Title (en)

GAS LASER AND OPERATING METHOD THEREFOR

Title (de)

GASLASER UND BETRIEBSVERFAHREN DAFÜR

Title (fr)

LASER À GAZ ET PROCÉDÉ PERMETTANT DE FAIRE FONCTIONNER UN LASER À GAZ

Publication

EP 2583364 A1 20130424 (DE)

Application

EP 11725669 A 20110606

Priority

- DE 102010030141 A 20100616
- EP 2011059281 W 20110606

Abstract (en)

[origin: WO2011157581A1] The invention relates to a gas laser, comprising: a plurality of discharge tubes (3), which are connected to one another via corner housings (4), in which in each case at least one mirror element (7) for guiding a laser beam (6) and at least one cooling channel (20) with a coolant (21) located therein are provided, and a heat exchanger (19) with at least one cooling channel (16) with a coolant (17) located therein for cooling the laser gas prior to entry into a respective corner housing (4). The invention provides an additional cooling device for cooling the laser gas and/or a temperature control device (18, 22) for producing a temperature difference (Tw,w - Tw,B) between the coolant (17) in the at least one cooling channel (16) of the heat exchanger (19) and the coolant (21) in the at least one cooling channel (20) of the corner housing (4, 5), in such a way that it is possible to set a difference (TG,K - Tw,B) between the temperature(TG,K) of the cooled laser gas on entry into the corner housing (4) and the temperature (Tw,B) of the coolant (21) in the corner housing (4) of less than 5 K, preferably of less than 2 K, in particular of less than 0.2 K. The invention also relates to an associated operating method for a gas laser.

IPC 8 full level

H01S 3/041 (2006.01); **H01S 3/03** (2006.01); **H01S 3/036** (2006.01); **H01S 3/081** (2006.01); **H01S 3/223** (2006.01)

CPC (source: EP KR US)

H01S 3/03 (2013.01 - EP KR US); **H01S 3/0407** (2013.01 - US); **H01S 3/041** (2013.01 - EP KR US); **H01S 3/076** (2013.01 - EP US); **H01S 3/223** (2013.01 - KR); **H01S 3/2232** (2013.01 - EP US); H01S 3/036 (2013.01 - EP US); H01S 3/0816 (2013.01 - EP US)

Citation (search report)

See references of WO 2011157581A1

Citation (examination)

- JP S63299183 A 19881206 - HITACHI LTD
- JP H02103974 A 19900417 - FANUC LTD

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

DOCDB simple family (publication)

DE 102010030141 A1 20111222; **DE 102010030141 B4 20120419**; EP 2583364 A1 20130424; JP 2013532380 A 20130815; JP 5591398 B2 20140917; KR 101449824 B1 20141008; KR 20130052575 A 20130522; US 2013100975 A1 20130425; US 8817833 B2 20140826; WO 2011157581 A1 20111222

DOCDB simple family (application)

DE 102010030141 A 20100616; EP 11725669 A 20110606; EP 2011059281 W 20110606; JP 2013514632 A 20110606; KR 20127031578 A 20110606; US 201213714914 A 20121214