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(57) Abrégé/Abstract:
Imaging systems, containing at least one charge-coupled device detector, are used for determining contamination of foodstuffs, such as for example, animal carcasses. Image processing algorithms allow for the identification of contaminants.

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(54) Title: METHOD AND SYSTEM FOR FECAL AND INGESTA DETECTION DURING MEAT AND POULTRY PROCESSING

(57) Abstract: Imaging systems, containing at least one charge-coupled device detector, are used for determining contamination of foodstuffs, such as for example, animal carcasses. Image processing algorithms allow for the identification of contaminants.

METHOD AND SYSTEM FOR FECAL AND INGESTA DETECTION DURING MEAT AND POULTRY PROCESSING

Background of The Invention

Field of the Invention

The invention relates to imaging systems for detecting contamination on foods. The imaging systems can be used, for example, for real-time detection of fecal and ingesta on meat and poultry carcasses which may be present when carcasses are being processed. The systems include both hyperspectral and multispectral imaging systems including apparatus, methods, and computer readable mediums.

Description of the Related Art

Microbial pathogens in food cause an estimated 76 million cases of human illnesses and up to 5,000 deaths annually, according to the Center for Disease Control and Prevention (Mead et al. Emerging Infectious Diseases 5(5) 607-625, 1999). In 1996, the USDA Economic Research Service reported that the annual cost of the food-borne illnesses caused by six common bacterial pathogens: Campylobacter spp., *Clostridium perfringens*, *Escherichia coli* O157:H7, *Listeria monocytogenes*, Salmonella spp., and *Staphylococcus aureus*; ranges from 2.9 billion to 6.7 billion dollars. The foods most likely to cause these illnesses are animal products such as red meat, poultry and eggs, seafood, and dairy products.

Contamination of meat and poultry in particular, with many bacterial food-borne pathogens, can occur as a result of exposure of the animal carcass to ingesta and/or fecal material

during or after slaughter. Accordingly, in order to minimize the likelihood of such contamination, it has been necessary to examine each food item individually to detect the presence of contaminants. Historically, such inspection has been performed visually by U.S.D.A. inspectors, who examine each individual food item as it passes through the processing system.

With poultry, for example, in a modern poultry processing plant, carcasses are placed on shackles of a processing line conveyor system for dressing and inspection. Typically, such conveyors operate at speeds of up to 140 carcasses per minute, with a six inch separation between shackles holding carcasses. Even with multiple inspectors continuously performing such inspection, as little as two seconds are allotted for the inspection of each carcass.

During this inspection period, the inspector is required to check for evidence of eight different diseases as well as for certain quality characteristics, to verify that the chicken was alive when placed on the production line, and to check for evidence of ingesta or fecal contamination. Moreover, during a typical business day operating in two eight hour shifts, a productive poultry processing plant may produce as many as 250,000 processed chickens.

After slaughter, each carcass is examined for disease or evidence of contamination that would render all or part of the carcass unfit for human consumption. Currently the meat processing industry relies upon a variety of methods for the inspection of animal carcasses. These methods typically include human visual inspection, microbiological culture analysis, bioluminescent ATP-based assays, and antibody-based microbiological tests. Unfortunately, these procedures are labor intensive, time consuming, and do not meet the needs of

the meat processing industry for an accurate high speed, non-invasive method that is amenable to inspection and real-time analysis.

It is apparent from this brief description that the historical inspection of meat carcases by human inspectors is problematic, and that it is poorly suited to the effective detection and elimination of contaminants in modern poultry processing plants. In particular, it requires the inspectors to make a subjective determination repeatedly. Such a system is prone to errors, which can lead to the entry of contaminated poultry products into the commercial distribution system.

In 1994, the Food Safety Inspection Service (FSIS) published a proposed rule, "Enhanced Poultry Inspection" (USDA, Proposed Rule, Fed. Reg. Volume 59, 35659, 1994) to clarify and strengthen the FSIS's zero-tolerance policy for visible fecal contamination on poultry carcasses. Prior to this rule, FSIS ensured removal of all visible fecal contamination subsequent to postmortem inspection through off-line reinspection, direct on-line observations by an inspector, and application of finished product standards (FPS). Any bird found to be contaminated with feces was set aside for rework or condemnation. The proposed Enhanced Poultry Inspection rule removed "feces" from the list of defects in the FPS.

Since the proposed rule was published, FSIS has adopted the Pathogen Reduction; Hazard Analysis and Critical Control Points (HACCP) Systems (USDA, Final Rule, Fed. Reg., Volume 61, 28805-38855, 1996). The Pathogen Reduction/HACCP system superceded the provisions of the Enhanced Poultry Inspection rule. However, FSIS determined that the zero fecal tolerance provision would complement the Pathogen Reduction/HACCP regulations. Therefore, FSIS finalized the zero fecal

tolerance provision of the Enhanced Poultry Inspection proposal (USDA, Final Rule, Fed. Reg., Volume 62, 5139-5143, 1997).

The HACCP regulations require meat processing establishments to identify all food safety hazards likely to occur in a specific process, and to identify critical control points adequate to prevent them. Zero tolerance for visible fecal contamination is a standard that has been implemented by FSIS, forcing poultry processing plants to adopt some point in the evisceration process as a critical control point under HACCP regulations which can be achieved by control, and therefore, is consistent with the HACCP framework. If evisceration machinery is not adjusted properly, the digestive tract of the bird may be torn during evisceration and its contents may leak onto the carcass. In meat processing establishments, fecal contamination of carcasses is a food safety hazard because of its link to microbiological contamination and food borne illness (USDA, 1997, supra). Pathogens may reside in fecal material and ingesta, both within the gastrointestinal tract and on the exterior surface of animals going to slaughter. Therefore, without proper procedures during slaughter and processing, the edible portions of the carcass can become contaminated with bacteria capable of causing illness in humans. Preventing carcasses with visible fecal and ingesta contamination from entering the chlorinated ice water bath (chiller) is critical for preventing cross-contamination of other carcasses. Thus, the final carcass wash, before entering the chiller, has been adopted by many poultry processors as a HACCP system critical control point for preventing cross-contamination of other carcasses.

Compliance with zero tolerance in meat processing establishments is currently verified by visual observation. Three criteria are used for identifying fecal contamination

(USDA, 1997, supra). These are color, consistency, and composition. In general, fecal material color ranges from varying shades of yellow to green, brown and white; the consistency of feces is usually semi-solid to paste; and the composition of feces may include plant material. Inspectors use these guidelines to verify that establishments prevent carcasses with visible fecal contamination from entering the chillers. me Visual inspection is both labor intensive and prone to both human error and variability. In addition, there has been a dramatic increase in water usage in most plants as a result of the zero-tolerance fecal standard. Plants have nearly doubled their previous water usage and nationwide the usage has increased an estimated 2 billion gallons (Jones, Poultry, Volume 6, 38-41, 1999).

Efforts have been made to develop automated or semiautomated visual inspection systems for detecting the presence of contaminants on food products during processing. Most systems utilize a technique in which the food item is irradiated with light having a frequency, for example, in the UV range, such that it causes the emission of fluorescent radiation upon striking fecal matter or ingesta. Fluorescent light emanating from the target food item is then measured and compared with a threshold value. If the light gathered exceeds the threshold, a signal indicative of the presence of fecal contamination or ingesta is generated. Such a system is disclosed for example in U.S. Patent Nos. 5,621,215 and 5,895,921 to Waldroup et al., and U.S. Patent No. 5,821,546 to Xiao et al.

U.S. Patent No. 5,914,247 to Casey et al. discloses a fecal and ingesta contamination detection system which is based on the premise that the emission of fluorescent light having a wavelength between about 660 and 680 nm is indicative of the presence of ingesta or fecal material. Thus, carcases being

processed are illuminated with UV or visible light (suitable wavelengths being between 300 and 600 nm) and the illuminated surface is then examined for the emission of fluorescent light in the 660 and 680 range. In a preferred embodiment, the intensity of such fluorescence in the 660-680 nm range is compared with that in the 600-620 range as a baseline in order to distinguish fluorescent light emissions of the carcasses themselves.

Visible and near-infrared reflectance (Vis/NIR) spectroscopy is a technique that can be used to detect contamination on foodstuffs. It is a nonconsumptive, instrumental method for fast, accurate, and precise evaluation of the chemical composition of agricultural materials (Williams, Commercial near-infrared reflectance analyzers. In Williams and Norris, eds., Near Infrared Technology in the Agricultural and Food Industries, Am. Assoc. Cereal Chem., St. Paul, MN, 1987, pp. 107-142). The use of Vis/NIR spectroscopic techniques for classifying wholesome, septicemic, and cadaver carcasses have been reported by Chen and Massie (ASAE, Volume 36(3), 863-889,1993) and Chen et al. (Appl. Spectrosc., Volume 50, 910-916,1996b). These studies were conducted with a near-infrared reflectance (NIR) probe in contact with a stationary carcass. More recently, Chen and Hruschka (ASAE Paper No. 983047, American Society of Agricultural Engineers, St. Joseph, MI, 1999) disclosed an on-line transportable Vis/NIR system (400 to 1700 nm) in which the probe was not in contact with the carcass and carcasses were moving at rates of either 60 or 90 birds per minute. Carcasses were classified as wholesome or unwholesome with an average accuracy of 94% and 97.5% when measured in room light and in the dark, respectively. On-line trials were conducted in a slaughter establishment where spectra of normal and abnormal carcasses were measured. The Vis/NIR system measured carcasses at a rate of 70 birds per minute and was

able to classify the carcasses from the spectral data with a success rate of 95% (Chen and Hruschka, 1998, supra). The Vis/NIR method showed promise for separation of wholesome and unwholesome carcasses in a partially automated system. The use of the technique to detect fecal and ingesta surface contaminants on poultry carcasses has not been attempted in the processing plant.

Machine vision is a technology for automating production processes with vision capabilities. Even though machine vision has evolved into a promising technology for many agricultural product applications, such as grading or inspection, there are many factors to be considered in on-line applications: processing speed, reliability, and applicability for industrial environments (Sakar and Wolfe, Trans. ASAE, Volume 28(3), 970-979, 1985; Miller and Delwiche, Trans. ASAE, Volume 32(4), 1484-1490,1989; Tao et al., Trans. ASAE Volume 38(5), 1555-1561, 1995; Steinmetz et al., Trans. ASAE, Volume 37(4), 1347-1353, 1994; Ni et al., ASAE Paper No. 933032, American Society of Agricultural Engineers, St. Joseph, MI, 1993; Daley et al., Proc. SPIE, Volume 2345, 403-411, 1994). Image processing techniques have made machine vision research possible to identify and classify agricultural commodities in the spatial domain (Guyer et al., Trans. ASAE, Volume 29(6), 863-869, 1986) as well as in the spectral domain (Meyer et al., Applied Engineering in Agriculture, Volume 8(5), 715-722, 1992).

Machine vision techniques are feasible for grading and parts identification in poultry production (Daley et al., Proceedings of Robotics and Vision '88, Society of Manufacturing Engineers, Dearborn, MI, 1988). Techniques for recognizing global or systemic defects on poultry carcasses with a color imaging system were reported by Daley et al. (1994, supra) and Chin et al. (Experimental evaluation of neural networks for inspection

of chickens. Research Report of Georgia Tech. Research Institute, 1993). However, this approach had a 90% accuracy for global defect classification and only a 60% accuracy for local defect classification (Daley and Carey, Color machine vision for defect detection: Algorithms and techniques, RIA International Robots and Vision Conf., 1991). Even though a color imaging system has the ability to extract the salient image features, this system was not successful for totally automated inspection because of low accuracy (Daley, Color machine vision for industrial inspection advances and potential for the future, Research Report of Georgia Tech. Research Institute, 1992).

Multispectral imaging technology has potential for food inspection application. Since biological materials at different conditions have different spectral reflectance characteristics, the status of materials could be identified based on their spectral images by selecting optimum wavelengths. Several spectral image processing algorithms have been developed to differentiate wholesome carcasses from unwholesome carcasses (Park and Chen, ASAE Paper No. 946027, American Society of Agricultural Engineers, St. Joseph, MI, 1994a; Park et al., Trans. ASAE, Volume 39(5), 1933-1941, 1996a). Use of intensities, recorded in different spectral bands of a multispectral camera for segmentation, was effective for classification of poultry carcasses (Park and Chen, Trans. ASAE, Volume 37(6), 1983-1988, 1994b; Park et al., 1996a, supra). Multispectral imaging was used for detecting unwholesome conditions, such as septicemia, cadaver, bruise, tumor, air-sacculitis, and ascites, in poultry carcasses (Park et al., 1996a, supra). Park and Chen (1994b, supra) developed a prototype multispectral imaging system for detecting abnormal poultry carcasses, specifically, to determine the optimal wavelengths of multispectral filters for discerning septicemic

and cadaver carcasses from normal carcasses, and to develop a discriminate function for separation of the abnormal carcasses with an accuracy of 93% for normal, 83% for septicemic, and 97% for cadaver carcasses.

Textural feature analysis of multispectral images has potential to discriminate wholesome carcasses from septicemic and cadaver carcasses with high classification accuracy of about 94% (Park and Chen, Trans. ASAE, Volume 39(4), 1485-1491, 1996). However, texture feature analysis would not be useful for an on-line system because of heavy computing time. To achieve real-time processing and analyzing of multispectral gray-scale images for on-line separation of septicemic, cadaver, tumorous, bruised, and other damaged carcasses from the wholesome carcasses, a neural network algorithm was found to be useful (Park et al., ASAE Paper No. 983070, American Society of Agricultural Engineers, St. Joseph, MI, 1998b). Thus, image texture analysis is an important process in scene analysis because it partitions an image into meaningful regions. Lumia et al., (Pattern Recognition, Volume 16(1), 39-46,1983) described a method for discriminating texture classes based on the measurements of small regions determined by an initial segmentation of the image for categorizing homogeneous regions. Park and Chen (1996, supra) have reported that textural feature analysis of multispectral images containing Vis/NIR wavelengths based on co-occurrence matrices was feasible for discriminating abnormal from normal poultry carcasses at 542 nm.

Development of high speed and reliable inspection systems to ensure safe production of poultry processing has become an important issue. Two dual-wavelength vision systems were developed for on-line machine vision inspection of poultry carcasses (Chao et al., ASAE Paper No. 993118, American Society of Agricultural Engineers, St. Joseph, MI, 1999). A real-time

multispectral image processing algorithm was developed from neural network models with different learning rules and transfer functions for on-line poultry carcass inspection (Park et al., Journal of Agricultural Engineering Research, Volume 69, 351-363, 1998c). The classification accuracy with dual-wavelength spectral images was much higher than single wavelength spectral images in identifying unwholesome poultry carcasses (Chao et al., 1999, supra). Object-oriented software was developed for on-line image capture, off-line development of classification models, and on-line prediction of wholesome and unwholesome carcasses.

An extension of multispectral imaging is known as hyperspectral imaging which is also referred to as imaging spectrometry. Whereas multispectral imaging consists of measurements from two to about ten discrete wavelengths for a given image, hyperspectral imaging measures more than ten contiguous wavelengths, often many more. Like multispectral imaging, hyperspectral imaging is an imaging technique that combines aspects of conventional imaging with spectrometry and radiometry. The result is a technique that is capable of providing an absolute radiometric measurement over a contiguous spectral range for each and every pixel of an image. Thus, data from a hyperspectral image contains two-dimensional spatial information plus spectral information over the spatial image. These data can be considered as a three-dimensional hypercube which can provide physical and geometric observations of size, dimension, orientation, shape, color, and texture, as well as chemical/molecular information such as water, fat, proteins, and other hydrogen-bonded constituent as described above in other Vis/NIR research. Hyperspectral imaging is often used in remote sensing applications (Schowengerdt, The nature of remote sensing, In Remote sensing: Models and methods for image processing, San Diego, Academic Press, 1997, pp. 1-

33), but is also being utilized in medical, biological, agricultural, and industrial areas as well (Lu and Chen, SPIE, Volume 3544, 121-133, 1998; Heitschmidt et al., SPIE, Volume 3544, 134-137, 1998; Levenson et al., SPIE, Volume 3438, 300-312, 1998; Lu et al., ASAE Paper No.993120, American Society of Agricultural Engineers, St. Joseph, MI, 1999; Willoughby et al., SPIE, Volume 2599, 264-272, 1996).

Since the detectors used to measure hyperspectral data are two-dimensional focal plane arrays (FPA), while hyperspectral data are three-dimensional, there must be a technique to collect all the data. The two primary techniques for collecting hyperspectral images are collecting two-dimensional spatial images while sequentially varying a narrow bandwidth of incident energy, or collecting full spectral information of a line-scan image while sequentially varying the position of the line scan (Wolfe, Introduction to imaging spectrometers, SPIE Optical Engineering Press, Bellingham, WA, 1997; Fisher et al., SPIE, Volume 3438, 23-30, 1998; Hart and Slough, SPIE, Volume 3389, 139-149, 1998). The first technique can typically be demonstrated with either an acousto-optic tunable filter (AOTF) or a liquid-crystal tunable filter (LCTF) in front of a FPA where a two-dimensional spatial image is captured at successive wavelengths. The latter technique is usually implemented in remote sensing as either a push-broom or whisk-broom scanner where a line-scan spectrometer is positioned in front of the FPA so that the FPA successively captures one spatial dimension and one spectral dimension as the scanner or image travels normal to the line-scan direction (first spatial dimension). With each technique, the successive images must be combined to build a hypercube of data for a given image. Each technique has advantages and disadvantages that dictate their use in varying applications. LCTF and AOTF systems can rapidly collect images at discrete wavelengths, which can be easily

varied. However, they are better suited for stationary objects to avoid image shifting between discrete wavelength measurements. Push-broom and whisk-broom systems are better suited for moving objects but cannot measure at discrete wavelengths.

Hyperspectral imaging has recently been used to explore the feasibility of detecting defects and contaminates in poultry carcasses (Lu and Chen, 1998, supra; Heitschmidt et al., 1998, supra). Lu et al. (1999, supra) demonstrated that taking a second-derivative of the reflectance value could qualitatively distinguish between four normal carcasses and four cadaver, four septicemia, and three tumorous carcasses. Heitschmidt et al. (1998, supra) contaminated two carcasses with fecal material and were able to qualitatively identify the contaminants with principal component analysis (PCA). However, the time required to perform the PCA was over 40 minutes for a single carcass. Image ratios (wavelength ratios) were also examined. No specific wavelengths were identified as significant for detecting fecal contamination with the limited sample population.

Hyperspectral imaging is an extremely useful tool to throughly analyze the spectra of inhomogeneous materials that contain a wide range of spectral information. It can be an effective technique for identifying surface contaminant on poultry carcasses. At the current time though, it is not suitable for on-line identification of fecal contamination because of lengthy image acquisition and processing times.

SUMMARY OF THE INVENTION

It is therefore, an object of the present invention to provide imaging systems and methods for detecting contamination on foods.

Another object of the present invention is to provide improved processes and apparatus for detection of contamination on a food item, which achieves enhanced accuracy and dependability in positively identifying contaminants.

Another object of the present invention is to provide processes and apparatus which can reliably detect contaminants at a speed which is compatible with the rate at which a food is processed on a production line.

A still further object of the present invention is to provide real-time automated food inspection systems which can quickly and accurately identify contaminated food items in a food processing line.

Further objects and advantages of the invention will become apparent from the following description.

This and other objects and advantages are achieved by the imaging systems according to the invention, in which digital imaging sensors, such as multispectral or hyperspectral imaging camera units are used to collect reflectance data from a food source on which contamination is to be detected. Reflectance data gathered by the imaging system are then processed in a digital computer using specially derived algorithms for enhancing the detection of contamination.

The theoretical development of algorithms which are used for this purpose is based on the difference between spectral reflectance of contaminants versus that of uncontaminated food. The assumption is made that a mathematical combination of remotely sensed spectral bands could be used to identify contaminants. The results generated by such a combination of

spectral bands corresponds to the amount of contaminants in a given image pixel.

There are two categories of algorithms that have been developed for use in the detection of contaminants. The first is a ratio of two key wavelengths or bands that are determined. The purpose behind using a ratio is to alter the reflectance measurements of spectral bands using an illumination independent function, which will augment the spectral values for the contaminant while diminishing the values for the food source or background.

Examples range from a simple ratio of two wavelength images, to a ratio of multiple wavelength image combinations, such as

$$\left(\frac{(\lambda_1 + x)^2(\lambda_2 - \lambda_4)}{(\lambda_1 + \lambda_3)(\lambda_2)}\right)$$

where λ_1, λ_2, λ_3, and λ_4 are images at four key wavelengths, and x is a constant. Another example in the ratio category would be the well-known normalized difference vegetative index (NDVI).

The second category of algorithm is defined as a linear combinations of wavelengths. The linear combinations category can range from a combination of two wavelengths $(\lambda_1 + \lambda_2)$, to a linear combination of wavelength ratios, such as:

$$\left(\frac{\lambda_1 + \lambda_2 - w}{\lambda_2 - x}\right) + \left(\frac{\lambda_1 + \lambda_3 - w}{\lambda_3 - x}\right) - \left(\frac{\lambda_1 + \lambda_4 - y}{\lambda_4 - z}\right)$$

where λ_1 , λ_2 , λ_3, and λ_4 are images at four key wavelengths, and w, x, y, and z are constants. This category also includes previously published remote sensing algorithms such as the Mahalonobis Distance and the rule file generation of the Spectral Angle Mapper. These formulas may need to be combined with a known filter for optimum results. Once an equation has been used, it may be necessary to apply any of a number of imaging filters to the resultant data set, either for clarity, to sharpen results, or even to limit the error. Some examples of these are low pass, high pass, median, gaussian, laplachian and texture filters.

BRIEF DESCRIPTION OF THE DRAWINGS

Figures 1a (Front view), 1b (Side View), and 1c (camera assembly) show a schematic of an imaging system 10 including a means for obtaining spectral images 12- SensiCam camera containing at least one charge-coupled device detector 1A with spectrograph 1C, and lens assembly 1B; two quartz-halogen line lights 2B; fiber-optic cables 2A, power supply 2C for lighting; power supply 4 for detector 1A; battery backup 5; computer monitor 6, computer 7, and interface cable 7A. Figure 1d is a schematic diagram which shows the components of a multispectral contaminant detection system according to one embodiment of the present invention.

Figure 2 is a flowchart for the detection of contaminants on food such as feces and ingesta on the poultry carcasses with Vis/NIR monochromator (2.1-2.5) and hyperspectral imaging system 10 (2.6-2.17).

Figure 3 is a flowchart for the detection of contaminants on food such as feces and ingesta on poultry carcasses with a

multispectral imaging system where key wavelengths have already been determined.

Figures 4a and 4b illustrate a digital filtering technique common to two embodiments of the present invention.

Figure 5 is a graph showing Vis/NIR reflectance average spectra from a scanning Vis/NIR monochromator of uncontaminated hard (#5.1) and soft (#5.2) scalded poultry carcass skin and pure feces from duodenum (#5.3), ceca (#5.4), and colon (#5.5) samples of poultry viscera.

Figure 6 is a graph showing discrimination of uncontaminated hard and soft scalded poultry carcass skin (#6.1) from duodenum (#6.2), ceca (#6.3), and colon (#6.4) feces by Principal Component Analysis of Vis/NIR reflectance spectra.

Figure 7 is a graph showing Principal Component Analysis loadings for Principal Components 1 (#7.1), 2 (#7.2), and 4 (#7.3) as a function of wavelength.

Figure 8 is a graph showing a non-linear cubic regression model for spectral calibration of the hyperspectral imaging system 10 with a binning of 4 by 2 .

Figure 9 shows a color composite and images of poultry carcasses contaminated with feces from duodenum, ceca, and colon locations of viscera at selected spectral wavelengths acquired by hyperspectral imaging to demonstrate image quality and spectral- image differences.

Figures 10a-e show a color-composite image (Figure 10a) and spectral images (Figures 10b-e) from image system 10 which

correspond to key wavelengths capable of identifying fecal contamination as determined from a Vis/NIR monochromator.

Figures 11a-f show the ratio images at key wavelengths that identify feces (duodenum, ceca, and colon) and ingesta contaminants on a poultry carcass. Figure 11a is a 517-nm image divided by 434-nm image. Figure 11b is a 565-nm image divided by 434-nm image. Figure 11c is a 628-nm image divided by 434-nm image; figure d is a 565-nm image divided by 517-nm image. Figure 11e is a 628-nm image divided by 517-nm image. Figure 11f is a 628-nm image divided by 565-nm image.

Figure 12a shows a hyperspectral color-composite image for the identification of fecal and ingesta contaminants on a poultry carcass. The image shows blood hemorrhage (#12a.1) and contaminant in the wing shadow (#12a.2).

Figure 12b shows a ratio image (565-nm image divided by 517-nm image) for the identification of fecal and ingesta contaminants on a poultry carcass. The blood hemorrhage (#12b.1) is not identified while the fecal contaminant in the wing shadow (#12b.2) can be identified easily.

Figures 13a, b, and c are ratio images to show a masking procedure to eliminate background noise from algorithm-processed images. Figure 13a shows an unmasked image (565-nm image divided 517-nm image). Figure 13b shows a masking template from a image at 565 nm. Figure 13c shows the image of figure 13a after the masking template (Figure 13b) was applied.

Figures 14a-b show a ratio image (565-nm image divided by 517-nm image) before and after histogram stretching of the masked

ratio image to qualitatively demonstrate the effectiveness of the histogram stretching routine. Figure 14a shows a ratio image, after the masking procedure, with contaminants somewhat visible in white. Figure 14b shows a ratio image, after the histogram stretching procedure, with contaminants clearly visible in white. #14b.1- contaminant below the tail, #14b.2- row of duodenum, #14b.3- row of ceca, #14b.4- row of colon contaminant, and #14b.5- row of ingesta contaminants.

Figures 15a-f show graphs of contaminated and uncontaminated poultry carcasses for validation of the ratio-image algorithm before and after the masking and threshold procedures for identification of fecal and ingesta contamination. The figure shows a clean carcass (fig. 15a), clean carcass with masking procedure applied to eliminate background (fig. 15b), clean carcass after masking and threshold procedures (fig. 15c), carcass with contaminant (fig. 15d), contaminated carcass with masking procedure applied to eliminate background (fig. 15e), and contaminated carcass after masking and threshold procedures (fig. 15f).

Detailed Description of the Invention

Hyperspectral and multispectral imaging are imaging techniques that combine aspects of conventional imaging with spectrometry and radiometry. These techniques are capable of providing an absolute radiometric measurement over a contiguous spectral range for each and every pixel of an image. Data from an image contain two-dimensional spatial information as well as spectral information at each location in the spatial domain. These data can be considered as a three-dimensional hypercube (or data cube) which can provide physical and/or chemical information of a material under test. This information can include physical and geometric observations of size, orientation, shape, color,

and texture, as well as chemical/molecular information such as water, fat, and protein.

Generally, for detecting contamination on food, such as for example animal carcasses, testing is conducted at one or more stations along the processing line, during transport along the line, or soon after completion of slaughter. For the purposes of this application, contamination of animal carcasses is to include but not be limited to, digestive tract material including fecal contamination, ingesta contamination, crop contents, bacterial contamination, etc. At the testing stations, the carcasses may be imaged with a hyperspectral or multispectral imaging system at any contiguous or discrete wavelengths of radiation from about 400 to about 2500 nm emitted therefrom and detected as described herein below. Because processing facility practices vary with the particular meat producing animal, specific locations for testing along the processing line will vary. For instance, the typical processing line for poultry include the following steps in order: the bird is suspended by the legs in a shackle, electrically stunned, bled via a neck cut, hard or soft scalded, defeathered, decapitated, and eviscerated (usually by mechanical means), and chilled in chlorinated ice-water baths. On the other hand, beef harvest procedures differ significantly, and include the following steps: the animal is inspected, rendered unconscious, shackled, hoisted, exsanguinated and placed onto a moving rail. The carcass is then skinned (primarily through the use of mechanical hide pullers) and the head is removed for postmortem inspection of wholesomeness. Prior to evisceration, the brisket is split and the esophagus and anus are loosened (these may be tied to prevent fecal and ingesta contamination of the carcass). The abdominal cavity is then opened with a vertical incision through the abdominal muscles and the internal organs

(excluding the kidneys) and the entire gastrointestinal tract are removed onto a conveyor for postmortem inspection and further processing. The eviscerated carcass is then split into halves, cutting longitudinally through the spinal column, and inspected for wholesomeness. Once inspection is complete (passed), the carcass sides are mechanically washed (which may include a steam pasteurization step to minimize microbial contamination), weighed, and chilled for 24 to 48 hours before fabrication into primal and subprimal cuts and subsequent shipment. Pork harvest procedures are similar to beef, with the exception where the skinning step in the beef process is replaced by a hair removal process in pork that leaves the skin on the carcass. Scalding the carcass in hot water to loosen the hair follicles, mechanically removing the hair, singeing to remove any residual hair, and subsequently washing and rehanging the carcass accomplish this. Evisceration is similar to beef and pork carcasses are split into sides through the spinal column; however, the skin and soft tissue are left intact at the anterior end of the carcass. Inspection, washing, and chilling procedures are also similar to beef. In some instances, pork carcass may be deboned while warm, ground with other ingredients such as spices, and rapidly chilled to refrigeration temperatures. Testing may be conducted during or upon completion of any of the above-mentioned steps.

In one example, beef or pork carcasses can be inspected for contamination prior to chilling of the sides or carcass usually within approximately 2 - 3 minutes after splitting or in less than 10 minutes of initiation of harvest, depending on the species. Other sites for inspecting may include after skinning, after evisceration, and(or) after splitting. Poultry carcasses can be inspected for contamination after defeathering and/or evisceration. For quality control, poultry may also be

inspected following removal from chilled chlorinated ice-water baths.

Imaging systems 10 (Figure 1d) include a means for obtaining spectral images 12, a lighting system 2, and data processing unit 9. One embodiment of the present invention includes a hyperspectral imaging system 10 (Figures 1a-1c). Hyperspectral imaging system 10 includes at least a means for obtaining spectral images 12, such as for example at least one charge-coupled device detector 1A; lighting system 2, and data processing unit 9. The means for collecting spectral images 12 for the purposes of this embodiment, includes at least one charge-coupled device 1A, a lens assembly 1B, and a line-scan spectrograph 1C. It further includes a power supply 4 and a battery back-up 5.

Device 1A can be a high resolution detector, such as for example, a Charge-Coupled Device detector (CCD). Examples of a charge-coupled device detector include, for example, a SensiCam 370 KL Camera (Cooke Cooperation, Auburn Hills, MI); an Orca 100 Digital CCD Camera system (Hamamatsu, Bridgewater, NJ); a SpectraVideo 16-bit Digital (PixelVision, Inc., Beaverton, OR); etc.

Line-scan spectrograph 1C has a nominal spectral range of from about 400 nm to about 900 nm and attaches to the CCD detector 1A for generating line-scan images. Lens assembly 1B includes a 1.4/17-mm compact C-mount lens such as, for example, a Xenoplan (Schneider, Hauppauge, NY); Nikkor (Nikon Inc., Melville, NY); and attaches to spectrograph 1C.

Another embodiment of the present invention includes a multispectral imaging system 10. Multispectral imaging system 10 includes a means for obtaining spectral images 12, a

lighting system 2 and a data processing unit 9. In this embodiment, a means for obtaining spectral images 12 for a multispectral imaging system includes a common aperture camera having two or more detectors, such as two CCD detectors, for simultaneously acquiring multispectral images. The camera utilizes a wavelength-separating prism, a dichroic filter, to split broadband light, which enters the camera through the lens, into at least two independent optical channels. The degree of specific spectral separation between optical channels depends upon the dichroic filter and the subsequent trim filter properties. Specifically, the separation is a function of the desired key wavelengths as determined by the calibration model for the specific food and its associated contaminants, their proximity to each other, and the bandwidth of the trim filters. The wavelength separating prisms or filters contain different dichroic coatings on different faces of the prism which determines the performance of the camera. The optical trim filters, between the prism exit plane and the detectors, determine the spectral bandwidth reaching the detectors and are designed such that the central wavelength corresponds to one of the key wavelengths. As a result of this process, two or more spectral images are obtained simultaneously. By way of example, a common aperture camera system with two detectors is described. Common aperture cameras with three or more detectors are also feasible. These cameras would result in simultaneously acquiring three or more spectral images.

It is of course possible to achieve similar means for obtainng spectral images 12 by using multiple digital imaging devices, such as CCD devices, each having its own filter, for isolation of a preselected wavelength band. Another means for obtainng spectral images 12 is at least one charge-coupled device detector containing area scan filters, such as for example, a liquid crystal tunable filter, an acousto-optic tunable filter,

etc. The bandwidths for these filters are specified according to the type of data to be collected. The determination of the bandwidths needed is well within the ordinary skill in the art in light of the detailed description of the present application. The at least one charge-coupled device detector with filters has to be capable of collecting at least two discrete spectral images.

The image signals provided by the means for obtaining spectral images 12 are input to a computer 7 via a known frame grabber 17, such as, for example, a 12-Bit PCI interface board (Cooke Company, Auburn Hills, MI; National Instruments, Austin, TX). The frame grabber 17 assembles the data into respective image frame files. These data are then processed by the computer 7 according to one of the different processes, including differing processing algorithms 20 and method steps, depending on the nature of the production line processing the food. The end result of such computer analysis is the generation of a qualitative analysis such as a "contaminated/uncontaminated" determination for each unit of food that passes in front of the means for obtaining spectral images or a quantitative determination to determine, for example, types and/or size of contamination.

The theoretical development of algorithms 20 which are used for this purpose is based on the difference between spectral reflectance of contaminants versus that of uncontaminated food. The assumption is made that a mathematical combination of remotely sensed spectral bands could be used to identify contaminants. The results generated by such a combination of spectral bands corresponds to the amount of contaminants in a given image pixel.

There are two categories of algorithms that have been developed for use in the detection of contaminants. The first is a ratio of key wavelengths or bands that are determined. The purpose behind using a ratio is to alter the reflectance measurements of spectral bands using an illumination-independent function, which will augment the spectral values for the contaminant while diminishing the values for the food source or background.

Examples range from a simple ratio of two wavelength images,to a more complex ratio such as:

$$\left(\frac{(\lambda_1 + x)^2(\lambda_2 - \lambda_4)}{(\lambda_1 + \lambda_3)(\lambda_2)}\right)$$

where λ_1, λ_2, λ_3, and λ_4 are images at four key wavelengths, and x is a constant. Another example in the ratio category would be the well-known normalized difference vegetative index (NDVI).

The second category of algorithm is defined as a linear combination of wavelengths. The linear combination category can range from a combination of two wavelengths, $(\lambda_1 + \lambda_2)$, to a linear combination of wavelength ratios such as:

$$\left(\frac{\lambda_1 + \lambda_2 - w}{\lambda_2 - x}\right) + \left(\frac{\lambda_1 + \lambda_3 - w}{\lambda_3 - x}\right) - \left(\frac{\lambda_1 + \lambda_4 - y}{\lambda_4 - z}\right)$$

where λ_1, λ_2, λ_3, and λ_4 are images at four key wavelengths, and w, x, y, and z are constants. This category also includes previously published remote sensing algorithms such as the Mahalonobis Distance and the rule file generation of the Spectral Angle Mapper. These formulas may need to be combined

with a known filter for optimum results though. Once an equation has been used, it may be necessary to apply any of a number of imaging filters to the resultant data set, either for clarity, to sharpen results, or even to limit the error. Some examples of these are low pass, high pass, median, gaussian, laplachian and texture filters.

Both the hyperspectral and the multispectral systems require lighting system 2. Lighting system 2 includes an illuminator with at least 2400 lux (lumen/m^2) intensity and excitation wavelengths between about 400 and about 2500 nm, such as for example, Fiber-Lite A240 (Dolan-Jenner, Inc., Lawrence, MA); lamp assembly 2B, for example quartz halogen line lights such as for example QF5048 (Dolan-Jenner, Inc.); lighting power supply 2C, and fiber-optic cables 2A.

Data analysis (Table A - Appendix) is needed in order to determine particular types of contamination on foodstuffs. A calibration model correlates band numbers of the imaging system with actual wavelengths. Referring to Figure 2, the first step is to collect spectra of pure contaminants and uncontaminated food with a Vis/NIR monochromator, for example, a NIRSystems 6500 monochromator (NIRSystems, Silver Spring, MD) which has a spectral range from about 400 to about 2500 nm in about 2-nm intervals (Figure 2, Box 2.1). Before each sample is measured, a standard ceramic tile, having high reflectance, is measured to provide standard reflectance values. The reflectance values of the samples and the standard are converted to log (1/R) values where R is reflectance. It is known to convert reflectance data representing log (1/R) values, wherein R is reflectance, which values vary approximately linearly with the concentration of the absorber. Generally, any suitable monochromator may be utilized, provided that the resulting spectra covers both visible and NIR regions. This means that

the wavelength of visible light will be in the range of about 400 to about 780 nm, and NIR light will be in the range of about 782 to about 2500 nm.

After the data are converted to log (1/R), the next step is to transform the converted data with standard normal variate and detrending or multiplicative scatter correction to remove interferences of scatter, particle size, variation in baseline shift, and curvilinearity (Figure 2, Box 2.2). Variation within individual Vis/NIR spectra is the result of three main sources: 1) nonspecific scatter of radiation at the surface of the sample; 2) variable spectral pathlength through the sample; and 3) chemical composition of the sample. Scatter is dependent on the physical nature of the sample particles and pathlength is largely dependent on sample particle size. There is a high degree of collinearity between data points in the log (1/R) spectra, which is a function of scatter and variable pathlength. The multiplicative combinations of these effects are unique to any one spectrum, and any corrections for these interference should be made on the same basis. These interferences can cause problems in quantitative and qualitative analysis and should be removed prior to calibration and analysis. Spectral measurements of pure contaminants and uncontaminated foodstuffs are transformed with standard normal variate and detrending procedures (Barnes et al., Appl. Spectrosc., Volume 43 (5), 772-777, 1989; herein incorporated by reference) to remove interferences of scatter and particle size, and variations in baseline shift and curvilinearity. The invention is not limited to any one specific mathematical transformation to remove these interferences. It has been found that NIR ratio techniques (Norris, Karl, U.S. Patent NO. 5, 132,538; herein incorporated by reference), second derivative transformation, and multiplicative scatter correction (Geladi et al., Applied Spectrosc., Vol. 39(3), 491-

500, 1985; herein incorporated by reference) show sufficiently similar corrections within the scope of the present invention.

After transforming the log (1/R) data, as described above, the transformed data is processed with Principal Component Analysis (PCA) for formation of scores and loadings (Figure 2, Box 2.3). Examples of commercially available software for performing PCA analysis include Winisi, Infrasoft, Port Matilde, PA; Unscrambler, CAMO, Oslo, Norway; Grams/32, Galactic Industries Corp., Salem, NH; etc. Mathematical tools have been developed to help extract additional information from spectra. Chemometrics have been described as the application of mathematical and statistical methods to extract more useful information from chemical and physical measurements. Recent advances have lead to new data analysis systems and commercially available Vis/NIR instruments that use one or more chemometric methods for qualitative and quantitative analysis. Standard practices for chemometrics in infrared, multivariate, qualitative, and quantitative analysis are described elsewhere (American Society for Testing Materials (ASTM) Practice, E1655-94, 1995; ASTM Annual Book of Standards, West Conshohocken, PA., Volume 3.06, 1995; both herein incorporated by reference).

Principal Component Analysis (PCA) is one technique for identifying the underlying features of large data sets, and attempts to describe the variation in multi-dimensional data by means of a small number of uncorrelated variables. The underlying concepts and properties of PCA are described in Barton et al., (U.S. Patent NO. 6,114,699; herein incorporated by reference). Briefly, PCA is a variable reduction procedure. It is useful on a large data set with a large number of variables that are correlated to each other. Because of these intercorrelations, the observed variables can be reduced into a smaller number of artificial variables (principal components,

eigenvectors, factors, or T-variables) that will account for most of the variance in the observed variables. Translated into principal components, the new coordinate system has fewer dimensions than the original set of variables, and the directions of the principal components describe the largest variations. The localization, or the coordinates of the samples related to the principal components, are called scores (Eigenvalues). The corresponding relationship between the original variables and the new principal components are called loadings (weights).

The next step is to compare scores with variations in principal components to select discrete principal components at which scores correlate with uncontaminated foods and contaminants (Figure 2, Box 2.4). The spectra of samples are analyzed by principal component analysis as described above, and scores and loadings are used to select key Vis/NIR wavelengths for discrimination between contaminated and uncontaminated foods. It has been found that partial least squares regression (Workman et al., Applied Spectrosc. Reviews, Volume 31(1&2), 73-124, 1996; herein incorporated by reference) can also be used for modeling the variance within spectra of pure contaminants and uncontaminated foods to identify key wavelengths (Figure 2, Box 2.5). Once key wavelengths are identified for a particular food and its associated contaminants, these can be used in any embodiment of the present invention.

After key wavelengths are identified from the calibration model generated for a particular food and its associated contaminants, the systems of the present invention are ready to image foods for contamination. For hyperspectral imaging system 10, line scan images are collected (Figure 2, Box 2.6). With hyperspectral imaging, all spectral wavelengths can be

collected for every pixel of an object. Data are acquired with a high resolution CCD image detector, which is a two-dimensional focal-plane array sensor. Therefore, only two dimensions of an image can be collected at any given time. A typical embodiment is a single line-scan image which consists of spectral information for one spatial row. Line-scan images are taken while the food source is moving so that the successive line scans represent successive slices of the food source. Alternatively, the food source may remain stationary and the camera may move. Successive line-scan images are collected by computer 7 via a frame-grabber 17 that interfaces the CCD detector through interface cable 7a. Once the frame-grabber has stored line-scan images as data files in computer 7, they may be combined to create a full hyperspectral image that has two-dimensional spatial information as well as spectral information (Figure 2, Box 2.7). This full hyperspectral image is sometimes referred to as a three-dimensional hypercube. The hyperspectral image is created through software which combines the individual line-scan image files into a single hyperspectral image file such as for example Hypervisual (Provision Technologies, Stennis Space Center, MS; Interactive Data Language (IDL), Research Systems, Inc., Boulder, Colorado). However, any software capable of creating a hyperspectral image is useful in the present system and is well within the ordinary skill in the art given the detailed description of the present invention.

The next step in the process is to choose sensor binning (Figure 2, Box 2.8). The choice of hyperspectral imaging resolution is determined by the food source imaged, the minimum physical size of the contaminant, and the values of the key wavelengths determined from the Vis/NIR monochromator. The imaging resolution is a function of both the CCD detector dimensions and the binning selected during image capture.

Binning describes the process where photons collected in adjacent pixels are summed together. For example, a binning of 4 by 2 applied to a CCD with 1280 by 1024 pixels would result in the summing of photons collected over eight adjacent pixels (two rows of four columns). The result would be line-scan images with an image resolution of 320 pixels (1280 divided by 4) in the spatial dimension and 512 pixels (1024 divided by 2) in the spectral dimension. The spectral dimension is sometimes referred to as the bands.

The hyperspectral imaging system requires a wavelength calibration so that the intensities at various band numbers will correspond to an actual wavelength. Thus, after wavelength calibration, the same key wavelengths, identified with the Vis/NIR monochromator (Figure 2, Box 2.5 and described above), can be evaluated with the hyperspectral imaging system. The hyperspectral wavelength calibration equation was developed from separate hyperspectral image data (Figure 2, Box 2.9) of spectral calibration lamps (Oriel Instruments, Stratford, CT) and lasers (Edmund Scientific, Barrington, NJ) inserted into an integrating sphere (Optronic Laboratories, Inc., Orlando, Florida; Labsphere, North Sutton, NH). The integrating sphere disperses the energy from the calibration lamps so that any image system looking into the integrating sphere observes a spatially uniform image. The calibration lamps must have precise distinct wavelength peaks across the wavelength range of the hyperspectral imaging system needing calibration. Determination of these is well within the ordinary skill in the art.

After imaging the spectral calibration sources, distinct wavelength peaks and their corresponding band numbers are identified (Figure 2, Box 2.10) and for a given binning, regressed (Figure 2, Box 2.11) against the corresponding image

band numbers as follows:

$$\text{wavelength (nm)} = 380.277 + 0.905X + (4.369 \times 10^{-4})X^2 - (4.356 \times 10^{-7})X^3 \quad (r^2=0.9999)$$

where X is the band number ranging from about 0 to about 511 (Figure 2, Box 2.11). This wavelength calibration equation is independent of light intensity but is dependent on the individual CCD detector and will have different coefficients for different detectors and binning combinations. The wavelength calibration is then applied to all subsequent images of food (Figure 2, Box 2.12). Given this detailed description of the present invention, it is well within the ordinary skill in the art to develop a calibration equation for a given sensor.

The next step is to select hyperspectral images (Figure 2, Box 2.13) with the key wavelengths identified earlier (Figure 2, Box 2.5). Then a ratio image is calculated where, in the simple case, the intensity of one image is divided by the intensity of a corresponding image at a different key wavelength on a pixel-by-pixel level (Figure 2, Box 2.14). This allows for the generation of ratio images that are used to identify and locate contamination on the food source.

To further enhance an image, the image background is eliminated through a masking procedure (Figure 2, Box 2.15). Histogram stretching is used to visually enhance the contaminants (Figure 2, Box 2.16). Masking is a process where all pixel intensities below a minimum value are assigned to a fixed value (zero). Since the calculated ratio-image values vary (Figure 2, Box 2.14) from about 0 to about 2, masking is performed on one of the original key wavelength images and then transferred to the ratio image by assigning all corresponding ratio image intensity values to zero. For example, the image at 565-nm has an intensity value of less than about 120 for the background.

Thus, any pixels below the minimum value of 120 in the 565-nm image are assigned a value of zero in the ratio image, which removes the background.

Histogram stretching is a method to enhance the contrast of a displayed image. Typically, it is a linear stretching of the image intensity values to the full-scale display range (0 to 255 gray-scale) where the minimum image intensity value is assigned to a full-scale display value (255 for 8-bit gray-scale). However, for the masked ratio images, a histogram stretch is applied such that all image intensity values below a low threshold value are assigned a zero display value, and all those above a high threshold value are assigned a full display-scale value, with intermediate values assigned linearly proportional display values between the zero and full display-scale values. The method to this point would be suitable as a decision tool for food inspectors in the identification of the presence of contaminants.

Another alternative to histogram stretching is to use a threshold routine to quantitatively identify contaminants (Figure 2, Box 2.17). The threshold routine changes all pixel intensity values below a given contaminant threshold value to zero. The contaminant threshold is chosen so that all pixels greater than the threshold value are identified as contaminants. This is applicable for real-time identification of food contamination in a processing line.

For the multispectral imaging system 10 embodiment, spectral images at least two wavelengths are collected (Figure 3, Box 3.1) with a means for collecting spectral images 12 as described above. The spectral data is then analyzed using a software program 19 containing the necessary algorithms 20 and process steps. A software program 19 is stored in the memory

of a computer 7 (Figures 1a-1d).

One example of an algorithm 20 for a first step in analyzing the spectral data is to calculate a ratio image at two key wavelengths to detect contaminants (Figure 3, Box 3.2). Multispectral wavelengths are first collected (Figure 3, Box 3.1) at the key wavelengths as discussed above for the hyperspectral imaging embodiment. Then the image at one key wavelength is divided by the image at another key wavelength. When this type of calculation is used the next step, is to reduce the background noise by separating the contaminated foodstuff from its background with a masking procedure (Figure 3, Box 3.3) as discussed above for the hyperspectral imaging embodiment. The fourth step, for this embodiment, separates the contaminants from the foodstuff with histogram stretching (Figure 3, Box 3.6) for display or monitoring purposes (Figure 3, Box 3.7) for qualitative separation, while the fifth step, for this embodiment, is a threshold procedure which quantitatively separates the contaminants from the foodstuff (Figure 3, Box 3.8), as described for the hyperspectral imaging embodiment.

Another embodiment for analyzing spectral data is illustrated in Figure 3 with a system as depicted in Figure 1d which is used to detect contamination on poultry carcasses which have been hard scalded prior to removal of feathers. The carcass is illuminated by a light source 2 which provides a predetermined spectral profile. In this case, it has been determined that a light source corrected to about 5600K is particularly advantageous.

Data representing a multispectral image of light reflected from the target carcass are generated by the spectral image detector 12 in four wavelengths (Figure 3, Box 3.1). In particular, it

has been determined that the following four ranges of wavelengths are particularly advantageous for this purpose:

λ_1 = about 750-830 nm

λ_2 = about 450-500 nm

λ_3 = about 500-535 nm

λ_4 = about 550-585 nm

The image data generated (Figure 3, Box 3.1) thus provide four reflectance values, each represented by a digital number (DN), for each pixel included in the acquired image - one such digital number for each of the frequency bands λ_1-λ_4. These values are combined to generate a value I for each pixel (Figure 3, Box 3.2), according to the following algorithm:

$$I = \frac{(\lambda_1 - n)(\lambda_3 + \lambda_4)}{\lambda_3(\lambda_1 + \lambda_2)}$$

wherein n is an integer constant. Subtraction of the constant n in the numerator as indicated in Equation 1, reduces the amount of background noise (Figure 3, Box 3.3) by altering the DN values of the specified wavelength λ_1. The result of the above calculation, which is performed in computer 7 of Figure 1d is the creation of an image file having a single DN value for each pixel.

The DN values generated are then filtered by a process referred to as "texture analysis" (Figure 3, Box 3.4), which characterizes the image according to real variations in pixel brightness -- that is, DN values -- to generate two new output image files indicative of the mean and variance for pixels within a moving window of about a 3 by 3 pixel mask, as illustrated in Figures 4a and 4b.

Figure 4a shows the manner of calculation of mean values in the

texture analysis. For each window of nine pixels (about a 3 by 3 pixel set) a mean value of the DN values is determined.

For example, in Figure 4a, three windows a, b, and c are indicated by brackets, with window a being enclosed by a heavy line. The mean of DN values in window a is about 4.2. Similarly, the mean value for window b, enclosed by a dashed line, is about 3.2, as also shown in the set of mean values. As the window is moved over the whole of the image file, a complete new image file of mean values is created. It is of course apparent that different sizes and shapes of windows can be used for this purpose.

The technique of calculation of a new image data set of variance values, shown in Figure 4b, is similar to that used to calculate the mean values in Figure 4a.

As is apparent, the performance of the texture analysis (Figure 3, Box 3.4) yields two image data sets, representing the spatially distributed mean and variance values, respectively for the data values I (Figure 3, Box 3.2). The mean and variance values are then added together to form a final output image.

Finally the output image is analyzed by computer 7 to determine whether ingesta or fecal contamination is present on the imaged carcass. This can be done, for example, by establishing a threshold value, IF which is indicative of contamination. In this case, calculated values in the final output image data are compared with a threshold value and a decision is made based on such comparison. For example, a positive contamination judgement (Figure 3, Box 3.10) could be made if a single pixel value exceeds the threshold value, i.e., a judgement of contamination could be made if a specified minimum number of

values exceed the threshold; or a minimum number within a defined proximity. In a preferred embodiment, such a determination is made if the carcass has at least one pixel that exceeds the threshold (Figure 3, Box 3.10); otherwise, the carcass is concluded to be contaminant free (Figure 3, Box 3.9).

In another embodiment, i.e., for carcasses that are soft scalded, carcasses are illuminated by a 5600K color corrected light source 2 in the same manner as indicated in Figure 1d. In this embodiment, however, three multispectral image-data sets are acquired by specral image detector 12 at the following key wavelengths, one image dataset per wavelength range:

λ_1 = about 497-537 nm

λ_2 = about 525-565 nm

λ_3 = about 608-648 nm

That is, DN reflectance values are determined for every pixel at each of the three wavelength ranges λ_1 - λ_3. Thus, each pixel is characterized by a spectral pattern or "signature" consisting of these three DN values - one for each wavelength range.

Next, an algorithm referred to as Spectral Angle Mapper is applied (Figure 3, Box 3.2), correlating each of the acquired image-data sets λ with predetermined spectral signature values at the detected wavelength ranges λ_1, λ_2, and λ_3, for each of four types of ingesta/fecal contamination, which differ only in their source within the digestive tract of the carcass prior to dressing; that is in particular, the stomach, the duodenum, the colon, and the ceca. The reflectance values for each of these types of contaminant at the key wavelength ranges varies in a characteristic fashion, and accordingly this characteristic pattern can be used to detect its presence. It is of course apparent that the greater the number of wavelength bands which

is used to characterize both the target carcass and the types of contamination, the greater the precision of the correlation. However, it has been determined that the three wavelength range values indicated above are sufficient in practice.

In this embodiment, the Spectral Angle Mapper (SAM) algorithm is calculated (Figure 3, Box 3.2). The Spectral Angle Mapper is a mathematical function which can be used to determine the degree of spectral similarity between the spectral values for

each pixel in the acquired image data set and the corresponding spectral signature values for the four contaminants noted above. The formula for calculation of SAM is as follows:

$$\alpha = \cos^{-1}\left(\frac{\sum_{i=1}^{nb} t_i r_i}{\left(\sum_{i=1}^{nb} t_i^2\right)^{1/2} \left(\sum_{i=1}^{nb} r_i^2\right)^{1/2}} \right) \qquad \text{(Eq. 4)}$$

wherein :

t_i = detected reflectance value of the target carcass in the i^{th} band,

r_i = reflectance value of the predetermined spectral signature of a subject contaminant in the i^{th} band; and

nb = number of bands i in the image.

In this case, since four different types of contaminants are to be detected, four values of α are calculated for each pixel- one for each of the respective reference spectra - resulting in four image data sets, referred to as Rule Files. By virtue of the SAM algorithm, the data in each of these Rule Files are indicative of the likelihood of contamination of the imaged carcass.

Next, the sum or product of all the Rule Files produces a new image file (Figure 3, Box 3.2). Thereafter, processing for soft scald carcasses in Figure 3 proceeds in the same manner as for hard scald carcasses as in Figure 3. That is, a texture analysis is performed (Figure 3, Box 3.4); the mean and variance values are combined; and contamination is determined based on

the combined image data set (Figure 3, Box 3.8-3.10).

The following examples are intended only to further illustrate the invention and are not intended to limit the scope of the invention which is defined by the claims. Poultry carcasses are used as a model system for testing the system of the present invention.

EXAMPLE 1

Live birds were obtained from a local broiler house, transported to the grow-out facilities at USDA-Agricultural Research Service in Athens, Georgia and held for about 4 days. The feeding regime was scheduled for meal feeding to provide a consistent amount of fecal material in the digestive tract among birds. Birds were stunned (12 VAC), bled for about 90 seconds, scalded at about 57.5 °C for approximately 2 minutes (e.g. hard scald), or about 53 °C for 50 seconds (e.g. soft scald), and picked. Hard scalding removes the skin cuticle resulting in a white carcass, whereas soft scalding leaves the cuticle intact resulting in a yellow carcass. In order to collect feces and ingesta, four replicates of 20 birds were processed and eviscerated to obtain fecal material from the duodenum, ceca, and colon portions of the viscera, and ingesta from the proventriculus and gizzard. Samples of skin were also taken from the breast. See Table 1 below for control variables and fixed values for digestive tract contents.

Table 1. Control Variables and Corresponding Fixed Values

CONTROL VARIABLES	VALUES
Bird	6 week male
Diet	Corn/Soybean meal
Feed Withdrawal	8 hours
Water Withdrawal	4 hours

EXAMPLE 2

In order to collect Vis/NIR spectra from carcasses, pure feces from duodenum, ceca, colon and both hard and soft scalded uncontaminated skin were scanned with an NIRSystems 6500 monochromator (McGee, U.S. Pat. No. 4,969,739, herein incorporated by reference). Spectra were recorded from about 400 nm to about 2500 nm in about 2-nm intervals and analyzed from about 400 nm to about 900 nm. Samples of uncontaminated breast skin were presented in cylindrical sample cells (internal diameter-about 38 mm; depth-about 9 mm) with an optical quartz surface and a cardboard backing. Samples of pure feces were presented in cylindrical sample cells (internal diameter-about 38 mm; depth-about 0.1, 0.2, or 0.3 mm) with an optical quartz surface and a locking back. Each sample was scanned about 32 times, averaged and transformed to log ($1/R_1$, where R is reflectance). Figure 5 is the reflectance spectra of uncontaminated poultry carcass breast skin (hard and soft scalded), and pure feces from different sites in the digestive tract. Samples 5.1 and 5.2 are uncontaminated breast skin subjected to hard and soft scald treatments, respectively. Samples 5.3-5.5 are pure feces from the duodenum (5.3), colon (5.4), and ceca (5.5).

A commercial spectral analysis program (NIRS3, Infrasoft International, Inc., Port Matilda, PA) was used to collect the

spectra of pure contaminates and uncontaminated poultry carcass skin and for principal component analysis (PCA). The spectral data set (n=76 uncontaminated hard and soft scalded skin; N=42 duodenum; N=37 ceca; and N=25 colon) was transformed with standard normal variate and de-trending procedures to remove the interference of light scatter from the skin and differences in pathlength due to sample thickness. The spectra were mean centered and reduced by PCA. Translated into principal components, the new coordinate system has fewer dimensions than the original Vis/NIR data set, and the directions of the new coordinate axes (called principal components) were chosen to describe the largest variations.

The PCA algorithm creates scores, which represent the position of samples relative to the principal components. For each principal component, scores are derived by taking the sum across the spectrum of weights times the log (1/R) values. The corresponding relationship between the Vis/NIR spectra and the principal components are called loadings. Plots of loadings often resemble the spectra of samples and thus offer scope for interpretation. Four principal components were used in the PCA. The components explained about 99.8% of the Vis/NIR spectral variation. Figure 6 shows a clear discrimination between uncontaminated skin and feces using principal components 1, 2, and 4. Principal component 1 (PC 1) was primarily responsible for the separation of uncontaminated skin (Figure 6, 6.1 hard and soft scald), from duodenum (Figure 6, 6.2), colon (Figure 6, 6.3), and ceca (Figure 6, 6.4). Uncontaminated skin had negative scores for PC 1, whereas pure feces had positive scores for PC 1. Loadings are the regression coefficients for each Vis/NIR wavelength for each principal component and indicate which wavelengths are dominantly influencing the discrimination. From PC analysis, four key wavelengths were identified for discrimination of uncontaminated skin from pure feces based on

the loadings.

Figure 7 shows the loadings for PC 1, PC 2, and PC 4 as a function of wavelength. Key wavelengths are identified by maximum loadings at about 565 nm for PC 1 (Figure 7, 7.1), about 434 and 517 nm for PC 2 (Figure 7, 7.2), and about 628 nm for PC 4 (Figure 7, 7.3). These key wavelengths were selected and applied to hyperspectral images of uncontaminated and contaminated carcasses.

EXAMPLE 3

Spectral calibration was performed to correlate absolute wavelength data from known spectral light sources of Mercury Argon (HgAr) and Krypton (Kr) gas emission calibration lamps (Model 6035 and 6031, Oriel Instruments, Stratford, CT, respectively), and Helium-Neon lasers, to the 512-hyperspectral image bands (1024 pixels with a binning of 2) obtained from the CCD detector 1a. Figure 8 shows the data and the non-linear calibration for the hyperspectral imaging system 10, which was used to correlate the band numbers of the hyperspectral images to the actual wavelengths. The wavelength calibration equation for hyperspectral imaging system 10 is as follows:

$$\text{Wavelength (nm)} = 380.277 + 0.905X + (4.369 \times 10^{-4})X^2 - (4.356 \times 10^{-7})X^3 \qquad (r^2 = 0.9999)$$

where X is the band number ranging from about 0 to about 511.

EXAMPLE 4

Immediately after processing, as in Example 1, carcasses, fecal, and ingesta samples were used for image acquisition. Carcasses were contaminated with feces from the duodenum, ceca, and colon, and ingesta with varying contaminate size and location. Carcasses were imaged in a shackle welded to a stainless steel rod, suspended across two stands. A laser beam was used to align fiber-optic line-light propagation to make light propagation on the carcasses as diffuse as possible. Light

intensity and distribution on the carcasses were measured and optimized with a digital intensity meter (Mavolux 5032C, Gossen, Germany) before image data were collected. Carcasses were imaged with hyperspectral imaging system 10 with 4 by 2 binning and SensiCam™ software with the following control settings: actual image size of about 320 (horizontal) by about 340 (vertical) pixels spatial resolution, and about 512 wavelengths spectral resolution. The spectral resolution of hyperspectral images was approximately 0.9 nm. The exposure time and delay time of camera control during image acquisition were about 50 msec. and zero, respectively. Even though scanning time depends on the size of a carcass and image resolution, the average time to scan a whole carcass was about 34 seconds. Hypercube image files were created from line scan image data with HyperVisual software (ProVision Technologies, Stennis Space Center, MS), which converts 16-bit binary data into binary sequence mode data for hyperspectral image processing. First, hyperspectral images of uncontaminated carcasses were collected. Then, carcasses were contaminated with feces and ingesta varying in type of contaminant, contaminant spot size, and location on the carcass. Hyperspectral images and spectral image files were further processed, analyzed, and displayed using Environment for Visualizing Images (ENVI) software (Research Systems, Inc., Boulder, CO).

Figure 9 shows spatial images at some selected spectral wavelengths acquired by the hyperspectral imaging system 10 to demonstrate image quality and spectral differences. The spectral images less than 400-nm wavelengths contained noise compared with others, because the grating diffraction efficiency of the system below about 400 nm is less than about 30% and the nominal spectral range of spectrograph is between about 430 nm to about 900 nm. The fecal (top three rows on carcass) and ingesta spots (bottom row on carcass) on each carcass were

displayed distinctively up to about 517 nm. However, the spots of duodenum and ingesta began to disappear as the wavelengths increased beyond 517 nm. Feces from the ceca were clearly found over all the wavelength spectral images. Thus, spectral images selected from hypercube image data were useful for the identification of feces and ingesta contamination on the poultry carcasses.

EXAMPLE 5

Using the wavelength calibration from example 3, the key wavelengths of about 434 nm, 517 nm, 565 nm, and 628 nm, identified with the Vis/NIR monochromator, corresponded to band numbers 58, 143, 190, and 251. Figures 10a-e show an approximate color composite (Red: 634 nm; Green: 520 nm; Blue: 446 nm) image and four spectral images at key wavelengths (434, 517, 565, and 628 nm) of a poultry carcass contaminated with feces (duodenum, ceca, colon) and ingesta. Cecal feces were detected from the raw spectral images from the four selected wavelengths including the false color image. However, it was difficult to detect feces from duodenum and ingesta samples with the about 565 nm and about 628 nm spectral images. With a single wavelength image, uncontaminated dark areas in the leg and wing folds were incorrectly identified as contaminates.

Two wavelength ratio images were determined from the four key wavelengths above. Six ratio images were obtained from the combination of different key wavelengths as shown in Figures 11a-f. Among ratio images, the image at 565 nm divided by the image at 517 nm could identify feces (duodenum, ceca, and colon) and ingesta contaminants including colon feces located below the tail as shown in figure 11d. The ratio images of the image at 517 nm divided by the image at 434 nm (Figure 11a), the image at 565 nm divided by the image at 434 nm (Figure 11b), and the image at 628 nm divided by the image at 434 nm (Figure 11c) show

distinctive ceca (dark spots on the body) contamination. However, other contaminated spots of duodenum, colon, and ingesta were not readily apparent. Even though the image at 628 nm divided by the image at 517 nm (Figure 11e) shows all the contaminated spots on the body, other white spots under the wings and the area between the legs caused false positive errors. Similarly, as seen on the image at 628 nm divided by the image at 565 nm (Figure 11f), false positive contamination between the carcass legs were actually caused by skin cuticle or blood hemorrhages on the skin of the carcass.

Other contaminated carcasses showed this algorithm could detect contaminates of different sizes at different locations. As shown in Figure 12, blood clot (Figure 12, 12a.1) in the color composite disappeared (Figure 12, 12b.1) after the image ratio algorithm was applied. In addition, this algorithm could detect fecal contaminant in the shadow of the wing fold (Figure 12, 12a.2) in the composite image; (Figure 12, 12b.2 in the ratio image). Thus, image-ratio algorithm, particularly 565-nm and 517-nm wavelengths, identified fecal and ingesta contaminants on the surface of poultry carcasses extremely well, while minimizing false positive contaminates.

EXAMPLE 6

The background of the original two-wavelength ratio image is noisier than the chicken body and contains no useful information. To eliminate the background, a masking procedure was implemented for further processing to segregate the ratio image of a carcass from the background. To build a masking template for each carcass (Figure 13a), a single spectral image was selected from the 512- hyperspectral images. For example, a template (Figure 13b) was created by thresholding an image at 565 nm. Intensities below a minimum thresholding value of about 120, which corresponded to the background, were then assigned a

value of zero. Figure 13c shows the ratio image after the masking procedure was applied. It was obvious that the masking procedure made the spots of contamination on the carcass more visually distinctive.

EXAMPLE 7

After eliminating the background noise with a masking procedure, a histogram stretching algorithm was used to separate feces and ingesta contaminates from a carcass as shown in Figure 14a. Both linear and nonlinear histogram-stretching algorithms were tested. As shown in Figure 14b, top center white portion of vent area indicates natural contamination of colon feces (Figure 14, 14b.1); the second row represents duodenum (Figure 14, 14b.2); third row represents ceca (Figure 14, 14b.3); fourth row represents colon feces (Figure 14, 14b.4); and fifth row represents ingesta contaminates (Figure 14, 14b.5), respectively. From numerous ratio images of both hard and soft scalded carcasses, parameter values of histogram-stretching algorithm for the sample in Figures 14a and 14b were determined as follows: minimum input = about 1.28; maximum input = about 1.60; minimum output = about 0.75; maximum output = about 2.38. These parameter values force intensities below 1.28 to have a display value of zero, intensities between 1.28 and 1.60 to have display values that linearly vary from zero to full scale, and intensities above 1.60 to have display values at full scale.

EXAMPLE 8

The hyperspectral image processing algorithms (ratio of two-wavelength images) demonstrated in the previous examples were tested with sixteen poultry carcasses. As shown in Table 2 below, the histogram stretching algorithms were accurate for both the linear and nonlinear models. Even though threshold values of each sample varied slightly, the mean minimum and maximum input threshold values were about 0.76 (Standard

Deviation (S.D.)= about -0.03) and about 2.29 (S.D.= about 0.25). For the linear model, the mean minimum and maximum values were about 1.25 (S.D. = about 0.05) and about 1.69 (S.D.= about 0.08), respectively. For the square-root model, the mean minimum and maximum values were about 1.39 (S.D. = about 0.06) and about 1.55 (S.D.= about 0.13), respectively.

The square-root model of histogram stretching performed perfectly for identifying fecal and ingesta contaminants. However, the linear model missed several contaminant spots (chicken sample #2, #3, and #7).

Table 2. Threshold values of histogram stretching for segregating feces and ingesta from chicken carcasses.

Sample ID	Input		Output				Number of Contaminants	
	Min.	Max.	Linear		Square root		Predicted	Actual
			Lower	Upper	Lower	Upper	Linear / Square	
Chicken#1	0.77	2.62	1.20	1.88	1.34	1.38	9 / 9	9
Chicken#2	0.77	2.03	1.28	1.80	1.38	1.46	8 / 9	9
Chicken#3	0.76	2.22	1.20	1.80	1.30	1.94	7 / 9	9
Chicken#4	0.72	2.28	1.26	1.60	1.36	1.56	10 / 10	10
Chicken#5	0.80	2.10	1.20	1.70	1.36	1.46	9 / 9	9
Chicken#6	0.75	2.33	1.28	1.60	1.36	1.46	11 / 11	11
Chicken#7	0.74	2.01	1.26	1.60	1.30	1.40	6 / 8	8
Chicken#8	0.80	2.30	1.20	1.70	1.46	1.56	12 / 12	12
Chicken#9	0.74	2.46	1.30	1.70	1.50	1.60	14 / 14	14
Chicken#10	0.74	2.06	1.34	1.70	1.46	1.56	16 / 16	16
Chicken#11	0.76	2.14	1.20	1.64	1.41	1.51	16 / 16	16
Chicken#12	0.74	2.51	1.30	1.64	1.44	1.57	14 / 14	14
Chicken#13	0.73	2.18	1.20	1.68	1.40	1.50	13 / 13	13
Chicken#14	0.80	2.96	1.30	1.66	1.36	1.50	12 / 12	12
Chicken#15	0.80	2.13	1.28	1.60	1.40	1.60	12 / 12	12
Chicken#16	0.73	2.34	1.20	1.74	1.44	1.66	16 / 16	16
Mean	0.76	2.29	1.25	1.69	1.39	1.55		
Std. Dev.	0.03	0.25	0.05	0.08	0.06	0.13		

EXAMPLE 9

Figure 15 shows the comparison of intensity distribution between a clean and contaminated carcass to demonstrate the performance of the masking procedure and the threshold algorithm. As shown in Figures 15a-e, there were no readily apparent differences of the intensity distribution of the original ratio images between the clean (Figure 15a) and fecal and ingesta contaminated (Figure 15d) carcass. Masking makes the carcass outline apparent (Figures 15b and 15e), but little distinctive between the contaminated and uncontaminated carcass can be seen. After the thresholding algorithm was applied, intensities above the threshold are shown in Figure 15c for the clean bird disappeared; whereas the peak intensities above the threshold in Figure 15f indicated the spots of feces and ingesta on the carcass. Therefore, the threshold algorithm can be further applied for the automatic detection of fecal and ingesta contaminants on poultry carcasses in conjunction with masking and the optimum threshold parameter values.

The foregoing detailed description is for the purpose of illustration. Such detail is solely for that purpose and those skilled in the art can make variations therein without departing from the spirit and scope of the invention.

Index of the Elements

1A. Charge-Coupled Device Detector

1B. Lens Assembly

1C. Spectrograph

2. Lighting System

2A. Fiber Optic Cable

2B. Lamp Assembly

2C. Power Supply for Lighting

4. Power Supply for at least one Charge-Coupled Device Detector

5. Battery Backup

6. Computer Monitor

7. Computer

7a. Interface Cable

9. Data Processing Unit

10. Imaging Systems

12. Means for Obtaining Spectral Images

17. Frame Grabber

19. Software

20. Algorithm

TABLE A - APPENDIX 05

Source	Band	Band ^2	Band ^3	WvLgth
HgAr	27	729	19683	404.66
Kr	51	2601	132651	427.40
Kr	55	3025	166375	432.00
Kr	61	3721	226981	437.60
HgAr	61	3721	226981	435.84
Kr	70	4900	343000	446.40
Kr	75	5625	421875	450.20
HgAr	117	13689	1601613	491.60
laser	168	28224	4741632	543.50
HgAr	173	29929	5177717	546.07
Kr	182	33124	6028568	557.00
HgAr	203	41209	8365427	578.00
Kr	212	44944	9528128	587.10
laser	218	47524	10360232	594.00
laser	235	55225	12977875	612.00
laser	255	65025	16581375	632.80
Kr	377	142129	53582633	760.15
Kr	386	148996	57512456	769.00
Kr	426	181476	77308776	811.29
Kr	434	188356	81746504	819.01
Kr	442	195364	86350888	829.81
Kr	464	215296	99897344	850.89
Kr	491	241081	118370771	877.67
Kr	505	255025	128787625	892.87

Obs.	Predicted Y	Residuals
1	405.02	-0.36
2	427.51	-0.11
3	431.30	0.70
4	437.01	0.59
5	437.01	-1.17
6	445.62	0.78
7	450.43	-0.23
8	491.45	0.15
9	542.59	0.91
10	547.67	-1.60
11	556.84	0.16
12	578.36	-0.36
13	587.63	-0.53
14	593.82	0.18
15	611.43	0.57
16	632.24	0.56
17	760.23	-0.08
18	769.66	-0.66
19	811.43	-0.14
20	819.75	-0.74
21	828.04	1.77
22	850.76	0.13
23	878.42	-0.75
24	892.64	0.23

Cubic Calibration

Regression Statistics

Multiple R	0.999990
R Square	0.999981
Adjusted R Square	0.999978
Standard Error	0.783156
Observations	24

Analysis of Variance

	df	Sum of Squares	Mean Square	F	Significance F
Regression	3	6.3634E+05	2.1211E+05	3.4584E+05	2.6214E-47
Residual	20	1.2267E+01	6.1333E-01		
Total	23	6.3635E+05			

	Coefficients	Standard Error	t Statistic	P-value	Lower 95.00	Upper 95.00
Intercept	3.8028E+02	7.1341E-01	5.3304E+02	0.0000E+00	3.7879E+02	3.8177E+02
Band	9.0500E-01	1.2561E-02	7.2049E+01	0.0000E+00	8.7880E-01	9.3121E-01
Band ^2	4.3698E-04	5.8113E-05	7.5194E+00	1.2210E-07	3.1575E-04	5.5820E-04
Band ^3	-4.3561E-07	7.5019E-08	-5.8067E+00	6.4599E-06	-5.9210E-07	-2.7912E-07

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: Tue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	1	2	3	4	5	6	7	8	9
Sample Nu	0102s	"0103s"	"0104s"	"0105s"	"0106s"	"0107s"	"0108s"	"0109s"	"0110s"
400	0.463525	0.4788483	0.4838938	0.4695534	0.4793588	0.4137969	0.4523254	0.4422773	0.487329
402	0.485949	0.504639	0.5121277	0.4954112	0.5071897	0.4325764	0.4762123	0.4671833	0.5098276
404	0.509578	0.5322698	0.5380695	0.5253913	0.531085	0.4523951	0.502008	0.4860967	0.5328052
406	0.532265	0.557336	0.5598709	0.5429813	0.55439	0.4690523	0.5204953	0.5057206	0.5540736
408	0.550346	0.5759787	0.5819975	0.5596452	0.5731922	0.4845066	0.5395666	0.5242565	0.5748277
410	0.566941	0.5935451	0.602661	0.5755309	0.5892518	0.49801	0.5569966	0.5402868	0.5942198
412	0.582469	0.6111816	0.6206171	0.5898036	0.6049463	0.5117362	0.5732133	0.554607	0.6115218
414	0.595918	0.6249065	0.6343607	0.6021099	0.6183185	0.521819	0.5886634	0.567129	0.6275928
416	0.60708	0.637239	0.64663	0.6109515	0.629473	0.5314206	0.600623	0.5776856	0.6420978
418	0.616541	0.64675	0.6573169	0.6175108	0.6374405	0.5383703	0.6098161	0.5850421	0.6534052
420	0.622283	0.6540251	0.666238	0.6218126	0.6444607	0.5449553	0.6189444	0.5912401	0.6635942
422	0.625605	0.6578929	0.671261	0.6235379	0.6477855	0.5488715	0.623551	0.5937292	0.6708127
424	0.626405	0.6605738	0.6745231	0.623962	0.6502526	0.551026	0.626884	0.5944499	0.6756957
426	0.625136	0.6601317	0.6756846	0.6196387	0.6485714	0.5512289	0.6282412	0.592833	0.6785378
428	0.621402	0.6582128	0.674981	0.6143537	0.6458614	0.5498758	0.6270275	0.5893205	0.6783627
430	0.614919	0.6541668	0.6721152	0.6086149	0.6411394	0.5479244	0.6229709	0.5841771	0.6758286
432	0.606976	0.647888	0.6672614	0.60081	0.63547	0.5426617	0.6182697	0.5766237	0.6714652
434	0.596825	0.6403149	0.6604199	0.5916975	0.6273642	0.5362863	0.6107314	0.568948	0.6638387
436	0.586522	0.6331297	0.6524678	0.5828173	0.6187864	0.5294421	0.6020963	0.5589063	0.6549271
438	0.574681	0.6249124	0.6435721	0.5736563	0.6101949	0.5218401	0.5927975	0.5481378	0.6447909
440	0.562256	0.616564	0.6335912	0.5632824	0.5996118	0.5129365	0.5821788	0.5374465	0.6337761
442	0.549899	0.6079009	0.6230059	0.5538462	0.5893925	0.5047283	0.5720594	0.5263048	0.6213182
444	0.537671	0.6005846	0.612548	0.5449518	0.5797794	0.4958161	0.5618883	0.5153311	0.608721
446	0.525247	0.5925722	0.601499	0.5358708	0.5697427	0.4869008	0.5515556	0.5041648	0.596068
448	0.513572	0.585081	0.5910736	0.5278931	0.5596681	0.4782642	0.5412483	0.4936853	0.5833945
450	0.502829	0.5786622	0.5813336	0.5205811	0.5507488	0.4701559	0.5319415	0.4837947	0.5716509
452	0.49274	0.5731782	0.5719812	0.5139911	0.5418916	0.4624011	0.5230367	0.4745791	0.5600057
454	0.483178	0.5679224	0.5635383	0.5077929	0.5339525	0.4549484	0.5143784	0.4660467	0.5495672
456	0.47482	0.563319	0.5554782	0.5024987	0.5266998	0.4480881	0.507216	0.4580752	0.5397863
458	0.467246	0.558321	0.5482465	0.4975077	0.5197333	0.4419132	0.5005973	0.4505469	0.5307453
460	0.460036	0.5543582	0.5412462	0.4921772	0.5136874	0.4363951	0.4939173	0.4441884	0.5228004
462	0.453625	0.5509202	0.535196	0.4880852	0.5078477	0.4319116	0.4883628	0.438187	0.5153161
464	0.447894	0.5469061	0.5299736	0.4839948	0.5024293	0.4277287	0.4832523	0.4324363	0.5086493
466	0.442419	0.543103	0.5246041	0.480058	0.4977163	0.4230912	0.4789537	0.4266864	0.5027679
468	0.437412	0.5394217	0.5197067	0.4759876	0.4925311	0.4190029	0.4746932	0.4213442	0.4972041
470	0.432911	0.5349053	0.5151145	0.4724496	0.4884234	0.4154451	0.4702859	0.4168843	0.4923474
472	0.428754	0.5313882	0.5109227	0.468947	0.484542	0.4122873	0.4662705	0.4125381	0.4878643
474	0.424428	0.5272902	0.5068733	0.4653081	0.4803779	0.4085639	0.4617813	0.4083347	0.4833205
476	0.42059	0.5236388	0.5026375	0.4620275	0.4765635	0.4049376	0.4579739	0.4047048	0.479578
478	0.416843	0.5200164	0.4987943	0.458984	0.4730199	0.4018595	0.4544813	0.4015194	0.4758539
480	0.413118	0.5160526	0.4950482	0.4562637	0.4696816	0.3989828	0.4513522	0.3971982	0.4724949
482	0.410305	0.513026	0.4918339	0.4532253	0.4666915	0.3969488	0.4485658	0.3937299	0.4697618
484	0.407146	0.5091623	0.4886568	0.4504373	0.4635356	0.394691	0.4457902	0.3904291	0.4669466
486	0.403749	0.5057507	0.4849533	0.4479526	0.4599348	0.3924838	0.4429386	0.3873567	0.4639521
488	0.40049	0.5018595	0.4809908	0.4444627	0.4562825	0.3892969	0.4397651	0.3845037	0.4602856
490	0.397729	0.4982488	0.4773282	0.4413898	0.4526701	0.386553	0.4358832	0.380551	0.4566903
492	0.393995	0.4935298	0.4726967	0.4378999	0.448559	0.3832911	0.4319883	0.377152	0.4527723
494	0.390107	0.4874248	0.4666241	0.4325628	0.4433268	0.3791715	0.4267167	0.3730415	0.4479652
496	0.385854	0.4808643	0.4603559	0.4267915	0.4375711	0.3746227	0.4213443	0.3687387	0.4425617
498	0.381766	0.4739333	0.4537451	0.4213441	0.431891	0.3703339	0.4153467	0.3651494	0.4371914
500	0.376351	0.4649336	0.4448019	0.4140572	0.4248923	0.3647059	0.407907	0.3602872	0.4302477
502	0.371089	0.4550267	0.4355986	0.4063054	0.4173461	0.358502	0.3998708	0.355395	0.4228266
504	0.365618	0.4459169	0.4264498	0.3988823	0.4098139	0.3524502	0.3919718	0.350585	0.4155529
506	0.360433	0.4348823	0.416345	0.3914568	0.4019462	0.3461356	0.3836493	0.3459401	0.407909
508	0.355105	0.4240557	0.4067734	0.3833147	0.3944522	0.3398281	0.3752832	0.3411436	0.4005282
510	0.350831	0.4141911	0.3980871	0.3758689	0.3876807	0.3343994	0.3678019	0.3376159	0.3941382
512	0.347213	0.4047153	0.3901332	0.3694169	0.3814507	0.3296789	0.361179	0.334891	0.3882802
514	0.344715	0.396281	0.3830152	0.3640234	0.3765527	0.3252943	0.3553729	0.3325233	0.3838508
516	0.343346	0.3895374	0.3775131	0.3598308	0.3729277	0.3222263	0.35113	0.3313307	0.3810037
518	0.34356	0.3850873	0.3733905	0.3571183	0.3708186	0.3202791	0.3480551	0.3317636	0.3789452

520	0.344895	0.3813979	0.3714013	0.3563007	0.3700558	0.31959	0.3469515	0.3333785	0.3787293
522	0.347719	0.3802508	0.3712601	0.3568358	0.3706383	0.3199956	0.3471002	0.3356889	0.3796454
524	0.351791	0.3806769	0.3723341	0.3583094	0.3725769	0.3218559	0.3489367	0.3393245	0.3822702
526	0.356812	0.3822094	0.3744788	0.3603671	0.3750988	0.3231738	0.3520544	0.3432019	0.3851831
528	0.362943	0.3859743	0.378377	0.364431	0.3793453	0.3273474	0.3559088	0.3485904	0.390312
530	0.369084	0.389993	0.3832257	0.3690353	0.3844712	0.3305242	0.3607897	0.3538378	0.3956548
532	0.375589	0.3944896	0.3878747	0.3732382	0.3892651	0.3339305	0.3654679	0.3597714	0.4010868
534	0.382454	0.3993367	0.3928291	0.3774501	0.3947572	0.338667	0.3715421	0.3648844	0.4071371
536	0.387867	0.403393	0.397507	0.3811433	0.3998066	0.3425038	0.376107	0.3691307	0.4127053
538	0.392604	0.4072949	0.4016401	0.384452	0.4036786	0.345803	0.3804581	0.3734294	0.4174666
540	0.396596	0.4094135	0.4049399	0.38688	0.4074493	0.3491309	0.3842821	0.3760853	0.4221445
542	0.399175	0.4104615	0.4075228	0.387906	0.4103197	0.351853	0.3873097	0.3780699	0.425607
544	0.400541	0.410387	0.4086801	0.3880571	0.4117421	0.3536531	0.3891021	0.3790139	0.4277577
546	0.400915	0.4091391	0.4087406	0.3871602	0.4125549	0.3551137	0.390097	0.378836	0.4295324
548	0.400459	0.4072573	0.4083787	0.3857438	0.4127178	0.3558865	0.3909109	0.3778257	0.430438
550	0.399522	0.4049934	0.4073927	0.3838733	0.4122631	0.3561434	0.3905832	0.3765872	0.430739
552	0.398269	0.4022765	0.4060756	0.3817953	0.4113504	0.3560563	0.3897609	0.3747091	0.4304204
554	0.396762	0.39989	0.4047295	0.3797255	0.4105439	0.3557568	0.389008	0.3731156	0.4302981
556	0.395924	0.3981954	0.4036281	0.3780006	0.4093772	0.3552231	0.3881863	0.3716565	0.429635
558	0.395341	0.3970675	0.4028808	0.3772737	0.4089181	0.3546577	0.3877414	0.3705395	0.4293418
560	0.395247	0.3967496	0.4024148	0.376691	0.4082451	0.3540792	0.3870921	0.3700082	0.4287636
562	0.396003	0.3976077	0.4023991	0.3769979	0.4082845	0.3534022	0.3874264	0.3703917	0.4286402
564	0.397474	0.399303	0.4030733	0.3780829	0.4086201	0.3530671	0.3877447	0.3710493	0.428985
566	0.399163	0.4015902	0.4037183	0.3792929	0.4086805	0.352427	0.3880456	0.3718808	0.4290436
568	0.400203	0.4026992	0.4041382	0.3806628	0.4087442	0.3514554	0.3881779	0.3725635	0.4287206
570	0.400563	0.4031297	0.4034907	0.3809504	0.4076586	0.3497819	0.3872955	0.3725369	0.4274985
572	0.399315	0.4017361	0.4015925	0.3797531	0.4056567	0.3472311	0.3851913	0.3710952	0.4250839
574	0.395971	0.3979728	0.3976322	0.3766801	0.4015341	0.3435762	0.3815062	0.3678947	0.4209853
576	0.390059	0.3912953	0.3911932	0.3714477	0.3957963	0.3384202	0.3756302	0.3625787	0.4149717
578	0.381904	0.3819088	0.3829164	0.3639342	0.3881711	0.3322102	0.3681403	0.3551014	0.4073498
580	0.37122	0.3698679	0.372467	0.3542211	0.3787258	0.3246824	0.3586615	0.3457583	0.3977326
582	0.357974	0.3549692	0.3594697	0.3421574	0.3670507	0.3155207	0.3469634	0.3340681	0.3860893
584	0.343806	0.3393208	0.3458038	0.3293017	0.3549101	0.3059542	0.3345556	0.3215923	0.3739001
586	0.328676	0.3226678	0.3312488	0.3157945	0.3419046	0.2957646	0.3213183	0.3084244	0.3608384
588	0.312464	0.3056193	0.3157084	0.301253	0.3278992	0.2848005	0.3073789	0.2945382	0.3468209
590	0.296774	0.2888962	0.3006215	0.2873824	0.3142501	0.2737617	0.2933157	0.2806884	0.3330825
592	0.281724	0.2731636	0.2862406	0.2742285	0.3009552	0.2630641	0.2798522	0.2677816	0.3199203
594	0.267327	0.2586025	0.2724007	0.2616558	0.2880059	0.2525267	0.2668173	0.2553988	0.3069694
596	0.253781	0.2450083	0.2593987	0.2498944	0.2756145	0.2422671	0.2543591	0.2436965	0.2946053
598	0.242022	0.2333751	0.2479742	0.2399947	0.2645022	0.2330573	0.2432517	0.2336931	0.2837138
600	0.231542	0.2233218	0.23784	0.2312351	0.2544403	0.2247016	0.2332526	0.2247986	0.2737961
602	0.222088	0.2143296	0.2286975	0.2233284	0.2451572	0.2166793	0.2240198	0.2168106	0.2645721
604	0.213888	0.2068445	0.2207865	0.2167385	0.2369168	0.2095949	0.2158149	0.2099637	0.2565399
606	0.207112	0.2006939	0.214226	0.2113771	0.2298985	0.2034997	0.208851	0.2042938	0.2496223
608	0.201025	0.1952408	0.2083854	0.2065956	0.2234212	0.1978091	0.2025136	0.1992548	0.2432321
610	0.19571	0.1905371	0.2032491	0.2025814	0.2176908	0.1927228	0.1967332	0.1948018	0.2375128
612	0.191422	0.1868259	0.1992554	0.1993663	0.2130474	0.1885542	0.1920204	0.1913037	0.2327998
614	0.187594	0.1835354	0.1956509	0.1965716	0.208747	0.1847088	0.187701	0.1880483	0.2283597
616	0.184088	0.1804718	0.1924621	0.1940267	0.2047825	0.1811522	0.1836188	0.1850356	0.2240899
618	0.181334	0.1781445	0.1899227	0.1920871	0.2016056	0.1782449	0.1803879	0.1826621	0.220499
620	0.178822	0.1759368	0.1877056	0.190335	0.1987137	0.1755967	0.1772911	0.1803572	0.2171221
622	0.176659	0.1740081	0.1857505	0.1888395	0.1961754	0.1732954	0.1746425	0.1783242	0.2139201
624	0.174686	0.1723238	0.1839847	0.1874263	0.1938454	0.171228	0.1722308	0.1763786	0.2109466
626	0.172983	0.170764	0.1824616	0.1861376	0.1917657	0.1693939	0.1701191	0.1747019	0.2081942
628	0.17142	0.169246	0.1809708	0.1849346	0.1898527	0.1677202	0.1681673	0.1729826	0.205633
630	0.169923	0.1677956	0.1794532	0.1835483	0.1879889	0.1661315	0.1663647	0.1712342	0.2031602
632	0.168507	0.166342	0.1779695	0.1821034	0.1861414	0.1646495	0.164712	0.1695433	0.2008932
634	0.167229	0.164959	0.1764954	0.1806678	0.1844215	0.1633183	0.1632321	0.1678676	0.198799
636	0.165922	0.1635003	0.1749142	0.1789819	0.1826456	0.1619523	0.1617847	0.1661581	0.1967983
638	0.164655	0.1620108	0.1732883	0.177193	0.1808643	0.160662	0.1604829	0.1644315	0.1949344
640	0.163461	0.1606159	0.1717047	0.1753897	0.1791848	0.1595076	0.1593204	0.1628092	0.1933016
642	0.162243	0.1591014	0.1699841	0.1734034	0.1774162	0.1582724	0.1581507	0.161034	0.1917414
644	0.161017	0.1575253	0.1682212	0.1712747	0.1756408	0.1570766	0.1570753	0.1592595	0.1902728
646	0.159913	0.1561235	0.1665281	0.1692773	0.1739781	0.1559698	0.1560977	0.1576223	0.1890128
648	0.158785	0.1547316	0.1648126	0.1671742	0.1722939	0.1548974	0.155126	0.1559717	0.1877561
650	0.157689	0.1532625	0.1630835	0.165052	0.1706219	0.1538574	0.154217	0.1543131	0.1865764
652	0.156667	0.1519667	0.1614745	0.1630596	0.1690803	0.1528346	0.1534135	0.1528097	0.1855132
654	0.155661	0.1506774	0.1598946	0.1611497	0.1675687	0.151888	0.1526101	0.1513016	0.1844956
656	0.15464	0.1493633	0.158314	0.1592242	0.1660386	0.1508791	0.1517548	0.1498181	0.1834662
658	0.153654	0.1481726	0.1568346	0.157409	0.164557	0.1499316	0.15097	0.1484562	0.1824694
660	0.152739	0.147059	0.1554508	0.1557495	0.1632212	0.1490313	0.1502074	0.1471884	0.1815317
662	0.151838	0.1459563	0.1541349	0.1542059	0.1618791	0.1481246	0.1494385	0.1459655	0.1806108
664	0.150945	0.144915	0.1528606	0.1527293	0.1605861	0.1472581	0.1486742	0.1448075	0.1796692
666	0.150091	0.1439763	0.151657	0.1513682	0.1593625	0.1463715	0.1479332	0.1437684	0.1787526

668	0.14925	0.1430518	0.1505427	0.1501528	0.1581967	0.1455392	0.1471666	0.1427402	0.1778544
670	0.148366	0.1420727	0.1493831	0.1489009	0.1569509	0.1446129	0.1463757	0.141707	0.1768598
672	0.147587	0.1412534	0.148351	0.1478341	0.1558369	0.1437927	0.1456456	0.1408215	0.1759533
674	0.146857	0.1404795	0.1474289	0.1469172	0.1548232	0.1430262	0.1449422	0.1400463	0.1751104
676	0.146156	0.1397316	0.1465587	0.1460534	0.1537851	0.1422601	0.1442177	0.1392935	0.174264
678	0.145476	0.1391203	0.1456984	0.1452266	0.1528023	0.1415088	0.1436695	0.1386388	0.1734059
680	0.144849	0.1384659	0.1449191	0.1445292	0.1519355	0.1408175	0.1430414	0.1379862	0.1726194
682	0.144246	0.1378184	0.144205	0.1438713	0.151084	0.1401431	0.1424129	0.1373613	0.171881
684	0.143646	0.1372544	0.1434912	0.1432199	0.1502294	0.1394286	0.1418293	0.1367581	0.1711078
686	0.14309	0.1366808	0.1428256	0.1426513	0.1494367	0.1387896	0.1412692	0.1362265	0.170373
688	0.14258	0.1361929	0.142236	0.1421243	0.1486989	0.1382055	0.1407414	0.1357456	0.1697346
690	0.142076	0.1356903	0.1416485	0.1416548	0.1479894	0.1376339	0.1402558	0.1353004	0.1690741
692	0.141638	0.1352468	0.1411177	0.1412357	0.1473292	0.1370845	0.1397788	0.1348726	0.1684366
694	0.141231	0.1348587	0.1406338	0.1408546	0.1467167	0.1365972	0.139385	0.1345102	0.1678659
696	0.140884	0.134521	0.1402382	0.1405415	0.1461837	0.1361653	0.1390213	0.1341829	0.1673326
698	0.140568	0.1342296	0.1398391	0.1402375	0.1456958	0.135754	0.1387102	0.1338909	0.1668322
700	0.140303	0.133925	0.1395071	0.1399879	0.1452298	0.1353893	0.1384106	0.1336493	0.1663811
702	0.140083	0.1337024	0.1392242	0.1398067	0.1448629	0.1350792	0.1381966	0.1334488	0.1660077
704	0.139892	0.1334955	0.1389813	0.1396549	0.1445173	0.1348098	0.1379937	0.1332547	0.1656406
706	0.139744	0.1333573	0.1387521	0.1395412	0.1441831	0.1345577	0.1378357	0.1331296	0.1653225
708	0.139658	0.1332299	0.1386012	0.1394744	0.1439544	0.1343888	0.137742	0.1330443	0.1650554
710	0.139617	0.1331715	0.1384943	0.1394521	0.1437701	0.1342428	0.1377087	0.1330001	0.1648406
712	0.139652	0.1331782	0.1384272	0.1394953	0.1436377	0.134189	0.1377215	0.1330175	0.1646955
714	0.139723	0.1332232	0.1384431	0.1395943	0.1435783	0.1341497	0.1378002	0.1330642	0.164582
716	0.139866	0.1333361	0.1384969	0.1397499	0.1435826	0.1342018	0.1379364	0.1331611	0.1645309
718	0.140047	0.1335003	0.1385966	0.1399622	0.1436458	0.1343038	0.1381108	0.1333069	0.1645707
720	0.140315	0.1337065	0.1387739	0.1402461	0.1437828	0.1344704	0.138378	0.1334997	0.1646584
722	0.140622	0.133998	0.1389822	0.1405579	0.1439693	0.1346926	0.1386864	0.1337412	0.1647938
724	0.14098	0.1343168	0.1392521	0.1409326	0.1442187	0.1349658	0.1390548	0.1340241	0.1649869
726	0.141453	0.1347249	0.13958	0.1413952	0.1445725	0.1353613	0.1395075	0.1343682	0.1652884
728	0.141949	0.1351711	0.1399814	0.1418956	0.1449619	0.1357756	0.1400103	0.1347505	0.1656151
730	0.142457	0.1356324	0.1403851	0.1423898	0.1453945	0.1362172	0.1405289	0.1351332	0.1659683
732	0.143018	0.1361276	0.1408322	0.1429403	0.1458834	0.1367157	0.1410912	0.1355622	0.1663641
734	0.143603	0.1366283	0.1413162	0.1435134	0.1464147	0.1372305	0.1416827	0.1360055	0.166802
736	0.144122	0.1370772	0.1417699	0.1440318	0.1469035	0.1377009	0.1422273	0.1363582	0.1672049
738	0.144664	0.1375245	0.1422431	0.1445653	0.1474304	0.1381663	0.1428021	0.1367221	0.1676184
740	0.145202	0.1379745	0.1427379	0.1450984	0.1479729	0.1386526	0.1433607	0.1371008	0.1680512
742	0.145687	0.1383608	0.1432007	0.1455859	0.1484831	0.1390773	0.143878	0.1373971	0.1684503
744	0.146137	0.1387365	0.1436513	0.1460643	0.1489864	0.1394834	0.1443861	0.137675	0.1688319
746	0.146574	0.1390665	0.144107	0.1465097	0.1494699	0.1398502	0.1448519	0.1379498	0.1691882
748	0.146978	0.1393776	0.1445297	0.1469342	0.1499321	0.1401953	0.145303	0.1381677	0.1695266
750	0.14733	0.139643	0.1449124	0.1473058	0.1503456	0.1404904	0.1457055	0.1383514	0.1698037
752	0.147632	0.1398637	0.1452442	0.147641	0.1506891	0.1407354	0.1460429	0.1384898	0.1700203
754	0.147873	0.1400307	0.1455016	0.1479081	0.1509467	0.1409063	0.1463049	0.1385897	0.1701563
756	0.148013	0.1401202	0.1456591	0.1480765	0.1510757	0.1409855	0.1464523	0.1386181	0.1701681
758	0.14808	0.1401745	0.1457249	0.1481788	0.1511069	0.1409908	0.1465153	0.1386265	0.1700911
760	0.148069	0.1401556	0.1457058	0.1481924	0.1510161	0.1409132	0.1464663	0.1385811	0.1698841
762	0.14801	0.1401152	0.1456135	0.1481537	0.1508522	0.1407686	0.1463396	0.1385109	0.1695887
764	0.147939	0.1400649	0.1454994	0.1481066	0.1506693	0.1406096	0.1461816	0.1384436	0.1692411
766	0.147854	0.1400402	0.1453754	0.1480888	0.1504796	0.1404204	0.146019	0.1384086	0.1688697
768	0.147776	0.1399943	0.1452098	0.148063	0.1502691	0.1402121	0.1458106	0.1383742	0.1684238
770	0.147644	0.1399122	0.1450135	0.1480096	0.1500072	0.1399227	0.1455744	0.1383356	0.1679652
772	0.147423	0.1397654	0.1447153	0.1478332	0.149613	0.1395686	0.1452398	0.1382124	0.1673929
774	0.147184	0.1395316	0.1443751	0.1476053	0.1491564	0.1392033	0.1448467	0.1380308	0.166801
776	0.146881	0.1393282	0.1440313	0.1473669	0.1486212	0.1388144	0.1444134	0.1379271	0.1661896
778	0.146611	0.1391406	0.1437139	0.1471384	0.1480834	0.138466	0.1440185	0.1377578	0.165661
780	0.146329	0.1389673	0.1434237	0.1469334	0.1475649	0.1381639	0.143671	0.1376006	0.1651797
782	0.146035	0.1387732	0.1431226	0.146723	0.1470396	0.1378288	0.1432949	0.1373937	0.16467
784	0.145812	0.1386369	0.1429055	0.1466083	0.1466494	0.1375484	0.1430259	0.1372551	0.1642562
786	0.145636	0.1385221	0.1427345	0.1465266	0.1463547	0.1373163	0.142804	0.1371265	0.163886
788	0.145481	0.1384225	0.1425946	0.1464792	0.14611	0.1370832	0.1425966	0.1370202	0.1635327
790	0.145342	0.1383356	0.1424807	0.1464438	0.1459118	0.1368633	0.1424094	0.1369221	0.1631999
792	0.145229	0.1382481	0.1423897	0.1464279	0.145744	0.1366766	0.1422506	0.1368428	0.1629076
794	0.14511	0.1381664	0.1423064	0.1464065	0.1455851	0.1364839	0.1420965	0.1367542	0.1626107
796	0.145004	0.1380783	0.1422306	0.1464016	0.1454467	0.1363038	0.14196	0.1366689	0.162329
798	0.144927	0.1380249	0.1421815	0.1464138	0.1453399	0.1361531	0.1418532	0.1365977	0.1620845
800	0.144863	0.1379825	0.1421559	0.1464419	0.1452541	0.1360277	0.1417703	0.136545	0.1618742
802	0.144834	0.1379773	0.142155	0.1464958	0.1452001	0.1359334	0.1417228	0.1365098	0.1616882
804	0.144823	0.1379894	0.1421726	0.1465736	0.1451894	0.1358658	0.1417034	0.1364989	0.1615295
806	0.144859	0.1380325	0.1422364	0.1466892	0.1452126	0.1358409	0.1417236	0.1365234	0.1614183
808	0.14492	0.138103	0.142321	0.1468326	0.1452719	0.1358529	0.1417842	0.1365746	0.1613482
810	0.145024	0.1382223	0.1424399	0.1470115	0.1453823	0.1359067	0.1418871	0.1366613	0.1613147
812	0.145169	0.1383718	0.1425932	0.1472201	0.1455178	0.1359996	0.1420267	0.1367872	0.1613137
814	0.145359	0.1385597	0.1427805	0.147461	0.1457021	0.136141	0.1422106	0.1369453	0.1613744

