

Title (en)

Arc tube having two apposed hemispherical regions and an intermediate conical region; and high-intensity arc discharge lamp employing same.

Title (de)

Bogenrohr mit zwei gegenüberliegenden, halbkugelförmigen Bereichen und einem konischen Zwischenteil und Verwendung desselben für Hochleistungsbogenentladungslampe.

Title (fr)

Tube à décharge en arc avec deux régions hémisphériques et une région conique intermédiaire et lampe à décharge en arc à haute intensité utilisant ce dernier.

Publication

**EP 0173347 A1 19860305 (EN)**

Application

**EP 85110969 A 19850830**

Priority

US 64565984 A 19840830

Abstract (en)

This invention provides a specially shaped arc tube for a high-intensity arc discharge lamp, particularly a lamp for vertical operation. The arc tube has a hemispherical top with radius R1, a hemispherical bottom with radius R2, and a middle section being a frustum of a right circular cone which on one end mates with the top and on the other end mates with the bottom so that the arc tube has a smooth and continuous surface. R2 is greater than or equal to two millimeters. The ratio R1/R2 is always greater than one, and in preferred embodiments R1/R2 is within the range of 1.5 to 3, inclusive. This arc tube virtually eliminates species segregation in metal halide lamps even though the arc is vertical. The invention also includes an arc discharge lamp employing an arc tube as described herein together with an optimum choice of design parameters, such as wall loading and nitrogen pressure within the outer envelope. The virtual elimination of species segregation of the additives along the arc axis provides this lamp with higher luminous output, lower color temperature, improved luminous efficacy, extended life, and no perceptible flicker with electrical current at fifty hertz compared with counterparts in the existing art.

IPC 1-7

**H01J 61/30; H01J 61/82**

IPC 8 full level

**H01J 61/30** (2006.01); **H01J 61/32** (2006.01); **H01J 61/82** (2006.01); **H01J 61/88** (2006.01)

CPC (source: EP)

**H01J 61/30** (2013.01); **H01J 61/82** (2013.01)

Citation (search report)

- EP 0034056 A1 19810819 - NGK INSULATORS LTD [JP]
- US 3883766 A 19750513 - FOHL TIMOTHY
- DE 1589342 A1 19701210 - SIEMENS AG
- PATENT ABSTRACTS OF JAPAN, unexamined applications, E section, vol. 7, no. 288, December 22, 1983 THE PATENT OFFICE JAPANESE GOVERNMENT page 97 E 239 \* JP - A - 58-165 239 \*

Cited by

EP1564785A1; EP0220633A1; US8106589B2; EP0271927A3; GB2213317A; EP0483507A3; US4823050A; WO03060946A3

Designated contracting state (EPC)

BE DE FR GB NL

DOCDB simple family (publication)

**EP 0173347 A1 19860305**; CA 1243721 A 19881025; JP S61107652 A 19860526

DOCDB simple family (application)

**EP 85110969 A 19850830**; CA 482188 A 19850523; JP 18872985 A 19850829