

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
22 May 2008 (22.05.2008)

PCT

(10) International Publication Number
WO 2008/060857 A3(51) International Patent Classification:
H01J 61/12 (2006.01) **H01J 61/82 (2006.01)**Koga-shi, Ibaraki-ken, 306-0107 (JP). **KOZAWA, Makoto**
[JP/JP]; 199-7 Onanuma Koga-shi, Ibaraki-ken, 306-0226
(JP).

(21) International Application Number:

PCT/US2007/083121

(74) Agents: **TOOP, Barbara, A.** et al; General Electric Company, Global Patent Operation, 187 Danbury Road, Suite 204, Wilton, CT 06897 (US).

(22) International Filing Date: 31 October 2007 (31.10.2007)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, 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, PG, **PH**, PL, PT, **RO**, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, **TJ**, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW

(25) Filing Language: English

(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, MT, 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).

(26) Publication Language: English

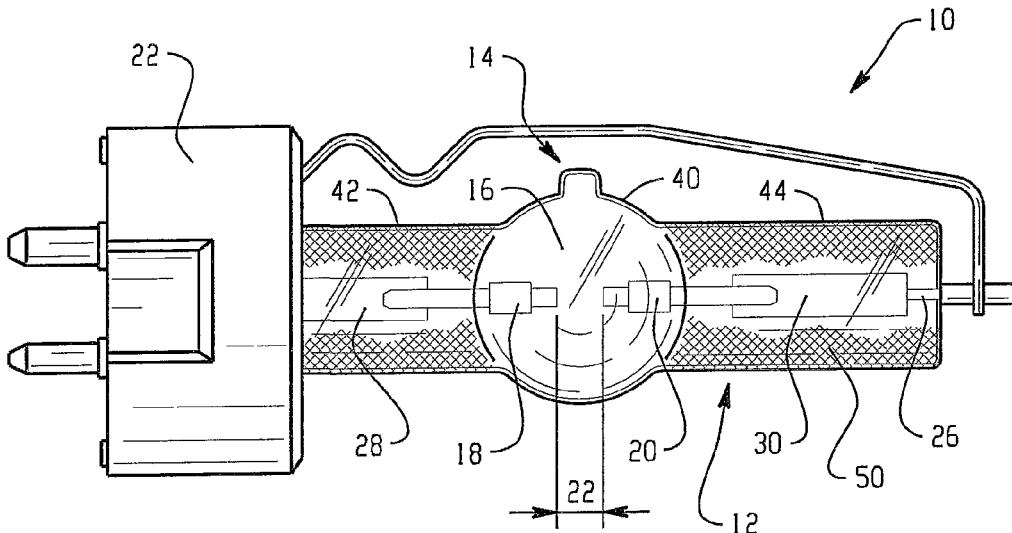
(30) Priority Data:
11/595,632 9 November 2006 (09.11.2006) US(71) Applicants (for all designated States except US): **GENERAL ELECTRIC COMPANY** [US/US]; 1 River Road, Schenectady, NY 12345 (US). **KOTO ELECTRIC COMPANY, LTD.** [JP/JP]; Bunmeido Building 3-16-5, Taito-ku, Tokyo, 110-0016 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **JOHNSTON, Colin, W.** [US/US]; 2118 Lennox Road, Apartment 10, Cleveland Heights, OH 44106 (US). **LEONARD, James, A.** [US/US]; 3635 Stoer Road, Shaker Heights, OH 44122 (US). **AURONGZEB, Deeder** [BD/US]; 6805 Mayfield Road, Apartment 1110, Mayfield Heights, OH 44124 (US). **ABE, Kayuza** [JP/JP]; 107-12 Higashimanakabashi

[Continued on next page]

(54) Title: DISCHARGE LAMP WITH HIGH COLOR TEMPERATURE



WO 2008/060857 A3

(57) Abstract: A lamp includes a discharge sustaining fill which includes cesium halide, one of indium halide and thallium halide, optionally gadolinium halide and a rare earth halide component selected from dysprosium halide, holmium halide, thulium halide, and neodymium halide. In operation without a jacket, the lamp may have a color temperature of from 7,000K to 14,000K and a color rendering index of at least 70 when operated at an arc wall loading in excess of about 2 W/mm².

**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(H))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(Hi))*

- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

Published:

- *with international search report*

(88) Date of publication of the international search report:

12 September 2008

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/083121

A. CLASSIFICATION OF SUBJECT MATTER
INV. H01J61/12 H01J61/82

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)
HOIJ

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal , WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 605 248 A (TOSHIBA LIGHTING & TECHNOLOGY [JP]) 6 July 1994 (1994-07-06) column 3, line 41 - column 4, line 15; claims 1,2 -----	1-23
X	EP 0 702 394 A (PATRA PATENT TREUHAND [DE]) 20 March 1996 (1996-03-20) page 1 - page 2; claim 1; table 3a -----	1-23
A	EP 0 634 780 A (MATSUSHITA ELECTRIC IND CO LTD [JP]) 18 January 1995 (1995-01-18) column 3, line 14 - line 57 claim 3 -----	1-23
A	JP 06 342641 A (IWASAKI ELECTRIC CO LTD) 13 December 1994 (1994-12-13) abstract. -----	1-23
		-/-

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 document but 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

26 June 2008

Date of mailing of the international search report

11/07/2008

Name and mailing address of the ISA/
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl
Fax: (+31-70) 340-3016

Authorized officer

But , Gabriel a-Ileana

INTERNATIONAL SEARCH REPORTInternational application No
PCT/US2007/083121

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
A	US 4 134 039 A (VIDA DENES ET AL) 9 January 1979 (1979-01-09) column 1 - column 4 -----	1-23

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2007/083121

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 0605248	A	06-07-1994	DE	69331134 D1		20-12-2001
			DE	69331134 T2		21-03-2002
			US	5479065 A		26-12-1995
EP 0702394	A	20-03-1996	CA	2156472 A1		15-03-1996
			DE	4432611 A1		21-03-1996
			JP	8096748 A		12-04-1996
EP 0634780	A	18-01-1995	DE	69401394 D1		20-02-1997
			DE	69401394 T2		24-04-1997
			US	5512800 A		30-04-1996
JP 6342641	A	13-12-1994	NONE			
US 4134039	A	09-01-1979	AT	358664 B		25-09-1980
			DE	2707204 A1		13-10-1977
			GB	1580991 A		10-12-1980
			HU	172230 B		28-07-1978
			NL	7701740 A		11-10-1977