

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
14 September 2006 (14.09.2006)

PCT

(10) International Publication Number
WO 2006/096302 A3

(51) International Patent Classification:
F21V 7/00 (2006.01)

(21) International Application Number:
PCT/US2006/005672

(22) International Filing Date:
17 February 2006 (17.02.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/069,989 3 March 2005 (03.03.2005) US

(71) Applicant (for all designated States except US): **DIA-LIGHT CORPORATION** [US/US]; 1501 State Route 34 South, Farmingdale, NJ 07727 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **PECK, John, P.** [US/US]; 1622 Myrtle Avenue, Manasquan, NJ 08736 (US).

(74) Agent: **GHOLZ, Charles, L.**; OBLON, SPIVAK, MC-CLELLAND, MAIER & NEUSTADT, P.C., 1940 Duke Street, Alexandria, VA 22314 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

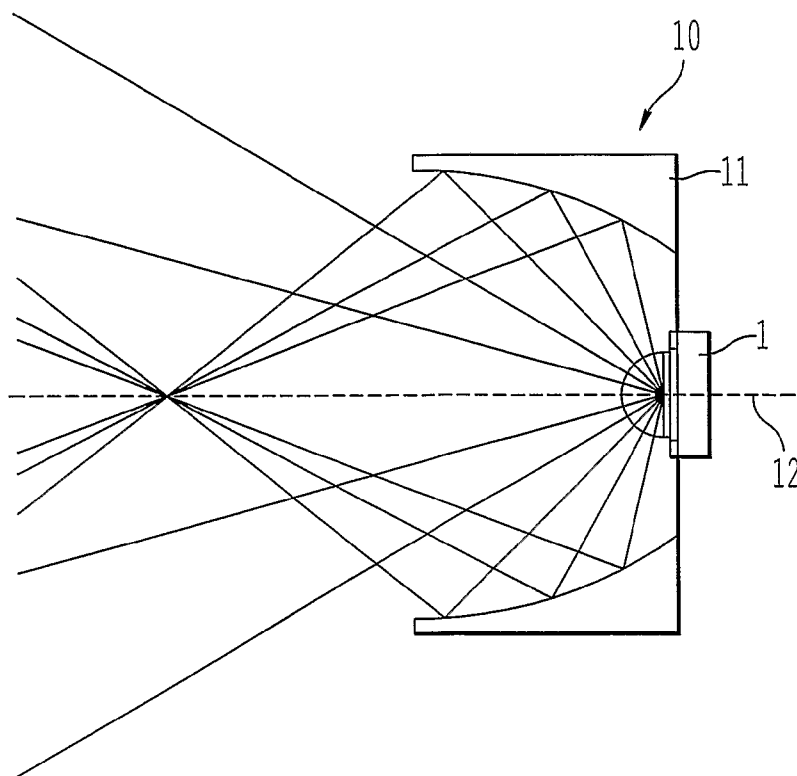
Published:

— with international search report

(88) Date of publication of the international search report:
5 April 2007

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LED ILLUMINATION DEVICE WITH A SEMICIRCLE-LIKE ILLUMINATION PATTERN



(57) Abstract: An LED (light emitting diode) illumination device that can generate a non-circular light output illumination intensity pattern. The illumination source including a reflector with a conic or conic-like shape. Further, an LED is positioned at approximately 90° with respect to a central axis of the reflector.

WO 2006/096302 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/05672

A. CLASSIFICATION OF SUBJECT MATTER

IPC: F21V 7/00(2007.01)

USPC: 362/341

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 362/341

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0042212 A1 (DU et al.) 04 March 2004 (04.03.2004), see entire document.	1,2,8,9
---		-----
Y		3-5,10-12
Y	US 5,800,051 A (GAMPE et al.) 01 September 1998 (01.09.1998), see entire document.	3,4,10,11
Y	JP 2004341067 A (MITSUI CHEM, INC.) 02 December 2004 (02.12.2004), see entire document.	5,12
---		-----
A		6,7,13,14

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent published on or after the international filing date
"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)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"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
"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
"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
"&" document member of the same patent family

Date of the actual completion of the international search

05 December 2006 (05.12.2006)

Date of mailing of the international search report

03 JAN 2007

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

JOSE DEES *Shawn J. Hyspe*
Telephone No. 571-272-1569

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/05672

Continuation of B. FIELDS SEARCHED Item 3:

USPGPUB, USPAT, USOCR, EPO, JPO, DERWENT, IBM_TDB search notes: (reflector near3 (parabol\$4 or conic\$4)) near3 (segment\$4 or facet\$4), (reflector near2 (plastic or glass)) near3 (total near2 reflection), (reflector near2 (plastic or glass)) near3 (total adj internal adj reflection)