(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 14 July 2011 (14.07.2011)

(10) International Publication Number WO 2011/084401 A3

- (51) International Patent Classification: *B42D 15/00* (2006.01) *C09K 11/08* (2006.01)
- (21) International Application Number:

PCT/US2010/060191

(22) International Filing Date:

14 December 2010 (14.12.2010)

(25) Filing Language:

English

(26) Publication Language:

English

US

US

(30) Priority Data: 61/287,447

12/966,036

17 December 2009 (17.12.2009)

(71) Applicant (for all designated States except US): HON-EYWELL INTERNATIONAL INC. [US/US]; 101 Columbia Road, Morristown, NJ 07962 (US).

13 December 2010 (13.12.2010)

- (72) Inventors; and
- (75) Inventors/Applicants (for US only): KANE, James [US/US]; Honeywell International Inc., Patent Services M/S AB/2B, 101 Columbia Road, P.O. Box 2245, Morrisotwn, NJ 07962-2245 (US). RAPOPORT, William, Ross [US/US]; Honeywell International Inc., Patent Services M/S AB/2B, 101 Columbia Road, P.O. Box 2245, Morrisotwn, NJ 07962-2245 (US). LAU, Carsten [DE/US]; Honeywell International Inc., Patent Services M/S AB/2B, 101 Columbia Road, P.O. Box 2245, Morrisotwn, NJ 07962-2245 (US).
- (74) Agent: BEATUS, Carrie; Honeywell International Inc., Law Department AB/2B, 101 Columbia Road, P.O. Box 2245, Morristown, NJ 07962-2245 (US).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- (88) Date of publication of the international search report:

3 November 2011



International application No. **PCT/US2010/060191**

A. CLASSIFICATION OF SUBJECT MATTER

B42D 15/00(2006.01)i, C09K 11/08(2006.01)i

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)

B42D 15/00; H01L 21/56; C09D 11/00; H01J 1/62; C09K 11/02; F21V 9/16; H01J 63/04; H01L 33/00; C09K 11/06; G03B 21/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKOMPASS(KIPO internal) & Keywords:phosphor, fluoride, rare, refractive

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002-0124772 A1 (PHILIPP EGGER et al.) 12 September 2002 See paragraphs 2,5,21,25-29 and claims 1,5,7,9-11,13.	1,3-10
Y	US 2007-0273282 A1 (Emil V. Radkov et al.) 29 November 2007 See paragraphs 16-17,45,60.	1,3-10
Y	US 2002-0020830 A1 (MICHAEL BASS et al.) 21 February 2002 See paragraphs 9,11,18.	6
A	US 2009-0134414 A1 (LI, YI-QUN et al.) 28 May 2009 See paragraphs 41-58.	1,3-5,7-9
A	US 2008-0079910 A1 (Todd S. Rutherford et al.) 03 April 2008 See paragraphs 31-34.	1,3-5,7-9

	Further documents are	11-4-41-41-4	41 41	- CD C
	i Fiiriner documents are	instea in the	e confinitation	OLBOX U.

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 but published on or after the international
- 'L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
- 'O" document referring to an oral disclosure, use, exhibition or other
- "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

31 AUGUST 2011 (31.08.2011)

Date of mailing of the international search report

31 AUGUST 2011 (31.08.2011)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office Government Complex-Daejeon, 189 Cheongsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

LEE, Jun Hee

Telephone No. 82-42-481-8285



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2010/060191

Box No. II	Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)
This internat	ional search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
	ims Nos.: sause they relate to subject matter not required to be searched by this Authority, namely:
bec ext	tims Nos.: 2 reause they relate to parts of the international application that do not comply with the prescribed requirements to such an ent that no meaningful international search can be carried out, specifically: the claim 2 is missing.
	nims Nos.: cause they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box No. III	Observations where unity of invention is lacking (Continuation of item 3 of first sheet)
This Internat	tional Searching Authority found multiple inventions in this international application, as follows:
2. As of a	all required additional search fees were timely paid by the applicant, this international search report covers all searchable ims. all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment any additional fee. only some of the required additional search fees were timely paid by the applicant, this international search report covers
onl	y those claims for which fees were paid, specifically claims Nos.: required additional search fees were timely paid by the applicant. Consequently, this international search report is
	tricted to the invention first mentioned in the claims; it is covered by claims Nos.:
Remark on	Protest The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee. The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation. No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2010/060191

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002-0124772 A1	12.09.2002	AT 247158 T AU 2001–33627 A1 AU 2001–33627 B2 AU 776197 B2 BR 0016936 A BR 0016936 B1 CA 2377548 A1 CA 2377548 C CN 1313547 C CN 1368996 A CZ20022356A3 DE 60004570 D1 DE 60004570 T2 DK1246876T3 EA004272B1 EP 1116755 A1 EP 1246876 A2 EP 1246876 B1 ES 2204748 T3 HK 1048486 A1 HU0302776A2 JP 2003–519710 A KR 10–0752995 B1 MX PA02001689A N020020757A PL 204726 B1 PL 356059 A1 PT1246876E UA74809C2 US 6613137 B2 W0 01–51571 A2	15.08.2003 24.07.2001 02.09.2004 02.09.2004 19.11.2002 30.11.2010 19.07.2001 08.07.2008 02.05.2007 11.09.2002 12.02.2003 18.09.2003 17.06.2004 08.12.2003 26.02.2004 18.07.2001 09.10.2002 13.08.2003 01.05.2004 21.12.2007 28.04.2004 21.12.2007 28.04.2004 21.12.2007 28.04.2004 21.12.2007 28.04.2004 21.12.2007 28.04.2004 21.12.2007 28.04.2004 21.12.2007 28.04.2004 21.02.2002 26.02.2010 14.06.2004 31.12.2003 15.10.2002 02.09.2003 19.07.2001
		WO 01-51571A3 ZA200205456A	07.03.2002 28.04.2004
US 2007-0273282 A1	29.11.2007	None	
US 2002-0020830 A1	21.02.2002	US 2002-0015218 A1 US 2002-0063946 A1 US 6327074 B1 US 6501590 B2 US 6654161 B2 US 6844387 B2 US 6897999 B1 US 7075707 B1 US E042076 E1 US E042389 E1	07.02.2002 30.05.2002 04.12.2001 31.12.2002 25.11.2003 18.01.2005 24.05.2005 11.07.2006 25.01.2011 01.03.2011 24.05.2011
US 2009-0134414 A1	28.05.2009	None	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2010/060191

		101/	032010/000171
Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008-0079910 A1	03.04.2008	TW 200825617 A US 7857457 B2 WO 2008-042703 A1	16.06.2008 28.12.2010 10.04.2008