

reference points 114, 112, the value of the curvatures of the spectacles lens 104 on the front surface and back surface, at the distance and near reference points 114, 112 or at the positions opposite these points, and also the date and location of the spectacles lens manufacture.

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Figure 6 shows a device 200 for marking spectacles lens semi-finished products or lens blanks 204 with a data matrix code. The device 200 contains a conveying apparatus 202, on which the spectacles lens blanks 204 are fed to a marking system 208.

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The spectacles lens blanks 204 are arranged on a supporting device 203. For example the spectacles lens blanks 204 can be blocked on such supporting device. In the supporting device 203, the position of the local coordinate system of the spectacles lens blank 204 is well defined with respect to the local coordinate system of the supporting device 203.

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The marking system 208 comprises an excimer laser 210. The excimer laser 210 generates a spatially displaceable laser beam 212, by means of which a data matrix code can be written into a spectacles lens semi-finished product 204. However, in principle, the device 200 can also be used to mark finished spectacles lenses and raw spectacles lens blanks.

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It is possible also to design the marking system 208 for marking spectacles lens glass- or plastic bodies by chiselling, micro-drilling, impressing or printing.

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A referencing arrangement 214 with a camera 216 is in the device 200. The referencing arrangement 214 is used to reference the spatial coordinates of the glass- or plastic bodies in the form of a spectacles lens, a spectacles lens semi-finished product or a spectacles lens blank 204, which was fed to the marking system 208, with respect to a coordinate system affixed to the marking system 208. For referencing the spatial coordinates of the glass-

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204, for the manufacturer-side specification of the position of the lens horizontal 24 and/or the distance and/or the near and/or the prism reference point 14, 12, 11.

**We Claim:**

1. Method for storing information on a glass- or plastic body embodied as spectacles lens (4) or spectacles lens blank (104) or spectacles lens semi-finished product (204),

**characterized** in that

the information in the form of data on or in the glass- or plastic body (4, 104, 204) is stored by creating at least one marking (32, 132, 230, 232), which can be read by a reader (300), by means of a marking system (200), which has an interface (218) for reading information individualizing this glass- or plastic body (4, 104, 204), with the at least one marking (32, 132, 230, 232) being created permanently by the marking system (200) on or in the glass- or plastic body (4, 104, 204) at a definition point (16) of a local body-specific coordinate system (20) set by two points (16, 18) on or in the glass- or plastic body (4, 104, 204), for the manufacturer-side specification of the position of the lens horizontal (24) and/or the distance and/or the near and/or the prism reference point (14, 12, 11) as it is defined by the standardization regulations DIN EN ISO 8980-2:2004.

2. Method according to Claim 1, **characterized** in that the marking (32, 132, 230, 232) created on or in the glass- or plastic body (4, 104, 204) together with a further marking (30), created on or in the glass- or plastic body (4, 104, 204) sets the local body-specific coordinate system (20) for the manufacturer-side specification of the position of the lens horizontal (24) and/or the distance and/or near and/or prism reference point (14, 12, 11) and/or created on or in the glass- or plastic body (4) is a phase object changing the phase of light waves passing through the glass-or plastic body (4).

3. Method according to one of Claims 1 or 2, **characterized** in that the marking (232) is created by laser engraving, chiselling, micro-drilling, impressing or printing.
4. Method according to Claim 3, **characterized** in that a multiplicity of pixels (40) are generated for creating the marking (32) on or in the glass- or plastic body (4), said pixels having a diameter D lying in the range  $60 \mu\text{m} \leq D \leq 100 \mu\text{m}$  and having a depth T which is  $0.5 \mu\text{m} \leq T \leq 2.5 \mu\text{m}$ .
5. Method according to one of Claims 1 to 4, **characterized** in that the marking (32) is a digital code composed of individual pixels (40).
6. Method according to Claim 5, **characterized** in that the marking (32) is a data matrix code.
7. Method according to Claim 5 or 6, **characterized** in that the marking (32) has a convex envelope (36) with a square external contour which has a side length A, which is preferably  $1.5 \text{ mm} \leq A \leq 2.5 \text{ mm}$  and/or in that the geometric centroid (18) of the convex envelope (36) of the marking is a definition point (16) of a local coordinate system (20) defining the lens horizontal (24) and/or the distance and/or near reference point (14, 12) and/or prism reference point (11) and/or in that the pixels (60) of the marking (62) are arranged in a pattern (64), the external contour (66) of which reproduces a trademark and/or a company logo, more particularly a letter, and/or in that the pixels (60) of the marking (62) replicate a trademark and/or a company logo (32).
8. Glass- or plastic body embodied as spectacles lens (4), spectacles lens blank (104) or spectacles lens semi-finished product (204), more particularly a progressive power spectacles lens or an individual single-vision lens, comprising a marking (32) arranged on or in the glass-

