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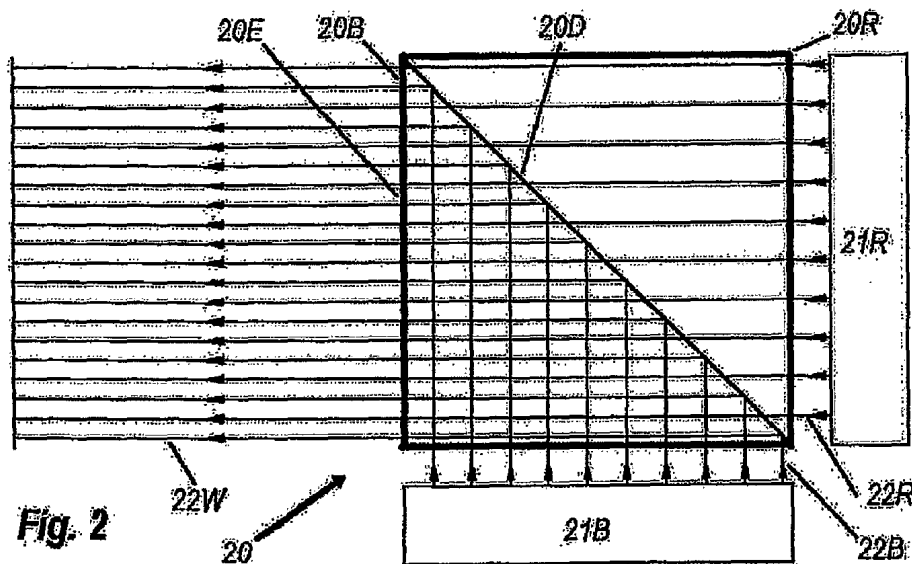
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(54) Title: DICHROIC BEAM COMBINER UTILIZING BLUE LED WITH GREEN PHOSPHOR



(57) Abstract: A white beam (22W) with high color-rendering index is formed by uniting a collimated red beam (22R) and a collimated blue-green beam (22B), the latter having as its source a blue LED (11) with a green phosphor (12). The white beam is formed by a prism (20) with an amber low-pass dichroic filter. The prism cross-section can be either a square or an equilateral triangle. The triangular prism can have one third of its mass reduced by stepped facets. Both types of prisms can be elongated to accommodate multiple collimators. Switching between white, red, and blue-green allows application to police vehicles.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/38162

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : G02B 27/10; G03B 21/14 US CL : 353/31, 81; 359/634, 638; 362/231, 800 According to International Patent Classification (IPC) or to both national classification and IPC</p>														
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) U.S. : 353/31, 81; 359/634, 638; 362/231, 800</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)</p>														
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category *</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>A, P</td> <td>US 6,547,400 B1 (YOKOYAMA) 15 APRIL 2003 (15.04.2003) SEE FIGURE 5.</td> <td>1-10</td> </tr> <tr> <td>A</td> <td>US 6,139,166 A (MARSHALL ET AL.) 31 OCTOBER 2000 (31.10.2000) SEE FIGURE 1.</td> <td>1-10</td> </tr> <tr> <td>A</td> <td>US 5,438,453 A (KUGA) 01 AUGUST 1995 (01.08.1995) SEE FIGURE 3A.</td> <td>1-10</td> </tr> </tbody> </table>			Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	A, P	US 6,547,400 B1 (YOKOYAMA) 15 APRIL 2003 (15.04.2003) SEE FIGURE 5.	1-10	A	US 6,139,166 A (MARSHALL ET AL.) 31 OCTOBER 2000 (31.10.2000) SEE FIGURE 1.	1-10	A	US 5,438,453 A (KUGA) 01 AUGUST 1995 (01.08.1995) SEE FIGURE 3A.	1-10
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<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.</p>														
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td style="vertical-align: top;"> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </td> <td style="vertical-align: top;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p> </td> </tr> </table>			<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p>										
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<p>Name and mailing address of the ISA/US</p> <p>Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450</p> <p>Facsimile No. (703) 305-3230</p>		<p>Authorized officer</p> <p><i>Michelle R. Dowling</i> William C. Dowling</p> <p>Telephone No. 571-272-1750</p>												