816	0.145606	0.1388081	0.1430076	0.1477588	0.1459484	0.1363464	0.1424541	0.1371629	0.1614796
818	0.14591	0.1391095	0.1432908	0.1480995	0.1462491	0.1366135	0.1427568	0.1374257	0.1616385
820	0.146266	0.1394622	0.1436024	0.1484878	0.1465907	0.1369378	0.1431163	0.137742	0.1618537
822	0.146681	0.1398674	0.1439582	0.148918	0.1469943	0.1373318	0.1435339	0.138117	0.1621197
824	0.147199	0.1403638	0.1443795	0.1494222	0.147468	0.1378199	0.1440371	0.1385585	0.1624669
826	0.147764	0.1409113	0.1448379	0.1499588	0.1479849	0.1383685	0.1445907	0.1390616	0.1628536
828	0.148357	0.1414927	0.1453081	0.150516	0.1485337	0.1389584	0.1451706	0.1396022	0.1632755
830	0.148973	0.1420871	0.145792	0.1510831	0.1490815	0.1395599	0.1457653	0.1401452	0.1637001
832	0.14963	0.1427224	0.1463099	0.1516844	0.1496505	0.1402037	0.1463905	0.1407278	0.1641486
834	0.15025	0.1433123	0.1467934	0.1522535	0.1501817	0.1408072	0.1469672	0.1412974	0.164559
836	0.150801	0.1438572	0.1472229	0.1527469	0.1506627	0.1413403	0.1474818	0.14183	0.1649132
838	0.151334	0.1444035	0.1476331	0.1532292	0.1511186	0.1418478	0.1479839	0.1423236	0.1652419
840	0.15182	0.1448839	0.1480208	0.1536637	0.1515186	0.1423073	0.1484432	0.1427806	0.1655254
842	0.152219	0.1452846	0.1483343	0.1540335	0.1518494	0.1426913	0.1488169	0.1431599	0.1657451
844	0.152618	0.1456817	0.1486505	0.1544009	0.1521757	0.1430585	0.1491781	0.1435424	0.1659574
846	0.153003	0.1460687	0.1489868	0.1547615	0.1524944	0.1434054	0.1495276	0.1439099	0.1661627
848	0.153362	0.146433	0.1492961	0.1551045	0.1527923	0.1437342	0.149854	0.1442587	0.166357
850	0.153729	0.1468038	0.1496053	0.1554608	0.1531088	0.1440687	0.1501999	0.1446135	0.1665633
852	0.1541	0.1471762	0.149934	0.1558157	0.1534441	0.1444025	0.1505433	0.1449618	0.1667708
854	0.154494	0.1475707	0.1502782	0.1562262	0.1537982	0.1447597	0.1509211	0.1453326	0.1670089
856	0.154884	0.1479687	0.1506352	0.1566224	0.1541736	0.1451315	0.1513037	0.145715	0.1672613
858	0.155295	0.148392	0.1510197	0.157048	0.1545718	0.1455119	0.151708	0.1460941	0.1675384
860	0.155738	0.1488389	0.1514458	0.1575202	0.155022	0.1459314	0.1521658	0.1465173	0.1678685
862	0.156206	0.1493192	0.1518967	0.1580238	0.1555151	0.1463693	0.1526456	0.1469586	0.1682397
864	0.156679	0.149799	0.1523621	0.1585408	0.1560341	0.1468235	0.1531501	0.1473867	0.1686255
866	0.15722	0.1503377	0.1528975	0.1591391	0.1566274	0.1473395	0.1537278	0.1478728	0.1690848
868	0.157786	0.1509182	0.1534755	0.1597773	0.1572803	0.1478831	0.1543539	0.1483759	0.1695884
870	0.158378	0.1515129	0.1540844	0.1604607	0.1579801	0.1484619	0.1550127	0.1489041	0.1701463
872	0.159015	0.1521683	0.1547475	0.1612068	0.1587491	0.1490853	0.1557297	0.1494516	0.1707693
874	0.159725	0.1528793	0.155498	0.1620476	0.1596418	0.149784	0.1565498	0.150065	0.1714824
876	0.160463	0.1536308	0.1562935	0.1629501	0.1605919	0.1505183	0.1574101	0.1506851	0.1722592
878	0.16126	0.1544279	0.1571514	0.16393	0.1616251	0.1512997	0.1583533	0.1513424	0.1731113
880	0.162102	0.1552821	0.1580854	0.1649838	0.16276	0.1521317	0.1593671	0.1520351	0.1740471
882	0.162936	0.1561399	0.1590393	0.1660728	0.1639355	0.1529689	0.1604019	0.1526963	0.175016
884	0.16388	0.1570916	0.160113	0.1672894	0.1652633	0.1539091	0.1615678	0.1534556	0.1761219
886	0.164834	0.1580505	0.1611928	0.1685098	0.166596	0.154862	0.1627522	0.1542162	0.1772529
888	0.16587	0.1590886	0.1623803	0.1698503	0.1680584	0.1558903	0.1640333	0.1550353	0.1784814
890	0.166916	0.1601399	0.1635716	0.1711838	0.1695145	0.1569267	0.1653283	0.1558621	0.1797243
892	0.167915	0.1611277	0.1646995	0.1724416	0.1708883	0.1579175	0.1665572	0.1566615	0.1809042
894	0.168951	0.1621411	0.1658406	0.1737194	0.1722807	0.1589317	0.1678031	0.1574796	0.1821026
896	0.169997	0.1631948	0.167004	0.1750182	0.1736892	0.1599763	0.1690855	0.1583369	0.1833205
898	0.171032	0.1642138	0.1681483	0.1763114	0.1750719	0.1610035	0.1703455	0.1591684	0.1845224
900	0.172088	0.1652732	0.1693229	0.1776554	0.1765233	0.1620662	0.1716468	0.1600188	0.1857727
902	0.173224	0.1664019	0.1706121	0.179123	0.1781021	0.1632024	0.173063	0.1609134	0.1871527
904	0.174437	0.1676321	0.1720343	0.1807575	0.1798585	0.1644458	0.1746184	0.1618285	0.1886852
906	0.175741	0.1689272	0.1736093	0.1825315	0.1817645	0.1657842	0.1762862	0.1628425	0.1903509
908	0.177102	0.1703389	0.175238	0.1844107	0.1838297	0.1671924	0.1780584	0.1638764	0.1921286
910	0.178661	0.1718707	0.1770534	0.1864908	0.1861209	0.1687626	0.1800819	0.1649726	0.1941624
912	0.180269	0.173461	0.1789755	0.1886265	0.1884798	0.1703819	0.1821759	0.1661365	0.1962916
914	0.181894	0.1750498	0.1808469	0.1907337	0.1908085	0.1720456	0.1842372	0.1673134	0.1983848
916	0.183687	0.1768095	0.1828295	0.193006	0.1932889	0.1738845	0.1864659	0.1686492	0.2006505
918	0.18563	0.178699	0.1848884	0.1953132	0.1958772	0.175892	0.1888171	0.1701331	0.2030072
920	0.187633	0.1806414	0.1868907	0.1975707	0.1983652	0.1779712	0.1911583	0.1716979	0.205323
922	0.189752	0.1826691	0.1888891	0.1998195	0.2008413	0.1801715	0.1935499	0.1733933	0.2076465
924	0.192057	0.1848875	0.1908843	0.202066	0.2033024	0.1825683	0.1960357	0.1753303	0.2100071
926	0.194436	0.1871456	0.1927786	0.2041724	0.2056123	0.1850596	0.1984803	0.1773884	0.2122654
928	0.196821	0.1894158	0.1944448	0.2060234	0.2076037	0.187569	0.2007508	0.1795683	0.2142769
930	0.199218	0.1916922	0.1959092	0.2076463	0.2093343	0.1901092	0.2029024	0.1818651	0.2160875
932	0.201726	0.194072	0.1972013	0.2090524	0.2107925	0.1927865	0.2049573	0.1843879	0.2177031
934	0.204268	0.1964923	0.1982977	0.210287	0.2119998	0.1955052	0.2069	0.1870655	0.2191276
936	0.206833	0.1989417	0.1992902	0.2114003	0.2130615	0.1982516	0.208762	0.1898027	0.2204256
938	0.209692	0.2016999	0.2003769	0.212658	0.214226	0.2013294	0.2108259	0.1929009	0.2218706
940	0.212938	0.204849	0.2017162	0.2142152	0.215702	0.2048067	0.2132351	0.1963614	0.2236237
942	0.216517	0.2083436	0.203404	0.2161877	0.2176169	0.2086374	0.216035	0.2000844	0.2257917
944	0.220606	0.212336	0.2055372	0.2186904	0.2201062	0.2129853	0.2193872	0.2042445	0.2285138
946	0.225534	0.2171637	0.2084179	0.2220391	0.2235123	0.218212	0.2236342	0.2091141	0.2321244
948	0.23099	0.2225062	0.2118083	0.2259733	0.227587	0.2239841	0.2284879	0.214387	0.2363649
950	0.236863	0.2282619	0.2156546	0.2304258	0.2322346	0.2301778	0.2338487	0.21997	0.241134

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	10	11	12	13	14	15	16	17	18
Sample Numb	"0201s"	"0202s"	"0203s"	"0204s"	"0205s"	"0206s"	"0207s"	"0208s"	"0209s"
400	0.4417099	0.4223092	0.4815808	0.4922886	0.4297265	0.4397354	0.4610363	0.4430547	0.4539875
402	0.4654154	0.4400371	0.5056908	0.5200322	0.4506458	0.4606268	0.485855	0.4636146	0.4773917
404	0.4866334	0.4580631	0.5286901	0.5441844	0.4708753	0.4812941	0.5087757	0.4838107	0.5006902
406	0.5063549	0.4753388	0.5507249	0.569411	0.4901946	0.5003011	0.5307325	0.5033643	0.5226895
408	0.524966	0.4906878	0.5708143	0.5894474	0.5079643	0.5172225	0.5508941	0.520665	0.5428433
410	0.5411173	0.503791	0.588056	0.607829	0.5229814	0.5322216	0.5688181	0.5359278	0.5591733
412	0.555158	0.5157428	0.6036388	0.6249178	0.5358899	0.5458894	0.5838468	0.5491605	0.5746768
414	0.5678232	0.5250866	0.6165056	0.6387274	0.5475663	0.5571518	0.5969846	0.5612991	0.5889222
416	0.5763423	0.5331053	0.6270395	0.6504431	0.5569968	0.5660673	0.6074886	0.5704027	0.599691
418	0.583362	0.5382772	0.6349155	0.6600221	0.5638125	0.5728121	0.6159339	0.5776864	0.6085243
420	0.5879406	0.5424554	0.6402587	0.6672261	0.5689775	0.5778163	0.6222891	0.5825953	0.6153132
422	0.590178	0.5438205	0.6424664	0.6719583	0.5715653	0.5802875	0.6260881	0.585041	0.6196609
424	*0.5897444*	*0.5435309*	*0.6419258*	*0.6737923*	*0.5715455*	*0.5806289*	*0.6266772*	*0.5854083*	*0.6210492*
426	0.587717	0.5403858	0.6393949	0.6724631	0.5700029	0.579618	0.6251613	0.5837945	0.6197512
428	0.5833102	0.5357462	0.6346812	0.6698213	0.5661467	0.5762003	0.6226784	0.580468	0.6165979
430	0.5777784	0.5298749	0.628431	0.6652367	0.5608681	0.5718451	0.6169327	0.5751218	0.6115509
432	0.5701335	0.5224603	0.6204393	0.6595952	0.5541484	0.5657696	0.6099362	0.5685212	0.6048903
434	0.5606881	0.5129331	0.6108319	0.6509473	0.5458016	0.558126	0.6013134	0.559814	0.5960018
436	0.5522677	0.5042598	0.601998	0.6426826	0.5372322	0.5509679	0.5921706	0.5513272	0.5875777
438	*0.5427911*	*0.4944327*	*0.5912623*	*0.6342468*	*0.5275683*	*0.5428942*	*0.5831629*	*0.5419586*	*0.5779302*
440	0.5334769	0.4846256	0.5804052	0.6245719	0.5176427	0.5342526	0.5725223	0.5324973	0.5676953
442	0.5246096	0.4752703	0.5706033	0.6146616	0.5075891	0.5256433	0.5625542	0.5232802	0.5576456
444	0.5156044	0.4652131	0.5606782	0.6050072	0.4975403	0.5172029	0.5525644	0.5141238	0.5478155
446	0.5074118	0.456087	0.5517159	0.5965846	0.4880952	0.5092497	0.5423363	0.505358	0.5382452
448	0.4998605	0.4479562	0.5431494	0.587415	0.4786823	0.5013574	0.532889	0.4969778	0.5291584
450	0.4933389	0.4393967	0.5359219	0.579576	0.4698161	0.4945095	0.5241263	0.4892993	0.5215151
452	*0.4870234*	*0.4320416*	*0.5285801*	*0.5718222*	*0.4614549*	*0.4874656*	*0.516041*	*0.4821365*	*0.5139361*
454	0.4813029	0.4245261	0.5221834	0.5646999	0.4532342	0.4813322	0.5082358	0.4753506	0.5068573
456	0.4768483	0.4184726	0.5167353	0.5589278	0.4461416	0.4752789	0.5013282	0.4695009	0.5007223
458	0.4729066	0.4124815	0.5111822	0.5528774	0.4397953	0.4700518	0.4956536	0.4640283	0.4950614
460	0.4689058	0.4070159	0.5064647	0.5475162	0.4337972	0.4650815	0.4899231	0.4590353	0.4898272
462	0.4651251	0.4023647	0.502077	0.5424671	0.4280173	0.460138	0.4840843	0.4546179	0.4850971
464	0.4609869	0.3978263	0.4980334	0.537752	0.4228615	0.4557767	0.4791268	0.4507153	0.4806746
466	0.4570912	0.3936698	0.4940301	0.5329029	0.4181705	0.4515618	0.4740911	0.4465252	0.4764334
468	0.4532695	0.3896912	0.4899251	0.5284783	0.4134724	0.4474289	0.46929	0.4426932	0.4721225
470	0.4498366	0.3861951	0.4862979	0.5239952	0.409383	0.4435114	0.4651528	0.4390491	0.4681083
472	0.4468116	0.3829453	0.4825434	0.5199208	0.4055643	0.4398023	0.4610717	0.4357137	0.464301
474	0.4433424	0.3798275	0.4793412	0.5157552	0.4018935	0.4361257	0.4570524	0.4326518	0.46038
476	0.4390895	0.3768461	0.4755924	0.5113309	0.3985857	0.4327801	0.4536638	0.4294198	0.4569927
478	0.4351977	0.374314	0.4723472	0.5075315	0.3955264	0.4294544	0.4497637	0.426201	0.4537233
480	0.4323399	0.3714683	0.4689756	0.5038025	0.3921874	0.4259013	0.4454532	0.4230679	0.4505146
482	0.4290058	0.3689758	0.4660564	0.5004029	0.3897587	0.4232287	0.442017	0.420571	0.4471158
484	0.4257293	0.3668389	0.4633665	0.4972256	0.386961	0.4203862	0.43901	0.4182375	0.4440791
486	0.4226259	0.3647645	0.4602777	0.4935975	0.3842059	0.4174515	0.4352955	0.4152541	0.4409548
488	0.4190631	0.3619594	0.4566107	0.4897445	0.380688	0.4137873	0.4311458	0.4120533	0.437398
490	0.4155805	0.3601555	0.4532624	0.4860256	0.3776756	0.4100944	0.4281339	0.4093215	0.4344461
492	0.4110323	0.3566115	0.4487764	0.481155	0.3737568	0.4056058	0.4232197	0.4057846	0.4299529
494	0.4063689	0.3538252	0.4442672	0.4754087	0.3695151	0.4007025	0.4185375	0.4015183	0.4253154
496	0.4001078	0.3502461	0.4380422	0.4683195	0.3638075	0.3946645	0.4120765	0.3961873	0.4194166
498	0.3946157	0.3478538	0.4326523	0.4619169	0.3593823	0.3891908	0.4065385	0.3919908	0.4141082
500	0.3869348	0.3440607	0.4257232	0.4539484	0.3537414	0.3822851	0.399417	0.386073	0.4072374
502	0.3790966	0.3399433	0.4182411	0.444921	0.3471773	0.374599	0.3915568	0.3799176	0.3997833
504	0.3711181	0.33612	0.4104173	0.4358211	0.3410777	0.3671074	0.3841369	0.3734152	0.3920723
506	0.3631276	0.3324834	0.4024685	0.4263909	0.3347235	0.3596401	0.3763612	0.3670549	0.3842068
508	0.354811	0.3291265	0.3946016	0.4166346	0.3287684	0.3520907	0.3684468	0.3607845	0.3766272
510	0.3474534	0.3263758	0.387661	0.4086734	0.3233406	0.3455704	0.3614907	0.3551681	0.369473
512	0.3408604	0.3244523	0.3813417	0.4007628	0.3187876	0.3393751	0.3551302	0.3504012	0.3631543
514	0.335108	0.3232194	0.375884	0.393973	0.3151567	0.3344297	0.3495748	0.3463582	0.3579286
516	0.3310394	0.3233134	0.3719734	0.388863	0.312769	0.3306151	0.3457736	0.343394	0.3543757
518	0.3284401	0.3240761	0.3698493	0.385619	0.3117228	0.3282783	0.3430107	0.3415559	0.352175

520	0.3276655	0.3256256	0.3688941	0.3843284	0.3116495	0.3275333	0.342155	0.3414216	0.3514031
522	0.3281089	0.3285663	0.3698145	0.3843697	0.3124537	0.3275526	0.3424444	0.342426	0.3525627
524	0.3296062	0.332372	0.3720085	0.3864281	0.3146105	0.3286107	0.3435403	0.3443678	0.3549883
526	0.3315725	0.3367856	0.3751396	0.3892155	0.3174284	0.3310261	0.3457063	0.3473134	0.358009
528	0.3353489	0.3420635	0.3800893	0.3938116	0.3214538	0.3343889	0.3495622	0.3517761	0.3629664
530	0.3393191	0.3475755	0.3854149	0.3991577	0.3255039	0.338048	0.3541981	0.3559916	0.3684428
532	0.3433447	0.353069	0.3908029	0.4044331	0.3295206	0.3418886	0.3579223	0.3603744	0.3737161
534	0.3474454	0.3579022	0.3970438	0.4105443	0.3340051	0.3459332	0.3625789	0.3650609	0.379501
536	0.3509637	0.362731	0.4015607	0.4155216	0.3376917	0.3494302	0.3664281	0.3691243	0.3843327
538	0.3534819	0.3666477	0.4053774	0.419251	0.3408054	0.3523624	0.3695133	0.3723313	0.3882185
540	0.3552196	0.3698766	0.4085103	0.4228015	0.3432068	0.3548039	0.3719024	0.3751313	0.3911891
542	0.3560256	0.3724259	0.4103723	0.4250464	0.3451958	0.3564246	0.3736441	0.3768289	0.3932668
544	0.3554461	0.3733478	0.4109472	0.4257342	0.3455764	0.3567952	0.3738552	0.377486	0.3938554
546	0.3544098	0.3741382	0.4107581	0.4258827	0.3457769	0.3570952	0.3737237	0.3775796	0.3938416
548	0.3522652	0.3740904	0.4098222	0.4249192	0.3449879	0.3564623	0.3728479	0.3768049	0.3927585
550	0.3500354	0.3735471	0.4081661	0.4235	0.3438945	0.3554774	0.3715878	0.3755674	0.3910535
552	0.3475592	0.3725848	0.406685	0.4221182	0.3427235	0.3543081	0.3697817	0.3743057	0.3894023
554	0.3454413	0.3716044	0.4047257	0.4205398	0.3414714	0.3528732	0.3681282	0.3727882	0.3875613
556	0.3440049	0.3708524	0.4033691	0.4192568	0.3402063	0.3517272	0.3667218	0.3715638	0.3863578
558	0.3428663	0.3704739	0.4026817	0.4184928	0.3392699	0.3505868	0.3653005	0.3706869	0.3852935
560	0.342444	0.3707088	0.4029616	0.4187414	0.3386874	0.3502707	0.3647705	0.3704645	0.3853118
562	0.343091	0.3712434	0.4040966	0.4196165	0.3386217	0.3501753	0.3653367	0.3708446	0.3860619
564	0.3442475	0.3723015	0.405664	0.4209686	0.3389108	0.3503122	0.3652363	0.3714736	0.387285
566	0.3458265	0.3732693	0.4076835	0.4229289	0.3391107	0.3504991	0.3657144	0.3723197	0.3887558
568	0.347202	0.3739938	0.4092192	0.4240027	0.3391994	0.3504977	0.3659171	0.3726973	0.390146
570	0.3477345	0.3739901	0.4098345	0.4242612	0.3384738	0.349677	0.3652299	0.3723839	0.3902305
572	0.3469135	0.3728586	0.409263	0.4232158	0.3367236	0.347902	0.3634839	0.3709145	0.3892504
574	0.3442152	0.3700751	0.4062149	0.4196051	0.3333834	0.3446523	0.3600846	0.3675784	0.3859266
576	0.3391283	0.3653945	0.4007976	0.4137672	0.3285121	0.3396086	0.3545061	0.3623575	0.3800888
578	0.3323615	0.358949	0.3929264	0.4053214	0.3218669	0.3331343	0.3473836	0.3552703	0.3719219
580	0.3231302	0.3505194	0.3824682	0.3942879	0.3135704	0.3248949	0.3382759	0.3461209	0.3612833
582	0.3118637	0.3401116	0.3694662	0.3809025	0.3037109	0.3149816	0.3269868	0.3351048	0.3482165
584	0.2998605	0.3289554	0.3554294	0.3664734	0.2933993	0.3045519	0.3155392	0.3233398	0.3342856
586	0.2874555	0.3170158	0.3404337	0.350952	0.282389	0.2933799	0.3031489	0.311064	0.3194677
588	0.274098	0.3041672	0.3245156	0.334591	0.2706374	0.2815792	0.2902007	0.2977093	0.3037288
590	0.2613415	0.2914701	0.3090205	0.3189255	0.2591577	0.2699306	0.2773889	0.2848504	0.288543
592	0.2494444	0.279217	0.2941843	0.3037128	0.2482786	0.2587849	0.2653588	0.2725203	0.2741208
594	0.2382829	0.2674033	0.2800958	0.2892142	0.2379246	0.2481241	0.2538131	0.2607445	0.2603889
596	0.2279136	0.2560945	0.2668008	0.275616	0.2280585	0.2380229	0.242932	0.2496368	0.2475304
598	0.219232	0.2461502	0.2552469	0.2636323	0.2195176	0.2291845	0.2335111	0.2399153	0.2362704
600	0.2117158	0.2372968	0.2451341	0.2531125	0.2118827	0.2213443	0.2251457	0.2313379	0.2264228
602	0.2050867	0.2291025	0.2359157	0.2435141	0.2048807	0.2141594	0.2175168	0.223495	0.2174399
604	0.1996159	0.2219269	0.2279913	0.2352167	0.1988573	0.2079061	0.2109278	0.2166644	0.2097333
606	0.1951871	0.2159339	0.2214662	0.228403	0.1938639	0.2027404	0.2054878	0.2110203	0.203327
608	0.1913296	0.2104335	0.2156597	0.2221693	0.1892468	0.1980269	0.2005275	0.2058582	0.1975379
610	0.1880134	0.2056471	0.210668	0.2167613	0.1851772	0.1938884	0.1961786	0.2013294	0.1924593
612	0.1854077	0.2017343	0.206612	0.212502	0.1818915	0.1905895	0.192643	0.1977302	0.1883647
614	0.183128	0.1982001	0.2030198	0.2086202	0.1789047	0.1876048	0.1894343	0.1944	0.1846586
616	0.1809696	0.1948712	0.1996967	0.205056	0.1761758	0.1848271	0.1864289	0.1913302	0.1811785
618	0.1793786	0.1922997	0.197162	0.2022766	0.1739716	0.182695	0.1841304	0.1888904	0.1784787
620	0.1778811	0.1899418	0.194865	0.1997816	0.172008	0.180746	0.1819412	0.1866925	0.1760071
622	0.1765396	0.1878258	0.1928125	0.1975228	0.1702418	0.1790046	0.1800836	0.1847368	0.1737692
624	0.1753403	0.1858962	0.1909625	0.1955422	0.1686874	0.1774843	0.1783421	0.1830341	0.1718133
626	0.1742843	0.1842604	0.1893679	0.1937743	0.1673045	0.1761334	0.1769209	0.1815304	0.17011
628	0.1731964	0.1826924	0.187916	0.1921445	0.1659878	0.1748468	0.1754975	0.1801037	0.1685168
630	0.1720926	0.1810913	0.1863807	0.1905628	0.1646847	0.1735727	0.1740823	0.1787287	0.1669658
632	0.1710097	0.179583	0.1849341	0.1889787	0.1635027	0.1723706	0.1727655	0.1774541	0.1655544
634	0.1699893	0.1781646	0.1835719	0.1874793	0.1623345	0.1712174	0.1715194	0.1762791	0.1642751
636	0.1688442	0.1766399	0.1820754	0.1859292	0.1611369	0.1699806	0.1702007	0.1750121	0.1629818
638	0.1677011	0.17511	0.1805641	0.1843549	0.1599817	0.1687638	0.1688999	0.1737887	0.1617175
640	0.1665712	0.1736581	0.1791448	0.1828453	0.1588576	0.1676149	0.1676686	0.1726421	0.1605631
642	0.1653524	0.172091	0.1775931	0.1812711	0.1576349	0.166325	0.1663172	0.1714365	0.1593486
644	0.1640893	0.1705171	0.1760162	0.1796721	0.1564369	0.1650172	0.1649755	0.1701863	0.1581486
646	0.162971	0.1690419	0.1745636	0.1781679	0.1553327	0.1638222	0.1637745	0.1691194	0.1570829
648	0.1617445	0.1675124	0.1730578	0.1766416	0.154192	0.1625768	0.1624853	0.1679362	0.1559742
650	0.1605429	0.1659751	0.1715417	0.1750998	0.1530559	0.161328	0.1612264	0.1668347	0.1548951
652	0.159444	0.1645399	0.1700927	0.1736694	0.1519918	0.1601669	0.1600698	0.165763	0.15389
654	0.1583811	0.1631352	0.1687583	0.1722596	0.1509142	0.1590398	0.1589085	0.1647265	0.1528885
656	0.1573033	0.1617195	0.1673761	0.1708833	0.1498486	0.1578936	0.1577334	0.1636615	0.1518772
658	0.1562821	0.1603449	0.1660367	0.1695122	0.1488503	0.156819	0.1566082	0.1626689	0.1509266
660	0.1553515	0.1590719	0.1648009	0.1682525	0.1478916	0.1557771	0.1555883	0.1617129	0.1499885
662	0.1544534	0.1578383	0.1636236	0.167038	0.1469811	0.1547911	0.1545553	0.1607846	0.1490835
664	0.1536	0.156628	0.1624742	0.1658203	0.1460877	0.1538279	0.1535672	0.1598578	0.1482034
666	0.1528204	0.1554759	0.1613655	0.1646606	0.1452315	0.1529257	0.1526397	0.1589887	0.1473491

668	0.152029	0.1543264	0.160294	0.1634921	0.1443349	0.1520277	0.1516869	0.1580829	0.1464539
670	0.1512714	0.1532141	0.1592643	0.162397	0.1435238	0.151156	0.1507836	0.1571888	0.1455937
672	0.1506143	0.1521709	0.1582931	0.1613367	0.1427693	0.1503681	0.1499489	0.1563879	0.1448017
674	0.1500331	0.1512283	0.1574361	0.160377	0.1420646	0.1496523	0.1492006	0.1556229	0.1440673
676	0.1494408	0.1502718	0.1565642	0.1594127	0.1413956	0.1489228	0.1484197	0.1548421	0.1433252
678	0.1489354	0.1493936	0.1557364	0.1584609	0.1407493	0.148312	0.1477464	0.1541581	0.142699
680	0.1484902	0.1485646	0.1550442	0.1576389	0.1401512	0.1476947	0.1471265	0.1534771	0.1420431
682	0.1479939	0.1477664	0.1543339	0.1568494	0.1395557	0.1471029	0.1464885	0.1527852	0.1413993
684	0.1475474	0.146951	0.153649	0.1560431	0.1389875	0.1465388	0.14588	0.1521757	0.1407867
686	0.1471117	0.1461916	0.1530188	0.155303	0.1384578	0.1460091	0.1452979	0.1515581	0.1402122
688	0.1467403	0.1454933	0.1524257	0.1546035	0.1379732	0.1455255	0.144778	0.1509844	0.1396914
690	0.1463863	0.144824	0.1518747	0.1539265	0.1375186	0.1450748	0.1443002	0.150431	0.1391887
692	0.1460375	0.1441804	0.151366	0.1533066	0.1370735	0.1446362	0.1438364	0.1498923	0.1387115
694	0.145746	0.1436024	0.1508908	0.1527286	0.1367085	0.1442725	0.1434313	0.14944	0.1383161
696	0.1454758	0.143076	0.1504976	0.1522306	0.1364013	0.1439416	0.1430489	0.1489842	0.1379409
698	0.1452508	0.1426096	0.1501223	0.1517483	0.1360922	0.1436455	0.1427458	0.148603	0.1376293
700	0.1450296	0.1421672	0.1497922	0.1513295	0.1358251	0.1433845	0.1424378	0.1482172	0.1373164
702	0.1448725	0.1418085	0.1495485	0.1509802	0.1356224	0.14317	0.1422105	0.1479121	0.1370929
704	0.1447253	0.141479	0.1493211	0.150654	0.1354496	0.1429892	0.1419936	0.1476246	0.1369033
706	0.1445919	0.141174	0.149102	0.1503425	0.1352782	0.1428396	0.1418085	0.1473459	0.1367383
708	0.1445338	0.1409804	0.1489855	0.1501464	0.1352114	0.1427514	0.1416971	0.147159	0.1366371
710	0.1445081	0.1408129	0.1489084	0.1499651	0.1351686	0.1427017	0.1416199	0.1470106	0.1365809
712	0.1445284	0.1407285	0.1489006	0.1498547	0.1351974	0.1427046	0.1415989	0.1469143	0.1365993
714	0.1445828	0.140695	0.1489306	0.1497909	0.1352636	0.1427619	0.141623	0.1468753	0.1366711
716	0.1446979	0.1407246	0.1490455	0.1497871	0.1354003	0.1428706	0.141737	0.1468914	0.1367901
718	0.1448393	0.1408353	0.1492155	0.1498549	0.1355701	0.1430236	0.1418691	0.1469588	0.1369644
720	0.1450271	0.1410061	0.1494334	0.1499671	0.1358067	0.1432424	0.1420377	0.1471071	0.13722
722	0.1452514	0.1412582	0.1497419	0.1501431	0.1360956	0.1435035	0.1422824	0.1472866	0.1375184
724	0.1455144	0.1415582	0.1500896	0.1503582	0.136432	0.1438053	0.1425637	0.1475373	0.1378654
726	0.1458385	0.141978	0.150533	0.1506916	0.1368387	0.1441938	0.1429259	0.147869	0.1383021
728	0.1461809	0.1424478	0.1510078	0.1510516	0.1372916	0.1446173	0.1433129	0.1482408	0.1387826
730	0.1465399	0.142939	0.1515179	0.1514435	0.1377595	0.1450495	0.1437259	0.1486444	0.1392898
732	0.1469378	0.1434852	0.1520815	0.1518982	0.1382838	0.1455392	0.1441837	0.1490871	0.1398309
734	0.1473418	0.1440614	0.1526783	0.1523852	0.1388213	0.1460394	0.1446641	0.1495488	0.1404018
736	0.1477133	0.1446212	0.1532339	0.152856	0.1393358	0.1465174	0.1451013	0.1499767	0.1409349
738	0.1481089	0.1452035	0.1538182	0.1533584	0.1398639	0.1470228	0.1455733	0.1504262	0.1414944
740	0.1485023	0.1457841	0.1544158	0.1538578	0.1404019	0.1475307	0.1460298	0.150873	0.1420485
742	0.1488598	0.1463343	0.1549728	0.1543444	0.1409074	0.1480182	0.1464534	0.1512792	0.1425661
744	0.1491999	0.1468709	0.1555175	0.1548201	0.1413991	0.1484896	0.1468644	0.151677	0.1430765
746	0.1495376	0.147395	0.1560401	0.1552899	0.1418871	0.1489519	0.1472537	0.1520421	0.1435558
748	0.149861	0.1478932	0.1565498	0.1557197	0.1423451	0.1493951	0.1476199	0.1523862	0.1440169
750	0.1501362	0.1483317	0.1569884	0.1561179	0.1427486	0.1497962	0.1479327	0.1526853	0.1444301
752	0.1503808	0.1487034	0.1573733	0.1564568	0.1431105	0.1501441	0.1481995	0.1529291	0.1447814
754	0.1505675	0.1489821	0.1576628	0.1566989	0.1433871	0.1503953	0.1484018	0.1530944	0.1450459
756	0.1507063	0.1491639	0.1578687	0.1568588	0.1435919	0.1505867	0.1485355	0.1531873	0.1452339
758	0.1507692	0.1492054	0.1579429	0.1569107	0.1436833	0.1506603	0.1485789	0.1531751	0.145311
760	0.1507806	0.14914	0.1579071	0.1568735	0.1436752	0.1506559	0.1485611	0.1530835	0.1453075
762	0.150759	0.1489896	0.1577857	0.1567659	0.1435974	0.1505789	0.1485186	0.1529122	0.145233
764	0.1507323	0.1488162	0.157612	0.1566557	0.143479	0.1504695	0.1484922	0.1527237	0.145137
766	0.1507221	0.1486259	0.1573972	0.1565222	0.143349	0.1503574	0.1484908	0.1525456	0.1450358
768	0.1507168	0.1484088	0.1571401	0.1563598	0.143178	0.150231	0.1484967	0.1523376	0.1449092
770	0.1506758	0.1481513	0.1568174	0.1561273	0.1429789	0.1500472	0.1484388	0.1521129	0.144731
772	0.1505578	0.1477828	0.1564324	0.1557856	0.1426512	0.1497918	0.1482572	0.151817	0.1444619
774	0.1504121	0.1473644	0.1560137	0.1554047	0.1423098	0.1495043	0.1479991	0.151497	0.1441423
776	0.150251	0.1468987	0.155647	0.1549629	0.141966	0.1492125	0.1476818	0.1511988	0.1438257
778	0.1501164	0.1464173	0.1553334	0.1545453	0.1416824	0.1489636	0.1474171	0.1509181	0.1435307
780	0.1499947	0.1459572	0.1550516	0.1541355	0.1414181	0.1487238	0.1471402	0.1506554	0.1432571
782	0.1498253	0.1454913	0.1547628	0.1537368	0.1411333	0.14846	0.1468299	0.1503495	0.1429752
784	0.1497326	0.1451353	0.1545454	0.1534416	0.1409296	0.1482778	0.1466174	0.150109	0.1427671
786	0.1496682	0.1448761	0.1543754	0.1532159	0.1407731	0.148141	0.1464481	0.1499101	0.1426159
788	0.14962	0.1446728	0.1542352	0.1530354	0.1406447	0.1480241	0.1463177	0.1497318	0.1424869
790	0.1495916	0.1445127	0.1541231	0.1528904	0.1405353	0.1479363	0.1462137	0.1495764	0.1423896
792	0.1495716	0.1443879	0.1540347	0.15278	0.1404517	0.1478576	0.146129	0.149447	0.142299
794	0.1495518	0.1442741	0.1539577	0.1526711	0.1403671	0.1477943	0.1460449	0.1493189	0.142225
796	0.1495418	0.1441839	0.1538995	0.1525817	0.1403106	0.1477427	0.1459783	0.1492136	0.1421613
798	0.1495411	0.1441174	0.1538636	0.1525103	0.140266	0.1477086	0.1459228	0.1491255	0.1421214
800	0.1495494	0.1440821	0.1538576	0.1524727	0.1402517	0.1476983	0.1458857	0.1490595	0.1420994
802	0.1495801	0.1440864	0.1538801	0.1524633	0.1402575	0.1477094	0.1458745	0.1490167	0.1421066
804	0.1496338	0.1441212	0.1539385	0.1524833	0.1402861	0.1477483	0.1458839	0.1490025	0.1421466
806	0.149704	0.1441865	0.1540253	0.1525312	0.1403505	0.1478047	0.1459307	0.1490252	0.1422129
808	0.1497904	0.1442924	0.1541425	0.1526099	0.1404399	0.1478997	0.1459964	0.1490756	0.1423052
810	0.149929	0.1444518	0.1542968	0.1527337	0.1405679	0.1480227	0.1461096	0.1491742	0.142447
812	0.150073	0.1446483	0.154497	0.1528879	0.140727	0.1481818	0.1462403	0.149308	0.1426158
814	0.1502375	0.1448931	0.1547217	0.1530793	0.140922	0.1483696	0.1464057	0.1494848	0.1428208

816	0.1504483	0.1452019	0.1550244	0.1533317	0.1411689	0.148607	0.1466224	0.1497204	0.1430901
818	0.1506876	0.1455724	0.1553689	0.1536264	0.1414568	0.1488827	0.1468903	0.1500128	0.1434042
820	0.1509544	0.145989	0.1557574	0.1539581	0.1417781	0.1491927	0.1471877	0.1503509	0.1437602
822	0.1512663	0.1464694	0.1562026	0.154353	0.1421471	0.1495479	0.147529	0.1507584	0.1441713
824	0.1516144	0.1470388	0.1567278	0.1548132	0.1425909	0.149972	0.1479557	0.1512523	0.1446589
826	0.1519865	0.1476505	0.1572856	0.1553092	0.1430606	0.1504143	0.1484092	0.1517873	0.1451796
828	0.1523814	0.1482892	0.1578711	0.1558347	0.1435446	0.1508779	0.1488943	0.1523627	0.1457349
830	0.1527714	0.1489372	0.1584615	0.1563656	0.1440369	0.1513409	0.14939	0.1529507	0.1462912
832	0.15319	0.1495991	0.1590782	0.1569274	0.1445496	0.1518328	0.1499032	0.1535708	0.1468726
834	0.1535815	0.1502224	0.1596544	0.1574465	0.1450396	0.1522932	0.1503987	0.1541541	0.1474221
836	0.1539309	0.1507684	0.1601665	0.1579203	0.145467	0.1527025	0.1508382	0.1546797	0.1479114
838	0.1542778	0.1513038	0.1606616	0.1583807	0.1458721	0.1531	0.1512726	0.1551978	0.1483966
840	0.154605	0.151764	0.1611113	0.1588034	0.1462349	0.1534745	0.1516711	0.1556624	0.1488279
842	0.1548697	0.1521425	0.1614865	0.1591558	0.1465482	0.1537816	0.1519969	0.1560582	0.149202
844	0.155143	0.1525272	0.1618672	0.1595178	0.1468563	0.1540986	0.152334	0.1564373	0.1495617
846	0.1554194	0.1528896	0.1622276	0.1598615	0.1471522	0.1543976	0.1526532	0.1568123	0.1499126
848	0.1557014	0.1532388	0.1625894	0.1602068	0.1474423	0.154699	0.152955	0.1571628	0.150246
850	0.1559726	0.1536053	0.1629573	0.1605597	0.1477432	0.1550082	0.1532584	0.1575189	0.1505978
852	0.1562537	0.1539862	0.1633212	0.1609137	0.1480428	0.155316	0.153573	0.1578813	0.1509472
854	0.1565612	0.1543957	0.1637295	0.1612904	0.1483842	0.155657	0.1539116	0.1582818	0.1513326
856	0.1568741	0.1548239	0.1641454	0.1616798	0.1487357	0.1560081	0.1542518	0.1586713	0.1517323
858	0.1572097	0.1552781	0.1645821	0.162092	0.1491112	0.1563813	0.1546197	0.1590821	0.1521507
860	0.1575756	0.1557999	0.1650671	0.1625478	0.1495313	0.1567974	0.1550124	0.1595315	0.1526117
862	0.1579789	0.1563651	0.1655908	0.1630379	0.1499875	0.1572449	0.1554443	0.1600082	0.1531077
864	0.1583909	0.1569546	0.1661346	0.1635333	0.1504635	0.157711	0.1558764	0.1604954	0.1536262
866	0.158859	0.1576486	0.1667587	0.1641102	0.1510237	0.1582487	0.1563745	0.1610476	0.1542233
868	0.1593723	0.1583969	0.1674368	0.1647274	0.151621	0.1588295	0.1569087	0.1616286	0.1548662
870	0.1599064	0.1591948	0.1681553	0.1653769	0.1522668	0.1594372	0.1574593	0.1622394	0.155543
872	0.1604924	0.1600718	0.1689465	0.1660917	0.1529806	0.1601128	0.1580761	0.162911	0.1562896
874	0.161157	0.1610686	0.1698405	0.1668862	0.1537929	0.1608727	0.1587515	0.1636585	0.1571406
876	0.1618613	0.1621218	0.1708049	0.1677286	0.1546597	0.1616799	0.1594619	0.1644409	0.1580413
878	0.1626284	0.1632616	0.1718395	0.168639	0.155606	0.1625528	0.1602399	0.1652759	0.1590174
880	0.163454	0.1645089	0.1729642	0.1696239	0.1566456	0.1635012	0.1610631	0.1661759	0.1600822
882	0.164292	0.1658041	0.1741297	0.1706239	0.1577175	0.1644702	0.1619008	0.1670829	0.1611798
884	0.1652484	0.1672567	0.1754339	0.1717507	0.1589235	0.1655672	0.1628412	0.1681016	0.1624167
886	0.1662168	0.1687295	0.1767493	0.1728949	0.1601563	0.1666778	0.1637922	0.1691308	0.1636602
888	0.1672668	0.1703374	0.1781818	0.1741244	0.161501	0.1678874	0.1648371	0.1702484	0.1650173
890	0.168329	0.1719702	0.1796193	0.1753678	0.1628557	0.1691052	0.1658837	0.1713724	0.1663761
892	0.1693298	0.1735122	0.1809687	0.1765366	0.1641348	0.1702563	0.1668702	0.1724414	0.1676516
894	0.170347	0.1750925	0.1823334	0.1777332	0.1654333	0.1714303	0.1678846	0.1735437	0.168949
896	0.1713891	0.1766935	0.1837221	0.1789478	0.1667477	0.1726319	0.168921	0.1746597	0.1702648
898	0.172413	0.1782672	0.1850882	0.1801391	0.1680518	0.173808	0.1699354	0.1757647	0.1715542
900	0.1734851	0.1799082	0.1864971	0.1813722	0.1694011	0.1750305	0.1709888	0.1768979	0.1728973
902	0.1746677	0.181712	0.1880387	0.1827166	0.1708812	0.1763779	0.1721098	0.1781199	0.174369
904	0.1759725	0.1837062	0.1897479	0.1841938	0.1725281	0.1778669	0.1733327	0.179443	0.175988
906	0.1773964	0.1858776	0.1915985	0.1857821	0.1743376	0.1795037	0.1746421	0.1808595	0.1777411
908	0.1788957	0.1881888	0.1935443	0.1874454	0.1762483	0.1812263	0.1760136	0.1823612	0.1795897
910	0.1805983	0.1907998	0.195768	0.1893414	0.1783993	0.1831788	0.1775715	0.1840549	0.1817595
912	0.1823406	0.193527	0.1980292	0.1912949	0.1806423	0.1851751	0.1791281	0.1857976	0.1839276
914	0.1840317	0.1962109	0.2002939	0.1932312	0.1828263	0.1871292	0.1806735	0.1875653	0.1860765
916	0.1858286	0.1990534	0.2026753	0.1952762	0.1851506	0.1892434	0.1823516	0.1894812	0.1883654
918	0.1876729	0.2019834	0.2051685	0.1974003	0.1875329	0.1913928	0.1841204	0.1915304	0.1907468
920	0.1894492	0.2048279	0.2075691	0.1994896	0.1898319	0.1934711	0.1858857	0.1936114	0.1930685
922	0.1912026	0.2076618	0.2099738	0.2015934	0.1921217	0.1955401	0.187707	0.1957707	0.1954079
924	0.1929091	0.2104761	0.212374	0.2037215	0.1943531	0.1975799	0.1896024	0.1980764	0.1977594
926	0.1944815	0.2131146	0.214644	0.2057461	0.1964359	0.1994777	0.1914797	0.2004003	0.199998
928	0.1958136	0.2154003	0.2166424	0.2075785	0.1981966	0.2011123	0.1932566	0.2026723	0.2019819
930	0.1969201	0.2173676	0.2183961	0.2092133	0.199678	0.2025091	0.194959	0.2048959	0.2037581
932	0.1978075	0.2190251	0.2199312	0.2107038	0.2008661	0.2036793	0.1966397	0.2071567	0.2053386
934	0.1985055	0.2203784	0.2212437	0.2120372	0.201788	0.2046309	0.1982749	0.2093882	0.2067252
936	0.199087	0.2215332	0.222422	0.2132757	0.2025444	0.2054411	0.1998748	0.2115945	0.2079922
938	0.1997265	0.2227853	0.22372	0.2146762	0.2033619	0.2063261	0.2016958	0.2140771	0.2093865
940	0.2005802	0.224359	0.2253195	0.2163735	0.2044275	0.2074527	0.203809	0.2169108	0.211091
942	0.2017489	0.2264089	0.2273452	0.2184442	0.2058898	0.2089356	0.2062404	0.2200866	0.2131909
944	0.2033246	0.2290965	0.2299342	0.2210268	0.2078718	0.210884	0.2091235	0.2237806	0.2158331
946	0.2055216	0.232793	0.2334079	0.2244022	0.2106787	0.2135694	0.2127195	0.2283127	0.2193347
948	0.2081757	0.2372158	0.2375177	0.2283381	0.2140899	0.2167841	0.2167965	0.2333778	0.2234408
950	0.211235	0.2422891	0.2421914	0.2327556	0.2180465	0.2204762	0.2212752	0.2388903	0.2280845

File Name: e:\scald\trim\abc.cal *Spectra and Constituent Data File*
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	19	20	21	22	23	24	25	26	27
Sample Numb	"0210s"	"0211s"	"0212s"	"0213s"	"0214s"	"0215s"	"0216s"	"0217s"	"0218s"
400	0.420077	0.4377109	0.4285945	0.4576493	0.4148346	0.4039123	0.3879727	0.4049643	0.4289438
402	0.4382981	0.456647	0.4487427	0.4792726	0.4339473	0.4213884	0.4046288	0.4234909	0.4494443
404	0.4566408	0.476026	0.4679348	0.5009014	0.4514663	0.4376734	0.4201436	0.4414582	0.4684074
406	0.4735506	0.4938587	0.4858995	0.521015	0.4668783	0.4537301	0.4356358	0.4580644	0.4861287
408	0.4886231	0.5103881	0.5027841	0.5397184	0.4805233	0.4666543	0.4482589	0.474468	0.5017568
410	0.5011603	0.5246076	0.5166392	0.5551527	0.4936893	0.4780566	0.4595711	0.4869744	0.5150385
412	0.5133462	0.5374333	0.5291505	0.5695689	0.5040204	0.4885785	0.4698133	0.4992685	0.5269166
414	0.5231995	0.5479015	0.5395707	0.5814772	0.5124131	0.4970105	0.4784684	0.509375	0.5374236
416	0.5308605	0.5556211	0.5469985	0.5907908	0.5191436	0.5042122	0.4855291	0.5176354	0.5439622
418	0.5365591	0.5619643	0.5522286	0.5979016	0.5239787	0.5091012	0.4916199	0.5240099	0.549539
420	0.5414178	0.5664665	0.55558	0.6024132	0.5268309	0.5138874	0.4953992	0.528399	0.5532983
422	0.5435397	0.5678076	0.5566263	0.6041201	0.5269446	0.5149053	0.4974327	0.5320961	0.5547538
424	0.5442606	0.5669746	0.5551208	0.6036837	0.5250022	0.5145836	0.4983118	0.5325839	0.5543053
426	0.5431117	0.5646375	0.5518232	0.6008051	0.5219101	0.5131885	0.497898	0.5311441	0.5521021
428	0.5407469	0.5603337	0.5466247	0.5965884	0.5167286	0.5102563	0.4957375	0.5289176	0.5482733
430	0.5370641	0.5543981	0.5397213	0.5904294	0.5099012	0.5062928	0.4929053	0.5244356	0.5439546
432	0.5321013	0.5477136	0.5316885	0.5830559	0.5023207	0.5019062	0.4893796	0.5188498	0.5379165
434	0.5260101	0.5390663	0.5218883	0.5737789	0.4933081	0.4958878	0.4841299	0.5118181	0.5308906
436	0.5200915	0.5310753	0.5128906	0.565037	0.4849398	0.4906745	0.4795474	0.5051215	0.5247642
438	0.5140444	0.5225186	0.5030836	0.5555708	0.4761767	0.4849605	0.4744849	0.4973668	0.5179529
440	0.5075453	0.5137991	0.4932737	0.5455226	0.4666512	0.4793492	0.4695635	0.4898682	0.5113395
442	0.5016653	0.50565	0.4839951	0.53633	0.4580808	0.474131	0.4646216	0.4815753	0.5050413
444	0.4958555	0.4978333	0.4745704	0.5272021	0.4493608	0.4689431	0.4603667	0.4739115	0.4990068
446	0.4908282	0.4909278	0.4657787	0.5187545	0.4413585	0.4653211	0.4566003	0.4665256	0.4943483
448	0.4861698	0.4842432	0.4578643	0.5109257	0.4340796	0.4624836	0.4526137	0.4599773	0.4893521
450	0.4820709	0.4786988	0.4508162	0.5040765	0.4278606	0.4591855	0.4493277	0.4540139	0.4852981
452	0.4781966	0.4737866	0.4441231	0.4976398	0.4216747	0.4562325	0.4465568	0.4476566	0.4817046
454	0.4747516	0.4695006	0.4381114	0.4918287	0.4156663	0.4538951	0.4437971	0.4417879	0.478376
456	0.4720792	0.4651533	0.4328016	0.4867277	0.4109531	0.4520871	0.4416823	0.4365901	0.475711
458	0.4692358	0.4614835	0.4277572	0.4821835	0.4062773	0.4503617	0.4397457	0.4318802	0.4731514
460	0.4668671	0.4583768	0.4232496	0.4782206	0.4019913	0.4488139	0.4376688	0.4276646	0.4709702
462	0.4643202	0.4556202	0.4189122	0.4744249	0.3983482	0.4475048	0.4355507	0.4236065	0.4685588
464	0.4623411	0.4528306	0.4150582	0.470752	0.3949778	0.4460026	0.4335726	0.420218	0.4663824
466	0.4597535	0.4500312	0.4115473	0.4669905	0.391713	0.4445513	0.4313129	0.4163229	0.463947
468	0.4572762	0.4470449	0.4080937	0.4634809	0.3884896	0.4427098	0.4292483	0.4127057	0.4614906
470	0.4545381	0.444306	0.4048425	0.4603433	0.3853301	0.4408663	0.4268614	0.4093378	0.4588444
472	0.4519611	0.4415081	0.4018915	0.4571348	0.3823553	0.4388398	0.4243387	0.406373	0.4564537
474	0.4490792	0.4389349	0.3991647	0.4539111	0.3797514	0.4373413	0.4217679	0.4030488	0.4538473
476	0.4466214	0.436593	0.3964597	0.4504899	0.3771939	0.4358316	0.4194064	0.3997122	0.4515662
478	0.4442337	0.4336354	0.3934962	0.4475234	0.375018	0.4335142	0.4173728	0.3969504	0.4492199
480	0.4413833	0.4312742	0.3910685	0.444466	0.3721118	0.4305645	0.4150901	0.3940848	0.4467113
482	0.4390644	0.4291099	0.3886572	0.442029	0.3704075	0.4288288	0.4135474	0.3915086	0.445055
484	0.4367032	0.4267635	0.3860265	0.4392477	0.368412	0.4271622	0.4105872	0.3900623	0.4424364
486	0.433876	0.4245846	0.38356	0.4368183	0.3657781	0.4252586	0.4078745	0.3864382	0.4395902
488	0.4309426	0.4219189	0.3808571	0.4336476	0.363029	0.4230781	0.405076	0.3824631	0.4371868
490	0.4281785	0.419476	0.3781233	0.430828	0.3610298	0.42069	0.4021939	0.3798607	0.434393
492	0.4241122	0.4164623	0.3744855	0.4267879	0.3581614	0.4172294	0.3979419	0.3761316	0.4305879
494	0.4194058	0.4124867	0.3710796	0.4223357	0.3555467	0.4134677	0.3937829	0.3722066	0.4264899
496	0.4128041	0.4072551	0.3661736	0.4164775	0.3522305	0.4080089	0.3873686	0.3669855	0.420314
498	0.4071195	0.4033442	0.3624035	0.4117219	0.3493074	0.4032171	0.3813393	0.3631336	0.4149404
500	0.3989758	0.3972344	0.3570259	0.4045572	0.3450711	0.3962513	0.373385	0.3573694	0.4078216
502	0.3901922	0.3906176	0.351332	0.3972777	0.3408937	0.388668	0.3644764	0.3511722	0.3997934
504	0.3813261	0.3838651	0.3456497	0.389573	0.337	0.3803291	0.3553907	0.3451847	0.3915335
506	0.3716466	0.377071	0.3401461	0.3816634	0.33314	0.3718369	0.346175	0.3391736	0.3830154
508	0.3619017	0.3701276	0.3343992	0.3737145	0.3296593	0.3629086	0.336428	0.3331048	0.3744836
510	0.3525254	0.3642414	0.3295804	0.3665767	0.3265932	0.3544045	0.3274079	0.3278492	0.366677
512	0.3439301	0.3584677	0.3250335	0.3597788	0.3246337	0.3466448	0.3190298	0.3233753	0.3588959
514	0.3361543	0.3535202	0.3215625	0.3541322	0.3234662	0.3394651	0.3117303	0.319355	0.3522482
516	0.3299589	0.3501456	0.319068	0.3501348	0.3228529	0.3332328	0.3052691	0.3171541	0.3472703
518	0.3245485	0.3480435	0.3174155	0.3472331	0.3230749	0.3287475	0.3007585	0.3157619	0.3430486

520	0.320525	0.3472707	0.3174271	0.3458034	0.3248994	0.3253962	0.2962683	0.3159602	0.3406551
522	0.3181432	0.3477716	0.3184186	0.3460998	0.3276276	0.3234217	0.2941182	0.317158	0.3398587
524	0.3172481	0.3498039	0.3199946	0.3476515	0.3311701	0.3229975	0.2924472	0.3189421	0.3397199
526	0.3168802	0.3526482	0.3226449	0.3501518	0.3353461	0.3226674	0.2918199	0.3213514	0.3405046
528	0.3180836	0.3566063	0.3263191	0.3546083	0.341022	0.3240532	0.2928143	0.3250051	0.3429757
530	0.3200625	0.3611567	0.330168	0.3589494	0.346303	0.3263958	0.2938154	0.329046	0.3462257
532	0.321906	0.3659983	0.3336339	0.363605	0.3515724	0.3288309	0.2952516	0.3328938	0.348888
534	0.3242799	0.3706032	0.3374797	0.3679359	0.3569399	0.3314959	0.2969191	0.3370035	0.3521841
536	0.3266435	0.3745824	0.3408725	0.3721428	0.3612989	0.3338858	0.2985136	0.340573	0.3547893
538	0.3282553	0.3775008	0.3434969	0.3754077	0.3645191	0.3355449	0.2998139	0.3436244	0.3569584
540	0.3296067	0.3797446	0.3454596	0.3778968	0.3673242	0.336918	0.3007536	0.3458153	0.3583891
542	0.3303805	0.3813803	0.3464651	0.3796068	0.368775	0.3377091	0.3010957	0.347344	0.3590997
544	0.3305233	0.3815507	0.3467414	0.3796962	0.3690316	0.3375595	0.3008633	0.3478377	0.3590055
546	0.3302296	0.38122	0.3463764	0.3793725	0.3688509	0.3369466	0.3003168	0.3477592	0.3581672
548	0.3293484	0.3800425	0.345216	0.3783471	0.3676979	0.3357563	0.2995543	0.3469379	0.3569849
550	0.3282998	0.3787361	0.3440164	0.3768178	0.36623	0.3342634	0.2984394	0.3458985	0.3553576
552	0.3269576	0.3769954	0.3421941	0.3750709	0.3650952	0.3330326	0.2970631	0.3446343	0.3534939
554	0.325606	0.3756338	0.3406764	0.3734341	0.3634244	0.3314755	0.2957684	0.3433703	0.3520244
556	0.3244437	0.3746306	0.3393298	0.3722093	0.3623271	0.3302927	0.2944674	0.3423811	0.3507939
558	0.3233699	0.3741573	0.3384102	0.3716111	0.361797	0.3294666	0.2935483	0.3416607	0.3499945
560	0.323034	0.3744259	0.3380879	0.371738	0.3621785	0.3294431	0.2928023	0.3412673	0.3499533
562	0.3228639	0.3755372	0.3383269	0.3726341	0.3630357	0.3300228	0.292391	0.3414255	0.3504045
564	0.3229833	0.3773127	0.3388581	0.3738472	0.3648792	0.3310001	0.2923843	0.342017	0.3513738
566	0.3231232	0.379184	0.3395388	0.3754476	0.3669232	0.3320161	0.2922283	0.3427471	0.3528147
568	0.3232166	0.3808452	0.3400595	0.3766851	0.3688095	0.3330922	0.2921192	0.3432217	0.3538629
570	0.3225631	0.3816975	0.3397247	0.3771137	0.3693436	0.3331993	0.2912575	0.3429022	0.3542404
572	0.3211539	0.3813722	0.3383653	0.3762635	0.3690104	0.3324282	0.2898392	0.3417332	0.3536138
574	0.3183767	0.3789041	0.3354158	0.3732961	0.3665513	0.3301176	0.2871994	0.3387921	0.35119
576	0.3140905	0.374308	0.3307354	0.3678719	0.3617409	0.3259157	0.2832682	0.3341316	0.3469054
578	0.3086224	0.3674198	0.3243983	0.3604471	0.3546664	0.3200743	0.2785887	0.3279001	0.340844
580	0.3014687	0.35819	0.31626	0.3506706	0.345183	0.3122938	0.2727843	0.3196543	0.3328436
582	0.2929942	0.346753	0.3064459	0.3383565	0.3332755	0.302831	0.2654804	0.3096381	0.322981
584	0.2840824	0.3341896	0.2959989	0.3253712	0.3206714	0.2927372	0.2579775	0.2989393	0.312327
586	0.2745673	0.3208944	0.2849196	0.311554	0.3067727	0.282009	0.2499555	0.2875484	0.3011969
588	0.2644425	0.3064116	0.2731389	0.2968965	0.29212	0.2702968	0.2414218	0.2751653	0.2892376
590	0.2545656	0.2925377	0.2616642	0.2825468	0.2779545	0.2589488	0.2330947	0.2630632	0.2775322
592	0.2450883	0.2791708	0.2507139	0.2688521	0.2644831	0.2481167	0.2251787	0.2515703	0.2663687
594	0.2360435	0.2664053	0.2403971	0.2558921	0.251714	0.2378552	0.2176461	0.2404918	0.2558536
596	0.2274186	0.2543252	0.2305373	0.243728	0.2398018	0.2281984	0.2104515	0.2300536	0.2459576
598	0.219927	0.2437737	0.2221342	0.2332024	0.229535	0.2197036	0.2042029	0.2209163	0.2374403
600	0.2133032	0.2344746	0.2146811	0.2239919	0.2205634	0.2123228	0.1986276	0.2127879	0.23
602	0.2071351	0.2260208	0.2079275	0.2156225	0.2124981	0.2056217	0.1935316	0.2053563	0.2232878
604	0.201787	0.2186693	0.202187	0.2085323	0.2056574	0.1998109	0.1890969	0.1989494	0.2175753
606	0.197406	0.2126078	0.1974247	0.2026581	0.200205	0.1950641	0.1854692	0.1936407	0.2128456
608	0.1933138	0.2071217	0.1931367	0.1974888	0.1952646	0.1907102	0.1821354	0.1888231	0.2086378
610	0.1897247	0.2023259	0.1894705	0.1929832	0.1910746	0.18687	0.1791877	0.1845928	0.2050574
612	0.1867946	0.1984642	0.1865201	0.1894405	0.1878075	0.1838642	0.1767982	0.1812038	0.2021485
614	0.1841465	0.1949906	0.1838907	0.1862357	0.1849101	0.1810829	0.1746308	0.1781248	0.1995298
616	0.1816362	0.1917558	0.1814461	0.1833396	0.1822522	0.1784726	0.1726068	0.1752609	0.1970929
618	0.1796848	0.1892583	0.1796151	0.181164	0.1802472	0.1764997	0.1710531	0.173031	0.1951884
620	0.1778803	0.1869562	0.1779274	0.1791244	0.1784085	0.1747003	0.1696078	0.1709687	0.1934201
622	0.1762489	0.184938	0.1764586	0.1773245	0.176836	0.1729902	0.168317	0.1691358	0.1917856
624	0.1748322	0.1830737	0.1751073	0.1757829	0.1754535	0.1715545	0.1672009	0.1675968	0.1901828
626	0.1735534	0.1814964	0.1738948	0.1743956	0.1741277	0.1702444	0.1661788	0.1661243	0.1887644
628	0.1723594	0.1799359	0.1727294	0.1730224	0.1729149	0.1689836	0.1651722	0.1647803	0.1872936
630	0.1711796	0.1784575	0.1714874	0.1716658	0.1716835	0.1677211	0.1641811	0.1634551	0.1857115
632	0.1700428	0.1770128	0.1702528	0.1703221	0.1704893	0.1665486	0.1632803	0.1622344	0.184065
634	0.1689648	0.1756646	0.1690242	0.1689895	0.1693189	0.1654286	0.1623428	0.1610249	0.1823952
636	0.1678571	0.1742091	0.1676823	0.1675898	0.1680295	0.1642253	0.1613565	0.1598231	0.1805079
638	0.1667469	0.1727494	0.1662466	0.1661297	0.1667043	0.1630375	0.1603523	0.1586211	0.1784942
640	0.1657052	0.1713827	0.1648593	0.1647087	0.1654254	0.1618766	0.1594244	0.157483	0.1765162
642	0.1645568	0.1698847	0.1633418	0.1631383	0.1640159	0.1606174	0.1583832	0.1562694	0.1743394
644	0.1634144	0.168403	0.1617774	0.16155	0.1625794	0.1593594	0.1573374	0.1550409	0.1720585
646	0.1623868	0.1670171	0.1602749	0.1600716	0.161209	0.1581744	0.1563653	0.1539251	0.1699051
648	0.1612845	0.1655772	0.1587272	0.1585283	0.1597963	0.1569462	0.155321	0.1527633	0.1676431
650	0.1602235	0.1641777	0.1571664	0.1569889	0.1584189	0.1557545	0.1543052	0.1516403	0.1653384
652	0.1592191	0.1628595	0.1557116	0.1555655	0.1571081	0.1546371	0.1533875	0.150602	0.1632032
654	0.1582425	0.1615751	0.1542881	0.1541683	0.1558599	0.1535478	0.1524761	0.1495547	0.1611284
656	0.1572143	0.1602819	0.1528827	0.1527603	0.154593	0.1524433	0.151496	0.1485105	0.1590536
658	0.1562674	0.159057	0.1515529	0.1514483	0.153413	0.1513771	0.150598	0.147556	0.1570935
660	0.1553684	0.1579081	0.1503187	0.1502234	0.1523036	0.1504015	0.1497513	0.1466368	0.1552761
662	0.1545087	0.1568079	0.1491682	0.1490493	0.1512859	0.1494675	0.1489644	0.1457343	0.1535767
664	0.1536419	0.1557107	0.1480628	0.1479297	0.1502977	0.1485686	0.1481795	0.1448721	0.1519596
666	0.1528299	0.1546813	0.1470291	0.1469029	0.1493803	0.1476948	0.1474508	0.1440523	0.1504589

668	0.15203	0.1536599	0.1460514	0.1458979	0.1484949	0.1468411	0.1467405	0.143234	0.1490673
670	0.1512223	0.1526669	0.1450891	0.1449108	0.1476452	0.1460203	0.1460236	0.1424181	0.1477358
672	0.1505321	0.1517605	0.144229	0.1440357	0.1469029	0.1452574	0.1454069	0.1416987	0.1465212
674	0.1498854	0.1509437	0.1434999	0.1432616	0.1462478	0.1446004	0.1448511	0.1410197	0.1454553
676	0.1492425	0.1501227	0.1427822	0.1424806	0.1456236	0.143973	0.1442865	0.1403311	0.1444213
678	0.1486517	0.1493533	0.1421193	0.1418567	0.1450397	0.1433853	0.143861	0.139801	0.1434644
680	0.1481466	0.1486101	0.1415071	0.1412026	0.144504	0.1428227	0.1434144	0.1391883	0.1425615
682	0.1476286	0.1478872	0.1409084	0.1405837	0.144012	0.1423139	0.1429687	0.1386187	0.1416894
684	0.1471094	0.1472384	0.140365	0.1399899	0.1435515	0.141791	0.142561	0.1380773	0.1408259
686	0.146637	0.1466102	0.1398542	0.1394754	0.1431312	0.1413233	0.142195	0.1375593	0.140023
688	0.1462085	0.1460321	0.1393789	0.1389924	0.1427343	0.1408999	0.1418549	0.1371266	0.1392893
690	0.145802	0.145476	0.1389366	0.1385479	0.1423732	0.1405011	0.1415327	0.1366674	0.1385692
692	0.1454205	0.1449508	0.1385302	0.1381245	0.142055	0.1401308	0.1412434	0.1362475	0.137909
694	0.1450953	0.1444903	0.1381773	0.1377663	0.1417904	0.1398104	0.1409916	0.1358931	0.1372761
696	0.1448072	0.1440832	0.1378619	0.1374585	0.1415717	0.1395318	0.1407902	0.1355629	0.1367579
698	0.1445545	0.1437315	0.1376065	0.1372057	0.1413887	0.139299	0.140622	0.13531	0.1362321
700	0.14434	0.1433898	0.1373509	0.1369587	0.141213	0.1390837	0.1404651	0.1350393	0.1357594
702	0.144178	0.1431348	0.1371819	0.1368151	0.1411152	0.1389337	0.1403732	0.1348504	0.1353733
704	0.1440422	0.1429153	0.1370249	0.1366575	0.1410406	0.138806	0.140288	0.1346696	0.1350242
706	0.1439395	0.1427137	0.1368886	0.1365687	0.1409946	0.1387046	0.1402438	0.1345245	0.1347189
708	0.1439031	0.1425945	0.1368354	0.136532	0.1410207	0.1386846	0.1402521	0.1344442	0.1345001
710	0.1439181	0.1425224	0.1368243	0.1365541	0.1410838	0.1387218	0.1402909	0.1344017	0.1343281
712	0.1439962	0.142516	0.1368767	0.1366265	0.1412159	0.1388089	0.1404179	0.1344126	0.1342379
714	0.1441254	0.1425731	0.1369644	0.1367656	0.1414082	0.1389565	0.1405773	0.1344777	0.1342145
716	0.1443132	0.1426852	0.1371154	0.1369567	0.1416436	0.1391573	0.1407916	0.1345959	0.1342594
718	0.1445554	0.1428502	0.1373197	0.1372102	0.1419323	0.1394295	0.1410431	0.1347498	0.1343634
720	0.1448724	0.1431234	0.1375825	0.1375296	0.1422964	0.1397635	0.1413776	0.1349738	0.1345668
722	0.1452491	0.1434347	0.1378898	0.1379148	0.1427034	0.1401714	0.1417405	0.1352458	0.1348061
724	0.1456684	0.143817	0.1382535	0.1383427	0.1431563	0.1406055	0.142149	0.1355524	0.1351251
726	0.1461677	0.1442886	0.1386932	0.1388649	0.1437056	0.1411663	0.1426276	0.1359372	0.1355204
728	0.1467082	0.144818	0.1391822	0.1394345	0.1442904	0.1417415	0.1431428	0.1363534	0.1359778
730	0.147276	0.1453604	0.1396684	0.1400123	0.144868	0.1423442	0.1436654	0.1367959	0.1364403
732	0.147877	0.1459591	0.1402	0.1406343	0.1455048	0.1429814	0.1442355	0.1372684	0.1369683
734	0.1485065	0.1465916	0.1407545	0.1412867	0.1461467	0.1436315	0.1448263	0.137759	0.13749
736	0.1490866	0.147171	0.1412548	0.1418675	0.1467336	0.1442164	0.1453691	0.1381912	0.137998
738	0.1496947	0.1477779	0.1417655	0.1424791	0.147321	0.1448153	0.1459382	0.1386452	0.1385027
740	0.1502968	0.1483758	0.1422789	0.1431047	0.1479007	0.1453886	0.1465041	0.1390914	0.1390088
742	0.1508516	0.148928	0.1427439	0.143647	0.1484192	0.145893	0.1470487	0.1395004	0.1394649
744	0.1513924	0.1494717	0.1431887	0.1441958	0.148904	0.1463673	0.1475655	0.1398837	0.1398957
746	0.1519179	0.1499738	0.1435984	0.1447039	0.1493714	0.1468067	0.1480766	0.1402408	0.1403138
748	0.1524155	0.1504461	0.1439934	0.1451892	0.1498028	0.1472083	0.1485558	0.1405882	0.140703
750	0.1528455	0.1508833	0.1443318	0.1456244	0.150179	0.1475651	0.1489948	0.1408853	0.1410302
752	0.1532252	0.151253	0.1446294	0.1460031	0.1505225	0.1478618	0.1493777	0.1411351	0.1413186
754	0.1535235	0.1515476	0.1448699	0.1463076	0.1507915	0.1481019	0.1496973	0.1413373	0.1415289
756	0.1537177	0.1517373	0.1450259	0.1465069	0.151001	0.1482679	0.1499002	0.1414514	0.1416872
758	0.1537967	0.1518368	0.1451036	0.1466158	0.1511243	0.1483441	0.1500037	0.1415103	0.1417288
760	0.153778	0.1518374	0.1451143	0.146639	0.1511803	0.1483639	0.1500128	0.1415088	0.1416953
762	0.1536713	0.1517655	0.1450678	0.1465861	0.1511886	0.1483503	0.1499439	0.1414586	0.1415941
764	0.1535372	0.1516711	0.1449945	0.1465145	0.1511622	0.1483082	0.1498294	0.1414217	0.1414725
766	0.1533994	0.1515566	0.144922	0.1464286	0.1511505	0.1482846	0.1497127	0.1414096	0.1413417
768	0.1532256	0.1514242	0.1448404	0.1463244	0.1511346	0.148245	0.1495553	0.1413901	0.1411862
770	0.1530156	0.1512344	0.1447128	0.1461738	0.1511086	0.1481678	0.1493468	0.1413554	0.140993
772	0.1526922	0.1509545	0.1444743	0.1459341	0.1510246	0.1479864	0.149061	0.1412154	0.1407211
774	0.152343	0.1506564	0.1442091	0.1456631	0.1509332	0.1477616	0.1487419	0.1410337	0.1404313
776	0.1519738	0.1503417	0.1439632	0.1453961	0.1508154	0.1475199	0.1484181	0.1408033	0.1401571
778	0.1516638	0.1500654	0.1437265	0.1451966	0.1507764	0.1473212	0.1481783	0.1405615	0.1399245
780	0.1513622	0.1498087	0.1435167	0.1449926	0.1507092	0.1471051	0.1479392	0.1403157	0.1397053
782	0.1510628	0.149524	0.1432889	0.1447881	0.1505986	0.1468577	0.1476934	0.1400279	0.139469
784	0.1508469	0.1493137	0.1431267	0.144642	0.1505259	0.1466899	0.1475292	0.1398353	0.1393039
786	0.1506821	0.1491492	0.142999	0.1445356	0.1504686	0.1465611	0.1474165	0.1396886	0.1391893
788	0.1505527	0.1490045	0.1428919	0.1444445	0.1504176	0.1464553	0.1473365	0.1395758	0.1391072
790	0.150454	0.1488901	0.1427995	0.1443712	0.1503812	0.1463681	0.1472803	0.1394849	0.1390453
792	0.150373	0.1487943	0.1427186	0.1443104	0.1503419	0.146292	0.147245	0.1394103	0.1390127
794	0.1503027	0.1487071	0.1426428	0.1442606	0.1503058	0.1462183	0.1472152	0.1393389	0.1389774
796	0.1502467	0.148639	0.1425809	0.1442229	0.1502784	0.1461603	0.1472003	0.1392689	0.1389595
798	0.1502207	0.1485923	0.1425413	0.1442111	0.1502705	0.1461211	0.1472033	0.1392206	0.138963
800	0.1502072	0.1485677	0.142512	0.1442159	0.1502735	0.1460916	0.1472305	0.1391821	0.1389972
802	0.1502274	0.1485845	0.14251	0.1442486	0.1503077	0.1460917	0.147282	0.1391713	0.139058
804	0.1502806	0.1486239	0.1425388	0.1443071	0.1503768	0.1461373	0.1473648	0.1391794	0.1391511
806	0.1503692	0.1487011	0.1425944	0.1444044	0.1504668	0.146202	0.147471	0.139221	0.1392735
808	0.15048	0.1488042	0.1426775	0.1445302	0.1505852	0.1463071	0.1475983	0.1392835	0.1394262
810	0.1506465	0.1489691	0.1428054	0.144697	0.1507446	0.1464584	0.1477809	0.1393856	0.1396323
812	0.1508388	0.1491664	0.1429615	0.1448967	0.1509389	0.1466584	0.1479793	0.1395152	0.1398721
814	0.1510749	0.1494114	0.1431594	0.1451397	0.1511839	0.1468958	0.1481984	0.1396742	0.1401545

816	0.1513668	0.1497228	0.1434112	0.1454433	0.1514803	0.1472003	0.1484815	0.1398939	0.1404967
818	0.1517191	0.1501066	0.1437192	0.1458034	0.1518388	0.1475772	0.1488063	0.1401624	0.1408973
820	0.1521096	0.1505334	0.1440684	0.1462065	0.1522406	0.1480068	0.1491491	0.1404712	0.1413425
822	0.1525565	0.1510381	0.144475	0.1466771	0.1527158	0.14851	0.1495519	0.1408277	0.1418525
824	0.1530775	0.1516387	0.1449678	0.1472338	0.1532712	0.1491193	0.1500069	0.1412622	0.1424453
826	0.1536393	0.1522927	0.1455079	0.1478357	0.1538806	0.1497782	0.1504826	0.1417411	0.1430759
828	0.1542219	0.1529857	0.1460654	0.1484688	0.154536	0.1504815	0.1509779	0.1422449	0.1437404
830	0.1548118	0.1536939	0.1466357	0.1491098	0.1552031	0.1511979	0.1514594	0.1427567	0.144415
832	0.1554102	0.1544544	0.1472283	0.1497812	0.1559012	0.1519482	0.151962	0.1433012	0.1451045
834	0.1559777	0.155159	0.1477882	0.1504124	0.1565789	0.1526547	0.1524254	0.1438134	0.1457641
836	0.1564692	0.1557919	0.1482895	0.1509795	0.1571947	0.153287	0.1528284	0.1442831	0.1463428
838	0.1569519	0.1564082	0.1487721	0.1515354	0.1577804	0.1539024	0.1532123	0.1447416	0.1468896
840	0.1573745	0.1569685	0.149203	0.1520419	0.1583281	0.154471	0.1535605	0.1451627	0.1473782
842	0.1577184	0.1574384	0.149575	0.1524602	0.1587794	0.1549412	0.1538453	0.1455044	0.1477838
844	0.1580644	0.1579128	0.149938	0.1528837	0.159231	0.1553919	0.1541374	0.1458419	0.148181
846	0.1584094	0.1583679	0.1502852	0.1532952	0.1596832	0.1558294	0.1544274	0.1461772	0.1485599
848	0.1587316	0.1587951	0.1506196	0.153675	0.160106	0.1562436	0.1547097	0.1464887	0.1489341
850	0.1590659	0.1592367	0.150963	0.1540676	0.1605267	0.1566673	0.1549973	0.1468164	0.1493141
852	0.1594117	0.1596747	0.1513132	0.154465	0.1609491	0.1570978	0.1552982	0.1471407	0.1496937
854	0.1597987	0.1601374	0.1516906	0.1548904	0.1613998	0.1575556	0.1556359	0.147491	0.1501195
856	0.1601997	0.1606117	0.1520745	0.1553162	0.1618471	0.1580056	0.1559944	0.1478428	0.1505569
858	0.1606335	0.1610949	0.1524746	0.1557724	0.1623029	0.158483	0.1563842	0.1482076	0.1510346
860	0.1611175	0.1616244	0.1529174	0.1562601	0.1627987	0.1589963	0.1568242	0.1486105	0.1515635
862	0.1616516	0.1621868	0.1533853	0.156789	0.1633226	0.1595413	0.1573144	0.1490419	0.1521515
864	0.1622035	0.1627475	0.1538676	0.1573193	0.1638285	0.1600993	0.1578348	0.1494753	0.1527721
866	0.1628599	0.1633827	0.1544242	0.1579276	0.1644038	0.1607264	0.1584419	0.149969	0.1534934
868	0.1635727	0.1640577	0.1550185	0.1585884	0.1650007	0.1614012	0.1591159	0.1504911	0.1542782
870	0.164336	0.1647478	0.1556447	0.1592688	0.1656253	0.162104	0.1598404	0.1510317	0.1550966
872	0.1651888	0.1655001	0.15633	0.1600152	0.1662857	0.1628658	0.160653	0.151623	0.1559909
874	0.1661706	0.1663304	0.157106	0.1608522	0.1670176	0.1637244	0.1615923	0.15228	0.156964
876	0.1672247	0.1672068	0.1579259	0.1617368	0.1677701	0.1646198	0.1626068	0.1529683	0.1579837
878	0.1683846	0.168131	0.1588037	0.1626976	0.1685682	0.1655822	0.163731	0.1537083	0.1590581
880	0.169657	0.1691182	0.1597521	0.1637233	0.16941	0.1666171	0.1649668	0.1544969	0.1602132
882	0.1709952	0.1701184	0.1607169	0.1647727	0.1702347	0.1676684	0.1662733	0.1552762	0.1613951
884	0.1724889	0.1712263	0.1618003	0.1659512	0.1711656	0.1688398	0.1677469	0.1561691	0.162708
886	0.1740044	0.1723515	0.162899	0.1671345	0.1720998	0.1700201	0.1692342	0.1570619	0.1640503
888	0.1756568	0.1735602	0.1640942	0.1684247	0.1731042	0.1712933	0.1708782	0.1580203	0.1655271
890	0.1773233	0.1747817	0.1653014	0.1697261	0.1741193	0.1725849	0.1725239	0.158999	0.1670306
892	0.1788955	0.1759461	0.1664432	0.1709419	0.175078	0.1738043	0.1740698	0.1599137	0.1684648
894	0.1804839	0.1771333	0.167612	0.1721898	0.1760712	0.1750553	0.1756403	0.1608576	0.1699486
896	0.1821026	0.1783496	0.1688058	0.1734525	0.1770879	0.176332	0.1772296	0.1618158	0.1714559
898	0.183696	0.1795375	0.169989	0.1746947	0.1780841	0.1775898	0.1787899	0.1627596	0.1729639
900	0.1853603	0.1807624	0.1712136	0.1759681	0.179102	0.1788827	0.1804208	0.163729	0.1745507
902	0.1871827	0.1820601	0.1725572	0.177363	0.1801949	0.1802793	0.1822233	0.1647729	0.176284
904	0.1892139	0.1834639	0.1740288	0.1788929	0.1813595	0.1817956	0.184238	0.1658989	0.17823
906	0.1914307	0.1849697	0.1755915	0.1805248	0.1826023	0.1834175	0.1864569	0.1671242	0.1803509
908	0.1937935	0.1865323	0.1772505	0.1822392	0.1838729	0.1851181	0.1888044	0.168427	0.182599
910	0.1964456	0.1883	0.1791211	0.1842198	0.1853149	0.1870673	0.1915189	0.1698521	0.1851691
912	0.1991835	0.1901474	0.1810968	0.1862736	0.1868392	0.1890818	0.194269	0.1713275	0.1878187
914	0.2018736	0.1919944	0.1830621	0.1882838	0.1883622	0.1911277	0.196952	0.1728058	0.1904178
916	0.2047462	0.1940296	0.1851825	0.1904731	0.1900871	0.193345	0.1997891	0.1744402	0.1931775
918	0.2076658	0.1962552	0.187413	0.1927733	0.1919512	0.1957244	0.2026486	0.1761944	0.1960247
920	0.2104866	0.1985096	0.1896448	0.195078	0.1938865	0.1981506	0.2053787	0.1779763	0.1987993
922	0.2132571	0.2008615	0.1919294	0.1974353	0.1959488	0.2006904	0.207997	0.17984	0.2015704
924	0.2159438	0.2034103	0.1943017	0.199893	0.1982294	0.2034106	0.2104828	0.1818306	0.2043381
926	0.2184073	0.2060116	0.1966377	0.2023128	0.2006104	0.2061639	0.2126646	0.183851	0.2069327
928	0.2204518	0.2085833	0.1988278	0.2045912	0.2030441	0.2088572	0.214331	0.1858449	0.2092118
930	0.2221173	0.2111369	0.2008707	0.2067411	0.2055431	0.2114989	0.2155381	0.187803	0.2111823
932	0.2233867	0.2137594	0.2028216	0.2088243	0.2082192	0.2141985	0.2162033	0.1898169	0.2128611
934	0.2242928	0.2163813	0.2046437	0.2108043	0.2109799	0.2168609	0.2164078	0.1918216	0.2142523
936	0.2249781	0.2189677	0.206372	0.2127112	0.2137785	0.2194895	0.2163068	0.1938298	0.2154665
938	0.2256822	0.2218502	0.2082836	0.2148465	0.2169317	0.2224222	0.2161303	0.1960713	0.2167751
940	0.2266564	0.2251159	0.2105042	0.2173394	0.220485	0.225773	0.2161383	0.1986426	0.2184117
942	0.2280967	0.2287099	0.2130883	0.2202222	0.2243402	0.2295065	0.2166091	0.2015176	0.22051
944	0.2301358	0.2328538	0.2161871	0.2236708	0.2287049	0.233839	0.2176408	0.2048479	0.2232429
946	0.2331252	0.2378626	0.2201177	0.2280158	0.2338787	0.2391309	0.2195619	0.2088982	0.2269488
948	0.2368185	0.2434089	0.2246023	0.2329596	0.2395378	0.2450138	0.2221816	0.2134156	0.2313756
950	0.2411451	0.2493918	0.2295756	0.2384168	0.2455868	0.2514042	0.2254617	0.2183118	0.2364577

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points; 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	28	29	30	31	32	33	34	35	36
Sample Numb	"0219s"	"0220s"	"0311S"	"0312S"	"0313S"	"314S"	"315S"	"316S"	"318S"
400	0.4216431	0.4221345	0.4360455	0.471044	0.5078487	0.4968925	0.5051789	0.4719531	0.4537621
402	0.4424535	0.4388928	0.4531707	0.4944344	0.533318	0.5195351	0.5314584	0.494493	0.4712887
404	0.4623252	0.4548912	0.4709977	0.5178887	0.5580521	0.5411463	0.5537146	0.5161493	0.4915125
406	0.4800147	0.469839	0.4876768	0.538587	0.5778975	0.5602558	0.5762311	0.5373324	0.5108156
408	0.4962821	0.4836532	0.5027525	0.5565946	0.596517	0.579232	0.5955039	0.5552792	0.5292996
410	0.509547	0.4954461	0.5152497	0.5720432	0.6132442	0.5953786	0.6123071	0.5724681	0.5444264
412	0.5210202	0.5056469	0.5272226	0.586832	0.6290658	0.6108727	0.6287935	0.5877331	0.5585847
414	0.5299025	0.513911	0.5371804	0.5996403	0.6419443	0.6232319	0.6425675	0.6009113	0.5708401
416	0.5364671	0.5209472	0.544759	0.6103591	0.6515872	0.6320998	0.6533425	0.6115616	0.5812924
418	0.5409784	0.5256866	0.5501102	0.6182397	0.6586803	0.6395004	0.660821	0.6190833	0.5894887
420	0.5437388	0.5291041	0.5541533	0.6244611	0.6630014	0.6446251	0.6670628	0.6251196	0.5955544
422	0.5444562	0.5295387	0.5560242	0.6277522	0.6655033	0.6467612	0.669803	0.6281085	0.5978932
424	0.5424638	0.5289707	0.5563578	0.6289692	0.6655518	0.6467244	0.6703598	0.6292545	0.5992664
426	0.539407	0.5270615	0.5541618	0.6282889	0.6631667	0.6445765	0.6683044	0.628289	0.5986766
428	0.5346233	0.5226607	0.5508727	0.6250004	0.6581995	0.6398147	0.6649328	0.6246092	0.5958722
430	0.5285664	0.5178766	0.5457734	0.6211051	0.6524948	0.634224	0.6591915	0.6206703	0.5917733
432	0.5217031	0.5116491	0.5393721	0.6147671	0.6443837	0.6276491	0.6516039	0.6143503	0.5856961
434	0.5138549	0.5039438	0.5316229	0.6068984	0.6343011	0.6195886	0.6436077	0.6060886	0.5784017
436	0.5066347	0.4971149	0.5247323	0.5991109	0.6251454	0.6109349	0.6339498	0.5986803	0.5712016
438	0.4988445	0.489603	0.517116	0.5900887	0.6146979	0.6024711	0.6238237	0.5902917	0.5627109
440	0.4911867	0.4821679	0.5094633	0.581117	0.6042725	0.5932091	0.6138676	0.5810289	0.5546092
442	0.4838309	0.4749803	0.5020536	0.5721443	0.5939493	0.5847457	0.604436	0.5725223	0.5463288
444	0.4770385	0.4678279	0.4952304	0.5635808	0.584835	0.5764897	0.5953599	0.5645465	0.5384541
446	0.471188	0.4615251	0.4887285	0.5545328	0.5755658	0.5684429	0.586626	0.5570307	0.530979
448	0.465488	0.4558007	0.4829286	0.5462558	0.5672746	0.5614633	0.5784487	0.5498404	0.5243976
450	0.4600716	0.4507015	0.4779151	0.5386308	0.559756	0.5551377	0.5714557	0.5434254	0.5187052
452	0.4557346	0.446051	0.4731869	0.5319118	0.5524483	0.5493042	0.5646992	0.537901	0.5129497
454	0.4516678	0.4418875	0.4687543	0.525041	0.5461667	0.543634	0.5584236	0.5324889	0.5080106
456	0.447671	0.438411	0.465421	0.5195587	0.5402668	0.5391667	0.5532396	0.5280688	0.5033458
458	0.4442582	0.4351727	0.4623125	0.5141854	0.5351425	0.535045	0.5480652	0.5238959	0.4996147
460	0.4411875	0.4324204	0.4593796	0.5092692	0.5305476	0.5309145	0.5438896	0.5199555	0.4957152
462	0.4382528	0.4297654	0.4566496	0.5049618	0.5258525	0.5272545	0.5397319	0.5163814	0.4920945
464	0.4353413	0.4272578	0.4541541	0.5007082	0.5217693	0.5238485	0.5357757	0.5127257	0.4887799
466	0.4324325	0.4248393	0.4515629	0.4964557	0.5176471	0.5200878	0.5315847	0.5092541	0.4853953
468	0.4296769	0.4225441	0.44911	0.4925829	0.5135715	0.5166478	0.5278787	0.5056587	0.4819614
470	0.4266636	0.4205368	0.44637	0.4888339	0.5099804	0.5129573	0.5242313	0.5022197	0.4780796
472	0.4240357	0.4185536	0.4442298	0.4854006	0.506529	0.5098733	0.5204334	0.4990458	0.4749593
474	0.4213504	0.416064	0.4417192	0.4818033	0.5026266	0.5060509	0.5166358	0.4954959	0.4716269
476	0.4185761	0.413873	0.4395955	0.4782885	0.4991794	0.502553	0.5134082	0.4920551	0.4682857
478	0.4162202	0.4120502	0.4369433	0.4754632	0.4960824	0.4994751	0.5099268	0.4888396	0.4649662
480	0.4139449	0.4101115	0.434911	0.4722705	0.492674	0.4960909	0.5065573	0.4859016	0.46207
482	0.4114314	0.4085125	0.4334288	0.4696993	0.4898825	0.4932047	0.5038654	0.4832925	0.4595495
484	0.4092256	0.4070648	0.4315357	0.4671458	0.4872786	0.4905234	0.5013198	0.4807105	0.4572093
486	0.4070496	0.405248	0.4295988	0.4642582	0.4846737	0.4879679	0.4984481	0.478127	0.4548699
488	0.4039882	0.4034945	0.4272977	0.4610258	0.4814768	0.4849295	0.4953766	0.4744501	0.4513252
490	0.4010812	0.4014168	0.4251771	0.4583834	0.4789087	0.4820133	0.4927849	0.4716959	0.4485932
492	0.3977526	0.3987487	0.4221786	0.4545223	0.4753417	0.4777631	0.488606	0.4675378	0.4449878
494	0.3939286	0.3960458	0.4185103	0.4498024	0.4718689	0.473764	0.4844596	0.463248	0.440551
496	0.388807	0.3917627	0.4140386	0.4437812	0.466857	0.4677522	0.4792202	0.4571101	0.4351434
498	0.3844722	0.388599	0.4095061	0.4386978	0.4626419	0.4627129	0.4740965	0.4514612	0.4299237
500	0.3790049	0.3840886	0.4038276	0.4318054	0.4568602	0.4554469	0.4673769	0.4440241	0.4228579
502	0.3725962	0.3787576	0.3971642	0.4241751	0.4503137	0.447617	0.460003	0.4355702	0.4151849
504	0.3659399	0.3734696	0.3905845	0.416336	0.4437003	0.4397241	0.4521206	0.4272772	0.407386
506	0.3593936	0.368208	0.3836386	0.4081645	0.436967	0.4315528	0.4442152	0.4182774	0.3989015
508	0.3530146	0.3630534	0.3765487	0.4003088	0.4304396	0.4228421	0.4358302	0.4091913	0.3903525
510	0.3470275	0.358325	0.3701833	0.3934008	0.4244488	0.4155431	0.4288608	0.4010603	0.3829622
512	0.3414083	0.3541983	0.3644732	0.3864579	0.4192203	0.4084395	0.4224922	0.3939029	0.3764632
514	0.336801	0.3503027	0.3592095	0.3810206	0.4151063	0.4028507	0.4168507	0.3874309	0.3703473
516	0.3335701	0.3480988	0.3557141	0.3770135	0.4126628	0.3980936	0.4133569	0.3824778	0.365706
518	0.3315195	0.3466724	0.3531205	0.3744922	0.4110933	0.3951997	0.4110564	0.3793075	0.362951

