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(54) **OPTICAL SCANNING DEVICE**

(57) There is provided a headlight unit 1 configured to make phosphors emit light efficiently. The headlight unit 1 includes a laser-light emission device 14, a light deflector 15, a phosphor panel 20, and a projector lenses 19 in order along a light traveling path. The rotational position of a light emitting unit 45 of the laser-light emis-

sion device 14 about an optical axis is so set that the minor axis direction of an optical spot Sp generated on a light incident surface 41 of the phosphor panel 20 will be a direction along a scanning direction Hc of the optical spot Sp on the light incident surface 41.

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EUROPEAN SEARCH REPORT

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EP 17 15 2156

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	EP 2 537 708 A2 (STANLEY ELECTRIC CO LTD [JP]) 26 December 2012 (2012-12-26) * the whole document *	2	
A	US 2015/176778 A1 (SCHWAIGER STEPHAN [DE] ET AL) 25 June 2015 (2015-06-25) * the whole document *	2	
A	DE 10 2013 226622 A1 (OSRAM GMBH [DE]) 25 June 2015 (2015-06-25) * the whole document *	2	TECHNICAL FIELDS SEARCHED (IPC) F21S
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 19 June 2017	Examiner Sarantopoulos, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1, 2

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1, 2

laser scanner(s) employing a vertically oriented elliptical
laser spot of variable size

2. claims: 3-7

laser spot dimensioning for a laser scanner based on the
fluorescence lifetime of the phosphor employed

3. claim: 8

scanning device using 2 laser scanners where each scanner
illuminates a scanning area of different size

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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19-06-2017

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