- or plastic body (4, 104, 204) at a definition point (18) of the local glass- or plastic body coordinate system (20) for the manufacturer-side specification of the position of the lens horizontal (24) and/or the distance and/or the near and/or the prism reference point (14, 12, 11), **characterized** in that the marking contains information in the form of data which individualizes the glass- or plastic body (4), in particular stored by means of a method according to one of Claims 1 to 7.
9. Glass- or plastic body according to Claim 8, **characterized** in that the marking (32, 132, 230) together with a further marking (30, 130, 232), preferably designed as trademark and/or company logo, arranged on or in the glass- or plastic body (4, 104, 204) sets the local glass- or plastic body coordinate system (20) for the manufacturer-side specification of the position of the lens horizontal (24) and/or the distance and/or near and/or prism reference point (14, 12, 11).
  10. Glass- or plastic body according to Claim 8 or 9, **characterized** in that the marking (32) created on or in the glass- or plastic body (4) is a phase object and/or in that the marking contains a multiplicity of pixels (40) which have a diameter  $D$  lying in the range  $60 \mu\text{m} \leq D \leq 100 \mu\text{m}$  and which have a depth  $T$  which is  $0.5 \mu\text{m} \leq T \leq 2.5 \mu\text{m}$ .
  11. Glass- or plastic body according to one of Claims 8 to 10, **characterized** in that the marking (32) is a digital code composed of individual pixels (40), more particularly a data matrix code (30).
  12. Glass- or plastic body according to Claim 11, **characterized** in that the set of pixels (60) of the marking (32) has a convex envelope (36) with a square external contour which has a side length  $A$ , which is preferably  $1.5 \text{ mm} \leq A \leq 2.5 \text{ mm}$ .

13. Glass- or plastic body according to Claim 12, **characterized** in that the geometric centroid (18) of the convex envelope (36) of the marking (32) is a definition point (16) of a local coordinate system (20) defining the lens horizontal (24) and/or the distance and/or near reference point (14, 12) and/or prism reference point (11).
  
14. Device (200) for storing information on a glass- or plastic body embodied as spectacles lens (4), spectacles lens blank (104) or spectacles lens semi-finished product (204),

**characterized by**

a marking system (208) for marking a glass- or plastic body (204), by virtue of a marking (230, 232) containing information individualizing a glass- or plastic body (204) being created on or in the glass- or plastic body (204), an interface (218) connected to the marking system (208), for reading information individualizing the glass- or plastic body (204) to be marked, and a referencing arrangement (214), connected to the marking system (208), for establishing the position of the local glass- or plastic body coordinate system (20) on the glass- or plastic body (204) to be marked, specifying the lens horizontal (24) and/or the distance and/or the near reference point (14, 12) and/or the prism reference point, with the marking system (208) marking the glass- or plastic body (204) by virtue of the fact that the information, read in at the interface (218) and individualizing this glass- or plastic body (204), is transferred onto or into the glass- or plastic body (204) by applying a marking (230, 232) containing this information to a definition point (16, 18) of the local glass- or plastic body coordinate system (20), established by the referencing arrangement (214) for this glass- or plastic body, specifying the lens horizontal (24) and/or the distance and/or near reference point (14, 12) and/or the prism reference point (11).

15. Method for reading digital information stored on a glass- or plastic body embodied according to one of Claims 8 to 13, **characterized** in that an illumination light beam (322, 323) is directed at the glass- or plastic body (316), the former passing through the glass- or plastic body (316) and being reflected at a reflector (332) after passing through the glass- or plastic body (316) in order once again to pass through the glass- or plastic body (316) and then being fed to a camera (336), which is connected to a computer unit (350) which contains a program storage medium (354) with an evaluation program for capturing and decoding the information from the marking (318).

**Dated this 21<sup>st</sup> day of April 2014**

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