520	0.3299905	0.3460705	0.3519045	0.3732871	0.411603	0.3938567	0.4105006	0.3775435	0.3615018
522	0.3301149	0.3470754	0.3523927	0.3735963	0.4137386	0.3941071	0.4117136	0.377522	0.3615009
524	0.3315636	0.3489753	0.3537102	0.3758748	0.4163904	0.3955286	0.4143666	0.3789634	0.3635139
526	0.3325095	0.3509901	0.3558865	0.3788511	0.4208375	0.3976674	0.4180233	0.3817056	0.3664114
528	0.3352615	0.3547938	0.3598341	0.3830101	0.4265549	0.4016774	0.4234827	0.3856777	0.3705684
530	0.3384341	0.3584782	0.3636961	0.38819	0.4328617	0.4060547	0.4294662	0.3905965	0.3755518
532	0.3414015	0.3624951	0.3676191	0.3932311	0.43908	0.4105097	0.4350004	0.3958353	0.3809364
534	0.3442961	0.3667068	0.3721027	0.3979869	0.4450394	0.4153802	0.4414665	0.40039	0.3861889
536	0.3471299	0.3702294	0.3756415	0.4027917	0.4502299	0.419309	0.4471736	0.4046903	0.3907596
538	0.3490289	0.3729475	0.3790851	0.4067867	0.4545638	0.4224375	0.4521184	0.4082401	0.394639
540	0.3505096	0.3755125	0.3815979	0.4099883	0.4580039	0.425221	0.4553485	0.4109923	0.397285
542	0.3511908	0.3772099	0.3834014	0.4122198	0.4605006	0.4264035	0.4580834	0.4127587	0.3990741
544	0.351302	0.3781696	0.3841449	0.4130903	0.4611938	0.4267341	0.4593118	0.4132462	0.3997793
546	0.3504943	0.3784597	0.3843488	0.4137574	0.461443	0.4260987	0.4597508	0.4128634	0.3997936
548	0.3493209	0.378109	0.3840145	0.4131561	0.4601834	0.4250156	0.4594794	0.4119824	0.3987005
550	0.3478262	0.3777344	0.3832831	0.4125094	0.4589758	0.42333	0.458456	0.4105623	0.397606
552	0.3460044	0.3770517	0.3823406	0.4114516	0.4572577	0.4213413	0.4574046	0.4090498	0.3964405
554	0.3445688	0.3763472	0.3813561	0.4102369	0.4557989	0.4197662	0.4562717	0.4074463	0.3949481
556	0.343474	0.3758575	0.3806534	0.409585	0.454787	0.4182746	0.4554452	0.406412	0.3937916
558	0.3422388	0.3754866	0.380181	0.4088387	0.4542195	0.4173813	0.4553312	0.4057887	0.3930998
560	0.3417535	0.3756728	0.3805211	0.4088612	0.454684	0.4173093	0.4557797	0.4060594	0.3932489
562	0.3418117	0.3764101	0.381339	0.4097739	0.456104	0.4182874	0.4574648	0.4069994	0.3943275
564	0.3420756	0.3777194	0.3824685	0.410636	0.4583001	0.4192267	0.459474	0.4086528	0.3962392
566	0.3427075	0.3788421	0.3835092	0.4116025	0.4602623	0.4204182	0.4617895	0.4104427	0.3977334
568	0.3432018	0.3797207	0.3845736	0.4124152	0.4622006	0.4215742	0.4639764	0.4118645	0.3992248
570	0.3428589	0.3800593	0.3846166	0.4123936	0.4631088	0.4218741	0.4650923	0.4125916	0.3996812
572	0.3418568	0.3793786	0.3839064	0.4109484	0.4622745	0.4206424	0.4646338	0.4119135	0.3988001
574	0.3393154	0.3772314	0.3811364	0.4074478	0.4595648	0.417668	0.4618274	0.4091443	0.3955908
576	0.3352226	0.3733695	0.3765978	0.401841	0.4539946	0.4118987	0.4562964	0.4038239	0.3901756
578	0.3296498	0.3679735	0.3701701	0.3942995	0.4456165	0.4043795	0.4482003	0.3964483	0.3823892
580	0.3223801	0.3607367	0.3618977	0.3845197	0.4346649	0.3944614	0.4375623	0.3864851	0.3721608
582	0.3135521	0.3519005	0.3516369	0.3726615	0.4208454	0.3822681	0.423824	0.3741889	0.3596987
584	0.3042377	0.3421777	0.3405429	0.3600287	0.4060764	0.3692575	0.4091128	0.3609821	0.3462692
586	0.2945851	0.3318231	0.3286532	0.3463963	0.3901991	0.3554038	0.3932906	0.3468869	0.3319733
588	0.2837962	0.3204583	0.3160227	0.3320417	0.3733192	0.3407771	0.3762668	0.3319822	0.3170536
590	0.273402	0.3095347	0.303639	0.3180947	0.3569224	0.326878	0.3598029	0.3175459	0.3024161
592	0.2635108	0.2987507	0.291465	0.3047736	0.341458	0.3135597	0.3438567	0.3037277	0.2886188
594	0.2541337	0.2884451	0.2799473	0.2918738	0.326664	0.300747	0.3287857	0.2907332	0.2755128
596	0.2452133	0.2785836	0.2688692	0.2795763	0.3128572	0.2888105	0.3144603	0.2784579	0.2631261
598	0.2375739	0.2698497	0.2591155	0.2687484	0.3005944	0.278473	0.3017738	0.2677762	0.2525008
600	0.2308074	0.2621259	0.2503317	0.259319	0.289869	0.2693896	0.2904308	0.2584948	0.2430922
602	0.2246647	0.25502	0.2423943	0.2505032	0.2801836	0.2612833	0.2801414	0.2500651	0.2345225
604	0.2194311	0.2488437	0.2353331	0.242861	0.2718491	0.2543388	0.2712243	0.2428575	0.227089
606	0.2150816	0.2436712	0.2293655	0.2364548	0.2648638	0.2484519	0.2637702	0.2368898	0.2209331
608	0.2111871	0.2389166	0.2238974	0.2305937	0.2585721	0.2432955	0.2568542	0.2314475	0.2152346
610	0.2078666	0.2347963	0.2190443	0.2255114	0.2531903	0.2387948	0.2508418	0.2268139	0.2103464
612	0.2051305	0.2314247	0.2151194	0.2213579	0.2487331	0.2352647	0.2459563	0.2230265	0.2062601
614	0.2026917	0.228388	0.2114991	0.2175916	0.2448741	0.2321145	0.2415707	0.2196021	0.2025148
616	0.2003626	0.2255732	0.2080577	0.2140559	0.2412626	0.2290682	0.2374259	0.2163795	0.1989438
618	0.1985376	0.2233621	0.2054075	0.211248	0.2383125	0.2267197	0.2341329	0.213759	0.1960752
620	0.1968079	0.2212583	0.2028105	0.2086735	0.235717	0.2244929	0.2311595	0.2113768	0.1933576
622	0.1951966	0.219435	0.2005708	0.206335	0.2332795	0.2226121	0.228419	0.2091837	0.1908641
624	0.1936246	0.2176829	0.1984155	0.204179	0.2310594	0.2207045	0.2260015	0.2070747	0.1885518
626	0.1920528	0.2160469	0.1965443	0.2022423	0.2290326	0.2188899	0.2237136	0.2052003	0.1864648
628	0.1905354	0.2144673	0.1947324	0.2003998	0.2269994	0.2170906	0.2215443	0.2033746	0.1845324
630	0.1887594	0.2128346	0.1929462	0.1985136	0.2249755	0.215342	0.2194138	0.2014969	0.1825707
632	0.1868676	0.2111203	0.1911935	0.1966542	0.222972	0.2133657	0.2174059	0.1996055	0.1806819
634	0.1849544	0.2094172	0.1894103	0.1947771	0.2209656	0.211375	0.2153351	0.1977106	0.1789311
636	0.1827334	0.207506	0.1875955	0.1928295	0.2187161	0.2091103	0.2131982	0.1957162	0.1770364
638	0.1803301	0.2054789	0.1856798	0.1907726	0.2163833	0.2067076	0.2109864	0.1936244	0.1751833
640	0.1779873	0.2034305	0.1838749	0.1888364	0.2141339	0.2043133	0.2088502	0.1915879	0.173481
642	0.1753389	0.201219	0.1818876	0.1866913	0.2116389	0.2016754	0.206547	0.1894258	0.1716505
644	0.1726071	0.1988951	0.179843	0.184527	0.2090826	0.1989713	0.2041889	0.1872104	0.1698267
646	0.169965	0.1966819	0.1779786	0.1824279	0.2066721	0.1963154	0.2019735	0.1850957	0.1681302
648	0.1672243	0.194336	0.1759887	0.1802756	0.2041959	0.1935729	0.1996823	0.1829249	0.1663546
650	0.164446	0.1919897	0.1740014	0.1780956	0.2016626	0.1908001	0.1973871	0.1807315	0.1646044
652	0.1618693	0.1897477	0.172146	0.1760569	0.1992761	0.188188	0.1952286	0.1786831	0.1630132
654	0.1593399	0.1875288	0.1702955	0.1740531	0.1970246	0.1855988	0.1930824	0.1767064	0.1613692
656	0.1568392	0.1853209	0.1684698	0.1720756	0.1947291	0.1831235	0.1909939	0.1746904	0.1598011
658	0.1544691	0.1832264	0.1667347	0.1701621	0.1925196	0.1807239	0.1889569	0.1727808	0.158215
660	0.1523159	0.1812702	0.1650736	0.1683603	0.1905461	0.1785295	0.1870604	0.1709951	0.1568075
662	0.1502813	0.1793984	0.1634993	0.1666758	0.1886175	0.1764252	0.1852232	0.1693302	0.1554031
664	0.1483637	0.1776074	0.1619579	0.165013	0.1867763	0.174473	0.1834255	0.1676922	0.1540384
666	0.1465992	0.1759234	0.1604894	0.1634669	0.1850405	0.1726214	0.1817086	0.1661572	0.1527345

668	0.1449512	0.1743358	0.1590556	0.1619637	0.1833707	0.1708923	0.180048	0.1646928	0.1514701
670	0.1433839	0.1727532	0.1576996	0.1605399	0.1818061	0.1692735	0.1784334	0.1633143	0.1502259
672	0.1419657	0.1713255	0.156427	0.1592237	0.180329	0.167811	0.1769123	0.1620227	0.1490912
674	0.1407211	0.1700299	0.155282	0.1580012	0.1790234	0.166495	0.1754943	0.1608838	0.1480518
676	0.1395152	0.1687206	0.1541777	0.1568173	0.1777194	0.1652079	0.1740874	0.1597399	0.1469724
678	0.1384344	0.167482	0.1530337	0.1556867	0.1764687	0.1639977	0.1726875	0.1586342	0.1460122
680	0.137371	0.1663234	0.15204	0.1546766	0.1753494	0.1629508	0.1714246	0.1576869	0.1450878
682	0.1363351	0.1651744	0.1510476	0.1536684	0.1742381	0.1619452	0.1701922	0.156741	0.1441597
684	0.1353368	0.1641016	0.1501137	0.1527329	0.1731804	0.1609749	0.1689871	0.1558281	0.1432811
686	0.1344108	0.1630751	0.1492365	0.1518084	0.1722407	0.1600551	0.1678385	0.1549496	0.1424356
688	0.1335545	0.1620651	0.1484139	0.1509571	0.1713346	0.1592117	0.1667053	0.1541458	0.1416453
690	0.1327211	0.1611088	0.1476068	0.1501496	0.1704608	0.1584236	0.1656565	0.1533647	0.1409067
692	0.1319341	0.1601735	0.1468749	0.1493686	0.1696469	0.1576559	0.1646378	0.1526281	0.1402053
694	0.1312045	0.1593157	0.1462219	0.1487048	0.1688931	0.1569872	0.1636993	0.1519777	0.1395735
696	0.1305648	0.1585303	0.1456067	0.1480873	0.1682219	0.1563844	0.1628594	0.1513765	0.1389941
698	0.1299436	0.157774	0.1450611	0.1475187	0.1676156	0.1558482	0.162021	0.1508208	0.1385043
700	0.1293677	0.1570719	0.1445647	0.1470061	0.1670576	0.1553462	0.1612758	0.1503318	0.1380408
702	0.1288951	0.1564558	0.1441738	0.1465731	0.1665949	0.1549662	0.1606389	0.1499336	0.1376764
704	0.1284423	0.1558869	0.1438434	0.1462073	0.166202	0.1546075	0.1600218	0.1495714	0.1373509
706	0.1280237	0.1553364	0.1435209	0.1458373	0.1658327	0.1542758	0.1594468	0.1492285	0.1370578
708	0.1276961	0.1548833	0.1433445	0.1456257	0.1655869	0.1540834	0.1590148	0.1490024	0.1368896
710	0.1274168	0.1544792	0.1431966	0.1454449	0.1653979	0.1539398	0.1586279	0.1488215	0.1367782
712	0.127189	0.1541455	0.1431791	0.1453436	0.1652928	0.1538544	0.1583049	0.148741	0.1367278
714	0.127027	0.153887	0.1431957	0.1452982	0.1652532	0.1538435	0.1580636	0.1486904	0.1367758
716	0.1269035	0.1536829	0.1433099	0.1453464	0.1653272	0.1539061	0.1579129	0.1487366	0.1368774
718	0.1268401	0.1535618	0.14352	0.1454562	0.16545	0.1540851	0.1578909	0.1488458	0.1370803
720	0.1268454	0.1535219	0.1438213	0.1456583	0.1656765	0.1543201	0.1579461	0.1490344	0.1373462
722	0.1269004	0.1535738	0.1442145	0.145943	0.1660374	0.1546375	0.1580801	0.1492874	0.1377079
724	0.1270084	0.1536876	0.1446835	0.1462699	0.1664594	0.1550068	0.1583241	0.1496125	0.1381272
726	0.1271972	0.1538924	0.1452776	0.1467211	0.1669945	0.1554984	0.1586874	0.1500155	0.1386664
728	0.1274283	0.1541865	0.1459396	0.1472314	0.1676114	0.1560503	0.1591466	0.1504863	0.1392625
730	0.1276785	0.1545047	0.1466153	0.1477612	0.1682208	0.1566006	0.159642	0.1509657	0.1398711
732	0.1279722	0.1548898	0.1473624	0.1483437	0.168935	0.1572161	0.1602311	0.1515126	0.1405382
734	0.1282863	0.1553005	0.1481249	0.1489622	0.169646	0.1578474	0.1608382	0.1520561	0.1412212
736	0.128589	0.1556972	0.1488349	0.1495641	0.1703368	0.158451	0.1614421	0.1525843	0.1418315
738	0.128905	0.156107	0.1495535	0.1501818	0.1710245	0.1590493	0.1620732	0.1531033	0.1424662
740	0.1292335	0.1565109	0.1502396	0.1508115	0.1716903	0.1596499	0.1627147	0.153621	0.1430613
742	0.1295387	0.1568804	0.1508523	0.1513956	0.1722944	0.160183	0.1632936	0.1540827	0.1435923
744	0.1298252	0.1572321	0.1514335	0.1519657	0.1728683	0.1606842	0.1638535	0.1545124	0.1440798
746	0.1301105	0.1575609	0.151963	0.1525168	0.1733962	0.161159	0.1643924	0.1549248	0.1445317
748	0.1303742	0.157851	0.1524483	0.1530471	0.1738876	0.1615912	0.1649015	0.1552942	0.1449292
750	0.1306022	0.1581017	0.1528667	0.1535006	0.1743089	0.1619876	0.1653371	0.1556166	0.1452741
752	0.1307925	0.1582879	0.1532272	0.1539032	0.1746769	0.1623289	0.1656918	0.1558942	0.1455616
754	0.1309219	0.1584055	0.153479	0.1542019	0.1749554	0.1625766	0.1659494	0.1560917	0.1457528
756	0.1310072	0.1584298	0.1536605	0.1544125	0.1751455	0.16276	0.1661032	0.1562311	0.1458923
758	0.1310083	0.1583609	0.1537221	0.1544805	0.175227	0.1628399	0.1661096	0.1562734	0.1459308
760	0.1309513	0.1581839	0.1536699	0.1544404	0.1752089	0.1628356	0.1659951	0.1562384	0.1459272
762	0.1308707	0.1579478	0.1535399	0.1543019	0.1751168	0.1627349	0.1657583	0.1561404	0.1458766
764	0.1307672	0.1576938	0.1533913	0.1541346	0.1749932	0.1626203	0.1654776	0.1560367	0.1458454
766	0.1306919	0.1574384	0.1532221	0.1539536	0.1748163	0.1624642	0.1651547	0.1559312	0.1458426
768	0.1306072	0.1571393	0.1530572	0.1537416	0.1746175	0.1622722	0.1647577	0.1558153	0.1458603
770	0.1304631	0.1567855	0.1528104	0.1534407	0.1743609	0.1620309	0.164313	0.1556537	0.1458241
772	0.1302311	0.1563436	0.1524708	0.1530275	0.1740088	0.1617185	0.1637661	0.1554143	0.1456515
774	0.1299744	0.1558513	0.1520989	0.1525624	0.1736544	0.1614137	0.1631995	0.155123	0.1453793
776	0.1297413	0.1553603	0.151696	0.15211	0.1733031	0.1611353	0.1626287	0.1548378	0.1450881
778	0.1295764	0.1549248	0.1512812	0.1516663	0.172973	0.1609476	0.1621233	0.1545762	0.144731
780	0.1294525	0.1545126	0.1508984	0.1512877	0.1726776	0.160767	0.1616771	0.1543292	0.1443682
782	0.1292887	0.1540951	0.1505117	0.1509096	0.1723572	0.1605635	0.1612075	0.1540569	0.144008
784	0.129181	0.153765	0.1502006	0.150631	0.1721282	0.1604179	0.1608353	0.1538562	0.1437408
786	0.1290869	0.1534904	0.1499548	0.1504298	0.1719427	0.1603056	0.1605356	0.1537135	0.1435492
788	0.1290023	0.1532509	0.1497411	0.1502698	0.1717802	0.1602021	0.1602568	0.1535923	0.1433905
790	0.1289397	0.1530434	0.1495551	0.1501383	0.1716489	0.1601186	0.1600137	0.1534935	0.1432677
792	0.1288845	0.1528668	0.1493954	0.1500378	0.1715366	0.1600467	0.1598198	0.1534236	0.143159
794	0.1288381	0.1527023	0.1492452	0.1499564	0.1714292	0.1599841	0.1596385	0.153352	0.1430557
796	0.1287987	0.1525651	0.1491139	0.1498963	0.1713453	0.159945	0.1594841	0.1532976	0.142963
798	0.1287742	0.1524567	0.1490081	0.1498571	0.1712874	0.1599201	0.1593612	0.153261	0.1428863
800	0.1287787	0.1523709	0.1489375	0.1498534	0.1712727	0.159932	0.1592826	0.1532511	0.1428499
802	0.1287975	0.1523329	0.1489148	0.1498891	0.1712931	0.1599749	0.1592429	0.1532763	0.142835
804	0.1288442	0.1523307	0.1489229	0.1499599	0.1713532	0.1600621	0.1592652	0.1533307	0.1428629
806	0.1289105	0.1523687	0.1489877	0.1500671	0.1714569	0.1601708	0.1593197	0.1534165	0.1429247
808	0.1290082	0.1524491	0.149094	0.1502106	0.1716002	0.1603147	0.1594275	0.1535324	0.143029
810	0.1291363	0.1525927	0.1492621	0.1504073	0.1718125	0.1605227	0.1596081	0.1536995	0.1431777
812	0.1292866	0.1527734	0.1494868	0.1506432	0.1720797	0.1607654	0.1598419	0.1539115	0.1433896
814	0.1294758	0.1530172	0.1497763	0.150928	0.1724035	0.1610699	0.1601343	0.1541622	0.1436483

816	0.1297135	0.1533393	0.1501603	0.1512691	0.1728088	0.1614331	0.1605206	0.1544819	0.1439872
818	0.1299856	0.1537294	0.1506298	0.1516755	0.1733143	0.161871	0.1610035	0.154869	0.1443972
820	0.1302935	0.1541893	0.1511801	0.1521293	0.1738784	0.1623608	0.161548	0.1552993	0.1448905
822	0.1306516	0.1547367	0.1518327	0.1526491	0.1745496	0.162933	0.1621948	0.1558093	0.1454691
824	0.1310757	0.1553856	0.1526296	0.1532511	0.1753489	0.163612	0.162973	0.156404	0.1461562
826	0.1315424	0.1561022	0.1534884	0.1539024	0.1762197	0.1643357	0.1638197	0.1570557	0.1469098
828	0.1320194	0.1568692	0.1544134	0.1545789	0.1771491	0.1650917	0.1647391	0.1577507	0.1477181
830	0.1325163	0.157657	0.1553695	0.1552734	0.1781018	0.1658885	0.1656655	0.1584579	0.1485527
832	0.1330266	0.1584767	0.1563659	0.1559768	0.1791058	0.1666926	0.1666314	0.1591916	0.1494256
834	0.1335128	0.159253	0.1572966	0.1566354	0.180051	0.1674628	0.1675538	0.1598863	0.1502486
836	0.1339436	0.1599615	0.1581265	0.1572171	0.1808892	0.1681547	0.1683819	0.1605047	0.1509899
838	0.1343711	0.1606307	0.1589125	0.1577683	0.1817085	0.1688105	0.1691714	0.1611027	0.1516926
840	0.1347517	0.1612316	0.1596152	0.1582627	0.1824404	0.1694071	0.1698843	0.1616438	0.1523452
842	0.1350813	0.1617246	0.1601835	0.1586647	0.1830515	0.1699024	0.1704845	0.1620885	0.1528723
844	0.1354038	0.1622078	0.160738	0.1590591	0.1836568	0.1703799	0.1710586	0.1625251	0.1533788
846	0.1357126	0.1626683	0.1612568	0.159444	0.1842149	0.1708377	0.1716123	0.1629494	0.1538721
848	0.136014	0.1631031	0.1617455	0.1598168	0.1847564	0.1712839	0.1721366	0.1633587	0.154328
850	0.1363206	0.1635518	0.162242	0.1602001	0.1853065	0.1717375	0.1726729	0.1637708	0.1547913
852	0.1366264	0.164	0.1627362	0.1605869	0.1858438	0.1721903	0.1732175	0.1641836	0.1552668
854	0.1369714	0.1644901	0.1632641	0.1610138	0.1864173	0.1726954	0.1737906	0.1646252	0.1557668
856	0.137318	0.164996	0.1637989	0.1614694	0.1870071	0.1731976	0.1743827	0.16509	0.1562846
858	0.1376962	0.1655277	0.1643677	0.161967	0.1876099	0.1737264	0.1749867	0.1655874	0.156812
860	0.1381044	0.1661083	0.1649833	0.1625173	0.1882714	0.1743285	0.1756711	0.1661371	0.1574238
862	0.1385633	0.1667436	0.1656507	0.1631284	0.1889789	0.174977	0.1763874	0.16674	0.1580743
864	0.1390386	0.1673994	0.1663453	0.1637814	0.1896971	0.1756381	0.1771169	0.1673613	0.1587476
866	0.1395788	0.1681516	0.1671236	0.1645301	0.1905203	0.1764091	0.1779528	0.168075	0.159525
868	0.1401612	0.1689557	0.1679593	0.1653549	0.1913851	0.1772162	0.1788424	0.1688332	0.1603406
870	0.1407468	0.169786	0.1688215	0.1662189	0.1922735	0.1780588	0.1797489	0.1696128	0.1611852
872	0.1413748	0.1706759	0.1697518	0.1671721	0.1932212	0.1789696	0.1807215	0.1704512	0.1620833
874	0.1420391	0.1716322	0.1707618	0.1682235	0.1942393	0.1799457	0.18177	0.1713417	0.1630302
876	0.1427009	0.1726093	0.1718121	0.1693217	0.1952763	0.1809517	0.1828384	0.1722415	0.1639929
878	0.1433765	0.1736245	0.1729015	0.1704977	0.1963455	0.1819972	0.1839449	0.1731588	0.1649886
880	0.1440681	0.1746842	0.1740631	0.1717608	0.1974446	0.1830948	0.1850951	0.1741274	0.1660171
882	0.1447323	0.1757509	0.1752174	0.1730795	0.1985551	0.1841986	0.1862503	0.1750839	0.1670322
884	0.1454947	0.1769245	0.1765114	0.1745379	0.1997695	0.1854304	0.187525	0.1761489	0.1681687
886	0.1462743	0.1781187	0.1778131	0.1760262	0.2010047	0.1866844	0.1888067	0.1772296	0.1693276
888	0.1471406	0.1794205	0.1792283	0.1776553	0.2023512	0.1880679	0.1902181	0.1784273	0.1705911
890	0.148025	0.1807489	0.1806803	0.1793086	0.2037263	0.1894832	0.1916453	0.1796534	0.1718989
892	0.1489038	0.1820327	0.1820786	0.1808859	0.2050678	0.1908553	0.1930341	0.1808439	0.1731776
894	0.1498185	0.1833584	0.1835199	0.182503	0.2064587	0.1922764	0.1944613	0.1820812	0.1745115
896	0.1507734	0.1847316	0.1849993	0.1841411	0.2079003	0.1937354	0.1959289	0.1833658	0.1758896
898	0.1517348	0.1860956	0.1864701	0.1857608	0.2093191	0.1951951	0.1973836	0.1846416	0.1772582
900	0.1527472	0.1875244	0.1879976	0.1874654	0.2107955	0.1967199	0.1988885	0.1859863	0.1786896
902	0.1538408	0.1890667	0.1896464	0.1893383	0.2123632	0.1983702	0.2004998	0.1874403	0.1802244
904	0.1550954	0.1907438	0.1914423	0.1914265	0.2140529	0.2001703	0.2022423	0.1890371	0.1818903
906	0.1564202	0.1925439	0.193367	0.1937038	0.2158252	0.2021021	0.2040738	0.1907538	0.1836163
908	0.1577755	0.1944503	0.1953918	0.1961093	0.2176626	0.2041284	0.2060011	0.1925498	0.1854115
910	0.1592789	0.1965695	0.1977015	0.1988415	0.2197577	0.2063926	0.2081521	0.1945725	0.1874747
912	0.1608498	0.1987734	0.2000963	0.2016393	0.221922	0.208756	0.2103945	0.1966686	0.1896118
914	0.1623818	0.200988	0.2025276	0.2044294	0.2240992	0.211117	0.2126834	0.1987622	0.191738
916	0.1640493	0.2034099	0.2052179	0.2073509	0.2265098	0.2136605	0.2151943	0.201016	0.1940574
918	0.1657788	0.2059771	0.2081276	0.210344	0.2291276	0.2163137	0.2178726	0.2033952	0.1965585
920	0.1675023	0.2085759	0.2111309	0.2132409	0.2318244	0.2189983	0.2206432	0.2057707	0.1991271
922	0.1692569	0.211283	0.2143061	0.2161268	0.2347116	0.2217581	0.2235599	0.2082265	0.201855
924	0.1710826	0.2141522	0.217721	0.2189697	0.2378649	0.2246101	0.2267145	0.2107911	0.2048171
926	0.1728722	0.2170513	0.2212359	0.2216109	0.241139	0.2274552	0.2299569	0.2133561	0.2078775
928	0.1745778	0.2198984	0.2247609	0.223878	0.2444865	0.2301562	0.2332242	0.2158236	0.2109597
930	0.1761983	0.2226956	0.2282774	0.2258155	0.2478857	0.2327437	0.2365032	0.2182055	0.2140711
932	0.1777713	0.2255516	0.2319448	0.2274233	0.2514909	0.2352849	0.2399548	0.220585	0.2173527
934	0.1792814	0.2283913	0.2356304	0.2287094	0.2551821	0.2377411	0.2434621	0.222924	0.2206941
936	0.1807563	0.2312086	0.2393133	0.2298033	0.258898	0.2401371	0.2469905	0.2252413	0.2240747
938	0.1824096	0.2343705	0.2434126	0.230997	0.2630665	0.2428006	0.2509701	0.2278456	0.2278782
940	0.1843384	0.2379803	0.2480415	0.2325255	0.2677678	0.245887	0.2554748	0.230869	0.2322005
942	0.1865782	0.2420154	0.2531175	0.2345541	0.2728732	0.2494192	0.2604302	0.2343082	0.2369459
944	0.1892557	0.2467044	0.258931	0.2372583	0.278679	0.2536096	0.2661076	0.238361	0.2423928
946	0.1926042	0.2524033	0.2658573	0.2409958	0.2855528	0.2588052	0.2728918	0.2433486	0.2488772
948	0.1964229	0.2587555	0.2735056	0.2455038	0.2930864	0.2646903	0.280367	0.2489665	0.2560433
950	0.2006547	0.2656851	0.2817457	0.2507215	0.3011398	0.2711724	0.288423	0.2551292	0.2637792

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	37	38	39	40	41	42	43	44	45
Sample Numb	"320S"	"0513ss	"0514ss"	"0515ss"	"0516ss"	"0521ss"	"0522ss"	"0523ss"	"0524ss"
400	0.5307149	0.395392	0.4148007	0.4061596	0.4097563	0.3778211	0.4647379	0.4237475	0.3431998
402	0.5568504	0.4146594	0.4346701	0.425703	0.4269626	0.395298	0.4889678	0.4450157	0.3583157
404	0.5838243	0.4329531	0.4540758	0.4454183	0.4459355	0.4126239	0.5117579	0.4666481	0.3747495
406	0.6078711	0.4494472	0.4721465	0.462082	0.4602758	0.427843	0.5339224	0.4860431	0.3869253
408	0.6310979	0.4658365	0.4896133	0.4785289	0.4742093	0.442111	0.5547895	0.5038432	0.3993991
410	0.650521	0.4795881	0.5037146	0.4920197	0.487818	0.4541461	0.5719027	0.5193898	0.4111921
412	0.6652738	0.4914238	0.5168678	0.5041081	0.4987585	0.4654312	0.5876176	0.5330329	0.4201927
414	0.6785467	0.5019166	0.5282323	0.5144454	0.5082085	0.4745473	0.6012146	0.5454333	0.4280882
416	0.6900206	0.5108973	0.5377163	0.5225745	0.5159393	0.4823751	0.6121511	0.5554513	0.4355519
418	0.6988256	0.5175394	0.5440714	0.5289128	0.5223054	0.4875679	0.6216463	0.5626668	0.4401513
420	0.7056118	0.5225682	0.548865	0.5332627	0.5262355	0.4918923	0.6275339	0.567509	0.4435838
422	0.7089979	0.5251923	0.5508111	0.5353407	0.5273892	0.4933586	0.6312849	0.5702729	0.4458868
424	0.7090787	0.5253287	0.5499151	0.5341666	0.5266661	0.4931288	0.6324424	0.5707087	0.4459849
426	0.7072138	0.5239155	0.5474908	0.531378	0.5246154	0.491027	0.6308942	0.5684984	0.445183
428	0.702502	0.5202052	0.5430755	0.5268793	0.5201926	0.487337	0.6267004	0.5646572	0.4429356
430	0.6964269	0.5149901	0.5368749	0.5207884	0.5145841	0.4823434	0.6211841	0.5583758	0.4391612
432	0.6882582	0.5084075	0.5284907	0.5131171	0.5078762	0.4761429	0.61374	0.5513358	0.4350433
434	0.6782765	0.4998701	0.5191703	0.5041872	0.499027	0.4685597	0.603543	0.5420916	0.429355
436	0.6688205	0.4913025	0.5088131	0.4948125	0.4904999	0.4613653	0.5931213	0.5331303	0.4232866
438	0.6585537	0.4821599	0.4982814	0.4846404	0.4813604	0.4532166	0.5813737	0.5232075	0.4177111
440	0.6481885	0.4720176	0.4873046	0.4749193	0.4717852	0.4448475	0.5701905	0.5129235	0.4107885
442	0.6382624	0.4629051	0.4760594	0.4649477	0.4629242	0.4370526	0.5578926	0.5030593	0.4046158
444	0.6281271	0.4532956	0.4659284	0.4562431	0.4537772	0.4293187	0.5458105	0.49371	0.3991503
446	0.6183016	0.4439428	0.4551268	0.4463944	0.4445724	0.4222339	0.5339072	0.4844487	0.3928011
448	0.6096547	0.4352452	0.4452721	0.437758	0.4364573	0.415031	0.5229546	0.4760913	0.3877361
450	0.6017342	0.4268496	0.4368129	0.4298043	0.4287663	0.4087412	0.5122609	0.4681993	0.3829546
452	0.5942177	0.4191571	0.4281797	0.422315	0.4217709	0.4029032	0.5023492	0.4608745	0.3791101
454	0.5875804	0.4119703	0.4201584	0.4154539	0.4153398	0.3977135	0.4927247	0.4544505	0.374474
456	0.5817693	0.4055264	0.4135553	0.4094765	0.4093002	0.3929853	0.4850381	0.4481328	0.3707755
458	0.5764151	0.3995316	0.4072055	0.4040855	0.4040953	0.3886727	0.4772762	0.4425187	0.3673239
460	0.5709751	0.3939664	0.4012004	0.3990963	0.3994407	0.3843172	0.4698525	0.4373022	0.3640393
462	0.5664585	0.3890673	0.395974	0.3946957	0.3950848	0.380833	0.4633913	0.4324604	0.3610372
464	0.5618979	0.3847011	0.3913025	0.3906558	0.3911744	0.3774451	0.4575476	0.4281728	0.3581984
466	0.5574217	0.3803838	0.3866849	0.3864484	0.387417	0.3740912	0.4521574	0.4239208	0.3554169
468	0.5531896	0.3763531	0.3824363	0.3825693	0.3837104	0.3708743	0.4465485	0.4194776	0.3521119
470	0.5489156	0.3727065	0.3785393	0.3792197	0.3804804	0.3675536	0.4418162	0.4156439	0.349334
472	0.5450322	0.3691011	0.3749933	0.3756627	0.377166	0.3647268	0.4372354	0.4115213	0.3464473
474	0.5409039	0.365773	0.3713615	0.3725044	0.3744622	0.3619913	0.4328117	0.4076679	0.3436489
476	0.5373359	0.3625529	0.3676763	0.3691194	0.3715596	0.3588369	0.4283278	0.4040091	0.3409569
478	0.5335625	0.3596298	0.3648892	0.3662606	0.3688431	0.3565429	0.424665	0.4004133	0.338227
480	0.52997	0.3564219	0.3613308	0.3630134	0.3663531	0.3535798	0.4208095	0.396895	0.3352365
482	0.5266194	0.353665	0.3586402	0.3604473	0.3638772	0.3510713	0.4174812	0.3940168	0.3326568
484	0.5237608	0.3512413	0.3558205	0.3579637	0.3617798	0.3486591	0.4136469	0.3909828	0.330266
486	0.5201671	0.34837	0.3533446	0.3551134	0.3591939	0.346085	0.4102153	0.3879644	0.3275746
488	0.5167368	0.3454375	0.3504286	0.3522423	0.356734	0.3433162	0.4063025	0.3838811	0.3249213
490	0.5137756	0.342749	0.3466937	0.34913	0.3544317	0.3402412	0.4022891	0.3800337	0.3214259
492	0.5099694	0.3398372	0.3435486	0.3463182	0.3515677	0.3367523	0.3984751	0.3757861	0.3177716
494	0.5054014	0.3360561	0.3398854	0.3424977	0.3486772	0.3330817	0.3933574	0.3711057	0.3134794
496	0.4994075	0.3318532	0.3360275	0.3378839	0.3446918	0.3284993	0.3881607	0.3660826	0.3086149
498	0.494379	0.3269978	0.3314442	0.3333607	0.3405045	0.3234999	0.3820655	0.359694	0.3027094
500	0.4872761	0.3235315	0.3276356	0.3291452	0.3369702	0.3191628	0.3765245	0.3541087	0.2977346
502	0.4790345	0.3183175	0.322762	0.3237412	0.3322798	0.3132639	0.3694567	0.3470841	0.2915661
504	0.4718313	0.3134102	0.3181046	0.3184394	0.3274997	0.3076871	0.3629081	0.340076	0.284878
506	0.4638021	0.3081521	0.3133904	0.3128747	0.3225513	0.3014013	0.3562601	0.3327974	0.2783196
508	0.4565538	0.3036206	0.3089857	0.3074038	0.3180605	0.2958142	0.349566	0.3262417	0.2719621
510	0.4494627	0.2996888	0.3053575	0.3027103	0.3139227	0.290718	0.344099	0.3202026	0.2661176
512	0.4441836	0.2961568	0.3024807	0.2989855	0.3100444	0.2864744	0.3393041	0.3149652	0.2607594
514	0.4391698	0.2932924	0.3000672	0.2958142	0.3072937	0.2827762	0.3351816	0.3108456	0.2567362
516	0.4364064	0.2917991	0.2988907	0.2939261	0.3053037	0.2797832	0.3329706	0.3078909	0.253334
518	0.4355018	0.291317	0.2986629	0.2934327	0.3047697	0.2783772	0.3320923	0.3060155	0.2506379

520	0.4357559	0.2920079	0.29991	0.2937598	0.3055166	0.27816	0.3326764	0.3068179	0.2494991
522	0.4380819	0.2936632	0.3022749	0.2953549	0.3064545	0.2794365	0.3342671	0.3083838	0.249251
524	0.4421694	0.2961983	0.3056144	0.2980465	0.3092047	0.2811391	0.3373662	0.3106376	0.2501204
526	0.4469356	0.2995866	0.3098187	0.3013364	0.3123246	0.2834392	0.3413773	0.3142125	0.2512704
528	0.4536315	0.3037849	0.3147204	0.3059448	0.3164341	0.2866732	0.3463207	0.3189439	0.2529757
530	0.4606924	0.308386	0.3201908	0.3104043	0.3209685	0.2905898	0.35214	0.324304	0.2559311
532	0.4679905	0.3129227	0.3253438	0.3153827	0.3257213	0.2942417	0.3572136	0.3297307	0.25856
534	0.4751435	0.3175848	0.3299529	0.3198332	0.329885	0.298131	0.3629319	0.3345944	0.2609205
536	0.4812261	0.3212862	0.3344514	0.3237814	0.3337462	0.30157	0.367846	0.3388696	0.2625836
538	0.4853915	0.3247952	0.3382771	0.3268533	0.3368562	0.3036297	0.3716042	0.342454	0.2639114
540	0.4892852	0.3270502	0.3406186	0.3292091	0.3395299	0.3054204	0.3748408	0.3446945	0.2648591
542	0.4919407	0.3286215	0.3425799	0.3309033	0.341371	0.3063467	0.3768097	0.345984	0.2647759
544	0.4924832	0.328942	0.3424675	0.3311335	0.3417297	0.3062944	0.3770774	0.3456516	0.2640837
546	0.4922051	0.3288288	0.3423149	0.3308768	0.3418587	0.3056367	0.3770013	0.3449847	0.2632187
548	0.49108	0.3279716	0.3411283	0.3299477	0.3416009	0.3047762	0.3759553	0.3433957	0.2616289
550	0.4887722	0.3269539	0.3399141	0.3285275	0.3405746	0.3030045	0.3744167	0.3412808	0.2595528
552	0.4864959	0.3254393	0.3380309	0.3270937	0.3397381	0.301041	0.3725641	0.3391064	0.257434
554	0.4850129	0.3239439	0.3363303	0.3256757	0.3385813	0.2995255	0.3708986	0.3369456	0.2556955
556	0.4835151	0.3227953	0.334837	0.3243707	0.3376997	0.2983347	0.3694114	0.3357173	0.2541156
558	0.4828455	0.3215662	0.3334496	0.323229	0.3368146	0.2972894	0.3680178	0.3344978	0.2526456
560	0.4837897	0.3214501	0.3336202	0.3233104	0.3370372	0.2972891	0.3682198	0.3347915	0.252618
562	0.4859678	0.3220114	0.3341903	0.3239724	0.337343	0.2977684	0.3687883	0.3358775	0.2527854
564	0.4879856	0.3227326	0.335332	0.3249454	0.338212	0.2988751	0.369917	0.3375643	0.2534978
566	0.490811	0.3235882	0.3366092	0.3261205	0.3390044	0.3000516	0.371161	0.3394769	0.2541481
568	0.4931561	0.3243062	0.3375745	0.3267733	0.3397514	0.3012058	0.3719717	0.3412194	0.2549324
570	0.4948172	0.3242499	0.3378299	0.3269016	0.3395298	0.301444	0.3718309	0.3422393	0.2550018
572	0.4942768	0.3232779	0.3367917	0.3259292	0.3383515	0.3008408	0.3704759	0.3416249	0.2542956
574	0.4912855	0.3203876	0.3338414	0.322973	0.3356633	0.298424	0.3670999	0.3388641	0.2524257
576	0.4848064	0.3156836	0.3287441	0.3179763	0.3309852	0.2942977	0.3610665	0.3336451	0.2489202
578	0.4750356	0.309206	0.3216664	0.3111939	0.3248127	0.2884004	0.3531604	0.3261725	0.2443519
580	0.4623592	0.3009471	0.3123439	0.302267	0.3167441	0.2807699	0.3429195	0.3160026	0.2379977
582	0.4464584	0.290694	0.3011111	0.2916079	0.3070261	0.2712461	0.3303571	0.3039767	0.2302797
584	0.4293861	0.2801286	0.2891766	0.2803616	0.2968207	0.2611675	0.3172317	0.2907002	0.2220932
586	0.4112975	0.2687306	0.2764158	0.2684945	0.2858278	0.2505574	0.30324	0.2769317	0.2135891
588	0.391995	0.2564785	0.2630173	0.2556262	0.2739985	0.2392146	0.2886835	0.2621947	0.2043828
590	0.373682	0.2447869	0.2500672	0.2432935	0.2626082	0.22827	0.2745515	0.2480529	0.1957654
592	0.3563556	0.2336238	0.2380114	0.2316938	0.2516964	0.2180621	0.2611927	0.2349916	0.1876943
594	0.3402491	0.2231022	0.2266548	0.220818	0.2412912	0.2084524	0.2485149	0.2227036	0.1801335
596	0.3249218	0.2132837	0.2160745	0.2106601	0.231465	0.1994185	0.2367774	0.2113298	0.1731257
598	0.3117964	0.2047687	0.2069951	0.2019012	0.2229099	0.1917781	0.2266308	0.2017296	0.1672216
600	0.3002816	0.1973655	0.1991235	0.1942788	0.2153413	0.1852033	0.2179033	0.1934149	0.1622828
602	0.2899849	0.1907177	0.1920853	0.1874458	0.2084336	0.1793571	0.2099655	0.1861234	0.1579168
604	0.2814173	0.1850942	0.1862317	0.1816621	0.2025126	0.1744927	0.2031962	0.1800358	0.1543463
606	0.274139	0.1805	0.1813932	0.176957	0.197629	0.17055	0.1977053	0.1752481	0.1514966
608	0.2677463	0.1763527	0.1770381	0.1726815	0.1932004	0.1669226	0.1927881	0.1708959	0.1489749
610	0.2622201	0.1727691	0.1733057	0.1690914	0.189249	0.1639342	0.1886029	0.1673023	0.1468152
612	0.2577944	0.1698995	0.1702689	0.1660921	0.1861293	0.1615202	0.1852174	0.1644828	0.1451778
614	0.253954	0.1673485	0.167555	0.1634362	0.183373	0.1594552	0.1822227	0.1619459	0.143674
616	0.2503107	0.1649185	0.1650042	0.160962	0.1807453	0.1573896	0.1794785	0.1595746	0.1421914
618	0.2475107	0.1631012	0.1630215	0.1590466	0.1787193	0.1558377	0.1774123	0.1577928	0.1410905
620	0.24483	0.1613529	0.1612229	0.1573109	0.1768446	0.1544765	0.1754503	0.1561105	0.1400959
622	0.2423426	0.1598942	0.1596734	0.1558155	0.1752339	0.153266	0.1737944	0.1547406	0.1392637
624	0.2401269	0.1586082	0.1581633	0.1544518	0.1738148	0.1521395	0.1722788	0.1534908	0.1383988
626	0.2378735	0.1574471	0.1569645	0.1532467	0.1725566	0.1511227	0.1710337	0.1523009	0.1376652
628	0.235699	0.1563822	0.155772	0.1521222	0.17142	0.1501967	0.1697779	0.1512247	0.1369072
630	0.2335213	0.1553984	0.1547305	0.1510656	0.1702907	0.1493064	0.1686083	0.1502236	0.1361913
632	0.2312659	0.1544714	0.1537147	0.1500828	0.1693334	0.1484479	0.1674817	0.1492968	0.1355071
634	0.2289257	0.1536946	0.1528764	0.1491802	0.1684391	0.1476447	0.1664712	0.148428	0.1348754
636	0.2262844	0.1528782	0.1519811	0.1483323	0.1675214	0.1467664	0.1654136	0.1476007	0.1342382
638	0.2235263	0.1521357	0.1511322	0.1474718	0.1666322	0.1459589	0.1643738	0.1467718	0.133565
640	0.2208024	0.1514639	0.1503602	0.1466851	0.1658158	0.1451648	0.1633877	0.1460122	0.1329913
642	0.2178383	0.1507434	0.1495826	0.1458552	0.1649762	0.1443428	0.1623007	0.1452049	0.1323075
644	0.2146243	0.1500919	0.148797	0.1450466	0.1641182	0.1435028	0.1612559	0.144406	0.131653
646	0.2117136	0.1494749	0.1481478	0.144309	0.1633678	0.1427319	0.1603153	0.1436731	0.1311139
648	0.2085374	0.1488775	0.1474514	0.1435597	0.1625766	0.1419302	0.1593158	0.1429515	0.1304636
650	0.2054874	0.1482985	0.1467773	0.1428392	0.1618101	0.1411651	0.158326	0.1422891	0.1298497
652	0.2025028	0.1477496	0.1461679	0.142142	0.1611087	0.1404043	0.1574214	0.141595	0.1292921
654	0.1995918	0.1472362	0.1455513	0.1414771	0.1603913	0.1396882	0.1565238	0.1409274	0.1287263
656	0.1967863	0.1466568	0.1449308	0.1407735	0.1596497	0.1389436	0.155589	0.1402562	0.1281479
658	0.1940798	0.146111	0.1443191	0.1400973	0.1589269	0.1382527	0.1547317	0.1396203	0.1276141
660	0.1915641	0.1456047	0.1437622	0.1394904	0.1583032	0.137595	0.1539051	0.1390113	0.12711
662	0.1892129	0.1450551	0.1432054	0.1388745	0.1576359	0.1369661	0.1531034	0.1384091	0.1265785
664	0.1869457	0.1445496	0.1426491	0.1382613	0.1569565	0.1363472	0.1523018	0.1378579	0.1261137
666	0.1848556	0.1440565	0.1421068	0.1376459	0.1563099	0.1357762	0.1515858	0.1372951	0.1256597

668	0.1828744	0.143552	0.1415704	0.1370564	0.1556929	0.135213	0.1508652	0.1367125	0.1251722
670	0.1810291	0.1429992	0.1410017	0.1364393	0.1550134	0.1346356	0.1500948	0.1361442	0.1246901
672	0.1793562	0.1425013	0.1405166	0.1358816	0.1544164	0.1341082	0.1494489	0.1356415	0.1243413
674	0.1778699	0.1420699	0.1400603	0.1354358	0.1538675	0.1337186	0.1488694	0.1352112	0.1239989
676	0.176365	0.1416443	0.1396459	0.1349698	0.1533042	0.1333098	0.1482511	0.1348392	0.1236677
678	0.1749768	0.1412546	0.1392206	0.1344825	0.1527575	0.1329107	0.1477398	0.1344547	0.1233364
680	0.1737554	0.1408655	0.13883	0.1340576	0.1523445	0.1325315	0.1472742	0.1340537	0.1230324
682	0.1725689	0.140484	0.1384594	0.1336518	0.15187	0.1321835	0.1467697	0.1336883	0.1227568
684	0.1715738	0.1400898	0.1381117	0.1332396	0.1514226	0.1318617	0.1463011	0.1333333	0.1224788
686	0.1705295	0.1397626	0.1377886	0.1328601	0.1509898	0.1315458	0.1458831	0.1330163	0.1221947
688	0.1695898	0.1394489	0.1374834	0.1325446	0.1506215	0.13129	0.1454907	0.1327454	0.1219827
690	0.1686846	0.1391272	0.1371997	0.1322282	0.1502576	0.1310118	0.1451207	0.1324583	0.1217422
692	0.1678455	0.138859	0.1369525	0.1319139	0.149914	0.130765	0.1447755	0.1322033	0.1215694
694	0.1670966	0.1386272	0.1367162	0.1316913	0.14963	0.1305914	0.1444838	0.1319898	0.1213778
696	0.166437	0.1384085	0.1365706	0.1314648	0.1493909	0.1304225	0.1442132	0.1318337	0.121247
698	0.1658204	0.1382586	0.1364211	0.1313033	0.1491729	0.1303016	0.1440145	0.1316957	0.1211102
700	0.165241	0.1381011	0.1362956	0.1311393	0.1490052	0.1301783	0.1438342	0.131562	0.1210131
702	0.1647813	0.1380034	0.1362295	0.1310516	0.148887	0.1301229	0.1437263	0.1315016	0.1209539
704	0.164386	0.1379286	0.1361959	0.130976	0.1488069	0.1300793	0.1436315	0.1314468	0.1209134
706	0.1640006	0.1378748	0.1361988	0.1309297	0.1487473	0.1300676	0.1435624	0.1314421	0.1208734
708	0.1637304	0.1378694	0.1362261	0.1309416	0.1487509	0.1300844	0.1435544	0.1314576	0.1208949
710	0.1635035	0.1379099	0.1363025	0.1309686	0.1487887	0.1301684	0.1435837	0.1315214	0.120957
712	0.1634022	0.137998	0.1364493	0.1311141	0.1489008	0.1302971	0.1436913	0.1316628	0.1210607
714	0.1633061	0.1381418	0.1366391	0.1312627	0.1490485	0.1304498	0.1438324	0.1318247	0.1211781
716	0.1633288	0.1383103	0.1368705	0.1314672	0.1492812	0.1306599	0.1440369	0.1320328	0.1213555
718	0.1633918	0.1385179	0.1371645	0.1317147	0.1495678	0.1309027	0.1442971	0.1322847	0.1215554
720	0.1635965	0.1387877	0.1374999	0.1320614	0.1499262	0.1311853	0.1446063	0.1326024	0.1217822
722	0.1638316	0.1390945	0.1378962	0.1323954	0.1503185	0.1315132	0.1449673	0.132957	0.1220714
724	0.1641656	0.1394268	0.1383061	0.1327989	0.1507667	0.1318684	0.145382	0.1333383	0.1223606
726	0.1645982	0.1398278	0.1388004	0.1332896	0.1513188	0.1323135	0.1458699	0.1337952	0.1226991
728	0.1650761	0.1402664	0.1393336	0.1338146	0.1518977	0.1327634	0.146396	0.1342868	0.1230783
730	0.1655623	0.1407023	0.139853	0.1343247	0.1524889	0.1332121	0.1469156	0.134766	0.1234354
732	0.1661252	0.1411758	0.1404039	0.1348842	0.1531224	0.1336894	0.1475028	0.1352857	0.1238309
734	0.1666884	0.1416668	0.1409758	0.1354692	0.1537881	0.1341872	0.1481032	0.1358206	0.1242238
736	0.1672589	0.1420939	0.1414638	0.1359584	0.1543668	0.1346184	0.1486326	0.1362976	0.12458
738	0.1677887	0.1425652	0.1419794	0.1364754	0.154976	0.1350717	0.1491996	0.136808	0.1249582
740	0.1683506	0.1430382	0.1424681	0.1369852	0.1555744	0.1355154	0.1497624	0.1373185	0.1253383
742	0.1688401	0.1434691	0.142899	0.1374513	0.1561112	0.1359338	0.1502827	0.137797	0.1256783
744	0.169289	0.1438952	0.1433146	0.1378961	0.1566108	0.1363232	0.1507794	0.1382475	0.1260075
746	0.1697523	0.1442984	0.143699	0.1383029	0.1570965	0.1366971	0.1512637	0.1386924	0.1263222
748	0.1701556	0.144674	0.1440277	0.1386858	0.1575589	0.1370509	0.1517063	0.1391319	0.1266216
750	0.1705019	0.1450206	0.144348	0.1390305	0.1579536	0.1373578	0.1521329	0.1395162	0.1269132
752	0.170791	0.1453199	0.144609	0.1393146	0.1582911	0.1376221	0.152484	0.139854	0.1271541
754	0.1710421	0.1455546	0.1448294	0.1395594	0.1585706	0.1378541	0.1527777	0.1401359	0.1273445
756	0.1712222	0.1457149	0.1449713	0.1397083	0.1587473	0.1380208	0.1529728	0.1403266	0.1274879
758	0.1713088	0.145816	0.1450741	0.1397961	0.1588396	0.1381126	0.1530827	0.1404434	0.1275519
760	0.1713148	0.1458425	0.1451365	0.1398196	0.1588362	0.1381575	0.1531083	0.1404843	0.1275651
762	0.171296	0.1458203	0.14517	0.1397922	0.1587776	0.1381535	0.1530714	0.1404662	0.1275319
764	0.1712209	0.1458045	0.1452013	0.139751	0.1586739	0.1381561	0.1530278	0.14043	0.1274925
766	0.1711498	0.1457924	0.1452649	0.1397086	0.1585787	0.1381767	0.1529613	0.1404004	0.1274582
768	0.1710937	0.1457989	0.1453578	0.139679	0.1584676	0.1381746	0.152889	0.140356	0.1274351
770	0.1710101	0.1457523	0.1454287	0.1396418	0.158341	0.138206	0.152765	0.1403002	0.1274024
772	0.1708499	0.1456531	0.1454123	0.139518	0.1581317	0.1381217	0.1525953	0.1401295	0.1272786
774	0.1706932	0.1454852	0.145378	0.1393767	0.1578999	0.1380612	0.1523531	0.1399623	0.1271897
776	0.1704915	0.1453372	0.1453089	0.1391878	0.1576255	0.1379515	0.1521644	0.1397823	0.1270972
778	0.1703273	0.1451838	0.1452196	0.1390412	0.1574178	0.1378872	0.151955	0.1396374	0.1270299
780	0.1701414	0.1450372	0.1450828	0.1388821	0.1571884	0.1377902	0.151758	0.1394977	0.1269885
782	0.1699636	0.1448691	0.1449207	0.1386921	0.1569162	0.1376486	0.1515252	0.1393102	0.1268925
784	0.169841	0.1447474	0.1448049	0.1385589	0.1567153	0.1375589	0.1513536	0.1392074	0.126855
786	0.1697388	0.1446602	0.1447227	0.1384581	0.1565538	0.1375078	0.1512521	0.1391357	0.1268101
788	0.1696765	0.1445995	0.1446622	0.1383725	0.1564219	0.1374604	0.1511661	0.1390863	0.1267771
790	0.1696449	0.1445408	0.1446147	0.1382951	0.1563131	0.1374298	0.1510992	0.1390707	0.1267551
792	0.1696062	0.1445051	0.1445771	0.1382315	0.1562196	0.1374051	0.1510575	0.1390644	0.1267313
794	0.1695807	0.1444624	0.14453	0.1381625	0.1561248	0.137383	0.151025	0.1390578	0.1267125
796	0.1695644	0.1444245	0.1444934	0.1381077	0.1560463	0.1373742	0.1509945	0.1390589	0.1266873
798	0.1695782	0.1444095	0.1444699	0.1380634	0.1559924	0.137371	0.1509907	0.139086	0.1266856
800	0.169611	0.1443996	0.1444562	0.1380336	0.1559524	0.1373718	0.1509977	0.139111	0.1266832
802	0.1696762	0.1444078	0.1444677	0.1380334	0.1559359	0.1373973	0.1510336	0.1391669	0.1266985
804	0.1697725	0.1444376	0.1444866	0.1380505	0.1559567	0.1374344	0.1510891	0.139244	0.1267383
806	0.1699087	0.1444967	0.1445394	0.1381003	0.1560206	0.1375038	0.1511862	0.1393492	0.126788
808	0.1700762	0.1445684	0.144622	0.1381756	0.1561012	0.1375865	0.1513019	0.1394702	0.1268589
810	0.1702914	0.1446797	0.144739	0.1382936	0.1562371	0.1377086	0.1514633	0.1396226	0.1269566
812	0.1705556	0.1448137	0.144885	0.1384409	0.1564006	0.1378464	0.1516576	0.1398046	0.1270714
814	0.1708532	0.144973	0.145066	0.1386272	0.1566181	0.1380169	0.1518696	0.1400136	0.1272194

816	0.1712232	0.1451811	0.145301	0.1388705	0.156894	0.1382346	0.1521563	0.1402582	0.127389
818	0.1716623	0.1454135	0.1455875	0.1391633	0.1572406	0.1384837	0.1524812	0.1405563	0.1275923
820	0.1721597	0.1456847	0.1459178	0.1395012	0.157637	0.1387712	0.1528458	0.1408787	0.1278181
822	0.1727298	0.1459862	0.1463044	0.139904	0.1581015	0.1391088	0.1532563	0.1412382	0.1280581
824	0.1733954	0.146365	0.1467714	0.1403793	0.1586587	0.1394991	0.1537497	0.1416497	0.128345
826	0.1741295	0.1467584	0.1472764	0.1408992	0.1592611	0.1399201	0.1542684	0.1420935	0.1286633
828	0.1749066	0.1471724	0.1478161	0.1414579	0.1598969	0.1403541	0.1548182	0.1425448	0.1289811
830	0.1756975	0.1475996	0.1483674	0.1420218	0.1605555	0.1407926	0.155362	0.1429952	0.1293028
832	0.1765276	0.1480421	0.1489561	0.1426192	0.1612422	0.1412697	0.1559362	0.1434684	0.1296442
834	0.1773296	0.1484607	0.1495101	0.1431746	0.1618881	0.1417178	0.156477	0.1439018	0.1299773
836	0.1780605	0.148838	0.150015	0.1436735	0.1624534	0.1421132	0.1569449	0.1442838	0.1302654
838	0.1787352	0.1492087	0.1505078	0.1441639	0.1630014	0.1425055	0.1574045	0.1446864	0.1305425
840	0.1793736	0.1495495	0.1509452	0.1445978	0.1635079	0.1428705	0.1578224	0.1450322	0.1308128
842	0.1799018	0.1498428	0.1513164	0.1449607	0.1639132	0.1431734	0.1581864	0.1453176	0.1310291
844	0.1804163	0.1501308	0.151681	0.1453236	0.1643217	0.1434744	0.1585275	0.1456008	0.1312506
846	0.1809245	0.1504221	0.1520445	0.1456852	0.1647301	0.143791	0.1588715	0.1458899	0.1314781
848	0.1813938	0.1507038	0.1523893	0.1460198	0.1650971	0.1440797	0.1592029	0.1461707	0.1316969
850	0.1818675	0.1509937	0.152737	0.1463645	0.1654753	0.1443756	0.159538	0.1464722	0.1319347
852	0.1823427	0.151284	0.1530789	0.1467073	0.1658763	0.144683	0.1598946	0.1467615	0.1321649
854	0.1828662	0.1515947	0.1534572	0.1470927	0.1662932	0.145005	0.1602663	0.1470918	0.1324338
856	0.1833798	0.1519169	0.1538398	0.1474673	0.1667276	0.1453407	0.1606544	0.1474337	0.1327043
858	0.1839405	0.1522542	0.1542197	0.1478607	0.1671634	0.1456846	0.1610518	0.1477983	0.1329974
860	0.1845345	0.152625	0.1546352	0.1482944	0.1676402	0.1460671	0.1615047	0.1482052	0.133319
862	0.1851974	0.1530147	0.1550694	0.1487424	0.1681488	0.1464685	0.1619776	0.1486462	0.1336655
864	0.1858508	0.1534254	0.1555016	0.1492074	0.1686616	0.1468814	0.1624738	0.1491067	0.1340365
866	0.1865905	0.1538824	0.1560051	0.1497392	0.1692611	0.1473532	0.1630529	0.1496375	0.1344524
868	0.1873747	0.1543826	0.1565191	0.1503013	0.1698952	0.1478517	0.1636563	0.1502145	0.1349086
870	0.1881558	0.154897	0.1570594	0.1508882	0.1705599	0.1483734	0.1643094	0.1508293	0.1353891
872	0.1889838	0.1554557	0.1576336	0.151528	0.1712911	0.1489454	0.1650287	0.1515034	0.1359048
874	0.189843	0.1560934	0.1582748	0.1522529	0.1721083	0.1495862	0.1658443	0.1522817	0.136507
876	0.1906806	0.1567575	0.1589456	0.1530057	0.1729729	0.1502526	0.1667081	0.1531088	0.1371414
878	0.1915325	0.1574759	0.1596582	0.1538169	0.1738947	0.1509721	0.1676406	0.1540108	0.1378491
880	0.192397	0.15825	0.1604108	0.1546802	0.1748878	0.1517457	0.1686473	0.1549995	0.1385958
882	0.1932307	0.1590128	0.161143	0.1555561	0.1758944	0.1525104	0.1696877	0.156019	0.1393522
884	0.1941691	0.1598933	0.1619841	0.1565409	0.1770286	0.1533934	0.1708569	0.1571758	0.1402252
886	0.1951011	0.1607778	0.1628234	0.1575267	0.1781547	0.1542676	0.1720295	0.1583347	0.1411118
888	0.196138	0.1617465	0.1637406	0.1585965	0.1793841	0.1552323	0.1733115	0.1596046	0.1420802
890	0.197204	0.1627122	0.1646599	0.1596737	0.1806158	0.1561984	0.1745989	0.160885	0.1430516
892	0.1982491	0.1636298	0.1655417	0.160697	0.1817815	0.1571026	0.1758054	0.1620798	0.1439669
894	0.199367	0.1645595	0.166446	0.1617392	0.1829684	0.1580322	0.1770388	0.1633068	0.1449002
896	0.2005146	0.1655119	0.1673778	0.1628186	0.1841866	0.1589874	0.1782918	0.1645502	0.1458631
898	0.2016707	0.1664577	0.168292	0.1638723	0.1853797	0.1599222	0.1795336	0.1657762	0.1468104
900	0.2028797	0.1674324	0.16922	0.1649611	0.1866133	0.1608879	0.1808431	0.1670607	0.1478354
902	0.2041615	0.1685015	0.1702116	0.1661548	0.1879592	0.1619474	0.1822614	0.1684778	0.1489271
904	0.2055302	0.16966	0.1712674	0.1674659	0.1894278	0.1631104	0.1838452	0.1700613	0.1501444
906	0.2069736	0.1709294	0.1724205	0.1688862	0.191003	0.1643627	0.1855464	0.1718062	0.1515259
908	0.2084463	0.172293	0.1735956	0.1703543	0.192676	0.1656698	0.1873942	0.1736815	0.1529381
910	0.2101068	0.1737992	0.1749091	0.1720129	0.1945659	0.1671535	0.1894237	0.1757908	0.1545314
912	0.2118181	0.1753282	0.1762786	0.1737436	0.1965488	0.1686774	0.191555	0.1779504	0.156187
914	0.2135823	0.1768449	0.1776908	0.175494	0.1985673	0.1701932	0.1936405	0.1800672	0.157788
916	0.2155343	0.1784884	0.1792313	0.1773849	0.2007427	0.1718271	0.1958779	0.1823194	0.1595062
918	0.2176306	0.1801782	0.1809298	0.179401	0.2030554	0.1735597	0.1981956	0.1846297	0.1612695
920	0.219773	0.1818574	0.182662	0.1814369	0.2053839	0.1752697	0.2004415	0.1868301	0.1629384
922	0.2220582	0.183554	0.1845143	0.183549	0.2078108	0.1770217	0.2026992	0.1889901	0.1646004
924	0.2245783	0.1852838	0.1865544	0.1857759	0.2103709	0.1788324	0.2049654	0.1910944	0.1661962
926	0.2272017	0.1869537	0.1886826	0.1880021	0.2129378	0.1806066	0.2071026	0.1929929	0.1676611
928	0.2299256	0.1884796	0.1908495	0.1901658	0.2154287	0.1822725	0.2089823	0.1945598	0.168845
930	0.2327007	0.1898862	0.1930581	0.1922459	0.2178379	0.1838275	0.2106468	0.1958102	0.1698041
932	0.2356983	0.1911807	0.1953999	0.1943226	0.2202604	0.185325	0.2121052	0.1967046	0.1705179
934	0.2388227	0.1923935	0.1978248	0.1963655	0.2226483	0.1867473	0.2133811	0.1973134	0.1709994
936	0.2419975	0.193556	0.200261	0.1983746	0.2250048	0.1881052	0.214536	0.1977158	0.1713421
938	0.2455959	0.1948436	0.2030081	0.2006262	0.2276441	0.1896283	0.2158433	0.1981373	0.1717178
940	0.249667	0.1963908	0.2061109	0.2032282	0.2306904	0.1914054	0.2174509	0.1987531	0.1722413
942	0.2541123	0.1982309	0.2095072	0.2061636	0.234117	0.1934765	0.2194578	0.1997572	0.1730505
944	0.259152	0.2004744	0.2133698	0.2096056	0.23812	0.1959594	0.2219991	0.2012307	0.1742207
946	0.2651384	0.2033574	0.2179771	0.2138437	0.2430432	0.1990951	0.2253819	0.2034452	0.1759525
948	0.2716807	0.2066736	0.2230253	0.218591	0.2485323	0.2026666	0.2293322	0.2062185	0.1780996
950	0.2787375	0.2103622	0.2284542	0.223777	0.2545094	0.206621	0.2337918	0.2095101	0.1806421

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	46	47	48	49	50	51	52	53	54
Sample Numb	"0101a"	"0102a"	"0103a"	"0104a"	"0105a"	"0106a"	"0107a"	"0108a"	"0109a"
400	0.7847013	0.6962262	0.7120124	0.7137238	0.8003576	0.692632	0.7245775	0.7370628	0.7645409
402	0.8249398	0.7311295	0.7476255	0.7476124	0.8371832	0.7216483	0.7621423	0.772456	0.8018971
404	0.8629265	0.7665927	0.7839409	0.7816665	0.8720596	0.7499489	0.7978767	0.8081745	0.8380337
406	0.8975505	0.7995492	0.8197333	0.8130392	0.9064336	0.7749374	0.8331795	0.8407637	0.8720331
408	0.9312376	0.8285173	0.8517259	0.841609	0.9378432	0.7988032	0.8648067	0.8706831	0.9033227
410	0.961969	0.855152	0.8787887	0.8679546	0.9654082	0.8188474	0.892805	0.8968272	0.9310864
412	0.9894445	0.8793039	0.9055648	0.8909264	0.9919912	0.8359575	0.9189982	0.919759	0.9572775
414	1.0143056	0.9016334	0.9298622	0.9108411	1.0147731	0.8511093	0.942466	0.9422166	0.9814531
416	1.0373054	0.9211777	0.9504698	0.9289795	1.0356157	0.8629924	0.9641523	0.9608607	1.00225
418	1.0556109	0.9359566	0.9679072	0.942616	1.0544679	0.8730841	0.9818001	0.9766906	1.019576
420	1.0742877	0.9497077	0.9845437	0.955778	1.0712137	0.88088	0.9982594	0.9911453	1.0367575
422	1.089704	0.9597452	0.9982634	0.9648585	1.0846024	0.8862474	1.0124675	1.0025616	1.0501027
424	1.1036913	0.9684765	1.0103152	0.9722935	1.0965459	0.8892548	1.0235523	1.0118982	1.0599211
426	1.116046	0.9759842	1.021845	0.9779689	1.1083531	0.8917261	1.0342809	1.0199628	1.0709367
428	1.1277785	0.9818804	1.0300816	0.9824598	1.117768	0.8930532	1.0429747	1.0271342	1.0790999
430	1.1373491	0.9843622	1.0386485	0.9845121	1.1267343	0.8929139	1.0499825	1.0316683	1.0857151
432	1.1462191	0.9869788	1.0448225	0.9858343	1.1344893	0.8944605	1.0556552	1.0349096	1.0920634
434	1.1537938	0.9880929	1.0489057	0.985739	1.1402528	0.8958342	1.0608201	1.0361605	1.095938
436	1.158896	0.9872869	1.0521227	0.9842037	1.1448932	0.8918341	1.0626581	1.0356746	1.0997075
438	1.1642234	0.9855068	1.0529063	0.9817984	1.150082	0.8863623	1.0652444	1.0356709	1.1031319
440	1.1681694	0.9829243	1.0545858	0.9781263	1.1525723	0.8844414	1.0655763	1.0343738	1.1043316
442	1.1693549	0.9792067	1.0538858	0.9748394	1.1540763	0.8834112	1.0648543	1.0318844	1.1049223
444	1.1734407	0.9761124	1.0540806	0.970857	1.156842	0.878551	1.0635886	1.0290053	1.105238
446	1.1728342	0.971949	1.0527797	0.9661989	1.1571901	0.872371	1.0611405	1.0254657	1.1042081
448	1.1724243	0.9682838	1.0503507	0.9623991	1.1578007	0.867571	1.058877	1.02191	1.1038454
450	1.1716592	0.9652049	1.048389	0.958873	1.1567547	0.8624556	1.055886	1.0178938	1.1026045
452	1.1701727	0.9622172	1.0444958	0.9558392	1.1566887	0.8585004	1.0517843	1.0123953	1.1004732
454	1.1690147	0.9598049	1.0397655	0.9521718	1.1561601	0.8542084	1.047233	1.0074763	1.0981214
456	1.1680611	0.9546285	1.0373598	0.9469751	1.1547664	0.8495312	1.0422117	1.0025737	1.0964606
458	1.1650674	0.9468189	1.0328898	0.9381137	1.1532433	0.8445178	1.0371675	0.9968829	1.0934999
460	1.1626049	0.9381821	1.0262197	0.9294356	1.1505229	0.8388416	1.0317802	0.9906269	1.0896299
462	1.1601851	0.9297051	1.0204242	0.92189	1.1480052	0.8338937	1.0255637	0.9841201	1.0844164
464	1.1560967	0.9211355	1.0123109	0.9144102	1.1437073	0.8272889	1.0180981	0.9767849	1.077951
466	1.1511588	0.9120721	1.0029609	0.9077535	1.1393007	0.820901	1.0095618	0.9685083	1.0710384
468	1.1455646	0.9028798	0.9941132	0.8989323	1.1340153	0.8142927	1.0001426	0.9598935	1.0630162
470	1.1377811	0.8939306	0.9829458	0.8878415	1.1279157	0.8064518	0.99068	0.9520741	1.0545745
472	1.1305225	0.8842211	0.9715476	0.8756351	1.1207204	0.7994729	0.9811814	0.9437068	1.0460291
474	1.1219888	0.872771	0.9599369	0.8623108	1.1121528	0.7915641	0.9689449	0.9349922	1.0352228
476	1.1126418	0.8612114	0.9469149	0.8506406	1.1033822	0.7829086	0.9577077	0.9242637	1.0238886
478	1.1031141	0.8478996	0.9347997	0.837737	1.093636	0.7739301	0.9444429	0.9135027	1.0112005
480	1.0902894	0.8337325	0.9227396	0.8242482	1.081455	0.7647408	0.9304311	0.9009095	0.9975167
482	1.0777338	0.8193684	0.9116547	0.8110203	1.0694201	0.7553604	0.9166142	0.8872145	0.9842441
484	1.0653374	0.8055958	0.8990973	0.797785	1.0564616	0.7458054	0.9034109	0.8738319	0.9689773
486	1.050727	0.790871	0.8806797	0.7837593	1.0421629	0.7352249	0.8903679	0.8590575	0.9536837
488	1.0354326	0.7751665	0.8577974	0.7689189	1.0267584	0.7245643	0.8773912	0.8435014	0.9365963
490	1.0194092	0.7608882	0.8371804	0.7539195	1.0116785	0.7144079	0.8645691	0.8295625	0.9206638
492	1.0026672	0.7436792	0.8167453	0.7379588	0.9946908	0.7027559	0.8474796	0.8145881	0.9020345
494	0.9833293	0.7268475	0.7964097	0.721505	0.9771698	0.6907873	0.8239921	0.798916	0.8836152
496	0.965324	0.7095839	0.7756191	0.7054437	0.9593209	0.6788172	0.8029788	0.7842107	0.8655504
498	0.9473211	0.6930862	0.7555748	0.6904262	0.9417095	0.6671857	0.7839802	0.7706908	0.8481876
500	0.9275969	0.6758589	0.7351254	0.6739809	0.9233695	0.6551327	0.7663356	0.7544422	0.830776
502	0.9078955	0.6580466	0.7146486	0.6566523	0.9049653	0.643093	0.7474881	0.7359748	0.8169438
504	0.8894417	0.6414301	0.6938046	0.6406624	0.887058	0.6315714	0.7309564	0.7187074	0.8064672
506	0.8693202	0.6252033	0.6725429	0.625523	0.8692477	0.6206122	0.7143049	0.7034672	0.7891536
508	0.849438	0.6089109	0.6519512	0.6102639	0.849743	0.6098604	0.6985496	0.687354	0.7658187
510	0.8310113	0.593446	0.6329852	0.5946279	0.832978	0.59857	0.6830752	0.6723574	0.7494369
512	0.8130047	0.5795251	0.6164484	0.5813422	0.816357	0.5879851	0.6679804	0.6585549	0.7355787
514	0.7949212	0.5650747	0.5985662	0.5676497	0.8009665	0.5786381	0.6543159	0.6454508	0.7215897
516	0.7808119	0.5530949	0.5827044	0.5553108	0.7859065	0.5706439	0.6419188	0.6322434	0.7095379
518	0.7665907	0.5424231	0.5677488	0.545191	0.7722836	0.5619407	0.6303221	0.6218534	0.7002141

520	0.7553211	0.5319375	0.554782	0.5343762	0.7630639	0.5549368	0.6211598	0.6117687	0.6888944
522	0.7384868	0.5227282	0.5428935	0.5251869	0.7534326	0.5478423	0.6111785	0.6026155	0.6792795
524	0.7271479	0.515619	0.5326854	0.5182878	0.7400013	0.5422848	0.6029419	0.5950148	0.6707829
526	0.7159952	0.5085207	0.5242996	0.5108726	0.7301088	0.536762	0.5950787	0.5871809	0.6629858
528	0.7078109	0.5027286	0.5154147	0.5052463	0.7223593	0.5323391	0.5894643	0.5806878	0.6581922
530	0.6994782	0.4976708	0.508746	0.4996218	0.7160257	0.5281852	0.5835909	0.575649	0.6506058
532	0.6924505	0.492995	0.502283	0.4948764	0.7093104	0.5245782	0.5781236	0.570711	0.6445936
534	0.6867177	0.4900068	0.4975063	0.4908062	0.7042053	0.521154	0.575242	0.5678388	0.6396785
536	0.6805169	0.4869787	0.4930941	0.4873782	0.6992379	0.5176839	0.5704812	0.5641017	0.634705
538	0.6749026	0.4848201	0.4893609	0.4847725	0.6947951	0.5147999	0.5665797	0.5610104	0.6300645
540	0.6696864	0.4824613	0.485852	0.4815812	0.689291	0.5120039	0.5632607	0.5582275	0.6263428
542	0.6641268	0.4800177	0.4821953	0.4788126	0.68426	0.5090189	0.5592741	0.555421	0.6209027
544	0.6590813	0.4781504	0.479345	0.4765601	0.6794447	0.5059346	0.5561488	0.5530763	0.6161008
546	0.6541225	0.4755157	0.4757951	0.4734525	0.6738754	0.5032939	0.5516967	0.5497891	0.610945
548	0.6472651	0.4725195	0.472403	0.4703106	0.6684649	0.5000513	0.5477086	0.546242	0.6052927
550	0.6411166	0.4690269	0.4684896	0.467255	0.662328	0.497151	0.54309	0.5427377	0.6001675
552	0.6347586	0.4652986	0.4648359	0.4638626	0.6553769	0.4935136	0.5396131	0.5396491	0.5940145
554	0.6279241	0.4610714	0.4607169	0.4603596	0.64876	0.4902401	0.5334706	0.534834	0.5879931
556	0.6210225	0.4567739	0.4566554	0.4566805	0.6421487	0.4870901	0.5283126	0.5303971	0.5815766
558	0.6145068	0.4522451	0.4527618	0.4533716	0.6356881	0.4836862	0.5228369	0.5256072	0.5764095
560	0.6077659	0.44737	0.4481664	0.4494287	0.6287377	0.4801503	0.5171216	0.5205866	0.5693766
562	0.60129	0.4425806	0.4436918	0.4455301	0.6219424	0.4765762	0.5113609	0.515545	0.5628679
564	0.5954447	0.4382389	0.4401195	0.4424274	0.6163884	0.4738284	0.5062715	0.510977	0.5569038
566	0.5897138	0.4342344	0.4364362	0.4392806	0.6102666	0.4707686	0.5010234	0.506525	0.551146
568	0.5843279	0.4305519	0.4330589	0.4363358	0.6040536	0.46789	0.4961174	0.5021822	0.5453743
570	0.5791959	0.4272367	0.430269	0.4339776	0.598541	0.4650815	0.4913566	0.4982355	0.5402722
572	0.5742841	0.4242278	0.4270721	0.4312646	0.5932405	0.4623508	0.4866674	0.4945093	0.5351793
574	0.5696926	0.4214193	0.4244956	0.4288341	0.5880091	0.4601322	0.4822833	0.4909192	0.5300945
576	0.5653086	0.4187584	0.4217469	0.4267276	0.5823544	0.4571815	0.4784018	0.4876398	0.5251571
578	0.5608042	0.4166151	0.4194626	0.4247774	0.5774821	0.454901	0.4744141	0.4847175	0.520681
580	0.5564374	0.4144394	0.4173622	0.4228358	0.5721886	0.4524449	0.4706059	0.4816957	0.5166241
582	0.5518773	0.4121921	0.4150471	0.4209517	0.5666525	0.4496803	0.4666646	0.4786395	0.5115714
584	0.5476932	0.4103522	0.4131307	0.4194361	0.5615653	0.4473773	0.4632214	0.4760193	0.5074435
586	0.5438985	0.4087254	0.4113551	0.4178403	0.5564721	0.4450828	0.4598563	0.473622	0.5031548
588	0.539305	0.4071408	0.4095847	0.416521	0.5515797	0.4425768	0.4564675	0.4712008	0.4989054
590	0.5353618	0.4055696	0.4076583	0.4151557	0.5464768	0.4403015	0.4531751	0.4689185	0.4948724
592	0.5313951	0.404092	0.4062151	0.413803	0.5415366	0.4382696	0.4503429	0.4667253	0.4909452
594	0.5276891	0.4026533	0.4047017	0.412529	0.5369857	0.4361441	0.4473209	0.4647544	0.4871134
596	0.5239632	0.4010866	0.403015	0.4112253	0.5322414	0.43399	0.4442002	0.462499	0.4835588
598	0.5206548	0.3997726	0.4017435	0.4100083	0.5279638	0.4320461	0.4414576	0.4603156	0.4801161
600	0.5176147	0.3984237	0.4001547	0.4091305	0.5237914	0.4302715	0.4386979	0.4581701	0.4766985
602	0.5146764	0.3968446	0.3984385	0.4079674	0.5199041	0.4286847	0.4360163	0.4558353	0.4736742
604	0.5119097	0.3951925	0.396861	0.4068531	0.516239	0.4270629	0.4334425	0.4536397	0.4705515
606	0.5095518	0.3936986	0.3953438	0.4058086	0.5128943	0.4254714	0.4308538	0.4516392	0.467765
608	0.5073147	0.3920259	0.3938154	0.4046927	0.5096775	0.4239516	0.4282292	0.4491409	0.4653339
610	0.5053065	0.3904059	0.3923316	0.4038056	0.5066602	0.4225538	0.4256802	0.4467648	0.4626492
612	0.5038232	0.3889881	0.3909611	0.4027933	0.5043213	0.4213765	0.4234642	0.4447136	0.4604025
614	0.5022786	0.3876249	0.3896641	0.4019428	0.501675	0.4201682	0.4212248	0.4426654	0.458063
616	0.5007225	0.3862298	0.3883328	0.4010139	0.4991774	0.418936	0.4190188	0.4404784	0.4558323
618	0.499577	0.3851062	0.3873234	0.4003235	0.4970263	0.4179525	0.4170339	0.438711	0.4537977
620	0.4985614	0.383998	0.3863567	0.3997499	0.4949935	0.4170701	0.4153501	0.4370508	0.4519267
622	0.4976724	0.3830418	0.3854462	0.3991875	0.493171	0.4162149	0.4136305	0.4355421	0.4500766
624	0.4965829	0.3821355	0.3846619	0.3985511	0.4912932	0.4153501	0.4119944	0.4341231	0.4484116
626	0.4955153	0.381312	0.3839333	0.3980988	0.4894344	0.4145385	0.4104862	0.4328307	0.4468624
628	0.4942895	0.3806085	0.3832304	0.3975723	0.4876726	0.4137616	0.4090376	0.4315991	0.4452983
630	0.4928823	0.3800578	0.3827972	0.3970825	0.4857071	0.4128995	0.4075912	0.4304408	0.4437764
632	0.4911244	0.3793308	0.3820894	0.396633	0.4836757	0.4121619	0.4062741	0.4293317	0.442382
634	0.4892661	0.3787131	0.3815305	0.3961381	0.481591	0.411447	0.4050248	0.428298	0.4410825
636	0.4870213	0.3781574	0.3809505	0.3956183	0.4793792	0.4105606	0.403643	0.4272807	0.439759
638	0.4846364	0.377506	0.3803326	0.3950539	0.4770909	0.4097103	0.4022989	0.4262629	0.4386084
640	0.4822981	0.3769202	0.3797849	0.3944876	0.4748757	0.4089013	0.4010295	0.4252843	0.4374734
642	0.4797354	0.3763254	0.3792412	0.393872	0.4725694	0.4079953	0.399715	0.4242719	0.4362722
644	0.4770218	0.3756782	0.3786813	0.3933209	0.4701961	0.4070524	0.3984982	0.423272	0.4351698
646	0.4744461	0.3750652	0.3781407	0.3927304	0.46789	0.4062622	0.3972428	0.422389	0.4341092
648	0.4717801	0.3744537	0.377627	0.3921206	0.4655924	0.4053892	0.3959799	0.4214614	0.4331049
650	0.4690548	0.3738322	0.3771022	0.3915265	0.4631695	0.4044551	0.3947605	0.4205354	0.4321787
652	0.4665	0.3732908	0.3766456	0.3909233	0.4609479	0.403618	0.3935336	0.4196449	0.4312373
654	0.4639945	0.3726615	0.3761709	0.3903468	0.4588276	0.4027563	0.3923331	0.4187957	0.4302931
656	0.4614927	0.3719593	0.3755572	0.3898239	0.4566	0.4018781	0.3911737	0.4178579	0.4293242
658	0.4590156	0.3712672	0.3750304	0.3892344	0.4544201	0.401043	0.3899073	0.4169158	0.4283368
660	0.4565874	0.3705764	0.374457	0.3886658	0.4523658	0.4001858	0.3886964	0.416142	0.4273961
662	0.454215	0.369869	0.3738356	0.3880776	0.450327	0.3992785	0.3874275	0.4152246	0.4265319
664	0.4517918	0.3691711	0.3732174	0.38745	0.4482922	0.3984049	0.3861326	0.4142931	0.4255088
666	0.4494864	0.3684344	0.3725728	0.3868307	0.4464185	0.3975058	0.3848677	0.4133646	0.4244567

668	0.4473143	0.3676845	0.3718397	0.38629	0.4445655	0.3966123	0.3835859	0.4123908	0.4234108
670	0.4449362	0.3668691	0.3710606	0.3855872	0.4426374	0.395687	0.3822149	0.4113812	0.4222572
672	0.4426693	0.3661208	0.37034	0.3849953	0.4408434	0.3948155	0.3809309	0.4104695	0.4211556
674	0.4406029	0.3654305	0.3696628	0.3844657	0.4392101	0.3940229	0.3796848	0.4095263	0.4201173
676	0.4384941	0.3647403	0.3689572	0.3838935	0.4375901	0.3931995	0.3784189	0.4085934	0.4190473
678	0.4364745	0.3639988	0.3681954	0.3833488	0.436091	0.3923988	0.3772638	0.4076714	0.4179971
680	0.4345687	0.3633139	0.3674443	0.3828565	0.4347075	0.3916868	0.3760754	0.406803	0.4169818
682	0.4326895	0.3626574	0.3667105	0.3823397	0.4333736	0.3910235	0.3749419	0.4059304	0.415977
684	0.4309009	0.3619964	0.365999	0.3818156	0.4321308	0.3903553	0.3738442	0.4051396	0.4150066
686	0.4292478	0.3613684	0.3653269	0.3813444	0.4309792	0.3897488	0.3728409	0.4043415	0.414105
688	0.427708	0.3607434	0.3646474	0.3809496	0.4299867	0.3891984	0.371869	0.4036013	0.4132374
690	0.4261966	0.3601564	0.3640046	0.3805068	0.4290144	0.3887067	0.3709286	0.402856	0.4124089
692	0.4248026	0.3596199	0.3633785	0.3801181	0.4281547	0.388243	0.3700552	0.4022088	0.4116352
694	0.4235226	0.3591298	0.3628605	0.3797454	0.4273676	0.3879023	0.3692879	0.4015895	0.4109709
696	0.4223899	0.3586858	0.3623518	0.3795286	0.4266993	0.3875722	0.3685658	0.4010555	0.4103337
698	0.4212931	0.3582464	0.3618319	0.3792436	0.4260811	0.3873893	0.3678856	0.4005055	0.4097433
700	0.4202724	0.3578359	0.3613961	0.3789951	0.4255117	0.3871592	0.3672308	0.4000627	0.409201
702	0.4194126	0.3575014	0.3610249	0.3788131	0.4250742	0.3870628	0.3667303	0.3996732	0.4088074
704	0.4186475	0.357174	0.3606578	0.3786556	0.4246812	0.3869697	0.3662194	0.3992771	0.4083872
706	0.4179046	0.3568903	0.3602863	0.3785004	0.4243562	0.3869476	0.3657371	0.3989183	0.4080233
708	0.4172852	0.3566876	0.3600554	0.3784355	0.424069	0.3869668	0.3653712	0.3986688	0.4077508
710	0.4167575	0.3564978	0.3598155	0.3784096	0.4238446	0.3870549	0.3650492	0.3984151	0.4075164
712	0.416284	0.3563907	0.3596331	0.3784339	0.4237056	0.3872186	0.3647736	0.3982231	0.4073521
714	0.4158753	0.356314	0.3595118	0.3784819	0.4236037	0.3874266	0.3645721	0.3981017	0.4072319
716	0.4155684	0.3562888	0.3594258	0.3785936	0.423564	0.3876975	0.3644122	0.3980216	0.4071872
718	0.4153371	0.356338	0.3593937	0.3787436	0.4235595	0.3879987	0.3643036	0.3980061	0.407195
720	0.4151466	0.3565371	0.3595261	0.3789567	0.4236789	0.3883921	0.364257	0.3980084	0.4072932
722	0.4150342	0.3566742	0.359594	0.3791938	0.4237727	0.3887939	0.3643877	0.3980829	0.4073879
724	0.4149686	0.3568439	0.3597142	0.3795873	0.4239186	0.3892286	0.3644306	0.398187	0.40756
726	0.414995	0.3571284	0.3598881	0.3799411	0.4241699	0.3897822	0.3645617	0.3983531	0.407791
728	0.4150535	0.3574196	0.3600888	0.3803332	0.4244514	0.3904268	0.3647281	0.3986474	0.4080749
730	0.4151592	0.3577251	0.3603301	0.38073	0.4247372	0.3909796	0.3649106	0.398917	0.4083837
732	0.415347	0.358114	0.3606129	0.3811972	0.4250417	0.39158	0.3651588	0.399192	0.4088372
734	0.4155845	0.3585067	0.3609275	0.3816535	0.4254089	0.3922423	0.3654522	0.3994828	0.4092267
736	0.4157694	0.3588944	0.3612246	0.3821112	0.4258028	0.3928321	0.3657168	0.3998015	0.4095945
738	0.4159665	0.3593241	0.361549	0.3826253	0.4261315	0.3934748	0.366016	0.4001458	0.4100254
740	0.4162124	0.3597916	0.3619226	0.3831438	0.4264503	0.3941363	0.3663402	0.40048	0.41047
742	0.4164385	0.3602161	0.362242	0.3836547	0.4267298	0.3948012	0.3666683	0.4008354	0.4109129
744	0.4166766	0.3606743	0.3625972	0.3841592	0.4270332	0.3954521	0.36701	0.401221	0.4113717
746	0.4169279	0.361138	0.3629472	0.3846779	0.427291	0.3961083	0.3673649	0.4015834	0.4118482
748	0.4171755	0.3616666	0.3633026	0.3852445	0.4275706	0.3967775	0.3677315	0.4019861	0.4123771
750	0.4174551	0.3621908	0.363717	0.3858126	0.427833	0.3974355	0.3681179	0.402387	0.4128507
752	0.4177344	0.3627132	0.3641005	0.3863955	0.4281212	0.3980905	0.3685869	0.4027975	0.4133655
754	0.4180884	0.3633062	0.364561	0.3870488	0.428424	0.3988028	0.3690353	0.4032546	0.4139429
756	0.4184087	0.3639078	0.3650013	0.3877002	0.4287333	0.399504	0.3695317	0.4037235	0.4145056
758	0.4187507	0.3645211	0.3654718	0.3883601	0.4290567	0.4001973	0.3700421	0.4041989	0.4150611
760	0.4191331	0.3651546	0.3659837	0.3890747	0.4293989	0.4009074	0.370588	0.4046968	0.41564
762	0.4195161	0.3657874	0.3664665	0.3898082	0.4297639	0.4016252	0.3711504	0.4051901	0.4161905
764	0.41987	0.3663049	0.366881	0.3904774	0.4301298	0.4022532	0.3716466	0.4056388	0.4166829
766	0.4202587	0.3668026	0.3672498	0.3911688	0.4305208	0.4028775	0.372124	0.4061034	0.4171669
768	0.4206733	0.3672104	0.3675422	0.3918465	0.4309739	0.4034717	0.3725874	0.4065662	0.4176591
770	0.4210329	0.3676042	0.3677933	0.3924651	0.4314331	0.4040624	0.3729849	0.4070475	0.4180908
772	0.4213438	0.3680565	0.3680909	0.3930205	0.4318348	0.4046353	0.3733736	0.4075085	0.4185699
774	0.4216868	0.3686257	0.3685249	0.3936443	0.4322392	0.405283	0.373832	0.4080392	0.4191148
776	0.4220451	0.3693008	0.369045	0.3942727	0.4326369	0.4060047	0.3743625	0.4085838	0.4197688
778	0.4224846	0.3700173	0.3696292	0.3949823	0.4330459	0.40679	0.3749303	0.4091755	0.420513
780	0.4229472	0.3707435	0.3702455	0.3957054	0.4334487	0.407596	0.3755235	0.4098101	0.4213042
782	0.4234517	0.3714523	0.3708466	0.3964794	0.4338585	0.4083721	0.3761289	0.4104034	0.4220667
784	0.423956	0.3721638	0.371431	0.3972542	0.4342915	0.4091288	0.3767461	0.4110081	0.4228189
786	0.42439	0.3727898	0.37194	0.3979676	0.4346951	0.4097804	0.3772832	0.4115407	0.4234642
788	0.4248152	0.3733927	0.3724348	0.3986663	0.435099	0.4104364	0.3778242	0.412075	0.4240993
790	0.4252135	0.3739655	0.3729049	0.3993192	0.4354967	0.4110675	0.3783303	0.4125725	0.4246922
792	0.4255692	0.3744972	0.3733406	0.3999504	0.4358599	0.4116518	0.3787881	0.4130185	0.4252414
794	0.425947	0.3750358	0.3737881	0.4005779	0.4362326	0.4122492	0.3792581	0.4134768	0.4258124
796	0.4262979	0.3755724	0.3742292	0.4011947	0.4365919	0.412838	0.3797222	0.4139332	0.4263706
798	0.4266448	0.3760802	0.3746373	0.4017817	0.4369425	0.4133916	0.3801519	0.4143644	0.4268985
800	0.426968	0.3765489	0.3750259	0.402333	0.4372606	0.413923	0.3805592	0.4147692	0.4273928
802	0.4272747	0.3770018	0.3754078	0.4028702	0.4375799	0.4144383	0.380951	0.4151434	0.4278741
804	0.4275649	0.3774389	0.3757728	0.4033996	0.437897	0.4149364	0.381324	0.4155207	0.428346
806	0.4278234	0.3778265	0.3760939	0.4038662	0.4381877	0.4154033	0.3816659	0.4158413	0.4287827
808	0.4280674	0.3781703	0.3763705	0.4042851	0.4384608	0.4158217	0.3819667	0.4161366	0.429177
810	0.4282863	0.3784928	0.3766559	0.4046955	0.4387323	0.4162332	0.3822341	0.4164081	0.4295433
812	0.4284449	0.3787771	0.3768711	0.4050454	0.4389679	0.4165931	0.3824568	0.4166267	0.4298324
814	0.4285601	0.3789856	0.3770314	0.405324	0.4391546	0.416876	0.3826281	0.4167832	0.4300808

816	0.4286343	0.3791704	0.3771759	0.4055594	0.4393493	0.4171519	0.3827783	0.4169178	0.4302852
818	0.428673	0.3793002	0.3772748	0.405754	0.4395295	0.4173677	0.3828687	0.4170023	0.4304361
820	0.4286688	0.3793819	0.3773167	0.4058869	0.4396963	0.4175264	0.3829159	0.4170268	0.430551
822	0.4286157	0.3794123	0.377334	0.4059891	0.4398309	0.4176379	0.3829117	0.4170068	0.4306077
824	0.4285116	0.3794003	0.3772932	0.4060053	0.4399449	0.4176974	0.3828691	0.4169307	0.4305993
826	0.4283561	0.3793247	0.3772021	0.4059691	0.4400342	0.4176971	0.3827752	0.4167951	0.4305419
828	0.4281574	0.3792049	0.3770792	0.4058664	0.4400824	0.4176323	0.3826212	0.4166076	0.4304377
830	0.4278708	0.3790198	0.3768608	0.4056922	0.4400801	0.4174945	0.3823968	0.4163486	0.4302314
832	0.4275157	0.378757	0.3765807	0.4054403	0.4400069	0.4173003	0.3821337	0.4160093	0.4299589
834	0.42709	0.3784271	0.376242	0.4051068	0.4398658	0.4170065	0.3817766	0.4155989	0.4296098
836	0.4265983	0.3780243	0.3758287	0.4047265	0.4396459	0.4166377	0.3813495	0.4151115	0.4291912
838	0.4259852	0.3775289	0.375316	0.4041985	0.4392931	0.4161586	0.3808246	0.414515	0.4286436
840	0.425291	0.3769488	0.374738	0.403588	0.4388272	0.4155783	0.3802088	0.4138226	0.4280234
842	0.4245247	0.3763015	0.3740633	0.4029099	0.4382678	0.4149199	0.3795432	0.4130661	0.4273149
844	0.4236584	0.3755715	0.3733274	0.4021265	0.4376244	0.4141879	0.3787682	0.4122085	0.4265075
846	0.4226919	0.374742	0.3724943	0.4012766	0.4368787	0.4133313	0.3779178	0.411247	0.4255779
848	0.4216746	0.3738696	0.3716144	0.4003386	0.4360681	0.4124197	0.3770025	0.4102299	0.4246187
850	0.4206019	0.3729373	0.3706766	0.3993349	0.4351816	0.4114378	0.3760458	0.4091752	0.4235728
852	0.4194056	0.3718997	0.369619	0.3982291	0.434198	0.4103693	0.3749661	0.4079776	0.4224103
854	0.4181615	0.3708001	0.3685322	0.3970613	0.433157	0.4092231	0.3738405	0.4067273	0.4211821
856	0.4168938	0.3696727	0.3673955	0.3958486	0.4320716	0.4080308	0.3726892	0.4054401	0.4199397
858	0.4155754	0.3685074	0.3662159	0.3945954	0.4309499	0.4068143	0.3714933	0.4041224	0.4186295
860	0.4141444	0.3672489	0.36496	0.3932438	0.4297315	0.405474	0.3701946	0.4026777	0.4172115
862	0.4126962	0.3659552	0.3636642	0.3918581	0.4284892	0.4041107	0.3688829	0.4012299	0.4157556
864	0.4112589	0.3646654	0.3623588	0.3904749	0.4272396	0.4027709	0.3675703	0.3997804	0.4143188
866	0.4097243	0.3632841	0.3609853	0.3890045	0.4259075	0.4013177	0.3661654	0.3982247	0.4127668
868	0.4081236	0.361847	0.3595494	0.3874661	0.4245244	0.3998069	0.3647045	0.3966179	0.4111604
870	0.4065745	0.3604566	0.358151	0.3859885	0.423188	0.3983555	0.3632834	0.3950633	0.4095946
872	0.4049802	0.3590243	0.356718	0.384464	0.4218065	0.3968423	0.3618272	0.3934461	0.4079659
874	0.4033192	0.3575253	0.3551976	0.382862	0.4203805	0.3952818	0.3603002	0.3918014	0.406288
876	0.4016594	0.3560312	0.3536951	0.3812676	0.4189583	0.3937309	0.3587864	0.3901341	0.4046069
878	0.4000391	0.3545586	0.3522263	0.3796949	0.4175494	0.3921921	0.3572748	0.388502	0.4029488
880	0.3983669	0.353067	0.3507148	0.3781019	0.4161189	0.3906225	0.3557447	0.3868273	0.401252
882	0.3965697	0.3514447	0.3490846	0.3763685	0.4145692	0.3889279	0.3540989	0.3850252	0.3994102
884	0.394884	0.3499342	0.3475462	0.3747415	0.4131356	0.3873419	0.3525372	0.3833392	0.397687
886	0.3932441	0.3484664	0.3460543	0.3731565	0.4117223	0.3857884	0.3510365	0.3816924	0.396003
888	0.3915084	0.3469063	0.3444719	0.3714911	0.4102407	0.3841499	0.3494329	0.3799505	0.3942236
890	0.3897659	0.3453555	0.3428881	0.3698307	0.4087494	0.3825115	0.3478404	0.3782092	0.3924277
892	0.3881069	0.3438711	0.3413747	0.3682255	0.4073197	0.380948	0.3463046	0.376562	0.3907244
894	0.3863853	0.3423365	0.3397995	0.3665701	0.4058542	0.3793396	0.3447234	0.3748415	0.3889472
896	0.3846301	0.3407538	0.3382007	0.364861	0.4043486	0.3776815	0.3430862	0.3730723	0.387128
898	0.3829026	0.3392026	0.3366143	0.3631926	0.4028744	0.3760629	0.3415002	0.3713463	0.3853431
900	0.3811699	0.3376428	0.3350179	0.3615019	0.401414	0.3744465	0.3398867	0.369619	0.383549
902	0.379399	0.3360252	0.3333715	0.3597742	0.3999452	0.3727962	0.3382372	0.3678392	0.3817061
904	0.3775901	0.3343808	0.3316866	0.357998	0.3984639	0.3711149	0.3365328	0.3660397	0.3798307
906	0.3758495	0.3327572	0.3300461	0.3562726	0.3970456	0.3695062	0.3348887	0.3642966	0.3780174
908	0.3741361	0.3311706	0.3284288	0.3545658	0.3956816	0.3679174	0.3332713	0.3625894	0.3762304
910	0.3723726	0.3295153	0.3267618	0.3528129	0.3943337	0.3662949	0.3315821	0.3608076	0.37439
912	0.3706511	0.3278922	0.3251398	0.3510842	0.3930699	0.3647201	0.3299439	0.3591033	0.3725984
914	0.3690682	0.326404	0.3236137	0.3494749	0.3919605	0.3632651	0.3284478	0.3575076	0.3709279
916	0.3674915	0.3248986	0.3221017	0.3479052	0.3909418	0.361815	0.326933	0.3559284	0.3692745
918	0.3659731	0.3234444	0.3206343	0.3463842	0.3900687	0.3604563	0.3254869	0.3544221	0.3676738
920	0.3646063	0.3221195	0.3193147	0.3449956	0.389381	0.3592468	0.3241676	0.3530657	0.3662603
922	0.3633357	0.3208696	0.3180831	0.3436843	0.388872	0.3580928	0.3229315	0.3517816	0.3649071
924	0.3620984	0.3196986	0.3169004	0.3424638	0.3885573	0.3570377	0.3217774	0.3505743	0.3636374
926	0.360967	0.318632	0.3158231	0.3413082	0.3884649	0.3560667	0.3207202	0.349465	0.3624645
928	0.3599924	0.3176963	0.3149103	0.3403282	0.3885792	0.355254	0.319803	0.3485027	0.3614416
930	0.3590991	0.3168448	0.3140706	0.339423	0.3888754	0.3545208	0.3189772	0.3476312	0.3605332
932	0.3582681	0.3160588	0.3133045	0.3386022	0.3894023	0.3538728	0.3182211	0.3468345	0.3596775
934	0.3575536	0.3153915	0.312655	0.3378806	0.3901492	0.3533434	0.3175865	0.3461614	0.3589587
936	0.3569815	0.3148347	0.3121329	0.3372883	0.3910667	0.3529418	0.3170764	0.3456154	0.3583711
938	0.356497	0.3143649	0.3116876	0.3367796	0.3922794	0.3526521	0.3166521	0.34516	0.3578906
940	0.3561454	0.3140063	0.3113701	0.336386	0.3938118	0.3524892	0.3163401	0.3448351	0.3575341
942	0.3559591	0.3137922	0.3112038	0.33615	0.3956065	0.3524923	0.316197	0.3446731	0.3573533
944	0.3559222	0.3137005	0.3111676	0.3360471	0.3977312	0.3526423	0.3161888	0.3446612	0.3573131
946	0.3560968	0.3138055	0.3113814	0.3361121	0.4003858	0.3530101	0.3163558	0.34484	0.3574786
948	0.3564299	0.3140748	0.311664	0.3363151	0.4033691	0.3535331	0.3166708	0.3451695	0.3578008
950	0.3569177	0.3144257	0.31208	0.3366557	0.4066259	0.3542121	0.3172067	0.3456637	0.3582763

