

Title (en)  
SOLID-STATE LASER

Title (de)  
FESTKÖRPERLASER

Title (fr)  
LASER SOLIDE

Publication  
**EP 3117494 A1 20170118 (DE)**

Application  
**EP 15716389 A 20150310**

Priority  
• AT 1842014 A 20140314  
• AT 2015000038 W 20150310

Abstract (en)  
[origin: WO2015135011A1] A solid-state laser has an amplifying laser medium (1) for producing a laser beam (4) and a pump device (13, 14) that has at least one laser diode (16) and that produces a pump radiation (5) that impinges on a first lateral face (6) of the laser medium (1), which lateral face is parallel to a z axis and parallel to a y axis that is at right angles to the z axis. On a second lateral face (23), which is opposite the first lateral face (6), the laser medium (1) is cooled by a heat sink (22). The length of a y-1/e<sup>2</sup> region (33) of the pump radiation (5) is shorter than the length of the first lateral face (6) of the laser medium (1) in the direction of the y axis, wherein the y-1/e<sup>2</sup> region (33) of the pump radiation (5) denotes a section of the y axis over which the intensity of the pump radiation (5) on the first lateral face (6) of the laser medium (1) has a value that is more than the maximum intensity of the pump radiation (5) on the first lateral face (6) of the laser medium (1) divided by e<sup>2</sup>. The length of a y cooling region (26), said length denoting a section of the y axis, over which a cooling strip (24) extends is less than 70% and greater than 50% of the length of a y pump region (28) of the laser medium (1), wherein the y pump region (28) denotes a section of the y axis over which 80% of the total power of the pump radiation (5) that is absorbed by the laser medium (1) is absorbed and at the two ends of which the intensity of the pump radiation (5) is of equal magnitude.

IPC 8 full level  
**H01S 3/08** (2006.01); **H01S 3/04** (2006.01); **H01S 3/06** (2006.01); **H01S 3/0941** (2006.01); **H01S 3/115** (2006.01)

CPC (source: AT EP US)  
**H01S 3/0405** (2013.01 - EP US); **H01S 3/042** (2013.01 - EP US); **H01S 3/0606** (2013.01 - EP US); **H01S 3/08072** (2013.01 - EP US); **H01S 3/08095** (2013.01 - EP US); **H01S 3/0941** (2013.01 - AT EP US); **H01S 3/1611** (2013.01 - US); **H01S 3/1643** (2013.01 - US); **H01S 5/40** (2013.01 - AT); **G02B 27/09** (2013.01 - AT); **H01S 3/115** (2013.01 - EP US); **H01S 5/02423** (2013.01 - EP US); **H01S 5/405** (2013.01 - EP US)

Citation (search report)  
See references of WO 2015135011A1

Cited by  
WO2020118324A1; EP3667838A1

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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**WO 2015135011 A1 20150917**; AT 515674 A4 20151115; AT 515674 B1 20151115; EP 3117494 A1 20170118; US 2017117681 A1 20170427

DOCDB simple family (application)  
**AT 2015000038 W 20150310**; AT 1842014 A 20140314; EP 15716389 A 20150310; US 201515126017 A 20150310