

Title (en)

Lens for bundling emitted light by means of a semiconductor light source (LED)

Title (de)

Vorsatzoptik zur Bündelung von ausgesandtem Licht mindestens einer Halbleiterlichtquelle (LED)

Title (fr)

Lentille pour concentrer la lumière envoyée d'au moins une source de lumière semi-conductrice (LED)

Publication

EP 2543926 A3 20150520 (DE)

Application

EP 12174888 A 20120704

Priority

DE 102011078653 A 20110705

Abstract (en)

[origin: EP2543926A2] The optical head (10) has semiconductor light source (12) that emits light to generate predefined light distribution with bundles of light-dark boundary (42). A lighting unit couples a portion of emitted light. The reflecting boundary surfaces performs total reflection of injected light, while light output surface decouples injected light, after total reflection on one boundary surface. The boundary surfaces are divided into several regions (34) assigned to defined point of light source luminous surface. The regions are formed such that light-dark boundary is generated. An independent claim is included for light module.

IPC 8 full level

F21S 8/12 (2006.01); **F21S 8/10** (2006.01); **F21V 5/00** (2015.01); **F21V 7/00** (2006.01)

CPC (source: EP US)

F21S 41/143 (2017.12 - EP US); **F21S 41/153** (2017.12 - EP US); **F21S 41/24** (2017.12 - EP); **F21S 41/285** (2017.12 - EP); **F21S 41/322** (2017.12 - EP); **F21S 41/336** (2017.12 - EP US)

Citation (search report)

- [X] US 2009290371 A1 20091126 - YAGI TAKAYUKI [JP]
- [A] US 2011096561 A1 20110428 - OWADA RYOTARO [JP]
- [A] JP 2010123447 A 20100603 - KOITO MFG CO LTD
- [A] US 2010259153 A1 20101014 - FUTAMI TAKASHI [JP]
- [A] US 2008310159 A1 20081218 - CHINNIAH JEYACHANDRABOSE [US], et al
- [A] US 2009071467 A1 20090319 - BENITEZ PABLO [ES], et al
- [A] DE 602004011186 T2 20090122 - FIAT RICERCHES [IT]

Cited by

JP2014167879A; EP2818789A3; CN113242948A; EP4386256A1; US10890307B2; WO2020064259A1; EP2837566B1; WO2023025512A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2543926 A2 20130109; EP 2543926 A3 20150520; DE 102011078653 A1 20130110; DE 102011078653 B4 20131212

DOCDB simple family (application)

EP 12174888 A 20120704; DE 102011078653 A 20110705