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	55	56	57	58	59	60	61	62	63
Sample Numb	"0110a"	"0111a"	"0112a"	"0113a"	"0114a"	"0115a"	"0116a"	"0117a"	"0118a"
400	0.7781149	0.711133	0.7276059	0.7414168	0.7096283	0.726806	0.6520679	0.7062058	0.7235578
402	0.8152934	0.7441609	0.7592626	0.7768544	0.7424356	0.7664696	0.6781524	0.7410896	0.7575393
404	0.8532405	0.7764477	0.7907139	0.8119965	0.7741118	0.804824	0.7036831	0.7745296	0.7918769
406	0.8865668	0.8062578	0.820738	0.8451538	0.8057745	0.8400198	0.7267594	0.8070427	0.8225921
408	0.9173819	0.8333197	0.8467461	0.8747025	0.8326628	0.8735433	0.7462119	0.8358712	0.8488684
410	0.9465238	0.8576241	0.8700937	0.9030079	0.8574487	0.9047379	0.763615	0.8639351	0.8740572
412	0.9723306	0.8791239	0.8903223	0.9276273	0.880748	0.932003	0.7782986	0.8877831	0.8956827
414	0.9966792	0.89831	0.9070696	0.9505416	0.9006869	0.9571711	0.7904943	0.9086488	0.9154182
416	1.0179734	0.9161957	0.921847	0.9694513	0.9177868	0.9786899	0.7999783	0.9276601	0.9327745
418	1.0359228	0.9301274	0.9328002	0.9858555	0.9314166	0.996402	0.8061763	0.9425284	0.9473872
420	1.0530052	0.9432647	0.9438729	0.9996681	0.9439312	1.0138838	0.8115001	0.9569156	0.9595073
422	1.0671846	0.9528641	0.9519733	1.0117421	0.9530469	1.0278943	0.814537	0.9677202	0.9697869
424	1.0788722	0.9612743	0.957749	1.0206463	0.9593999	1.0401162	0.8194135	0.9769826	0.977765
426	1.0906873	0.9685648	0.9609714	1.0299261	0.9649115	1.0507405	0.8166125	0.984167	0.9850497
428	1.1006306	0.973942	0.962856	1.0378253	0.9682118	1.0616628	0.8149606	0.990333	0.9888135
430	1.1072001	0.974938	0.9637164	1.0430734	0.9699076	1.0692203	0.8083001	0.9936172	0.9921427
432	1.1140854	0.9758234	0.9631034	1.0474476	0.9705738	1.075748	0.8011951	0.9971325	0.9939337
434	1.1203469	0.9763724	0.9617105	1.0504851	0.970239	1.0827484	0.7951157	0.9991286	0.9955786
436	1.1227317	0.9743755	0.9594967	1.0516237	0.9677963	1.0854807	0.7888901	0.9987586	0.9951159
438	1.1270429	0.971604	0.9564496	1.0533704	0.9651604	1.0889772	0.7826937	0.9975706	0.9951822
440	1.1297268	0.9689922	0.9532138	1.0540119	0.9612066	1.0910854	0.7757635	0.9962903	0.9943589
442	1.1314784	0.9650911	0.9489967	1.0536209	0.9570345	1.0921474	0.7692642	0.9944123	0.9930204
444	1.132611	0.960748	0.9454826	1.0527174	0.9543352	1.0932856	0.7632298	0.991019	0.9909175
446	1.1331193	0.9560956	0.9410422	1.0510752	0.9492047	1.0922843	0.7577367	0.9874818	0.987395
448	1.1327434	0.9514026	0.9376285	1.0492718	0.9449984	1.0913051	0.7523419	0.9834688	0.9840028
450	1.1318407	0.9468753	0.9339917	1.0462153	0.9423121	1.0894514	0.7482464	0.9800494	0.9816689
452	1.1307923	0.9425411	0.9295893	1.0430875	0.9395187	1.0875492	0.7423341	0.9748398	0.9786269
454	1.1293793	0.9388223	0.9258519	1.0404533	0.9345812	1.0844678	0.7369261	0.9700875	0.9746548
456	1.1271772	0.935676	0.9219141	1.0366073	0.927561	1.0820222	0.7327621	0.9651361	0.9711548
458	1.1234798	0.9324483	0.9170064	1.032505	0.9193235	1.0770086	0.7270777	0.9601961	0.9662281
460	1.1207111	0.9287315	0.9117104	1.028507	0.9121441	1.071412	0.7216233	0.9543771	0.9621427
462	1.1168804	0.9224929	0.905601	1.0229836	0.906538	1.0657569	0.71655	0.9480692	0.9569792
464	1.1115962	0.9141741	0.8982551	1.0166111	0.8999671	1.0583847	0.7103643	0.9407302	0.9517043
466	1.1059344	0.9038124	0.8907772	1.0097246	0.891206	1.0507371	0.7044207	0.9330907	0.9462121
468	1.099825	0.8934965	0.8829331	1.0015619	0.8809881	1.0416863	0.6986516	0.9253832	0.9395604
470	1.0912046	0.8837292	0.8754516	0.9926005	0.8697956	1.0316148	0.6924608	0.9173459	0.9322527
472	1.0828639	0.8739421	0.868138	0.9832443	0.8594591	1.0208073	0.6864046	0.9094525	0.9235209
474	1.0724667	0.8638009	0.8596976	0.9714003	0.8487721	1.009231	0.6797347	0.9004516	0.911886
476	1.0605316	0.8540106	0.8513375	0.9593387	0.8379521	0.9957235	0.6729682	0.8895953	0.8990023
478	1.0484513	0.8439404	0.842543	0.9461163	0.8266311	0.9817205	0.6662664	0.8781092	0.8858204
480	1.0345089	0.8326203	0.832204	0.9316933	0.8143405	0.9659842	0.6593721	0.8654027	0.8727197
482	1.0203742	0.8220173	0.8220726	0.9173145	0.8025752	0.9491874	0.6524624	0.852569	0.8591528
484	1.0058839	0.8114411	0.8113631	0.9014647	0.7898272	0.931765	0.6456535	0.8392113	0.8457437
486	0.9908521	0.8000154	0.7998641	0.8847413	0.7767284	0.913082	0.6386604	0.8258036	0.830748
488	0.9734137	0.7884125	0.7880718	0.8673027	0.7631629	0.8938817	0.6311674	0.8119907	0.8172042
490	0.9573351	0.776659	0.7752684	0.8498344	0.7495311	0.8751898	0.6242241	0.7986266	0.8034667
492	0.9388072	0.7635365	0.7616628	0.8319288	0.7347976	0.8549407	0.6160871	0.7840025	0.7889737
494	0.9201347	0.7495373	0.746865	0.8119828	0.7193843	0.8331984	0.6075781	0.7668023	0.7709579
496	0.9007096	0.7348511	0.7326505	0.7932003	0.7037601	0.8114992	0.598803	0.7495108	0.7519034
498	0.8820486	0.7210336	0.7190933	0.7743003	0.6892501	0.7914832	0.5904912	0.7336503	0.7336496
500	0.8615686	0.7057008	0.7047564	0.7560732	0.6740801	0.7699453	0.5804721	0.7171351	0.7164478
502	0.8419526	0.690042	0.691399	0.739676	0.658264	0.7552717	0.5711635	0.7005796	0.6992634
504	0.8242334	0.6745706	0.6788074	0.7168668	0.6429993	0.7354862	0.5613225	0.6851808	0.6805233
506	0.8109806	0.6583552	0.6648505	0.6957051	0.628	0.7084984	0.5519365	0.6694537	0.6634281
508	0.7961925	0.642555	0.6516933	0.6775078	0.6135904	0.6887197	0.5422722	0.6535748	0.6471877
510	0.770173	0.6278363	0.6400297	0.6601881	0.6006159	0.6691908	0.5335833	0.639316	0.6310224
512	0.7514002	0.6143909	0.6290898	0.6444926	0.5873541	0.651729	0.5254658	0.6248664	0.6159816
514	0.7345059	0.6009891	0.6177388	0.6286086	0.5750332	0.6346167	0.5168163	0.6113925	0.6022103
516	0.718399	0.5896884	0.6078835	0.6143212	0.5636411	0.6187196	0.5096976	0.5997521	0.5886009
518	0.7060736	0.5781709	0.5993481	0.6022485	0.5532475	0.6043146	0.5032861	0.5890006	0.5771512

520	0.6920272	0.5685843	0.5910901	0.5906321	0.5439463	0.5922554	0.4967372	0.5788974	0.5656801
522	0.6804804	0.5592717	0.5836455	0.5814714	0.5351777	0.5810275	0.4911159	0.5691015	0.5561091
524	0.6703416	0.5528036	0.5778489	0.5715917	0.5282136	0.5700609	0.4872258	0.5613334	0.5478038
526	0.6614975	0.5457139	0.5715423	0.5632678	0.5215142	0.5601324	0.4822176	0.5536948	0.5395099
528	0.654247	0.5400941	0.5666808	0.5564657	0.5158683	0.5529535	0.4780344	0.5475925	0.5331575
530	0.6469671	0.5366247	0.5630799	0.5507768	0.511317	0.5456731	0.4750069	0.5426971	0.5281732
532	0.6402087	0.5325611	0.5595609	0.5455109	0.5066965	0.5392247	0.4719222	0.5385397	0.5228235
534	0.6353616	0.5295864	0.5570004	0.5420372	0.5031179	0.5347252	0.469841	0.5349748	0.5184462
536	0.6300046	0.5272927	0.5542743	0.537458	0.4996991	0.5288203	0.4675356	0.53172	0.5141822
538	0.6255717	0.5254766	0.5519131	0.5341561	0.4972301	0.5246153	0.4658184	0.5290007	0.510281
540	0.6218273	0.5238107	0.5494087	0.5304451	0.4948125	0.5195315	0.4637896	0.5263186	0.5070443
542	0.6167436	0.5221685	0.547021	0.5271971	0.4921081	0.515377	0.4617841	0.5236752	0.5035912
544	0.6120432	0.5204408	0.5439376	0.5237327	0.4896335	0.5110033	0.4607109	0.5208139	0.4997392
546	0.6069906	0.5184357	0.5409888	0.5197667	0.4871145	0.5064533	0.4581062	0.5175359	0.4965996
548	0.6016428	0.5162026	0.5373498	0.5154063	0.484266	0.5019633	0.4557343	0.514091	0.492855
550	0.5967375	0.5141928	0.5337471	0.5116071	0.4812934	0.498107	0.4534733	0.5107821	0.4891349
552	0.5905273	0.5109525	0.5301269	0.5070345	0.4778145	0.4929656	0.4507031	0.506007	0.4855335
554	0.5846123	0.5074029	0.5258775	0.5020813	0.4740162	0.4880648	0.4477909	0.5010431	0.4817872
556	0.5790299	0.503472	0.5215736	0.4972712	0.4703941	0.4835323	0.445037	0.4961692	0.4778001
558	0.5729845	0.4993079	0.517005	0.4924778	0.4665684	0.478761	0.4422514	0.4906567	0.4739885
560	0.5666937	0.4943947	0.5123717	0.4871806	0.4626158	0.4736524	0.4389082	0.4848	0.4702523
562	0.5606986	0.4899423	0.5081547	0.4824162	0.4584449	0.4694296	0.4358765	0.4794514	0.466817
564	0.5554814	0.485935	0.5043256	0.4785237	0.4549113	0.464997	0.4335174	0.4743913	0.463506
566	0.5499894	0.4815682	0.5005562	0.4744729	0.4513773	0.4607866	0.4309816	0.4694849	0.4605321
568	0.5450332	0.4774215	0.4972435	0.4706837	0.4479808	0.4570135	0.4286458	0.4648601	0.4576528
570	0.5404769	0.4735949	0.4938632	0.4672923	0.4453158	0.453146	0.4266405	0.4606401	0.4547955
572	0.5360056	0.4700134	0.4908348	0.4642251	0.4427639	0.4497187	0.4246635	0.456646	0.4526589
574	0.5319467	0.4673017	0.488125	0.4616119	0.440072	0.4468133	0.4228218	0.4535088	0.4502378
576	0.5279374	0.4642872	0.4856152	0.4587575	0.437696	0.443563	0.4208653	0.4500209	0.4475732
578	0.5241019	0.4616302	0.4830903	0.4560969	0.4355477	0.4406714	0.4193008	0.4469978	0.4455168
580	0.5205513	0.4592093	0.4806859	0.4537051	0.4335915	0.4377434	0.4178706	0.4440086	0.4433249
582	0.5168858	0.4567283	0.4779955	0.4510349	0.4314966	0.4350282	0.4161363	0.4410421	0.4410264
584	0.5134087	0.4547979	0.4757605	0.4487529	0.4297892	0.4322721	0.4147879	0.4383542	0.438984
586	0.509994	0.4529251	0.4734803	0.4462861	0.4282415	0.4298598	0.4132361	0.4360183	0.4369373
588	0.5065392	0.4511196	0.4712564	0.4440134	0.4266034	0.4273866	0.4121467	0.4333441	0.4348981
590	0.5033269	0.4494303	0.4691097	0.4417331	0.4251643	0.4250922	0.4108368	0.430988	0.433034
592	0.5002305	0.448177	0.4672542	0.4397097	0.4237745	0.4228904	0.4095986	0.4287703	0.4311679
594	0.4972201	0.4465634	0.4652471	0.437693	0.4223396	0.4206744	0.408414	0.4264846	0.4293878
596	0.4941315	0.4448324	0.4634464	0.4356526	0.4208112	0.4186339	0.4071624	0.4241509	0.4277265
598	0.4914643	0.4431769	0.4616953	0.433954	0.4194695	0.4167758	0.4062081	0.4221173	0.4261625
600	0.4888481	0.4414831	0.4601307	0.4322678	0.4180447	0.4149808	0.4056211	0.4200162	0.4248003
602	0.4862028	0.4395731	0.4587028	0.4308603	0.4169229	0.4134994	0.4044288	0.4183499	0.423795
604	0.4838485	0.4377372	0.4574066	0.4295902	0.4153849	0.4118701	0.4035342	0.4161507	0.4225063
606	0.4816124	0.4357266	0.4563027	0.4282997	0.4140283	0.4104905	0.4027135	0.414324	0.4214222
608	0.4795366	0.4334952	0.4553486	0.4270142	0.4125148	0.4090007	0.4017836	0.4123704	0.4204493
610	0.4775958	0.4313602	0.4543558	0.4259536	0.411062	0.4076012	0.4010349	0.4105003	0.4195758
612	0.4759022	0.429378	0.4534581	0.4249668	0.4098241	0.4063346	0.4003421	0.40892	0.4188576
614	0.4741893	0.4274098	0.4527194	0.4241281	0.4085426	0.4051815	0.3996857	0.4073152	0.4181411
616	0.4725323	0.4254384	0.4519981	0.4232081	0.407198	0.4039403	0.3990023	0.4056402	0.4174228
618	0.4711725	0.4238046	0.4514773	0.4225135	0.4062182	0.4030477	0.3985018	0.4043932	0.4168965
620	0.4697954	0.4222285	0.4508758	0.4219255	0.4052612	0.4020833	0.3980273	0.4030431	0.416485
622	0.4685988	0.4208936	0.4504277	0.4214808	0.4043055	0.4010961	0.3975438	0.4018601	0.4160181
624	0.4674118	0.4196143	0.4499359	0.4209361	0.4034774	0.4001505	0.3970729	0.4007019	0.4155713
626	0.4663985	0.4185035	0.449511	0.4203934	0.4027416	0.3992646	0.3967283	0.3996755	0.4150569
628	0.4651517	0.4175306	0.4489034	0.4199218	0.4019975	0.3983403	0.3963096	0.3986389	0.4145828
630	0.4639338	0.4166346	0.4482588	0.4194025	0.4013336	0.3974142	0.3958581	0.3976017	0.4140697
632	0.4626382	0.415827	0.4475469	0.4188221	0.4007284	0.3965036	0.3955753	0.3966159	0.4134482
634	0.4612988	0.4152524	0.4467735	0.4182918	0.4001085	0.3956096	0.3951574	0.3956101	0.4129182
636	0.4598365	0.4145193	0.4458442	0.4177487	0.3995626	0.3946096	0.394704	0.3946231	0.4122216
638	0.458321	0.4138334	0.4448726	0.4171052	0.3989896	0.393613	0.3943007	0.3935919	0.4114684
640	0.4569137	0.4132361	0.4438045	0.4164919	0.3984149	0.3926132	0.3938736	0.392601	0.4106738
642	0.4553077	0.4126118	0.4425066	0.4158134	0.397845	0.3915786	0.3934209	0.3915421	0.4098105
644	0.4536804	0.4119709	0.4410946	0.4151623	0.3973688	0.3905317	0.3929831	0.3905055	0.4088536
646	0.4521177	0.411424	0.439702	0.4144935	0.3968168	0.3894776	0.3925685	0.389461	0.4079925
648	0.4504873	0.4108494	0.4382023	0.4138303	0.3962783	0.3883998	0.392109	0.3884048	0.4070337
650	0.4488925	0.4102611	0.4365873	0.4131968	0.395805	0.3872786	0.3916589	0.387314	0.4059933
652	0.4473463	0.40969	0.4349783	0.412506	0.3952999	0.3861906	0.3912415	0.3862619	0.4050179
654	0.445796	0.409125	0.4333137	0.4118558	0.3948285	0.3852247	0.3907999	0.3853908	0.404018
656	0.4441872	0.4085149	0.4314833	0.4111443	0.3944051	0.3840152	0.3904537	0.3842299	0.4029821
658	0.4426343	0.408052	0.4297191	0.4104362	0.393882	0.3828649	0.3900523	0.3831319	0.4019844
660	0.4411385	0.4074402	0.4279557	0.4098872	0.3933923	0.3817139	0.3896127	0.3821065	0.4010383
662	0.4396503	0.4068339	0.4262125	0.4091911	0.3929055	0.3805645	0.389194	0.3810374	0.4000465
664	0.4381745	0.4061871	0.4245006	0.4084073	0.3924091	0.3793828	0.3887967	0.3799509	0.3990713
666	0.436797	0.4056301	0.4227473	0.4076916	0.3919125	0.3782315	0.3884149	0.3789011	0.3981172

668	0.4354088	0.4050295	0.4210926	0.4069569	0.3914111	0.3770815	0.388061	0.3778611	0.3972068
670	0.4339398	0.4043406	0.4192939	0.4061147	0.390836	0.3758506	0.3876242	0.3767542	0.3963162
672	0.4326242	0.4038078	0.4176621	0.4053943	0.3903493	0.374741	0.3872536	0.37576	0.3954712
674	0.4314104	0.4032506	0.4162287	0.4046829	0.3899108	0.3736361	0.3869548	0.3747947	0.3947162
676	0.4302362	0.4026934	0.4147846	0.4039544	0.3894561	0.3726137	0.3866489	0.3738781	0.3939862
678	0.4290747	0.4021497	0.4133995	0.4032555	0.389014	0.371532	0.3863633	0.3729434	0.3933156
680	0.427996	0.4016529	0.4121389	0.4026107	0.38864	0.3705359	0.3861454	0.3720848	0.3926959
682	0.4270015	0.4012203	0.4109659	0.4020009	0.3882733	0.3695589	0.3858874	0.3712803	0.3921201
684	0.4260375	0.4007107	0.4098954	0.4013754	0.3878832	0.3686408	0.3857	0.3704544	0.3915811
686	0.4251956	0.4003066	0.4088871	0.4008065	0.3875423	0.3677768	0.3855089	0.3697378	0.3910932
688	0.4243448	0.3998707	0.4080115	0.4002623	0.3872556	0.3669751	0.3853532	0.3690391	0.3906655
690	0.423569	0.399478	0.4071806	0.399757	0.3870005	0.3661849	0.3852373	0.3683711	0.3902924
692	0.4228382	0.3991485	0.4064342	0.3993412	0.386753	0.3654506	0.3851406	0.367757	0.389953
694	0.4221841	0.3988534	0.405793	0.3989583	0.3865797	0.364878	0.3850773	0.3672505	0.3896553
696	0.4216257	0.3985769	0.4052397	0.3986027	0.3863787	0.3642634	0.385033	0.366733	0.3894082
698	0.4210691	0.3983351	0.4047335	0.3983115	0.386341	0.3637411	0.385091	0.3662836	0.3892577
700	0.4205783	0.3981491	0.4042988	0.3980749	0.3862365	0.3632596	0.3851229	0.3658454	0.3891005
702	0.420173	0.3979946	0.4040075	0.3979189	0.3862025	0.3628394	0.3851863	0.3655043	0.3890133
704	0.4198141	0.3978323	0.4036736	0.3977595	0.3861861	0.362453	0.3852893	0.3651744	0.3889388
706	0.4194855	0.397691	0.4034188	0.397638	0.3861968	0.3620951	0.3854196	0.3648928	0.3889467
708	0.419207	0.3976485	0.4032415	0.397615	0.3862333	0.3618436	0.3855864	0.3646557	0.388959
710	0.4189658	0.3975997	0.4031012	0.3976075	0.3863164	0.3616132	0.3857494	0.3644632	0.3890413
712	0.4187995	0.3976314	0.4030328	0.3976699	0.3864282	0.361439	0.3860187	0.3643438	0.3891648
714	0.4186618	0.3977067	0.4029932	0.3977644	0.3865876	0.3613199	0.3862658	0.3642644	0.3893402
716	0.4185782	0.3978118	0.4030354	0.3979341	0.3867778	0.3612453	0.3865941	0.3642393	0.3895574
718	0.4185606	0.3979416	0.4031002	0.3981397	0.3870009	0.3612165	0.3869202	0.3642456	0.3898197
720	0.4185873	0.3981377	0.40324	0.3984214	0.3872692	0.3612923	0.3872954	0.3643303	0.3901614
722	0.4186372	0.3983992	0.4033814	0.3987162	0.3875553	0.3614084	0.3877063	0.3645452	0.3904861
724	0.4187256	0.3986599	0.4035705	0.3990313	0.3878726	0.3615017	0.3881217	0.3646974	0.3908517
726	0.4188839	0.3990154	0.4038441	0.3994584	0.3882821	0.3616704	0.3886376	0.3649135	0.3913252
728	0.4190748	0.3994735	0.4041218	0.3999183	0.3887141	0.3618696	0.3892064	0.3651676	0.39188
730	0.4192823	0.3998965	0.4044796	0.4004374	0.3891085	0.3620721	0.3896874	0.3654223	0.3923489
732	0.4195339	0.4003367	0.40487	0.4009126	0.3895225	0.3623016	0.3902251	0.3657527	0.3928578
734	0.4199073	0.4008245	0.4052306	0.4014378	0.389979	0.3625994	0.3907852	0.3661042	0.3934153
736	0.4201643	0.4012698	0.4055509	0.4019147	0.390404	0.362867	0.391312	0.3664314	0.3939265
738	0.4204412	0.4017563	0.405945	0.4024471	0.3908531	0.3631634	0.3918676	0.3668039	0.394491
740	0.4207562	0.4022877	0.4063062	0.4029866	0.3913044	0.3634685	0.3924438	0.3671799	0.395044
742	0.4210515	0.4027919	0.4066917	0.4035045	0.3917691	0.3637807	0.3930053	0.3675473	0.3956107
744	0.4213375	0.4033161	0.4070648	0.4040258	0.3922215	0.3640992	0.3935674	0.3679157	0.3961694
746	0.4216436	0.4038717	0.4074506	0.4045752	0.3926863	0.3644195	0.3941317	0.3683053	0.3967335
748	0.4219599	0.4044014	0.4078763	0.4051216	0.3931707	0.3647655	0.3947147	0.3686966	0.3973128
750	0.4222795	0.4049557	0.4082991	0.4056664	0.3936394	0.3651463	0.3952807	0.3691285	0.3978883
752	0.4226153	0.4055129	0.4087178	0.4062087	0.3941224	0.3655568	0.3958603	0.3695459	0.3984658
754	0.4229856	0.4061106	0.4091804	0.4068297	0.394684	0.3660077	0.3964855	0.3700649	0.3991044
756	0.4233665	0.4067172	0.4096718	0.4074329	0.3952351	0.36648	0.3971256	0.3705482	0.3997218
758	0.4238203	0.4073069	0.4101267	0.4080343	0.3957832	0.3669799	0.397768	0.3710539	0.400338
760	0.4241745	0.407915	0.4106287	0.4086551	0.3963652	0.3674803	0.3984382	0.371599	0.400971
762	0.424557	0.4085067	0.4111054	0.4092897	0.3969387	0.3679451	0.3990898	0.3721445	0.4016033
764	0.4249072	0.4090373	0.4115529	0.4098505	0.3974516	0.3683153	0.3997231	0.3726292	0.4021589
766	0.4252678	0.4095708	0.4120388	0.4104568	0.3979818	0.3685918	0.4003913	0.3731386	0.4027577
768	0.4256309	0.4100818	0.4125187	0.4110481	0.3985119	0.3688081	0.4010738	0.3736166	0.4033496
770	0.4260115	0.4105824	0.4130701	0.4116817	0.3990442	0.3690269	0.401756	0.3740988	0.4039661
772	0.4263927	0.4110731	0.4136121	0.4122856	0.399545	0.3693106	0.4023533	0.3745837	0.4045467
774	0.4267861	0.4116294	0.4141601	0.4129062	0.4001092	0.3697093	0.402939	0.3750747	0.4051855
776	0.427305	0.4123173	0.4147684	0.4136011	0.4006719	0.3702546	0.4035691	0.3756362	0.4059102
778	0.4278567	0.4130596	0.4153618	0.4143232	0.401321	0.3708856	0.404274	0.3761505	0.4066411
780	0.4284278	0.4138169	0.4159213	0.415033	0.4020119	0.371538	0.4049927	0.3766651	0.4074117
782	0.4289759	0.4146024	0.4164807	0.4157676	0.4026866	0.3721926	0.4057202	0.3772281	0.4081414
784	0.4295313	0.41533	0.4170487	0.4164842	0.4033866	0.3728449	0.4064512	0.3777962	0.4088709
786	0.4300182	0.4159583	0.4175664	0.4171162	0.4040119	0.3733845	0.4071232	0.3782999	0.4095115
788	0.4304931	0.4165722	0.4180845	0.4177441	0.4046074	0.3738979	0.4077905	0.3788022	0.4101564
790	0.4309457	0.4171533	0.4185887	0.4183381	0.4051855	0.3743709	0.4084281	0.3792865	0.4107822
792	0.4313749	0.4176962	0.4190759	0.4189007	0.4057366	0.3748186	0.40904	0.3797179	0.4113224
794	0.4318146	0.4182571	0.4195583	0.4194673	0.406293	0.3752621	0.4096512	0.3801652	0.4119029
796	0.432235	0.4187959	0.4200338	0.4200176	0.4068379	0.3757102	0.410246	0.3806019	0.4124602
798	0.4326431	0.4193138	0.4204857	0.4205506	0.4073459	0.376139	0.4108133	0.380996	0.4129854
800	0.4330085	0.4197894	0.4209154	0.4210502	0.4078329	0.3765252	0.4113473	0.3813806	0.4134831
802	0.4333699	0.4202509	0.4213243	0.4215309	0.4083058	0.3769123	0.4118695	0.381747	0.4139786
804	0.4337196	0.4207053	0.4217389	0.4220111	0.408766	0.3772816	0.412375	0.3820981	0.4144633
806	0.4340214	0.4211026	0.4221081	0.4224394	0.4091935	0.3775993	0.4128301	0.3824197	0.4148965
808	0.4342925	0.4214663	0.4224393	0.4228294	0.409564	0.3778773	0.4132309	0.382687	0.4152868
810	0.4345617	0.4218091	0.4227644	0.4232076	0.4099156	0.3781443	0.4136396	0.3829584	0.4156729
812	0.4347629	0.4220898	0.4230497	0.4235354	0.4102116	0.3783603	0.4139853	0.3831658	0.4160094
814	0.4349576	0.4223078	0.4232706	0.4237921	0.4104458	0.3785234	0.4142479	0.3833306	0.4162677

816	0.4350745	0.4224963	0.4234583	0.4240272	0.4106288	0.3786427	0.4144728	0.3834532	0.4165103
818	0.4351563	0.4226477	0.4236189	0.4242147	0.4107825	0.3787292	0.4146606	0.3835545	0.416704
820	0.4351959	0.4227253	0.4237239	0.4243466	0.4108728	0.3787577	0.4147859	0.3835918	0.4168433
822	0.4351776	0.4227719	0.4238107	0.4244526	0.4109134	0.3787583	0.4148687	0.383596	0.4169313
824	0.4351198	0.4227407	0.4238202	0.4244877	0.410879	0.3786901	0.4148674	0.3835326	0.4169762
826	0.4350024	0.4226615	0.4237959	0.4244795	0.4108063	0.3785773	0.4148322	0.3834369	0.4169577
828	0.4348489	0.4225234	0.4237062	0.4244025	0.4106703	0.3784174	0.4147173	0.3832894	0.4168719
830	0.4346196	0.4222984	0.4235671	0.4242505	0.410443	0.3781922	0.4145308	0.3830629	0.4167348
832	0.4343047	0.4220111	0.4233405	0.4240291	0.4101331	0.3778913	0.4142666	0.3827904	0.416512
834	0.4339175	0.4216361	0.4230505	0.4237277	0.4097661	0.3775148	0.4139245	0.3824384	0.4162124
836	0.4334628	0.4212052	0.422699	0.4233597	0.4093155	0.377086	0.4135256	0.3820033	0.4158373
838	0.4328879	0.4206388	0.4222462	0.4228661	0.4087683	0.3765475	0.4129929	0.3814787	0.4153506
840	0.4322173	0.4199897	0.4216871	0.4222708	0.4081357	0.3759395	0.4123789	0.3808702	0.4147652
842	0.4314948	0.4192621	0.4210645	0.4216165	0.4074229	0.3752623	0.4117013	0.3801986	0.414122
844	0.4306646	0.4184409	0.420344	0.4208503	0.4066169	0.3744963	0.4109265	0.3794367	0.4133775
846	0.4297237	0.4175178	0.4195458	0.4199927	0.4057223	0.3736455	0.4100544	0.3785783	0.4125288
848	0.4287302	0.4165291	0.4186718	0.419058	0.4047773	0.3727542	0.4091188	0.3776602	0.4116117
850	0.4276759	0.4154863	0.4177427	0.4180633	0.4037565	0.3717891	0.4081396	0.3767009	0.4106494
852	0.4265024	0.4143286	0.4166904	0.4169468	0.4026141	0.3707335	0.4070424	0.375621	0.409564
854	0.4252707	0.41311	0.4156143	0.4157866	0.401426	0.3696282	0.4058793	0.3744914	0.4084129
856	0.4240004	0.4118506	0.4144628	0.4145763	0.4001951	0.3684754	0.4046769	0.373331	0.4072176
858	0.4226966	0.4105415	0.4132763	0.4133175	0.3989179	0.3672995	0.403435	0.3721216	0.4059958
860	0.4212657	0.4091402	0.4119899	0.4119368	0.3975353	0.3660311	0.402082	0.3708084	0.4046449
862	0.4198182	0.4076897	0.4106689	0.410538	0.3961299	0.3647352	0.4007126	0.3694908	0.4032741
864	0.4183797	0.4062551	0.4093537	0.4091371	0.3947228	0.3634224	0.3993367	0.368163	0.4019117
866	0.4168352	0.404741	0.4079461	0.4076402	0.3932219	0.3620424	0.3978646	0.3667458	0.4004481
868	0.4152243	0.4031492	0.406478	0.4060729	0.3916567	0.360591	0.3963383	0.3652613	0.3989152
870	0.4136833	0.4016106	0.4050396	0.4045501	0.3901433	0.3591938	0.3948502	0.3638366	0.3974416
872	0.4120712	0.4000292	0.4035631	0.4029809	0.388598	0.3577496	0.393318	0.3623582	0.3959018
874	0.4104069	0.3983704	0.4020206	0.4013333	0.3869618	0.3562543	0.3917351	0.360815	0.3943273
876	0.4087509	0.3967376	0.4004885	0.3997136	0.3853399	0.3547527	0.3901467	0.3592803	0.3927279
878	0.4071024	0.3951095	0.3989764	0.398091	0.3837233	0.3532734	0.3885678	0.3577612	0.3911602
880	0.4054453	0.3934567	0.3974197	0.3964392	0.3820775	0.3517783	0.3869577	0.356217	0.3895515
882	0.4036481	0.3916699	0.3957422	0.3946522	0.3803163	0.3501503	0.3852188	0.3545657	0.3878188
884	0.4019559	0.389991	0.3941571	0.3929728	0.3786443	0.3486262	0.3835879	0.3530034	0.386198
886	0.4003091	0.3883676	0.3926158	0.391347	0.3770337	0.3471424	0.3819925	0.3514944	0.3846084
888	0.3985782	0.3866376	0.390992	0.3896062	0.3753062	0.345588	0.3803154	0.3498939	0.3829302
890	0.3968428	0.3849094	0.3893522	0.3878752	0.3736077	0.3440217	0.3786149	0.348298	0.3812507
892	0.3951899	0.3832557	0.3877996	0.3862053	0.3719601	0.3425226	0.377009	0.3467652	0.3796458
894	0.3934771	0.3815608	0.3861872	0.384487	0.3702609	0.3409734	0.3753408	0.3451845	0.3779924
896	0.3917211	0.3798013	0.384542	0.3827265	0.3685172	0.3393803	0.3736243	0.3435654	0.3762888
898	0.3900118	0.3780895	0.382924	0.380991	0.3668012	0.3378239	0.3719349	0.3419815	0.3746207
900	0.3882966	0.3763641	0.3813107	0.3792593	0.3650753	0.3362406	0.3702536	0.3403854	0.3729556
902	0.3865295	0.3746037	0.3796619	0.3774707	0.3633003	0.3346272	0.3685155	0.3387384	0.3712462
904	0.3847458	0.3728131	0.37799	0.3756611	0.3615097	0.3329616	0.3667583	0.3370625	0.3695053
906	0.3830237	0.3710843	0.3763764	0.3739067	0.3597456	0.331353	0.3650447	0.3354301	0.3678384
908	0.3813443	0.3693702	0.3747946	0.3721917	0.3580126	0.3297787	0.3633572	0.3338243	0.3661817
910	0.3796228	0.367614	0.3731614	0.370422	0.3562252	0.3281161	0.3616147	0.3321715	0.364485
912	0.3779405	0.365894	0.3715796	0.3686937	0.3544769	0.3265177	0.3599239	0.3305552	0.3628558
914	0.3763738	0.3642929	0.3700952	0.3671131	0.352848	0.3250338	0.3583353	0.3290881	0.361318
916	0.3748458	0.3627067	0.3686445	0.3655402	0.3512155	0.3235649	0.3567642	0.3276021	0.3598045
918	0.3733616	0.3611729	0.3672293	0.3640367	0.3496628	0.3221272	0.3552444	0.3261691	0.358361
920	0.3720372	0.3598144	0.3659793	0.3627059	0.3482091	0.3208453	0.3538712	0.3248855	0.3570691
922	0.3708267	0.3585114	0.3648006	0.3614545	0.3468144	0.3196293	0.352539	0.323674	0.3558404
924	0.369679	0.3572672	0.3636869	0.3602712	0.3455008	0.3184908	0.3512776	0.3225569	0.3546835
926	0.3686235	0.3561252	0.3626642	0.3591976	0.3442517	0.3174521	0.3500947	0.3215235	0.3536234
928	0.3677263	0.3551359	0.3617882	0.358285	0.3431399	0.3165453	0.3490438	0.3206393	0.3527066
930	0.3669353	0.3542286	0.3609968	0.3574674	0.3421119	0.3157388	0.3480621	0.3198473	0.3518758
932	0.3662249	0.3533885	0.3602865	0.3567349	0.3411215	0.3149941	0.3471392	0.3191191	0.351128
934	0.3656302	0.3526649	0.3596913	0.3561261	0.3402412	0.3143658	0.3463127	0.3185058	0.3504838
936	0.3651743	0.3520813	0.3592212	0.3556544	0.3394766	0.3138564	0.3456	0.3180247	0.3499814
938	0.3648248	0.3515769	0.358851	0.3553005	0.3387613	0.313421	0.3449471	0.3176216	0.3495638
940	0.3646116	0.3512003	0.3586191	0.3550802	0.3381486	0.3131133	0.3443937	0.3173375	0.3492736
942	0.3645926	0.3509835	0.3585534	0.355042	0.3376778	0.3129496	0.3439835	0.3172253	0.3491496
944	0.3647284	0.3509076	0.3586367	0.3551514	0.3373213	0.3129112	0.3436813	0.3172388	0.349168
946	0.3650796	0.3510184	0.3589238	0.3554849	0.3370885	0.313071	0.3435189	0.3174459	0.3493872
948	0.3656061	0.3512774	0.3593771	0.355988	0.3369819	0.3133883	0.3434916	0.317793	0.3497621
950	0.3662972	0.3516921	0.3599938	0.3566513	0.3369939	0.3137855	0.3435686	0.3183032	0.3502853

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	64	65	66	67	68	69	70	71	72
Sample Numb	"0119a"	"0120a"	"0201a"	"0202a"	"0203a"	"0204a"	"0205a"	"0206a"	"0207a"
400	0.7047285	0.7709525	0.6995398	0.7017881	0.755093	0.7418728	0.6987668	0.6906096	0.717128
402	0.7399186	0.8078532	0.7270901	0.7349525	0.7884632	0.776564	0.7303342	0.7244214	0.7539612
404	0.7747251	0.8442883	0.7539826	0.7661845	0.8200395	0.8112702	0.7613381	0.7580857	0.7906199
406	0.80624	0.878143	0.7790959	0.795839	0.8497013	0.8416323	0.7893198	0.787204	0.8245278
408	0.8354462	0.9083076	0.8004968	0.8204232	0.8785167	0.8700408	0.8150812	0.8142123	0.855323
410	0.8618102	0.9371188	0.8199506	0.845784	0.9046932	0.8960231	0.83696	0.8387581	0.8838214
412	0.8859665	0.9624563	0.836824	0.8666576	0.9275702	0.9187205	0.858153	0.8608367	0.9083835
414	0.9081006	0.9857871	0.8512273	0.8851702	0.9481147	0.9391651	0.8762723	0.8813406	0.9323387
416	0.9274658	1.0074811	0.8650826	0.8995582	0.9659464	0.9560495	0.8920928	0.8979411	0.9526934
418	0.9433211	1.0243949	0.8746508	0.9107983	0.9811656	0.9712938	0.9046127	0.9120581	0.9703255
420	0.9577594	1.0399725	0.8825395	0.9207503	0.9953789	0.9843625	0.9163419	0.9238209	0.9849441
422	0.9694152	1.0531994	0.8882185	0.9301153	1.0060334	0.9936662	0.9263353	0.9354634	0.9974291
424	0.978274	1.0633161	0.8930948	0.9346674	1.0148805	1.0004423	0.9323	0.9436468	1.0073678
426	0.9870351	1.0732903	0.8969701	0.9393286	1.0216035	1.0071318	0.9379191	0.9499888	1.0141362
428	0.9940854	1.0812151	0.8985721	0.9410737	1.0260913	1.0119835	0.9411904	0.9540383	1.0215541
430	0.9972787	1.0878323	0.8984506	0.9414651	1.0291702	1.0153853	0.9430921	0.9578753	1.0264478
432	1.0006611	1.0933108	0.8974301	0.9405763	1.032177	1.0175312	0.944539	0.9607828	1.0304679
434	1.0030665	1.0978892	0.8959106	0.9392802	1.0342541	1.0178208	0.9440432	0.9602466	1.0344635
436	1.0028782	1.1000888	0.8949283	0.9372451	1.0331764	1.0187384	0.9437705	0.9622522	1.0357506
438	1.0022674	1.1019785	0.8941045	0.9362474	1.0322256	1.0190181	0.9425339	0.9618269	1.0367012
440	1.0010101	1.1037755	0.8925549	0.9383597	1.0320963	1.0166776	0.9403901	0.9615524	1.0367674
442	0.9989538	1.1033094	0.8879164	0.9353759	1.0297315	1.01397	0.9383057	0.9590629	1.0356982
444	0.9968399	1.1044689	0.8819032	0.9250978	1.0282683	1.0095093	0.9370871	0.9568245	1.0347482
446	0.9930092	1.102484	0.8768282	0.9151755	1.0235184	1.0068934	0.9340391	0.9533687	1.0304879
448	0.9891168	1.100847	0.8733444	0.9086897	1.0200425	1.0025473	0.9316275	0.9500058	1.0267992
450	0.9845468	1.0986172	0.8691351	0.9032028	1.0172235	0.9984227	0.9284534	0.9474955	1.0233927
452	0.9797891	1.095752	0.8644859	0.896381	1.0129662	0.9935836	0.9263355	0.9434975	1.0187843
454	0.975745	1.0927255	0.8603686	0.8894023	1.0087951	0.9884551	0.9256496	0.9397383	1.0146334
456	0.9709815	1.0891143	0.8559912	0.8835387	1.0042793	0.9832468	0.924811	0.9362205	1.009601
458	0.9647933	1.0846233	0.8518419	0.876694	0.998953	0.9774262	0.9233993	0.93251	1.0034271
460	0.9591503	1.0803586	0.8461397	0.8699384	0.993995	0.9712588	0.919373	0.9289863	0.9980019
462	0.9540681	1.0750277	0.8414243	0.8633691	0.9889423	0.9645863	0.9113906	0.9255797	0.991671
464	0.9492145	1.0684716	0.8356968	0.8567861	0.9814595	0.9572158	0.9028164	0.9219831	0.9839722
466	0.9446673	1.0613012	0.8302534	0.8495508	0.9741942	0.9499944	0.8915342	0.9165024	0.9753482
468	0.9388981	1.0534489	0.8241017	0.8408253	0.9661427	0.9411701	0.8843077	0.9086894	0.9669452
470	0.9294304	1.0437953	0.8173965	0.8325875	0.9575866	0.9311897	0.8744838	0.8977746	0.9561119
472	0.9167201	1.0338786	0.8107823	0.8240091	0.9485595	0.9205273	0.8659624	0.8869806	0.9455727
474	0.9012645	1.0228318	0.8040081	0.814642	0.9396687	0.9106095	0.8566225	0.8734855	0.9348558
476	0.8871906	1.011489	0.7958056	0.8053054	0.929846	0.8990362	0.8474185	0.8620169	0.9221943
478	0.8735734	0.9987182	0.7885001	0.7961835	0.91973	0.8887483	0.8382161	0.8494599	0.9094834
480	0.8596094	0.9853275	0.7797827	0.7862105	0.9092228	0.8790551	0.8263496	0.8374846	0.8950582
482	0.8458681	0.9710248	0.7719623	0.7763034	0.8981598	0.8687356	0.8160969	0.8245659	0.8807434
484	0.8326369	0.9567504	0.7637572	0.765955	0.8877042	0.8563134	0.8040174	0.8125775	0.8669986
486	0.8184046	0.9399856	0.755189	0.7556266	0.8759153	0.8417417	0.7909923	0.7978548	0.8529091
488	0.802389	0.9241765	0.7451321	0.7443326	0.8636908	0.8246559	0.7770393	0.7829896	0.8399464
490	0.7868157	0.9084101	0.7366189	0.7339182	0.8509438	0.8070785	0.7642572	0.7688	0.825462
492	0.7713383	0.890781	0.7268169	0.7225326	0.8382567	0.7889768	0.7505925	0.7523332	0.8049486
494	0.7539124	0.871398	0.7163423	0.7110875	0.8250429	0.7718275	0.7369483	0.7373837	0.7821285
496	0.7374328	0.8537958	0.7055618	0.6999447	0.8122501	0.7542114	0.7230074	0.7209849	0.7621243
498	0.7221508	0.8356091	0.6960651	0.6900995	0.8009276	0.7387639	0.709788	0.7066782	0.7454754
500	0.7061467	0.8164935	0.6844386	0.6787956	0.7901468	0.7217524	0.6963052	0.6920355	0.7270095
502	0.6881058	0.7985888	0.6738975	0.6684611	0.7814251	0.7041543	0.6834839	0.6766347	0.7091714
504	0.671547	0.7845511	0.6629688	0.6584474	0.7716876	0.6877218	0.6704593	0.6618831	0.6931255
506	0.6556081	0.7674752	0.6526864	0.6486439	0.7575434	0.6724019	0.6568518	0.6477187	0.6769873
508	0.63931	0.7475438	0.6419469	0.6385173	0.7396822	0.6552614	0.6444548	0.6340905	0.661166
510	0.6247146	0.7275177	0.6329312	0.6300263	0.7259545	0.6395571	0.6332289	0.6218799	0.6453269
512	0.6114838	0.7097652	0.6235548	0.622227	0.7157763	0.6261745	0.6228794	0.6093594	0.632134
514	0.5995892	0.6937302	0.6144519	0.6146804	0.7055309	0.6119312	0.6122148	0.5983999	0.6187017
516	0.5863938	0.6802044	0.6068681	0.6080846	0.6963952	0.6000074	0.6028446	0.5895905	0.6069573
518	0.5753158	0.6670907	0.6000651	0.6002431	0.6890445	0.5912879	0.5958053	0.5797077	0.5966974

520	0.5655767	0.6546608	0.5933662	0.5940045	0.6817546	0.5792836	0.5880261	0.5711949	0.5876033
522	0.55655	0.6440278	0.5870909	0.5874453	0.6745826	0.5706475	0.5804079	0.5631212	0.5780027
524	0.5489284	0.6348592	0.5811674	0.5828757	0.6691421	0.5627599	0.573783	0.5567659	0.5703343
526	0.5411783	0.6264863	0.5760974	0.5782084	0.6630983	0.5558417	0.5678874	0.5506632	0.5637948
528	0.5357453	0.619719	0.5720164	0.5739014	0.6588076	0.550034	0.5631002	0.5448332	0.5580423
530	0.5314751	0.6132964	0.56833	0.5700762	0.6553396	0.5455191	0.5581545	0.5401188	0.5528626
532	0.5261774	0.607803	0.5646117	0.5669193	0.6514381	0.5424724	0.5538907	0.5365553	0.5493362
534	0.5217727	0.6032895	0.5619769	0.5635552	0.6477867	0.5375798	0.5509883	0.5319875	0.5450829
536	0.5183883	0.5987132	0.5587227	0.559709	0.6448157	0.5347108	0.5465173	0.5280627	0.5410469
538	0.5148889	0.5958828	0.5557317	0.5572347	0.6423609	0.5316458	0.5430272	0.5244001	0.5384082
540	0.5123816	0.5916654	0.5532063	0.5537546	0.6397653	0.5287261	0.539996	0.5214725	0.5344963
542	0.5090249	0.5872612	0.5502921	0.5506532	0.6369354	0.5264446	0.5369521	0.5172143	0.5318102
544	0.5060561	0.5833164	0.5476481	0.5474579	0.6353957	0.5230193	0.5333104	0.5136497	0.5275486
546	0.502264	0.5791409	0.544548	0.5442609	0.6318166	0.5203291	0.5296144	0.5101535	0.5240023
548	0.499615	0.5748889	0.5412391	0.54049	0.6280228	0.5171139	0.5255701	0.505899	0.5191748
550	0.4955018	0.5705643	0.5378294	0.5367342	0.6243973	0.5142436	0.5221471	0.5017194	0.5157472
552	0.4912383	0.5659549	0.5347746	0.5329893	0.6203187	0.5109034	0.5175183	0.4969485	0.5112037
554	0.4867819	0.5612887	0.5306768	0.5282292	0.615713	0.507301	0.5126014	0.4918044	0.5062763
556	0.4821821	0.5570036	0.526805	0.523833	0.6101238	0.5036963	0.5079213	0.4868999	0.5014446
558	0.4775939	0.5519213	0.5229937	0.5184582	0.6049837	0.5001484	0.503173	0.4813978	0.4969398
560	0.4729078	0.5469092	0.5188189	0.5130863	0.598722	0.4961824	0.4979771	0.4761233	0.4919603
562	0.4680453	0.5422575	0.5146011	0.5080686	0.5932208	0.4924935	0.4929798	0.4711696	0.48756
564	0.4637296	0.5379946	0.5106775	0.5029997	0.5872976	0.4890962	0.4884919	0.4661371	0.4837985
566	0.459491	0.5336596	0.5072131	0.498128	0.5816388	0.4856244	0.4840247	0.4612966	0.4799652
568	0.4553761	0.5298599	0.503352	0.4932844	0.5758381	0.4825124	0.4796769	0.4569731	0.4760638
570	0.4515501	0.5261552	0.4996511	0.4885913	0.5702076	0.4795218	0.4754887	0.4525349	0.4724771
572	0.4488609	0.5227282	0.4963058	0.4844293	0.565037	0.47689	0.4716579	0.4490318	0.4693253
574	0.4452645	0.5191294	0.4928051	0.4803879	0.5602691	0.4741268	0.4682335	0.4449725	0.4663122
576	0.4422588	0.5159097	0.489342	0.4765975	0.5552922	0.4720718	0.4642594	0.4411523	0.4628802
578	0.4392546	0.5127916	0.4868239	0.4728439	0.5510319	0.4696077	0.4609958	0.4376406	0.4599949
580	0.436721	0.5102008	0.4833338	0.4693344	0.5467464	0.4674951	0.4573308	0.4341426	0.4568354
582	0.4338873	0.5069578	0.4801558	0.4657136	0.5423625	0.4649139	0.4536878	0.4307059	0.4536119
584	0.4314407	0.5041853	0.4771255	0.4626185	0.5387998	0.4629177	0.4504949	0.4274912	0.4508303
586	0.4289884	0.5014587	0.4743713	0.4597542	0.5350878	0.4605956	0.4470668	0.4244161	0.447962
588	0.4266308	0.4987503	0.4715091	0.4568027	0.5312864	0.4585757	0.4440389	0.4212792	0.4453144
590	0.4244808	0.4962797	0.468766	0.4541372	0.5278328	0.4566855	0.4409842	0.41841	0.4426541
592	0.4224185	0.4939004	0.4662124	0.4518969	0.524454	0.4548886	0.437954	0.4158212	0.4401816
594	0.420307	0.4915965	0.4636458	0.4493525	0.52127	0.4532421	0.4350889	0.4130999	0.4378021
596	0.4181744	0.4892218	0.4608833	0.4466684	0.5177634	0.4514614	0.4320312	0.4102714	0.4352122
598	0.4162111	0.4872961	0.458342	0.4442554	0.5143072	0.4497848	0.4295118	0.4078386	0.4328623
600	0.4148168	0.4854266	0.4559697	0.4418022	0.5110353	0.4482636	0.4269016	0.4057947	0.4307027
602	0.4128377	0.4834999	0.4533519	0.4394104	0.5074071	0.4468679	0.424736	0.4034608	0.4286302
604	0.410948	0.4818905	0.4510477	0.4369922	0.5039285	0.445899	0.4221653	0.4013581	0.4266338
606	0.4093528	0.48042	0.4488821	0.4344825	0.5005873	0.444486	0.4199367	0.3992981	0.4246799
608	0.4076298	0.4791946	0.4464443	0.4316983	0.4969547	0.4430462	0.4176795	0.3973516	0.4226405
610	0.4060652	0.4777321	0.4441492	0.4290688	0.4939096	0.4417709	0.4154532	0.3953632	0.4206729
612	0.4046333	0.4766366	0.4420367	0.4265853	0.4903208	0.4407581	0.4135857	0.3938074	0.419046
614	0.4032987	0.4755257	0.4401323	0.4242912	0.4870829	0.4397726	0.4117299	0.3921439	0.4173515
616	0.4017884	0.4745118	0.4380477	0.4218626	0.4836922	0.4386596	0.4098333	0.3904163	0.4157901
618	0.4006543	0.4735988	0.4363216	0.4196737	0.4808522	0.4378162	0.4082756	0.3890876	0.4144327
620	0.3995465	0.4726979	0.4347945	0.417953	0.4779868	0.4370669	0.4067785	0.3877447	0.4133849
622	0.3984197	0.4719611	0.4333224	0.4159779	0.4754421	0.43621	0.4053741	0.3864624	0.4123173
624	0.3973156	0.471145	0.431894	0.414228	0.472922	0.4355358	0.404071	0.3852476	0.4113096
626	0.3964082	0.470369	0.4306685	0.4125679	0.4707574	0.434806	0.4029003	0.3842129	0.4104218
628	0.3954213	0.4696665	0.4295121	0.4110749	0.4686357	0.4340385	0.4017266	0.3830986	0.4094612
630	0.3944605	0.4687892	0.4283247	0.4096312	0.4666063	0.4333254	0.4006015	0.3821727	0.4083609
632	0.3936277	0.4677947	0.4273024	0.4083755	0.4645856	0.4325583	0.3996228	0.3811039	0.4072547
634	0.3927227	0.4668786	0.4262902	0.4071253	0.4627433	0.4317935	0.398674	0.3801381	0.406121
636	0.3918114	0.4658044	0.4252975	0.405894	0.4609138	0.4310091	0.3977042	0.3791864	0.4048452
638	0.3909043	0.4646091	0.4242946	0.4046715	0.459134	0.4301677	0.3967352	0.3782341	0.4035682
640	0.3900216	0.4634668	0.4232964	0.4035949	0.4575766	0.4293789	0.3958859	0.3773073	0.402187
642	0.3891988	0.4621704	0.4223593	0.4024411	0.4558839	0.4285288	0.3950105	0.3764113	0.4008739
644	0.3882996	0.4607897	0.4213623	0.401432	0.454194	0.4276444	0.3942218	0.3754885	0.3995464
646	0.3874934	0.4593828	0.420449	0.4004276	0.4527326	0.4268065	0.3934072	0.3746682	0.398329
648	0.3866599	0.4579442	0.4195668	0.3994013	0.4511387	0.4260897	0.3925999	0.3738388	0.3971132
650	0.3858046	0.4564253	0.4186143	0.3984657	0.449615	0.425219	0.3917617	0.3730512	0.3959234
652	0.3849882	0.4549587	0.4176954	0.3975971	0.4481703	0.4244371	0.3910595	0.3723307	0.3948353
654	0.3843045	0.4534299	0.4168386	0.3966971	0.4467398	0.4236653	0.3903229	0.3716001	0.3938546
656	0.3834179	0.4517809	0.4159376	0.3958935	0.4452572	0.4228318	0.3896532	0.3707884	0.3929511
658	0.3825196	0.4501842	0.4150806	0.3950258	0.4438203	0.4220672	0.3889134	0.3700701	0.3919823
660	0.3817398	0.4486326	0.414302	0.3941581	0.4424391	0.421382	0.3882085	0.3693723	0.3910159
662	0.3808402	0.4470144	0.4134527	0.3932945	0.4410343	0.420633	0.3874956	0.3686288	0.3901103
664	0.3799377	0.4453655	0.4125772	0.3924922	0.4396607	0.4198551	0.3867266	0.3680118	0.3891917
666	0.3790344	0.4438214	0.4116798	0.3917075	0.4383676	0.419052	0.3860183	0.3673139	0.3882935

668	0.3781109	0.4423101	0.4107881	0.3909212	0.436961	0.4182707	0.3851995	0.3665983	0.3874028
670	0.3771079	0.4406477	0.4098448	0.3900275	0.435532	0.4174725	0.3844095	0.3659196	0.3864477
672	0.3761926	0.4391439	0.4090106	0.3892322	0.4341291	0.4167488	0.3836057	0.3652804	0.3855359
674	0.3752777	0.4377004	0.4082185	0.3885346	0.4328257	0.4160873	0.3828623	0.3646935	0.3847618
676	0.3744115	0.4362409	0.4074022	0.3878164	0.4314854	0.4153343	0.3821051	0.3641308	0.3838998
678	0.3734956	0.4348668	0.4065861	0.3871193	0.4301644	0.4146274	0.3813811	0.3635626	0.3830973
680	0.3726411	0.4335773	0.4058325	0.386484	0.4289087	0.4139782	0.38066	0.3630258	0.3823171
682	0.3717978	0.4323195	0.4051515	0.3858624	0.4277192	0.4133096	0.3799729	0.3625104	0.3815835
684	0.3709471	0.4311157	0.4045228	0.385278	0.4265124	0.4127145	0.3793519	0.3620341	0.3808653
686	0.3701755	0.4299724	0.4038803	0.3847205	0.4254686	0.4121425	0.3787372	0.3616366	0.3801966
688	0.3694441	0.4290021	0.4033515	0.3842302	0.4243964	0.4115864	0.3782919	0.361254	0.3796139
690	0.3686996	0.4279532	0.4028375	0.3837613	0.4234177	0.411061	0.3778362	0.3608879	0.3790138
692	0.3680452	0.4270201	0.4024251	0.3833584	0.4224705	0.410596	0.3774365	0.3606312	0.3784831
694	0.3674671	0.4261513	0.4020487	0.3830071	0.4216123	0.4102059	0.3771454	0.360368	0.378008
696	0.3669243	0.425408	0.4017353	0.3827175	0.4208673	0.4097875	0.3769267	0.3601717	0.3776113
698	0.366403	0.4246561	0.401448	0.3824106	0.4201444	0.4094625	0.3767348	0.3600109	0.377212
700	0.3659087	0.4239896	0.40125	0.3821553	0.4194246	0.4091395	0.3765546	0.3599043	0.3768356
702	0.3655146	0.4234169	0.4010752	0.3819415	0.4188602	0.408959	0.3764871	0.3598452	0.376561
704	0.3651294	0.4229027	0.4009165	0.3817802	0.418327	0.408733	0.3764319	0.3597742	0.3762687
706	0.364803	0.4224212	0.4007949	0.3816404	0.4177912	0.4085344	0.3763654	0.3597478	0.3760025
708	0.3645225	0.4219975	0.4007627	0.3815374	0.4173161	0.4084237	0.3763925	0.3598062	0.3758145
710	0.3643008	0.4216345	0.4007217	0.3814649	0.4169198	0.4083303	0.3764814	0.3598619	0.3756985
712	0.3641265	0.4213426	0.4007264	0.381472	0.4165614	0.4082811	0.3765852	0.3599767	0.3755678
714	0.3640092	0.4210856	0.4007673	0.3814803	0.4162762	0.4082822	0.3766729	0.3601354	0.3754825
716	0.3639268	0.4209078	0.4008771	0.3815443	0.4160388	0.4083486	0.3768412	0.3603242	0.3754304
718	0.3638898	0.4207506	0.4009985	0.3816264	0.4158388	0.4084714	0.3770624	0.3605337	0.375442
720	0.3638974	0.4206659	0.4011876	0.3817604	0.4156953	0.4086085	0.3773156	0.3609019	0.3755111
722	0.3640534	0.4206157	0.4013778	0.381953	0.4155914	0.4087991	0.3775942	0.3612261	0.3755887
724	0.364151	0.4206155	0.4016225	0.3822106	0.415524	0.4090691	0.3780186	0.3615361	0.3757923
726	0.3642977	0.4206529	0.4019245	0.3825262	0.4155702	0.4093281	0.3784074	0.3619469	0.3759603
728	0.3644846	0.4207513	0.4022616	0.3828057	0.4156157	0.4096626	0.378824	0.3623675	0.376131
730	0.3646773	0.4208539	0.4027022	0.3831117	0.4156905	0.4100168	0.3792251	0.3627775	0.3763593
732	0.364925	0.4209886	0.4030653	0.3834659	0.4158848	0.410504	0.379692	0.3632392	0.376594
734	0.3652236	0.4212802	0.403458	0.3838126	0.4160906	0.4109171	0.3801691	0.3637442	0.3768565
736	0.3654748	0.4214199	0.4038427	0.3841695	0.4162502	0.4113466	0.3806093	0.3642137	0.3771233
738	0.3657498	0.4216188	0.4042589	0.3845425	0.4164544	0.4117783	0.381115	0.3646892	0.3773942
740	0.3660672	0.4218172	0.4046686	0.3849352	0.4166656	0.412237	0.3815885	0.3652053	0.3776785
742	0.3663688	0.4220083	0.4050645	0.3853157	0.4168894	0.4126954	0.3820779	0.3657049	0.377971
744	0.366663	0.4222145	0.405482	0.3856893	0.4171079	0.4131504	0.3825704	0.3662044	0.3782686
746	0.3669624	0.4224244	0.4059078	0.3860748	0.4173406	0.4136139	0.3830558	0.3667007	0.3785883
748	0.3672734	0.4226407	0.406333	0.386484	0.4175874	0.4140747	0.3835513	0.3672115	0.3789067
750	0.3676286	0.4228857	0.4067315	0.3868805	0.4178387	0.4146095	0.3840463	0.3677122	0.3792306
752	0.368014	0.4231488	0.4071413	0.3872804	0.4181174	0.4151055	0.38453	0.3682598	0.379576
754	0.3684291	0.4234243	0.4075833	0.3876994	0.41841	0.4156618	0.3850213	0.3687809	0.3799433
756	0.3688546	0.4237574	0.4080427	0.3881427	0.4187247	0.4162605	0.3855526	0.3693351	0.3803624
758	0.3693101	0.4240794	0.40847	0.3885623	0.4189996	0.4168463	0.3860298	0.3698624	0.3807936
760	0.3698174	0.4244616	0.4089136	0.3889934	0.4193569	0.4174932	0.3865579	0.3704184	0.3812822
762	0.370339	0.4248192	0.4093768	0.3894626	0.4196793	0.4181471	0.3870564	0.370968	0.3817823
764	0.3708088	0.4251604	0.4098035	0.3898778	0.4199866	0.4187539	0.387517	0.3714722	0.3823222
766	0.3712726	0.4255309	0.4102988	0.3903759	0.4203442	0.4194089	0.3880982	0.3719686	0.3829262
768	0.3716832	0.4258919	0.410832	0.390885	0.4207381	0.4200412	0.3886403	0.3725148	0.3835045
770	0.3720129	0.4262432	0.4113913	0.3913866	0.4211608	0.4206074	0.3892274	0.3730459	0.3840964
772	0.3723124	0.4265462	0.4119053	0.3918011	0.4215725	0.4212094	0.3897401	0.3735977	0.3845676
774	0.3726824	0.4268776	0.412385	0.3922549	0.4219594	0.421774	0.390282	0.3741679	0.3850862
776	0.3731526	0.4273039	0.4128583	0.3926851	0.4223503	0.4224022	0.3908611	0.3748314	0.3854665
778	0.3736306	0.4278079	0.4133623	0.3932045	0.4227799	0.4230543	0.3914431	0.3754323	0.3858624
780	0.3741407	0.4283347	0.4138312	0.393712	0.423179	0.4236975	0.3920027	0.3760068	0.3862314
782	0.374668	0.4288493	0.4143113	0.3941973	0.4235438	0.4243321	0.3925386	0.3765842	0.386654
784	0.3752116	0.429377	0.4147818	0.3947022	0.423957	0.4249866	0.39311	0.3771499	0.3871517
786	0.3757082	0.4298485	0.4152394	0.3951336	0.4243252	0.4255702	0.3936048	0.3776498	0.3876163
788	0.3761872	0.4303076	0.4156871	0.395586	0.4247206	0.4261836	0.3941102	0.3781732	0.3880925
790	0.3766513	0.4307451	0.4161406	0.3960133	0.4250834	0.4267797	0.3945837	0.3786735	0.3885513
792	0.3770816	0.4311511	0.4165457	0.3964044	0.4254189	0.4273254	0.3950417	0.3791323	0.3889889
794	0.3775257	0.4315637	0.4169693	0.3967895	0.4257655	0.4278811	0.3954864	0.3795975	0.3893975
796	0.377954	0.4319704	0.4173755	0.3971916	0.4260961	0.428441	0.395939	0.3800422	0.3898312
798	0.378359	0.4323561	0.4177556	0.3975784	0.4264025	0.4289654	0.3963591	0.3804767	0.3902124
800	0.3787413	0.432726	0.4181101	0.3979107	0.4266888	0.4294502	0.3967421	0.3808813	0.3905676
802	0.3791056	0.4330671	0.4184524	0.3982415	0.4269536	0.429923	0.3971277	0.3812671	0.3909234
804	0.3794541	0.4333998	0.4187984	0.3985559	0.4272492	0.4303808	0.3974935	0.3816415	0.3912706
806	0.3797551	0.4337	0.4191094	0.3988416	0.4274784	0.430792	0.3978336	0.3819985	0.3915754
808	0.3800262	0.4339714	0.4193823	0.3990904	0.4276775	0.4311475	0.3981306	0.3822936	0.3918571
810	0.3802714	0.4342179	0.4196515	0.399333	0.4278568	0.4315471	0.3984055	0.3825852	0.3921019
812	0.3804581	0.4344206	0.4198785	0.3995123	0.4279957	0.4318422	0.3986587	0.3828278	0.3923069
814	0.3806118	0.4345757	0.420062	0.3996535	0.4280976	0.4320645	0.3988586	0.3830288	0.3924501

816	0.3807247	0.434707	0.4202384	0.3997923	0.4281663	0.4322752	0.399041	0.3832015	0.3925568
818	0.3807877	0.434778	0.4203806	0.399866	0.4281921	0.4324301	0.3991861	0.3833626	0.3926337
820	0.3808104	0.4348029	0.4204686	0.399889	0.4281734	0.4325291	0.3992727	0.3834463	0.3926516
822	0.3807779	0.4347759	0.4205304	0.3998836	0.4281147	0.4325655	0.3993294	0.3835071	0.3926281
824	0.3807093	0.434712	0.4205508	0.3998298	0.428018	0.4325635	0.3993484	0.3835086	0.3925361
826	0.3805876	0.4345834	0.4205323	0.3997398	0.4278879	0.4324929	0.3993113	0.3834762	0.3924182
828	0.3804124	0.4343992	0.4204787	0.3995846	0.4276984	0.4323707	0.3992368	0.3833999	0.3922375
830	0.3801858	0.4341447	0.4203547	0.3993641	0.4274408	0.4321828	0.3990867	0.3832408	0.3919845
832	0.379878	0.4338257	0.4201748	0.3990926	0.4271072	0.4319064	0.3988887	0.3830471	0.3916667
834	0.379499	0.4334246	0.4199281	0.3987251	0.4267096	0.4315539	0.3985884	0.3827516	0.3912669
836	0.3790643	0.4329714	0.4196335	0.3983054	0.4262425	0.4311356	0.3982406	0.3824015	0.390819
838	0.3785162	0.4323875	0.4192187	0.3977734	0.4256797	0.4305859	0.3977672	0.3819367	0.3902806
840	0.3779127	0.4317192	0.4187212	0.3971463	0.4250295	0.4299537	0.3972121	0.3813778	0.3896407
842	0.3772268	0.4309896	0.4181776	0.3964781	0.4242949	0.4292379	0.3966154	0.3807692	0.3889339
844	0.3764595	0.4301588	0.4175318	0.3956891	0.4234787	0.4284136	0.3958906	0.380062	0.3881482
846	0.3755971	0.4292297	0.4167983	0.394805	0.4225801	0.4275087	0.3950748	0.3792613	0.38725
848	0.3746879	0.4282437	0.4160142	0.3938722	0.4216321	0.4265178	0.3942113	0.3784153	0.3863172
850	0.3737277	0.4271902	0.4151664	0.3928882	0.4206	0.4254828	0.3932982	0.3775216	0.3853103
852	0.3726478	0.4260282	0.4142367	0.391779	0.419472	0.4243136	0.3922676	0.3764962	0.3841906
854	0.3715287	0.4248062	0.41327	0.3906182	0.4183018	0.4230857	0.3911784	0.3754351	0.3830219
856	0.370366	0.4235415	0.4122424	0.3894312	0.4170964	0.4218208	0.3900553	0.3743261	0.3818095
858	0.369173	0.4222632	0.4111918	0.3882058	0.415855	0.4205332	0.3889062	0.3732004	0.3805574
860	0.3678769	0.4208453	0.4100426	0.3868791	0.4145021	0.4191207	0.3876525	0.371948	0.3792126
862	0.3665563	0.4193997	0.4088682	0.3855137	0.4131252	0.4176702	0.3863599	0.3706793	0.3778202
864	0.3652474	0.4179803	0.4077058	0.3841688	0.4117673	0.4162271	0.3850791	0.36942	0.3764364
866	0.3638449	0.4164484	0.4064609	0.3827184	0.4102971	0.4146808	0.3837053	0.3680606	0.3749841
868	0.3623725	0.4148383	0.4051607	0.3812431	0.4087877	0.4130766	0.3822787	0.3666496	0.3734478
870	0.3609597	0.4133106	0.403895	0.3797843	0.4073154	0.4115354	0.3808894	0.3652855	0.3719712
872	0.359495	0.4117143	0.4025891	0.378293	0.405804	0.4099343	0.3794685	0.3638812	0.3704494
874	0.3579673	0.4100589	0.4012294	0.3767351	0.4042407	0.4082685	0.3779727	0.3624023	0.3688435
876	0.3564525	0.4083998	0.3998862	0.3751847	0.4026645	0.4065922	0.3764804	0.3609179	0.3672614
878	0.3549434	0.4067548	0.3985452	0.3736525	0.4011323	0.4049463	0.3750118	0.3594571	0.3656889
880	0.3534259	0.4051089	0.3971888	0.3720989	0.3995577	0.4032861	0.3735057	0.3579719	0.3640961
882	0.3517644	0.4033087	0.3957247	0.3704151	0.3978542	0.4014849	0.371867	0.3563824	0.3623609
884	0.3502199	0.4016247	0.394331	0.3688259	0.3962684	0.3997839	0.3703451	0.3548642	0.3607331
886	0.3487168	0.3999811	0.3929939	0.3672919	0.3947229	0.3981326	0.3688637	0.3534046	0.3591597
888	0.3471168	0.3982321	0.3915654	0.3656748	0.3930908	0.3963789	0.3672962	0.351839	0.3574801
890	0.3455239	0.3964917	0.3901333	0.3640507	0.3914453	0.3946279	0.3657193	0.3502811	0.3558008
892	0.3439973	0.3948258	0.3887815	0.3625031	0.3898908	0.3929587	0.3642091	0.3487957	0.3541928
894	0.3424156	0.3931063	0.387367	0.3608857	0.3882613	0.3912296	0.3626282	0.3472523	0.3525362
896	0.3407965	0.3913361	0.3859386	0.3592617	0.386615	0.3894509	0.361034	0.3456645	0.350822
898	0.3392092	0.3896137	0.3845333	0.3576618	0.384997	0.387734	0.3594685	0.3441335	0.3491372
900	0.337604	0.3878762	0.3831373	0.3560594	0.3833745	0.3859791	0.3578893	0.3425904	0.347461
902	0.3359476	0.3860985	0.3817138	0.3544367	0.3817243	0.384192	0.3562991	0.3410161	0.3457245
904	0.3342479	0.3842867	0.3802741	0.3527868	0.3800663	0.3823698	0.3546945	0.3394136	0.3439612
906	0.3326064	0.3825296	0.3789078	0.3511883	0.3784596	0.3806263	0.3531163	0.3378696	0.342233
908	0.3309844	0.3808244	0.3775883	0.3496457	0.3769074	0.3789109	0.3516115	0.3363675	0.3405667
910	0.3293014	0.3790401	0.3762269	0.3480586	0.3753105	0.377129	0.3500549	0.334813	0.338814
912	0.3276658	0.3773245	0.374911	0.3465179	0.3737512	0.3753992	0.348552	0.3333244	0.3371041
914	0.3261594	0.3757049	0.3737204	0.3450903	0.3723294	0.3737994	0.3471912	0.331954	0.3355516
916	0.3246424	0.3741247	0.3725575	0.3437301	0.3709279	0.3722475	0.3458712	0.3306084	0.3340104
918	0.3231778	0.3725695	0.3714663	0.3424166	0.3695667	0.3707232	0.3446037	0.3293213	0.3325256
920	0.3218664	0.3711808	0.3705135	0.3412499	0.3683639	0.369393	0.3434835	0.3281697	0.3311434
922	0.3206334	0.3698985	0.3696572	0.3401622	0.3672417	0.3681397	0.342466	0.3270969	0.3298596
924	0.3194585	0.3686586	0.368867	0.3391772	0.3661784	0.3669675	0.3415362	0.3261217	0.3286377
926	0.3184001	0.3675123	0.3681756	0.3382938	0.3652113	0.365892	0.3407143	0.3252561	0.3275027
928	0.3174745	0.3665082	0.3676371	0.3375706	0.3643841	0.3649681	0.3400538	0.3245407	0.3265102
930	0.3166386	0.3656084	0.3671899	0.3369568	0.3636377	0.3641567	0.3394857	0.3239161	0.3255897
932	0.3158696	0.3647526	0.3668419	0.3364401	0.3629793	0.3634218	0.339039	0.3233922	0.3247252
934	0.3152116	0.3640338	0.3666143	0.3360464	0.3624319	0.3628174	0.3387026	0.322987	0.323975
936	0.3146726	0.3634308	0.3665164	0.3358007	0.3620145	0.3623473	0.3385108	0.3227129	0.3233274
938	0.3142195	0.3629254	0.3665431	0.3356649	0.3616915	0.3619742	0.3384463	0.3225662	0.3227788
940	0.3138869	0.3625464	0.3667293	0.3356919	0.3615176	0.3617596	0.3385422	0.3225691	0.3223222
942	0.3136992	0.3623425	0.3670964	0.3359041	0.3615071	0.3617163	0.3388283	0.3227347	0.3220149
944	0.3136341	0.3622646	0.3676408	0.3362848	0.3616541	0.3618275	0.3392754	0.3230874	0.32184
946	0.3137721	0.3623835	0.368446	0.3369221	0.362014	0.3621532	0.3400251	0.3236599	0.3218128
948	0.3140922	0.3626599	0.3694312	0.3377335	0.3625391	0.3626482	0.3409472	0.3244175	0.3219338
950	0.3144848	0.3630871	0.3705812	0.3387186	0.3632277	0.3632995	0.3420404	0.3253341	0.3221777

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File-ID: . pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	73	74	75	76	77	78	79	80	81
Sample Numb	"0209a"	"0208a"	"0212a"	"0210a"	"0213a"	"0211a"	"0214a"	"0215a"	"0216a"
400	0.6569802	0.6879414	0.610348	0.7305527	0.7349157	0.712083	0.7129124	0.8042518	0.7488258
402	0.6848665	0.7189386	0.6347284	0.7697494	0.7644622	0.7468867	0.7429083	0.843048	0.7871434
404	0.7122162	0.749234	0.6579359	0.8090765	0.7943673	0.7799496	0.773002	0.8810449	0.8236237
406	0.7389362	0.7765341	0.6795366	0.8458529	0.8222943	0.8118761	0.7994148	0.917664	0.8583953
408	0.7614309	0.8017403	0.6990545	0.8793274	0.8480796	0.8425583	0.8235002	0.9518145	0.8928948
410	0.7819507	0.823866	0.7171812	0.9102141	0.8696922	0.8674091	0.8447272	0.9816278	0.9221539
412	0.7989115	0.8441709	0.7358544	0.9385753	0.8892521	0.890883	0.8652292	1.0108573	0.9496791
414	0.8135274	0.8627927	0.74795	0.9648207	0.9067577	0.9116241	0.8814998	1.0372192	0.9728398
416	0.8260108	0.8772306	0.756613	0.9876199	0.9217694	0.9294534	0.8960638	1.0591587	0.9948392
418	0.8353582	0.8918304	0.7619614	1.0069413	0.9328775	0.9451512	0.9068244	1.0789526	1.0131601
420	0.8432161	0.9017134	0.7654811	1.0270972	0.9437965	0.9592015	0.9174497	1.0978682	1.0308766
422	0.8493628	0.9095584	0.7668686	1.0424398	0.9535439	0.9694946	0.924274	1.1143942	1.0464531
424	0.8535395	0.9133142	0.766893	1.0567511	0.9594692	0.978242	0.9292049	1.1255358	1.0571721
426	0.855772	0.9177822	0.765365	1.0695953	0.9644522	0.9845896	0.9328128	1.1396074	1.0702049
428	0.8564478	0.9191293	0.7611693	1.0804985	0.9664354	0.9907899	0.9353699	1.1525861	1.0819074
430	0.8597941	0.9203169	0.7559184	1.0899252	0.9682409	0.9933876	0.9369344	1.1621777	1.0876702
432	0.8611414	0.9178632	0.7498179	1.0988774	0.968834	0.9953707	0.9361504	1.1718158	1.095939
434	0.8541526	0.9138582	0.7427362	1.1067264	0.9686341	0.995973	0.9344481	1.1795888	1.1020507
436	0.84817	0.9082609	0.7362303	1.1121951	0.9684259	0.9942239	0.9323907	1.1854731	1.1056613
438	0.8445628	0.9022361	0.7277005	1.1169449	0.9674356	0.9933184	0.9297654	1.190766	1.1084172
440	0.8398813	0.8994247	0.7203459	1.1219066	0.9650078	0.9899543	0.9279967	1.1957556	1.109923
442	0.8352317	0.8922017	0.7125183	1.1242456	0.9620745	0.986285	0.9273457	1.1984955	1.1115191
444	0.8302706	0.8804907	0.7050515	1.1281725	0.96047	0.9845083	0.9285562	1.2023829	1.1108935
446	0.8258067	0.8724669	0.6973322	1.1284233	0.9579095	0.9845445	0.9269493	1.2047982	1.1106198
448	0.8219523	0.8639262	0.6898709	1.129287	0.9548466	0.9824681	0.9200246	1.2068738	1.1085615
450	0.8175009	0.8557692	0.6833003	1.1293879	0.9522312	0.9774179	0.9124749	1.2071359	1.1077279
452	0.8116092	0.8476871	0.6760551	1.1272644	0.9488581	0.9657989	0.9059753	1.2076724	1.1044551
454	0.8064398	0.839726	0.6689951	1.1255265	0.9471927	0.9563487	0.9009055	1.2079347	1.1020261
456	0.8018915	0.8319262	0.662376	1.1236439	0.9456089	0.9494742	0.8968182	1.2082353	1.099152
458	0.796625	0.8240224	0.6566117	1.1182605	0.9441221	0.9426732	0.8926685	1.2058691	1.0945156
460	0.7918156	0.8143511	0.6510885	1.1135421	0.9427105	0.9354581	0.8873332	1.2045918	1.0897788
462	0.7862437	0.8062811	0.6446639	1.1081916	0.9402367	0.9273478	0.880529	1.203813	1.0844337
464	0.7802452	0.7975477	0.6382467	1.102316	0.9355918	0.9184391	0.8738814	1.2002575	1.07628
466	0.7738474	0.7882372	0.6314373	1.0944772	0.9293351	0.9098158	0.8669766	1.1962465	1.0688738
468	0.7673226	0.7794881	0.6252517	1.0860095	0.9213423	0.9015896	0.8607014	1.1911793	1.0610807
470	0.7597455	0.7707146	0.618816	1.0754267	0.9113561	0.8925862	0.8531579	1.1858326	1.0502031
472	0.752645	0.7612421	0.6130321	1.0649036	0.9035559	0.8828149	0.8447627	1.1790984	1.0401405
474	0.7454022	0.7518955	0.6070643	1.0517433	0.8939006	0.8730555	0.8365849	1.1714578	1.0271049
476	0.7370499	0.7429414	0.600669	1.0382903	0.8839904	0.8629434	0.8282164	1.1631433	1.0139594
478	0.7291656	0.7336177	0.5953153	1.0230995	0.876034	0.8529487	0.8190976	1.1546248	0.9998592
480	0.7206272	0.7237338	0.5894623	1.0058632	0.8651504	0.8415663	0.8090444	1.1440789	0.9838746
482	0.712144	0.7147607	0.5833128	0.9885331	0.8543502	0.8313333	0.7993806	1.1322474	0.9685036
484	0.7036079	0.705171	0.577615	0.9685581	0.8450405	0.8205181	0.7892429	1.1192608	0.9528991
486	0.6950248	0.6956014	0.5717523	0.9470159	0.8342607	0.8080124	0.7784808	1.1061429	0.9354478
488	0.6844414	0.6850651	0.5656811	0.9263967	0.8220165	0.794851	0.7672693	1.0905669	0.9183621
490	0.6758232	0.6755178	0.5585696	0.9036461	0.8112354	0.7823131	0.7572144	1.0768018	0.9030858
492	0.6653981	0.664631	0.5508709	0.8808992	0.7991892	0.7682905	0.7457032	1.0608557	0.8891145
494	0.6553455	0.6539996	0.5442012	0.8561305	0.786183	0.7534283	0.7333809	1.0449383	0.8713973
496	0.643379	0.6427591	0.5368212	0.8310278	0.7731633	0.7383072	0.7208921	1.0274721	0.8466972
498	0.6329153	0.6331659	0.5304829	0.807076	0.7617984	0.7255841	0.7096926	1.0100447	0.820784
500	0.6209992	0.6221476	0.5240716	0.7865592	0.7507135	0.7092751	0.6961437	0.9927856	0.8007487
502	0.6092345	0.6118122	0.5171217	0.7612114	0.7374066	0.6948012	0.6825025	0.9732775	0.7808256
504	0.5989852	0.6020098	0.5110637	0.7332033	0.7247849	0.6799101	0.6697417	0.9575509	0.7605083
506	0.5866463	0.5924048	0.5046962	0.7083612	0.7130129	0.6655014	0.6578814	0.9393051	0.7407869
508	0.5747561	0.5821461	0.4990555	0.6852039	0.702207	0.6517996	0.6453944	0.9218183	0.7244313
510	0.5640393	0.5731106	0.4943444	0.6629217	0.691174	0.6394213	0.6349861	0.9057748	0.705718
512	0.5542889	0.5655281	0.4893027	0.6413397	0.6812759	0.627679	0.6238825	0.8889944	0.6889459
514	0.5438875	0.5579328	0.4844347	0.6210525	0.6714298	0.6150001	0.613937	0.8738903	0.6735482
516	0.5354097	0.5515248	0.4797695	0.6029968	0.6615134	0.6049056	0.6055948	0.858995	0.6592352
518	0.5282512	0.5460759	0.4756075	0.5876348	0.6526028	0.5954062	0.5976186	0.846517	0.6469131

520	0.5206012	0.5405846	0.4715902	0.5707014	0.6448852	0.5862893	0.5890445	0.8334683	0.636209
522	0.5141535	0.5365802	0.4680274	0.5568194	0.638454	0.5799158	0.5827464	0.8221751	0.6237658
524	0.5086632	0.5319749	0.4649056	0.5450976	0.6331734	0.5733871	0.5762469	0.8141304	0.6148639
526	0.5051357	0.5285208	0.4620839	0.53361	0.6272847	0.5675551	0.5717321	0.8101985	0.6060402
528	0.499691	0.5248671	0.4593642	0.5243505	0.6219602	0.5632532	0.5670536	0.7983372	0.5992466
530	0.4963792	0.5234867	0.457687	0.5163859	0.617663	0.5603446	0.5629852	0.7897578	0.592655
532	0.4935292	0.5207717	0.4555295	0.5086103	0.6140968	0.5571612	0.559971	0.7829998	0.5868536
534	0.4903719	0.5187683	0.4535359	0.5020214	0.6102009	0.554045	0.5573925	0.7768635	0.5830132
536	0.48792	0.5174366	0.4516792	0.4960052	0.6063057	0.5513335	0.5537006	0.772029	0.5770181
538	0.4856201	0.5160857	0.4496615	0.4912582	0.6034008	0.5494004	0.5514909	0.7660729	0.5730067
540	0.4835091	0.515048	0.4486271	0.4861839	0.5998781	0.5476865	0.5490524	0.7600484	0.5684593
542	0.4810773	0.514087	0.4469444	0.4813322	0.5957774	0.5455609	0.5461497	0.756151	0.5644463
544	0.4788654	0.5131367	0.4452883	0.4773317	0.5928049	0.5428844	0.5436822	0.7486743	0.5602912
546	0.4761236	0.5118096	0.4431154	0.473186	0.5885669	0.5400739	0.5411721	0.7420536	0.5555795
548	0.4732993	0.5101309	0.4410937	0.4685202	0.5852016	0.5371786	0.5379649	0.7352422	0.5510054
550	0.4705671	0.508307	0.4389507	0.4640683	0.5807163	0.5343148	0.5348445	0.7280681	0.5466084
552	0.4674476	0.5053838	0.4362958	0.4603301	0.5768386	0.5308937	0.5320933	0.7209506	0.5417373
554	0.4637366	0.5023387	0.4337249	0.455465	0.5719271	0.5271146	0.5281532	0.7129779	0.5366238
556	0.460465	0.4991129	0.4308402	0.4511007	0.5686602	0.5228703	0.5242348	0.7048673	0.5315005
558	0.4570442	0.494839	0.4277917	0.4470671	0.5631171	0.5187488	0.5201498	0.6965816	0.5261525
560	0.4534353	0.4903139	0.4245786	0.4428375	0.5586262	0.5143687	0.516485	0.6883545	0.5210623
562	0.4497671	0.4857998	0.4213114	0.4385716	0.5539172	0.5098538	0.5122858	0.6809032	0.5156693
564	0.446361	0.4811814	0.4183947	0.4349668	0.5495296	0.5055972	0.5084612	0.6726866	0.5106797
566	0.4430808	0.4767956	0.4156096	0.431501	0.5451754	0.5012528	0.504667	0.665078	0.505987
568	0.4398868	0.4724763	0.4127215	0.4280449	0.5407881	0.4968286	0.5011492	0.6580136	0.5012074
570	0.4373046	0.46818	0.4097144	0.4251217	0.5365612	0.492462	0.4974468	0.6510209	0.49682
572	0.4344174	0.4645372	0.40722	0.4222065	0.5324272	0.4886451	0.494167	0.6440145	0.4925207
574	0.4316419	0.4612803	0.4046221	0.4195426	0.5283148	0.4850004	0.4907892	0.6370012	0.488452
576	0.4287626	0.4578422	0.4023293	0.4166071	0.5243158	0.4804679	0.4876312	0.6304425	0.4847642
578	0.4264822	0.4549724	0.4001842	0.4143481	0.5202467	0.4768894	0.4848638	0.6237317	0.4811554
580	0.4240226	0.4520737	0.3980147	0.4118541	0.5165541	0.4728539	0.481498	0.6174626	0.4775654
582	0.4214844	0.449485	0.3961964	0.4094579	0.512433	0.4687509	0.4785128	0.6112036	0.4736963
584	0.4192098	0.4472893	0.3946354	0.4074135	0.5087505	0.4649046	0.4756354	0.6049117	0.4704935
586	0.4169607	0.4453515	0.3929753	0.4057451	0.5047324	0.4611712	0.4729583	0.599069	0.4673898
588	0.4148549	0.4433835	0.391605	0.4036016	0.5009874	0.4574209	0.4700399	0.5930451	0.4642404
590	0.4127811	0.4417455	0.3902326	0.4018047	0.4973051	0.453855	0.4673854	0.5878888	0.4611803
592	0.4108436	0.4400801	0.3890507	0.400267	0.4936273	0.4505426	0.4650106	0.5821477	0.4587963
594	0.4088618	0.4384244	0.3876948	0.3986904	0.4902066	0.4473596	0.4626874	0.576865	0.4560081
596	0.4067761	0.4365449	0.3863669	0.3971506	0.4869539	0.4438728	0.4601721	0.5714312	0.4531516
598	0.4051177	0.434735	0.3851188	0.3959301	0.4836435	0.4407748	0.4577702	0.5667878	0.4508387
600	0.4033482	0.4327565	0.3836203	0.3947479	0.4804824	0.437787	0.4556259	0.5621632	0.4484795
602	0.4015248	0.4307338	0.381819	0.3934762	0.4774383	0.434854	0.4533553	0.557705	0.4461242
604	0.3996941	0.4285485	0.3799946	0.3923991	0.4745477	0.4319432	0.4516305	0.5535811	0.4440932
606	0.398026	0.4262338	0.3783319	0.3913451	0.4719579	0.4290268	0.4495888	0.5496287	0.4418474
608	0.3964617	0.4236563	0.3763652	0.3902101	0.4694445	0.4261595	0.4474806	0.5457203	0.4396481
610	0.3948023	0.4209802	0.374491	0.3892478	0.4666959	0.423459	0.4456098	0.542086	0.4375312
612	0.3934201	0.4187332	0.3726964	0.3883692	0.464434	0.4210938	0.4439044	0.5386661	0.4355816
614	0.3921238	0.4163053	0.37104	0.3876522	0.462153	0.4187356	0.4423022	0.5356981	0.4338482
616	0.3906073	0.4139385	0.369175	0.3867735	0.4597738	0.4162554	0.4404728	0.532563	0.4318644
618	0.3896617	0.4119386	0.3677504	0.3861751	0.4577985	0.4144101	0.4391017	0.5296715	0.4302711
620	0.3885367	0.4100981	0.3662625	0.3855812	0.4558676	0.4126506	0.4377431	0.5270879	0.4286714
622	0.3874895	0.408347	0.3649604	0.3849838	0.4539204	0.410929	0.4363635	0.5244067	0.4272758
624	0.3866504	0.4068106	0.3638791	0.3844846	0.4522551	0.4093268	0.4351121	0.5219793	0.4258971
626	0.3857819	0.4054705	0.3629176	0.3840969	0.4505302	0.4078897	0.4339772	0.5194887	0.4244999
628	0.3849716	0.404265	0.3620974	0.3836044	0.4489123	0.406472	0.4327386	0.5170335	0.4231895
630	0.3841946	0.403197	0.3613026	0.3832314	0.4472569	0.4050829	0.4316568	0.5145248	0.4218139
632	0.383442	0.4022735	0.3605866	0.3828306	0.445733	0.4039026	0.4306147	0.5119429	0.4205162
634	0.3826845	0.4014848	0.359975	0.3824158	0.4441917	0.4026434	0.4294982	0.5093843	0.4193881
636	0.3819628	0.4006624	0.3593642	0.3820219	0.4427458	0.4013827	0.4285928	0.5066811	0.4180981
638	0.3811909	0.399933	0.3588785	0.38164	0.4412746	0.4001774	0.4275919	0.5039897	0.4167833
640	0.380393	0.3992608	0.3584333	0.3812763	0.4399283	0.3989999	0.4265882	0.5014397	0.4155772
642	0.3796933	0.3985903	0.3579174	0.3809122	0.438473	0.3977827	0.425594	0.4987353	0.4143665
644	0.378943	0.3980234	0.3575155	0.3805738	0.4370693	0.3965939	0.4245573	0.4960889	0.413076
646	0.378208	0.3974555	0.3571827	0.3802406	0.4357693	0.3954883	0.4236875	0.4936895	0.4120434
648	0.377441	0.3969031	0.3569311	0.3799463	0.4343865	0.3943637	0.4228069	0.4912026	0.4108951
650	0.3766996	0.3964024	0.3566669	0.3796419	0.4331444	0.3932621	0.4218383	0.4887208	0.4097638
652	0.3760631	0.3959378	0.3563754	0.3795201	0.4318321	0.392209	0.4209383	0.486486	0.4087178
654	0.3753903	0.3954568	0.3561094	0.3792713	0.4306134	0.3913378	0.4200919	0.4842434	0.4077736
656	0.3746513	0.3950907	0.3558403	0.379018	0.4293886	0.3903426	0.4191639	0.4819785	0.4067081
658	0.3739522	0.3946048	0.3555957	0.3787341	0.4281373	0.3893478	0.4183035	0.4798546	0.4057717
660	0.3732615	0.3941669	0.355411	0.3784805	0.4269241	0.3884071	0.4175746	0.477746	0.4047996
662	0.3725545	0.3937692	0.3551796	0.3782099	0.4258115	0.3875203	0.4166859	0.475646	0.4038137
664	0.3718439	0.3933563	0.3549948	0.3779174	0.4246179	0.3866129	0.4157883	0.4735002	0.4028833
666	0.3711196	0.392992	0.354793	0.3776302	0.4233616	0.3857428	0.4148798	0.471376	0.4019285

668	0.3703343	0.3925161	0.3545001	0.377188	0.4221566	0.384762	0.4139684	0.4692713	0.4008906
670	0.3695946	0.3920954	0.3542451	0.3767668	0.4208788	0.3838694	0.4130128	0.4671503	0.3999677
672	0.3688954	0.3917149	0.3540907	0.3764039	0.4196511	0.3830321	0.4121063	0.4650902	0.3990422
674	0.3682287	0.3913476	0.353875	0.3759623	0.4185546	0.382221	0.4112467	0.4631067	0.3981709
676	0.3675939	0.3909323	0.3536745	0.3755324	0.4173743	0.3814017	0.4103367	0.4610827	0.3972569
678	0.366922	0.3905442	0.3534512	0.3751034	0.4162425	0.3806183	0.4094418	0.459033	0.3963274
680	0.3663006	0.390229	0.3532404	0.3746429	0.4151531	0.3798859	0.4086311	0.4571388	0.3955471
682	0.3657696	0.3899114	0.3530443	0.3741695	0.414166	0.3792157	0.4078529	0.4553402	0.3947692
684	0.3652191	0.3895755	0.3528469	0.3737003	0.4132104	0.3785119	0.4071574	0.453547	0.3939748
686	0.3647726	0.3892332	0.3526936	0.3733323	0.4123592	0.377929	0.4064373	0.4518408	0.3932512
688	0.3643394	0.3889841	0.3525504	0.3729201	0.4115472	0.3773777	0.4058581	0.4502289	0.3925833
690	0.363981	0.3887572	0.3524311	0.3725507	0.4107718	0.376856	0.4052781	0.4487817	0.3919284
692	0.3636307	0.3885213	0.3523312	0.3722012	0.4101198	0.3763964	0.4048597	0.4473431	0.3913045
694	0.3634563	0.3883636	0.3522558	0.3719425	0.4095911	0.3760228	0.4044276	0.4460636	0.3907672
696	0.3632573	0.3881897	0.3522162	0.3716995	0.409059	0.3757024	0.404087	0.4448727	0.3902865
698	0.3630856	0.3881613	0.3521868	0.3714719	0.4085543	0.3754027	0.4037924	0.443744	0.389871
700	0.363001	0.3880934	0.3521635	0.3712685	0.4081464	0.3751734	0.4035748	0.4427113	0.3894553
702	0.3629128	0.3880444	0.3522223	0.3711251	0.4078667	0.3749939	0.403405	0.441781	0.3891075
704	0.3628992	0.3880607	0.3522392	0.3709725	0.4075611	0.3748502	0.403279	0.4409385	0.3888122
706	0.3628924	0.3880642	0.3523166	0.3708168	0.4072626	0.3746988	0.4031584	0.4401202	0.3884963
708	0.3629677	0.3881529	0.3524304	0.3707725	0.407097	0.3746361	0.4031065	0.4394965	0.3882795
710	0.3630269	0.3882545	0.3525817	0.3707451	0.4069413	0.3746603	0.4030842	0.4388201	0.3880889
712	0.3631623	0.388386	0.3527731	0.3707843	0.4068109	0.3746698	0.4031337	0.4382897	0.3879448
714	0.3633301	0.3885542	0.3529896	0.370808	0.406748	0.3747396	0.4031868	0.4378195	0.3878404
716	0.3635387	0.3887906	0.3532416	0.370923	0.4067501	0.3748611	0.4033126	0.4374002	0.3878126
718	0.3637586	0.389039	0.3536079	0.3710077	0.4067648	0.3750129	0.4034614	0.437047	0.3877729
720	0.3640435	0.3893624	0.3540034	0.3711418	0.406813	0.3752196	0.4036587	0.4367488	0.3878441
722	0.3644666	0.3897046	0.3543657	0.371362	0.4069248	0.3754998	0.4038956	0.4365579	0.387911
724	0.3648041	0.3900608	0.3547554	0.3716022	0.4070668	0.3758317	0.4041753	0.4364142	0.38801
726	0.3652014	0.3905785	0.3552316	0.3718413	0.4072672	0.3761791	0.4044811	0.4362966	0.3883095
728	0.3656282	0.3911145	0.3557311	0.3720693	0.4074956	0.3765517	0.4048248	0.4362625	0.388518
730	0.366054	0.3916018	0.3562182	0.3723121	0.4078024	0.3769478	0.4053005	0.4362962	0.3887356
732	0.3665247	0.3921246	0.3567716	0.3725813	0.4081452	0.3773565	0.4057027	0.4363218	0.3890207
734	0.3670263	0.3927006	0.3573272	0.3728505	0.4084447	0.3778319	0.4061184	0.4363998	0.3893141
736	0.3675085	0.3932315	0.3578818	0.3730933	0.4087427	0.3782509	0.4065301	0.4365108	0.3896044
738	0.3680082	0.3937941	0.3584613	0.3733341	0.4090762	0.3787354	0.4069685	0.4367313	0.3899155
740	0.3685216	0.3943857	0.3590724	0.3736026	0.4094021	0.3792259	0.4074016	0.4368944	0.3902501
742	0.3690198	0.3949876	0.3596469	0.3738277	0.4097284	0.3796981	0.4078311	0.4370419	0.3905687
744	0.3695371	0.3955688	0.3602249	0.3740614	0.4100663	0.3801864	0.4082765	0.4372122	0.390897
746	0.370052	0.3961583	0.3608271	0.3743028	0.4104176	0.3806717	0.4087371	0.4374072	0.3912115
748	0.3705507	0.3967686	0.3614741	0.374566	0.4107694	0.381149	0.4091864	0.437607	0.3915605
750	0.3710697	0.397361	0.3621056	0.3748484	0.4111064	0.3816267	0.4096562	0.4378069	0.3919162
752	0.3715728	0.3979332	0.3627261	0.3751716	0.4114589	0.3821037	0.4101131	0.4380455	0.3923016
754	0.3720969	0.3985445	0.3633776	0.3755342	0.4117933	0.3825994	0.4105786	0.4382922	0.392747
756	0.3726686	0.3991943	0.3640643	0.3759496	0.4121834	0.3831271	0.4110811	0.4385932	0.3932218
758	0.373195	0.3997981	0.3647099	0.3763892	0.4125303	0.3836184	0.4115499	0.4388747	0.3936967
760	0.3737064	0.4004431	0.3654214	0.3768446	0.4129311	0.3841606	0.412064	0.4391992	0.3942177
762	0.3742377	0.401077	0.3661054	0.377315	0.4133444	0.3847173	0.4125581	0.4395	0.3947177
764	0.3747284	0.4016797	0.3667319	0.3776413	0.4137684	0.3852872	0.4130092	0.4397723	0.3951569
766	0.375255	0.4023177	0.3673858	0.3778876	0.4142714	0.3859145	0.4135402	0.440125	0.3955857
768	0.3758049	0.4029741	0.3680624	0.3780204	0.4148321	0.386548	0.4140599	0.4404643	0.3959821
770	0.3763406	0.4036632	0.3687117	0.3781853	0.415401	0.3870806	0.4146227	0.440819	0.3962829
772	0.3768975	0.4043192	0.3693615	0.3784005	0.4159251	0.3875657	0.4151444	0.4411561	0.3965691
774	0.3774626	0.4049816	0.3700633	0.3787666	0.416405	0.3880239	0.4156713	0.4414647	0.3969447
776	0.3780435	0.4056773	0.3707819	0.3792001	0.416798	0.3885321	0.4161533	0.4419501	0.3974191
778	0.3786375	0.4063913	0.371533	0.3796442	0.417196	0.3891461	0.4167616	0.4423547	0.3980036
780	0.3792101	0.4070983	0.3722453	0.3801053	0.4175546	0.3897289	0.4173151	0.4428037	0.3986183
782	0.3797888	0.4077666	0.3729537	0.3806729	0.4179325	0.3903021	0.4178529	0.4432102	0.399246
784	0.3803471	0.4084477	0.3736864	0.3812876	0.4183307	0.390876	0.4184274	0.4436337	0.3998678
786	0.3808419	0.4090657	0.3743371	0.3818535	0.4187082	0.3913979	0.4189324	0.4440079	0.400407
788	0.3813508	0.4096939	0.375006	0.3824119	0.4191121	0.3919142	0.4194356	0.4443999	0.4009265
790	0.3818322	0.410323	0.3756592	0.3829445	0.4195023	0.3924336	0.4199295	0.4447843	0.4014474
792	0.3822693	0.4108891	0.3762569	0.383426	0.4198855	0.3928919	0.4203715	0.4451356	0.4019141
794	0.3827203	0.4114737	0.3768452	0.3839492	0.420274	0.3933821	0.4208313	0.4455065	0.4023954
796	0.383157	0.4120489	0.3774556	0.3844628	0.4206249	0.3938663	0.4212737	0.4458699	0.4028716
798	0.3835542	0.4125754	0.3780053	0.3849523	0.4209464	0.3943169	0.4216942	0.4461962	0.4033168
800	0.3839495	0.4130984	0.3785408	0.385424	0.4212679	0.3947459	0.4220913	0.4465026	0.4037324
802	0.3843125	0.4135928	0.379058	0.3858897	0.4215695	0.3951513	0.4224657	0.446815	0.4041313
804	0.3846787	0.414067	0.3795649	0.386327	0.4218785	0.3955614	0.4228446	0.4471076	0.4045274
806	0.3850025	0.4145114	0.3800139	0.3867355	0.4221426	0.395937	0.4231718	0.4473682	0.4048631
808	0.3852983	0.4149036	0.3804214	0.3870696	0.4223803	0.3962747	0.4234785	0.4475962	0.4051609
810	0.385585	0.4152777	0.3808199	0.3873911	0.422621	0.3966009	0.4237666	0.4478025	0.4054262
812	0.3858272	0.4156103	0.3811524	0.3876607	0.4228146	0.3968855	0.4240171	0.4479688	0.4056527
814	0.3860036	0.415877	0.3814493	0.387881	0.4229632	0.3971067	0.4241998	0.4480778	0.4058198

816	0.3861803	0.4161032	0.3816951	0.3880538	0.4230841	0.3973042	0.4243639	0.4481713	0.4059528
818	0.3863112	0.4162847	0.3819005	0.3882025	0.4231953	0.3974659	0.4245071	0.4482138	0.4060391
820	0.3864109	0.4164227	0.3820463	0.388293	0.4232447	0.3975772	0.4245805	0.4482138	0.4060908
822	0.3864701	0.4165043	0.3821378	0.3883508	0.4232886	0.3976578	0.4246449	0.4481862	0.4060931
824	0.3864813	0.4165471	0.382194	0.3883537	0.4232778	0.3976842	0.4246399	0.448108	0.4060396
826	0.3864366	0.4165189	0.3821908	0.3883096	0.4232419	0.3976559	0.4246002	0.4479934	0.405939
828	0.3863697	0.416442	0.3821225	0.3881966	0.4231409	0.3975729	0.4244917	0.447822	0.4057692
830	0.3862099	0.4162958	0.382001	0.3880282	0.4230012	0.3974435	0.4243362	0.4475718	0.4055535
832	0.3860074	0.4160759	0.3818082	0.387795	0.4227921	0.3972354	0.4241006	0.4472586	0.4052415
834	0.3857317	0.4157619	0.381521	0.3874978	0.4225131	0.3969494	0.4237958	0.4468614	0.4048682
836	0.3854051	0.4153824	0.3811794	0.3871364	0.4221871	0.3965977	0.4234454	0.4464091	0.404443
838	0.3849615	0.4148818	0.3807227	0.3866682	0.4217483	0.3961323	0.4229726	0.4458199	0.4038818
840	0.3844363	0.414282	0.3801823	0.3861131	0.4212415	0.3956026	0.4224138	0.4451683	0.4032359
842	0.3838408	0.4136332	0.379575	0.385486	0.4206556	0.3949859	0.4217799	0.4444312	0.4025147
844	0.383178	0.4128661	0.3788651	0.384782	0.4199884	0.3942922	0.4210584	0.4436065	0.4017195
846	0.3824046	0.4119946	0.3780622	0.3839645	0.4192512	0.3934817	0.4202573	0.4426724	0.4008183
848	0.3815813	0.4110775	0.3772107	0.3831091	0.4184551	0.39263	0.4193897	0.4416955	0.3998603
850	0.3806995	0.4100979	0.3763058	0.382176	0.4176044	0.3917112	0.4184763	0.4406348	0.3988364
852	0.3797409	0.4089918	0.3752789	0.3811666	0.416658	0.390683	0.4174329	0.4394674	0.3977037
854	0.3787138	0.4078271	0.3741993	0.3800748	0.4156788	0.389587	0.416368	0.4382395	0.3965099
856	0.3776457	0.4066204	0.3730856	0.3789788	0.4146384	0.3884797	0.4152428	0.4369752	0.395284
858	0.3765557	0.4053873	0.3719258	0.3778457	0.4135811	0.3873283	0.4140906	0.4356535	0.3940251
860	0.3753535	0.4040399	0.3706634	0.3765945	0.412412	0.3860529	0.4128179	0.4342145	0.3926409
862	0.3741305	0.4026541	0.3693844	0.3753236	0.4112325	0.384776	0.411527	0.4327728	0.3912413
864	0.3729303	0.4013007	0.3681046	0.3740837	0.4100547	0.3834887	0.410251	0.4313303	0.3898576
866	0.3716364	0.3998041	0.366737	0.3727399	0.4087961	0.382107	0.408884	0.4297628	0.3883576
868	0.3702742	0.3982796	0.3652941	0.3713382	0.407476	0.3806755	0.4074481	0.4281483	0.3867987
870	0.3689771	0.3967911	0.3639224	0.369979	0.406206	0.3792826	0.406067	0.4265723	0.3853103
872	0.3676194	0.3952494	0.3624989	0.3685808	0.4049003	0.3778382	0.4046467	0.4249441	0.3837549
874	0.3662062	0.3936661	0.3609945	0.3670982	0.4035428	0.3763305	0.403147	0.4232331	0.3821267
876	0.364809	0.3920616	0.3595081	0.3656299	0.4021735	0.374825	0.4016634	0.4215291	0.3805105
878	0.3633976	0.390484	0.3580374	0.3641649	0.4008427	0.3733439	0.4002161	0.4198303	0.3789128
880	0.3619944	0.3888772	0.3565502	0.3626786	0.3994708	0.3718253	0.3987213	0.4181116	0.3772925
882	0.3604312	0.387137	0.3549307	0.3610581	0.397985	0.3701869	0.3970992	0.4162447	0.3755271
884	0.3590073	0.3855112	0.3534094	0.3595327	0.3965906	0.3686385	0.3955879	0.4144981	0.3738696
886	0.357602	0.3839194	0.3519359	0.358046	0.3952241	0.3671531	0.3941065	0.4127813	0.3722633
888	0.3561176	0.3822555	0.3503545	0.3564605	0.3937974	0.3655542	0.3925577	0.4109493	0.3705573
890	0.354625	0.3805683	0.348785	0.3548663	0.3923579	0.3639582	0.3909862	0.4091257	0.3688502
892	0.3532011	0.3789728	0.3472644	0.353347	0.3909853	0.3624351	0.3895027	0.4073769	0.3672116
894	0.3517369	0.3773218	0.3457066	0.3517617	0.3895599	0.3608485	0.3879553	0.4055612	0.3655123
896	0.3502196	0.3756183	0.3440805	0.3501473	0.3881018	0.3592263	0.3864017	0.4036884	0.3637728
898	0.3487545	0.3739502	0.3425101	0.3485431	0.386677	0.3576294	0.3848604	0.4018504	0.3620646
900	0.3472925	0.3722842	0.3409163	0.3469643	0.385252	0.3560452	0.3833123	0.4000183	0.3603407
902	0.3457904	0.3705751	0.3392936	0.3452956	0.3837946	0.3544132	0.3817586	0.3981413	0.3585816
904	0.3442775	0.3688505	0.3376248	0.3436096	0.382325	0.3527579	0.3801857	0.3962129	0.3567727
906	0.3428138	0.3671735	0.3359977	0.3419501	0.3809267	0.3511404	0.3786571	0.3943711	0.3550259
908	0.3413988	0.3655181	0.3344151	0.340331	0.3795632	0.3495601	0.3771774	0.3925384	0.3533188
910	0.3399239	0.3638338	0.3327693	0.3386334	0.3781923	0.347946	0.3756595	0.390707	0.3515367
912	0.338513	0.3621999	0.3311816	0.3369789	0.3768484	0.3463782	0.3741891	0.3888756	0.3498018
914	0.3372276	0.3606709	0.3297525	0.3354309	0.3756116	0.3449087	0.3728473	0.3872003	0.3482232
916	0.3359811	0.3591751	0.3282909	0.3339206	0.37444	0.3435065	0.3715248	0.3855256	0.3466667
918	0.3347851	0.3577451	0.3269159	0.3324431	0.373322	0.3421582	0.3702743	0.3839099	0.3451664
920	0.3337149	0.3564819	0.3256725	0.3310792	0.372317	0.3409514	0.3691517	0.3824691	0.3437998
922	0.3327405	0.355271	0.3245038	0.3297954	0.3714545	0.3398278	0.3681467	0.3811112	0.3425425
924	0.3318515	0.3541593	0.3234277	0.328567	0.3706423	0.3387902	0.3671989	0.3798642	0.3413756
926	0.3310477	0.3531416	0.3224434	0.3274247	0.3699362	0.3378627	0.3663489	0.3786899	0.3402991
928	0.3303818	0.3522715	0.3216012	0.3264202	0.3693453	0.3370793	0.3656478	0.3776744	0.3393896
930	0.3298384	0.3515092	0.3208486	0.3254845	0.368873	0.3364165	0.3650397	0.3767538	0.3385724
932	0.3293576	0.3508109	0.32017	0.324621	0.3684886	0.3358221	0.3645116	0.3759253	0.3378629
934	0.3290284	0.3502581	0.3196096	0.32386	0.3682292	0.3353503	0.3641363	0.3752198	0.3372676
936	0.3287985	0.3498256	0.3191751	0.3232068	0.3680843	0.3350203	0.3638631	0.3746566	0.3368157
938	0.3286891	0.3494905	0.3188275	0.3226369	0.3680629	0.3347965	0.3637061	0.3741991	0.3364587
940	0.3287393	0.3493134	0.3186002	0.3221763	0.368207	0.3347186	0.3637079	0.3738795	0.3362387
942	0.3289621	0.3492977	0.3185455	0.3218573	0.3685149	0.334818	0.3638836	0.3737421	0.3362159
944	0.3293398	0.349438	0.3186255	0.321672	0.369012	0.3350686	0.3642217	0.3737682	0.3363374
946	0.3299633	0.3497945	0.3189051	0.3216221	0.3697522	0.3355524	0.3647925	0.3740128	0.3366756
948	0.3307557	0.3503163	0.319337	0.3217171	0.3706781	0.3362037	0.3655452	0.3744444	0.3371819
950	0.3317223	0.3509842	0.3199081	0.3219429	0.3717666	0.3369997	0.3664486	0.3750274	0.3378492

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	82	83	84	85	86	87	88	89	90
Sample Numb	"0217a"	"0218a"	"0219a"	"0220a"	"0221a"	"0223a"	"0101b"	"0102b"	"0103b"
400	0.7711207	0.752283	0.7740424	0.6837728	0.7406657	0.7068977	0.896792	1.1305944	1.2274954
402	0.806706	0.792017	0.8129926	0.7164721	0.7747481	0.7392907	0.930994	1.163609	1.2646487
404	0.8427551	0.8297486	0.8487486	0.7465923	0.8079318	0.7725028	0.9650375	1.1957042	1.2976111
406	0.8738403	0.8648165	0.8842177	0.7750216	0.8374673	0.8026921	0.9965628	1.2219545	1.331152
408	0.9048241	0.8963325	0.9162329	0.8012888	0.8654876	0.8291894	1.0251886	1.2465298	1.3585156
410	0.9314547	0.9279151	0.9473037	0.823993	0.8912722	0.8518596	1.0519309	1.2726662	1.3846426
412	0.9573367	0.9552389	0.9723666	0.8451442	0.9143357	0.8741405	1.0759792	1.2941253	1.4096897
414	0.9792109	0.9807739	0.997431	0.8632037	0.9356128	0.8928162	1.0986648	1.3121498	1.4278166
416	0.9989631	1.0016267	1.0196793	0.8783549	0.9526698	0.9099905	1.1185017	1.3278565	1.4500611
418	1.0153213	1.0219142	1.0372504	0.88985	0.9662285	0.9235871	1.1344175	1.3423657	1.4646816
420	1.029694	1.0397373	1.0549667	0.8991542	0.9785296	0.9351863	1.1508408	1.3559904	1.4807298
422	1.043835	1.0545902	1.070649	0.9075858	0.9907245	0.9440929	1.164695	1.3658535	1.4940078
424	1.0520092	1.0682249	1.0824524	0.9134417	0.9984441	0.9500014	1.1771187	1.3732934	1.5038254
426	1.0635215	1.0794836	1.0951627	0.9169152	1.0078262	0.954394	1.1858243	1.3838642	1.5158651
428	1.0713681	1.0916755	1.1060299	0.9216552	1.0142047	0.9565921	1.1952016	1.3909967	1.5237304
430	1.0790137	1.0995344	1.1132067	0.9288598	1.0185373	0.9566014	1.2012711	1.3949594	1.5304701
432	1.0843612	1.1080357	1.1214911	0.9332769	1.023428	0.9562631	1.2079134	1.3993258	1.5382326
434	1.0877606	1.1153998	1.129217	0.9279695	1.0277178	0.9535953	1.2133905	1.4018617	1.5460477
436	1.0899611	1.1198443	1.1336672	0.9207616	1.0300932	0.951903	1.2165239	1.4034507	1.549697
438	1.0919679	1.1257188	1.1376605	0.9161983	1.0324031	0.9480914	1.2201974	1.4063792	1.5562925
440	1.0938588	1.1288375	1.143141	0.9134238	1.0328579	0.9434681	1.2216008	1.4066492	1.5571923
442	1.0936437	1.1320421	1.1457871	0.9090649	1.0325527	0.9384839	1.2235065	1.4057252	1.5571012
444	1.0951041	1.1335357	1.1474177	0.9040605	1.033076	0.9331411	1.2259789	1.4062884	1.5614731
446	1.0949993	1.1345503	1.1481022	0.8998799	1.0321751	0.9298828	1.2246784	1.4034185	1.5616608
448	1.0944295	1.1341773	1.1485574	0.8949602	1.0317308	0.9281855	1.2251356	1.4025161	1.5594975
450	1.0924929	1.135795	1.1499048	0.8908779	1.03113	0.9268618	1.2240415	1.4006176	1.5628227
452	1.0897217	1.1343383	1.148973	0.8869584	1.0294045	0.9197826	1.2235395	1.3979011	1.5618312
454	1.0877637	1.1339585	1.1476581	0.8820932	1.0269593	0.9094177	1.2224531	1.394981	1.5600672
456	1.0864832	1.1324054	1.1456635	0.8773789	1.0256147	0.9014629	1.2202456	1.3913498	1.5604932
458	1.0829953	1.1300099	1.1430848	0.8717079	1.0216049	0.8948041	1.2174585	1.3864317	1.5569876
460	1.0802618	1.1272742	1.1396612	0.8655372	1.0186746	0.8881471	1.2146616	1.3810952	1.5542946
462	1.0767924	1.1251851	1.1370414	0.8593416	1.0149789	0.8818558	1.2122767	1.3768898	1.5505424
464	1.0724417	1.1201974	1.1315556	0.8525786	1.0103872	0.8737603	1.2080418	1.3708978	1.5470035
466	1.0668958	1.1141422	1.1261855	0.8450422	1.0051291	0.8653742	1.2047465	1.3654904	1.5440534
468	1.0612849	1.1082218	1.1185752	0.8369424	0.9999484	0.8567702	1.2005599	1.361375	1.5386028
470	1.0555055	1.1025207	1.1124107	0.8286447	0.9938587	0.8483008	1.195019	1.3514377	1.5322104
472	1.0474197	1.0940664	1.1046107	0.8204008	0.9883428	0.8391868	1.1900573	1.3467231	1.5279782
474	1.0393236	1.0834452	1.095415	0.8108706	0.981212	0.8304378	1.1842778	1.3382806	1.5204906
476	1.0295403	1.073536	1.0863626	0.8014127	0.974355	0.8202724	1.1780524	1.331136	1.5153453
478	1.0193856	1.0643179	1.0759995	0.7905688	0.9670821	0.8111047	1.1711454	1.3243291	1.5073969
480	1.0082984	1.0515407	1.0655185	0.7795646	0.9573056	0.8000124	1.1637254	1.3157514	1.498971
482	0.9966021	1.0386169	1.052955	0.7679353	0.9477741	0.7891526	1.1559839	1.3070779	1.4896424
484	0.9849771	1.0260748	1.0405531	0.7562934	0.9372067	0.779087	1.1477957	1.2982457	1.4819627
486	0.9732614	1.010305	1.026788	0.744257	0.9270549	0.767179	1.1403322	1.2887263	1.4722002
488	0.960057	0.9949149	1.012665	0.7313917	0.9160465	0.7551548	1.1317219	1.2796757	1.461832
490	0.9477094	0.9784557	0.9987	0.7191616	0.9053904	0.7435713	1.1235163	1.2713904	1.4559317
492	0.9340348	0.9618473	0.9829113	0.7056342	0.8936495	0.7313023	1.1135905	1.2607241	1.4444852
494	0.9204561	0.9436691	0.9678801	0.6922151	0.883045	0.7186837	1.1053159	1.2509396	1.4335157
496	0.9069919	0.924639	0.9519529	0.6787115	0.869239	0.7039936	1.0971981	1.24298	1.4252899
498	0.8934405	0.9065438	0.9389001	0.6667786	0.8557186	0.6899396	1.0884714	1.2330837	1.4156344
500	0.8806871	0.8882593	0.9228069	0.6538217	0.8386142	0.676974	1.080935	1.225477	1.4082565
502	0.8675665	0.8689805	0.9063527	0.6391616	0.820491	0.662245	1.0741496	1.217283	1.400239
504	0.8540555	0.8507096	0.8934319	0.6262069	0.8048784	0.6495571	1.0671453	1.2109733	1.3913277
506	0.8414811	0.8329493	0.8788125	0.6127409	0.7919865	0.6367747	1.0608979	1.2042627	1.3843307
508	0.8287389	0.8141609	0.8647388	0.600672	0.7800313	0.622278	1.0535038	1.197705	1.3796451
510	0.8173102	0.7962537	0.851702	0.5888858	0.7667624	0.6104112	1.0484968	1.1896558	1.3711197
512	0.8069345	0.7800184	0.8416476	0.5778809	0.7542161	0.5993536	1.0425274	1.1846224	1.3660352
514	0.7964238	0.7689557	0.8355366	0.5674009	0.743013	0.5894846	1.0383017	1.179422	1.3615482
516	0.788307	0.7568222	0.8256293	0.5587133	0.7325082	0.5787871	1.034214	1.1751139	1.3555398
518	0.7848924	0.7383006	0.8106193	0.5510016	0.7243434	0.5700092	1.0323732	1.1714671	1.3531637

520	0.7829098	0.7253157	0.7983251	0.5428872	0.7130837	0.56191	1.0301847	1.1686858	1.3526192
522	0.7708292	0.7130408	0.7908146	0.5365101	0.7049567	0.554764	1.0290465	1.165072	1.3516567
524	0.7622131	0.7043641	0.7820198	0.5311598	0.6981791	0.5490896	1.0282333	1.163239	1.3525555
526	0.7563452	0.6957031	0.7741317	0.5259109	0.6918174	0.5431534	1.0264566	1.1617272	1.3530321
528	0.7518083	0.6865774	0.7698119	0.5212191	0.6881145	0.5389624	1.0269327	1.1613832	1.3558328
530	0.7490704	0.6807417	0.7634228	0.5170813	0.6820232	0.5357717	1.0294702	1.1618643	1.3589191
532	0.7454782	0.6754727	0.7575499	0.5137995	0.677317	0.5314236	1.0299935	1.1614937	1.3627287
534	0.7412235	0.6689775	0.7532491	0.5101891	0.6729716	0.5285786	1.0319527	1.1606081	1.3644309
536	0.7383006	0.663807	0.7497336	0.5077313	0.6703006	0.5260876	1.033319	1.1614184	1.3658392
538	0.735242	0.6594172	0.7437053	0.5048297	0.6660475	0.5242192	1.0335622	1.1615465	1.3659052
540	0.7327432	0.655158	0.738968	0.5023	0.6628777	0.5225492	1.0339237	1.1613226	1.3685918
542	0.7289094	0.650534	0.734028	0.4994526	0.6615193	0.5201269	1.034405	1.1599743	1.3691399
544	0.7243575	0.6466983	0.7281928	0.4974107	0.6557476	0.5176084	1.0335279	1.1584394	1.3709424
546	0.7210217	0.6422781	0.7218824	0.4946229	0.6518602	0.5153228	1.0310179	1.1577196	1.3722675
548	0.7162002	0.6369606	0.7164981	0.4911145	0.6471378	0.5129632	1.0296731	1.1558983	1.3701972
550	0.7120224	0.6322168	0.7101858	0.4879396	0.6424568	0.5104398	1.0273705	1.1530976	1.3706694
552	0.7090891	0.6260949	0.7036427	0.4850542	0.6386624	0.506663	1.0289456	1.1516941	1.36971
554	0.7023218	0.6203408	0.6964988	0.4811352	0.6328917	0.503123	1.0227927	1.1482391	1.3681288
556	0.6974118	0.6132724	0.6887915	0.4775454	0.6278908	0.4991791	1.0183461	1.1455429	1.3643305
558	0.6917498	0.6063862	0.6815413	0.4736434	0.622209	0.4949207	1.0156832	1.1425922	1.3631523
560	0.686304	0.5995207	0.6741269	0.4702057	0.6175466	0.4904336	1.006911	1.1388783	1.3612201
562	0.6807526	0.5924554	0.6666256	0.4663479	0.6119694	0.4860818	1.0013118	1.1358891	1.3577914
564	0.6750043	0.58529	0.6592308	0.4624881	0.6064246	0.4821079	0.9949135	1.1329496	1.3580902
566	0.6691065	0.5782111	0.6527452	0.4589051	0.6012113	0.4779475	0.9896959	1.1298972	1.3555547
568	0.6633973	0.5713537	0.6448032	0.4552401	0.5959187	0.4739801	0.9820971	1.1282227	1.3520172
570	0.6578125	0.5644183	0.6373566	0.4522095	0.5903099	0.4700988	0.975933	1.1259754	1.3479891
572	0.6523026	0.5584196	0.6304666	0.4488134	0.5849744	0.466902	0.9684719	1.1236286	1.3444834
574	0.646225	0.5523908	0.623496	0.4454615	0.5800548	0.463833	0.9620727	1.1164422	1.3408984
576	0.6402727	0.5463935	0.6161563	0.4424415	0.5744802	0.4607311	0.954017	1.1114742	1.3378578
578	0.63411	0.5408142	0.6098561	0.4394776	0.5695744	0.4579075	0.9460249	1.1072881	1.3324761
580	0.6279362	0.5357514	0.6034621	0.4363846	0.5642745	0.4549705	0.9383469	1.103487	1.3280122
582	0.6217489	0.5306717	0.5965703	0.4338126	0.5589947	0.452147	0.9308336	1.0987959	1.325119
584	0.6152533	0.5262727	0.5905665	0.4311174	0.5543321	0.44993	0.9228153	1.0948085	1.3206577
586	0.6088248	0.5214642	0.5843503	0.4287069	0.549232	0.4476955	0.9148987	1.0912893	1.3167123
588	0.6022706	0.5172259	0.5785605	0.4263068	0.5440913	0.4453918	0.9064091	1.0873412	1.3118494
590	0.5958167	0.5130029	0.572907	0.4237978	0.5393257	0.4433932	0.8988041	1.0832293	1.3080742
592	0.5901284	0.5090849	0.5674573	0.4216204	0.5345187	0.4415403	0.8910747	1.0793791	1.3045859
594	0.5839326	0.5052158	0.5617945	0.4193893	0.5300362	0.4397057	0.8833501	1.0754589	1.3017199
596	0.5776271	0.5013016	0.5566709	0.4171861	0.525346	0.4375372	0.8757336	1.0717406	1.3046265
598	0.571814	0.4976661	0.5515345	0.4149013	0.52106	0.4357805	0.869445	1.0685816	1.2959485
600	0.5663009	0.4939731	0.546648	0.4131914	0.5170964	0.433785	0.8622085	1.0656569	1.2902709
602	0.5608878	0.4900295	0.541846	0.4110976	0.5127629	0.4318727	0.8553745	1.062519	1.2858391
604	0.5557315	0.4862046	0.5371408	0.4091525	0.508894	0.4300607	0.84875	1.05898	1.2830927
606	0.5509517	0.4825645	0.5326861	0.407199	0.5053302	0.4281279	0.8425187	1.0557436	1.2788507
608	0.5461627	0.4787425	0.5282317	0.405204	0.501542	0.4260031	0.8365824	1.0525768	1.2755592
610	0.5417675	0.4749202	0.523909	0.403243	0.4983144	0.4238694	0.830695	1.0494037	1.2719564
612	0.5377001	0.4714825	0.5200318	0.4014817	0.4950816	0.4222095	0.8252443	1.0463665	1.2694962
614	0.5341311	0.4678943	0.5163932	0.3997957	0.492081	0.4203447	0.8199133	1.0436966	1.2658887
616	0.5301931	0.4643388	0.5122978	0.3980655	0.4888855	0.418471	0.8145252	1.0404464	1.2627227
618	0.5267499	0.4612663	0.5089015	0.396726	0.4861718	0.4168592	0.8095118	1.037957	1.2593814
620	0.5234166	0.4581798	0.5055243	0.3951796	0.4834443	0.4155153	0.8044742	1.0350286	1.2558768
622	0.5201685	0.4552896	0.5024432	0.3939338	0.4809156	0.4141718	0.7991906	1.0320113	1.2525263
624	0.5170689	0.4527601	0.4992628	0.392719	0.4783523	0.4128999	0.7937593	1.0289738	1.2503612
626	0.5140624	0.4501734	0.4964172	0.3916019	0.475899	0.411817	0.7887802	1.0262953	1.2460281
628	0.5110461	0.4477436	0.493615	0.3905212	0.4736778	0.4108146	0.7833931	1.0233369	1.2423202
630	0.5079669	0.4453055	0.4907745	0.389481	0.4712426	0.4098409	0.7778897	1.020505	1.2387044
632	0.5051199	0.4430765	0.487964	0.3885531	0.4688346	0.408981	0.7727234	1.0176862	1.2353991
634	0.5022353	0.4409609	0.4852764	0.3875959	0.4665862	0.4082196	0.7674575	1.0149961	1.2318623
636	0.499194	0.4387479	0.4825579	0.386674	0.4641761	0.4073494	0.7620881	1.0121406	1.2283826
638	0.4961793	0.4366249	0.4798633	0.3857189	0.4618463	0.4065596	0.7568306	1.0093607	1.2248023
640	0.4933201	0.4346123	0.4773884	0.3848416	0.4597435	0.405774	0.7520667	1.0067749	1.2217991
642	0.4902805	0.4325909	0.4748749	0.3840067	0.4573981	0.4050208	0.7474591	1.0044606	1.2186272
644	0.4873576	0.4306185	0.4723006	0.383117	0.455044	0.4042763	0.7425024	1.0017226	1.2149971
646	0.4845113	0.428713	0.4700111	0.3823122	0.4528258	0.4035881	0.7381269	0.9992442	1.2117021
648	0.4816273	0.4269347	0.4676815	0.3815443	0.4505287	0.402872	0.7337685	0.9966645	1.2081797
650	0.4787297	0.4251438	0.465359	0.3807447	0.4482476	0.4021918	0.7294711	0.9940071	1.2049471
652	0.4759095	0.4234417	0.4632095	0.3800465	0.4460779	0.4015629	0.7255368	0.9915063	1.2013766
654	0.4731362	0.4218203	0.4611329	0.3793833	0.4438506	0.4009488	0.7216038	0.9889179	1.1980054
656	0.4703576	0.4201515	0.4590216	0.3786082	0.4415679	0.4003597	0.7176353	0.9861997	1.1944306
658	0.4675534	0.4186299	0.4569378	0.3778535	0.4393194	0.3998224	0.7137721	0.9834995	1.1907952
660	0.4647558	0.4171584	0.4548849	0.3771195	0.4371103	0.3992586	0.7100853	0.9808701	1.1871036
662	0.4620564	0.4157072	0.4528847	0.3763691	0.434877	0.3986772	0.7065091	0.9782919	1.1830633
664	0.45926	0.41419	0.4508278	0.3756451	0.4327661	0.3981195	0.7027417	0.9755076	1.1790187
666	0.4565117	0.4127082	0.4488486	0.3748753	0.4305323	0.3976004	0.6990574	0.9726738	1.1748805

668	0.4539376	0.4112153	0.4467989	0.3740606	0.4283141	0.3970288	0.6954624	0.9698781	1.1706576
670	0.4511126	0.4097525	0.4447005	0.3732844	0.4261017	0.3965461	0.6916735	0.9669051	1.1660185
672	0.4483537	0.4083802	0.4426376	0.3725255	0.4239175	0.3960203	0.6879966	0.9640207	1.1617163
674	0.4457999	0.4070792	0.440694	0.3718138	0.4219009	0.3955364	0.6845006	0.9612191	1.1570885
676	0.4431607	0.40571	0.438706	0.3711048	0.4198794	0.3950742	0.6809818	0.9583395	1.1524476
678	0.4406002	0.4043893	0.4367283	0.3704115	0.417861	0.3946433	0.6774004	0.9555357	1.1475806
680	0.4382234	0.4031406	0.4348507	0.3697556	0.4159675	0.3942264	0.6741337	0.9530205	1.14293
682	0.4358439	0.4019604	0.4330229	0.3691243	0.4141877	0.3938496	0.6707841	0.950222	1.1387033
684	0.4335687	0.400758	0.4312321	0.3685197	0.4124644	0.3935166	0.6673891	0.947468	1.1338036
686	0.4314174	0.3996333	0.4295333	0.3680055	0.4108514	0.3932005	0.6642206	0.9447651	1.1292946
688	0.4294463	0.3985813	0.4279831	0.3675275	0.4093228	0.3928803	0.661124	0.94216	1.1248641
690	0.4275293	0.3975439	0.4264539	0.3670887	0.4078989	0.3926693	0.6580771	0.9395906	1.1204473
692	0.4257122	0.3965904	0.4250267	0.3667216	0.4065555	0.3924781	0.6550218	0.9370475	1.1161261
694	0.4240213	0.3956662	0.4237053	0.3664894	0.4052924	0.3923101	0.6521934	0.9346544	1.1118768
696	0.4225295	0.3948195	0.4224981	0.3661967	0.4041703	0.3921912	0.6494478	0.9322895	1.1077645
698	0.4210551	0.3940176	0.421299	0.3660164	0.4030685	0.3921423	0.6465994	0.929896	1.1036303
700	0.4196696	0.3933041	0.4201667	0.3658637	0.402077	0.3921485	0.6438582	0.9275928	1.0995919
702	0.4184693	0.3926443	0.4192144	0.3657347	0.4012125	0.3921146	0.6413488	0.9253906	1.0957417
704	0.4173172	0.3919851	0.4183124	0.3656551	0.4002959	0.3921228	0.6388035	0.9232405	1.0918977
706	0.4161464	0.3913678	0.4174215	0.3655418	0.3994479	0.3922041	0.6362218	0.9210023	1.0886445
708	0.4151861	0.39085	0.4166279	0.36562	0.3987434	0.392287	0.6338036	0.9189562	1.0846239
710	0.4142857	0.3903466	0.4159006	0.3656292	0.3980562	0.3924073	0.6313971	0.9168954	1.0808766
712	0.4133814	0.389927	0.4152319	0.3657539	0.3974073	0.3925724	0.6290003	0.9147623	1.0771587
714	0.412586	0.3895756	0.4146098	0.3658788	0.3968454	0.3927843	0.6267253	0.9127516	1.073513
716	0.4118308	0.3892559	0.4140354	0.3660372	0.396346	0.3930167	0.6244692	0.9108238	1.0700049
718	0.4111959	0.3889812	0.4135461	0.366248	0.3958903	0.3932956	0.6222137	0.9088022	1.0664723
720	0.4105489	0.3887785	0.4130697	0.366485	0.395462	0.3936302	0.6199944	0.9068288	1.0628067
722	0.4099732	0.3886119	0.4126796	0.366868	0.3951368	0.3939641	0.6178347	0.9049081	1.0592794
724	0.409495	0.3884854	0.4123456	0.3671687	0.394864	0.3943368	0.6158121	0.9031088	1.0557991
726	0.4090329	0.3885208	0.4120339	0.367523	0.3946324	0.394794	0.6136854	0.9011793	1.0522654
728	0.4086238	0.3885321	0.4117969	0.3679231	0.3945079	0.3953239	0.6116371	0.8992498	1.0486856
730	0.4082913	0.3885433	0.4115939	0.3683158	0.3943713	0.3958122	0.6096913	0.8974077	1.0455136
732	0.4080509	0.3885954	0.4115366	0.3687637	0.3942393	0.3963271	0.6076947	0.8955379	1.0419898
734	0.4077355	0.3886438	0.411383	0.3692019	0.3941066	0.3968562	0.6057137	0.8936026	1.0383823
736	0.4074771	0.3887427	0.4112814	0.369675	0.3940441	0.3973935	0.6038531	0.8917338	1.0350915
738	0.4072447	0.3888423	0.4111837	0.370151	0.39397	0.3979031	0.6019453	0.8898631	1.0316024
740	0.4070119	0.3889779	0.4111039	0.3706653	0.3939332	0.3984682	0.5999901	0.8878706	1.0279824
742	0.4067932	0.3890961	0.4110315	0.3711476	0.3939045	0.3990029	0.5981312	0.8859795	1.0245135
744	0.4065814	0.3892422	0.4109719	0.3716423	0.3938843	0.3995674	0.5963128	0.8840461	1.0210351
746	0.4064111	0.389387	0.4109351	0.3721523	0.3938907	0.4000986	0.5944096	0.8820601	1.0174997
748	0.4062577	0.3895307	0.4109402	0.3726642	0.3939061	0.4006503	0.5925198	0.8800297	1.0139239
750	0.4060884	0.3897107	0.4109216	0.3731933	0.3938952	0.4012086	0.5907011	0.8780031	1.0105374
752	0.405977	0.3898859	0.4109574	0.3737039	0.3939254	0.4017675	0.5889424	0.8760625	1.0073071
754	0.4058475	0.3901016	0.4110028	0.37427	0.3939216	0.4023573	0.5871973	0.8740699	1.0040894
756	0.4057716	0.3903868	0.4111297	0.3748398	0.3939354	0.403	0.5855317	0.872162	1.0011301
758	0.4057044	0.3906545	0.411218	0.375389	0.3939582	0.4035858	0.5840253	0.870347	0.998327
760	0.4056439	0.390977	0.4113419	0.376024	0.393972	0.4042335	0.5825565	0.8684725	0.9954889
762	0.4055484	0.3912484	0.4114541	0.3766173	0.3939432	0.4048645	0.5811119	0.8665403	0.9925804
764	0.4054554	0.3915074	0.4115506	0.377195	0.3938649	0.4054762	0.579859	0.8646843	0.9899717
766	0.4053994	0.3917699	0.411646	0.3778643	0.3937992	0.4060729	0.5786579	0.8627838	0.9871989
768	0.4054281	0.3920842	0.4117121	0.3785643	0.3938279	0.4067294	0.5774771	0.8608575	0.9842545
770	0.4054945	0.3923886	0.4118263	0.3793105	0.3938793	0.40737	0.5763075	0.8588375	0.9812142
772	0.4055797	0.3926587	0.411886	0.3799553	0.3940485	0.4079928	0.574909	0.8566179	0.9779142
774	0.4056065	0.3929359	0.4120141	0.3805054	0.3942593	0.4086388	0.57339	0.8542756	0.9745783
776	0.4056575	0.3931811	0.4121734	0.3810883	0.3945025	0.4093457	0.5717531	0.8518673	0.9711656
778	0.4056978	0.393549	0.4124736	0.3816037	0.394754	0.4099864	0.5700188	0.8496026	0.9679129
780	0.4057355	0.3939237	0.4127638	0.382157	0.3949495	0.4106865	0.5684001	0.8474784	0.964835
782	0.4057332	0.3943287	0.4130027	0.3827147	0.3950636	0.4113178	0.5667893	0.8454207	0.9618437
784	0.4057732	0.3947714	0.4132783	0.3833373	0.3951936	0.4119696	0.5653991	0.8435287	0.9590695
786	0.4058107	0.3951527	0.4134693	0.3838926	0.3953308	0.4125614	0.5641679	0.8417448	0.9565904
788	0.4058638	0.3955258	0.4136676	0.384459	0.3954488	0.4131744	0.5629412	0.8399183	0.9540461
790	0.4059233	0.3958879	0.4138716	0.3850013	0.3955602	0.4137394	0.5617212	0.8380888	0.9515971
792	0.4059795	0.3962311	0.4140213	0.3855108	0.3956847	0.4142729	0.560621	0.8363748	0.9493556
794	0.406033	0.3965781	0.4142248	0.3859884	0.3958146	0.4148314	0.5594863	0.8346322	0.9470886
796	0.4060793	0.3969265	0.4144322	0.3864884	0.3959382	0.4153703	0.5583696	0.8328578	0.9448184
798	0.4060943	0.3972269	0.4146138	0.3869528	0.3960363	0.4158679	0.557224	0.8311071	0.9425553
800	0.4061287	0.3975228	0.4147724	0.3873836	0.396129	0.4163442	0.5560812	0.8293636	0.9403003
802	0.4061384	0.3978021	0.4149027	0.3878021	0.3962054	0.4168152	0.5549555	0.8275977	0.9380089
804	0.4061502	0.3980671	0.4150246	0.3882253	0.3962922	0.4172465	0.5538133	0.8258291	0.9356762
806	0.4061287	0.3983012	0.4151338	0.3886009	0.3963464	0.4176445	0.5527111	0.8241154	0.9334116
808	0.4060997	0.3984895	0.4152095	0.3889452	0.3963877	0.4180035	0.5516208	0.8224227	0.9311697
810	0.4060496	0.3986733	0.4152636	0.3892651	0.3964215	0.4183531	0.5504873	0.820649	0.9287886
812	0.4059839	0.3988015	0.4152852	0.3895383	0.3964376	0.4186435	0.5493531	0.8188893	0.9263996
814	0.405895	0.3988894	0.4152691	0.3897734	0.3964251	0.4188699	0.5482475	0.8172204	0.924142

816	0.4057791	0.3989589	0.4152093	0.3899586	0.3963801	0.4190799	0.5470901	0.8154898	0.9217951
818	0.4056335	0.3989672	0.415105	0.3901086	0.396305	0.4192328	0.545923	0.8137289	0.9193774
820	0.4054918	0.3989533	0.4149705	0.3902059	0.3962293	0.4193284	0.5447852	0.8120811	0.9170678
822	0.4053305	0.3988938	0.4147988	0.3902627	0.3961326	0.4193822	0.5436141	0.8104112	0.9147553
824	0.4051175	0.3987894	0.4145651	0.3902696	0.3959824	0.4193684	0.5424003	0.8086952	0.9123225
826	0.404873	0.398634	0.4143058	0.3902304	0.3958176	0.4193084	0.5411793	0.8070387	0.909943
828	0.4046231	0.3984317	0.4139868	0.3901203	0.3956375	0.419183	0.539941	0.8053852	0.9076031
830	0.4043131	0.3981649	0.413615	0.3899598	0.3953926	0.4189914	0.5386874	0.8037235	0.9052342
832	0.4039632	0.3978416	0.4131564	0.3897203	0.3951028	0.4187239	0.5373604	0.802036	0.9027634
834	0.4035559	0.3974271	0.4126375	0.3894119	0.3947447	0.4183767	0.5359993	0.8003566	0.9003403
836	0.4031191	0.3969747	0.4120702	0.3890579	0.394348	0.4179469	0.5346442	0.7986963	0.8979486
838	0.4025905	0.3963932	0.4113885	0.3885935	0.3938589	0.4174145	0.5331404	0.7969785	0.8954207
840	0.4019755	0.3957323	0.4106266	0.3880417	0.3933154	0.4167805	0.5316085	0.7952055	0.8928849
842	0.4013332	0.3950162	0.4098113	0.3874162	0.3927072	0.4160657	0.5301059	0.7934985	0.8903984
844	0.4006382	0.394191	0.4088961	0.3867088	0.3920117	0.4152703	0.5284898	0.7917193	0.8878082
846	0.3998475	0.3932647	0.4078754	0.3858976	0.3912401	0.414356	0.5268037	0.7898946	0.8851376
848	0.3990215	0.3923103	0.4068367	0.3850464	0.3904389	0.4133991	0.5251063	0.788083	0.8825186
850	0.3981419	0.3912752	0.4057284	0.3841208	0.3895958	0.4123566	0.5233877	0.7862836	0.87988
852	0.3971927	0.3901466	0.4044953	0.3830998	0.3886569	0.4112235	0.5215772	0.7844054	0.877134
854	0.3961959	0.3889519	0.4032165	0.382019	0.3876688	0.4100227	0.5197163	0.7825308	0.8743501
856	0.3951658	0.3877338	0.4018966	0.3808919	0.386663	0.4087702	0.5178635	0.7806838	0.8716699
858	0.394113	0.3864797	0.4005526	0.3797376	0.3856335	0.4074942	0.5160127	0.7788279	0.8689525
860	0.3929805	0.3851055	0.3990794	0.3784732	0.3845037	0.4060782	0.5140401	0.7768921	0.8660991
862	0.3918103	0.3837295	0.3975972	0.3771761	0.3833661	0.4046439	0.5120716	0.7749808	0.8632923
864	0.3906524	0.3823529	0.3961297	0.3758976	0.3822328	0.4032553	0.5101409	0.7731175	0.860557
866	0.3894191	0.3808984	0.3945596	0.3745327	0.3810269	0.4017317	0.5081545	0.7711958	0.8576989
868	0.3881275	0.3793791	0.3929234	0.3731039	0.3797777	0.4001484	0.5060793	0.7692356	0.8548008
870	0.386885	0.3779051	0.391336	0.3717089	0.3785706	0.3986247	0.5040984	0.7673659	0.8520795
872	0.3856023	0.3763836	0.3897093	0.3702693	0.3773249	0.3970455	0.5020736	0.7654613	0.8492644
874	0.3842408	0.3747994	0.388007	0.3687725	0.3760193	0.3954025	0.4999774	0.7634999	0.8463452
876	0.3829001	0.3732358	0.3863097	0.3672752	0.3747279	0.3937758	0.4978907	0.7615731	0.8434871
878	0.3815458	0.3716735	0.3846153	0.3657854	0.373456	0.3921539	0.4958651	0.7596853	0.8406749
880	0.3801797	0.3700956	0.3829005	0.3642866	0.3721609	0.3905075	0.4938074	0.7577736	0.8378345
882	0.3786787	0.368399	0.3810614	0.3626404	0.3707596	0.3887278	0.4916065	0.7557281	0.8348409
884	0.3772882	0.3667995	0.3793067	0.3611057	0.3694352	0.3870704	0.4895329	0.7538165	0.8319993
886	0.3759099	0.365258	0.3776223	0.3596116	0.3681495	0.3854591	0.4875229	0.751967	0.8292289
888	0.374458	0.3636238	0.3758051	0.3580136	0.3668282	0.3837259	0.4854087	0.7500616	0.8263142
890	0.3730157	0.3619887	0.3740121	0.3564188	0.3654716	0.3820253	0.4832861	0.7481339	0.8234175
892	0.3716158	0.3604129	0.3722976	0.3548776	0.3642003	0.3803787	0.4812758	0.7462853	0.8206916
894	0.370158	0.358795	0.3705154	0.3532854	0.3628647	0.3786889	0.4791953	0.7443748	0.8178803
896	0.368671	0.3571377	0.3686922	0.3516439	0.3615207	0.3769477	0.4770666	0.7424254	0.8150157
898	0.3672191	0.3555133	0.3669178	0.3500421	0.3602037	0.3752582	0.4749994	0.7405373	0.8122241
900	0.3657642	0.3538689	0.3651253	0.3484345	0.3588796	0.3735565	0.4729342	0.7386665	0.8094802
902	0.3642773	0.3522175	0.3633063	0.3467795	0.3575572	0.3718098	0.4708366	0.7367728	0.8066542
904	0.3627906	0.3505287	0.3614591	0.3450964	0.3562207	0.3700352	0.4687097	0.734876	0.8037826
906	0.3613397	0.3488799	0.3596938	0.3434636	0.3549339	0.3683379	0.4666579	0.7330629	0.8011113
908	0.3599235	0.3472573	0.3579313	0.3418677	0.3536893	0.3666539	0.464649	0.7312819	0.7984003
910	0.3584669	0.3456114	0.3561426	0.3402281	0.3524338	0.3649372	0.4625754	0.7294557	0.7955408
912	0.3570651	0.3439748	0.3543678	0.3386297	0.351211	0.3632664	0.4605559	0.7276891	0.7927326
914	0.3557638	0.3425038	0.3527423	0.3371643	0.3501086	0.3617143	0.4586724	0.7260052	0.7900337
916	0.35449	0.3410551	0.3511122	0.335727	0.3490329	0.3601836	0.4567754	0.7243273	0.787323
918	0.3532902	0.3396502	0.349562	0.3343419	0.3480295	0.3587169	0.4549226	0.7226589	0.7845765
920	0.352168	0.3383924	0.3481226	0.33307	0.3471274	0.3574393	0.4532007	0.7211086	0.7820033
922	0.3511123	0.3372256	0.3467505	0.3318754	0.3463114	0.3561941	0.4515634	0.7195963	0.7794759
924	0.3501487	0.3361461	0.3454493	0.3307518	0.3455732	0.3550402	0.4499462	0.7181183	0.7769434
926	0.3492507	0.3351751	0.3442555	0.329715	0.3449313	0.3540062	0.4484075	0.7166899	0.7744548
928	0.3484771	0.3343549	0.3431623	0.3288167	0.3444046	0.353097	0.4469887	0.7153857	0.7721102
930	0.3477963	0.3336506	0.3421885	0.3280048	0.343985	0.35229	0.445648	0.7141439	0.7698222
932	0.3471567	0.3330234	0.3412723	0.327234	0.3436513	0.3515606	0.4443246	0.7128987	0.767512
934	0.3466455	0.3325202	0.3404673	0.3265814	0.3434412	0.3509455	0.4430943	0.7117512	0.7652849
936	0.3462581	0.3321666	0.3397858	0.3260503	0.3433518	0.350474	0.4419912	0.710717	0.7631969
938	0.3459473	0.3319155	0.3391956	0.3255965	0.3433808	0.3500967	0.4409349	0.7097334	0.7611095
940	0.345766	0.3318172	0.3387131	0.3252652	0.3435574	0.3498434	0.4399544	0.7088333	0.7590486
942	0.3457384	0.3318949	0.3383972	0.3250785	0.3439173	0.3497701	0.4391373	0.7081025	0.7571576
944	0.3458486	0.3321444	0.3382248	0.3250239	0.3444514	0.3498444	0.438441	0.7074915	0.7553649
946	0.3461557	0.33262	0.3382122	0.3251558	0.3452341	0.350124	0.4378681	0.7070193	0.7536087
948	0.3466275	0.3332751	0.3383549	0.325429	0.3462134	0.3505654	0.4373981	0.7066917	0.7519478
950	0.347236	0.3340882	0.3386376	0.3258418	0.3473681	0.3511558	0.437061	0.7064996	0.7504103

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	91	92	93	94	95	96	97	98	99
Sample Numb	"0104b"	"0106b"	"0107b"	"0108b"	"0108b"	"0109b"	"0110b"	"0111b"	"0112b"
400	0.9961042	0.8906251	1.0081756	1.0098248	1.0233024	1.1361344	1.2866371	1.0853522	0.8675061
402	1.0319724	0.9226835	1.0433424	1.041845	1.0560778	1.1694641	1.3186665	1.1168108	0.9023532
404	1.066702	0.9538944	1.0783098	1.0807453	1.0910735	1.2007042	1.3492215	1.1524423	0.9372704
406	1.0976248	0.9849174	1.1105413	1.1074438	1.1212965	1.2318125	1.3756936	1.1852555	0.9692936
408	1.1264763	1.0110118	1.138778	1.1355776	1.1496353	1.2605428	1.3974831	1.2139661	0.9980994
410	1.1537005	1.0363204	1.1660595	1.1639661	1.1789546	1.2860086	1.4215522	1.2392445	1.0237845
412	1.176682	1.0601044	1.1896598	1.187785	1.2007678	1.306272	1.440865	1.2608523	1.0491923
414	1.1983707	1.0783715	1.2087424	1.2060361	1.22342	1.3304571	1.4601483	1.285152	1.070529
416	1.2185292	1.0945718	1.2307978	1.2259899	1.2402149	1.3476908	1.4777796	1.3042126	1.0895052
418	1.231473	1.1081619	1.2461699	1.2406632	1.2546022	1.3616991	1.4885423	1.3187991	1.1064789
420	1.2469324	1.1188788	1.2628764	1.2567348	1.2685428	1.3748983	1.4991846	1.3348029	1.1222709
422	1.2603104	1.1294968	1.2759736	1.2687418	1.280332	1.388265	1.5122842	1.3469236	1.1340125
424	1.2708021	1.1384292	1.2859507	1.277729	1.2911983	1.4002512	1.5210842	1.3583686	1.1451483
426	1.2816918	1.1461842	1.2990918	1.2882563	1.2989513	1.4113884	1.5289781	1.3689287	1.1548562
428	1.2909257	1.1530381	1.3087786	1.2976263	1.307146	1.4199698	1.5372458	1.3784397	1.164624
430	1.2978314	1.1565585	1.314208	1.3026	1.3133321	1.4253227	1.5433545	1.3851278	1.1714952
432	1.3060176	1.1610466	1.3223345	1.3078049	1.3199632	1.4330251	1.550101	1.3917216	1.1778877
434	1.3114468	1.1633204	1.3295993	1.3121139	1.3244969	1.437494	1.5548439	1.3982412	1.1837106
436	1.3149396	1.1655416	1.3329095	1.3150365	1.3277665	1.4422481	1.557292	1.4005939	1.1865766
438	1.3175786	1.1672549	1.3351032	1.3206618	1.3324991	1.4455127	1.5621934	1.405899	1.1902148
440	1.3199458	1.1673959	1.3378348	1.3224598	1.3343867	1.4491533	1.5640881	1.4071221	1.1927601
442	1.320437	1.1661079	1.3379415	1.3227928	1.3370116	1.4487965	1.5627513	1.4094725	1.1939961
444	1.320183	1.1647961	1.3367958	1.3249781	1.3376154	1.4501528	1.5622276	1.4110845	1.1939389
446	1.3190122	1.1611838	1.3375332	1.3240291	1.3338835	1.4492745	1.5630262	1.4109952	1.1929096
448	1.3171692	1.157594	1.3361213	1.3233196	1.3351052	1.4494369	1.5611491	1.4107604	1.1926783
450	1.3163981	1.1549211	1.3337491	1.3239725	1.3342499	1.4523499	1.5600512	1.4117117	1.1911197
452	1.3120244	1.1513655	1.3314993	1.3202243	1.3314848	1.4492688	1.5575545	1.4096406	1.1885815
454	1.3095927	1.1474123	1.3289825	1.3192281	1.3293946	1.448611	1.5558258	1.4077349	1.1858176
456	1.3070848	1.1444007	1.3259538	1.3163891	1.3270657	1.4465232	1.5537131	1.4062078	1.1839908
458	1.3035418	1.1395236	1.3226712	1.3135731	1.3245099	1.4436166	1.5522681	1.4024816	1.1805139
460	1.3001645	1.134326	1.3198085	1.3076069	1.3207529	1.44209	1.5490248	1.3996027	1.1773269
462	1.2961485	1.1293106	1.3169545	1.3052756	1.3167384	1.4401093	1.5441942	1.3948169	1.1727307
464	1.2898808	1.1238472	1.3122258	1.2998545	1.3123776	1.4348705	1.5403149	1.3891249	1.1685078
466	1.2858875	1.1168609	1.3075864	1.2964512	1.3084525	1.4316695	1.5358858	1.384518	1.1636965
468	1.2801437	1.1104555	1.3029823	1.289695	1.3014157	1.4280922	1.5305396	1.379703	1.156749
470	1.2731091	1.1039131	1.2958071	1.2846833	1.2964087	1.4234428	1.5213923	1.3747077	1.1500878
472	1.2651846	1.097074	1.289686	1.2774791	1.2904235	1.417519	1.5164287	1.3697494	1.1432321
474	1.2587619	1.0902077	1.2823607	1.2716755	1.2818129	1.4121953	1.5124234	1.3617334	1.1346891
476	1.2504466	1.0824749	1.2757318	1.264259	1.2749527	1.4044852	1.5024854	1.3536339	1.1254773
478	1.2425088	1.074174	1.2682993	1.2552162	1.267158	1.3978209	1.4978502	1.3462074	1.1168405
480	1.2334725	1.0656443	1.2608302	1.2460735	1.2581913	1.3924576	1.4871655	1.3371996	1.1066973
482	1.2248455	1.056304	1.2519482	1.2381833	1.2496023	1.3843729	1.4803048	1.3290766	1.0970129
484	1.2164487	1.0482514	1.244556	1.2305921	1.241068	1.3772032	1.475559	1.3205779	1.0866106
486	1.2055871	1.0396721	1.23537	1.2197967	1.2335776	1.370178	1.4657598	1.3114843	1.0760738
488	1.1960909	1.0299387	1.226649	1.2107459	1.2235612	1.3609675	1.4575713	1.3018259	1.0652988
490	1.186893	1.0217657	1.2184075	1.2020177	1.2140342	1.3548435	1.450665	1.2912154	1.0556513
492	1.1768062	1.012404	1.2079971	1.1918708	1.204924	1.344201	1.4416023	1.282468	1.0439694
494	1.1678475	1.0037034	1.2003108	1.1816698	1.1956757	1.3361601	1.4315832	1.2733601	1.0324478
496	1.1573102	0.9955399	1.1917572	1.1746064	1.1863192	1.3288128	1.4234743	1.2634196	1.0209007
498	1.1481221	0.9859707	1.1835815	1.1647074	1.1779225	1.3232515	1.4157443	1.2563124	1.010563
500	1.1405532	0.9791374	1.1770508	1.156728	1.1694521	1.3156574	1.4091222	1.248395	0.9999051
502	1.1327171	0.971627	1.1702055	1.1475962	1.1624483	1.3103514	1.4010996	1.2409097	0.9886613
504	1.1248341	0.9638363	1.163753	1.1418892	1.1548338	1.3009045	1.3926761	1.2334989	0.9789181
506	1.1177609	0.9579195	1.1583452	1.1353859	1.1489667	1.2973176	1.3845255	1.2255926	0.9696354
508	1.1108406	0.9511412	1.1536516	1.1275103	1.1436604	1.2925062	1.3782512	1.2195289	0.959114
510	1.10302	0.9449662	1.1497583	1.1230826	1.1371539	1.2888218	1.37042	1.213276	0.9504426
512	1.0969846	0.9404894	1.1455919	1.1180863	1.1321286	1.2842511	1.3641114	1.2099774	0.9417866
514	1.0928133	0.9351422	1.1435934	1.1149206	1.1290613	1.2817121	1.3574541	1.2047405	0.9336629
516	1.0874093	0.9305125	1.1425043	1.1115004	1.1251135	1.2794659	1.353145	1.2010924	0.9265214
518	1.0849338	0.9268728	1.141466	1.1115595	1.1221159	1.2784306	1.3500701	1.1978675	0.9215717

520	1.0818586	0.9231576	1.1402087	1.1094097	1.1191319	1.277249	1.3460861	1.1963658	0.9156235
522	1.0793369	0.9200372	1.1400552	1.1075246	1.1178827	1.2786033	1.3435495	1.1966801	0.9109666
524	1.0800457	0.9187104	1.1420376	1.1069206	1.1197768	1.2814418	1.3431557	1.1977031	0.9077382
526	1.0795004	0.9165696	1.1422899	1.1047034	1.1200519	1.282419	1.3401196	1.198087	0.9044199
528	1.0797684	0.9158463	1.1455724	1.1057866	1.1217232	1.2852855	1.3369259	1.1985693	0.9025361
530	1.0822126	0.9147547	1.1506276	1.1083682	1.1230546	1.2885249	1.3368587	1.2018931	0.9004682
532	1.0824897	0.9135321	1.1527468	1.1087079	1.1227947	1.2894787	1.3359673	1.2040634	0.8979676
534	1.0824776	0.9138094	1.1572847	1.1103264	1.1261251	1.2957884	1.3373631	1.2079234	0.8967672
536	1.0838344	0.9179706	1.1611958	1.1117396	1.1286877	1.29983	1.3359222	1.2111917	0.8947079
538	1.0835797	0.9231851	1.1649754	1.1112826	1.1303794	1.3031292	1.3357127	1.213501	0.8940657
540	1.0843844	0.9158067	1.1677654	1.1121572	1.1293887	1.3072308	1.3347644	1.2162496	0.8938375
542	1.0851178	0.9133517	1.1697391	1.1136681	1.1284597	1.3106107	1.334096	1.2172527	0.8970165
544	1.0832464	0.9107009	1.1712725	1.1120956	1.1295702	1.3126905	1.3323771	1.2163863	0.8899647
546	1.0824566	0.9089843	1.173454	1.1124244	1.1303364	1.3149111	1.3317757	1.2181423	0.8852681
548	1.0816616	0.9078515	1.1754799	1.1114415	1.1283194	1.3173238	1.3312085	1.2181273	0.8818466
550	1.079958	0.9049677	1.1771178	1.1094356	1.1269779	1.3160539	1.3295124	1.2171867	0.8785253
552	1.077246	0.9015129	1.1762747	1.1082094	1.1266518	1.3169342	1.3280213	1.2156321	0.8745424
554	1.074681	0.8984594	1.1752074	1.1052748	1.1243509	1.314152	1.3240128	1.2133889	0.8703764
556	1.0722959	0.8955886	1.1731656	1.1030672	1.1222265	1.3134831	1.3207607	1.2110753	0.8658268
558	1.0695043	0.8932789	1.1719916	1.0994359	1.1192691	1.3145548	1.3167911	1.2080426	0.862222
560	1.0647529	0.8880519	1.1689665	1.0972654	1.1154268	1.3111777	1.3130186	1.2054126	0.8575109
562	1.0614742	0.8837192	1.1647408	1.0991389	1.1131808	1.3080238	1.3093939	1.2017145	0.8527273
564	1.0629936	0.879795	1.1618873	1.1001434	1.110779	1.3061159	1.3054633	1.1989729	0.8479586
566	1.0544314	0.8755139	1.1584058	1.089862	1.1062521	1.3029914	1.3020217	1.1961286	0.8431216
568	1.0483775	0.8709232	1.1589093	1.0844532	1.1042423	1.2998254	1.2982098	1.1919535	0.8378668
570	1.0429695	0.866303	1.1563315	1.0802212	1.1061461	1.2967188	1.2948837	1.1876187	0.8331164
572	1.0372956	0.8630768	1.1461809	1.0750682	1.097594	1.2933309	1.2907379	1.1828054	0.8285713
574	1.0323348	0.8576168	1.1414938	1.0715666	1.0910175	1.2886918	1.2874465	1.1785002	0.8226904
576	1.0264645	0.8523334	1.1344895	1.0660427	1.0853673	1.2847004	1.282463	1.1760617	0.8172334
578	1.0203037	0.8481612	1.1289768	1.0605417	1.081574	1.2793926	1.278042	1.1720743	0.8112686
580	1.0151705	0.8432654	1.123147	1.055634	1.0764086	1.2744112	1.2738863	1.1685052	0.8056712
582	1.0084841	0.8385656	1.1163042	1.0522333	1.0712955	1.2690363	1.2693086	1.1599389	0.7997974
584	1.0021756	0.8340307	1.1096163	1.0456418	1.0662613	1.264119	1.2674417	1.152667	0.7941975
586	0.9961458	0.829352	1.1038553	1.0404371	1.0619457	1.2627734	1.2674417	1.1471975	0.7886809
588	0.9895852	0.824633	1.0970836	1.0353736	1.0572693	1.2581549	1.2634835	1.1409962	0.7833872
590	0.9834063	0.820871	1.0899146	1.0306059	1.0519967	1.2513154	1.2561796	1.1347387	0.7778848
592	0.9780905	0.8160732	1.0836868	1.0253286	1.0467298	1.2426069	1.2506249	1.1296072	0.7728022
594	0.9715558	0.8117646	1.0774188	1.0216986	1.0424571	1.2370418	1.2467905	1.123687	0.7679788
596	0.9651615	0.8073466	1.0706739	1.0161166	1.0372953	1.231365	1.2422099	1.1178266	0.7628731
598	0.9595751	0.8035685	1.0650965	1.011459	1.033489	1.2259476	1.2394147	1.1121501	0.7584188
600	0.9541414	0.7995546	1.059304	1.0065745	1.0284697	1.2203488	1.2349176	1.1071192	0.7541995
602	0.9484971	0.7956297	1.053	1.0019823	1.0240167	1.2154388	1.2322898	1.1020018	0.7501567
604	0.943427	0.7919056	1.0474596	0.997883	1.0199571	1.2108222	1.229089	1.0977187	0.7463405
606	0.9386136	0.7883137	1.0420911	0.9936037	1.0153193	1.2053146	1.2262444	1.0937808	0.7426844
608	0.9339331	0.7845643	1.0369622	0.9894696	1.0116631	1.2004089	1.2226365	1.0887589	0.7392035
610	0.929278	0.7811086	1.0314108	0.9853141	1.0072545	1.1958952	1.2197042	1.0849489	0.7358873
612	0.9250305	0.7780181	1.0264902	0.9822579	1.0034149	1.1914825	1.2167614	1.0807924	0.7326874
614	0.9209676	0.7748567	1.0218449	0.9782881	0.9999235	1.188152	1.2143049	1.0771978	0.7295215
616	0.916795	0.771467	1.0168149	0.9740713	0.9958733	1.1838639	1.2124617	1.0733898	0.7261379
618	0.9129299	0.7682991	1.0115755	0.9704785	0.9916731	1.1797251	1.2097242	1.0695846	0.723135
620	0.9092953	0.7651128	1.0068185	0.966497	0.9878146	1.1763761	1.2065036	1.0656185	0.7199604
622	0.9052572	0.762118	1.0017276	0.9627052	0.9842642	1.1718535	1.2037265	1.0617951	0.716625
624	0.9012596	0.7589666	0.9965984	0.9589246	0.9800386	1.1688209	1.2009417	1.0577028	0.7132715
626	0.8974202	0.7558573	0.9918884	0.9551365	0.9764012	1.1648567	1.1987329	1.0536566	0.7100275
628	0.8936445	0.7527884	0.9869515	0.9514562	0.972506	1.1612284	1.1960652	1.0493169	0.7066147
630	0.8894629	0.7496667	0.9819168	0.9474175	0.9685611	1.1571579	1.1932532	1.0449281	0.7032137
632	0.8852251	0.7465793	0.9769081	0.9438599	0.9646631	1.1534312	1.1906712	1.0405312	0.6998621
634	0.8809994	0.7436491	0.9720356	0.9399509	0.9606513	1.1495957	1.1886134	1.0364077	0.6968791
636	0.8766221	0.7405937	0.9674013	0.9362622	0.9569461	1.1454248	1.1857352	1.0319961	0.6936096
638	0.8723732	0.7375326	0.9624363	0.9324706	0.9531631	1.1410966	1.1830523	1.0275756	0.6903565
640	0.868329	0.735015	0.9579259	0.9287139	0.9493632	1.1370012	1.1806647	1.0235292	0.6874095
642	0.8642293	0.7320018	0.9531116	0.9251437	0.9454563	1.1327238	1.1780694	1.0195425	0.6843487
644	0.8600407	0.7291265	0.9486413	0.9212962	0.9416628	1.1284282	1.1756713	1.0157645	0.6814287
646	0.8561833	0.7262397	0.9440392	0.9177685	0.9380303	1.1244452	1.173152	1.0117996	0.6787847
648	0.8523703	0.7234225	0.9397211	0.9141726	0.9343216	1.1201887	1.1707141	1.0081533	0.6761369
650	0.8484706	0.7207431	0.9351759	0.9106384	0.9305312	1.1157937	1.168401	1.0043039	0.6733896
652	0.8447537	0.7179468	0.9309144	0.9070856	0.9269707	1.1116323	1.1661088	1.0007179	0.6708021
654	0.8410675	0.7152089	0.9266976	0.9034907	0.9231751	1.1074685	1.1636289	0.9971319	0.6683974
656	0.8376228	0.7124309	0.9222116	0.8998319	0.9195063	1.1033959	1.1611952	0.9933817	0.6657857
658	0.833966	0.7096313	0.9178271	0.8961993	0.9157789	1.0994892	1.1587565	0.9896649	0.6632131
660	0.8303068	0.7069976	0.9135132	0.8924891	0.9120452	1.095166	1.1563606	0.9861577	0.6606721
662	0.8266229	0.7043501	0.9091175	0.8888673	0.9081812	1.0909414	1.1538746	0.9824943	0.6580344
664	0.8228978	0.7015132	0.9045286	0.8852336	0.9042747	1.0866399	1.1512828	0.978634	0.6553357
666	0.8190835	0.698763	0.8999259	0.8817638	0.9004372	1.0823048	1.1489227	0.9747291	0.6526272

668	0.8155013	0.6960471	0.8958489	0.8779072	0.8965269	1.0781238	1.1465354	0.9707835	0.6499044
670	0.8115872	0.6931854	0.8908395	0.8738863	0.892728	1.0736768	1.1438175	0.9665784	0.6469731
672	0.8076792	0.6903719	0.885896	0.8701358	0.8888004	1.0692503	1.1413181	0.962437	0.6441758
674	0.8040089	0.6876856	0.8813379	0.8664813	0.8848925	1.0650346	1.138795	0.9583899	0.6414308
676	0.8002	0.6849593	0.8764802	0.8627275	0.8809671	1.0606395	1.1362422	0.9542228	0.6386102
678	0.7962795	0.6821599	0.8714448	0.8590189	0.8769648	1.0564458	1.1337579	0.9500275	0.6356728
680	0.7927284	0.6795976	0.8667206	0.8552972	0.8731914	1.052218	1.1311193	0.9462117	0.6329314
682	0.7890445	0.6769909	0.8619698	0.8517281	0.8695706	1.0479889	1.1288388	0.9420252	0.6302328
684	0.7853174	0.6743169	0.8569658	0.8481367	0.8657868	1.0437182	1.1264045	0.9378145	0.6274638
686	0.7816709	0.6717072	0.8521495	0.8445401	0.8621109	1.0395951	1.124027	0.9337603	0.6248326
688	0.7782729	0.6692187	0.8474832	0.8411788	0.8585557	1.035549	1.1218647	0.9298891	0.6222786
690	0.7748317	0.6667046	0.842868	0.8379318	0.8549651	1.031498	1.1196082	0.9260035	0.6197568
692	0.7713521	0.6642081	0.8381146	0.8344513	0.8515577	1.0274038	1.1174657	0.9221439	0.6172265
694	0.7681009	0.6618328	0.8336449	0.8312344	0.8481631	1.0236535	1.1152439	0.9184697	0.6148359
696	0.7649882	0.6596037	0.8291985	0.8281307	0.8449571	1.0198631	1.1131634	0.914917	0.6125249
698	0.7618033	0.6572309	0.8247766	0.8249648	0.8415924	1.0159781	1.1110792	0.9112746	0.610229
700	0.7586451	0.6549749	0.8203632	0.8218623	0.838339	1.012151	1.1089118	0.9076741	0.6080232
702	0.7557759	0.6528811	0.8163446	0.8189235	0.8352425	1.0084398	1.1070256	0.9044824	0.6059513
704	0.7527905	0.6507292	0.8122151	0.8159024	0.8321247	1.0047486	1.1049653	0.9010923	0.6038235
706	0.7498441	0.6487393	0.8081011	0.8130735	0.828951	1.0010343	1.1033541	0.8977115	0.601699
708	0.7471414	0.6467457	0.8042849	0.8102538	0.8261214	0.9975177	1.1011045	0.8945726	0.5997609
710	0.7444621	0.644747	0.8004366	0.8074688	0.8231946	0.9940175	1.0993261	0.8913779	0.5978374
712	0.7417461	0.6428162	0.7966334	0.8046654	0.8202491	0.9904999	1.0973177	0.8882043	0.5958712
714	0.7391242	0.6409284	0.7929417	0.8019865	0.8173756	0.9870137	1.0953799	0.8851314	0.5940369
716	0.7365786	0.6390877	0.7893434	0.7992933	0.8146046	0.983787	1.0935054	0.8821813	0.5922238
718	0.734068	0.6373689	0.7858313	0.796643	0.8117825	0.9804807	1.0916042	0.8791919	0.5904616
720	0.7315429	0.6356	0.7822818	0.7940676	0.8089423	0.9771925	1.0895884	0.8762183	0.5887326
722	0.7291759	0.6339027	0.7788618	0.791376	0.806233	0.9739013	1.0877211	0.8733569	0.5870231
724	0.726896	0.6322876	0.7755834	0.7888649	0.8035617	0.9707267	1.0859435	0.8705239	0.5853994
726	0.7245156	0.6306819	0.7722098	0.7862698	0.8008099	0.9675907	1.0839202	0.8676345	0.5837432
728	0.7222266	0.6290975	0.7689321	0.7837125	0.7980685	0.9644341	1.0819516	0.8648044	0.5821589
730	0.7200348	0.6276163	0.7659191	0.7812539	0.795523	0.9614605	1.0801277	0.8621438	0.5806859
732	0.7177958	0.6260808	0.7628026	0.778697	0.7927914	0.9583732	1.0781972	0.8593748	0.5791291
734	0.7155631	0.6245642	0.7596395	0.7762482	0.7900516	0.9552813	1.0762762	0.8565665	0.5776059
736	0.7134733	0.6231419	0.7566752	0.7737813	0.787492	0.9524075	1.0743233	0.8539702	0.5761874
738	0.7113385	0.6216804	0.7536557	0.7712902	0.7849197	0.9494015	1.0724441	0.8512806	0.5747669
740	0.7091525	0.6202035	0.7506276	0.7687798	0.782212	0.9463277	1.0703709	0.8485441	0.5732917
742	0.7070686	0.6187764	0.7477245	0.7662255	0.7795443	0.9433928	1.0683917	0.8458444	0.571884
744	0.7049723	0.6173328	0.744826	0.7637393	0.7768961	0.9404829	1.0663228	0.8431695	0.5704876
746	0.702907	0.6158729	0.7418848	0.7612296	0.7741994	0.9375253	1.064306	0.8404727	0.5690702
748	0.7008183	0.6144005	0.7389441	0.7587047	0.7714524	0.9344967	1.0621523	0.8376931	0.5676482
750	0.6987288	0.6130127	0.7361103	0.7562004	0.7687442	0.9316174	1.0600981	0.8349819	0.5663089
752	0.6967066	0.6116043	0.7333589	0.753783	0.7662178	0.9287793	1.0580485	0.8323871	0.5650097
754	0.694651	0.6102172	0.7305494	0.7513563	0.7636064	0.9259759	1.0559449	0.8296739	0.563722
756	0.6926413	0.6088629	0.7278641	0.749016	0.7610841	0.923287	1.0538921	0.8270805	0.562498
758	0.6907672	0.6076449	0.7253484	0.7468002	0.7587424	0.9207777	1.0520377	0.8246824	0.5613954
760	0.6888168	0.6063738	0.7228081	0.7445518	0.7563888	0.9181862	1.0500693	0.8221908	0.5602849
762	0.6868501	0.605019	0.7202542	0.7421796	0.7539967	0.9154533	1.0480847	0.8196918	0.5591798
764	0.6850957	0.6036921	0.7178938	0.7399682	0.7518094	0.9128077	1.0462413	0.8172635	0.5582187
766	0.6833562	0.6022748	0.7154824	0.7377388	0.7496448	0.9099502	1.0443177	0.8146944	0.557263
768	0.6816709	0.6007735	0.713007	0.7356174	0.7474846	0.9068845	1.0421848	0.8119755	0.5562801
770	0.6800594	0.5992082	0.7104963	0.733552	0.745432	0.9038056	1.0398972	0.8091643	0.5553061
772	0.6782793	0.597638	0.7076319	0.7313554	0.7430955	0.9005846	1.0371971	0.8062292	0.5542425
774	0.6762103	0.5961111	0.7044178	0.7290223	0.7405779	0.8973607	1.0342642	0.8031392	0.5531538
776	0.6739359	0.5946814	0.7008946	0.7264486	0.737715	0.8940959	1.031296	0.8000209	0.55197
778	0.6716542	0.5935391	0.6973347	0.7238788	0.7348837	0.8912293	1.0287409	0.7972395	0.5507429
780	0.6695294	0.5925082	0.6939292	0.7213558	0.732163	0.8886845	1.026484	0.7946984	0.5496365
782	0.6674529	0.5913215	0.6905162	0.7188408	0.7294595	0.8861331	1.0243874	0.7921968	0.5484955
784	0.6655853	0.5901952	0.687393	0.7165461	0.7269939	0.8837163	1.0225427	0.7898825	0.5475165
786	0.6638926	0.5890622	0.6845223	0.71448	0.7248061	0.8813567	1.0208502	0.7876382	0.5466026
788	0.662166	0.5878567	0.6815699	0.7123452	0.72257	0.8788282	1.0190566	0.7852837	0.5456778
790	0.6604489	0.5866877	0.6786447	0.7102252	0.7203454	0.8762424	1.0172049	0.7829009	0.5447654
792	0.658854	0.5854924	0.6759179	0.7082908	0.7183048	0.873857	1.0154587	0.7806855	0.5439245
794	0.6572224	0.584304	0.6731387	0.7063191	0.7163048	0.8714709	1.0136954	0.778464	0.5430614
796	0.6555604	0.5831195	0.6703252	0.7042916	0.714131	0.8690336	1.0118577	0.7761992	0.5421741
798	0.6539391	0.5819233	0.6676174	0.702303	0.7120445	0.8666143	1.010092	0.7739828	0.5413173
800	0.6523122	0.5807363	0.6649585	0.700376	0.7099757	0.8642293	1.0082881	0.7717931	0.5404342
802	0.6507071	0.5795419	0.6623272	0.6984132	0.7079002	0.861847	1.00642	0.7696131	0.5395553
804	0.6490858	0.5783424	0.6597308	0.6964335	0.7058235	0.8594086	1.0046496	0.7674303	0.5386656
806	0.6475207	0.5771723	0.6572481	0.6945238	0.7037879	0.857049	1.0028677	0.7653469	0.5378034
808	0.6459952	0.5760037	0.6549065	0.6926394	0.7018262	0.8547513	1.0010612	0.7633099	0.5369356
810	0.6444019	0.5747867	0.6524927	0.6907119	0.6997651	0.8523157	0.9991766	0.7611626	0.5360119
812	0.6428211	0.5735555	0.6501358	0.6887905	0.6977355	0.8498956	0.9973056	0.7590671	0.5350773
814	0.6413081	0.5723914	0.6479399	0.6869486	0.6957779	0.8475698	0.9955559	0.7570566	0.5341622

816	0.6397363	0.5711293	0.6456801	0.6850102	0.6937574	0.8451163	0.9937216	0.7549554	0.5331692
818	0.6382258	0.569868	0.643463	0.6830687	0.6917029	0.8426634	0.9918488	0.7528887	0.5321551
820	0.636737	0.5686444	0.6413811	0.6812155	0.6897548	0.8403026	0.9900939	0.750908	0.5311697
822	0.6352237	0.5674049	0.6392848	0.6793232	0.6877826	0.8379116	0.9883391	0.7488986	0.5301454
824	0.6336894	0.5660802	0.6373191	0.6774016	0.6857395	0.835434	0.9865581	0.7468386	0.529045
826	0.632177	0.5647833	0.6352746	0.6754802	0.6837454	0.8329974	0.9847383	0.744817	0.5279306
828	0.6306709	0.5634811	0.6332502	0.6736034	0.6817486	0.8305393	0.9830015	0.7428302	0.5267992
830	0.6291314	0.5621446	0.6312279	0.6716775	0.6797243	0.8280773	0.9812484	0.7407994	0.5256053
832	0.6275423	0.5607291	0.6291405	0.6697094	0.6776728	0.825498	0.97947	0.7387263	0.5243391
834	0.6259699	0.5593002	0.627089	0.6677438	0.6756091	0.8229272	0.9777017	0.7366704	0.5230473
836	0.6244155	0.5578874	0.6250935	0.665807	0.6735781	0.8203957	0.9759732	0.7346607	0.5217425
838	0.6227462	0.5563308	0.6229327	0.6637295	0.6714182	0.8176813	0.9741775	0.7324852	0.520312
840	0.6210704	0.5547452	0.6207347	0.6616196	0.6692436	0.8149363	0.9723445	0.7303092	0.5188244
842	0.619408	0.5532086	0.6186339	0.6597137	0.6671255	0.8122804	0.9706123	0.728191	0.5173343
844	0.6176928	0.5515468	0.6164308	0.6575872	0.6650139	0.8094922	0.9688001	0.7259909	0.5157613
846	0.6159061	0.5498254	0.6141822	0.6553873	0.6627412	0.8066419	0.966966	0.7237244	0.5141118
848	0.6141591	0.5480834	0.6119959	0.6532034	0.6604832	0.8037907	0.9651396	0.7214853	0.5124404
850	0.6124058	0.5463438	0.6097701	0.6510144	0.658228	0.8009328	0.963332	0.7192211	0.5107185
852	0.6105676	0.5445068	0.6075058	0.6487473	0.655861	0.7979311	0.9614859	0.7168884	0.5089052
854	0.6087017	0.5426221	0.6052221	0.6464641	0.6534945	0.7949036	0.9596	0.7145245	0.5070468
856	0.6068727	0.5407597	0.6030027	0.6441783	0.6511667	0.7919514	0.957781	0.7122091	0.505205
858	0.6050389	0.5388938	0.6008061	0.6419106	0.6488304	0.7889927	0.955961	0.709892	0.5033297
860	0.6031281	0.5369157	0.5985103	0.6395492	0.6463822	0.7858787	0.9540536	0.7074872	0.5013589
862	0.6012235	0.5349479	0.5962607	0.6372037	0.6439636	0.7827933	0.9521799	0.7050898	0.4993734
864	0.5993866	0.5330192	0.5941236	0.6349279	0.6416431	0.7798113	0.9503728	0.7027811	0.4974278
866	0.5974596	0.5310026	0.5918849	0.6325507	0.6391799	0.776701	0.9485341	0.7003981	0.495374
868	0.5955201	0.5289327	0.589609	0.6301001	0.6366835	0.7735189	0.9466245	0.6979501	0.4932675
870	0.5936506	0.5269592	0.5874456	0.6278092	0.6343064	0.7704817	0.9448012	0.6956131	0.4912488
872	0.5917566	0.5249559	0.5852643	0.6254461	0.6319177	0.7674072	0.9429924	0.6932149	0.4891731
874	0.5898018	0.5228713	0.5830311	0.6230284	0.6294395	0.764228	0.941079	0.6907626	0.4870307
876	0.587864	0.5207974	0.5808355	0.6206426	0.6269886	0.7611049	0.9392239	0.6883309	0.4849086
878	0.5859739	0.5187649	0.5786881	0.6183079	0.6245868	0.7580175	0.9374056	0.68597	0.4828115
880	0.5840739	0.516718	0.5765517	0.615954	0.6221892	0.7549202	0.9355876	0.6835705	0.4806923
882	0.582039	0.5145169	0.5742772	0.6134415	0.6196293	0.7516593	0.9335997	0.681026	0.4784214
884	0.5801429	0.512457	0.5721547	0.6110826	0.6172192	0.7485781	0.9317911	0.6786255	0.4762989
886	0.5782905	0.5104388	0.5701036	0.6087762	0.6148738	0.7455969	0.9299808	0.6762925	0.4742238
888	0.5763454	0.5083183	0.5679656	0.6063537	0.6124104	0.7424759	0.9281214	0.6738494	0.4720332
890	0.5744108	0.506206	0.5658548	0.6039329	0.6099607	0.7393231	0.9262539	0.6714125	0.4698357
892	0.5725776	0.5041831	0.5638807	0.6016666	0.6076311	0.7363355	0.924467	0.6690907	0.4677662
894	0.5706891	0.5021054	0.5618503	0.5993174	0.6052374	0.7332487	0.9226456	0.6667109	0.4656198
896	0.568772	0.5000046	0.5597775	0.5969121	0.602794	0.7301157	0.9207693	0.6642957	0.4634266
898	0.5669141	0.4979473	0.5577902	0.5945891	0.6004309	0.7270516	0.9189703	0.6619607	0.461297
900	0.565045	0.4959129	0.5558174	0.5922971	0.5980787	0.7240361	0.9172048	0.6596427	0.4591568
902	0.5631667	0.4938416	0.5538337	0.5899803	0.5956981	0.720956	0.9153929	0.6572937	0.4570062
904	0.5612573	0.4917619	0.5518424	0.5876107	0.5933075	0.7178277	0.9135634	0.65493	0.4548008
906	0.5594357	0.489765	0.5499131	0.5853437	0.5909737	0.7148234	0.9118061	0.652667	0.4526706
908	0.557665	0.4878221	0.5480673	0.5831292	0.5887224	0.7118638	0.9101105	0.6504345	0.4505708
910	0.5558202	0.485816	0.5461507	0.5808513	0.5863811	0.7088128	0.908342	0.6481416	0.4484075
912	0.5540416	0.4838715	0.5442885	0.5786073	0.5841019	0.7057946	0.906608	0.6459089	0.4462898
914	0.5523688	0.4820443	0.5425634	0.5765322	0.5819795	0.7029413	0.9049754	0.6437868	0.4442982
916	0.5506954	0.4802033	0.5408517	0.5744283	0.5798416	0.7000301	0.9033068	0.6416471	0.4422873
918	0.5490565	0.4783877	0.5391878	0.5723406	0.5777201	0.6971179	0.9016585	0.6395286	0.4403259
920	0.5475274	0.4767137	0.5376775	0.5704098	0.575743	0.6943598	0.9000883	0.6375166	0.4385051
922	0.5460765	0.4750974	0.5362324	0.5685312	0.5738295	0.691669	0.8985453	0.6355621	0.436727
924	0.5446339	0.4734992	0.5348787	0.5666895	0.5719338	0.6889772	0.8970577	0.6336371	0.4349899
926	0.543257	0.4719835	0.5336046	0.564899	0.5701384	0.6863083	0.8956012	0.6317768	0.4333164
928	0.5420004	0.4705898	0.5324978	0.5632551	0.5684484	0.6837838	0.8941591	0.630035	0.4317725
930	0.540804	0.4692772	0.5314767	0.5616655	0.5668195	0.6813133	0.892771	0.6283624	0.4302999
932	0.5396384	0.4679732	0.5305212	0.560091	0.5652257	0.6788013	0.8913572	0.6267065	0.4288427
934	0.5385485	0.466785	0.5296901	0.558616	0.563709	0.6763948	0.8900093	0.625144	0.4274743
936	0.5375952	0.4657153	0.5290006	0.5572603	0.5623381	0.6741113	0.8887459	0.6237183	0.4262343
938	0.5366632	0.4646996	0.5284293	0.555972	0.5610012	0.6718253	0.8875052	0.6223235	0.4250476
940	0.5358325	0.4637788	0.527999	0.55475	0.5597477	0.6695712	0.8863152	0.6210144	0.4239146
942	0.5351523	0.4630198	0.527773	0.553712	0.5586723	0.6674908	0.8852651	0.6198995	0.4229359
944	0.5345773	0.4623729	0.5277272	0.5527822	0.5577069	0.6654763	0.8843046	0.6188962	0.4220464
946	0.5341496	0.4618595	0.5279465	0.551976	0.5568843	0.663491	0.8834033	0.6180108	0.4212605
948	0.5338378	0.4614906	0.5283613	0.5513123	0.5561836	0.6616066	0.8826269	0.6172729	0.4205876
950	0.5336826	0.4612474	0.5289872	0.5508193	0.5556307	0.6598487	0.8819568	0.6166958	0.4200421

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File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: *pure a,b,c from skinabc.cal*
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	100	101	102	103	104	105	106	107	108
Sample Numb	"0113b"	"0114b"	"0116b"	"0118b"	"0119b"	"0120b"	"0202b"	"0203b"	"0204b"
400	1.1470624	0.9329072	1.2101444	1.1125412	1.0814395	0.9699558	1.0093706	1.1332545	0.8781718
402	1.1730099	0.968195	1.243556	1.1453221	1.1155677	1.0026789	1.0402415	1.1682109	0.9150829
404	1.198522	1.0047275	1.2765126	1.1780155	1.1498276	1.0363091	1.0727953	1.1975341	0.9490567
406	1.2228415	1.0330657	1.3072143	1.2057294	1.1797959	1.065438	1.1047643	1.2305117	0.9819145
408	1.2442204	1.0621763	1.3371979	1.2295928	1.2060795	1.0909632	1.1323248	1.2560475	1.0122792
410	1.2621601	1.0902042	1.3633153	1.2534289	1.2334868	1.1147118	1.1570756	1.2828971	1.0366744
412	1.2796922	1.1155962	1.3879452	1.2732335	1.256531	1.135509	1.182803	1.3063232	1.0607617
414	1.2934959	1.1370213	1.4086075	1.2921917	1.2772603	1.1550039	1.2041756	1.3280917	1.0832063
416	1.3078033	1.1570294	1.427316	1.309186	1.2960054	1.1722593	1.2232536	1.3481165	1.1027631
418	1.3185626	1.1740377	1.4427609	1.3229141	1.3101498	1.1869992	1.2376468	1.3625048	1.1207619
420	1.3287809	1.1900227	1.4589555	1.3382342	1.3225586	1.2007074	1.2539051	1.3769011	1.136449
422	1.3385668	1.2030551	1.47305	1.3490639	1.3358715	1.2123034	1.2654853	1.3901927	1.1498175
424	1.3438364	1.2141519	1.4825013	1.3583088	1.3447849	1.2200822	1.2754016	1.3995814	1.1620743
426	1.3506696	1.2268134	1.4921207	1.36742	1.3538501	1.2291806	1.2856818	1.411772	1.1725825
428	1.3554032	1.2363951	1.5018551	1.3753645	1.3630898	1.2352755	1.2935441	1.4212402	1.1810873
430	1.3582015	1.2432641	1.5066364	1.3808312	1.3685279	1.2409167	1.3006399	1.427734	1.1870376
432	1.3607397	1.2522342	1.5134621	1.3866589	1.3768653	1.2460542	1.3079135	1.4347093	1.1944662
434	1.3623298	1.2567987	1.5175687	1.3885603	1.3818285	1.2507432	1.3141317	1.4420736	1.2003323
436	1.3630378	1.2619145	1.5172834	1.3878138	1.3847008	1.2529593	1.3161577	1.4446217	1.2034563
438	1.3608496	1.2649047	1.5189784	1.3892736	1.3868039	1.2558357	1.3209568	1.4474741	1.2073442
440	1.3614013	1.2683318	1.5199981	1.3883672	1.3899149	1.257251	1.323302	1.4507726	1.2079616
442	1.358618	1.2703196	1.5180811	1.3865952	1.3905958	1.2567136	1.3240231	1.4494623	1.2081941
444	1.3584108	1.2713616	1.5146512	1.3835368	1.3921956	1.2570912	1.3235824	1.4521165	1.2088495
446	1.3548704	1.272917	1.5102553	1.3799362	1.3921717	1.2549622	1.3236796	1.4538198	1.2075107
448	1.3510008	1.2726274	1.5067749	1.3751841	1.3912518	1.2537636	1.3228776	1.4525875	1.2040963
450	1.3480425	1.2721452	1.5019281	1.3700379	1.3899841	1.252538	1.3218333	1.4524081	1.202195
452	1.3439263	1.2715323	1.4931663	1.3636959	1.3874309	1.2489204	1.3193567	1.4484608	1.1978
454	1.3415148	1.2698098	1.4895822	1.3585653	1.3853033	1.2469881	1.316154	1.4501429	1.194748
456	1.3369005	1.2674544	1.484512	1.3525267	1.3839533	1.2440686	1.3142854	1.446559	1.1915207
458	1.333358	1.2640965	1.4778533	1.3470535	1.3797028	1.2396183	1.3109379	1.4429147	1.1860002
460	1.3292509	1.2616789	1.471891	1.3400347	1.3759983	1.2355267	1.3077495	1.4396362	1.1805229
462	1.3230743	1.258584	1.4653103	1.3351541	1.3734267	1.2321768	1.3044407	1.4357939	1.1750284
464	1.3187538	1.2538879	1.4597734	1.3297763	1.3678541	1.2266877	1.2982253	1.4328479	1.1698074
466	1.3125386	1.2496163	1.4524748	1.3229079	1.3645613	1.2228839	1.2934231	1.427762	1.1617464
468	1.3072009	1.2446404	1.4478465	1.3175373	1.3573166	1.2164633	1.2899152	1.422215	1.1552539
470	1.3007162	1.238346	1.4397379	1.3096688	1.3510311	1.2097815	1.2819691	1.4158796	1.1469921
472	1.2954583	1.2335708	1.4349663	1.3033507	1.3468418	1.2034299	1.2753234	1.410862	1.1381594
474	1.2888744	1.2256429	1.4279461	1.2977953	1.3407695	1.1968789	1.2702996	1.4029335	1.1279063
476	1.2822154	1.2194426	1.4202156	1.2889917	1.3334827	1.1885505	1.2642174	1.3945563	1.1180525
478	1.2754912	1.2116983	1.4140325	1.2824013	1.3276881	1.1813021	1.2547849	1.3896627	1.1090428
480	1.2690697	1.2049835	1.4063872	1.2742201	1.3192474	1.1718714	1.2473743	1.3816253	1.0979403
482	1.2609459	1.1973226	1.3988128	1.2657685	1.3114886	1.1641917	1.2389251	1.3729967	1.0873072
484	1.2536967	1.1887369	1.3917701	1.2587873	1.3040769	1.1551609	1.2314776	1.3640286	1.0777253
486	1.2461941	1.179538	1.383085	1.2499552	1.2952216	1.145561	1.2225697	1.3546394	1.0668163
488	1.2383301	1.1704129	1.3743517	1.2428353	1.2864151	1.1371413	1.2133795	1.3478968	1.0548044
490	1.2316601	1.1621809	1.3696132	1.2353179	1.2780216	1.1277717	1.2057953	1.3369247	1.0445552
492	1.2236881	1.1528137	1.3610278	1.2273054	1.2688768	1.1179332	1.1945798	1.3273771	1.0318035
494	1.2149355	1.1429715	1.3521738	1.2184789	1.2590666	1.1091793	1.1876041	1.3207697	1.0212388
496	1.2080774	1.1348566	1.3460364	1.2112339	1.2518015	1.0998273	1.176594	1.310923	1.0098988
498	1.2013644	1.1268815	1.3410602	1.2066115	1.2445893	1.0904974	1.1683316	1.3034292	0.9999099
500	1.1956546	1.1189153	1.3338737	1.1980076	1.2373383	1.0827063	1.161356	1.2940037	0.9900419
502	1.1879995	1.1121356	1.3277266	1.1917614	1.2312155	1.0746281	1.154202	1.2890773	0.9801385
504	1.182189	1.1063416	1.3227549	1.1844492	1.2246594	1.0678456	1.1453967	1.2795006	0.9710058
506	1.1755791	1.098096	1.3174813	1.1778928	1.2198708	1.0600419	1.1403116	1.2765609	0.9618136
508	1.1700249	1.093453	1.3146098	1.1732929	1.2151895	1.0522335	1.1352639	1.2697225	0.953061
510	1.1644591	1.0869524	1.3087995	1.168931	1.2086203	1.0457921	1.1278114	1.2616031	0.9440757
512	1.1600745	1.0832055	1.3066456	1.1637233	1.2054621	1.0392218	1.1246092	1.2577462	0.9352558
514	1.1548133	1.0788159	1.3071954	1.1602983	1.2016273	1.0334153	1.1201508	1.2554182	0.9281349
516	1.1502249	1.0755087	1.3046068	1.1562889	1.1993325	1.0294046	1.1170166	1.2506242	0.9220204
518	1.1480744	1.0734113	1.3068261	1.1546545	1.1998339	1.0244825	1.1138526	1.2482224	0.9180704

520	1.1442096	1.0723894	1.3063666	1.153388	1.1981642	1.022846	1.1121262	1.2447171	0.9125097
522	1.1433208	1.072181	1.3077605	1.1526693	1.1993599	1.0210533	1.1121612	1.2450293	0.9096405
524	1.1409526	1.0732969	1.3127828	1.1534364	1.1998069	1.0190052	1.1113303	1.2448453	0.9071044
526	1.1400609	1.0730412	1.3168783	1.1530041	1.2017193	1.0171105	1.1127046	1.2461007	0.903154
528	1.1397645	1.0761774	1.3197944	1.1557794	1.20357	1.0176624	1.1135582	1.2483035	0.901221
530	1.1386569	1.0797403	1.3277386	1.1592174	1.2064874	1.0176775	1.1158352	1.2496186	0.9007053
532	1.1383053	1.0815217	1.3334951	1.1601918	1.2087562	1.016906	1.1168227	1.2515197	0.9020777
534	1.1395844	1.083065	1.3387573	1.1617317	1.2148881	1.0175526	1.1169974	1.253991	0.9088687
536	1.1396275	1.0851868	1.3446604	1.1639817	1.218991	1.0178068	1.1191602	1.2547517	0.9032032
538	1.1386883	1.086905	1.3480616	1.1644802	1.2201209	1.0187367	1.1199436	1.2555108	0.8978417
540	1.1381168	1.0887218	1.3523721	1.16711	1.2204885	1.018645	1.1210706	1.2588782	0.8954601
542	1.1373504	1.0894105	1.3571389	1.1683652	1.221802	1.019159	1.1224904	1.257796	0.8931653
544	1.1353929	1.0896046	1.3601913	1.1688417	1.2222786	1.0173949	1.1212844	1.2585793	0.8922012
546	1.1343229	1.0884854	1.3651923	1.1691256	1.2218827	1.0161996	1.1203166	1.2596655	0.8892026
548	1.1330515	1.0877939	1.3682162	1.1694469	1.2230778	1.0142066	1.1193941	1.2594219	0.8862528
550	1.1310451	1.0866899	1.3697586	1.1691095	1.2220082	1.0127711	1.1188771	1.2572351	0.8834679
552	1.1294245	1.0844846	1.3721914	1.1680145	1.2194233	1.0118723	1.1154159	1.2570238	0.8803875
554	1.1275105	1.0811775	1.3731788	1.1663836	1.2178695	1.0136154	1.112092	1.2540686	0.877955
556	1.1250161	1.0780698	1.3734257	1.1651592	1.2149155	1.0102136	1.1095585	1.2509879	0.8727354
558	1.1220961	1.0758903	1.3728337	1.1631217	1.2134817	1.0083401	1.1067942	1.2487025	0.8691868
560	1.118485	1.0720556	1.3706896	1.1599469	1.2108901	1.0017792	1.1033098	1.2448624	0.8637604
562	1.1169945	1.065654	1.3697944	1.1565896	1.2059672	0.9982815	1.0989043	1.2403197	0.8599534
564	1.1142857	1.0635979	1.3662345	1.1537899	1.2032061	0.9954352	1.0970477	1.2379776	0.855029
566	1.1115639	1.0578562	1.3641906	1.1500239	1.19911	0.9914539	1.1003559	1.2353781	0.850132
568	1.1095755	1.0487278	1.3620491	1.1463486	1.1954625	0.9878331	1.0888441	1.2314382	0.8460547
570	1.1102829	1.04249	1.3572655	1.1470649	1.1910716	0.9842426	1.082774	1.2263553	0.8407266
572	1.1062977	1.0355067	1.350636	1.1455423	1.1859667	0.9804202	1.0765564	1.2229351	0.8353449
574	1.0995271	1.0289252	1.3459119	1.1366916	1.1851703	0.9764768	1.0720313	1.2188953	0.8306218
576	1.0950761	1.0218804	1.3411894	1.1324983	1.185176	0.9724573	1.0672395	1.2131016	0.8249093
578	1.0911218	1.0146055	1.3349328	1.1255039	1.1737647	0.9674532	1.0604271	1.2088362	0.8203545
580	1.0881565	1.0080683	1.3286335	1.1207453	1.1692188	0.963275	1.0548245	1.2057737	0.8154356
582	1.0839875	0.9997518	1.321824	1.1150126	1.1614842	0.9584957	1.0484012	1.2022882	0.8099813
584	1.0803463	0.9922066	1.3160307	1.1093018	1.1564305	0.9538295	1.0426658	1.1926335	0.805177
586	1.0771078	0.9848635	1.3084083	1.1036292	1.1506038	0.9504327	1.0356677	1.1870614	0.8002945
588	1.0742157	0.9776573	1.3014208	1.0988655	1.1446772	0.9458239	1.0295644	1.1808832	0.7963997
590	1.0704291	0.9707576	1.2943075	1.0931382	1.1385909	0.9411532	1.022884	1.1757035	0.7911451
592	1.0670693	0.963277	1.288433	1.0877901	1.1341846	0.937021	1.0164666	1.1696234	0.7863481
594	1.0642546	0.9560632	1.2865423	1.0825381	1.1285555	0.9327573	1.0109521	1.1639693	0.7821607
596	1.060971	0.9487728	1.2795898	1.0770489	1.12234	0.9287205	1.0042268	1.158293	0.7773439
598	1.0583909	0.942013	1.2696524	1.0723537	1.1174093	0.9247578	0.9978092	1.1533757	0.7731674
600	1.0560508	0.9354317	1.2630405	1.068434	1.1122905	0.9208269	0.9921719	1.1476843	0.7691647
602	1.0533473	0.9287325	1.2578471	1.0634809	1.1068267	0.917177	0.9864039	1.1419523	0.7650376
604	1.0503807	0.9222537	1.2518353	1.0595732	1.1026709	0.9138379	0.981002	1.1366992	0.7609735
606	1.0481536	0.9162199	1.2467462	1.0554879	1.0971655	0.9100275	0.9755687	1.132036	0.7571704
608	1.0456638	0.9100016	1.2426288	1.0519483	1.0920069	0.9064599	0.9706912	1.1274978	0.7533581
610	1.0438188	0.90408	1.2373192	1.0489407	1.0871736	0.9032093	0.9668865	1.1224779	0.7497109
612	1.0411589	0.8986158	1.2331394	1.0456662	1.0826073	0.900051	0.9615357	1.1180762	0.7463892
614	1.0392337	0.892992	1.2292905	1.0425365	1.0782672	0.8968277	0.9573268	1.1138637	0.7426636
616	1.037183	0.8875863	1.2252738	1.0396068	1.0734289	0.8938755	0.9529777	1.1093922	0.7389857
618	1.0355437	0.8822864	1.2214253	1.0368868	1.0690088	0.8906004	0.9487067	1.1057265	0.7356415
620	1.0335282	0.8773089	1.2180601	1.0342553	1.0645174	0.8874926	0.9445835	1.1017779	0.7321492
622	1.031446	0.8720018	1.213838	1.0309439	1.0603787	0.8844332	0.9408944	1.098207	0.7286293
624	1.0294244	0.8672067	1.2097554	1.0279262	1.0556829	0.8813004	0.9366672	1.0940239	0.7252738
626	1.0276116	0.8621881	1.2062445	1.0248775	1.0514011	0.8786229	0.9324699	1.0902189	0.7220896
628	1.0255139	0.8573704	1.2020433	1.0216482	1.047217	0.8754413	0.9283612	1.0859491	0.7185345
630	1.0234506	0.8522897	1.1984428	1.0184736	1.0424857	0.8720634	0.9239529	1.0816238	0.7152376
632	1.0216644	0.8474648	1.1943319	1.015408	1.0383422	0.8688338	0.9197184	1.076911	0.7117413
634	1.0194672	0.8426703	1.1908342	1.0121673	1.0338145	0.8656387	0.9148695	1.0721568	0.7085642
636	1.0176435	0.8377621	1.187176	1.0089639	1.0293963	0.8624092	0.9101521	1.0671809	0.7053815
638	1.0157194	0.8330483	1.1837046	1.00586	1.0250587	0.8591787	0.9054323	1.0620629	0.7020727
640	1.0137999	0.828505	1.1803992	1.0027668	1.0207584	0.8560941	0.9007633	1.0570136	0.6990521
642	1.0121074	0.8238432	1.1770575	1.0001824	1.0169692	0.8530216	0.8959339	1.0520591	0.6958982
644	1.010293	0.8191612	1.1738623	0.9972112	1.0125771	0.8498406	0.8911999	1.046932	0.6926978
646	1.0084401	0.8148749	1.170537	0.9946214	1.0086074	0.846804	0.8870554	1.0425652	0.6898528
648	1.0067666	0.8105744	1.1673796	0.9919856	1.0046666	0.8438329	0.8825516	1.0377609	0.6868908
650	1.004722	0.8064003	1.1642087	0.9894071	1.0005831	0.840714	0.8782876	1.0331439	0.6839687
652	1.0028775	0.8022185	1.1612177	0.986889	0.9967701	0.8378423	0.8743113	1.028703	0.6810862
654	1.0013072	0.7979576	1.1580205	0.9844506	0.992977	0.8349646	0.8702776	1.0244466	0.6782448
656	0.9992828	0.7936621	1.1546724	0.9818721	0.9890441	0.8320433	0.8663195	1.0202203	0.6755593
658	0.9973704	0.7893516	1.1512039	0.9793383	0.9849756	0.8290287	0.8623968	1.0158142	0.6726623
660	0.9956844	0.7852156	1.1479368	0.9769412	0.9812093	0.8260134	0.8590154	1.0117347	0.6699181
662	0.9937514	0.781067	1.1444075	0.9744462	0.9774616	0.8228872	0.8551495	1.0075332	0.6670692
664	0.9918444	0.7766144	1.1406977	0.9716398	0.9734068	0.8197563	0.8513756	1.0031447	0.6641113
666	0.9900015	0.7722547	1.1372805	0.9688658	0.9695082	0.8165492	0.8475771	0.9989121	0.6613239

668	0.9879358	0.7680186	1.1333042	0.9661383	0.9655708	0.813484	0.8437658	0.9944476	0.6584076
670	0.9859245	0.7634259	1.1291678	0.9630527	0.9615669	0.8100793	0.839767	0.9898441	0.6554394
672	0.9839014	0.7590505	1.125072	0.9599823	0.9574889	0.8066914	0.8359447	0.9852023	0.652473
674	0.9819729	0.7547818	1.1208506	0.956924	0.9536319	0.8035144	0.8323226	0.9806823	0.6498467
676	0.9799965	0.7503683	1.1166244	0.9538249	0.9496859	0.800265	0.8285105	0.9760594	0.6468982
678	0.9779209	0.7459299	1.1122775	0.9506507	0.9460599	0.7969162	0.8247048	0.9711467	0.6440289
680	0.9759226	0.7416729	1.1077956	0.9477562	0.9421691	0.7939059	0.8210917	0.9666857	0.6412797
682	0.9740571	0.7374594	1.1033719	0.9446775	0.9384548	0.7907534	0.8174746	0.9625186	0.6385266
684	0.9724314	0.7331901	1.0989347	0.9414339	0.9346102	0.7875373	0.8140126	0.9575836	0.6357639
686	0.9703782	0.7290809	1.0946276	0.9382693	0.9308985	0.7844636	0.8104455	0.9530773	0.6331325
688	0.9684995	0.7251117	1.0903527	0.9352181	0.9272822	0.7815197	0.807106	0.9486071	0.630634
690	0.9665989	0.7212639	1.0861059	0.932218	0.9237913	0.7786359	0.8037978	0.9443405	0.6280916
692	0.9647346	0.7173682	1.0817348	0.9292818	0.9202061	0.7757388	0.8005674	0.9399941	0.6255802
694	0.9629294	0.7136471	1.0777643	0.9264579	0.9167404	0.7729731	0.7974983	0.9358046	0.623201
696	0.9611586	0.7101474	1.0737679	0.9236677	0.9134264	0.7702996	0.7945598	0.9319061	0.6209268
698	0.9595108	0.706558	1.0698063	0.9209502	0.9100131	0.7677187	0.7915828	0.9278104	0.6185958
700	0.9577417	0.7031285	1.0659531	0.9182351	0.9067138	0.7651304	0.7886829	0.9238712	0.6164628
702	0.9561051	0.6999897	1.0627071	0.915773	0.9037666	0.7627261	0.7860655	0.9202887	0.6144179
704	0.9544849	0.6967826	1.0589712	0.9133539	0.9005322	0.7602829	0.7833549	0.916656	0.6123391
706	0.9528028	0.6935996	1.0553815	0.9108537	0.8973752	0.7578428	0.780551	0.9129969	0.6102878
708	0.9512668	0.6906725	1.0520999	0.9086444	0.8944619	0.7556169	0.7780279	0.9096618	0.6084072
710	0.9498783	0.6877611	1.0488545	0.9063474	0.8915029	0.7533606	0.7755785	0.9063318	0.6065797
712	0.9482917	0.6849468	1.0455619	0.9040644	0.8885421	0.7511905	0.7731357	0.902985	0.6047236
714	0.9467161	0.6822615	1.042498	0.9019554	0.8856838	0.7490932	0.7707242	0.8998227	0.6029691
716	0.9453311	0.6796106	1.0394785	0.8998446	0.882882	0.7470145	0.7684992	0.8966581	0.6012756
718	0.9438041	0.6769696	1.0364785	0.8977703	0.8801366	0.7449853	0.7661746	0.8935991	0.5996002
720	0.9423432	0.6744176	1.0335581	0.895704	0.8774121	0.7429528	0.7639002	0.8905702	0.5980263
722	0.9409684	0.6719408	1.0307848	0.893831	0.8747551	0.7409973	0.7617005	0.8876285	0.5963934
724	0.9395772	0.6696086	1.0280343	0.8919204	0.8721	0.7392027	0.7595732	0.8847771	0.5949082
726	0.9381557	0.6672136	1.0253903	0.889964	0.8694602	0.7372755	0.7574243	0.8818306	0.5933748
728	0.9367452	0.6648895	1.0227029	0.888104	0.866838	0.7353649	0.7553797	0.8789443	0.5918662
730	0.9354246	0.662738	1.0202088	0.8862973	0.8643577	0.7335853	0.7533838	0.8762709	0.5905328
732	0.9340924	0.6605057	1.0176678	0.8845102	0.8617988	0.7317086	0.7513223	0.8734552	0.5890846
734	0.9326643	0.658339	1.0151813	0.8826605	0.8592246	0.7298198	0.7492493	0.8706077	0.587687
736	0.9312497	0.6562661	1.0127982	0.8809397	0.8568265	0.7280487	0.7472913	0.8680271	0.5863271
738	0.9298707	0.6541902	1.0104454	0.8791815	0.8543356	0.7262666	0.7452673	0.8653405	0.5850136
740	0.9284089	0.6520741	1.0080345	0.8774174	0.8517848	0.7244117	0.7432543	0.8626023	0.583657
742	0.9270037	0.6500394	1.0057559	0.8757075	0.8492961	0.7225935	0.741258	0.8599537	0.5823314
744	0.9255775	0.6480463	1.0035065	0.8739717	0.8468484	0.7207867	0.7392394	0.8573135	0.581025
746	0.9240409	0.6460386	1.0011764	0.8722061	0.8443121	0.7189533	0.7371645	0.8546478	0.5797023
748	0.9225907	0.643995	0.9988195	0.8704199	0.8417722	0.7170305	0.7350595	0.8520039	0.5783522
750	0.9210626	0.6420489	0.9966468	0.8686945	0.8393118	0.7152228	0.7330177	0.8493498	0.5771075
752	0.9196075	0.6401626	0.9943808	0.8670567	0.8369113	0.7134598	0.7310265	0.8468539	0.575904
754	0.9181266	0.6382523	0.9920827	0.8653452	0.8345537	0.7117009	0.7290254	0.8442499	0.5747023
756	0.9166874	0.6364012	0.9897758	0.8637372	0.8322115	0.7100031	0.7271391	0.8418031	0.5736205
758	0.9153892	0.6346922	0.9876682	0.8621726	0.8300626	0.7084084	0.7254014	0.8395239	0.5726145
760	0.9140667	0.6329127	0.9853872	0.8605401	0.827777	0.7067783	0.7236747	0.8371767	0.571573
762	0.9126791	0.631039	0.983114	0.8588728	0.8254285	0.7051634	0.722124	0.8347847	0.5705478
764	0.9112619	0.6292533	0.98112	0.8572721	0.8231977	0.7036617	0.7206752	0.8325692	0.5696532
766	0.9098432	0.6273167	0.9791164	0.8558074	0.8207939	0.7022019	0.719411	0.8302662	0.5687255
768	0.9082558	0.6251848	0.9772503	0.854214	0.8183023	0.7008207	0.7183055	0.8279807	0.5678959
770	0.90662	0.6230702	0.9752547	0.8525801	0.8158034	0.6994857	0.7173147	0.8256798	0.5670407
772	0.9048352	0.6208375	0.9727556	0.8507231	0.8131589	0.6979964	0.7160931	0.8232887	0.5661153
774	0.902985	0.6186548	0.969525	0.8486196	0.8104402	0.6962372	0.7143674	0.8206474	0.5650921
776	0.9009209	0.6166447	0.9655685	0.8462602	0.8077124	0.6942227	0.7121267	0.817849	0.5639688
778	0.8989619	0.6149114	0.9613346	0.8438438	0.8052348	0.6920786	0.7096369	0.8152098	0.5627956
780	0.8972043	0.6132676	0.9574301	0.8415411	0.8029326	0.6900208	0.7072118	0.8125938	0.5616531
782	0.8954701	0.6116211	0.9536117	0.839283	0.8006588	0.6879534	0.7048554	0.8100326	0.5605096
784	0.8939099	0.6099752	0.9503045	0.8372647	0.7985607	0.6861315	0.7028646	0.807704	0.5595207
786	0.8923989	0.6083372	0.9473894	0.8354647	0.7965456	0.6845036	0.7010968	0.8055761	0.5585735
788	0.8908744	0.6066099	0.9444366	0.8336161	0.7944096	0.6828814	0.6993643	0.8034251	0.557631
790	0.8893177	0.604866	0.941528	0.8317739	0.7922627	0.6812391	0.6975968	0.8013222	0.5566722
792	0.8878627	0.6032745	0.9388504	0.8301039	0.79028	0.679705	0.6959777	0.799349	0.5558113
794	0.8864107	0.6016939	0.9361314	0.8284332	0.7882651	0.6781502	0.6942999	0.79733	0.5549184
796	0.8848749	0.6000559	0.9332556	0.8266852	0.7862186	0.676561	0.692607	0.7952772	0.5539989
798	0.8833849	0.5984901	0.9305408	0.824984	0.7842193	0.6749736	0.6909474	0.7932799	0.5531093
800	0.8818986	0.5969288	0.9278107	0.8232881	0.782199	0.6733866	0.6892695	0.7912821	0.5521619
802	0.8803712	0.5953767	0.9251963	0.8215859	0.7802168	0.6717882	0.6876003	0.7892801	0.551224
804	0.8788557	0.5938153	0.9225754	0.8199233	0.7782034	0.6702017	0.6859825	0.7873003	0.5502977
806	0.8773779	0.592319	0.9200717	0.8182865	0.7762438	0.6686264	0.6844065	0.7853587	0.5493447
808	0.8759176	0.5908682	0.9176846	0.8166737	0.7743332	0.6670839	0.6828489	0.7834828	0.5484316
810	0.8743936	0.5893365	0.9151949	0.8150152	0.7723278	0.6654662	0.6812562	0.7815021	0.5474334
812	0.8728396	0.5878079	0.9127308	0.8133894	0.7703429	0.6638519	0.6796721	0.7795762	0.5464043
814	0.871377	0.5863507	0.9104377	0.8118135	0.7684597	0.6622865	0.6781541	0.7777521	0.5454358

816	0.8698452	0.5847952	0.9080253	0.8101697	0.7664633	0.6606543	0.6765735	0.7758657	0.5443485
818	0.868337	0.5832472	0.905623	0.808517	0.7644677	0.6590112	0.6749778	0.7740164	0.5432394
820	0.8668934	0.5817478	0.9033442	0.8069713	0.7625535	0.6574132	0.6734698	0.7722577	0.54215
822	0.8653985	0.5802171	0.9010557	0.8053876	0.7605867	0.6557766	0.671926	0.7704722	0.5410125
824	0.8638783	0.5786209	0.8987089	0.8037732	0.7586038	0.6540952	0.670321	0.7686401	0.539816
826	0.8624119	0.5770072	0.8964024	0.8021671	0.7566326	0.6524169	0.6687557	0.766892	0.5385878
828	0.8609165	0.575389	0.8941124	0.800575	0.7546785	0.6507506	0.6671858	0.7651603	0.5373474
830	0.8594264	0.5737298	0.8917863	0.7989662	0.7527044	0.6490644	0.6655801	0.7634455	0.5360565
832	0.8579197	0.5719806	0.8893751	0.7973036	0.7506552	0.6473215	0.6639221	0.7616732	0.5346693
834	0.8564097	0.5702266	0.8870437	0.7956798	0.7486431	0.645579	0.6622527	0.7599412	0.5332638
836	0.8549086	0.5684884	0.8846874	0.7940854	0.7466371	0.6437941	0.6606272	0.7582428	0.5318326
838	0.8533559	0.5665829	0.8821532	0.7923386	0.744477	0.6418898	0.6588632	0.7564846	0.5302395
840	0.8517493	0.564634	0.8796211	0.7905631	0.7423226	0.6399151	0.6571159	0.7546694	0.5286281
842	0.8502425	0.5627185	0.8771347	0.7888458	0.7402005	0.6380095	0.6553363	0.7529173	0.5270035
844	0.8486726	0.5607107	0.8745762	0.7870626	0.7380018	0.6359913	0.6534631	0.751102	0.5252642
846	0.847029	0.5586247	0.8719232	0.7852032	0.7357206	0.6339061	0.6515155	0.7492465	0.5234346
848	0.8454139	0.5565335	0.8693225	0.7833822	0.7334933	0.6318426	0.6495938	0.7474274	0.5216083
850	0.8437973	0.5544196	0.8667107	0.7815393	0.7312232	0.6297284	0.6476263	0.7456216	0.5197322
852	0.8421472	0.5521892	0.8640196	0.7796466	0.728855	0.6275295	0.6455891	0.7437861	0.5177373
854	0.8404341	0.549937	0.8612782	0.7777203	0.7264924	0.6253098	0.6435017	0.7419202	0.5157028
856	0.8388187	0.5477161	0.8586162	0.7758199	0.7241327	0.6231163	0.6414467	0.7401058	0.5136764
858	0.8371474	0.5454781	0.8559403	0.7739291	0.7217855	0.6209069	0.6393838	0.73831	0.5116479
860	0.8355094	0.5431092	0.8531551	0.7719557	0.7193431	0.618597	0.6371979	0.7364384	0.509465
862	0.8338041	0.5407752	0.8503968	0.7699784	0.7168977	0.6162922	0.6350431	0.734616	0.5073029
864	0.8321713	0.5384994	0.8477393	0.7680953	0.7145324	0.6140758	0.6329367	0.7328514	0.5052092
866	0.8304517	0.5361119	0.8450154	0.7661141	0.712069	0.6117243	0.6307333	0.7310275	0.5029799
868	0.8287191	0.5336757	0.8421853	0.764065	0.7095823	0.6093358	0.6284743	0.7291594	0.50068
870	0.8270404	0.531343	0.8394946	0.7621365	0.7072528	0.6070665	0.6263223	0.7274207	0.4984965
872	0.8253543	0.5289677	0.8367685	0.7601693	0.704792	0.6047593	0.6241208	0.7256573	0.4962539
874	0.8236402	0.5265566	0.8339561	0.7581309	0.702289	0.6023621	0.6218515	0.7238984	0.4939328
876	0.8219126	0.5241498	0.8311962	0.7561314	0.6998045	0.6000036	0.6196335	0.7221759	0.4916355
878	0.8202221	0.5217927	0.8285297	0.7541764	0.6973735	0.5977035	0.6174495	0.7204672	0.489375
880	0.8185303	0.5194113	0.8258089	0.7521808	0.6949097	0.5953732	0.6152225	0.7187502	0.487085
882	0.8166811	0.5168955	0.8229517	0.7500486	0.6923141	0.5928966	0.6128643	0.7169139	0.4846433
884	0.8149714	0.5145228	0.8202651	0.7480521	0.6898581	0.5905626	0.6106413	0.7152166	0.4823378
886	0.8133016	0.5122156	0.817651	0.7461977	0.6874735	0.5882975	0.6084948	0.713588	0.480131
888	0.8115608	0.5098027	0.8149129	0.7441845	0.6849594	0.5859218	0.6062254	0.7118825	0.477754
890	0.8098043	0.5073987	0.8122028	0.742134	0.6824553	0.5835488	0.6039652	0.7101876	0.4753977
892	0.8081323	0.5051299	0.8096025	0.7401766	0.6800666	0.58129	0.6018199	0.7086	0.4731664
894	0.8064134	0.5028023	0.806937	0.7381827	0.6776416	0.5789637	0.5996075	0.7069788	0.4708393
896	0.8046706	0.5004449	0.8042186	0.7361492	0.6751425	0.576596	0.5973544	0.7053499	0.4684951
898	0.8029928	0.4981541	0.8015855	0.7341392	0.6727413	0.574304	0.5951671	0.7037708	0.4661908
900	0.8013353	0.495881	0.7989488	0.7321596	0.6703917	0.5720217	0.5929819	0.7022179	0.463887
902	0.7996459	0.4935778	0.7962517	0.7301493	0.6679708	0.5696934	0.5907863	0.7006422	0.461551
904	0.7979594	0.4912606	0.7936364	0.7281091	0.6655371	0.5673349	0.5885559	0.6990837	0.4591827
906	0.7964238	0.4890217	0.7910483	0.7261376	0.6632015	0.5650861	0.5863857	0.6975852	0.456877
908	0.7948318	0.4868374	0.7884819	0.7241998	0.6609311	0.5628818	0.5842977	0.6961447	0.4546158
910	0.7931684	0.4845808	0.7858601	0.7222204	0.6585688	0.5606085	0.5821415	0.6946848	0.4523321
912	0.7915561	0.482356	0.7833049	0.7202803	0.6562636	0.5584088	0.5800357	0.6932216	0.4500442
914	0.7900095	0.4802808	0.7809235	0.7184249	0.6540931	0.5563552	0.5780677	0.6918918	0.4479398
916	0.7884364	0.4781725	0.7785088	0.716557	0.651889	0.55428	0.5761033	0.6905805	0.4458044
918	0.7868652	0.4761083	0.7761098	0.7147135	0.649724	0.5522576	0.5741593	0.6892757	0.4437089
920	0.7853675	0.4741668	0.7738578	0.7129787	0.6476721	0.5503619	0.5723654	0.6881194	0.4417758
922	0.7839043	0.4722868	0.7716625	0.7112808	0.6456596	0.5485301	0.5706465	0.6870103	0.439884
924	0.7824513	0.4704494	0.7694514	0.7095784	0.64369	0.5467405	0.5689146	0.6859404	0.4380517
926	0.7810137	0.4686857	0.7672834	0.7079488	0.6417587	0.5450077	0.5672768	0.6849477	0.43627
928	0.7796566	0.4670519	0.765222	0.706391	0.6399875	0.543376	0.5657334	0.6840488	0.4346413
930	0.7783252	0.4654897	0.7631987	0.7048918	0.6382669	0.5418344	0.5642858	0.6832305	0.4330798
932	0.7769961	0.4639358	0.7611363	0.7033685	0.6365529	0.5402962	0.5628328	0.6824399	0.4315349
934	0.7757302	0.4624916	0.7591336	0.701915	0.6349388	0.5388603	0.5614702	0.6817406	0.430089
936	0.7745473	0.4611799	0.7572659	0.7005757	0.6334614	0.5375395	0.560238	0.6811567	0.4287722
938	0.7733775	0.4599158	0.755373	0.699244	0.6320111	0.5362487	0.5590302	0.6806418	0.4275055
940	0.7722569	0.4587242	0.7535355	0.6979612	0.6306533	0.535037	0.5579137	0.6802227	0.4262989
942	0.7712662	0.457711	0.7518795	0.6968403	0.6294763	0.5340042	0.5569616	0.679972	0.4252598
944	0.7703354	0.4568063	0.7503002	0.6957808	0.6284089	0.5330642	0.5561262	0.6798368	0.42431
946	0.7694952.	0.4560367	0.7487772	0.6948118	0.6274669	0.5322495	0.5553955	0.6798681	0.4234593
948	0.7687511	0.4553992	0.7473587	0.6939523	0.6266829	0.5315666	0.5548016	0.6800597	0.4227315
950	0.7681139	0.4549053	0.7460846	0.6932141	0.6260359	0.5310195	0.5543545	0.680398	0.4221123

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	109	110	111	112	113	114	115	116	117
Sample Numb	"0205b"	"0206b"	"0208b"	"0209b"	"0212b"	"0211b"	"0213b"	"0214b"	"0215b"
400	1.1282247	0.9201871	0.9297443	0.9620914	0.8857886	0.8454257	1.2152524	0.8725634	1.0916936
402	1.1609881	0.9522616	0.9633888	0.9951913	0.9217217	0.8783463	1.245633	0.9079388	1.1216216
404	1.193	0.9888807	0.9982389	1.0270722	0.955725	0.9107542	1.2769527	0.9405571	1.1541342
406	1.2208147	1.0193167	1.0288473	1.0570395	0.9885113	0.9420462	1.3008888	0.9719185	1.1813536
408	1.2470205	1.0486668	1.0577846	1.0874133	1.0164387	0.9679834	1.328553	0.9997133	1.2076784
410	1.2709062	1.0739428	1.0862784	1.110404	1.0452076	0.9955227	1.3477584	1.0247006	1.23515
412	1.2918141	1.0975987	1.1101453	1.1339006	1.0710378	1.0190537	1.3692248	1.0487822	1.2549505
414	1.3114454	1.1169604	1.1320051	1.1542161	1.0927402	1.0386132	1.3857055	1.0694605	1.276067
416	1.3226645	1.1362606	1.148869	1.173545	1.1116711	1.058064	1.4040201	1.0889653	1.2935709
418	1.3317949	1.1523976	1.1654379	1.1878282	1.1292526	1.0726688	1.4147904	1.1030388	1.3056455
420	1.3444608	1.1662108	1.1795069	1.2031741	1.142574	1.0882022	1.425438	1.1185557	1.3218324
422	1.3575833	1.1786493	1.1916895	1.2159692	1.1573654	1.0986309	1.4372565	1.1311631	1.3289111
424	1.3589293	1.1893142	1.2002627	1.2245626	1.1676157	1.1087381	1.4443763	1.1419123	1.3385775
426	1.3709084	1.1991204	1.2104828	1.2346568	1.1775769	1.1169952	1.4532635	1.1510562	1.3460282
428	1.3792164	1.2093706	1.2198642	1.2420554	1.1874021	1.1246855	1.4608287	1.1582624	1.3524841
430	1.3821929	1.2151253	1.2258548	1.2470548	1.1949618	1.13162	1.4665648	1.1646312	1.3575803
432	1.3883715	1.2228978	1.2327282	1.2511547	1.202672	1.137808	1.4694818	1.1707633	1.3629894
434	1.393703	1.2247629	1.2378166	1.2544405	1.2098937	1.1411619	1.4722049	1.1758782	1.3681499
436	1.3949803	1.2300905	1.2426403	1.2577695	1.2136999	1.144672	1.4731158	1.1789572	1.3716388
438	1.3961738	1.2328689	1.2456656	1.2592998	1.2170261	1.1486529	1.4749007	1.1794251	1.3730178
440	1.3986403	1.2345662	1.2475426	1.2591617	1.2211285	1.149078	1.4771487	1.1822845	1.3740866
442	1.3976099	1.2360815	1.2497061	1.2590116	1.2228929	1.1501365	1.473238	1.1811097	1.3745707
444	1.3985755	1.2371305	1.2512752	1.2589998	1.2239813	1.1507322	1.4735202	1.1799172	1.3746394
446	1.398424	1.2374977	1.2511938	1.2557906	1.2226844	1.1497928	1.4744474	1.1781343	1.3721457
448	1.3999006	1.2358403	1.2491508	1.2524793	1.2226193	1.1460732	1.4712673	1.1758469	1.371978
450	1.3966211	1.2358844	1.2489958	1.2507768	1.2217489	1.1474644	1.4714661	1.1729028	1.3701749
452	1.3923954	1.2338808	1.2476906	1.2462406	1.2194724	1.1440541	1.4669133	1.1699436	1.3670802
454	1.3931909	1.2317123	1.2465646	1.2412374	1.2191887	1.1412598	1.4655563	1.1653295	1.3646268
456	1.3890185	1.2291117	1.2461089	1.2379485	1.2153406	1.1399591	1.4641201	1.1626183	1.3618054
458	1.3834795	1.2254283	1.24432	1.2342994	1.2113929	1.1362627	1.4578594	1.1579728	1.3575945
460	1.3811653	1.2222242	1.2397904	1.2293191	1.2088828	1.1328893	1.4543236	1.1536131	1.353945
462	1.3749988	1.2193042	1.2374699	1.2240262	1.2052495	1.1286734	1.4514525	1.1481159	1.3502696
464	1.3697046	1.2130767	1.2344238	1.2199503	1.2007827	1.1234773	1.4465381	1.1421757	1.3449392
466	1.3659276	1.2075831	1.230024	1.2148194	1.1965367	1.1177735	1.4401103	1.1358808	1.3401172
468	1.361231	1.202338	1.225033	1.2069037	1.1912812	1.111816	1.4366279	1.1283319	1.3373663
470	1.3545908	1.1958851	1.2190094	1.199541	1.1860071	1.1052289	1.4298226	1.1209042	1.3293114
472	1.3488078	1.1901618	1.2128336	1.1935861	1.1796823	1.0997596	1.4244069	1.113609	1.3233836
474	1.3411287	1.1837348	1.2066482	1.1851999	1.1742187	1.0917499	1.4191109	1.1061683	1.3163004
476	1.3347334	1.1764317	1.1986233	1.1760701	1.1659824	1.0845745	1.4103122	1.0964645	1.3094413
478	1.3284285	1.1681856	1.191371	1.1693459	1.1584126	1.0780395	1.4038355	1.0887362	1.3017061
480	1.3179444	1.1617224	1.182242	1.1595225	1.1497588	1.0681332	1.3939209	1.0784727	1.2964694
482	1.3118563	1.1533955	1.1748958	1.1507425	1.1411313	1.0600233	1.386544	1.0689709	1.286117
484	1.3029201	1.1436628	1.1675824	1.1422766	1.1316929	1.0499283	1.378342	1.0579716	1.2782903
486	1.2948226	1.1359791	1.1585416	1.1348546	1.1234114	1.0427624	1.3701131	1.0487002	1.2680906
488	1.2836902	1.127081	1.1482643	1.1234956	1.1137323	1.0326645	1.3575643	1.0377607	1.2599587
490	1.2761488	1.1191283	1.1401225	1.1175587	1.105755	1.0243601	1.351985	1.027352	1.2501892
492	1.2663404	1.1087279	1.1301849	1.1086823	1.0954432	1.0148222	1.3421961	1.0166973	1.2388459
494	1.2597822	1.1020287	1.1213893	1.0991527	1.0862888	1.0065751	1.3339609	1.0053256	1.2307795
496	1.2514278	1.0929203	1.1128566	1.0903661	1.0774759	0.9964295	1.3242726	0.9951553	1.224159
498	1.2426049	1.085165	1.1028118	1.0825083	1.0702454	0.9894716	1.3150157	0.9866778	1.2166166
500	1.2380465	1.0776885	1.0968918	1.0746343	1.0607864	0.9784935	1.3080686	0.9772686	1.2072842
502	1.2321351	1.0692297	1.0895433	1.0672165	1.0546439	0.9712076	1.300142	0.9667709	1.1999892
504	1.2255828	1.0637573	1.0817893	1.0592881	1.0479641	0.9625742	1.2933601	0.9575141	1.1919674
506	1.2201465	1.0567405	1.076444	1.0531005	1.0420265	0.9557732	1.2883731	0.950034	1.1862527
508	1.2133974	1.0504655	1.0701734	1.0471148	1.0359145	0.948036	1.2818654	0.9427115	1.1806149
510	1.2066201	1.0441723	1.0658439	1.0399563	1.0309023	0.9416098	1.2769359	0.93428	1.1721821
512	1.2003491	1.037697	1.0614364	1.0356314	1.026047	0.9355587	1.2715534	0.9280087	1.16672
514	1.1986433	1.0348191	1.0566852	1.0317438	1.0217178	0.9298877	1.2654998	0.920989	1.1613389
516	1.191399	1.0308557	1.0548002	1.0275316	1.0180905	0.9250408	1.2605025	0.9158508	1.1572433
518	1.1874979	1.0274968	1.0520974	1.0249393	1.015903	0.9212365	1.2556378	0.9117656	1.1539063

520	1.1838368	1.0258325	1.0485587	1.0237582	1.0142634	0.9178243	1.2537489	0.9073233	1.1507765
522	1.1788181	1.0261056	1.0483844	1.0245501	1.0157588	0.9148285	1.2526	0.9038916	1.1481335
524	1.1779305	1.0244848	1.047806	1.0244679	1.0155302	0.9131542	1.2509466	0.9010936	1.1468676
526	1.1765956	1.0243008	1.0491807	1.0255884	1.0161204	0.9119474	1.2517368	0.8980846	1.1478797
528	1.1794878	1.0266994	1.0516871	1.0283195	1.0166761	0.9112862	1.2529585	0.8980449	1.1502386
530	1.1777942	1.0270714	1.0531496	1.0308346	1.0189945	0.9119434	1.2537289	0.8974975	1.1507796
532	1.1763105	1.0267762	1.055421	1.0314345	1.0215046	0.9107243	1.2487956	0.90072	1.1483675
534	1.1787726	1.0293205	1.05846	1.033214	1.0236768	0.9122963	1.2490683	0.9070584	1.1484379
536	1.1796101	1.0313134	1.0596638	1.035305	1.0260377	0.9122408	1.2485563	0.8977407	1.1496794
538	1.1774576	1.0322123	1.0591551	1.0367208	1.0288733	0.9135092	1.2478065	0.892801	1.149359
540	1.1768676	1.03269	1.0614439	1.0389535	1.0295457	0.9181714	1.2451446	0.8930809	1.1500255
542	1.1754937	1.0334128	1.0627077	1.0400724	1.0296597	0.9149683	1.2464024	0.8905651	1.1492572
544	1.1735299	1.0328082	1.0631789	1.0393639	1.0295404	0.9101242	1.2439796	0.8895859	1.1467112
546	1.1729915	1.0331038	1.0622009	1.0401441	1.0299791	0.9081505	1.2418423	0.8873723	1.1449378
548	1.1695937	1.031696	1.0611666	1.0405757	1.0286607	0.9059229	1.2389883	0.8842041	1.1435386
550	1.1673715	1.0318366	1.060367	1.0403891	1.0275389	0.9038183	1.2360442	0.8812991	1.1417954
552	1.1651375	1.032354	1.0620294	1.0394837	1.0273703	0.8997315	1.2350562	0.8784247	1.1399802
554	1.1627831	1.0282439	1.058897	1.0381066	1.0315946	0.8968607	1.232026	0.8761659	1.1368153
556	1.1597015	1.0244914	1.0538214	1.0396249	1.0249089	0.8925766	1.2282574	0.8716586	1.1327116
558	1.1558515	1.0193622	1.0513726	1.0435692	1.0186676	0.8892978	1.224316	0.8680892	1.1315563
560	1.1520644	1.0143152	1.0483906	1.0360703	1.0132467	0.8853025	1.2204791	0.8632972	1.1267056
562	1.1494656	1.0103072	1.0410463	1.0312551	1.0089644	0.8801009	1.2176425	0.8587669	1.1232172
564	1.1453232	1.0058629	1.0368307	1.0279849	1.0049745	0.8752167	1.2125716	0.8547387	1.1215011
566	1.1416283	1.0009409	1.0313282	1.0242704	0.999574	0.8705667	1.207474	0.8496851	1.1232365
568	1.138171	0.9957866	1.0269868	1.0211338	0.9938526	0.8657559	1.204867	0.8460959	1.1188937
570	1.1412171	0.9903383	1.0214664	1.0169194	0.9880007	0.8604355	1.2049916	0.8413554	1.1089762
572	1.1339997	0.9858653	1.0162193	1.0126106	0.9834502	0.8554672	1.2076054	0.8361626	1.1034259
574	1.1246033	0.9798868	1.0104768	1.0075725	0.9767778	0.8495843	1.1953398	0.8316531	1.0995774
576	1.1189407	0.9739632	1.0046347	1.0029373	0.9701349	0.8435121	1.1885555	0.8266334	1.0955307
578	1.1145058	0.9676726	0.9983683	0.9973374	0.9640607	0.8377665	1.1822263	0.821951	1.0899934
580	1.1102449	0.9613371	0.9915789	0.9922176	0.9575202	0.8319591	1.1776677	0.8174128	1.0851675
582	1.1042643	0.9548958	0.9847782	0.985608	0.9509946	0.8262931	1.1743815	0.8122207	1.0804411
584	1.0990826	0.9488458	0.9779356	0.980131	0.9453142	0.8198965	1.1685094	0.8078967	1.0763875
586	1.0942487	0.942426	0.9722424	0.9742202	0.9379414	0.8144242	1.163653	0.8035101	1.0714216
588	1.0903831	0.9353173	0.9645382	0.9680288	0.9311526	0.8080168	1.1589723	0.800057	1.0666296
590	1.0843236	0.9285112	0.9574649	0.9621947	0.9242493	0.8027293	1.1552647	0.7950061	1.0620239
592	1.080078	0.921718	0.9500761	0.9560927	0.9175919	0.796659	1.1513152	0.7904949	1.0586811
594	1.0755671	0.91498	0.9434129	0.9503068	0.9110015	0.7911576	1.1466088	0.7866023	1.0537318
596	1.0708966	0.9078853	0.9362552	0.9438925	0.9038966	0.7857616	1.1419721	0.7822046	1.0493982
598	1.066691	0.9012836	0.9292632	0.9390118	0.8972371	0.7800053	1.138182	0.7782274	1.0464323
600	1.064021	0.8956825	0.9226407	0.9332018	0.8917307	0.7746132	1.1344124	0.7747343	1.0415633
602	1.0588002	0.8888402	0.9168262	0.9278594	0.8843555	0.7693882	1.1304156	0.7704637	1.0373034
604	1.0551143	0.8825092	0.9100236	0.9235409	0.8777685	0.7643834	1.1281798	0.7665646	1.0334576
606	1.0511011	0.8768153	0.9039245	0.9184589	0.871938	0.7596149	1.1240335	0.7629123	1.0292544
608	1.0472386	0.8709481	0.8980076	0.9135731	0.8652112	0.7545028	1.1203806	0.7590417	1.0254558
610	1.043715	0.8650599	0.8921711	0.9089978	0.8587771	0.7504104	1.1167068	0.7557489	1.0215995
612	1.0403856	0.860191	0.8868634	0.9048093	0.8531584	0.7457911	1.1135478	0.7520744	1.0179318
614	1.0372318	0.855244	0.8817837	0.9007268	0.8472753	0.7414442	1.1111164	0.748665	1.0148836
616	1.0336543	0.8501393	0.8762639	0.8967965	0.8411738	0.7370957	1.1072052	0.7449013	1.0105901
618	1.030691	0.8455378	0.8711843	0.8929802	0.8352079	0.7331666	1.1041459	0.7413779	1.007116
620	1.0271317	0.8411376	0.8660805	0.8890238	0.8301214	0.7291947	1.1015307	0.7380105	1.0035725
622	1.0238647	0.8365066	0.8610169	0.8851621	0.8243951	0.72507	1.0987973	0.7345926	1.0001719
624	1.0208589	0.8317582	0.8561802	0.8813037	0.8184636	0.72124	1.0955853	0.7311088	0.9966102
626	1.017607	0.8267022	0.8509766	0.877924	0.8128601	0.7171311	1.0924702	0.7277826	0.9932379
628	1.0143327	0.821758	0.8456024	0.8739026	0.8071806	0.7128994	1.0894485	0.7243299	0.989766
630	1.011493	0.8164746	0.8400211	0.8702767	0.8012097	0.7087069	1.0868797	0.7210107	0.986046
632	1.0081459	0.8109719	0.8344466	0.8661202	0.7954631	0.7044012	1.0838604	0.7176658	0.9826024
634	1.0050237	0.8054809	0.8291162	0.862457	0.7896231	0.7003153	1.0810038	0.7144302	0.9792307
636	1.002072	0.7994692	0.8233631	0.8584923	0.7835875	0.6961823	1.0782181	0.7115012	0.9759728
638	0.9990574	0.7934805	0.8174871	0.8545166	0.7775669	0.6917395	1.0756483	0.7079967	0.9727915
640	0.9966044	0.7878944	0.8121157	0.8508451	0.7719134	0.6876621	1.0730218	0.7047403	0.9695062
642	0.9936745	0.7820411	0.8065881	0.8471084	0.7662381	0.6834235	1.0705683	0.7017033	0.9662583
644	0.9905737	0.7766005	0.801066	0.8433039	0.7605261	0.6793586	1.0680366	0.6984518	0.9627978
646	0.9878906	0.7713698	0.796178	0.8396956	0.7551777	0.6755331	1.0657225	0.695491	0.9598672
648	0.9851533	0.7660674	0.7911792	0.836117	0.7496697	0.6717246	1.0641299	0.6923717	0.956756
650	0.9825842	0.760895	0.7860283	0.8323922	0.7441119	0.6678934	1.0612222	0.689334	0.9536771
652	0.9797662	0.7560867	0.781293	0.8288357	0.7389657	0.6644597	1.0590359	0.6864592	0.9505404
654	0.9769787	0.7514704	0.7766052	0.8258222	0.7337209	0.6608903	1.0566545	0.6835088	0.9474869
656	0.9743809	0.746802	0.771831	0.8220416	0.7284765	0.6573465	1.0542475	0.6805874	0.9445102
658	0.97163	0.7422887	0.767279	0.818404	0.7233906	0.6538452	1.0517311	0.6775613	0.9413404
660	0.9691187	0.7379529	0.7627083	0.814834	0.7184267	0.6503997	1.0495979	0.6745837	0.938432
662	0.9664376	0.7335607	0.7581668	0.8112972	0.7135848	0.646969	1.047284	0.6716433	0.9353412
664	0.9636728	0.7291939	0.7534907	0.8076261	0.7084501	0.6434081	1.0448294	0.6686584	0.9322503
666	0.9609439	0.7248698	0.7487424	0.8040599	0.7034361	0.6398103	1.0424376	0.6656855	0.9290001

668	0.9580855	0.7205346	0.74417	0.8003609	0.6985447	0.6362035	1.0398841	0.6627612	0.9258107
670	0.9554679	0.7159541	0.7392787	0.7965412	0.6934792	0.6324476	1.0373904	0.6596853	0.922575
672	0.952565	0.711387	0.7343663	0.7927502	0.6884982	0.628722	1.0351586	0.656682	0.9198202
674	0.9500395	0.7069994	0.729737	0.789161	0.6837628	0.6251006	1.0323663	0.6538479	0.9164516
676	0.9473778	0.702431	0.7247916	0.7854096	0.6788351	0.621389	1.029857	0.6509782	0.9133089
678	0.945224	0.6978428	0.7199103	0.7817325	0.6739825	0.6175963	1.02739	0.6481031	0.9101248
680	0.9422184	0.6935012	0.7152578	0.7781227	0.6693939	0.6140432	1.024949	0.6452968	0.9070566
682	0.9396525	0.6892161	0.7106522	0.7745779	0.6647685	0.6104727	1.0227902	0.6425481	0.9039488
684	0.9370655	0.6847958	0.7060566	0.7708322	0.6601638	0.6070103	1.0203195	0.6397879	0.9009254
686	0.9345907	0.6806244	0.7016535	0.7673047	0.6557411	0.6035635	1.0180755	0.6371	0.8980465
688	0.9321437	0.6765812	0.6974208	0.7638377	0.6513561	0.6003468	1.0159049	0.6344657	0.8951225
690	0.9297019	0.6726817	0.6932102	0.7604702	0.6471381	0.5972141	1.0138364	0.6319153	0.8922985
692	0.9274645	0.668816	0.6891263	0.7570361	0.6429127	0.5941216	1.0117953	0.6294031	0.889518
694	0.9251526	0.665125	0.6851762	0.7537928	0.638813	0.5913016	1.0097111	0.6269633	0.8867726
696	0.9229314	0.6616751	0.6815018	0.7507966	0.6350176	0.5886348	1.0076774	0.6246473	0.8842236
698	0.9208332	0.6580998	0.6778166	0.7475977	0.6310375	0.5858549	1.0057231	0.6222847	0.8816361
700	0.9186602	0.6547074	0.6741669	0.7444867	0.6271794	0.583215	1.0037783	0.620077	0.8790377
702	0.9166393	0.6515658	0.6708483	0.7416717	0.6237371	0.5808178	1.0018328	0.6179936	0.8766888
704	0.9146974	0.648412	0.6674573	0.7388045	0.6201451	0.5784321	1.00006	0.6158392	0.874156
706	0.9125813	0.6453256	0.6641028	0.7359223	0.6165763	0.5760295	0.9981762	0.6136644	0.8717004
708	0.9106637	0.642459	0.661056	0.733372	0.6132445	0.5738621	0.9965808	0.6117048	0.8694682
710	0.9088616	0.6395794	0.6580647	0.7308384	0.60993	0.5716999	0.9948919	0.6097789	0.8671871
712	0.9068527	0.6366791	0.6549435	0.7282078	0.606682	0.5695596	0.9931398	0.6078686	0.8650223
714	0.9050276	0.6339839	0.6520332	0.7257882	0.6035318	0.5675505	0.9915008	0.6060114	0.8628485
716	0.9032696	0.6313382	0.6491459	0.7234126	0.6004719	0.5655884	0.9899865	0.6042383	0.8608043
718	0.9014916	0.6286957	0.6463782	0.7210647	0.5974587	0.5636576	0.9884173	0.6024489	0.8586346
720	0.8997355	0.626128	0.6436113	0.7188495	0.5945273	0.5617665	0.9868311	0.6007715	0.8565828
722	0.8980733	0.6236185	0.6409122	0.716603	0.5916814	0.5599438	0.9852942	0.5991166	0.854553
724	0.8964754	0.6212555	0.6383337	0.7144301	0.5889505	0.5581973	0.9837179	0.5975239	0.8526052
726	0.8947836	0.6188472	0.6357549	0.7122298	0.5861513	0.5564284	0.9821789	0.5959008	0.850574
728	0.8931363	0.6164836	0.6332152	0.7100688	0.5834512	0.5547238	0.980688	0.5943296	0.8485901
730	0.8915984	0.6142879	0.6308394	0.7081037	0.5809233	0.5531205	0.9791743	0.5928984	0.8467427
732	0.8899803	0.6120152	0.6283693	0.7060163	0.5782825	0.5515125	0.9776542	0.5913746	0.8448381
734	0.8883559	0.609742	0.6259237	0.7039675	0.5756477	0.5498403	0.9761039	0.5898985	0.8428895
736	0.8867847	0.6076671	0.6236495	0.7020143	0.573258	0.5483282	0.9746309	0.5884975	0.8410498
738	0.8852081	0.6055043	0.6213046	0.7000498	0.5707867	0.546759	0.973028	0.5870473	0.839172
740	0.8835688	0.6033602	0.6189414	0.6981273	0.5682771	0.545209	0.9715777	0.5856619	0.8372275
742	0.8820634	0.6012793	0.6166657	0.6962323	0.5658686	0.5436773	0.9700959	0.5842862	0.8353342
744	0.8804534	0.5992406	0.6144069	0.6944541	0.563464	0.5421585	0.9685129	0.5829098	0.8334917
746	0.8788283	0.5971864	0.6121378	0.6926169	0.5610833	0.5406219	0.9669065	0.5815343	0.8315319
748	0.8771876	0.5951067	0.6098952	0.6908131	0.558623	0.5390766	0.9652411	0.580111	0.8295704
750	0.8755231	0.5931112	0.6076684	0.6890972	0.5562789	0.5376032	0.9635168	0.5787661	0.8278176
752	0.8739584	0.5911593	0.6055364	0.6874889	0.5539978	0.5361796	0.9618828	0.5774782	0.8259231
754	0.8723431	0.5891936	0.6033747	0.6858452	0.5516894	0.5347199	0.9601654	0.5761358	0.8239748
756	0.8707888	0.5873463	0.6013383	0.6843397	0.5494772	0.533348	0.9586305	0.5748848	0.8221927
758	0.8693464	0.5856145	0.5994447	0.6829445	0.5474451	0.5320997	0.9570269	0.5737224	0.8205845
760	0.8678986	0.5838452	0.5975283	0.6814696	0.5453526	0.5308368	0.9555815	0.5725242	0.8187897
762	0.8663957	0.5821166	0.5956125	0.6799051	0.5432757	0.5295923	0.9541345	0.5713259	0.8170369
764	0.865046	0.5804696	0.5939134	0.678427	0.5413756	0.5284435	0.9528605	0.5702525	0.8153231
766	0.8635995	0.5787914	0.5921451	0.6768525	0.5394686	0.5273302	0.9518391	0.5691772	0.8136497
768	0.8621359	0.5770762	0.5903605	0.6752813	0.5376304	0.5262253	0.9510452	0.5682148	0.8119465
770	0.8605157	0.5753533	0.588594	0.6737419	0.5358194	0.5251384	0.9504105	0.5673026	0.8102904
772	0.8586555	0.5735227	0.5867259	0.6720773	0.5340407	0.5239695	0.9494402	0.5663176	0.8084641
774	0.8565713	0.5717105	0.5847743	0.6701043	0.5320754	0.5226225	0.9477285	0.5652061	0.8065484
776	0.8543562	0.5699416	0.5827411	0.6679044	0.530008	0.5212046	0.9453121	0.5639768	0.8044355
778	0.8523884	0.5682317	0.5808911	0.6656364	0.5280895	0.5198298	0.9427441	0.562708	0.8023024
780	0.8506288	0.5666003	0.5789794	0.6633635	0.5262291	0.5185492	0.9402213	0.5614912	0.8003033
782	0.84902	0.564936	0.5770392	0.6609758	0.524358	0.5172405	0.9380253	0.5602694	0.7983715
784	0.8475856	0.5633667	0.575273	0.6587431	0.5226308	0.5160621	0.9362267	0.5591859	0.7966606
786	0.846262	0.5619572	0.5736775	0.6566607	0.5210442	0.5149604	0.9347987	0.5581745	0.7950575
788	0.8448263	0.5604773	0.5720508	0.654484	0.5194274	0.5138492	0.9333299	0.5571329	0.7934113
790	0.8434014	0.5590258	0.5704353	0.6522998	0.5178437	0.5127397	0.93189	0.5560817	0.7917609
792	0.8420507	0.5576656	0.5689761	0.6502502	0.5163724	0.5116984	0.9305383	0.5551178	0.7902462
794	0.8406588	0.5563116	0.5674809	0.6481659	0.5148739	0.5106478	0.9290941	0.5541449	0.7886516
796	0.8392991	0.5549393	0.5659921	0.6460752	0.513365	0.509585	0.9275858	0.553149	0.7870241
798	0.837888	0.5535948	0.5645359	0.6440405	0.5119019	0.5085611	0.9261062	0.5521459	0.7854462
800	0.8364609	0.5522413	0.5630761	0.6420513	0.5104764	0.5075024	0.9246045	0.5511525	0.783837
802	0.8350471	0.5509121	0.5616688	0.6400921	0.5090387	0.5064496	0.923076	0.5501458	0.782254
804	0.8336384	0.5495793	0.5602323	0.6381866	0.507598	0.5053944	0.921549	0.5491321	0.7806565
806	0.8322887	0.5482857	0.5588463	0.6363773	0.5062041	0.5043703	0.9201091	0.5481353	0.779116
808	0.8308966	0.5470445	0.5575067	0.6346639	0.5048685	0.5033796	0.9187115	0.5471563	0.7775654
810	0.8294399	0.5457362	0.5561137	0.632929	0.5034932	0.5023343	0.9171609	0.5461212	0.775987
812	0.8279866	0.5444517	0.5547683	0.6312346	0.5021093	0.5013124	0.9156479	0.5450736	0.774391
814	0.8266028	0.5432464	0.5534929	0.6297176	0.5008141	0.5003257	0.9141291	0.5440465	0.7728788

816	0.8251626	0.5419851	0.5521767	0.6281935	0.4995002	0.4992998	0.9126614	0.542945	0.77135
818	0.8236843	0.5407493	0.5508637	0.6266102	0.4981648	0.4982586	0.9110754	0.5417857	0.7697255
820	0.822327	0.5395479	0.5496232	0.6251248	0.4969051	0.4972831	0.909633	0.5406854	0.768205
822	0.8209085	0.5383717	0.5483842	0.623639	0.4956458	0.4962676	0.9081609	0.5395325	0.7666679
824	0.8194652	0.5371508	0.5471257	0.6221398	0.494372	0.4952429	0.9066542	0.5383036	0.7650824
826	0.8180754	0.5359753	0.5458938	0.6206455	0.4931297	0.4942282	0.9052039	0.5370651	0.7635461
828	0.8166261	0.5347975	0.5446751	0.6191841	0.4919031	0.4932219	0.9037509	0.5358484	0.7620023
830	0.8151996	0.5336211	0.5434424	0.6176643	0.4906722	0.4921829	0.902258	0.5345435	0.760447
832	0.8137123	0.5323914	0.5422029	0.6161007	0.4893902	0.4910995	0.9008111	0.53314	0.7588655
834	0.8122695	0.5311787	0.5409363	0.6145208	0.4881254	0.4899924	0.899333	0.531733	0.7572835
836	0.810797	0.5299792	0.539695	0.6129418	0.486876	0.4889138	0.8978741	0.5303004	0.7557889
838	0.809297	0.5286887	0.5383538	0.6112039	0.4855295	0.4877242	0.8963624	0.5287486	0.7541004
840	0.8077349	0.5273695	0.5369782	0.6094182	0.484157	0.4865043	0.894856	0.5271003	0.7524525
842	0.8062513	0.5260997	0.5356206	0.607671	0.482808	0.485283	0.8933679	0.5254945	0.7508281
844	0.8047144	0.5247431	0.5342187	0.60582	0.4813878	0.4840024	0.8918332	0.523765	0.7491358
846	0.8030707	0.5233538	0.5327486	0.6038746	0.4799107	0.4826495	0.8902491	0.5219357	0.7473873
848	0.8014799	0.5219862	0.531284	0.6019453	0.4784859	0.4813216	0.8886892	0.5201229	0.7456626
850	0.7998542	0.5205839	0.5298208	0.5999765	0.477051	0.4799699	0.8871568	0.5182689	0.7439525
852	0.7981675	0.5191243	0.5282859	0.5979167	0.4755077	0.4785358	0.8855392	0.516299	0.7421589
854	0.7964478	0.517661	0.5267434	0.5958323	0.4739579	0.4770697	0.8839566	0.5142878	0.740325
856	0.7947921	0.516225	0.5252159	0.593766	0.4724605	0.4756281	0.8823399	0.5122807	0.7385275
858	0.7931507	0.5147929	0.523693	0.5917017	0.4709442	0.4741647	0.8808221	0.5102649	0.7367189
860	0.7913966	0.5132746	0.5220739	0.5894958	0.4693478	0.4726217	0.8791668	0.5081015	0.7348539
862	0.7896446	0.5117849	0.5204958	0.5873351	0.4677842	0.4710732	0.8775655	0.5059868	0.7329878
864	0.7879508	0.5103456	0.5189607	0.5852198	0.4662687	0.4696003	0.8759846	0.5038933	0.731216
866	0.7862147	0.5088431	0.5173473	0.5830007	0.4646859	0.4680219	0.8743522	0.5016769	0.7293098
868	0.7844132	0.5073127	0.5157467	0.580693	0.4630605	0.4664042	0.8726808	0.4994063	0.7273669
870	0.7827064	0.5058492	0.5141706	0.5785329	0.4615276	0.4648679	0.8710986	0.4972361	0.7255593
872	0.7809627	0.5043566	0.5125812	0.5762841	0.4599725	0.4632894	0.8694848	0.495009	0.7236976
874	0.7791523	0.5028389	0.5109506	0.5739929	0.4583609	0.4616544	0.8678625	0.4927089	0.7217972
876	0.7773652	0.5013469	0.5093533	0.5717375	0.4568057	0.4600553	0.8662661	0.4904477	0.7199404
878	0.7756431	0.4998722	0.5077662	0.5695056	0.455268	0.4584693	0.8646725	0.4881944	0.7180867
880	0.7738695	0.4983987	0.5061969	0.5672547	0.4537356	0.4568658	0.863058	0.4859269	0.7161911
882	0.7719641	0.4967996	0.5044942	0.5648739	0.452076	0.4551498	0.8613343	0.4835246	0.7141567
884	0.7702085	0.4953334	0.5029122	0.5626274	0.4505432	0.4535237	0.8597018	0.4812346	0.7122496
886	0.7684872	0.4939256	0.5013899	0.5604579	0.4490775	0.4519411	0.8581521	0.47904	0.7104104
888	0.7666467	0.4924466	0.4998072	0.5582057	0.44754	0.4503122	0.8565016	0.4766987	0.7084504
890	0.7648228	0.4909889	0.4982372	0.5559646	0.4459939	0.4486568	0.8548513	0.4743591	0.7065107
892	0.7631027	0.4896126	0.4967267	0.5538307	0.4445701	0.4470902	0.8532453	0.4721466	0.7046711
894	0.7613917	0.4882182	0.4952089	0.5516452	0.4430873	0.4454746	0.8515786	0.4698483	0.7027784
896	0.7595938	0.4867917	0.4936561	0.5494297	0.4415919	0.4438495	0.8498953	0.4675116	0.7008473
898	0.7578214	0.4854257	0.4921606	0.5472782	0.4401484	0.4422674	0.8482128	0.4652341	0.6989777
900	0.7560602	0.4840697	0.4906655	0.5451635	0.4387282	0.4406808	0.8465864	0.4629515	0.6971127
902	0.7543001	0.4827294	0.4891734	0.5430195	0.4372937	0.4390835	0.8448606	0.4606546	0.6952426
904	0.7524924	0.4813667	0.487667	0.5408648	0.4358683	0.4374827	0.8431386	0.4583153	0.6933401
906	0.7507814	0.4800783	0.4861975	0.5388145	0.4344907	0.4359298	0.8415141	0.456078	0.6915475
908	0.7491006	0.4788288	0.4848031	0.5368273	0.4331615	0.4344229	0.8399184	0.4538713	0.6897753
910	0.7473723	0.4775464	0.4833722	0.5347939	0.4318326	0.4328836	0.8382915	0.4516075	0.687934
912	0.7456695	0.4763121	0.481961	0.5328397	0.4305341	0.4313708	0.836835	0.4494062	0.6861205
914	0.744082	0.4751419	0.4806746	0.5310152	0.4293515	0.429965	0.8354263	0.4473341	0.6844304
916	0.7424849	0.4740231	0.4793966	0.5292339	0.4282087	0.4285732	0.8339898	0.4452653	0.6827222
918	0.7408907	0.4729219	0.4781816	0.5274608	0.4271106	0.4272579	0.8325812	0.4432318	0.6809914
920	0.7393873	0.4719375	0.477059	0.52587	0.4261481	0.4260151	0.8312773	0.4413458	0.6794252
922	0.7379186	0.471004	0.4760287	0.5243216	0.4252763	0.4248591	0.830013	0.4395129	0.6778482
924	0.7364608	0.4701421	0.4750527	0.5228607	0.4244775	0.4237622	0.82876	0.437709	0.6763305
926	0.7350416	0.4693564	0.4741861	0.5214621	0.423769	0.4227425	0.8275219	0.4359871	0.6748315
928	0.7337157	0.4686645	0.4734213	0.5202037	0.4232073	0.4218494	0.8263243	0.4343919	0.673459
930	0.7324213	0.4680633	0.4727505	0.5190058	0.4227451	0.421017	0.8251749	0.4328685	0.672111
932	0.7311257	0.467501	0.4721527	0.5178743	0.4223531	0.4202493	0.8239825	0.4313681	0.6707914
934	0.7299301	0.4670447	0.4716569	0.5168561	0.42209	0.419588	0.8228767	0.4299688	0.6695456
936	0.7288041	0.4666918	0.4712847	0.5159467	0.4219743	0.4190786	0.8218101	0.4286962	0.6684141
938	0.7276813	0.4664273	0.4710033	0.5151331	0.4219616	0.418605	0.8207498	0.4274893	0.6673176
940	0.7266487	0.4662755	0.4708776	0.5144273	0.4221078	0.4182687	0.819709	0.4263522	0.6662936
942	0.7257403	0.466272	0.470909	0.5139136	0.4224209	0.4180913	0.8188081	0.4253668	0.66541
944	0.7249073	0.4664052	0.4710958	0.5135281	0.4229232	0.4180517	0.817959	0.4244744	0.6646274
946	0.7241722	0.4667336	0.471512	0.513329	0.4236854	0.4182036	0.8171744	0.4237094	0.6639622
948	0.7235584	0.4672073	0.4721001	0.5132955	0.4246428	0.4185114	0.8164775	0.4230678	0.6634177
950	0.7230472	0.4678329	0.4728448	0.5134066	0.4257846	0.4189768	0.8158767	0.4225348	0.663002

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	118	119	120	121	122	123	124	125	126
Sample Numb	"0216b"	"0217b"	"0219b"	"0220b"	"0221b"	"0223b"	"0207b"	"0101c"	"0102c"
400	0.9466209	0.9902276	0.9943695	1.0570412	1.18527	1.2762272	1.1333036	0.6911142	0.8208163
402	0.9826319	1.023406	1.0326588	1.0904858	1.2203989	1.3012346	1.166348	0.7177048	0.8553685
404	1.0183636	1.0561432	1.0718466	1.1233878	1.2496533	1.3320615	1.1969802	0.7440072	0.8867248
406	1.0506773	1.083642	1.1008327	1.1529491	1.2793139	1.3589736	1.2279073	0.7690571	0.9172657
408	1.0819294	1.11157	1.1345018	1.1787057	1.3019732	1.3817796	1.2571923	0.7912987	0.9450108
410	1.1099013	1.1363018	1.1622683	1.2029415	1.3273572	1.4030464	1.2837812	0.8104371	0.9703708
412	1.1345391	1.1589034	1.1871443	1.2250485	1.3499364	1.4253733	1.3058561	0.8266134	0.9943928
414	1.1578382	1.1812447	1.2084115	1.2469438	1.3707116	1.43799	1.3283497	0.8415107	1.0144188
416	1.1767497	1.1977413	1.2316903	1.2644448	1.3890394	1.4570211	1.3455932	0.8551072	1.0331624
418	1.1930496	1.2135948	1.2495508	1.2804167	1.4030597	1.46988	1.3587263	0.8655954	1.0488722
420	1.2089719	1.2282792	1.2661438	1.2946401	1.416769	1.4796342	1.3754847	0.8753552	1.061439
422	1.2221745	1.2404839	1.2803248	1.3077583	1.428666	1.4946773	1.3871464	0.882529	1.0738101
424	1.2337141	1.2470733	1.2909225	1.3173386	1.439154	1.4971642	1.3963991	0.888937	1.0843875
426	1.2464293	1.2557217	1.30195	1.3274187	1.4460111	1.509719	1.4058704	0.8935736	1.0942736
428	1.2550278	1.2631294	1.3108162	1.335278	1.4500405	1.5213878	1.4147521	0.8980126	1.1027205
430	1.2626996	1.2690139	1.3200617	1.340941	1.4573904	1.5215079	1.4204242	0.9024048	1.1090641
432	1.2715087	1.2749629	1.3297286	1.3455986	1.4595308	1.5235075	1.4273781	0.9061003	1.1141706
434	1.275898	1.2788728	1.3362976	1.3521568	1.4638597	1.5262784	1.4322948	0.9044599	1.1192329
436	1.282859	1.2811983	1.3436073	1.3546968	1.4709232	1.5269955	1.4347838	0.9009615	1.1212382
438	1.2870576	1.2836154	1.3477532	1.358526	1.4717828	1.5277386	1.4367402	0.8975135	1.1233873
440	1.2904588	1.2848513	1.351683	1.3596599	1.4735965	1.5313731	1.4381453	0.8954511	1.1253883
442	1.2910671	1.2844326	1.3547673	1.3611219	1.4739506	1.5269547	1.4391469	0.8915375	1.125137
444	1.2933966	1.2834513	1.3567686	1.363582	1.4762199	1.5317333	1.4373562	0.8869543	1.125998
446	1.2942927	1.2808954	1.359078	1.3614951	1.4748235	1.5270758	1.4375317	0.8830719	1.1241508
448	1.2945696	1.2787718	1.3591957	1.3619152	1.4737761	1.5224087	1.43671	0.879962	1.1236982
450	1.2923715	1.2769076	1.3625183	1.3613642	1.4719983	1.5227026	1.4349834	0.8768053	1.1215324
452	1.2919416	1.2724761	1.3605572	1.3606875	1.4661984	1.5186706	1.4339504	0.8720013	1.118428
454	1.2918202	1.2701653	1.3612854	1.3597654	1.4669797	1.5159672	1.4310757	0.864959	1.1151702
456	1.2887708	1.2683605	1.3593031	1.3563983	1.4626008	1.5121735	1.4279804	0.8562322	1.1123489
458	1.285905	1.2635288	1.3592395	1.3518659	1.4578573	1.5046961	1.423149	0.8497308	1.1090581
460	1.2835051	1.2604885	1.3568645	1.3512735	1.452929	1.502618	1.4208207	0.8435657	1.1058619
462	1.2787285	1.2574703	1.3532473	1.3489089	1.4500794	1.4980727	1.4165426	0.8379292	1.1017077
464	1.2767136	1.2519648	1.350711	1.3431383	1.4438289	1.4918135	1.4133358	0.8315235	1.0971203
466	1.270997	1.2479992	1.3480208	1.3393371	1.4380568	1.4846581	1.4075758	0.8244544	1.0913212
468	1.265758	1.2422472	1.3436307	1.3345244	1.4326351	1.4787713	1.4034274	0.817889	1.086338
470	1.2599045	1.2355255	1.3394881	1.3276199	1.4250151	1.4765059	1.3961715	0.8108906	1.0798765
472	1.2547195	1.2285436	1.333178	1.3246517	1.4183774	1.4704192	1.3915625	0.8045629	1.0732538
474	1.2475432	1.2219925	1.3274291	1.3170381	1.4120474	1.4642264	1.383412	0.7972149	1.0658648
476	1.2393543	1.2135386	1.3200306	1.310919	1.4040416	1.4600154	1.3766915	0.7899233	1.0577937
478	1.2337122	1.2052767	1.3156351	1.3037621	1.3948755	1.4506843	1.3685539	0.7824697	1.050297
480	1.2251436	1.1975564	1.3062818	1.2970273	1.3869087	1.4451495	1.3600228	0.7741851	1.0413458
482	1.2156322	1.1880678	1.2985629	1.28856	1.378742	1.441494	1.3525846	0.7664828	1.032025
484	1.2075965	1.1811368	1.289843	1.2815725	1.370591	1.4342203	1.3426365	0.7591203	1.0229368
486	1.1971349	1.1730005	1.2808958	1.2736442	1.3623545	1.4262341	1.3333244	0.7507794	1.0129774
488	1.1882025	1.1636249	1.2717632	1.2654655	1.3508222	1.4195473	1.3242785	0.7427665	1.002353
490	1.179036	1.1552978	1.2625207	1.2574111	1.3462613	1.4138116	1.3145475	0.7349607	0.9932417
492	1.1699247	1.146643	1.2517785	1.2464883	1.3352945	1.4040015	1.3050444	0.726661	0.9822103
494	1.161206	1.1386417	1.2457201	1.2391266	1.3249863	1.39775	1.2961167	0.7180779	0.9718608
496	1.150336	1.1297482	1.233085	1.2299716	1.3152941	1.3862531	1.2879262	0.7099307	0.9612821
498	1.1419297	1.1218953	1.2290906	1.2198931	1.3073896	1.3795351	1.2768086	0.7017784	0.9516273
500	1.1353492	1.1143763	1.2185327	1.2155054	1.3014914	1.3690543	1.27038	0.6930697	0.940863
502	1.1289034	1.1080532	1.2145777	1.2082717	1.2920384	1.3617793	1.2645006	0.6841724	0.9299014
504	1.1210456	1.1007005	1.2062145	1.2038815	1.285409	1.3513968	1.2559698	0.6761249	0.9203937
506	1.115643	1.0948819	1.2005806	1.198887	1.2773161	1.3469881	1.2511266	0.6674539	0.9091738
508	1.1110942	1.090243	1.196973	1.1925882	1.2722809	1.3441875	1.2466519	0.6589481	0.900692
510	1.1049596	1.0839438	1.1916035	1.1897676	1.2661691	1.3333168	1.2385511	0.650717	0.891423
512	1.1018217	1.0806892	1.1896371	1.1857684	1.2610154	1.3311485	1.2351521	0.6426005	0.8819308
514	1.0978861	1.0763465	1.1851881	1.180029	1.2569884	1.3260487	1.2307181	0.634918	0.8724746
516	1.0974146	1.0720259	1.1848226	1.1762882	1.2518338	1.321457	1.2266153	0.6277518	0.8643681
518	1.0948504	1.0710603	1.1831228	1.1763128	1.2468598	1.3168615	1.2249067	0.621202	0.8581759

520	1.0949758	1.0697753	1.1842706	1.1730394	1.2432283	1.3142087	1.2214085	0.6140404	0.8501393
522	1.0965893	1.0675642	1.1849325	1.171664	1.2404227	1.3101355	1.2213686	0.6077192	0.8436642
524	1.0948142	1.0677661	1.188215	1.1717509	1.2376539	1.3133854	1.2227422	0.6026477	0.8395905
526	1.0967427	1.0680349	1.1909268	1.1729848	1.236576	1.3098066	1.2215413	0.5981535	0.8381894
528	1.1001545	1.070576	1.1943158	1.1751757	1.2381003	1.3113775	1.2233351	0.5930672	0.8421167
530	1.1041397	1.0720749	1.2013962	1.1781451	1.2374094	1.3121616	1.2233121	0.5892639	0.8312886
532	1.106621	1.0730458	1.2057761	1.1793864	1.2363642	1.3111984	1.2232083	0.5855371	0.8248806
534	1.1093775	1.075016	1.2105775	1.1833895	1.2357217	1.3133032	1.2256705	0.5830444	0.8211977
536	1.1135137	1.0766035	1.2168671	1.1875485	1.2357073	1.3153685	1.2266234	0.5792595	0.8179824
538	1.1158155	1.0784403	1.220944	1.1880354	1.2355822	1.3149769	1.2275922	0.5762695	0.8156847
540	1.1174661	1.0800697	1.2258992	1.1894447	1.2377342	1.3148847	1.2291545	0.5736237	0.8115493
542	1.1192833	1.0821638	1.2326092	1.1904628	1.2373239	1.3162336	1.230976	0.5700047	0.809047
544	1.1216092	1.0821564	1.233138	1.1904	1.2335707	1.3142096	1.2314892	0.5674044	0.8047606
546	1.1223879	1.0819027	1.2349149	1.191833	1.2308009	1.3149463	1.2293742	0.563889	0.8030063
548	1.1215253	1.0816996	1.2349604	1.191945	1.229665	1.3168104	1.2279679	0.560889	0.7976879
550	1.1200167	1.081092	1.2363157	1.191034	1.2282976	1.3155361	1.2246368	0.557715	0.7936623
552	1.1188568	1.0808078	1.2359508	1.1899021	1.2266167	1.3176783	1.2245411	0.5546572	0.7893843
554	1.1155417	1.0791043	1.2355407	1.1880515	1.2242743	1.3126575	1.2212445	0.5511683	0.7856154
556	1.1136187	1.0773906	1.2320561	1.1851685	1.221177	1.3077551	1.2176956	0.5481562	0.781108
558	1.1101563	1.0755408	1.2303251	1.1831257	1.2170303	1.3059887	1.2150774	0.5447958	0.7770434
560	1.1069558	1.0785505	1.2280732	1.1793573	1.2147135	1.3011833	1.2114944	0.5413911	0.7725923
562	1.1037982	1.0797617	1.2252318	1.1752813	1.211453	1.2992128	1.2069954	0.5377226	0.7672793
564	1.1070751	1.0694182	1.2217927	1.171352	1.2071291	1.2960091	1.2054765	0.5344472	0.7625647
566	1.1001546	1.0645845	1.2177711	1.1707722	1.2031416	1.2917379	1.2008532	0.5314182	0.7578828
568	1.0908046	1.0602388	1.2134314	1.1737435	1.2000357	1.2888627	1.1972762	0.5280602	0.7529879
570	1.0853881	1.0563971	1.20804	1.164147	1.1963134	1.2849408	1.1932961	0.5247439	0.7485112
572	1.0794365	1.053073	1.2033061	1.1547103	1.1931833	1.2835054	1.1879789	0.5216005	0.743072
574	1.0740794	1.0479252	1.198095	1.149103	1.1895484	1.2787076	1.1843551	0.5182298	0.738086
576	1.0672293	1.0443834	1.1930391	1.1438943	1.18971	1.2752944	1.1808767	0.514919	0.7326641
578	1.0601852	1.0382175	1.1935058	1.1386019	1.1846873	1.2708452	1.1825981	0.5116532	0.7281371
580	1.0531143	1.0352809	1.1851019	1.1321157	1.1770111	1.2680193	1.1746459	0.508534	0.7230991
582	1.0469224	1.0291182	1.1740359	1.12503	1.1722177	1.2636994	1.1667242	0.5053318	0.7175174
584	1.0378475	1.0240004	1.1667651	1.1191397	1.1675112	1.2606244	1.1612678	0.5020881	0.712209
586	1.0297894	1.0190353	1.1598471	1.1150767	1.1637504	1.2607217	1.1571109	0.4989229	0.7073537
588	1.0218267	1.0139607	1.1509746	1.1079819	1.1588504	1.261567	1.1515933	0.4958396	0.7021868
590	1.013098	1.0087161	1.1430559	1.101665	1.1546119	1.2516643	1.146376	0.4928209	0.6973222
592	1.0057607	1.004419	1.1354505	1.0958169	1.1508325	1.2487147	1.1414891	0.489934	0.6929362
594	0.9975559	0.9995674	1.1277833	1.0899904	1.1468897	1.2440344	1.1377487	0.4871271	0.6881129
596	0.9887706	0.993852	1.1189963	1.0834948	1.142731	1.241842	1.1323498	0.4844012	0.6835558
598	0.9814225	0.989591	1.1114756	1.0791585	1.1387131	1.2380919	1.1274774	0.4820375	0.6791199
600	0.9741045	0.985067	1.1035396	1.0730003	1.1354371	1.2346343	1.1227789	0.4796666	0.6751767
602	0.966652	0.9806036	1.0958401	1.067299	1.1312141	1.232044	1.1186084	0.47754	0.6712779
604	0.9595905	0.9757445	1.0884991	1.0618286	1.1280208	1.2307487	1.1144096	0.4754444	0.667366
606	0.9534872	0.9714954	1.0812219	1.0569177	1.125271	1.2267097	1.1111562	0.4737591	0.663656
608	0.9477059	0.9672424	1.0742004	1.0518961	1.1216339	1.2243853	1.106671	0.4722049	0.6600821
610	0.9412922	0.9633451	1.0668117	1.0471301	1.1174976	1.2219436	1.1025462	0.470434	0.6564933
612	0.9354602	0.9589824	1.0605749	1.0421903	1.1148925	1.2199829	1.0987719	0.4689226	0.6533228
614	0.9299778	0.9550622	1.0540031	1.0374707	1.1115643	1.2174902	1.094964	0.4674409	0.6502187
616	0.9243525	0.9512963	1.0471729	1.0338088	1.1085752	1.2148768	1.091344	0.4658614	0.6470051
618	0.9191077	0.9473634	1.0414532	1.0288724	1.1054251	1.2130902	1.0876242	0.464378	0.6440885
620	0.913367	0.9434622	1.0350506	1.023932	1.1025668	1.2103598	1.0838652	0.4629477	0.6411444
622	0.9080035	0.9398324	1.028371	1.0196534	1.0991923	1.2077047	1.0805202	0.4614163	0.6382911
624	0.9023319	0.9358288	1.0219516	1.0149473	1.096568	1.2052089	1.0769128	0.4599422	0.6354961
626	0.8967949	0.9320989	1.0148972	1.0106544	1.093402	1.2026224	1.0729556	0.458334	0.6328272
628	0.8911666	0.9283953	1.0081147	1.0064903	1.0901654	1.2005352	1.0689216	0.4566776	0.6302843
630	0.8847206	0.9245923	1.0010262	1.0020911	1.0871224	1.1983073	1.0656753	0.4550734	0.6274709
632	0.8786134	0.9211593	0.9935197	0.9975106	1.0844029	1.1963189	1.061538	0.45344	0.624755
634	0.8725213	0.9171718	0.986106	0.9933932	1.0810938	1.1939247	1.057691	0.4517732	0.6220504
636	0.8660287	0.9134268	0.9786991	0.9890126	1.0784204	1.1922985	1.0541211	0.4501605	0.6194224
638	0.8595797	0.9096125	0.971294	0.984897	1.0754745	1.1902063	1.0501045	0.4486058	0.6166596
640	0.8537277	0.9061422	0.9639724	0.9809042	1.0725896	1.1880147	1.0462551	0.447178	0.6141722
642	0.8476501	0.90244	0.9566877	0.9766339	1.0696052	1.1858789	1.0426022	0.4457434	0.6116009
644	0.841549	0.8987348	0.9492818	0.9724585	1.0667562	1.184189	1.0389004	0.4443251	0.6092705
646	0.8360441	0.8953225	0.9425427	0.9686859	1.0639703	1.1818047	1.0356497	0.4431242	0.6068904
648	0.8305396	0.8918781	0.9357452	0.9648124	1.0615436	1.1797869	1.0321058	0.4419219	0.6045768
650	0.8251923	0.8882256	0.9292114	0.9608002	1.0589032	1.177443	1.0285637	0.4408345	0.6022499
652	0.8203424	0.8847446	0.9229366	0.9569672	1.0560209	1.1758894	1.0251209	0.4398703	0.6000863
654	0.8152922	0.8813332	0.9167947	0.9531273	1.053298	1.1737207	1.0216404	0.4388877	0.5979005
656	0.8104537	0.8779058	0.9108273	0.9494913	1.0504668	1.1714669	1.0182276	0.4379721	0.5957272
658	0.8056684	0.8744149	0.9049073	0.9456648	1.0477067	1.1691252	1.0144267	0.437089	0.5935029
660	0.8008829	0.8710514	0.8990364	0.9419461	1.0448687	1.1670325	1.0110877	0.4362562	0.5914483
662	0.7961398	0.8678547	0.8932	0.9381784	1.0421641	1.1649381	1.0076408	0.4354487	0.5893444
664	0.7912823	0.8643134	0.8873008	0.9343923	1.0390446	1.162515	1.0039988	0.434644	0.5871878
666	0.786292	0.8607252	0.8814982	0.9304331	1.0361975	1.1603364	1.0006303	0.433842	0.5850248

668	0.7814593	0.8571916	0.8753893	0.9267256	1.03324	1.1580964	0.9967523	0.4329922	0.5829113
670	0.7764053	0.8535833	0.8690644	0.9226625	1.0301635	1.1560956	0.993182	0.4320616	0.5806645
672	0.7713277	0.8498656	0.8627155	0.9189565	1.0273913	1.1538246	0.9893888	0.4312186	0.5784676
674	0.766521	0.8463773	0.8566561	0.91526	1.0244375	1.1513039	0.9858815	0.4303701	0.5764127
676	0.7613908	0.8428303	0.8503122	0.9113435	1.0216131	1.1490301	0.9822718	0.4295052	0.5742451
678	0.7561044	0.8391143	0.8436732	0.9074517	1.0185953	1.1465707	0.9785898	0.4286453	0.5721219
680	0.7511656	0.8355304	0.8376098	0.9035549	1.0157914	1.1443433	0.9750572	0.4277956	0.5700907
682	0.7462661	0.8320948	0.8314915	0.8998701	1.0132015	1.1423653	0.9715165	0.4269763	0.5680364
684	0.7411928	0.8285102	0.8253398	0.8960466	1.0102937	1.1398233	0.9682516	0.4261227	0.5659888
686	0.73638	0.8252066	0.819446	0.8923688	1.0075539	1.1375219	0.9648668	0.4253423	0.5639764
688	0.7317219	0.8218617	0.8137218	0.8888365	1.0050918	1.1356936	0.9614777	0.4246	0.5621003
690	0.7272598	0.8185532	0.8081381	0.8853636	1.0026659	1.1334964	0.9581587	0.4237995	0.5602481
692	0.7227709	0.8151624	0.8026206	0.8818592	1.0000629	1.1317037	0.9548272	0.423073	0.5583442
694	0.718495	0.8120155	0.7973574	0.8785917	0.9974951	1.1298451	0.9516841	0.4223733	0.5565087
696	0.7145522	0.808967	0.7924051	0.8753977	0.9951725	1.1280057	0.9485912	0.4217461	0.5547155
698	0.7105002	0.8058622	0.7874317	0.8721426	0.9927884	1.126119	0.9454966	0.421097	0.5528855
700	0.7066453	0.8028555	0.7826324	0.8689692	0.9904759	1.1242533	0.9424569	0.4204805	0.5511145
702	0.7031542	0.8000512	0.7782876	0.8659847	0.9883351	1.1226536	0.9396579	0.4199255	0.5495027
704	0.6996315	0.7972871	0.7738447	0.8629941	0.9860461	1.1208833	0.9367692	0.4194305	0.5477716
706	0.6960809	0.7944219	0.7694237	0.8600162	0.9838015	1.1191795	0.9339822	0.4189237	0.5460423
708	0.6929567	0.7918308	0.7653419	0.8572345	0.9816428	1.1174737	0.9313399	0.4184666	0.5444561
710	0.6898032	0.7892243	0.761313	0.8544773	0.9795776	1.1162739	0.9285811	0.4180301	0.5428926
712	0.6867281	0.786592	0.7572941	0.8516426	0.9774737	1.1145463	0.9259681	0.4176489	0.5412817
714	0.6838676	0.7840963	0.7535489	0.8490857	0.9755227	1.1130207	0.9233918	0.41729	0.5397478
716	0.6810608	0.7816501	0.7497844	0.8464328	0.9735664	1.1115199	0.9209214	0.4170016	0.5382513
718	0.678272	0.77925	0.746119	0.8438371	0.9715196	1.110044	0.9184284	0.416729	0.5367467
720	0.6755316	0.7767835	0.7424899	0.8412894	0.9696576	1.1084012	0.9159225	0.416501	0.5352836
722	0.6729272	0.7744551	0.7389683	0.838746	0.9676623	1.1068808	0.9135583	0.4163106	0.5338097
724	0.670471	0.7721946	0.7357368	0.8363515	0.9658072	1.1054389	0.9112227	0.4161592	0.5323968
726	0.6679764	0.7698519	0.7323207	0.8338551	0.9639607	1.1040239	0.9089731	0.4160506	0.530979
728	0.6655442	0.7675512	0.7290285	0.8314546	0.9620625	1.1025112	0.9066679	0.4159666	0.5295749
730	0.6633125	0.7653897	0.725945	0.8291655	0.9602495	1.1011635	0.9045365	0.415919	0.5282102
732	0.6610087	0.7632411	0.7227463	0.8268175	0.9584021	1.0996233	0.9022442	0.4159271	0.5267953
734	0.6587626	0.7609604	0.7195791	0.8243564	0.9564869	1.0981773	0.9000044	0.4159886	0.5253897
736	0.6566932	0.7588764	0.7166295	0.822183	0.9547865	1.0967206	0.8978757	0.4159902	0.5239986
738	0.6545808	0.7566598	0.7136461	0.819864	0.9530081	1.0952322	0.8956941	0.4159918	0.5225822
740	0.6524525	0.7544135	0.7105886	0.8175318	0.9510685	1.0937222	0.8934877	0.4160447	0.521088
742	0.6504251	0.752281	0.7076581	0.8153774	0.9492669	1.0922533	0.891227	0.4160866	0.5196314
744	0.6484181	0.7501786	0.7047483	0.8131266	0.9474041	1.0906309	0.8891174	0.4161366	0.5181669
746	0.6464736	0.7479429	0.7018436	0.8108599	0.9455596	1.0890135	0.8868565	0.4161932	0.5166361
748	0.644479	0.7457377	0.698958	0.8085841	0.9436244	1.087281	0.8845654	0.4162643	0.5150926
750	0.6425599	0.7436315	0.696127	0.8063275	0.9417052	1.0856092	0.8824002	0.4163663	0.5135795
752	0.6407452	0.7415672	0.6934174	0.8041631	0.9398782	1.0839734	0.8802643	0.4164537	0.5121233
754	0.6389179	0.7395778	0.6906654	0.8020126	0.9379194	1.0822099	0.87804	0.4166081	0.5106457
756	0.6372126	0.7376961	0.6880974	0.7999338	0.9361205	1.0806191	0.8759595	0.4167329	0.5092528
758	0.6356313	0.7359683	0.6856862	0.7980016	0.9344357	1.0790987	0.8741005	0.4168785	0.508002
760	0.6340009	0.7342443	0.6832514	0.795919	0.9326288	1.0776476	0.8721025	0.4169999	0.5067018
762	0.6323488	0.7325156	0.6808015	0.7938194	0.9308525	1.0761985	0.8700474	0.4170793	0.5054082
764	0.6308075	0.7309712	0.6785678	0.7916809	0.9291497	1.0749745	0.8679637	0.4170652	0.5041943
766	0.6292008	0.7294428	0.6762199	0.7895384	0.9274579	1.0737212	0.8657186	0.4170448	0.5029558
768	0.6274762	0.7278852	0.6736594	0.7872369	0.9256626	1.0722111	0.8634207	0.4170495	0.5018983
770	0.6257969	0.7262964	0.6709307	0.7850628	0.9238807	1.0705508	0.8610805	0.4171277	0.5008397
772	0.6239898	0.7245528	0.6679986	0.7827771	0.9218596	1.06859	0.8586248	0.4172533	0.4997585
774	0.6220816	0.7224485	0.6650177	0.7805	0.9196489	1.0661979	0.8561963	0.4174247	0.4985831
776	0.6201127	0.7200912	0.6622306	0.7780941	0.9172957	1.0634815	0.8538135	0.4176462	0.4972121
778	0.6182443	0.7176138	0.6599593	0.775782	0.9150644	1.0608673	0.8516999	0.41791	0.4957312
780	0.6164483	0.7151775	0.6579798	0.7735072	0.9129722	1.0585437	0.8497463	0.4182291	0.4942458
782	0.6146639	0.7127396	0.655986	0.7711655	0.9109731	1.0564753	0.8478313	0.4185415	0.4927283
784	0.6130489	0.7105371	0.654052	0.7689564	0.9092087	1.0547886	0.8459945	0.4188589	0.491445
786	0.6114761	0.7085211	0.6521763	0.7668809	0.9075944	1.0532516	0.8442152	0.4190926	0.4903151
788	0.6098345	0.7064778	0.6501815	0.7647891	0.9059406	1.0516382	0.8423444	0.4193109	0.4892194
790	0.6082158	0.704437	0.6482207	0.7626924	0.90426	1.050135	0.8404761	0.4195093	0.4881585
792	0.6066897	0.7025524	0.6464078	0.7608263	0.9026464	1.0485801	0.8387175	0.419645	0.4871857
794	0.6051718	0.7006528	0.6445866	0.7589059	0.9010378	1.0469832	0.8368965	0.4198197	0.4861923
796	0.6036138	0.698708	0.6427394	0.7569277	0.899367	1.0453087	0.8350683	0.4200068	0.4852127
798	0.6021373	0.6967902	0.6409437	0.7550191	0.8977316	1.0436807	0.8332611	0.420172	0.484241
800	0.6006421	0.6948935	0.6391665	0.7530916	0.8960903	1.0420529	0.8314623	0.4203019	0.4832945
802	0.5991796	0.6930014	0.6373911	0.7511867	0.8944213	1.0403568	0.829649	0.4204354	0.4823467
804	0.5977395	0.6911491	0.6356214	0.7492911	0.8927664	1.0386648	0.8277957	0.4205399	0.4814091
806	0.59632	0.689326	0.6339042	0.7474361	0.8911379	1.0370349	0.8260167	0.4206439	0.4805032
808	0.5949698	0.6876041	0.6322492	0.7456403	0.8895356	1.0353767	0.8242525	0.42069	0.4796373
810	0.5935758	0.685783	0.6305057	0.7437542	0.8878446	1.0336007	0.8223904	0.4207304	0.4787297
812	0.5921779	0.6840125	0.6288451	0.7419005	0.88614	1.0318182	0.8205532	0.4207177	0.4778277
814	0.5908684	0.6823186	0.6273004	0.7401221	0.8845379	1.030152	0.8187676	0.4206655	0.4769636

816	0.5894982	0.6805415	0.6256081	0.7382615	0.8828413	1.0283571	0.8169441	0.4205744	0.476069
818	0.5881038	0.6788198	0.6239114	0.7364394	0.8811453	1.026638	0.8150652	0.4204352	0.4751487
820	0.5867766	0.6771336	0.6223188	0.7346391	0.8795173	1.0249184	0.813256	0.4202583	0.4742554
822	0.5854324	0.6754581	0.620688	0.7327842	0.8779309	1.0232134	0.8114547	0.4200344	0.4733548
824	0.5840368	0.6737099	0.6190073	0.7309306	0.8762391	1.0214583	0.8095828	0.4197398	0.4723923
826	0.5826623	0.6720328	0.6173691	0.7290738	0.8746283	1.0197151	0.8077226	0.4194113	0.4714358
828	0.5812421	0.670321	0.6157545	0.7272568	0.872968	1.0180563	0.8058972	0.4190343	0.4704652
830	0.5798178	0.6685736	0.6141336	0.7253695	0.8713282	1.0163133	0.8040293	0.4185814	0.4694601
832	0.5782915	0.66679	0.6124293	0.72343	0.8696582	1.0145602	0.8021261	0.4180745	0.4683823
834	0.5767324	0.6649886	0.6107434	0.721469	0.8679889	1.0128065	0.8002039	0.417502	0.467285
836	0.5752087	0.6632262	0.6090962	0.7195923	0.866352	1.0112575	0.7983204	0.4168707	0.4661556
838	0.5735305	0.6613475	0.6073159	0.7175287	0.8646111	1.0094178	0.7963762	0.4161416	0.4649197
840	0.5717906	0.659485	0.6054951	0.7154263	0.8628816	1.0076047	0.794329	0.4153396	0.4636397
842	0.570078	0.6576072	0.6037707	0.7133766	0.8611441	1.0058593	0.7923597	0.4144926	0.4623368
844	0.5682381	0.6556172	0.6019229	0.7112391	0.8594032	1.0040863	0.7902984	0.4135524	0.4609303
846	0.5663454	0.6535499	0.6000155	0.7090171	0.8575967	1.0021949	0.7881436	0.4125226	0.4594576
848	0.5644519	0.6515302	0.5981436	0.706825	0.855831	1.0003811	0.7860435	0.4114426	0.4579731
850	0.562508	0.6494763	0.5962295	0.7046368	0.8540364	0.998547	0.7839106	0.4103202	0.4564337
852	0.560468	0.647343	0.5942656	0.7023151	0.8521554	0.9966569	0.7817113	0.4090973	0.4548095
854	0.5583993	0.6451914	0.5922741	0.6999953	0.8502997	0.9947245	0.7794623	0.4077997	0.4531386
856	0.5563382	0.6430566	0.5903053	0.6976897	0.8484421	0.9928851	0.7772729	0.4064842	0.4514911
858	0.5542728	0.6409566	0.5883455	0.6953912	0.8465924	0.9910358	0.7750985	0.405136	0.4498107
860	0.5520781	0.6387427	0.5863073	0.6930912	0.8446701	0.9890694	0.772758	0.4036611	0.4480126
862	0.5499008	0.636547	0.5842526	0.6907011	0.8427963	0.9871852	0.7704678	0.4021741	0.4462326
864	0.5477962	0.6344095	0.582296	0.6884006	0.840956	0.9853095	0.768245	0.4007012	0.4444912
866	0.5455719	0.6321743	0.5802135	0.685982	0.8390374	0.9833401	0.7659401	0.3991263	0.4426499
868	0.5432729	0.6298876	0.5781144	0.6834911	0.8370318	0.981339	0.7635613	0.3974897	0.440765
870	0.5411165	0.6277198	0.5761164	0.681131	0.8351843	0.979406	0.7613022	0.3959084	0.4389635
872	0.538874	0.6254814	0.5740769	0.6787168	0.8332583	0.9774773	0.7589776	0.3942709	0.4371006
874	0.5365694	0.6232018	0.571979	0.676246	0.8312806	0.9754968	0.7566208	0.3925893	0.435203
876	0.5343202	0.6209388	0.5699261	0.6738007	0.8293576	0.9734986	0.7542939	0.3909065	0.4333087
878	0.5320915	0.6187398	0.5678926	0.6714309	0.8274572	0.9715957	0.7519981	0.3892316	0.4314557
880	0.529846	0.6164898	0.5658545	0.6690152	0.8255162	0.9696822	0.7496706	0.3875357	0.4295738
882	0.5274607	0.6141046	0.5637093	0.6664438	0.8234394	0.9675816	0.7472139	0.3856911	0.4275598
884	0.5252118	0.611869	0.5616625	0.6640112	0.8215016	0.9655871	0.7449354	0.3839825	0.42568
886	0.523034	0.6096866	0.5596999	0.6616817	0.8196096	0.9636785	0.7427316	0.3823039	0.4238535
888	0.5207622	0.6073896	0.5576568	0.6591987	0.8176141	0.9616573	0.7403547	0.3805272	0.4219421
890	0.518492	0.6051198	0.5556328	0.6567436	0.8156588	0.9596004	0.7379555	0.3787476	0.4200198
892	0.5163302	0.6029609	0.5537202	0.6544243	0.8137385	0.9576921	0.7356985	0.3770491	0.4181976
894	0.5141179	0.6007389	0.5517626	0.6520481	0.8117925	0.9556798	0.7333891	0.3752874	0.416313
896	0.5118597	0.5984773	0.5497744	0.6496204	0.809803	0.9536846	0.7310323	0.3734788	0.4143798
898	0.509691	0.5962902	0.5478519	0.6472644	0.8078744	0.9517179	0.7287282	0.3717016	0.4124997
900	0.5075343	0.5941072	0.5459713	0.6449078	0.8059509	0.9497665	0.726446	0.3699148	0.4106411
902	0.5053514	0.591896	0.5440494	0.6425443	0.8040174	0.9478047	0.7241706	0.3680858	0.4087416
904	0.5031531	0.5896555	0.5421396	0.6401693	0.8020715	0.9458512	0.7218683	0.3662284	0.4068232
906	0.5010315	0.5874908	0.5402762	0.6378762	0.8002822	0.9439886	0.7196354	0.3644161	0.4049782
908	0.4989877	0.5853607	0.5384739	0.6356366	0.7984396	0.9421653	0.7174661	0.362636	0.4031596
910	0.4968611	0.5831653	0.5365849	0.6333151	0.7965773	0.9402672	0.7152497	0.3607841	0.4013328
912	0.4948117	0.5810167	0.5347421	0.6310583	0.7947224	0.9384312	0.7130532	0.3589917	0.3995586
914	0.4928795	0.5789863	0.5330185	0.6289274	0.79298	0.9366426	0.7109962	0.3573042	0.3979116
916	0.4909598	0.5769312	0.531283	0.6267912	0.7912436	0.934865	0.7089106	0.3556171	0.3962812
918	0.4890785	0.5749075	0.5295819	0.6246691	0.789466	0.9330906	0.7068299	0.3539832	0.3946933
920	0.4873403	0.5729898	0.5280089	0.6226742	0.7878221	0.9313658	0.7048789	0.3524724	0.3932653
922	0.4856587	0.571117	0.5265038	0.620769	0.7862268	0.9296769	0.7029561	0.3510047	0.3919108
924	0.4840395	0.5692521	0.5250309	0.6188537	0.7846281	0.9279487	0.7010679	0.3496068	0.3906122
926	0.4824923	0.5674503	0.5236539	0.617018	0.7830496	0.9262633	0.6992404	0.3482788	0.3894255
928	0.4810743	0.5657572	0.5224273	0.6153092	0.7815843	0.9245908	0.6975192	0.3470601	0.3883439
930	0.4797604	0.5640983	0.5212481	0.6136709	0.7801446	0.9229702	0.6958407	0.3459187	0.3873549
932	0.4784732	0.5624573	0.5201305	0.6120424	0.7787158	0.921406	0.6941817	0.344813	0.3864117
934	0.4773011	0.5608654	0.5191131	0.6105149	0.7773495	0.9197753	0.6926152	0.3438058	0.3855757
936	0.4762527	0.559399	0.5182213	0.6091244	0.7760985	0.9182481	0.6911562	0.3429103	0.3848667
938	0.4752666	0.5579462	0.5173917	0.6077735	0.7748353	0.9166807	0.6897258	0.3420547	0.3842316
940	0.4743939	0.5565468	0.5166896	0.6064948	0.7736334	0.9151207	0.6883742	0.3412835	0.383708
942	0.4736973	0.5552911	0.5161586	0.6054077	0.7725978	0.9137545	0.6871845	0.3406469	0.3833456
944	0.4731369	0.5541152	0.5157539	0.6044244	0.7716272	0.9123992	0.6860791	0.3400868	0.3831187
946	0.4727297	0.5530114	0.5155347	0.603586	0.770741	0.9110714	0.6851138	0.3396524	0.3830596
948	0.4724929	0.5520268	0.5154728	0.6028777	0.7699631	0.9098408	0.6842603	0.3393104	0.383148
950	0.4723983	0.5511472	0.5155752	0.6023258	0.7693163	0.90867	0.6835186	0.3390722	0.3833656

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	127	128	129	130	131	132	133	134	135
Sample Numb	"0106c"	"0107c"	"0110c"	"0112c"	"0114c"	"0116c"	"0117c"	"0118c"	"0120c"
400	0.8967098	0.7267665	0.7983993	0.8181554	0.7348812	0.7411618	0.9058273	0.6984425	0.6506312
402	0.9291005	0.7585692	0.8297536	0.8545716	0.7676251	0.7710291	0.9402828	0.7268523	0.6754829
404	0.9597167	0.7897521	0.8620487	0.8893968	0.8002987	0.7987614	0.9740132	0.7533679	0.6979833
406	0.987653	0.8187798	0.8904846	0.9225255	0.8278601	0.826354	1.0059154	0.7796659	0.7171624
408	1.0151682	0.8442761	0.9162674	0.9526739	0.8521066	0.8501428	1.0345051	0.802467	0.7345564
410	1.0396972	0.8669857	0.9401493	0.9804428	0.8757871	0.8701409	1.060028	0.8230605	0.7506731
412	1.0612092	0.888361	0.9617865	1.0042777	0.8966114	0.8891309	1.0846605	0.8419627	0.763352
414	1.0821331	0.9073435	0.9812949	1.02555	0.9151742	0.9064512	1.1054232	0.8568942	0.7732751
416	1.0975225	0.9239373	0.9985501	1.0442747	0.929836	0.9220517	1.124377	0.8699386	0.7820301
418	1.1098121	0.9369624	1.0128421	1.061481	0.9418451	0.9342151	1.1403675	0.8797811	0.7882216
420	1.1215382	0.9493905	1.0244632	1.0760324	0.9550589	0.9455758	1.1546811	0.8901207	0.7930796
422	1.1306021	0.9594404	1.0350729	1.0902047	0.9637157	0.9558498	1.1675603	0.8964491	0.7960725
424	1.1374419	0.9689993	1.0444314	1.1011387	0.9703631	0.9632739	1.1790205	0.9021484	0.7980289
426	1.1459534	0.9764988	1.0526667	1.112628	0.9766356	0.9689518	1.189733	0.9060928	0.8041145
428	1.1525347	0.9841119	1.0602207	1.1221411	0.9818717	0.9730785	1.1982191	0.9086437	0.8071631
430	1.1569221	0.9882151	1.0665519	1.1282243	0.9855617	0.9772467	1.2048091	0.9093533	0.7995282
432	1.1607184	0.9927354	1.0714401	1.1353533	0.9880984	0.9787283	1.2121835	0.9102131	0.7964283
434	1.1635311	0.9958786	1.076353	1.1404297	0.9894606	0.978714	1.2174404	0.9097012	0.7930648
436	1.1646047	0.9970198	1.0794864	1.1436419	0.9893047	0.9771876	1.2198308	0.9111853	0.7887317
438	1.1654863	0.9982241	1.0819759	1.1479585	0.9891137	0.9764464	1.222801	0.9145435	0.7848823
440	1.1659791	0.9985315	1.0843894	1.149655	0.9865006	0.9717913	1.2242854	0.909875	0.7805222
442	1.16483	0.9977589	1.0859554	1.1509354	0.9841769	0.9675071	1.2251472	0.8989376	0.7751255
444	1.1623554	0.9969116	1.0862685	1.1519837	0.9814968	0.9628083	1.2255248	0.8907984	0.7692912
446	1.1602026	0.9949809	1.0854175	1.1512215	0.9776772	0.95648	1.2244868	0.8855823	0.7631034
448	1.1565738	0.9928536	1.0853333	1.1504923	0.9738034	0.950671	1.2237235	0.8796413	0.7574095
450	1.1520157	0.9900013	1.0851476	1.1482211	0.9698415	0.9472219	1.2227437	0.8724961	0.7507351
452	1.1482654	0.9877723	1.0829492	1.1451726	0.9654076	0.9450209	1.2192664	0.8657004	0.7443226
454	1.1441988	0.9849644	1.0809944	1.1410705	0.9605424	0.9430183	1.2171886	0.8597154	0.7379488
456	1.14044	0.9819009	1.0788238	1.1382122	0.9564816	0.9364988	1.2139666	0.8533629	0.7328237
458	1.135994	0.9782031	1.0766184	1.1337669	0.952269	0.9254665	1.2103598	0.8481258	0.7266502
460	1.1307144	0.9748616	1.0744282	1.1285636	0.9480013	0.9162902	1.2067659	0.8413919	0.7186161
462	1.125551	0.9710269	1.0715976	1.1227975	0.9439236	0.908312	1.2019771	0.8335676	0.7115036
464	1.1200407	0.9662266	1.0674868	1.1180894	0.9384847	0.9014807	1.1961653	0.8265878	0.704341
466	1.114072	0.9619608	1.064151	1.1113071	0.9315891	0.895524	1.190891	0.8194759	0.6972385
468	1.1079949	0.9568955	1.0600758	1.1041267	0.9243178	0.8891498	1.1853142	0.8121922	0.6901438
470	1.1007775	0.9518843	1.0547602	1.0962299	0.9155332	0.8830028	1.1786246	0.8046186	0.6824489
472	1.0947227	0.9458563	1.0499854	1.0882781	0.9071034	0.8767606	1.172189	0.7975771	0.6756738
474	1.0872712	0.9398451	1.0437396	1.0784419	0.8991703	0.8696072	1.1634266	0.7900597	0.6681973
476	1.0793629	0.9327856	1.0375969	1.0686541	0.8913398	0.862753	1.1552627	0.7820526	0.6608015
478	1.0718315	0.92589	1.0305831	1.0587573	0.8829026	0.855733	1.1465423	0.7750923	0.6537203
480	1.0635865	0.9185147	1.0239723	1.0482447	0.8738925	0.8481225	1.137154	0.7663681	0.6461965
482	1.0544205	0.9105008	1.0159851	1.0376219	0.8652514	0.8411254	1.1273439	0.7590405	0.6396179
484	1.0466571	0.9019604	1.0080737	1.0274847	0.8570303	0.8334335	1.1174874	0.7514846	0.6328733
486	1.0373766	0.8935567	0.9989542	1.0149021	0.8477979	0.8255146	1.1064693	0.7432363	0.6261075
488	1.0282526	0.8841656	0.990711	1.0029867	0.8385548	0.8177193	1.0967115	0.7350206	0.6192538
490	1.0197854	0.8757992	0.9820577	0.9918202	0.83031	0.8103154	1.086885	0.7273977	0.612198
492	1.0111399	0.8661098	0.9723154	0.979261	0.820738	0.8022616	1.07653	0.7193025	0.6058729
494	1.0016596	0.8565708	0.962782	0.9668046	0.8106239	0.794021	1.0641946	0.7105062	0.5990166
496	0.9930338	0.846772	0.9534692	0.9549652	0.8007824	0.7857246	1.0541662	0.7019405	0.5924686
498	0.9855431	0.837455	0.9445418	0.9425529	0.7916852	0.7779664	1.0432017	0.6943446	0.5867954
500	0.9772314	0.8288661	0.934948	0.9303632	0.7816379	0.7693161	1.0313964	0.6858185	0.5803062
502	0.9697289	0.8194273	0.9260794	0.9185475	0.7719061	0.760326	1.0209036	0.6772158	0.5740521
504	0.9615892	0.8104987	0.9171445	0.9061467	0.7633247	0.7525542	1.0101976	0.6691187	0.5679579
506	0.9552152	0.8016824	0.907902	0.8952533	0.7559723	0.7444609	1.0002973	0.6604199	0.5615946
508	0.9486108	0.7929987	0.89963	0.8850181	0.7481512	0.7377023	0.9892803	0.6526303	0.5556583
510	0.9423668	0.784595	0.8904463	0.8745623	0.7404838	0.7304049	0.9789175	0.6449384	0.5502914
512	0.9373534	0.7774818	0.8821216	0.8642664	0.7309799	0.7224441	0.9700849	0.6372997	0.5449121
514	0.9316477	0.7707014	0.8745295	0.8542225	0.7196335	0.7149993	0.9602507	0.6289753	0.5396454
516	0.9255402	0.7636966	0.86786	0.8460499	0.7113804	0.7093604	0.9521732	0.6220393	0.5349465
518	0.9215819	0.7558734	0.8612234	0.8394433	0.7041597	0.7036334	0.9448023	0.615939	0.5306549

520	0.9173307	0.7473338	0.8551452	0.8313056	0.6984915	0.6995967	0.9383011	0.6109862	0.526352
522	0.9145592	0.7409562	0.850116	0.8256198	0.6918513	0.6950387	0.9327064	0.6039906	0.5231245
524	0.9126163	0.7346063	0.8464285	0.8216327	0.6873678	0.6910253	0.9279289	0.5987986	0.5195553
526	0.9104223	0.7292684	0.8440698	0.8201073	0.6819641	0.6870925	0.9229089	0.5934784	0.5159351
528	0.9094661	0.7248953	0.8456011	0.8177744	0.6771457	0.6846271	0.9197985	0.5895627	0.513363
530	0.9077644	0.7206907	0.8433717	0.8120906	0.6738122	0.6826555	0.9162474	0.5855488	0.5118047
532	0.906837	0.7162091	0.8377783	0.8104764	0.6695427	0.6818581	0.9121974	0.5817252	0.5089346
534	0.9077109	0.7130823	0.8373991	0.8081478	0.6661091	0.6790392	0.9102463	0.5791077	0.5071523
536	0.9133992	0.7096299	0.835333	0.8033487	0.6618502	0.6769229	0.908592	0.5758497	0.5049567
538	0.9145722	0.7062031	0.8324328	0.8004707	0.6581012	0.6755013	0.9095249	0.5725397	0.5033782
540	0.906557	0.7024406	0.8304972	0.7968463	0.6544945	0.6737698	0.9056115	0.569315	0.5016648
542	0.905637	0.6986135	0.82807	0.7935946	0.6506171	0.6722498	0.9057261	0.5662024	0.4999781
544	0.9019455	0.6944592	0.8258053	0.7899752	0.6477503	0.6700574	0.8992193	0.5633214	0.4979912
546	0.900872	0.6901274	0.8227764	0.785849	0.6432334	0.6698077	0.8941571	0.5602255	0.4958912
548	0.8995216	0.6862331	0.8213193	0.7822808	0.6389256	0.6665573	0.890614	0.5568937	0.4943215
550	0.8961304	0.6815426	0.8174288	0.7778897	0.6343677	0.6641438	0.886342	0.5538425	0.4929342
552	0.8937284	0.6766758	0.8144881	0.7738419	0.6299115	0.6619573	0.8818823	0.5503216	0.4904669
554	0.8901162	0.6713988	0.8103977	0.7690222	0.6254491	0.6586725	0.8775334	0.5481608	0.4886022
556	0.8881513	0.6657643	0.8063791	0.7642329	0.6205706	0.6557903	0.873464	0.5439968	0.4871034
558	0.8851236	0.6608629	0.8026476	0.7602065	0.6160653	0.6529069	0.8688294	0.5411153	0.484783
560	0.8805733	0.6549331	0.7983773	0.7549868	0.6105783	0.6491326	0.8638687	0.5374104	0.4827461
562	0.875676	0.6494492	0.7953296	0.7507962	0.6060094	0.6458246	0.8585941	0.5342267	0.4809487
564	0.8725734	0.6439335	0.7905268	0.7458988	0.6013888	0.6419606	0.8543355	0.5312252	0.4794835
566	0.8679554	0.6385559	0.786041	0.7411541	0.5959789	0.6390686	0.8494129	0.5276834	0.4774929
568	0.8640782	0.6328958	0.7815421	0.7361172	0.5910679	0.6343772	0.8442375	0.5246034	0.4758593
570	0.8598547	0.626968	0.7764114	0.7312086	0.5861669	0.6303816	0.8397064	0.5213289	0.4741628
572	0.856504	0.6215909	0.7717385	0.726041	0.5810766	0.6260931	0.8349897	0.5181193	0.4723466
574	0.8507118	0.6158884	0.7668873	0.7207854	0.5761719	0.6216826	0.8293118	0.5149797	0.470691
576	0.8458902	0.6101093	0.7617853	0.7149359	0.5713652	0.6168709	0.8240259	0.5114987	0.4695383
578	0.8414975	0.604703	0.7563085	0.7100236	0.5665568	0.6125419	0.8187312	0.5084968	0.4675742
580	0.8367588	0.5995181	0.7509737	0.7046582	0.5619018	0.6083391	0.8136388	0.5055569	0.4660383
582	0.8324286	0.593816	0.7455527	0.6985426	0.5567842	0.6031764	0.8081967	0.5022802	0.4641706
584	0.8271355	0.5887184	0.7400969	0.6929885	0.5523138	0.5985865	0.8029072	0.4991137	0.4625197
586	0.8231705	0.5836471	0.7347001	0.6876978	0.5481009	0.5941759	0.7975328	0.4961493	0.460854
588	0.8180943	0.5786873	0.7292193	0.6821182	0.5435117	0.5893422	0.7928699	0.493024	0.4592642
590	0.814607	0.5740935	0.7237256	0.6769093	0.5391496	0.585152	0.7877476	0.4901944	0.4577225
592	0.8094437	0.5694549	0.7182146	0.6722205	0.5348368	0.5807729	0.7828306	0.4873697	0.4561729
594	0.8051854	0.5649693	0.7129146	0.6674521	0.53087	0.5763714	0.7780336	0.4846349	0.4546703
596	0.8007433	0.5605834	0.7076589	0.6628882	0.5267622	0.5721852	0.7730212	0.4820803	0.4530726
598	0.7964758	0.556534	0.7025065	0.6587904	0.5229634	0.5683024	0.7685834	0.4798079	0.4515577
600	0.7924456	0.5526972	0.6977927	0.6550756	0.51931	0.5645472	0.7644925	0.4774939	0.4502895
602	0.7884743	0.5489545	0.69282	0.6510106	0.5157112	0.5610046	0.7601646	0.4755108	0.448857
604	0.7846813	0.5455302	0.6885093	0.6476111	0.5122983	0.5577662	0.7560555	0.4734955	0.447609
606	0.7811112	0.5421991	0.6841176	0.6442287	0.5092431	0.5547202	0.7522506	0.4718632	0.4466412
608	0.7775491	0.5389323	0.6796653	0.6410233	0.5060782	0.5515321	0.7483854	0.4703802	0.4452588
610	0.7738302	0.5356052	0.6754225	0.6380373	0.5032122	0.548568	0.7452805	0.4685006	0.444039
612	0.7706796	0.5329653	0.6715774	0.6352353	0.5006443	0.5459778	0.7414421	0.4669626	0.4427732
614	0.7676121	0.5302224	0.667706	0.6325336	0.4978108	0.5432711	0.7382931	0.4653984	0.4416681
616	0.7641929	0.5272776	0.6638489	0.6295356	0.4950435	0.5409548	0.734864	0.4637144	0.4403623
618	0.7609988	0.5245337	0.660315	0.626802	0.4925766	0.538177	0.7318122	0.4622112	0.4391865
620	0.758042	0.5217669	0.656966	0.6239473	0.4900666	0.5357263	0.728829	0.4605942	0.4380234
622	0.7548503	0.5190015	0.6536091	0.6211138	0.4878288	0.5331098	0.7258233	0.4590302	0.4369704
624	0.7518333	0.5163108	0.6503587	0.6182798	0.4854619	0.5306338	0.7230098	0.4573889	0.4358164
626	0.7488152	0.5136551	0.6471968	0.6155224	0.4833117	0.5281498	0.7201416	0.4557575	0.4346633
628	0.745873	0.5110488	0.644163	0.6124441	0.4811916	0.5257269	0.7172043	0.4541185	0.43352
630	0.7428051	0.5084683	0.6410273	0.6095583	0.4790028	0.5232264	0.7143024	0.4523846	0.4324897
632	0.7397676	0.505929	0.6376978	0.6064609	0.4768965	0.5209621	0.7113585	0.4507069	0.4313659
634	0.7368054	0.5035576	0.6345342	0.6036884	0.4748645	0.5188851	0.7085099	0.4490244	0.4303034
636	0.7338142	0.5010628	0.6313454	0.6007946	0.4728627	0.5165991	0.7059833	0.4473862	0.4292714
638	0.7313848	0.498718	0.6282248	0.5979829	0.4709079	0.5144356	0.7028916	0.4458684	0.4282471
640	0.7283226	0.4966156	0.6251719	0.595427	0.4691055	0.5126283	0.7000315	0.4444309	0.4272855
642	0.7254283	0.4944174	0.6221449	0.5929204	0.467315	0.510738	0.6972398	0.4429784	0.4263099
644	0.7224793	0.4923925	0.6191282	0.5904408	0.4655265	0.5088748	0.6943676	0.4416192	0.4253644
646	0.7197903	0.4905715	0.6162989	0.5882108	0.4638871	0.5073248	0.691829	0.440387	0.4244921
648	0.7170468	0.4887452	0.6134792	0.5859499	0.4622383	0.5058123	0.6891093	0.4392176	0.4236677
650	0.7143167	0.4869971	0.6105771	0.5837803	0.4606908	0.5043155	0.6863464	0.4381265	0.4228238
652	0.711626	0.4853002	0.6078953	0.5817339	0.4592496	0.502912	0.6837621	0.437054	0.4220447
654	0.7089884	0.4836969	0.6052197	0.5797241	0.4578685	0.5016092	0.6812165	0.4360579	0.4212777
656	0.7062533	0.4820715	0.602461	0.5776085	0.4563731	0.5002831	0.6787142	0.4350573	0.4204869
658	0.7035711	0.4804972	0.5997485	0.5755675	0.4549572	0.4989691	0.6761264	0.4340946	0.4197805
660	0.7010203	0.478964	0.5971022	0.5735945	0.4536386	0.4978202	0.6735511	0.4331896	0.419107
662	0.6983074	0.4773815	0.5944728	0.5714838	0.452305	0.4966269	0.6709675	0.4322433	0.4184803
664	0.6955627	0.4757767	0.5918005	0.5692808	0.450898	0.495348	0.6683036	0.4314294	0.4177028
666	0.6928363	0.4741708	0.5891059	0.5670573	0.4496034	0.4941566	0.66572	0.4304826	0.4169782

668	0.6901025	0.4725557	0.5864921	0.5648381	0.4483867	0.4929178	0.6631749	0.4295087	0.4162677
670	0.6872509	0.4708392	0.5836684	0.5624196	0.4469189	0.4916131	0.6604784	0.4284567	0.4154907
672	0.684513	0.4691644	0.5809373	0.5600296	0.4455553	0.490393	0.6578191	0.4274345	0.4147596
674	0.6818305	0.4675459	0.5784049	0.5577443	0.4442711	0.4892429	0.6554055	0.4264749	0.4141522
676	0.6791026	0.4658455	0.5757847	0.5553647	0.4429487	0.4880703	0.652905	0.4254869	0.4134643
678	0.6763593	0.4640903	0.5731342	0.552929	0.4416735	0.4868207	0.6503026	0.4244396	0.4127716
680	0.6738767	0.4623924	0.5706692	0.5505807	0.4404252	0.4856065	0.6479317	0.4234297	0.4121012
682	0.6712726	0.460723	0.5681739	0.5482439	0.4391744	0.4844309	0.6455619	0.4224257	0.4114279
684	0.6686668	0.4590103	0.565684	0.5458796	0.4379463	0.4832191	0.6431967	0.4214078	0.4108255
686	0.6661565	0.4573358	0.5632769	0.5436823	0.4367485	0.482043	0.6409696	0.4204871	0.4102188
688	0.6636817	0.455763	0.5609593	0.5414996	0.4356467	0.4809022	0.6387613	0.4195355	0.4096133
690	0.6612349	0.4541539	0.5587233	0.5393152	0.434535	0.4797593	0.6366466	0.4186296	0.4090513
692	0.6588132	0.4526203	0.5564155	0.5371349	0.4334682	0.4786485	0.6344905	0.4177417	0.4085123
694	0.6565647	0.4511149	0.5541874	0.5350666	0.4324506	0.4775774	0.6324514	0.4169562	0.4080383
696	0.6543465	0.4497283	0.5520248	0.5331141	0.4314887	0.476611	0.6305638	0.4162076	0.4075489
698	0.6520779	0.4483293	0.5497751	0.5311286	0.4305666	0.4755434	0.6286035	0.415484	0.4071186
700	0.6498508	0.4469419	0.5476056	0.5291778	0.4296778	0.4745478	0.6266952	0.414793	0.4066664
702	0.6478252	0.4457297	0.5455574	0.52741	0.4288818	0.4736316	0.6251179	0.4142102	0.4063701
704	0.6457325	0.4444691	0.5434438	0.5255846	0.4280776	0.4726903	0.6233029	0.4136999	0.4060336
706	0.6437895	0.4432539	0.5412877	0.5238284	0.4273453	0.4717993	0.621542	0.4131566	0.405672
708	0.6418668	0.4421625	0.5392717	0.5221963	0.4266754	0.4709516	0.6199343	0.4127153	0.4054021
710	0.639972	0.4410995	0.5372544	0.5205553	0.4260118	0.4701413	0.6183283	0.4123345	0.4051453
712	0.6381086	0.4400277	0.5351897	0.518936	0.425412	0.4693654	0.6167384	0.4119826	0.4049304
714	0.636289	0.439022	0.5331676	0.517404	0.4248457	0.4686392	0.6152726	0.4116894	0.4047239
716	0.6345848	0.4380503	0.5311795	0.5159281	0.4243394	0.4679319	0.6138492	0.4114519	0.4045895
718	0.6328746	0.4371073	0.5292059	0.5144655	0.4238761	0.4672431	0.6124545	0.4112894	0.4044594
720	0.6311432	0.4361904	0.527234	0.5130217	0.423456	0.4665788	0.6110818	0.4111516	0.4043907
722	0.6295164	0.4352982	0.5252383	0.5116603	0.4230627	0.4659537	0.6097891	0.4110407	0.4043032
724	0.6279483	0.4344352	0.5233612	0.5103672	0.422716	0.4653696	0.6085418	0.4110082	0.4042584
726	0.6263589	0.4335741	0.5213767	0.5090485	0.4224286	0.4647621	0.607296	0.4109983	0.4042496
728	0.6248475	0.4327161	0.5193803	0.5077617	0.4221534	0.4642189	0.6060824	0.4110245	0.4042778
730	0.6233709	0.4318916	0.5174962	0.5065838	0.4219342	0.463691	0.6049634	0.4110977	0.4044201
732	0.6218711	0.4310183	0.5154862	0.5053638	0.4217591	0.4631495	0.6038206	0.4112646	0.4044742
734	0.6203432	0.4301524	0.5134426	0.5041627	0.4216024	0.4626276	0.6026663	0.4113653	0.4045557
736	0.6189392	0.4293278	0.5114943	0.5030246	0.4214866	0.4621205	0.6015854	0.4114703	0.404615
738	0.6174983	0.4284241	0.5094788	0.5019091	0.4213447	0.4616372	0.6004956	0.4115807	0.4047058
740	0.6160131	0.4275076	0.5073959	0.5007775	0.4212168	0.4611451	0.5993608	0.4117121	0.4047889
742	0.6145831	0.4265472	0.5053447	0.4996755	0.4211115	0.4606475	0.5982751	0.4118184	0.4048781
744	0.6131143	0.4255651	0.5032432	0.4985838	0.4209915	0.4601874	0.5972254	0.4119537	0.4049824
746	0.6116503	0.4245563	0.5011262	0.497502	0.4208969	0.4597824	0.5961358	0.4120566	0.4051205
748	0.6102247	0.4235101	0.4989489	0.4964497	0.4208106	0.4592746	0.5950067	0.4122043	0.4052312
750	0.6087863	0.422487	0.4968325	0.495436	0.4207605	0.4587916	0.593944	0.4123067	0.4053756
752	0.6074042	0.4214914	0.4947657	0.4944845	0.4207177	0.4583171	0.5929085	0.4124454	0.4055377
754	0.6060054	0.4204745	0.4926361	0.4935628	0.4207062	0.4578557	0.5918647	0.4125922	0.4057508
756	0.6046664	0.4194791	0.4905679	0.4927044	0.4207216	0.4574116	0.5908831	0.4127385	0.405979
758	0.6034633	0.4185891	0.4886634	0.4919409	0.4207976	0.457008	0.589967	0.4128916	0.4062239
760	0.6021565	0.4176615	0.4867677	0.4911655	0.4208654	0.456566	0.5890474	0.4130508	0.4065103
762	0.6008511	0.4167399	0.48488	0.4903996	0.4209297	0.4561831	0.5881845	0.4131668	0.4067941
764	0.5996044	0.4158764	0.4832085	0.4897419	0.4209879	0.4558162	0.5873659	0.4132462	0.407077
766	0.5983087	0.4149854	0.4815301	0.4890835	0.4210548	0.4555224	0.5866152	0.4133322	0.4073724
768	0.5969414	0.4140757	0.4798532	0.4883226	0.4211448	0.4552889	0.5858847	0.4134173	0.4076815
770	0.5955842	0.4132085	0.4781677	0.4875151	0.4211662	0.4550685	0.5852137	0.4135618	0.4079909
772	0.5941553	0.4122892	0.4763708	0.4866476	0.421196	0.4546576	0.5844365	0.4137006	0.4083096
774	0.5926645	0.4113875	0.4744282	0.4858458	0.4212195	0.4541586	0.583527	0.413873	0.4086397
776	0.5911817	0.4105109	0.4724658	0.4851007	0.4212608	0.4535281	0.5825059	0.4141088	0.4089458
778	0.5898645	0.40977	0.470606	0.4844617	0.4214403	0.452963	0.5815473	0.4143063	0.4092323
780	0.5886289	0.4091017	0.4688622	0.4838711	0.421631	0.4524093	0.5804878	0.4145124	0.409494
782	0.5873117	0.4084617	0.467135	0.4832287	0.4217889	0.4518523	0.5794228	0.4147099	0.4097424
784	0.5861161	0.4078968	0.4655748	0.4826598	0.4219819	0.4513602	0.5785038	0.4148929	0.4100233
786	0.5849696	0.4073797	0.4641556	0.482106	0.4221353	0.4508997	0.5776821	0.4150458	0.4102925
788	0.5837765	0.4068613	0.4627252	0.4815425	0.4222779	0.4504407	0.5768796	0.4151866	0.4105757
790	0.5825739	0.4063481	0.4613197	0.4809945	0.4224033	0.4499664	0.5760869	0.4153027	0.4108498
792	0.581457	0.4059042	0.4600463	0.4804846	0.4225119	0.4495258	0.5753361	0.41543	0.4111113
794	0.5803173	0.4054639	0.4587626	0.4799819	0.4226266	0.4490669	0.5745834	0.4155523	0.4113632
796	0.5791818	0.4050387	0.4574752	0.479479	0.4227302	0.4485813	0.5737981	0.4156598	0.4116165
798	0.5780271	0.4046306	0.4562612	0.4789786	0.4228148	0.4481151	0.5730259	0.4157659	0.4118374
800	0.5768825	0.4042237	0.4550645	0.4784598	0.422879	0.447623	0.5722419	0.4158398	0.4120414
802	0.5757364	0.4038377	0.4538912	0.4779456	0.422934	0.4471422	0.5714477	0.4159172	0.412215
804	0.5745788	0.4034638	0.4527303	0.4774238	0.422985	0.4466796	0.5706559	0.4159812	0.4123897
806	0.5734439	0.4030899	0.4516426	0.4769045	0.423005	0.4461905	0.5698737	0.4160271	0.4125142
808	0.5723318	0.4027272	0.4506003	0.4763845	0.4229947	0.4457198	0.5690906	0.4160478	0.4126185
810	0.57117	0.4023504	0.4495454	0.4758223	0.4229676	0.4452327	0.568301	0.4160525	0.4126984
812	0.5700306	0.4019606	0.4484941	0.4752497	0.4228918	0.4447063	0.5674642	0.4160201	0.4127247
814	0.5689123	0.4015702	0.4475325	0.4746861	0.4227668	0.4442175	0.5666435	0.4159759	0.412699

816	0.5677526	0.4011578	0.4465169	0.4740526	0.4226345	0.4436672	0.5657814	0.4158613	0.4126351
818	0.5665561	0.4007133	0.4455304	0.4733984	0.4224316	0.4431059	0.5648875	0.4157202	0.412523
820	0.5654565	0.4002739	0.444614	0.4727463	0.422215	0.4425575	0.5640423	0.4155505	0.4123713
822	0.5643288	0.399802	0.4436882	0.4720628	0.4219312	0.4419957	0.5631658	0.4153386	0.4121604
824	0.563145	0.3992865	0.4427401	0.47131	0.4216101	0.4413536	0.5622256	0.4150681	0.4118937
826	0.5619948	0.3987449	0.4418084	0.4705379	0.4212359	0.4406947	0.5612855	0.4147614	0.41158
828	0.5608369	0.3981706	0.4408972	0.4697476	0.4208074	0.4400262	0.5603381	0.4144084	0.411218
830	0.5596569	0.3975528	0.4399489	0.4688998	0.4203082	0.4392893	0.5593458	0.4139962	0.4107746
832	0.5584247	0.396872	0.4389758	0.4679784	0.4197469	0.4384902	0.5582862	0.4134971	0.4102462
834	0.5571771	0.396139	0.4380084	0.4670054	0.4191105	0.4376662	0.5571887	0.4129359	0.4096629
836	0.5559305	0.3953761	0.4370218	0.4660023	0.4184307	0.4368012	0.5560609	0.4123216	0.4090326
838	0.5545572	0.3945052	0.435966	0.4648799	0.4176252	0.4358186	0.5548236	0.4115822	0.4082876
840	0.5531729	0.3935828	0.4348583	0.4637139	0.4167476	0.4347872	0.5535331	0.4107886	0.4074755
842	0.5517824	0.392621	0.4337749	0.4624976	0.4158224	0.4337298	0.5522324	0.40993	0.4066072
844	0.5502968	0.3915722	0.4326236	0.4611901	0.4148023	0.4325953	0.550819	0.4089823	0.4056566
846	0.5487594	0.3904344	0.4314113	0.4597964	0.4136867	0.4313828	0.5493264	0.4079445	0.4046118
848	0.5472118	0.3892789	0.4302008	0.4583787	0.4125428	0.4301413	0.5478169	0.4068736	0.4035478
850	0.5456539	0.3880779	0.4289764	0.4569054	0.411337	0.4288508	0.5462648	0.4057436	0.4024066
852	0.5440097	0.3867602	0.4276626	0.455343	0.4100311	0.4274895	0.5446334	0.4045003	0.401154
854	0.5423256	0.3854221	0.4263383	0.4537191	0.4086736	0.4260889	0.5429381	0.4032204	0.3998693
856	0.5406651	0.3840555	0.4250215	0.4521194	0.4072924	0.4246709	0.5412475	0.401908	0.3985314
858	0.5389965	0.3826573	0.4237127	0.4504753	0.405876	0.4232613	0.5395392	0.4005694	0.3971723
860	0.5372395	0.3811661	0.4223022	0.4486997	0.4043454	0.4217206	0.5377494	0.3991158	0.3956967
862	0.5354944	0.3796591	0.4209014	0.4469367	0.4028001	0.4201903	0.535937	0.3976582	0.3942097
864	0.5337728	0.3781749	0.4195305	0.4452005	0.4012772	0.4186901	0.5341581	0.3962055	0.3927296
866	0.5319833	0.3766096	0.4180912	0.4433543	0.399654	0.417097	0.5322913	0.3946687	0.3911582
868	0.5301635	0.3749855	0.4166084	0.4414908	0.3979678	0.4154459	0.5303717	0.3930683	0.3895177
870	0.5283954	0.3734242	0.4152026	0.4396662	0.3963455	0.4138711	0.528529	0.3915192	0.3879377
872	0.5266097	0.371813	0.4137549	0.4377989	0.3946712	0.4122456	0.5266444	0.3899543	0.3863147
874	0.5247911	0.3701439	0.4122687	0.4358662	0.3929252	0.4105547	0.5247437	0.388296	0.3846023
876	0.5229636	0.3684882	0.4107934	0.433955	0.3911912	0.4088864	0.5228126	0.3866563	0.3829067
878	0.5211827	0.3668551	0.409344	0.4320607	0.3894737	0.4072331	0.5209119	0.3850183	0.3812122
880	0.519365	0.3651925	0.4078908	0.4301535	0.3877163	0.4055676	0.5190021	0.3833629	0.3794995
882	0.5174232	0.3634023	0.4063084	0.4281055	0.3858381	0.4037607	0.5169465	0.3815845	0.3776519
884	0.5156053	0.3617354	0.4048442	0.4261687	0.3840591	0.4020659	0.5150182	0.3799064	0.375903
886	0.5138541	0.3601014	0.4034154	0.4242975	0.3823253	0.4004128	0.5131501	0.3782747	0.3741929
888	0.5119854	0.3583799	0.4019046	0.4223175	0.3805036	0.3986666	0.5111738	0.3765447	0.3723972
890	0.510128	0.3566607	0.4004059	0.420336	0.3786683	0.3969198	0.509192	0.3748325	0.3705989
892	0.5083755	0.3550213	0.3989729	0.418445	0.3769338	0.3952526	0.5073162	0.3731825	0.3688775
894	0.5065558	0.3533274	0.3974916	0.4164975	0.3751359	0.3935335	0.5053819	0.37148	0.3670982
896	0.5047132	0.3515903	0.3959768	0.4144907	0.3732868	0.3917727	0.503407	0.3697309	0.3652698
898	0.5029385	0.3498991	0.3945064	0.4125494	0.3714829	0.3900684	0.5014955	0.3680398	0.3634958
900	0.5011678	0.3482262	0.3930532	0.4106061	0.3696795	0.388351	0.4995825	0.366344	0.3617083
902	0.4993745	0.3464917	0.3915688	0.4086238	0.3678401	0.3866051	0.497638	0.3646188	0.3598896
904	0.4975778	0.3447598	0.3900704	0.4066149	0.3659667	0.3848486	0.4956942	0.3628873	0.3580313
906	0.4958527	0.343066	0.3886347	0.4046839	0.3641676	0.383143	0.4938133	0.3612018	0.3562364
908	0.494163	0.3414168	0.3872526	0.4027792	0.3623949	0.3814825	0.4919897	0.3595738	0.3544638
910	0.4924759	0.3397235	0.3858316	0.40083	0.360562	0.3797884	0.4901617	0.3578825	0.3526156
912	0.4908278	0.3380672	0.3844565	0.3989344	0.358768	0.3781311	0.4883651	0.3562526	0.3508314
914	0.4892966	0.3365425	0.3831706	0.3971745	0.3570889	0.3765815	0.4867066	0.3547209	0.3491361
916	0.4877973	0.3350426	0.3819201	0.3954274	0.3554265	0.3750457	0.4850681	0.3532108	0.3474334
918	0.4863428	0.3335611	0.3807048	0.3937053	0.3537967	0.3735489	0.4834965	0.3517882	0.3457968
920	0.4850382	0.3322001	0.3795971	0.3921544	0.3523105	0.3721532	0.4820676	0.3504303	0.3442409
922	0.4838027	0.3309076	0.3785541	0.3906754	0.3508692	0.3708703	0.4807208	0.3491532	0.3427242
924	0.4826543	0.3296735	0.3776	0.3892528	0.3494764	0.3695807	0.47946	0.3479283	0.3412631
926	0.4815786	0.3285073	0.3766828	0.3879673	0.3481725	0.3683716	0.4782858	0.3467792	0.3398351
928	0.4806775	0.3274675	0.3758722	0.3867827	0.3469723	0.3672581	0.4772788	0.3457364	0.3385369
930	0.4798712	0.3265015	0.3751321	0.3857026	0.3458565	0.3662336	0.476349	0.3447728	0.3372843
932	0.4791338	0.3255757	0.3744467	0.3846679	0.3447754	0.3652189	0.4754939	0.3438551	0.3360571
934	0.4785205	0.3247458	0.3738496	0.3837536	0.3437996	0.3642936	0.4747716	0.3430384	0.334896
936	0.4780407	0.3240206	0.3733552	0.3829921	0.3429443	0.3634838	0.4741834	0.3423328	0.3338498
938	0.4776745	0.3233736	0.3729381	0.3822937	0.3421369	0.362716	0.4736973	0.3416854	0.3328168
940	0.4774584	0.3228101	0.372623	0.3817165	0.341422	0.3620424	0.4733573	0.3411342	0.3318433
942	0.4774248	0.3223867	0.3724571	0.3813182	0.340855	0.3615145	0.4732146	0.3407267	0.3310074
944	0.4775698	0.3220677	0.3724191	0.3810533	0.3403895	0.3610829	0.4732367	0.3404309	0.3302245
946	0.477954	0.3218931	0.3725613	0.3809709	0.340051	0.3607725	0.4734818	0.3402824	0.3295044
948	0.4785219	0.3218311	0.3728422	0.381045	0.3398303	0.3605729	0.4739159	0.3402592	0.3288795
950	0.4792535	0.321888	0.3732554	0.3812611	0.3397272	0.3605012	0.4745115	0.3403447	0.328338

File Name: e:\scald\trim\abc.cal *Spectra and Constituent Data File*
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	136	137	138	139	140	141	142	143	144
Sample Numb	"0201c"	"0202c"	"0204c"	"0205c"	"0208c"	"0209c"	"0210c"	"0211c"	"0213c"
400	0.6817695	0.6323088	0.8130986	0.6779896	0.8264226	0.7922808	0.9696282	0.8556364	0.8576423
402	0.7113407	0.6593454	0.8494992	0.7032267	0.861827	0.826276	1.0056503	0.8901564	0.8907371
404	0.7386358	0.6848963	0.8874227	0.7262977	0.8934631	0.8602573	1.0415342	0.9241224	0.9245247
406	0.7648612	0.707159	0.9172482	0.749171	0.9251377	0.8921628	1.0743451	0.952588	0.9536353
408	0.7883313	0.7266109	0.9471241	0.7695982	0.9543774	0.9230319	1.1038253	0.9782791	0.9813335
410	0.8078472	0.744789	0.9740392	0.7871396	0.9796827	0.948408	1.131822	1.003185	1.0044358
412	0.8249741	0.7607941	0.9991199	0.8035861	1.0027014	0.9718621	1.1608915	1.0243506	1.0269616
414	0.8420819	0.7757846	1.0244501	0.8177739	1.0236958	0.9906198	1.1800529	1.0460042	1.0456135
416	0.8560425	0.7943652	1.0437779	0.8314281	1.0425713	1.0092473	1.201748	1.0613695	1.0649403
418	0.8651362	0.8014599	1.0607688	0.8428172	1.0580393	1.0239756	1.2187499	1.0750008	1.0793613
420	0.8752322	0.8031648	1.0758535	0.8542839	1.0750198	1.0367416	1.2348912	1.0874435	1.0934986
422	0.8831961	0.8061792	1.0889171	0.8664207	1.0867157	1.0499914	1.2500781	1.0988979	1.1053715
424	0.8891563	0.809139	1.0983295	0.8771348	1.0981069	1.0579656	1.2627982	1.1080528	1.1144817
426	0.8945981	0.8097678	1.1073691	0.8805522	1.1076977	1.0655794	1.2735875	1.1157752	1.123749
428	0.9017404	0.8106824	1.1153637	0.8817343	1.1143086	1.0721761	1.2837881	1.1249764	1.1317257
430	0.9097047	0.8113649	1.1217343	0.8793491	1.119627	1.078429	1.2925899	1.1295042	1.1374871
432	0.913972	0.8107906	1.1279937	0.8794796	1.1265191	1.0821695	1.3007791	1.1359036	1.1442964
434	0.9119561	0.8082591	1.1319832	0.8775993	1.1317012	1.0861596	1.3074957	1.13991	1.1495039
436	0.9059373	0.8054041	1.1349266	0.8734041	1.1348269	1.0862091	1.313272	1.1418828	1.1541862
438	0.9032809	0.8024896	1.1362282	0.8675826	1.1390561	1.0868635	1.3171496	1.1455809	1.1571764
440	0.9017425	0.7992178	1.1365728	0.861927	1.1416006	1.0844351	1.3216004	1.1475811	1.1601852
442	0.8992372	0.7951354	1.1354451	0.8547881	1.1422503	1.0820068	1.3262172	1.1475967	1.1612496
444	0.8966652	0.7910594	1.1347125	0.847322	1.1437113	1.0794406	1.325178	1.1485896	1.1624237
446	0.8928857	0.7869183	1.1330929	0.8374792	1.1438293	1.0768777	1.3279809	1.1477971	1.1632841
448	0.8903057	0.7839059	1.130416	0.8292565	1.1422445	1.072031	1.3304942	1.1477847	1.1645582
450	0.8880193	0.7806001	1.1270245	0.8191263	1.1398997	1.0673658	1.3292459	1.1460378	1.1625316
452	0.8848013	0.7758723	1.1222059	0.810484	1.1384495	1.0616385	1.3290452	1.1429397	1.1619252
454	0.8817778	0.7700683	1.1185566	0.8014591	1.1372939	1.054253	1.3278102	1.1415716	1.1618446
456	0.8793352	0.7654425	1.1114267	0.7936963	1.1342014	1.0500809	1.3280952	1.1385537	1.1602894
458	0.876571	0.7598909	1.1057742	0.7861148	1.1314827	1.0428098	1.3236278	1.1333176	1.1576126
460	0.8727791	0.7550438	1.0998077	0.7775266	1.1266587	1.0359092	1.322064	1.1305985	1.156404
462	0.8703191	0.7498809	1.0940777	0.7693245	1.1232812	1.02877	1.3186029	1.1261448	1.1538708
464	0.8662836	0.7445416	1.0869586	0.7616783	1.1189803	1.0207454	1.3154787	1.1218259	1.1498343
466	0.8630772	0.7392951	1.0800378	0.7544584	1.1151924	1.0138487	1.310608	1.116273	1.1461139
468	0.8573686	0.7336626	1.0711997	0.7481766	1.1094084	1.0058632	1.3066375	1.1109413	1.1412238
470	0.8531492	0.7275254	1.0633175	0.7412183	1.1026111	0.996719	1.2995913	1.1053021	1.1357982
472	0.8474907	0.7216573	1.053817	0.7341438	1.0974263	0.988342	1.2958275	1.09861	1.1306813
474	0.841794	0.7155551	1.044449	0.7273812	1.0904086	0.9789166	1.2891879	1.0916326	1.1245769
476	0.8356993	0.7092999	1.0354778	0.7208703	1.0818347	0.9694948	1.2794486	1.0835764	1.116829
478	0.8294923	0.7025868	1.0258303	0.7147943	1.0748987	0.9596596	1.2736325	1.0753263	1.1087549
480	0.8228333	0.6959527	1.0148134	0.7082984	1.0667197	0.9491446	1.2630582	1.0677423	1.0998445
482	0.8156949	0.6896291	1.0048053	0.7015674	1.059652	0.9394442	1.2533059	1.0588521	1.0913551
484	0.8087353	0.6825333	0.9926985	0.6954755	1.0503688	0.9289156	1.2423924	1.0495806	1.0823153
486	0.8002454	0.6752199	0.9817978	0.6883506	1.0411354	0.9183606	1.2335663	1.0410732	1.0734854
488	0.7916088	0.6664366	0.9699613	0.6814812	1.0310044	0.907445	1.2208209	1.0307511	1.060632
490	0.7839933	0.6596506	0.9583198	0.6759482	1.0235772	0.8977369	1.2117558	1.0222913	1.0521876
492	0.7749253	0.6513162	0.9460942	0.6684641	1.0144122	0.8862308	1.1998316	1.0109311	1.0418527
494	0.7663358	0.6440724	0.9334502	0.6614239	1.0053748	0.8756838	1.1874816	1.0015538	1.0311085
496	0.7568868	0.6359497	0.9206916	0.6536933	0.9967132	0.8657197	1.1758684	0.9914522	1.0197606
498	0.749321	0.6289505	0.9094252	0.647263	0.9893531	0.8556316	1.1654788	0.9833677	1.009227
500	0.739986	0.6214787	0.8972137	0.6399696	0.9799692	0.8469057	1.1542716	0.9738874	0.9993644
502	0.7311779	0.6141652	0.885921	0.6321021	0.9735761	0.8390947	1.1427466	0.9649451	0.9885264
504	0.7218859	0.6063704	0.8743504	0.6253483	0.9661629	0.8331372	1.1329226	0.9574274	0.9780997
506	0.7142707	0.5998118	0.8646175	0.617943	0.9585429	0.8269525	1.1228957	0.9490465	0.9679095
508	0.7048498	0.5927753	0.8539576	0.6102503	0.9513783	0.8190011	1.1124896	0.9399713	0.9572389
510	0.6947846	0.5857148	0.8437213	0.6035202	0.944615	0.8062894	1.1012043	0.9328066	0.9467065
512	0.6860515	0.5783706	0.8347497	0.5978604	0.9378077	0.7944245	1.0930731	0.9253415	0.938427
514	0.6777328	0.5711939	0.8269475	0.5928962	0.9319845	0.7820039	1.0826691	0.918247	0.9314559
516	0.6699342	0.5645664	0.818912	0.5872149	0.9265133	0.7742609	1.0747752	0.912971	0.9235886
518	0.6635493	0.5594509	0.8114062	0.5827945	0.9227275	0.7685686	1.0698639	0.9073166	0.9186738

520	0.6556461	0.5524436	0.8057629	0.5790564	0.9191324	0.7615921	1.0613754	0.9024101	0.9122831
522	0.6501686	0.545908	0.8009193	0.5760522	0.9174467	0.755747	1.0548375	0.8983088	0.9059536
524	0.6464486	0.5400391	0.7993855	0.5732251	0.9158655	0.7522098	1.0483968	0.896192	0.902637
526	0.6401293	0.5351151	0.8025205	0.5701967	0.9141827	0.7496586	1.0427973	0.8939263	0.8989136
528	0.6358988	0.5295499	0.7935969	0.5683247	0.9127027	0.745398	1.040749	0.894172	0.8971552
530	0.6311763	0.5237926	0.7880811	0.5675306	0.9127983	0.7428529	1.0377898	0.901287	0.9005062
532	0.6276218	0.5186524	0.7858611	0.5655215	0.9119722	0.7402639	1.0344617	0.8980445	0.9047679
534	0.6229246	0.5130041	0.7833611	0.5641443	0.9131934	0.7383384	1.0315105	0.8911244	0.8945037
536	0.6188632	0.5081835	0.7819557	0.5632883	0.912089	0.7369578	1.0298975	0.889205	0.8914061
538	0.6166539	0.503087	0.7790478	0.5624177	0.9119802	0.7345371	1.0276148	0.8861091	0.8887543
540	0.6114671	0.498078	0.7766724	0.5613935	0.9133784	0.7315084	1.025298	0.8851901	0.8858021
542	0.6065733	0.4931036	0.7748321	0.560465	0.9190502	0.7291112	1.021659	0.8847791	0.8845323
544	0.6027836	0.4879328	0.7730822	0.5596192	0.9095918	0.7268232	1.0190401	0.8801519	0.8808941
546	0.5978591	0.4830213	0.7705672	0.5588352	0.9059509	0.7237833	1.0159441	0.8774218	0.8780079
548	0.5934492	0.4774877	0.767286	0.5576606	0.9025264	0.7205745	1.0123937	0.8742195	0.8746193
550	0.5885249	0.4725034	0.7636705	0.5564405	0.8991545	0.7184395	1.009517	0.8721018	0.8714158
552	0.5834444	0.4669252	0.7613665	0.5550674	0.8951777	0.7144101	1.0097409	0.8688949	0.8695369
554	0.5783269	0.4616643	0.7575932	0.5533333	0.8905009	0.7103317	1.0048605	0.8637916	0.8633158
556	0.5735592	0.4563306	0.7536702	0.5510345	0.8854752	0.7066863	0.9965164	0.859144	0.8587261
558	0.5681967	0.4512631	0.7506814	0.5485914	0.8809772	0.7028478	0.9915015	0.8547233	0.8540919
560	0.5627913	0.4459645	0.7461112	0.5458065	0.8759261	0.698649	0.9854214	0.8497484	0.8493392
562	0.5571472	0.4409461	0.7418845	0.5426249	0.8695574	0.694827	0.9814054	0.8452806	0.844686
564	0.5518135	0.4361603	0.7378929	0.5391355	0.8637103	0.6907172	0.9753705	0.8402856	0.8395545
566	0.5465216	0.4316209	0.7332287	0.5360254	0.8581686	0.6863351	0.9703609	0.8366138	0.8365002
568	0.5414703	0.4277787	0.7287626	0.5330554	0.8510731	0.6819037	0.964646	0.8300385	0.8295298
570	0.5359474	0.4229894	0.724271	0.5294728	0.8447198	0.6785288	0.9594624	0.8246251	0.8242034
572	0.5307183	0.4192337	0.7196513	0.5260512	0.8396633	0.673713	0.9530597	0.8193663	0.8195127
574	0.5253673	0.415067	0.7151824	0.5229117	0.8311025	0.6688662	0.9473594	0.8134881	0.8137588
576	0.5196141	0.4113012	0.7102615	0.5196366	0.8239178	0.6644357	0.9412305	0.8084816	0.8087201
578	0.5147244	0.4077865	0.7070742	0.5166168	0.8163757	0.6602983	0.9350625	0.8022637	0.8030863
580	0.5096824	0.4043157	0.701851	0.5139495	0.8091047	0.6556764	0.9289042	0.7963592	0.7977222
582	0.5041978	0.4008471	0.6970167	0.5108951	0.8007854	0.6511033	0.9237676	0.7899944	0.792056
584	0.4992069	0.3977921	0.6926524	0.5080336	0.7934291	0.6469113	0.9175866	0.7848211	0.7872441
586	0.4940859	0.3949916	0.6881583	0.5052983	0.7857155	0.6427495	0.9109846	0.7784824	0.7819744
588	0.4893351	0.3922818	0.6840873	0.5025773	0.779035	0.6384641	0.9054804	0.7721999	0.7764099
590	0.4844587	0.38968	0.6801936	0.5000649	0.7710057	0.6344293	0.8997217	0.7661589	0.7714514
592	0.4799876	0.3875794	0.6759562	0.497601	0.7637686	0.6305578	0.8949298	0.7602775	0.7668999
594	0.4757488	0.3854367	0.6720886	0.4951641	0.7565104	0.626984	0.8893893	0.7544717	0.7617089
596	0.4713924	0.3837626	0.6681057	0.4928708	0.7491673	0.6231095	0.883949	0.748943	0.7571437
598	0.4675456	0.3818546	0.6645102	0.4905185	0.7424297	0.6194414	0.8799903	0.7434947	0.7529429
600	0.4639622	0.3801378	0.6613659	0.4883659	0.7357518	0.6160477	0.875188	0.7381652	0.7486787
602	0.4604011	0.3786059	0.6578299	0.4860738	0.7292506	0.612535	0.8706958	0.7326646	0.7444044
604	0.4573998	0.3770643	0.6544709	0.4839164	0.7228478	0.6090701	0.8663753	0.7275011	0.7406353
606	0.4545778	0.3758732	0.6513672	0.4818054	0.7171931	0.6059923	0.8624064	0.7237185	0.7368986
608	0.4516178	0.3743303	0.6482169	0.4798941	0.7114059	0.6027416	0.8585634	0.7184564	0.7336338
610	0.4489437	0.373213	0.6449961	0.4778397	0.7057188	0.5996701	0.8547911	0.7139102	0.7299185
612	0.4465444	0.3720078	0.6421767	0.4758126	0.7003983	0.5965372	0.8513761	0.7095606	0.726746
614	0.4442511	0.3710209	0.6394911	0.4738784	0.6954277	0.5936076	0.8477251	0.7053781	0.7235944
616	0.4419307	0.3699276	0.6364563	0.4717181	0.6900615	0.5906038	0.8441243	0.7009716	0.7204757
618	0.4399392	0.3690547	0.6337401	0.4699665	0.6852047	0.5878064	0.8406028	0.6971314	0.7175962
620	0.4379089	0.3681833	0.6311843	0.468176	0.6807132	0.5855663	0.8373379	0.6935163	0.7148485
622	0.4361373	0.3674975	0.6285783	0.4663615	0.675662	0.5826887	0.8336825	0.6895913	0.7120548
624	0.4342955	0.3668557	0.62599	0.4646167	0.6707749	0.5798846	0.8300768	0.6857615	0.7093962
626	0.4325415	0.3661793	0.6238651	0.4631828	0.6661331	0.577338	0.8262979	0.6821561	0.7068349
628	0.4308328	0.3657098	0.6211097	0.4616024	0.661214	0.5746638	0.8227495	0.6784639	0.7043663
630	0.4292267	0.3650971	0.618693	0.460004	0.6568429	0.5720214	0.8190159	0.674692	0.7018086
632	0.4275879	0.3645993	0.6162169	0.458608	0.6515893	0.5694169	0.8155206	0.6712746	0.6992257
634	0.4260282	0.3641892	0.6137539	0.4573511	0.6468946	0.5669209	0.8119161	0.667618	0.6971396
636	0.4245649	0.3637252	0.6114701	0.4559951	0.6419332	0.5643905	0.8085049	0.6639514	0.6945206
638	0.4231137	0.36333	0.6090628	0.4548259	0.6371123	0.5618637	0.8051643	0.6602212	0.6920304
640	0.4217397	0.362917	0.6068514	0.4537404	0.6326015	0.5595157	0.8019972	0.6568673	0.6896712
642	0.4203953	0.3625453	0.6045763	0.4526339	0.6280794	0.5571188	0.7988703	0.6532432	0.6870821
644	0.4190681	0.3622069	0.6024566	0.4515367	0.6236176	0.5546185	0.7958736	0.6497883	0.6847145
646	0.4178908	0.3619644	0.6004013	0.4506078	0.619596	0.5524414	0.7933056	0.646555	0.6824374
648	0.4167461	0.3616647	0.5983318	0.4497244	0.6154677	0.5502629	0.7905648	0.6434755	0.6800708
650	0.4156133	0.3615631	0.5962909	0.4488154	0.6114917	0.5479488	0.7878503	0.6401755	0.6777293
652	0.4145641	0.3613877	0.5943584	0.4480734	0.60767	0.5458838	0.7852103	0.6372501	0.675335
654	0.4136361	0.3612711	0.5924709	0.4473241	0.6039851	0.543839	0.7827092	0.6342517	0.6731604
656	0.4126013	0.3611536	0.5904752	0.4465056	0.6002681	0.5417072	0.7800304	0.6312497	0.6706954
658	0.4117286	0.3610849	0.5885134	0.4458056	0.5966734	0.5395479	0.7774513	0.6283054	0.6683112
660	0.4108437	0.361002	0.5866283	0.4451238	0.5931344	0.5375397	0.7749572	0.6253586	0.6659284
662	0.4099649	0.3609237	0.5847487	0.4444356	0.5896609	0.5355104	0.772273	0.6224622	0.6634302
664	0.4090546	0.360853	0.582698	0.4437623	0.5860733	0.5334051	0.7696133	0.6194467	0.6608967
666	0.4081699	0.3607744	0.580689	0.4431812	0.5824637	0.5312529	0.7669404	0.61645	0.6582016

668	0.4072168	0.3606277	0.5786184	0.4423895	0.5789151	0.5292127	0.7642015	0.6134169	0.6555013
670	0.4062361	0.3604522	0.5765159	0.441606	0.5752946	0.5270267	0.761413	0.6102352	0.6526872
672	0.4053687	0.3603289	0.5743505	0.4408867	0.5716649	0.5248711	0.7587602	0.6070814	0.6497874
674	0.4044659	0.3602414	0.572348	0.4401876	0.5682311	0.5228212	0.7561007	0.6040472	0.647207
676	0.403559	0.3600912	0.5702305	0.4394574	0.5647366	0.5207119	0.7533472	0.6008981	0.6443721
678	0.4026328	0.3599473	0.5680611	0.4387483	0.5612018	0.5185944	0.750592	0.5976937	0.6414212
680	0.4016781	0.3597871	0.5659736	0.4380206	0.5578911	0.5166341	0.74792	0.5947344	0.6387202
682	0.4008777	0.3596193	0.5639334	0.4372782	0.5545953	0.5146533	0.7453631	0.5916945	0.6360127
684	0.4000007	0.359475	0.5618094	0.4366139	0.551366	0.5127135	0.7426197	0.5886745	0.6332687
686	0.3991251	0.3593017	0.5598227	0.4359086	0.5483463	0.5108141	0.7400466	0.5858129	0.6306255
688	0.3983346	0.3591795	0.5579072	0.4352926	0.545455	0.5089498	0.7375131	0.5830721	0.6282032
690	0.3975419	0.359003	0.5560542	0.4346609	0.5425619	0.507204	0.7350489	0.5803788	0.6257433
692	0.3967864	0.3589235	0.5541944	0.4340322	0.5398192	0.5054979	0.7325256	0.5779132	0.6233152
694	0.3960988	0.358829	0.5523955	0.433506	0.5371416	0.5038536	0.7299919	0.57538	0.6210195
696	0.3954284	0.3587324	0.550701	0.4329403	0.5347115	0.5023077	0.7275346	0.5730479	0.6188307
698	0.3947993	0.3586704	0.5489962	0.4324763	0.532218	0.500764	0.7249952	0.5706986	0.6166256
700	0.3942433	0.3586097	0.5473371	0.4320015	0.5297686	0.4992823	0.7224101	0.5684605	0.6145074
702	0.3936986	0.3585679	0.5457867	0.4316152	0.5276345	0.4979694	0.7199313	0.5664212	0.6124827
704	0.3931881	0.3585522	0.544238	0.4312229	0.5254101	0.4966499	0.7173733	0.5643691	0.6104489
706	0.3926833	0.3585385	0.5426535	0.4308746	0.5232766	0.4953038	0.7147142	0.5622861	0.608283
708	0.3922733	0.3585615	0.5412694	0.4305511	0.5213231	0.4941496	0.7122212	0.5604532	0.6063382
710	0.3919028	0.3585755	0.5398484	0.4302335	0.5194126	0.4929985	0.7096762	0.5585728	0.6043764
712	0.3915385	0.3586513	0.5384632	0.4299683	0.5174842	0.4918556	0.7069845	0.556811	0.602334
714	0.3912554	0.3587633	0.5371005	0.4296963	0.5157405	0.4908316	0.704324	0.5550714	0.600337
716	0.3909589	0.3588608	0.535803	0.4294838	0.51402	0.4898174	0.7017754	0.5534255	0.5983108
718	0.390725	0.359017	0.5345112	0.429286	0.5123532	0.4889278	0.6991406	0.551792	0.5963005
720	0.3905748	0.3593389	0.5332539	0.4291373	0.5107413	0.4880004	0.6964301	0.550249	0.5942516
722	0.3904175	0.3595302	0.5320231	0.4290184	0.5092565	0.4871444	0.6937164	0.5486774	0.5921696
724	0.3902983	0.3597717	0.530844	0.4289292	0.5078009	0.4863379	0.6910767	0.5472621	0.5901199
726	0.3902639	0.3600668	0.5296965	0.4288398	0.5063573	0.4855533	0.688385	0.545794	0.5879109
728	0.3902757	0.3603586	0.5285462	0.4288188	0.5049518	0.4848117	0.685742	0.5444093	0.5856951
730	0.390263	0.3606752	0.5274811	0.4288143	0.503702	0.4841316	0.6832341	0.5431014	0.5835344
732	0.3902499	0.3610465	0.5263445	0.4288308	0.5023885	0.4834557	0.6806033	0.5417582	0.5811624
734	0.3902546	0.3614004	0.5252599	0.4288221	0.5010856	0.4827689	0.6780148	0.5403841	0.5787237
736	0.3902658	0.3617548	0.5242078	0.4289649	0.4999492	0.4821694	0.675607	0.5391341	0.5763589
738	0.3902781	0.3621372	0.523137	0.4290234	0.49876	0.4815359	0.6731291	0.5378473	0.5738938
740	0.3902918	0.3625469	0.5220298	0.4290894	0.4975796	0.4809371	0.6705939	0.5365154	0.5712179
742	0.3903106	0.3629111	0.5209714	0.4291281	0.496446	0.4803697	0.6682126	0.5352238	0.5685862
744	0.3903056	0.3633193	0.5199155	0.4291788	0.4953656	0.4798012	0.6658144	0.5339339	0.5658656
746	0.3902925	0.3637194	0.5188267	0.4292402	0.4942663	0.4792419	0.6633601	0.5326324	0.5631053
748	0.3902812	0.3641506	0.5177558	0.4292997	0.4931506	0.4786901	0.6609153	0.5313342	0.560277
750	0.3902662	0.3646577	0.5166703	0.4294335	0.4920639	0.4781955	0.6585249	0.5300533	0.5574504
752	0.3902566	0.365122	0.5156766	0.4295934	0.4910324	0.4777721	0.656229	0.5288113	0.5547003
754	0.3902471	0.3656488	0.5146473	0.4298284	0.4899724	0.4773998	0.6539026	0.5275294	0.5518983
756	0.3903119	0.3662127	0.5137201	0.4301009	0.4889674	0.4770288	0.6517127	0.5263478	0.5491964
758	0.3903614	0.366757	0.5129067	0.4303541	0.4880222	0.4766372	0.6497732	0.5252375	0.5467354
760	0.3904587	0.3673345	0.5121221	0.4306048	0.4870155	0.4762963	0.6479931	0.5241411	0.5441794
762	0.3905671	0.3678897	0.511343	0.4307913	0.4860157	0.4759078	0.6465808	0.5230482	0.5416534
764	0.390611	0.3683911	0.5106962	0.4308946	0.485043	0.4755467	0.6457286	0.5220618	0.5392421
766	0.3906572	0.3688586	0.5100957	0.430873	0.4839896	0.4751882	0.6452985	0.5211073	0.5366998
768	0.390686	0.3692934	0.5095622	0.4307045	0.4829428	0.4748363	0.6451463	0.5200952	0.5340108
770	0.3906885	0.3697428	0.5090705	0.4305246	0.4819723	0.4745262	0.6446057	0.5192039	0.5312688
772	0.3906321	0.3701805	0.508399	0.4304785	0.4810802	0.4742021	0.6432888	0.5180933	0.5286173
774	0.390639	0.3706943	0.5075689	0.4306391	0.4802047	0.4738891	0.6412771	0.5169514	0.5259502
776	0.3906778	0.3712309	0.5066449	0.4310196	0.4793386	0.4735409	0.6388581	0.5157292	0.5235212
778	0.3908562	0.3718163	0.5056627	0.4314826	0.4786725	0.4732184	0.6364356	0.5146154	0.5213614
780	0.3910421	0.3724059	0.5047194	0.4318902	0.4779742	0.4728671	0.6342275	0.513556	0.519355
782	0.3912044	0.3730646	0.5038092	0.4321941	0.4772245	0.4724796	0.6322702	0.5125001	0.5172694
784	0.3914174	0.3737506	0.5030235	0.4324779	0.4765409	0.4721399	0.6306847	0.5115356	0.5152962
786	0.3915936	0.3743586	0.5023091	0.4326864	0.475851	0.4718034	0.6293968	0.5106375	0.5134478
788	0.3917673	0.3749588	0.5016098	0.4329007	0.4751293	0.4714517	0.6282004	0.5097709	0.5116045
790	0.3919412	0.3755401	0.5009066	0.433123	0.4744359	0.4711055	0.6270938	0.5088375	0.5098104
792	0.3921139	0.376078	0.5002652	0.4333419	0.4737835	0.4707678	0.6260544	0.5079738	0.5082173
794	0.3922763	0.3766243	0.4996178	0.4335965	0.4731137	0.4704403	0.6250217	0.5070912	0.5066134
796	0.3924682	0.3771736	0.4989209	0.4338404	0.4724484	0.4700981	0.6239251	0.5062207	0.5050192
798	0.3926333	0.3777003	0.4982728	0.4340801	0.4717821	0.4697542	0.6228625	0.5053593	0.5034958
800	0.3927795	0.3781733	0.4975678	0.4342881	0.4711308	0.4693928	0.6218091	0.504486	0.5020019
802	0.3929214	0.3786571	0.4968848	0.434478	0.4704798	0.4690255	0.6208366	0.5036259	0.5005442
804	0.3930471	0.3791273	0.4961597	0.4346607	0.4698405	0.4686888	0.6198149	0.5027768	0.4991018
806	0.3931558	0.3795481	0.4954722	0.4348168	0.469212	0.468313	0.6188419	0.5019462	0.4977377
808	0.3932644	0.3799239	0.4947698	0.434923	0.4685908	0.4679402	0.6179029	0.5011489	0.4964408
810	0.3933232	0.3802728	0.4940521	0.4350132	0.4679353	0.4675453	0.6169131	0.5003101	0.4951212
812	0.3933528	0.3805736	0.4932781	0.4350683	0.467283	0.4671269	0.6159273	0.4994889	0.4938311
814	0.3933608	0.3808182	0.4925219	0.4350674	0.4666535	0.4666978	0.6150127	0.4987209	0.4926303

816	0.3933123	0.3810111	0.4916905	0.4350557	0.4659903	0.4662123	0.6140134	0.4978983	0.4914084
818	0.3932434	0.3811728	0.4908522	0.4349771	0.4652823	0.465695	0.6130128	0.4971044	0.4901963
820	0.3931355	0.381257	0.4900032	0.4348621	0.4646261	0.4651628	0.6120369	0.496321	0.4890731
822	0.3930132	0.3812982	0.4891376	0.4347149	0.4639455	0.464622	0.6110379	0.4955681	0.4879504
824	0.3928104	0.3812981	0.4881714	0.4345037	0.4632334	0.4639866	0.6100277	0.4947773	0.4868523
826	0.3925923	0.3812318	0.4872172	0.434246	0.4625092	0.4633326	0.6089775	0.4940117	0.4857732
828	0.3923205	0.3810977	0.4862229	0.4339503	0.4617677	0.4626431	0.607935	0.4932559	0.4847081
830	0.3919918	0.3809071	0.4851739	0.4335809	0.4609971	0.4618896	0.6068467	0.4924881	0.4836685
832	0.3915972	0.3806396	0.4840272	0.4331489	0.4601707	0.461045	0.6057125	0.4916675	0.4825751
834	0.3911434	0.3802738	0.4828562	0.4326578	0.4593344	0.4601817	0.604535	0.4908223	0.4815029
836	0.3906458	0.3798637	0.4816716	0.432105	0.4584769	0.4592874	0.6033562	0.4899675	0.4804731
838	0.3900707	0.3793331	0.4803486	0.4314353	0.4575142	0.4582307	0.6020635	0.4890252	0.4793558
840	0.3893966	0.3787363	0.4789528	0.4307128	0.4564896	0.4570979	0.6007004	0.48804	0.4782158
842	0.3886943	0.3780632	0.4775576	0.4299259	0.455467	0.4559449	0.5993713	0.4870522	0.4771018
844	0.3878946	0.3773058	0.4760375	0.4290447	0.4543635	0.4546963	0.597923	0.4859757	0.475916
846	0.387033	0.37643	0.4744779	0.4280838	0.453186	0.4533435	0.5964137	0.4848423	0.4747488
848	0.3861174	0.3755288	0.4728655	0.4270668	0.4519987	0.4519672	0.5948967	0.4837038	0.4735628
850	0.3851473	0.3745553	0.4712044	0.4260018	0.4507587	0.4505343	0.5933434	0.4825814	0.4723623
852	0.3840883	0.3734702	0.4694324	0.4248275	0.4494512	0.4489923	0.5916857	0.4813395	0.4710956
854	0.3829947	0.3723298	0.4676301	0.4236052	0.4481109	0.4474019	0.5899986	0.4800981	0.4698269
856	0.3818558	0.3711584	0.4657901	0.4223763	0.4467618	0.4458041	0.5883111	0.4788311	0.4685877
858	0.3806842	0.36995	0.4639574	0.4211035	0.4454011	0.4441638	0.586629	0.4775802	0.467341
860	0.3794343	0.3686262	0.4620084	0.4197088	0.443949	0.4424061	0.5848183	0.4762339	0.4660154
862	0.3781595	0.367299	0.4600277	0.4183127	0.4424901	0.4406407	0.583007	0.4748942	0.4647359
864	0.3768884	0.3659619	0.4581108	0.4169246	0.4410689	0.4389029	0.5812565	0.4735812	0.4634645
866	0.3755594	0.3645415	0.456072	0.4154373	0.4395607	0.4370827	0.5794037	0.4722285	0.4621503
868	0.3741543	0.3630557	0.4539628	0.413902	0.4380009	0.4351749	0.5774892	0.4708211	0.4608127
870	0.3727944	0.3616173	0.4519524	0.4124129	0.4365002	0.4333365	0.575666	0.4694574	0.4595294
872	0.3713973	0.360118	0.4498998	0.4108714	0.4349885	0.4314517	0.5738126	0.4681025	0.4582234
874	0.3699479	0.3585648	0.4477723	0.4092678	0.4333956	0.4294963	0.5718663	0.4666711	0.4568881
876	0.3685009	0.3570195	0.4456573	0.4076646	0.4318185	0.4275568	0.5699795	0.4652616	0.4555735
878	0.3670572	0.3554722	0.443565	0.4060819	0.4302712	0.4256314	0.5680969	0.4639041	0.4542701
880	0.3655982	0.353922	0.4414529	0.4044837	0.4286999	0.4236953	0.5662002	0.4625083	0.4529779
882	0.3640138	0.352236	0.4392077	0.4027557	0.427008	0.4216034	0.5641866	0.4610095	0.4515665
884	0.36253	0.3506508	0.4370751	0.4011088	0.4254127	0.4196319	0.5622782	0.4596059	0.4502529
886	0.3610966	0.3491009	0.4349993	0.3995201	0.4238592	0.4177238	0.5604291	0.4582402	0.4490006
888	0.3595618	0.3474591	0.4328265	0.3978229	0.4222354	0.4157025	0.5584872	0.4568071	0.4476652
890	0.3580269	0.3458286	0.4306399	0.3961399	0.4206002	0.4136846	0.5565335	0.455392	0.4463505
892	0.356572	0.3442589	0.4285928	0.3945365	0.4190566	0.4117555	0.5546859	0.4540275	0.4450935
894	0.3550619	0.3426327	0.4264459	0.3928881	0.4174537	0.4097708	0.5527605	0.4526288	0.4438112
896	0.3534997	0.3409716	0.4242616	0.3911756	0.4158229	0.4077275	0.5507786	0.4512028	0.4425061
898	0.3519914	0.3393342	0.4221367	0.3895353	0.4142471	0.4057388	0.5488493	0.4498219	0.4412497
900	0.3504851	0.3376802	0.420004	0.3878826	0.412666	0.4037585	0.5469128	0.4484645	0.439991
902	0.3489367	0.3359682	0.4178371	0.3861897	0.4110722	0.4017476	0.5449455	0.4470727	0.4387328
904	0.3473471	0.3342232	0.4156213	0.3844468	0.4094714	0.3996865	0.5429412	0.4456937	0.4374735
906	0.3458377	0.3325187	0.4135053	0.3827885	0.4079444	0.3977251	0.5410355	0.4443777	0.436278
908	0.3443494	0.330832	0.4114086	0.381123	0.4064364	0.3957819	0.5391566	0.4431074	0.4351153
910	0.3428304	0.3291035	0.4092737	0.3794231	0.4049265	0.3938195	0.5372666	0.4418345	0.4339452
912	0.3413282	0.3273948	0.4071748	0.3777098	0.4034445	0.3918746	0.5354282	0.4406205	0.4327868
914	0.3399639	0.3258373	0.4052173	0.3761317	0.4020788	0.390087	0.5337474	0.4395107	0.4317149
916	0.3386109	0.3242637	0.4032532	0.3745427	0.4007145	0.3882829	0.5320774	0.4384407	0.4306528
918	0.3372829	0.3227184	0.4013329	0.3729684	0.3994103	0.3865294	0.5304924	0.4374772	0.4296615
920	0.336074	0.3213509	0.3995596	0.3715346	0.3982326	0.3849228	0.5290575	0.4366204	0.4287297
922	0.3349048	0.3200347	0.3978601	0.3701983	0.3970959	0.3833726	0.5276832	0.4358668	0.4278658
924	0.3338154	0.3187934	0.3961996	0.3688858	0.396051	0.3818986	0.5263935	0.4352206	0.4270526
926	0.3327906	0.3176449	0.394599	0.3676594	0.3950533	0.3805152	0.5251775	0.4346813	0.4263075
928	0.3318746	0.3166286	0.393195	0.3665337	0.3942362	0.3792278	0.5240887	0.4342987	0.4256608
930	0.3310325	0.3157069	0.3918142	0.3655159	0.3934546	0.3780378	0.5230891	0.4340207	0.4250798
932	0.3302409	0.3148282	0.3904803	0.3645327	0.3927439	0.3768975	0.5221333	0.4338675	0.424546
934	0.3295347	0.3140584	0.3892429	0.3636483	0.3921305	0.3758622	0.5212833	0.433846	0.4241091
936	0.3289319	0.3134184	0.3881328	0.3628816	0.3916267	0.3749412	0.5205485	0.4339399	0.4237621
938	0.3283835	0.3128329	0.3870715	0.3621723	0.391229	0.3740895	0.5198827	0.43421	0.4235292
940	0.3279412	0.3123612	0.3861026	0.3615652	0.3909446	0.3733351	0.5193344	0.4346648	0.4233945
942	0.3276224	0.3120404	0.3852885	0.3611022	0.3908151	0.3727523	0.5189489	0.4353454	0.4234065
944	0.3274196	0.3118044	0.3845898	0.360728	0.3908265	0.3722872	0.5186859	0.4362249	0.42356
946	0.3273337	0.3118078	0.3839959	0.3605141	0.3910311	0.3719617	0.5185989	0.4373959	0.4239229
948	0.3273766	0.3118615	0.3835361	0.3604132	0.3913997	0.3717778	0.5186472	0.4387821	0.4244433
950	0.3275197	0.3120226	0.3831945	0.3604282	0.3919011	0.3717216	0.5188276	0.4403504	0.4251137

File Name: e:\scald\trim\abc.cal Spectra and Constituent Data File
File Date: FTue Nov 23 13:16:04 1999
Last Update: Fri Nov 03 14:08:32 2000
File ID: pure a,b,c from skinabc.cal
Master No: 13609408
Instrument Model: NIRSystem 6500
Serial No: 13609408 Samples: 149
Deleted: 0 Constituents: 1
No. Data Points: 276 Lab Basis Dry Matter
Segment 1 400 - 950 , 2
Segment 2 1100 - 2498, 0

Position	145	146	147	148	149
Sample Numb	"0216c"	"0217c"	"0220c"	"0221c"	"0223c"
400	0.7303997	0.8833141	0.5926965	0.8079487	0.8037553
402	0.7647575	0.9174237	0.6124044	0.8417648	0.8359786
404	0.7977486	0.9503297	0.6326981	0.8747538	0.8683625
406	0.8273133	0.9790995	0.6508337	0.9047895	0.8981882
408	0.8549501	1.0082535	0.6673476	0.9327208	0.9235451
410	0.8810965	1.0341893	0.6816531	0.9576963	0.9450736
412	0.9052792	1.0587931	0.6960365	0.9814787	0.9638242
414	0.9255478	1.0789882	0.7150822	1.0009181	0.9835694
416	0.9418708	1.0965357	0.7186001	1.0191145	0.9990994
418	0.9569775	1.1104141	0.7225273	1.0327034	1.0128793
420	0.9710119	1.1247724	0.728291	1.0489124	1.0255544
422	0.9826483	1.1373688	0.732453	1.0603838	1.0361594
424	0.9917935	1.146209	0.7354274	1.0706179	1.0439773
426	1.0019412	1.1559954	0.7398444	1.0794221	1.0530466
428	1.0102817	1.1668372	0.7402088	1.0870644	1.0605563
430	1.014678	1.1705002	0.7406844	1.0936563	1.0655185
432	1.0202564	1.1772749	0.7408985	1.0999626	1.0694841
434	1.0248965	1.1785806	0.740521	1.105318	1.0725815
436	1.0276942	1.1807021	0.7378598	1.1090145	1.0734956
438	1.0305526	1.1828111	0.7362158	1.1134475	1.0749365
440	1.0307232	1.1843181	0.7340465	1.114965	1.0764308
442	1.0290066	1.1816841	0.7318512	1.1165709	1.0770955
444	1.0281149	1.1815525	0.7273459	1.1174376	1.0757161
446	1.0255096	1.1815901	0.7236742	1.1180639	1.0749406
448	1.0232157	1.1792132	0.7195931	1.1170253	1.0737823
450	1.0215063	1.1765963	0.7163072	1.1179434	1.0722358
452	1.0180653	1.1724629	0.7119916	1.1165607	1.0705017
454	1.0148855	1.16877	0.7079357	1.1148012	1.0669825
456	1.0116317	1.1657779	0.7036392	1.1134071	1.0658593
458	1.0072238	1.1608015	0.6988853	1.1115792	1.0626125
460	1.0036989	1.1581117	0.6953136	1.1079106	1.0593616
462	0.9996629	1.1534849	0.6918885	1.1048555	1.0556991
464	0.9961708	1.1468009	0.6873641	1.1013705	1.0506123
466	0.9922663	1.1418231	0.6831935	1.0979254	1.0460006
468	0.9876528	1.1353741	0.6780824	1.0924416	1.041904
470	0.9830258	1.1279409	0.6735122	1.0874604	1.0346069
472	0.9776212	1.1210921	0.668933	1.0807241	1.0303038
474	0.9701411	1.1125202	0.6633835	1.0744822	1.0239698
476	0.9633034	1.1046616	0.6579228	1.0666441	1.0162843
478	0.9558939	1.0963794	0.6526657	1.0589961	1.0091147
480	0.946274	1.0876952	0.6464738	1.0506215	1.0016875
482	0.9377616	1.0778757	0.6410932	1.0427539	0.9936329
484	0.9289482	1.0693208	0.6350309	1.0332756	0.9851761
486	0.919184	1.0597847	0.6294768	1.0243111	0.9760736
488	0.9090212	1.0499558	0.6226832	1.0134034	0.967932
490	0.8988154	1.0415663	0.6174666	1.0033898	0.9585366
492	0.8890012	1.0307245	0.6111566	0.9920835	0.9472235
494	0.8779474	1.0212522	0.6046608	0.982429	0.9387705
496	0.8677723	1.0100887	0.5970156	0.9709725	0.9270692
498	0.8584727	1.0014589	0.5910388	0.9594817	0.9179139
500	0.8482834	0.9944685	0.5839882	0.9497018	0.9072038
502	0.8371351	0.985793	0.5773706	0.9400597	0.8967447
504	0.8220672	0.9764515	0.5703708	0.9297973	0.8862164
506	0.8074384	0.9684135	0.5636237	0.9203234	0.8770292
508	0.7946773	0.9617138	0.5565854	0.9110453	0.8679929
510	0.7846007	0.9549459	0.5494757	0.8999479	0.858503
512	0.7764869	0.9480194	0.5426586	0.8923454	0.8494197
514	0.767005	0.9441519	0.5362379	0.8851632	0.8412601
516	0.7574606	0.9395472	0.5311072	0.8773447	0.8336199
518	0.7503378	0.9344042	0.5263218	0.8697801	0.8271891

520	0.7436273	0.9312746	0.5199944	0.8646926	0.8207002
522	0.7390276	0.929526	0.5150737	0.8600156	0.816092
524	0.7334626	0.9278711	0.5112987	0.8566139	0.8120933
526	0.7280706	0.9258757	0.5081815	0.8551647	0.8138995
528	0.7243366	0.9250255	0.5042098	0.8566478	0.8157732
530	0.720028	0.9240348	0.5007521	0.8555055	0.8073214
532	0.7179248	0.9236817	0.4979641	0.8524317	0.8031006
534	0.7138154	0.9230312	0.4949344	0.8491536	0.8007624
536	0.7102192	0.9221045	0.4919328	0.8460841	0.7997099
538	0.7061421	0.921892	0.4894459	0.8439853	0.7987649
540	0.7031249	0.9251348	0.4866336	0.8424649	0.7964289
542	0.6993148	0.9317766	0.4839835	0.8404491	0.7949727
544	0.6951941	0.9217135	0.4817188	0.8378511	0.7923261
546	0.692575	0.9184099	0.4793314	0.8349706	0.7919868
548	0.6870297	0.9160168	0.4763954	0.8321976	0.7882897
550	0.6822558	0.9126806	0.4739144	0.8278783	0.785938
552	0.6777733	0.9109063	0.4707433	0.8246504	0.7832481
554	0.6719667	0.9062871	0.4679972	0.8198802	0.7803773
556	0.6664567	0.9026319	0.464891	0.8151644	0.776645
558	0.6600328	0.8990676	0.4615611	0.8104362	0.7733378
560	0.6541973	0.8959302	0.458452	0.805649	0.7713196
562	0.6474939	0.8905312	0.4550882	0.8006413	0.7664394
564	0.6415437	0.8863392	0.4517503	0.7954692	0.7626661
566	0.6352116	0.8811715	0.4481649	0.7898079	0.7589164
568	0.6283728	0.8772309	0.4447554	0.7839684	0.7544836
570	0.6212784	0.8716289	0.441633	0.7778363	0.7502472
572	0.6151943	0.8666	0.4382357	0.7719705	0.7459499
574	0.608323	0.8623247	0.4349775	0.7659849	0.7416216
576	0.601738	0.8567368	0.4318145	0.7593095	0.7370524
578	0.5958281	0.8513469	0.4288577	0.7531761	0.7325222
580	0.5893502	0.8457721	0.4258719	0.7470694	0.7284421
582	0.5832701	0.8402579	0.4230041	0.740328	0.7235251
584	0.5773574	0.8348585	0.4204176	0.733713	0.7190369
586	0.5716538	0.8294111	0.4178556	0.7276382	0.7147701
588	0.5663262	0.8243843	0.4157245	0.7211146	0.7101786
590	0.5610324	0.8188618	0.4134547	0.714493	0.7056344
592	0.5558935	0.8144917	0.4113725	0.7087787	0.701555
594	0.5509317	0.8090065	0.4093577	0.7029411	0.6977847
596	0.5457693	0.8034124	0.4072993	0.6968589	0.6934866
598	0.5410087	0.7988179	0.4054735	0.6913882	0.6898495
600	0.5364707	0.7937625	0.4039409	0.6862743	0.6862393
602	0.5320387	0.7889121	0.4020889	0.6810421	0.6829572
604	0.5276141	0.7843795	0.4003755	0.6758568	0.6793834
606	0.5234666	0.7796771	0.3986292	0.6708949	0.6763373
608	0.5192826	0.7752385	0.3969036	0.6662018	0.6731479
610	0.5152016	0.7706174	0.3952245	0.6615066	0.6702081
612	0.5118811	0.7667782	0.3936937	0.6572298	0.667127
614	0.5080733	0.7626748	0.3921828	0.6530495	0.6642991
616	0.5043293	0.7583733	0.3904408	0.6488333	0.6613481
618	0.5008725	0.7542329	0.38923	0.6448737	0.6588336
620	0.4976848	0.7505496	0.3879334	0.6411068	0.6564013
622	0.4944031	0.7463494	0.3866608	0.6372734	0.6537165
624	0.4914021	0.7424091	0.3854316	0.6336866	0.6511056
626	0.4884474	0.7384449	0.3843547	0.6304725	0.64868
628	0.4856891	0.7346725	0.3833165	0.6271098	0.6465855
630	0.4829712	0.7305942	0.3824099	0.6236736	0.6439435
632	0.4803702	0.7267718	0.3814592	0.620472	0.6416508
634	0.4779651	0.72298	0.3805366	0.617219	0.639391
636	0.4755307	0.719323	0.3797464	0.6140699	0.6370375
638	0.4731892	0.71549	0.3789697	0.6108863	0.6347502
640	0.47107	0.7118132	0.3782979	0.6079268	0.6326051
642	0.4690747	0.7081909	0.3776196	0.6049305	0.6303716
644	0.4670406	0.704462	0.3769898	0.6020047	0.6282816
646	0.4652589	0.7011185	0.3764446	0.5992439	0.6262698
648	0.4635021	0.6976833	0.3759073	0.5964494	0.6242697
650	0.4618028	0.6943123	0.37539	0.5936112	0.6221767
652	0.4602391	0.6910081	0.3750345	0.5909382	0.6201448
654	0.4587461	0.6878561	0.374653	0.5882421	0.6181457
656	0.4572886	0.6846632	0.3742403	0.5855205	0.6161678
658	0.455802	0.6814682	0.3739032	0.5828117	0.6139118
660	0.4544875	0.678335	0.3735509	0.5801326	0.6117613
662	0.4530839	0.6752459	0.3731858	0.5773622	0.609524
664	0.4516875	0.6721172	0.3728399	0.5745329	0.6071107
666	0.4504874	0.6689762	0.3725357	0.5716497	0.6047605

668	0.449075	0.6658621	0.3721251	0.5687441	0.6021076
670	0.447698	0.6627073	0.3717152	0.5657305	0.599345
672	0.4462948	0.6594967	0.3713656	0.5626506	0.5964601
674	0.4450348	0.6565981	0.371033	0.5598657	0.593656
676	0.4437208	0.6536015	0.3707294	0.5569586	0.5906803
678	0.4423619	0.6505089	0.3703701	0.5539742	0.5876203
680	0.4411023	0.6476468	0.3699976	0.5512204	0.5847077
682	0.4397833	0.6447608	0.3696302	0.5484023	0.5817852
684	0.4384694	0.6418949	0.369293	0.5456962	0.5788236
686	0.437201	0.6391175	0.3689532	0.5431612	0.5760524
688	0.4360415	0.6364371	0.3686466	0.5406755	0.5733167
690	0.434828	0.6338736	0.3683308	0.5382873	0.5707556
692	0.433598	0.6313348	0.3679847	0.5359557	0.5683393
694	0.432438	0.6288546	0.3677697	0.5337651	0.5659674
696	0.4313443	0.6265444	0.3674645	0.5317338	0.5637238
698	0.430269	0.6241702	0.3672623	0.5296415	0.5614578
700	0.429222	0.6219327	0.3670507	0.527625	0.5592688
702	0.4282376	0.6199366	0.3668792	0.5257937	0.5573265
704	0.4272884	0.6178581	0.3667528	0.5238946	0.5552896
706	0.4263202	0.6157758	0.366585	0.5220147	0.5532934
708	0.4254263	0.6138982	0.3665225	0.5203063	0.5513921
710	0.4245445	0.6120133	0.3665003	0.518585	0.5495577
712	0.423717	0.6101812	0.366495	0.5168272	0.5476987
714	0.4228984	0.6084642	0.3665139	0.5152021	0.5459087
716	0.4221288	0.6067633	0.3665843	0.5135683	0.5441366
718	0.4213865	0.6051067	0.36669	0.5119182	0.5424077
720	0.4206809	0.6034808	0.3668439	0.5102964	0.540646
722	0.4199805	0.6020007	0.3671574	0.5087695	0.538952
724	0.4193247	0.6005519	0.367354	0.5072384	0.5372984
726	0.4186894	0.5990527	0.3676091	0.5056483	0.5356103
728	0.4180409	0.5976452	0.367908	0.504086	0.5339668
730	0.4174413	0.5963188	0.3682029	0.5025924	0.5323635
732	0.4168926	0.5950033	0.3685312	0.5010108	0.5306409
734	0.4162905	0.593658	0.3688456	0.4993929	0.5289022
736	0.4156974	0.592436	0.3691763	0.4978754	0.5272537
738	0.4150482	0.5911701	0.3695115	0.4963101	0.5254892
740	0.4144311	0.5899066	0.3698317	0.4946778	0.5236918
742	0.4137459	0.588713	0.3701558	0.4930744	0.5219388
744	0.4130562	0.5874714	0.3704596	0.4914391	0.5201281
746	0.4123675	0.5862358	0.3707291	0.4898238	0.5182775
748	0.4116682	0.5850304	0.3710107	0.4881621	0.5163677
750	0.4109533	0.583854	0.3712754	0.4865595	0.5144659
752	0.4102879	0.5827314	0.3715389	0.4850141	0.5126262
754	0.4095695	0.5816349	0.3718148	0.4833987	0.510747
756	0.408939	0.5806736	0.3721565	0.4819154	0.5089796
758	0.4083829	0.5797487	0.3724427	0.4805421	0.5073225
760	0.4078175	0.5788504	0.372804	0.4791285	0.5056287
762	0.4072594	0.5779803	0.3731306	0.4776468	0.5039551
764	0.4067922	0.5771835	0.3734053	0.476285	0.5024278
766	0.4063288	0.5764383	0.3736656	0.4748707	0.5008581
768	0.4058586	0.5757139	0.3738768	0.4735254	0.4994111
770	0.4053912	0.5750104	0.374074	0.4722324	0.4978536
772	0.4048326	0.5741311	0.374294	0.4708784	0.4962657
774	0.4042228	0.5731176	0.3746513	0.469585	0.4945859
776	0.4036951	0.5720717	0.3750713	0.4682748	0.4928837
778	0.4032448	0.5709022	0.3754998	0.4671013	0.4912306
780	0.402882	0.5697891	0.3758769	0.4659669	0.489584
782	0.4024901	0.5686967	0.3762332	0.464825	0.4878682
784	0.4022149	0.5677291	0.3766144	0.4637833	0.4863315
786	0.4019426	0.5668648	0.3769798	0.4628401	0.4849764
788	0.4016855	0.5660013	0.377322	0.4618651	0.4836252
790	0.4014175	0.5651134	0.3776888	0.4609129	0.4823117
792	0.4011752	0.5642881	0.3780297	0.4600466	0.4811392
794	0.4009371	0.5634428	0.3783895	0.4591822	0.4799582
796	0.4007224	0.5625987	0.3787521	0.4583113	0.4787562
798	0.4004928	0.5617309	0.3790959	0.4574716	0.4775994
800	0.4002854	0.56094	0.3794298	0.4566448	0.4764692
802	0.4000646	0.5600674	0.3797551	0.4558335	0.4753563
804	0.3998532	0.5591919	0.3800806	0.4550352	0.4742598
806	0.3996308	0.5583628	0.3803591	0.4542603	0.4732098
808	0.3994158	0.5575404	0.380612	0.4535207	0.4722047
810	0.3991748	0.5566575	0.3808561	0.452751	0.4711727
812	0.3989146	0.5557905	0.3810574	0.4519961	0.4701659
814	0.3986726	0.5549267	0.3812049	0.4512785	0.4691884

816	0.3983554	0.5540195	0.3813455	0.450536	0.4682251
818	0.3980253	0.553104	0.3814288	0.449789	0.4672353
820	0.3977004	0.552218	0.3814706	0.4490877	0.4663098
822	0.3973359	0.5512895	0.3814629	0.4483692	0.4653624
824	0.3969297	0.5503154	0.3814203	0.4476447	0.4644306
826	0.3964996	0.5493389	0.3813162	0.4469391	0.4635034
828	0.3960499	0.5483463	0.3811698	0.4462245	0.4625664
830	0.3955382	0.5473062	0.3809687	0.4454735	0.4616343
832	0.3949534	0.5461777	0.3806919	0.4446973	0.4606537
834	0.3943123	0.5450403	0.3803424	0.4438971	0.4596877
836	0.3936341	0.5439028	0.3799503	0.4431024	0.4587382
838	0.3928526	0.5425927	0.3794507	0.4422292	0.4576657
840	0.3919998	0.5412174	0.3788751	0.4413073	0.4565751
842	0.3910874	0.5398296	0.3782394	0.4403886	0.4554887
844	0.3900843	0.5383474	0.3775198	0.4394038	0.4543514
846	0.3889984	0.5367988	0.3767019	0.4383714	0.4531308
848	0.3878845	0.5352155	0.375856	0.4373424	0.4519257
850	0.3867134	0.5335917	0.3749506	0.4362776	0.4506954
852	0.3854426	0.5318701	0.3739341	0.4351326	0.4494099
854	0.3841207	0.5301296	0.3728621	0.4339913	0.4480924
856	0.3827892	0.5283544	0.3717712	0.4328214	0.4467807
858	0.3814222	0.5265827	0.3706383	0.4316501	0.4454617
860	0.3799529	0.5246776	0.3693976	0.4304092	0.4440842
862	0.3784687	0.5227813	0.3681477	0.4291894	0.4426863
864	0.3769956	0.5209458	0.366899	0.4279663	0.441329
866	0.3754381	0.5189784	0.3655623	0.4266776	0.4399109
868	0.3738363	0.5169743	0.3641693	0.4253715	0.4384555
870	0.3722741	0.5150577	0.3628068	0.4241036	0.4370489
872	0.3706713	0.5130914	0.3614101	0.4228036	0.4356279
874	0.3690167	0.5110446	0.3599441	0.4214822	0.4341548
876	0.367362	0.5090429	0.3584901	0.4201479	0.4326881
878	0.365713	0.507047	0.357026	0.4188398	0.4312625
880	0.3640649	0.5050442	0.3555586	0.4175229	0.4298118
882	0.3622749	0.5028917	0.3539555	0.4160869	0.4282487
884	0.3605945	0.5008547	0.352443	0.4147703	0.4267936
886	0.358967	0.4988869	0.3509622	0.4134811	0.4253861
888	0.35724	0.4968111	0.3493918	0.412104	0.4238823
890	0.3555117	0.4947244	0.3478312	0.410737	0.4223897
892	0.3538722	0.4927521	0.3463244	0.4094243	0.4209844
894	0.3521684	0.4907194	0.344774	0.4080813	0.4195099
896	0.3504354	0.488636	0.3431666	0.406701	0.4180086
898	0.3487425	0.4866243	0.3416176	0.4053638	0.4165595
900	0.3470547	0.4846062	0.3400413	0.4040297	0.4150939
902	0.3453133	0.4825581	0.3384388	0.4026847	0.4136262
904	0.3435809	0.4805031	0.3367971	0.4013291	0.4121575
906	0.3418768	0.4785347	0.3352155	0.4000212	0.4107319
908	0.3402362	0.4766145	0.3336778	0.3987628	0.4093462
910	0.3385493	0.4746552	0.3320546	0.3974733	0.4079503
912	0.3368975	0.4727381	0.3304605	0.3962334	0.4065816
914	0.3353996	0.4709925	0.3290515	0.3950718	0.4053452
916	0.3339308	0.46925	0.3275746	0.3939349	0.4041027
918	0.3325078	0.4675742	0.3261693	0.3928247	0.4029104
920	0.3312344	0.4660449	0.324863	0.3918134	0.4018206
922	0.3300393	0.4645999	0.3236278	0.3908681	0.4008114
924	0.3289293	0.4632356	0.3224495	0.389935	0.3998442
926	0.3279205	0.4619686	0.321337	0.3891255	0.3989625
928	0.3270661	0.4608487	0.320363	0.3883709	0.3982035
930	0.3263066	0.4598163	0.3194476	0.3876821	0.3975108
932	0.3256305	0.4588652	0.3185813	0.3870362	0.3968761
934	0.3250817	0.4580333	0.3178117	0.3864627	0.3963263
936	0.3246517	0.4573446	0.3171474	0.3859949	0.3958866
938	0.3243285	0.4567467	0.3165408	0.3855928	0.3955297
940	0.3241421	0.4562886	0.316028	0.3852975	0.3953042
942	0.3241409	0.4560253	0.3156572	0.385145	0.3952252
944	0.3242962	0.455921	0.3153989	0.3851249	0.39527
946	0.3246594	0.4560199	0.3152594	0.3852732	0.3955232
948	0.3251947	0.456308	0.3153235	0.3855746	0.3959109
950	0.3258833	0.4567421	0.3154229	0.3860068	0.3964458

We claim:

1. An imaging system for determination of contamination on food comprising:

at least one charge-coupled device detector with an optical filter capable of collecting at least two discrete narrow-band images,

a lighting system,

a data processing unit operatively connected to said detectors for receiving images for analysis of the spectral properties of an image created by said detector, and

a computer readable memory encoded with a computer program containing a detection algorithm based on mathematical analysis of selected key wavelengths of radiation detected by said detector wherein said selected key wavelengths are derived by using a calibration process including:

(a) collecting spectra with a visible/near infrared monochromator by irradiating samples of uncontaminated food and pure contaminants representative of the types of contamination to be determined with visible/near infrared radiation and digitally recording reflectance intensity from about 400 nm to about 2500 nm in about 2-nm intervals,

(b) transforming said spectra recorded in step (a) for each sample to $\log_{10}$ spectra in absorbence units,

(c) transforming said $\log_{10}$ spectra with standard normal variate and detrending procedures to remove interferences of scatter, particle size, and variations in baseline shift and curvilinearity,

(d) processing said transformed spectra in step (c) with at least one of Principal Component Analysis and Partial Least Squares regression for formation of scores and loadings,

(e) comparing said scores with variations in Principal Components for selecting discrete Principal Components at which scores correlate with uncontaminated foods and contaminants,

(f) evaluating loadings of said discrete Principal

Components for extreme variations in absolute value to identify key wavelengths,

(g) selecting images at key wavelengths identified in step f, and

(h) calculating algorthim to detect contaminants.

2. The imaging system of claim 1 wherein said optical filter is selected from the group consisting of a line-scan spectrograph, a liquid crystal tunable filter, an acousto-optic tunable filter, and a narrow band-pass filter; wherein said filters are capable of collecting at least two discrete spectral images each taken at a different wavelength.

3. A method for identifying contamination on food comprising:

(a) identifying key wavelengths by performing the following steps:

(i) preparing samples of uncontaminated and pure contaminants representative of the types of contamination to be determined,

(ii) collecting spectra of said samples,

(iii) transforming spectra of said samples to $\log_{10}$ in absorbence units,

(iv) transforming said $\log_{10}$ spectra with standard normal variate and detrending procedures to remove interferences of scatter, particle size, and variations in baseline shift and curvilinearity,

(v) processing said transformed spectra in step (iv) with at least one of Principle Component Analysis and Partial Least Squares regression for formation of scores and loadings,

(vi) comparing said scores with variations in Principal Components for selecting discrete Principal Components at which scores correlate with uncontaminated foods and contaminants,

(vii) evaluating loadings of said discrete principal components for extreme variations in absolute value for identifying key wavelengths,

(viii) identifying said key wavelengths based on the results of step (vii),

(b) calibrating image wavelengths wherein said calibration includes selecting sensor binning to determine band numbers, imaging known wavelength standards to identify wavelength peaks and band numbers, performing a non-linear regression on said wavelengths against said band numbers, and applying said regression to subsequent images,

(c) creating hyperspectral or multispectral images of said samples,

(d) selecting said images at said key wavelengths based on the results of step (viii),

(e) applying algorithms using key wavelengths identified in step (viii) to form an image dataset for the identification of contamination.

4. A method for identifying contamination on food comprising:

(a) identifying key wavelengths by performing the following steps:

(i) preparing samples of uncontaminated and pure contaminants representative of the types of contamination to be determined,

(ii) collecting spectra of said samples,

(iii) transforming spectra of said samples to $\log_{10}$ in absorbence units,

(iv) transforming said $\log_{10}$ spectra in absorbence units,

(v) processing said transformed spectra in step (iv) with at least one of Principle Component Analysis and Partial Least Squares regression for formation of scores and loadings,

(vi) comparing said scores with variations in Principal

Components for selecting discrete Principal Components at which scores correlate with uncontaminated foods and contaminants,

(vii) evaluating loadings of said discrete principal components for extreme variations in absolute value for selecting key wavelengths,

(viii) identifying key wavelengths based on the results of step (vii),

(b) calibrating image wavelengths wherein said calibration includes selecting sensor binning to determine band numbers, imaging known wavelength standards to identify wavelength peaks and band numbers, performing a non-linear regression on said wavelengths against said band numbers, and applying said regression to subsequent images,

(c) creating hyperspectral or multispectral images of said samples,

(D) selecting said images at said key wavelengths based on the results of step (viii),

(e) calculating a ratio of two images at said two wavelengths to form a ratio image,

(f) performing a masking procedure on said ratio image to remove background from said image,

(g) applying histogram stretching to said ratio image to qualitatively identify contaminants in real-time, and/or

(h) applying thresholding to said ratio image from step m to quantitatively identify contaminants in real-time.

5. The method of claim 4 further including transforming said $\log_{10}$ spectra with standard normal variate and detrending procedures to remove interference of scatter, particle size, and variations in baseline shift and curvilinearity.

6. The method of claim 4 wherein hyperspectral images are collected by a line-scan spectrograph with a charge-coupled

detector.

7. The method of claim 4 wherein multispectral images are collected using an imaging device selected from the group consisting of a common aperture camera with at least two charge-coupled device detectors, at least one charge-coupled device detector with a liquid crystal tunable filter, at least one charge-coupled device with an acousto-optic tunable filter, at least one charge-coupled device with a line-scan spectrograph, and multiple charge-coupled device detectors with narrow band-pass filters.

8. The method of claim 4 wherein said ratio image is determined by dividing an image at a first said key wavelength by an image at a second key wavelength on a pixel by pixel basis of said collected images from step (4d).

9. A method comprising:

(a) preparing samples of uncontaminated food and pure contaminants representative of the types of contamination to be determined,

(b) collecting spectra of said samples,

(c) transforming spectra of said samples to $\log_{10}$ spectra in absorbence units,

(d) processing said transformed spectra in step (c) with at least one of Principal Component Analysis and Partial Least Squares regression for formation of scores and loadings,

(e) comparing said scores with variations in Principal Components for selecting discrete Principal Components at which scores correlate with uncontaminated foods and contaminants,,

(f) evaluating loadings of said discrete principal components for extreme variations in absolute value for selecting key wavelengths, and

(g) identifying key wavelengths for identification of

contaminants based on the results of step (f).

10. A process for detecting contamination on food comprising:

(a) illuminating said food with a source of electromagnetic radiation having a predetermined spectral content,

(b) detecting radiation from said source reflected by said food item in each of four predetermined wavelengths λ_1 , λ_2, λ_3, λ_4, and generating a first data set comprising digital values indicative of reflected radiation intensity in each of said wavelengths;

(c) processing said digital values according to an algorithm as follows

$$I = \frac{(\lambda_1 - n)(\lambda_3 + \lambda_4)}{\lambda_3(\lambda_1 + \lambda_2)}$$

wherein n is a constant integer; and

I is an indication of fecal contamination.

11. The process of claim 10 wherein

λ_1 is from about 750 to about 830 nm

λ_2 is from about 450 to about 500 nm

λ_3 is from about 500 to about 535 nm

λ_4 is from about 550 to about 585 nm.

12. The process of claim 10 further comprising

calculating, for each digital value in said first data set, mean and variance values, based on a set of proximate digital values, thereby creating a mean value data set and a variance value data set;

adding said mean value and variance value data sets to create a final data set;

determining presence or absence of contamination based on values in said final data set.

13. The process of claim 12 wherein said determining step comprises:

comparing data values in said final data set to a predetermined threshold value; and

determining presence of contamination based on results of said contamination.

14. A process for detecting contamination on food comprising:

(a) illuminating said food with a source of electromagnetic radiation having a predetermined spectral content;

(b) detecting radiation from said source reflected by said food in a plurality of predetermined wavelengths and generating a data set comprising signals indicative of reflected radiation intensity in each of said wavelengths;

(c) processing said data set according to a predetermined mathmatic function to generate a plurality of rule files comprising respective image files;

(d) combining said rule files to generate a combined data set;

(e) performing a texture analysis on said combined data set to generate spatially distributed mean and variance data;

(f) summing said mean and variance data to yield output data; and

(g) detecting contamination based on said output data.

AMENDED CLAIMS

[received by the International Bureau on 30 September 2002 (30.09.02);
original claims 15 and 16 amended (1 page)]

15. The process of claim 14 wherein said predetermined mathematic function is defined by:

$$\cos^{-1}\left(\frac{\sum_{i=1}^{nb} t_i r_i}{\left(\sum_{i=1}^{nb} t_i^2\right)^{1/2}\left(\sum_{i=1}^{nb} r_i^2\right)^{1/2}}\right)$$

wherein nb = number of said predetermined wavelengths;

t = detected reflected radiation value from said food for a defined wavelength; and

r = reflectance value of a contaminant at said defined wavelength.

16. A method for determining contamination on poultry or livestock carcasses comprising:

(a) obtaining poultry or livestock carcasses for which cortamination is to be determined,

(b) creating hyperspectral or multispectral images of said carcasses,

(c) selecting images at key wavelength,

(d) applying an algorithm to detect contaminants to images selected in step (c) to obtain contaminant containing images,

(e) applying masking to eliminate background in images of step (d),

(f) applying histogram stretching to images of step (e) qualitatively identify contaminants, and

(g) applying thresholding to images of step (e) or (f) to quantitatively identify contaminants in real-time.

17. The method of claim 16 wherein said algorithms are selected from the group consisting of a ratio of key wavelengths and a linear combination of key wavelengths.

18. A computer readable medium encoded with a computer program for detecting contamination on food by causing a computer to process image signals indicative fo intensity of radiation reflected from said food in four wavelengths λ_1-λ_4, using an algorithm:

$$I = \frac{(\lambda_1 - n)(\lambda_3 + \lambda_4)}{\lambda_3(\lambda_1 + \lambda_2)}$$

wherein I is an indication of contamination.

19. An apparatus for detecting contamination on food comprising:

(a) a plurality of sensors for detecting spatially distributed radiation reflected from a food at four wavelengths λ_1, λ_2, λ_3, and λ_4;

a computer; and

a computer readable medium coupled to said computer for causing said computer to process said image signals using an algorithm:

$$I = \frac{(\lambda_1 - n)(\lambda_3 + \lambda_4)}{\lambda_3(\lambda_1 + \lambda_2)}$$

wherein I is an indication of contamination.

20. A computer readable medium encoded with a computer program for detecting contamination on a food by causing a computer to

process spectrally resolved image information indicative of intensity of radiation reflected from said food in a plurality of wavelength by performing the following steps:

(a) calculating data sets in the form of rule files, using said spectrally resolved image information, comprising values of α wherein

$$\alpha = \cos^{-1}\left(\frac{\sum_{i=1}^{nb} t_i r_i}{\left(\sum_{i=1}^{nb} t_i^2\right)^{1/2}\left(\sum_{i=1}^{nb} r_i^2\right)^{1/2}}\right)$$

wherein nb = number of bands of spectrally resolved image information;

t = detected spectrally resolved image information values for an i_{th} band; and

r = spectrally resolved image information value for an i_{th} band for a contaminant whose presence is to be detected.

(b) combining said rule files to generate a combined data set;

(c) performing a texture analysis on said combined data set to generate spatially distributed mean and variance data; and

(d) summing said mean and variance data to yield output data indicative of contamination.

21. An apparatus for detecting contamination on food comprising:

(a) a plurality of sensors for detecting spatially distributed spectrally resolved image information indicative of intensity radiation reflected from a food in a plurality of wavelength bands;

(b) a computer readable medium coupled to said computer for causing said computer to process said image signals by calculating data sets in the form of Rule Files, using said spectrally resolved image information, using a formula

$$\alpha = \cos^{-1}\left(\frac{\sum_{i=1}^{nb} t_i r_i}{\left(\sum_{i=1}^{nb} t_i^2\right)^{1/2}\left(\sum_{i=1}^{nb} r_i^2\right)^{1/2}}\right)$$

wherein nb = number of bands of spectrally resolved image information;

t = detected spectrally resolved image information values for an i_{th} band, and

r = spectrally resolved image information value for an i^{th} band for a contaminant whose presence is to be detected;

(c) combining said Rule Files to generate a combined data set;

(d) performing a texture analysis on said combined data set to generate spatially distributed mean and variance data; and

(e) summing said mean and variance data to yield output indicative of contamination.

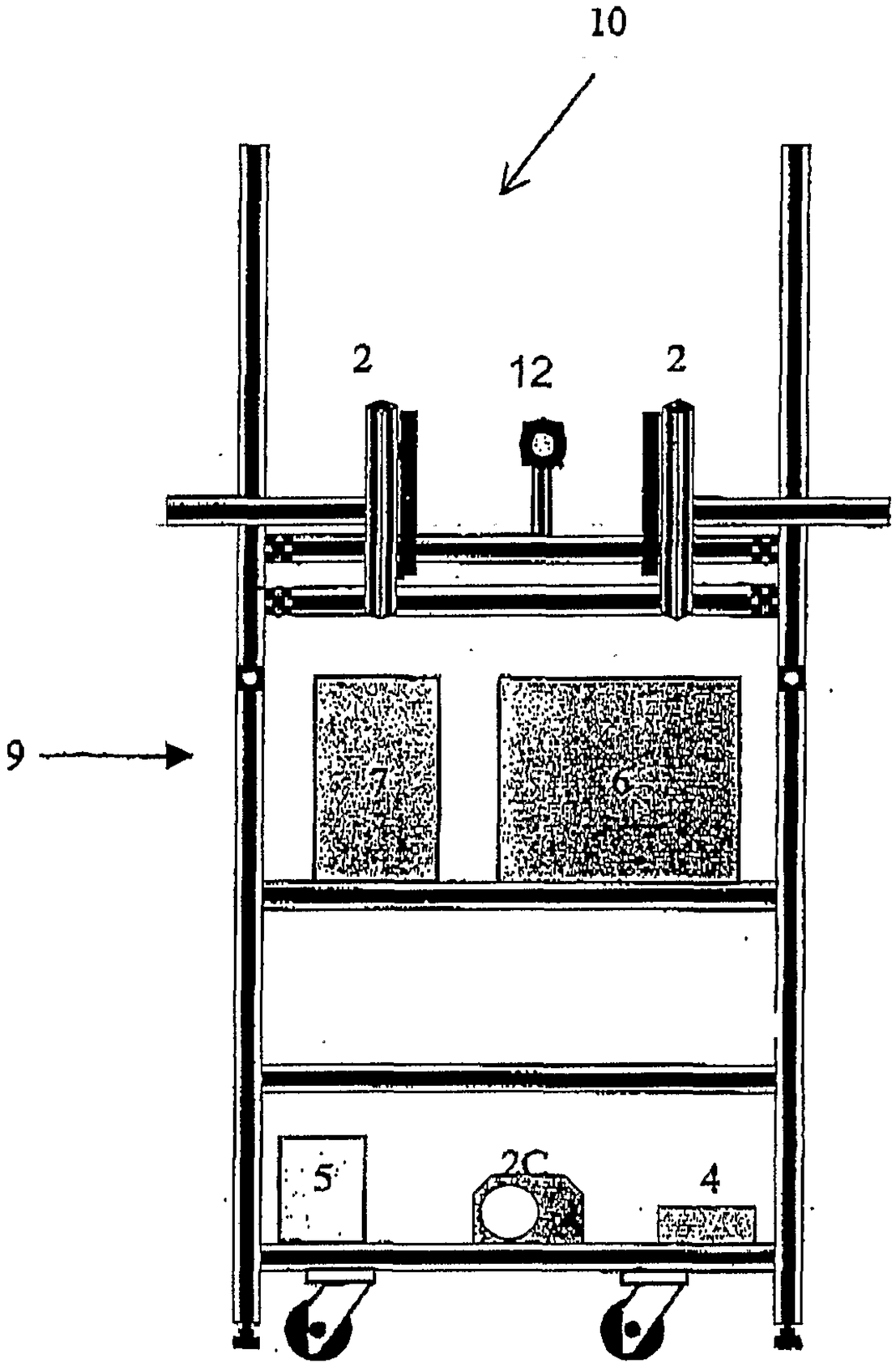


FIG. 1A

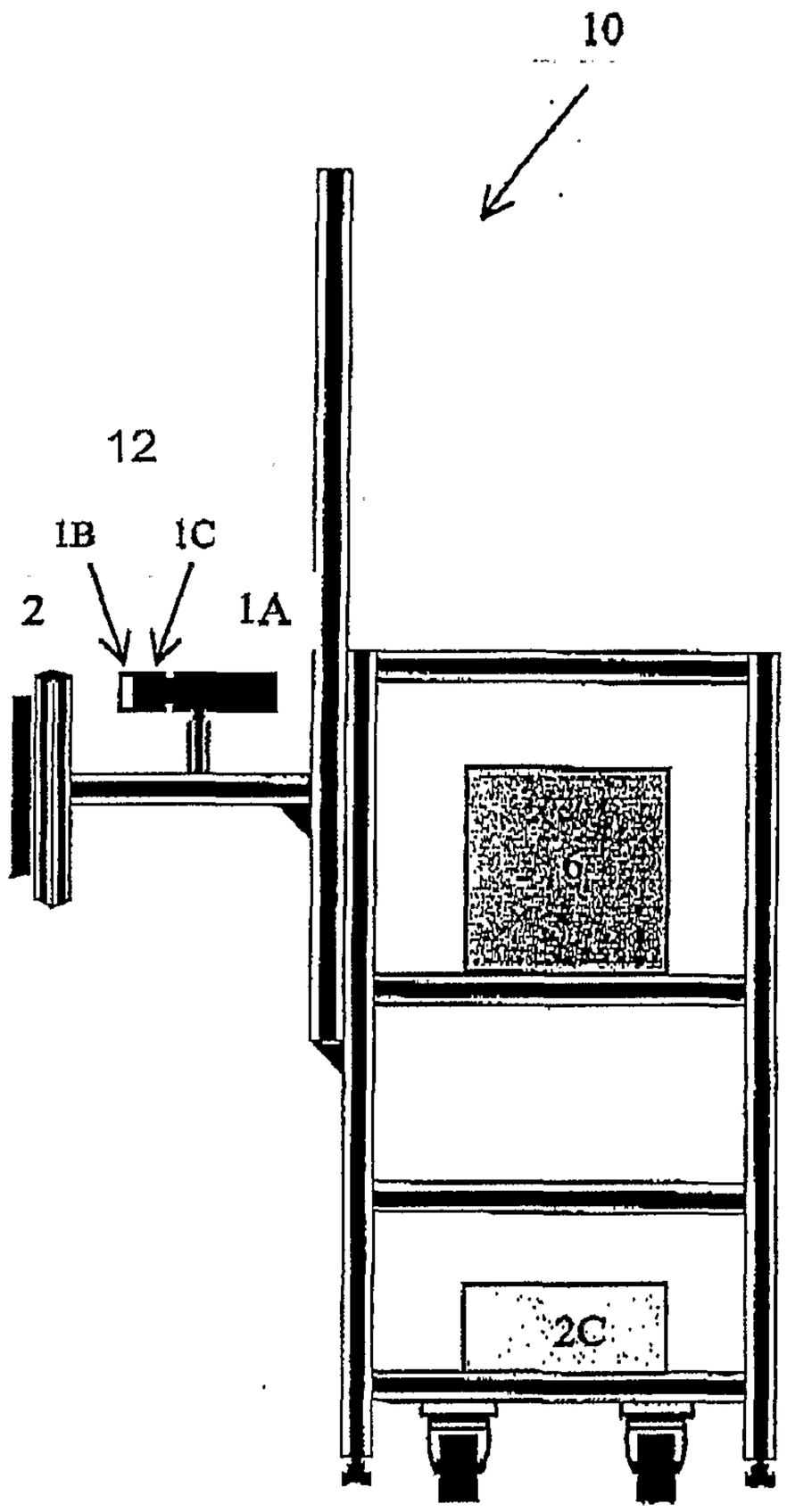


FIG. 1B

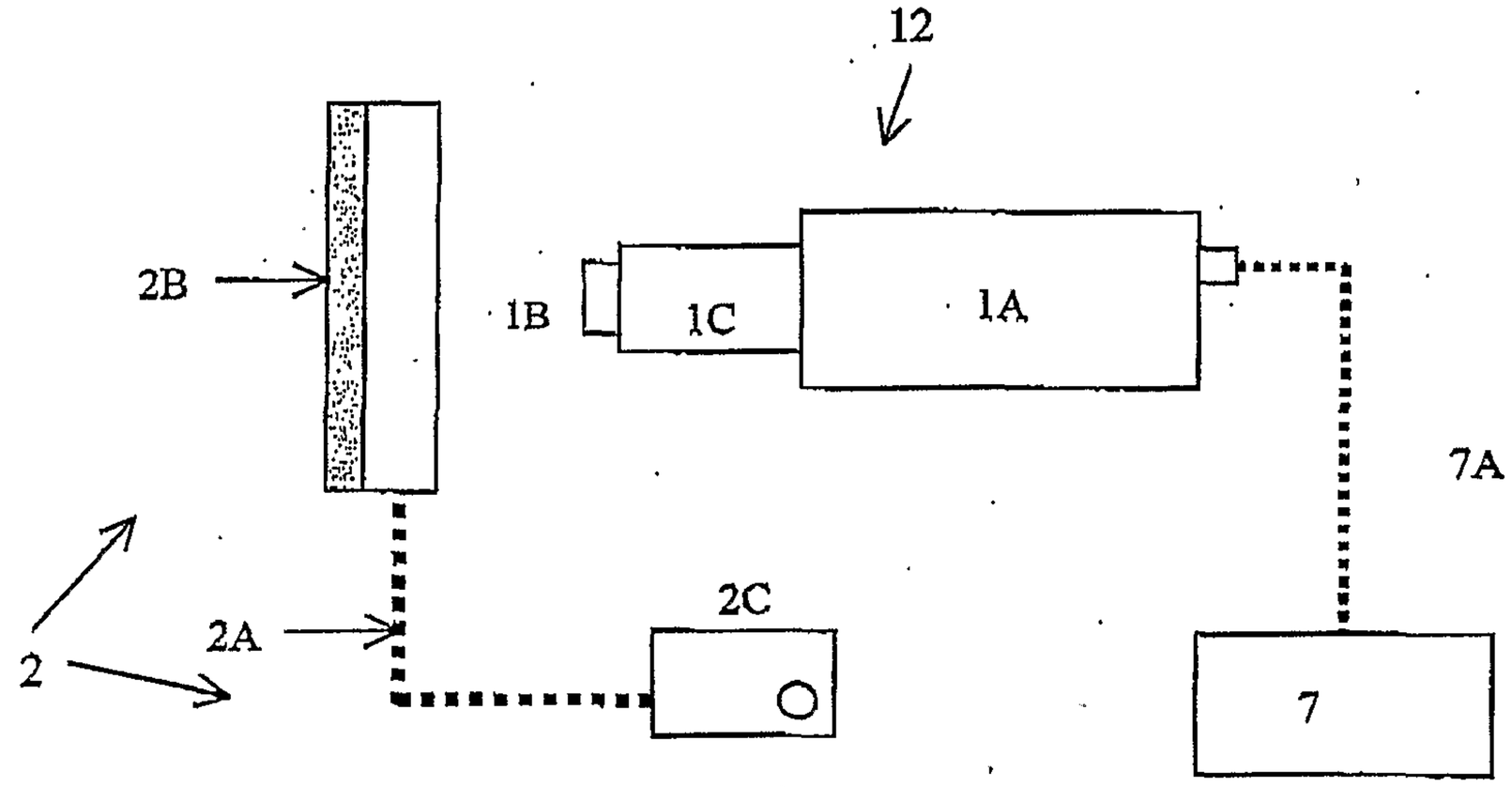


FIG. 1C

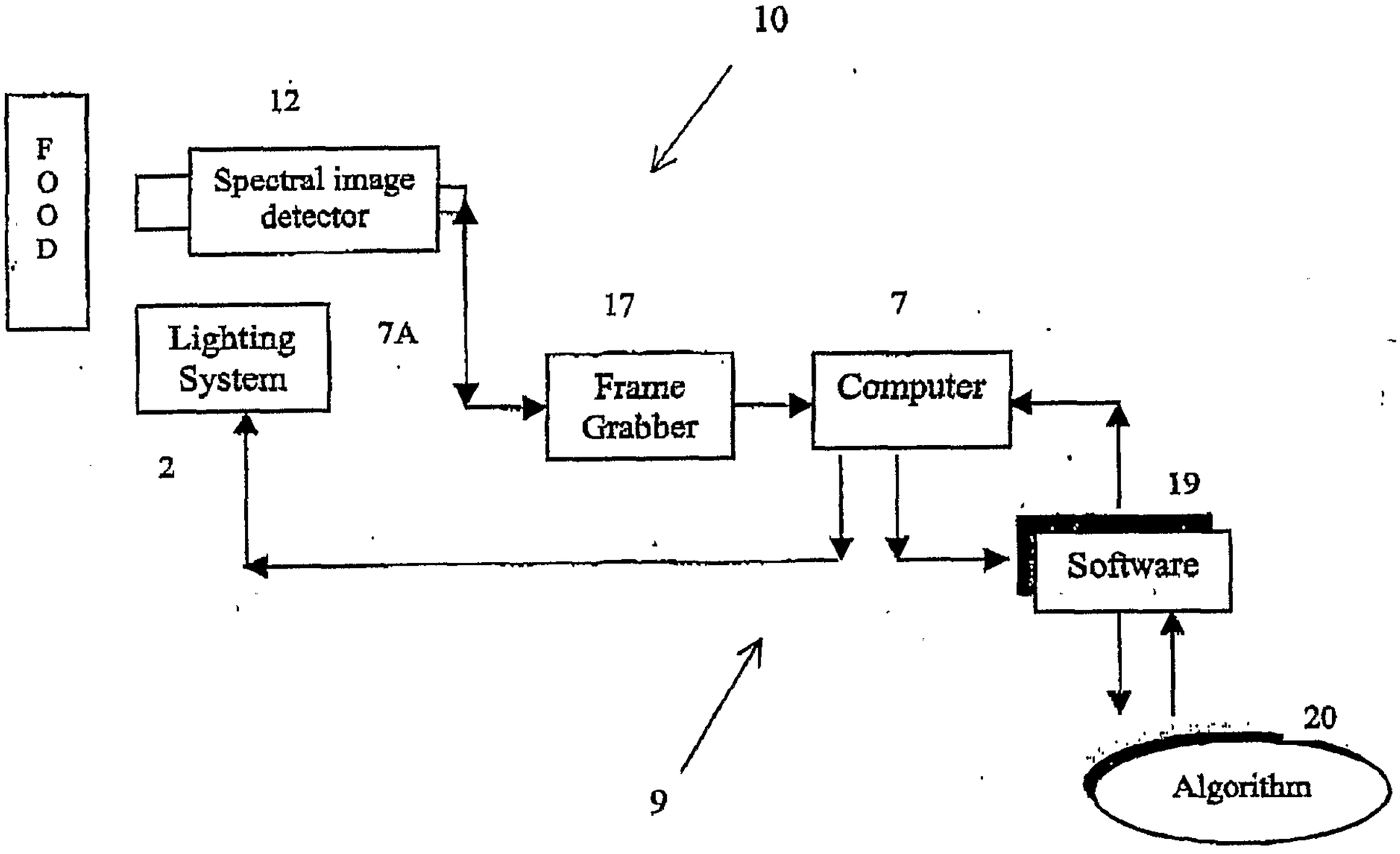

10
12
FOOD
Spectral image detector
Lighting System
7A
17
7
Frame Grabber
Computer
2
19
Software
9
20
Algorithm

FIG. 1D

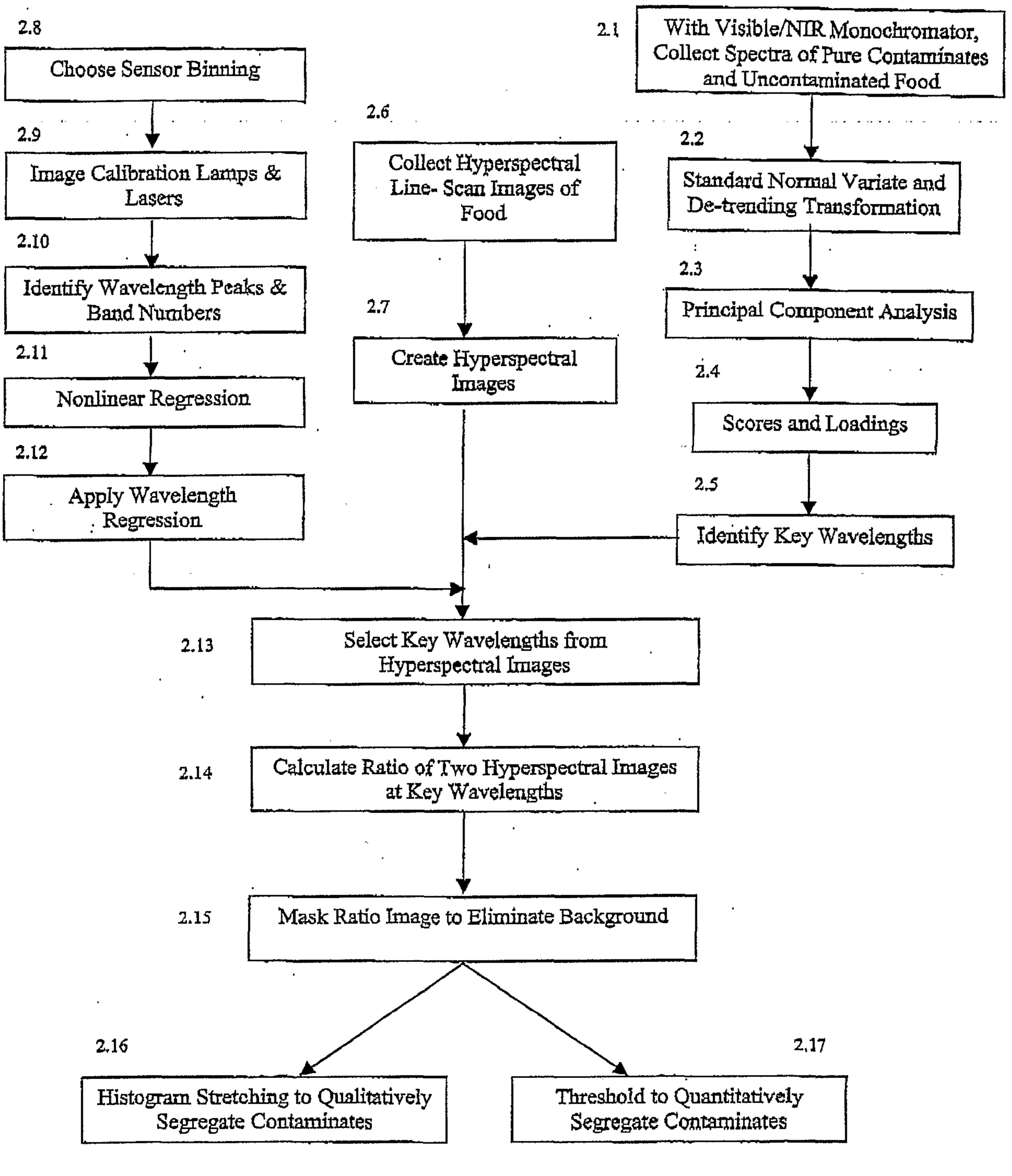

2.8
Choose Sensor Binning
2.9
Image Calibration Lamps & Lasers
2.10
Identify Wavelength Peaks & Band Numbers
2.11
Nonlinear Regression
2.12
Apply Wavelength Regression
2.6
Collect Hyperspectral Line- Scan Images of Food
2.7
Create Hyperspectral Images
2.1
With Visible/NIR Monochromator, Collect Spectra of Pure Contaminates and Uncontaminated Food
2.2
Standard Normal Variate and De-trending Transformation
2.3
Principal Component Analysis
2.4
Scores and Loadings
2.5
Identify Key Wavelengths
2.13
Select Key Wavelengths from Hyperspectral Images
2.14
Calculate Ratio of Two Hyperspectral Images at Key Wavelengths
2.15
Mask Ratio Image to Eliminate Background
2.16
Histogram Stretching to Qualitatively Segregate Contaminates
2.17
Threshold to Quantitatively Segregate Contaminates

FIG. 2

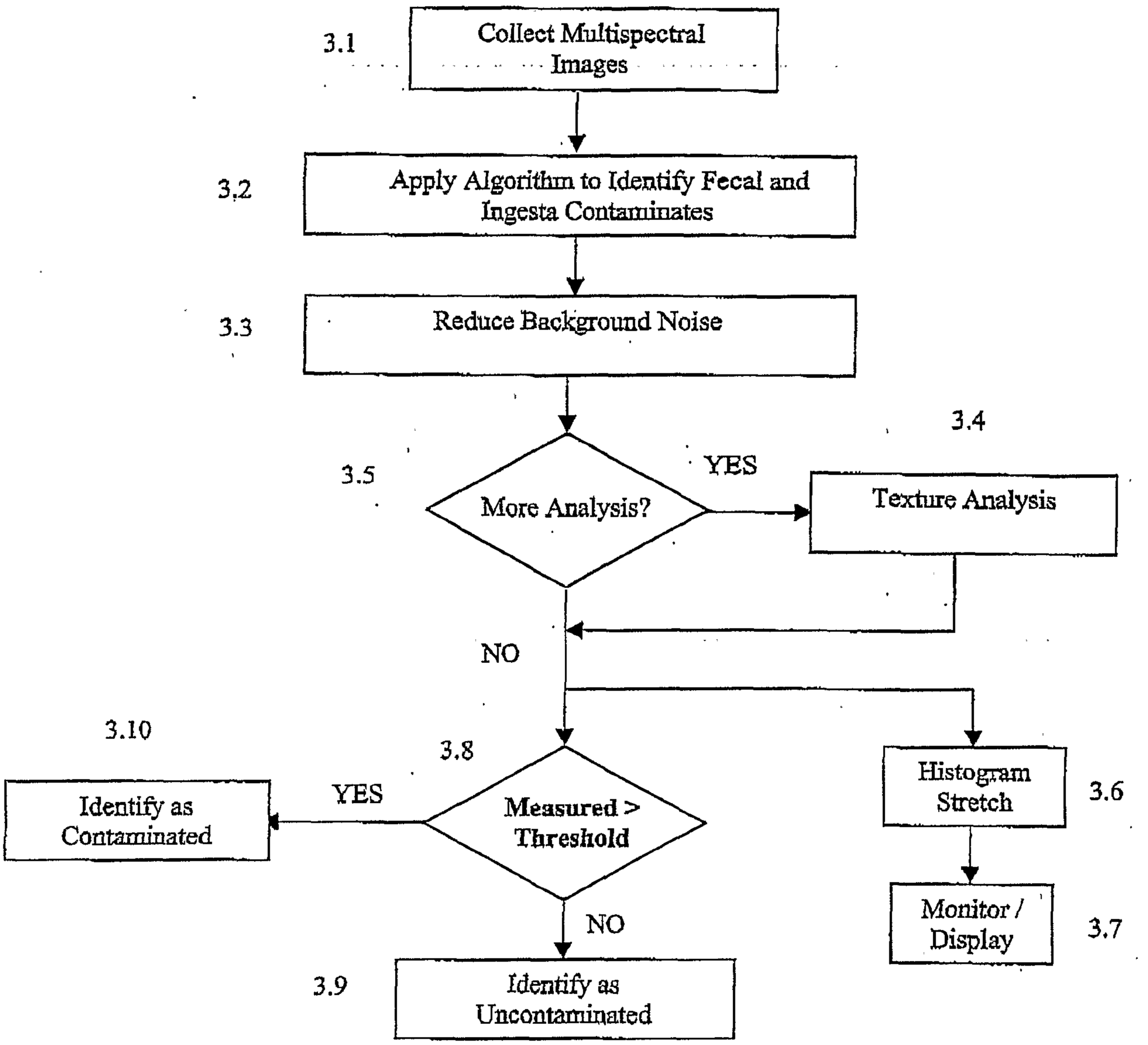

3.1
Collect Multispectral Images
3.2
Apply Algorithm to Identify Fecal and Ingesta Contaminates
3.3
Reduce Background Noise
3.4
3.5
More Analysis?
YES
Texture Analysis
NO
3.10
3.8
Identify as Contaminated
YES
Measured > Threshold
Histogram Stretch
3.6
Monitor / Display
3.7
NO
3.9
Identify as Uncontaminated

FIG. 3

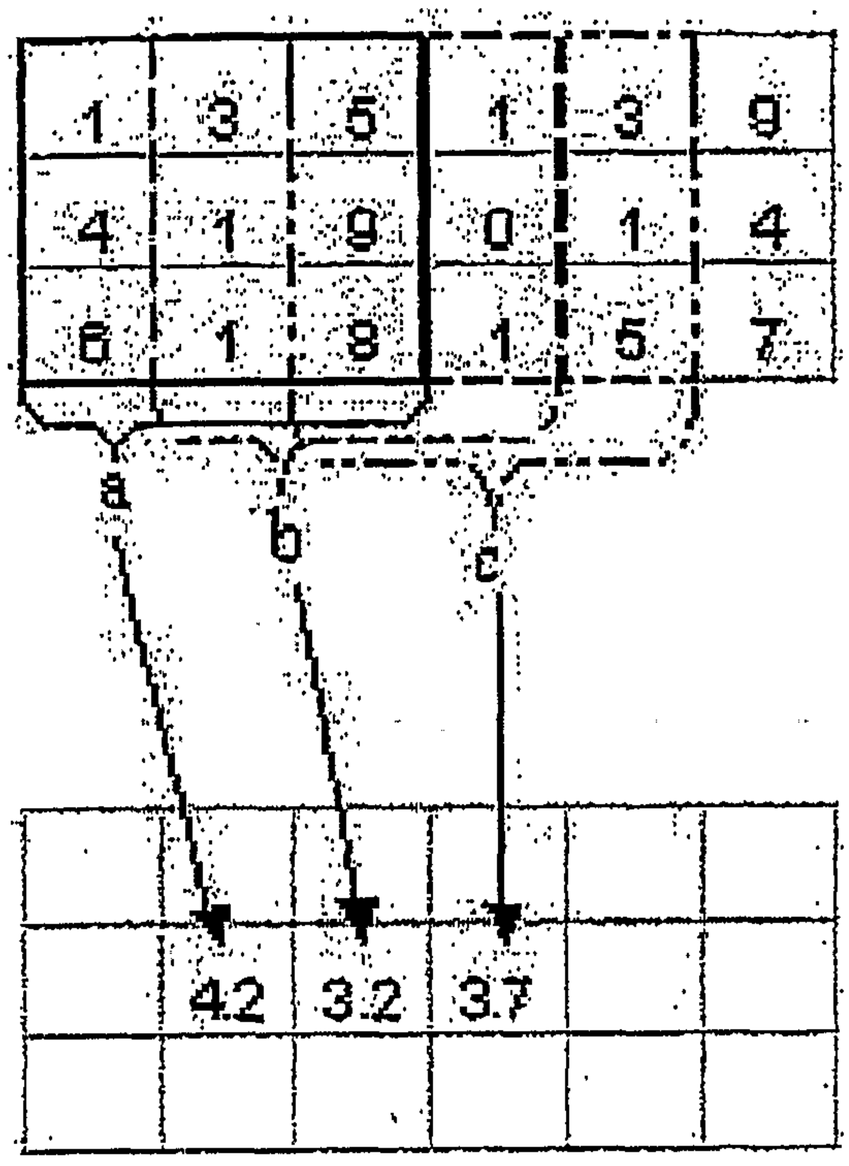


FIG. 4A

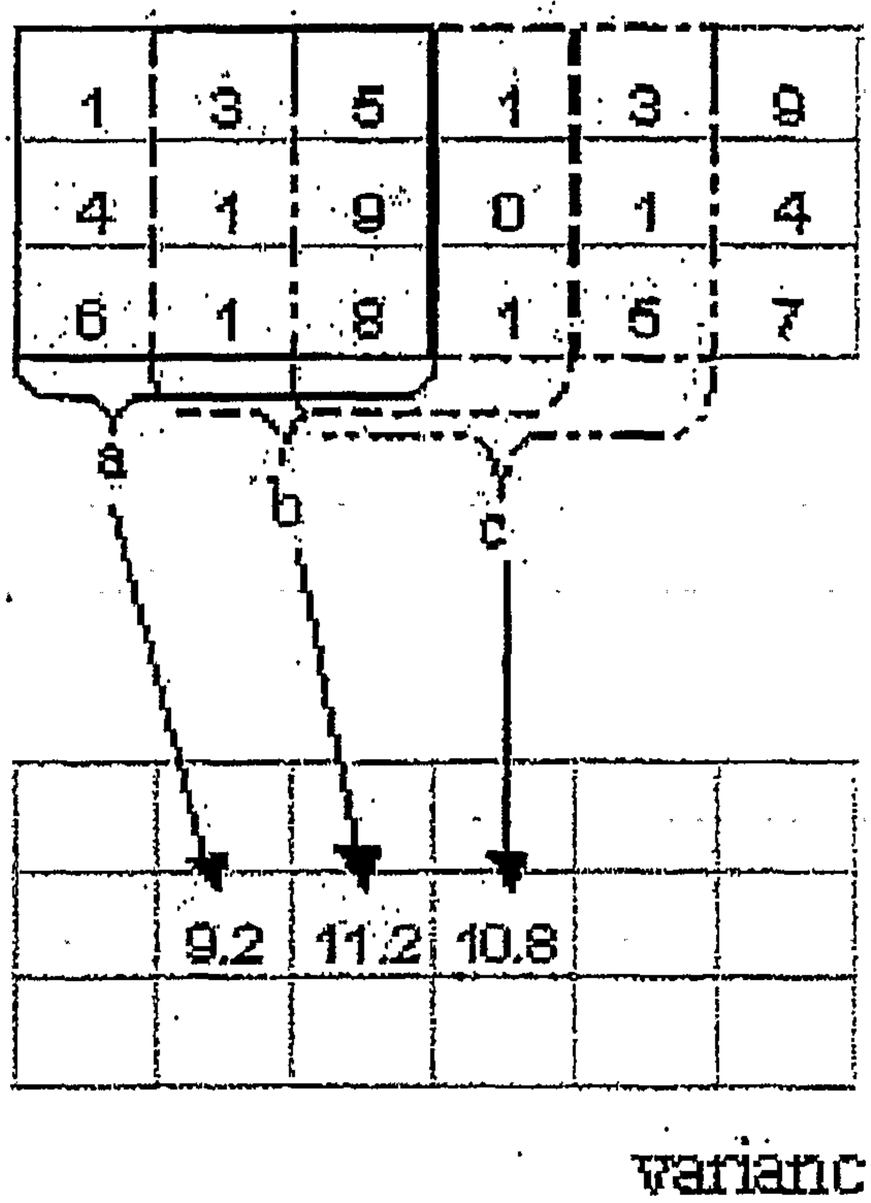


FIG. 4B

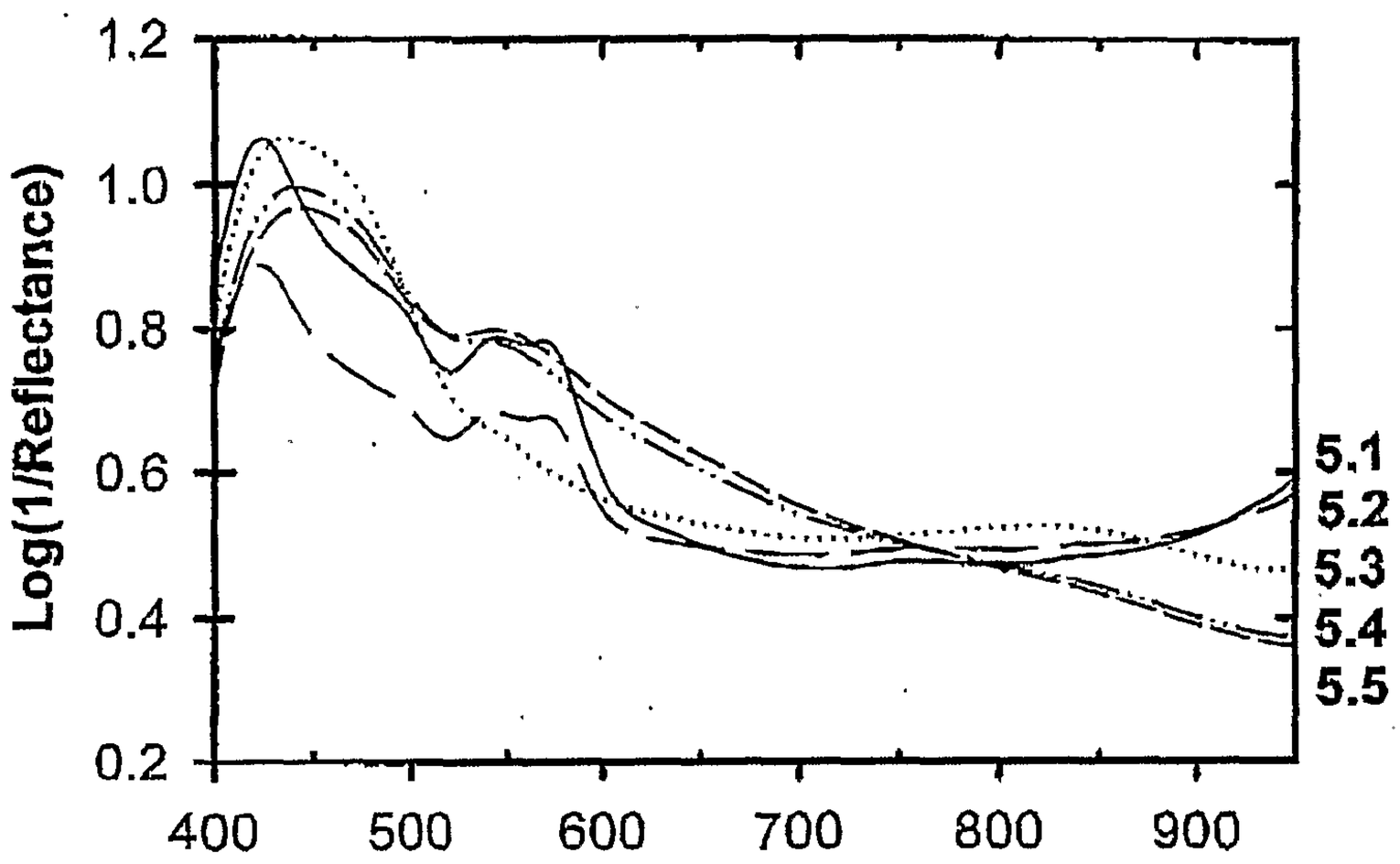

1.2
1.0
0.8
0.6
0.4
0.2
Log(1/Reflectance)
5.1
5.2
5.3
5.4
5.5
400
500
600
700
800
900
Wavelength, nm

FIG. 5

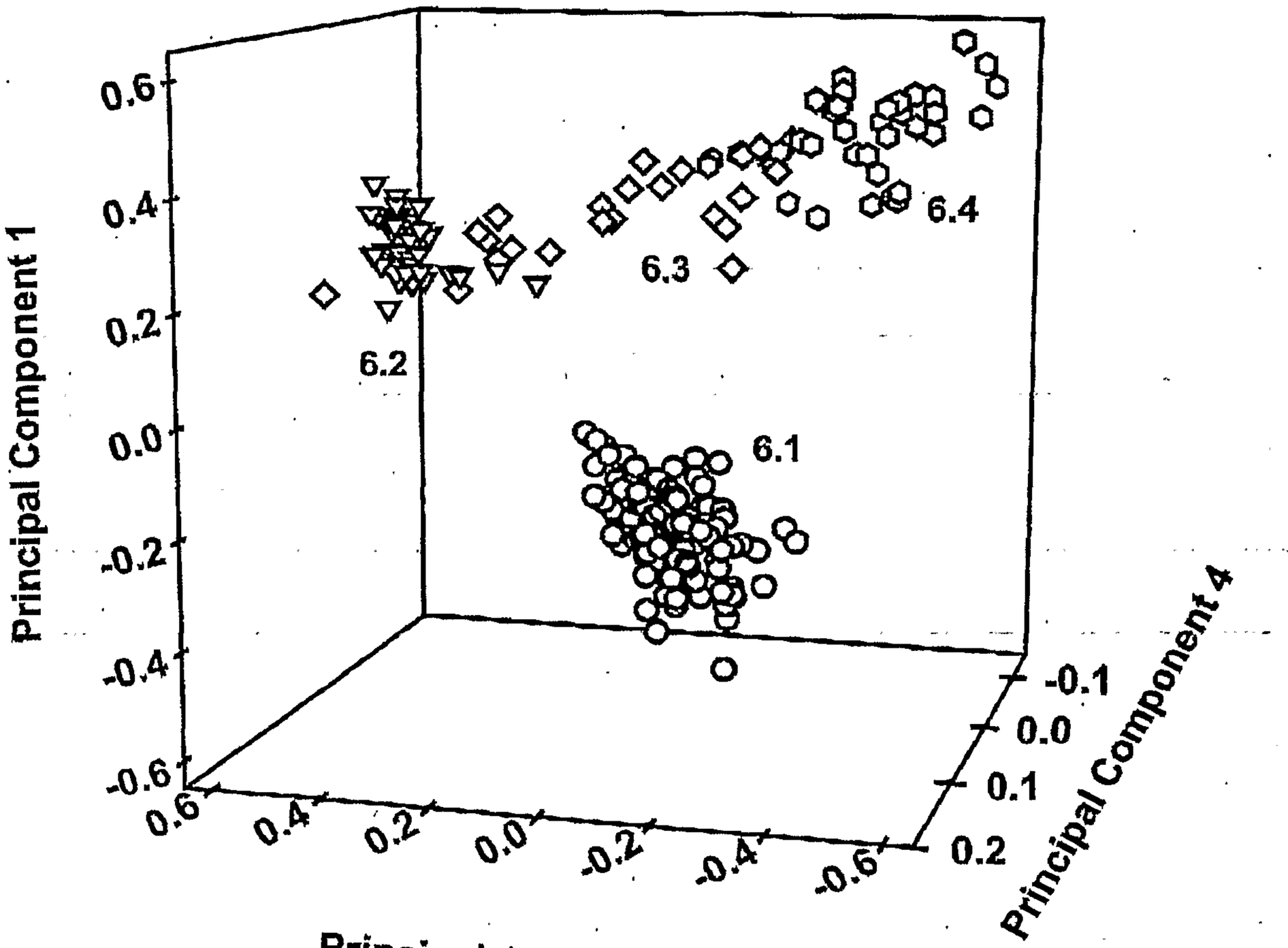

Principal Component 1
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
6.2
6.3
6.4
6.1
Principal Component 4
-0.1
0.0
0.1
0.2
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
Principal Component 2

FIG. 6

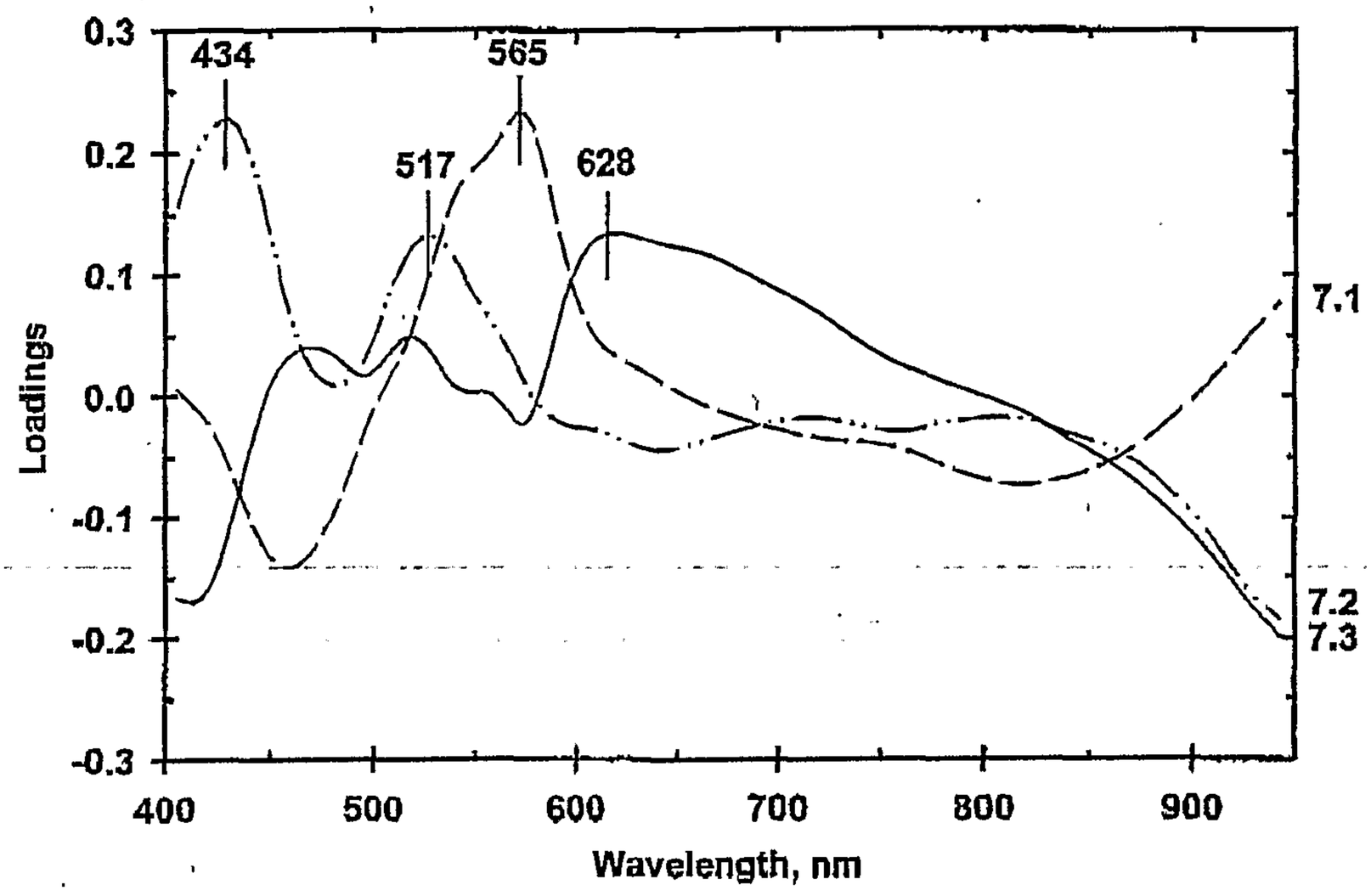

0.3
0.2
0.1
0.0
-0.1
-0.2
-0.3
Loadings
434
565
517
628
7.1
7.2
7.3
400
500
600
700
800
900
Wavelength, nm

FIG. 7

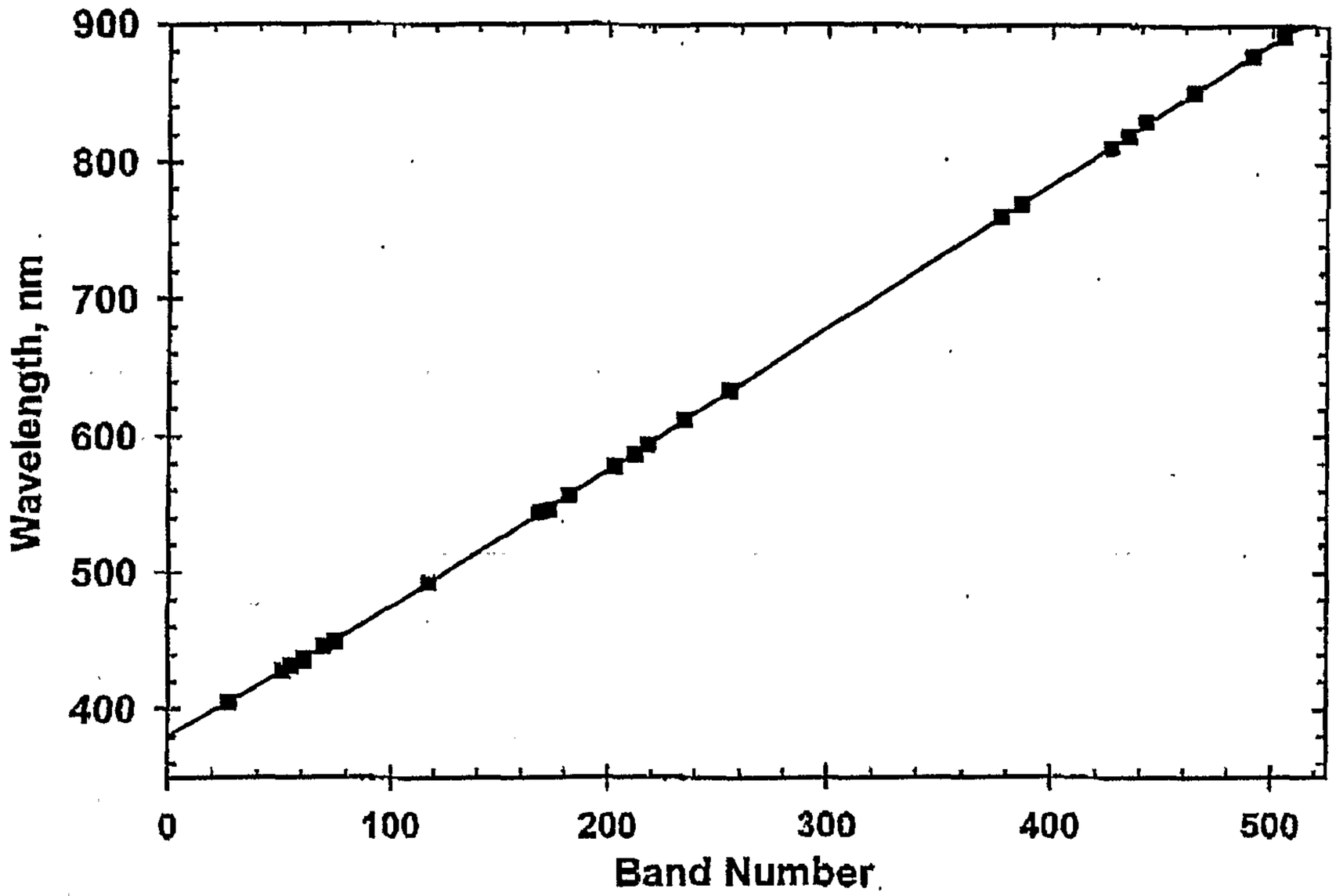

900
800
700
600
500
400
Wavelength, nm
0
100
200
300
400
500
Band Number

FIG. 8

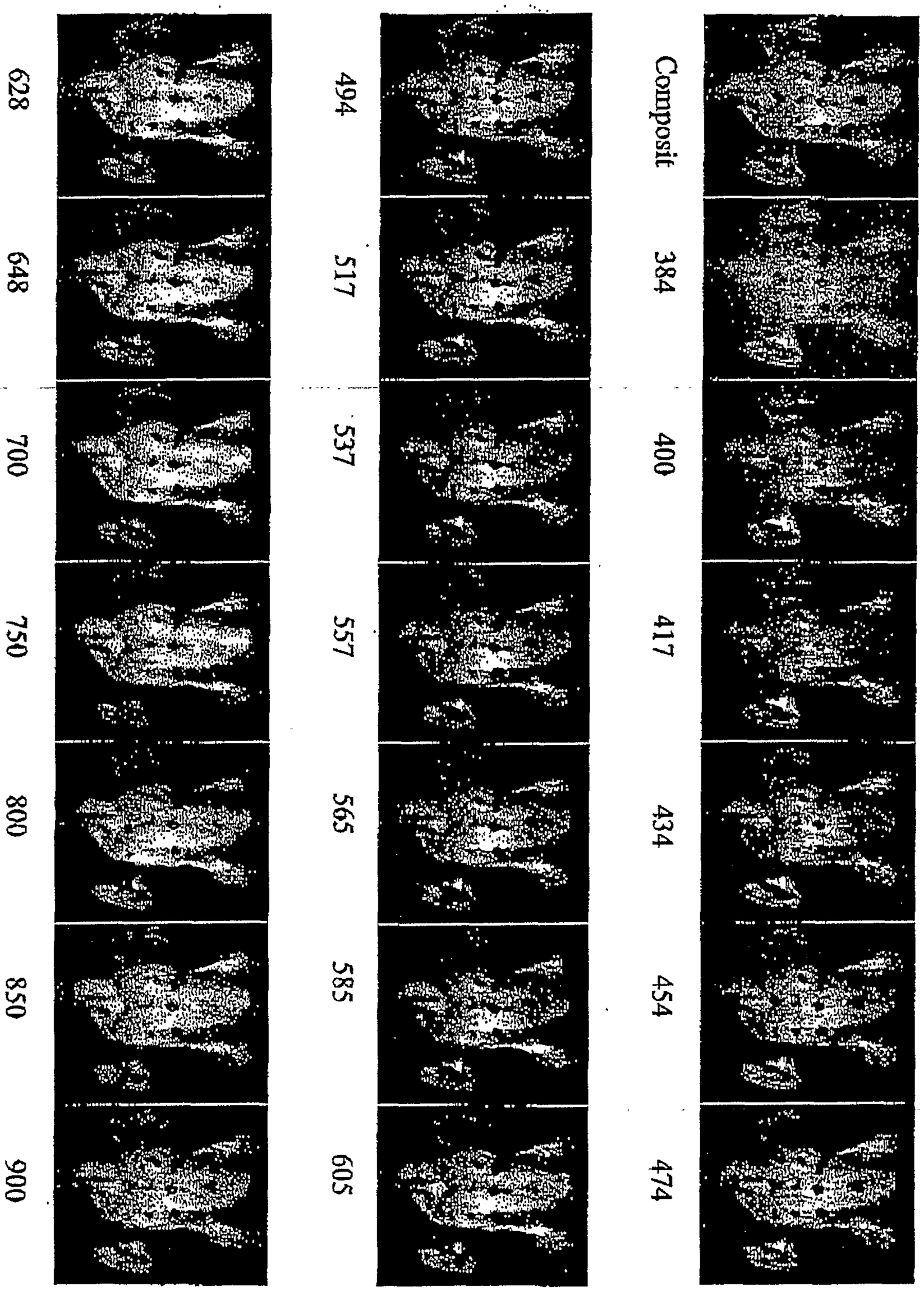
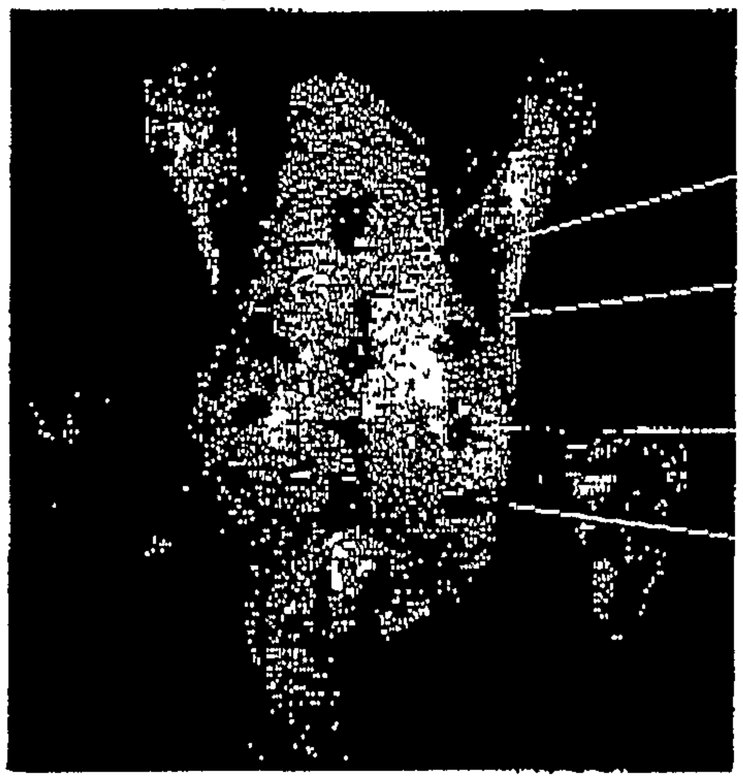

Composit
384
400
417
434
454
474
494
517
537
557
565
585
605
628
648
700
750
800
850
900

FIG. 9



Composite Color (Red: 634 nm; Green: 520 nm; Blue: 446 nm)
FIG. 10A



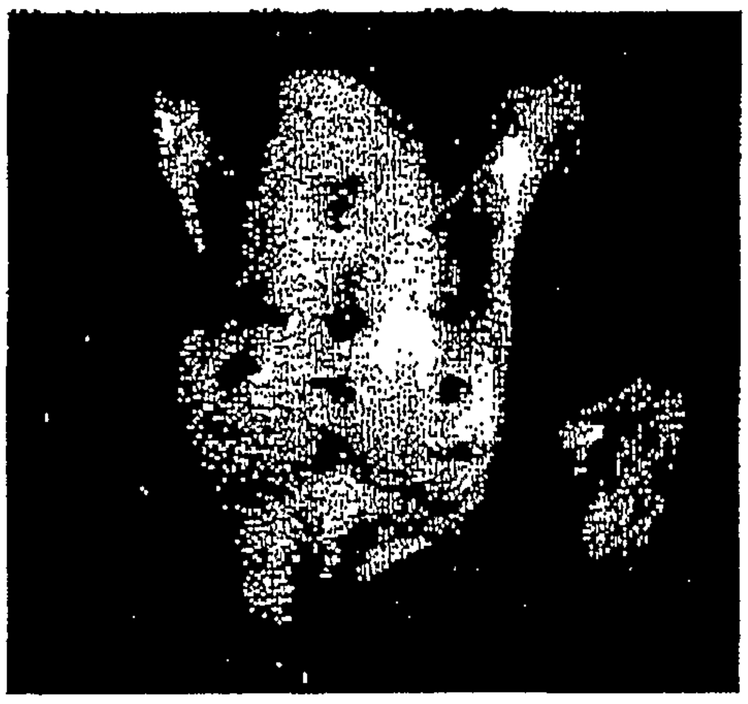
434 nm
FIG. 10B



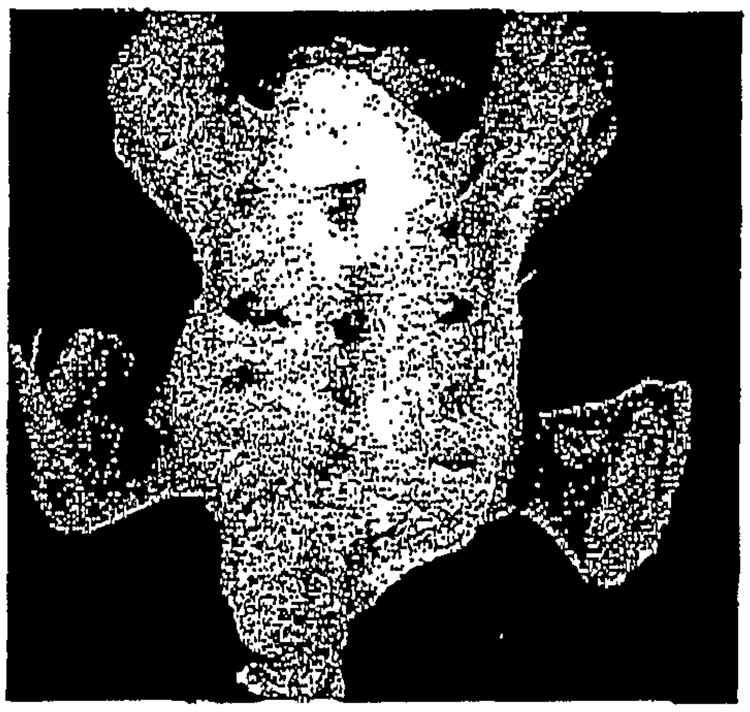
517nm
FIG. 10C



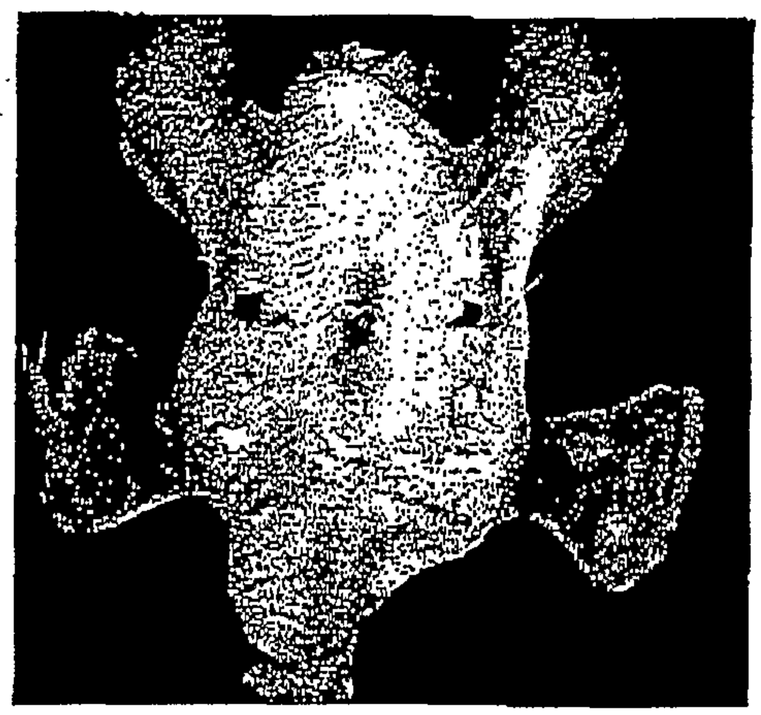
565 nm
FIG. 10D



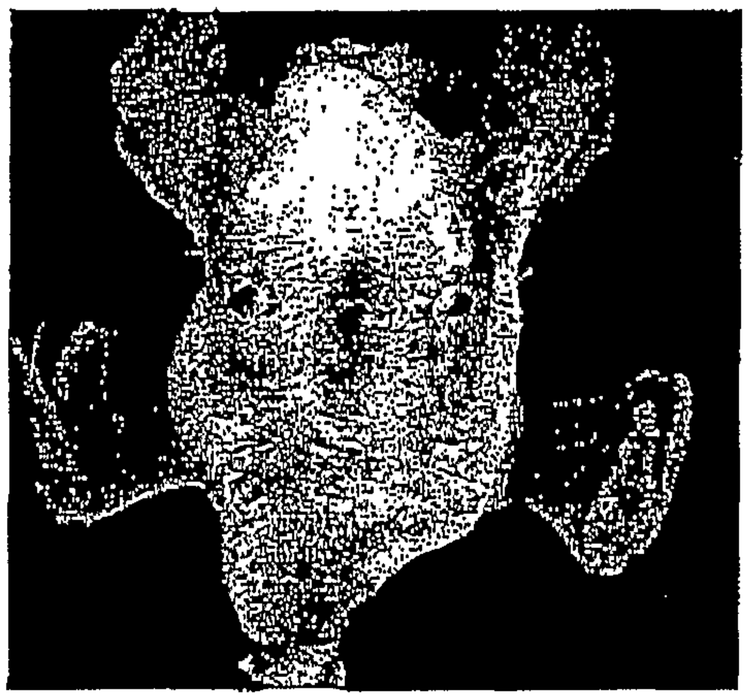
628 nm
FIG. 10E



517/434 nm
FIG. 11A



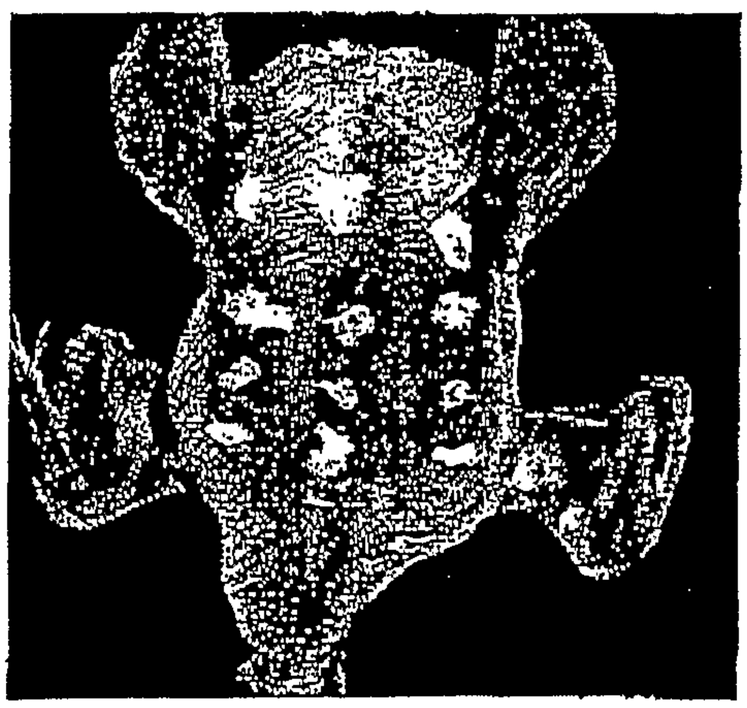
565/434 nm
FIG. 11B



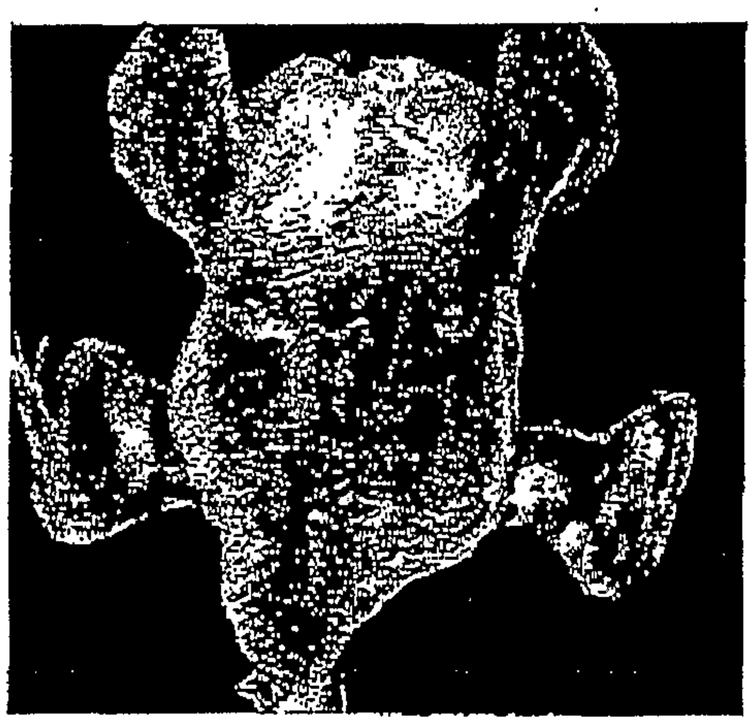
628/434 nm
FIG. 11C



565/517 nm
FIG. 11D



628/517 nm
FIG. 11E



628/565 nm
FIG. 11F

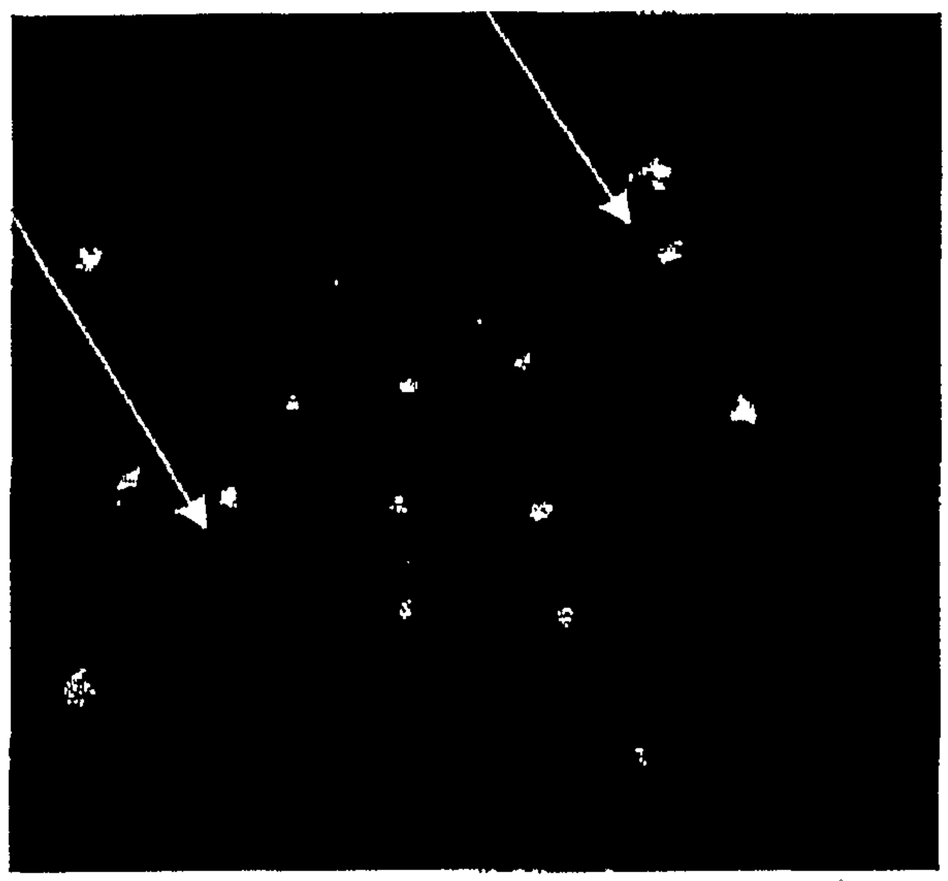


FIG. 12B

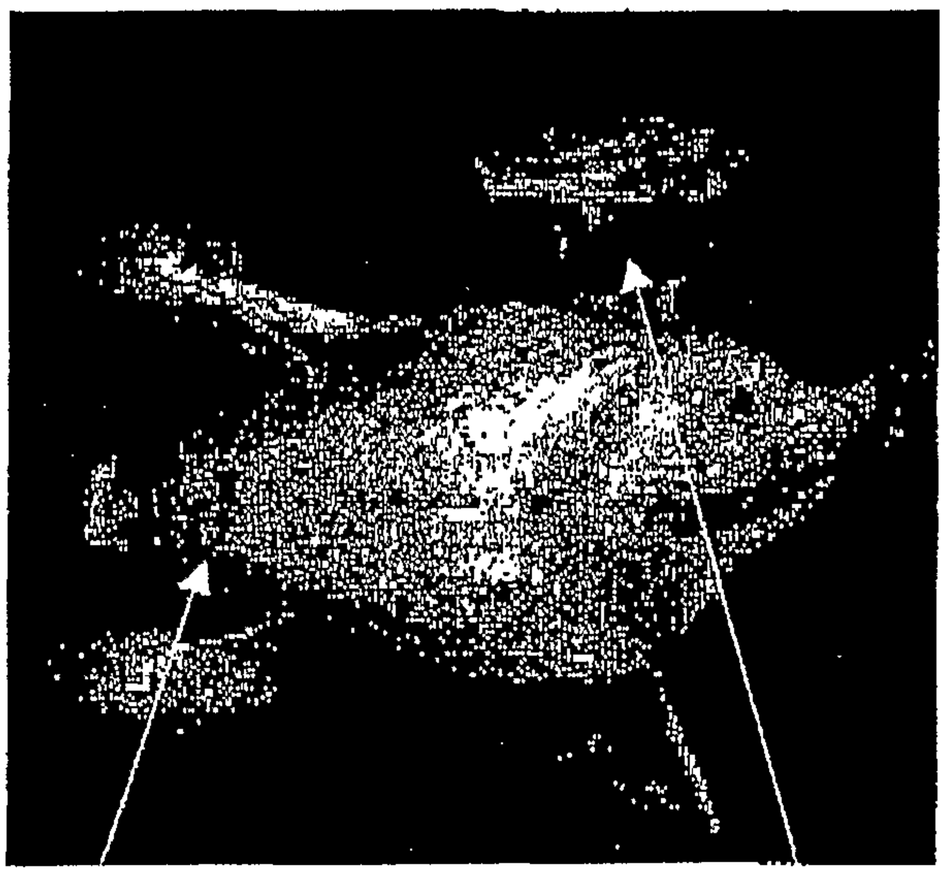


FIG. 12A

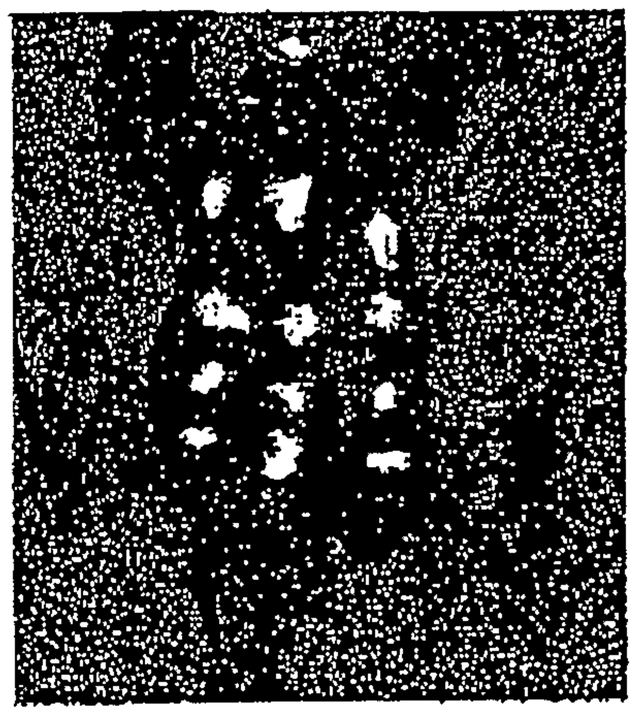


FIG. 13A



FIG. 13B

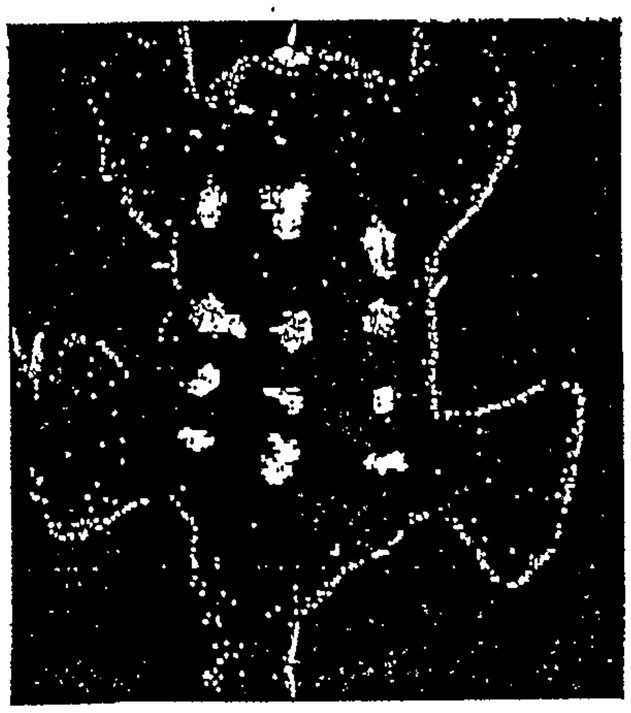


FIG. 13C

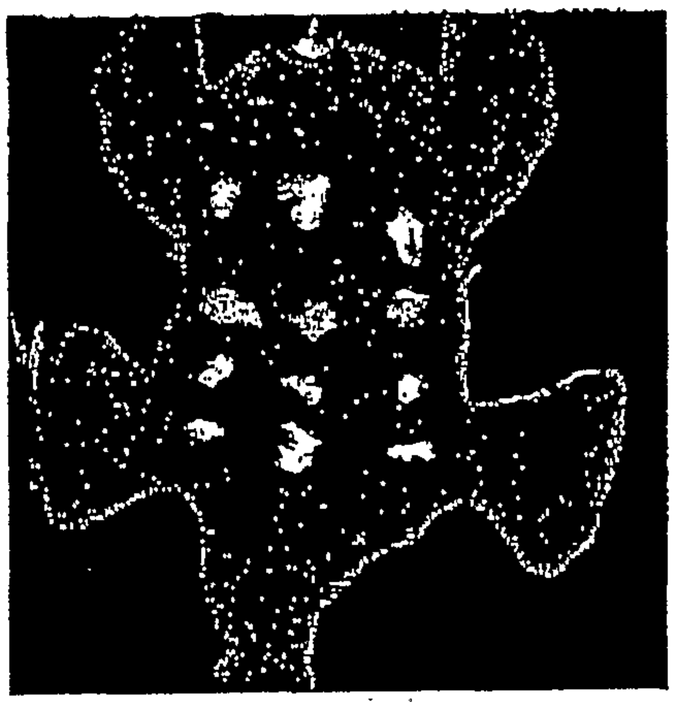


FIG. 14A

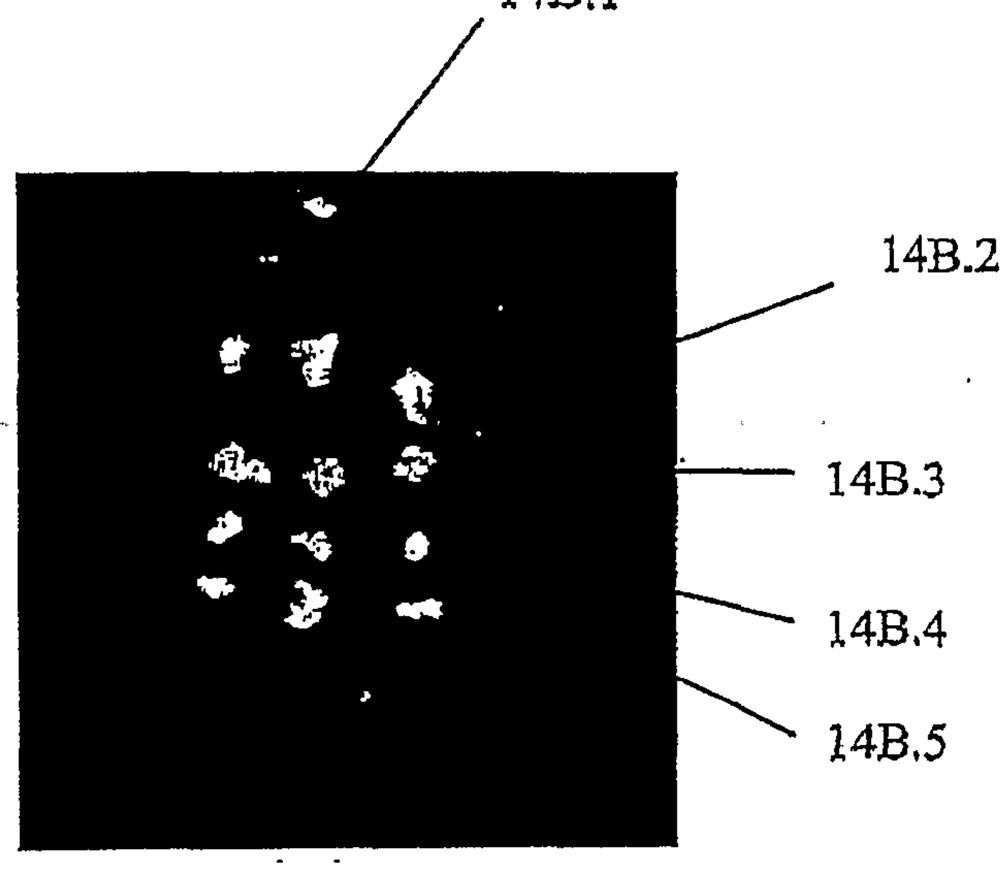


FIG. 14B

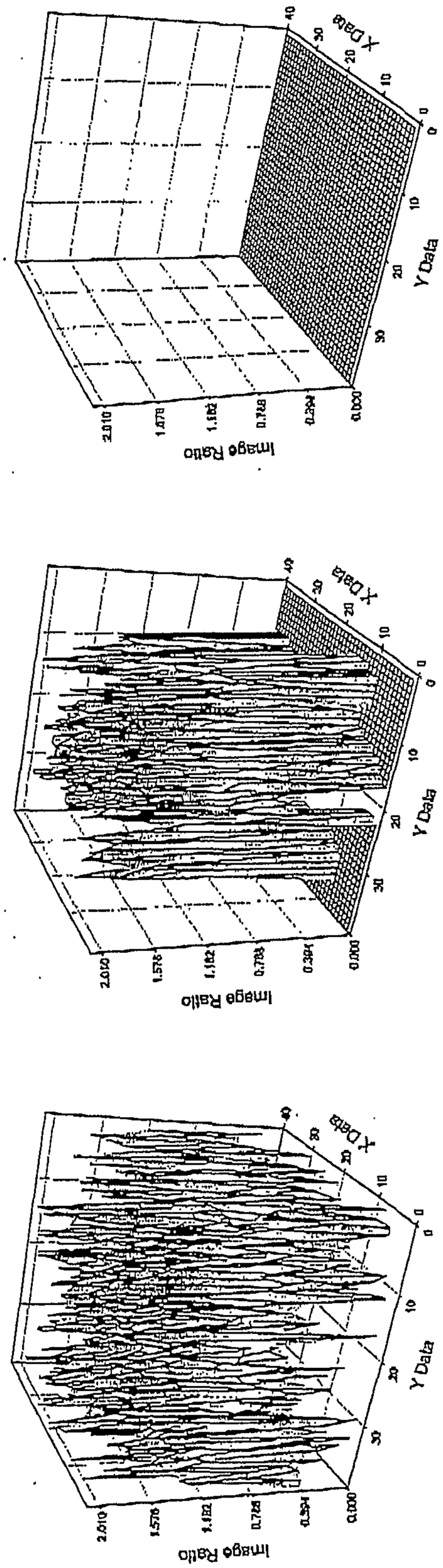


FIG. 15C

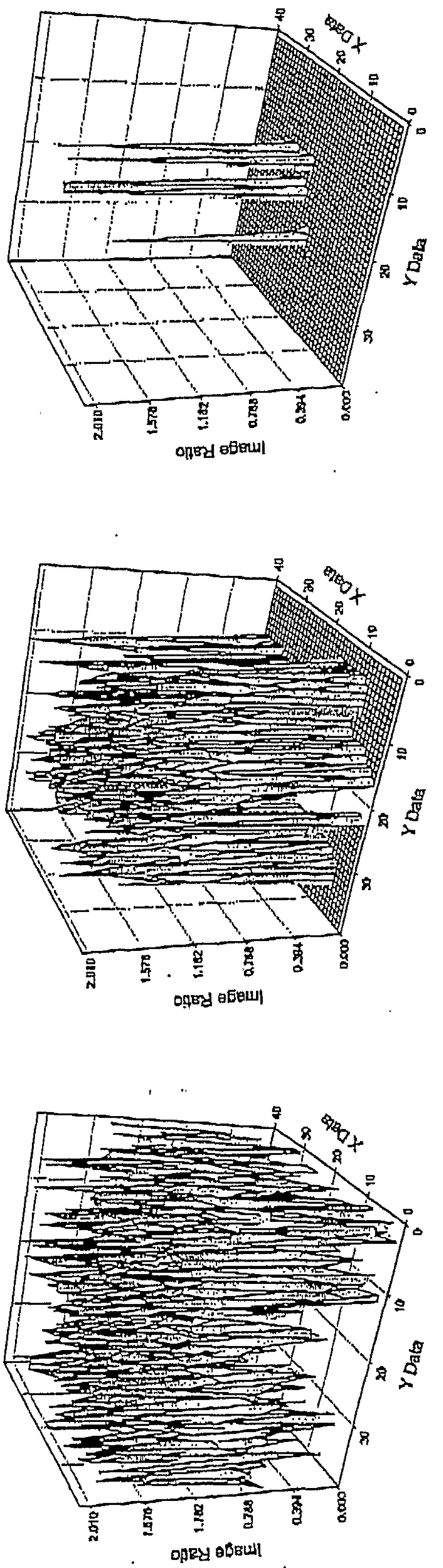


FIG. 15F

FIG. 15B

FIG. 15E

FIG. 15A

FIG. 15D