

Title (en)

EXTERNAL CAVITY LASER MODULE COMPRISING A MULTI-FUNCTIONAL OPTICAL ELEMENT

Title (de)

LASERMODUL MIT EXTERNEM RESONATOR MIT EINEM MULTIFUNKTIONALEN OPTISCHEN ELEMENT

Title (fr)

MODULE LASER À CAVITÉ EXTERNE COMPRENANT UN ÉLÉMENT OPTIQUE MULTIFONCTIONNEL

Publication

**EP 2186171 A1 20100519 (EN)**

Application

**EP 07723882 A 20070402**

Priority

EP 2007002941 W 20070402

Abstract (en)

[origin: WO2008119363A1] An external cavity laser module (1) configured to emit an output optical beam (32) along a first output optical axis (X) is described. The laser module (1) comprises a gain medium (13) including a front facet (24) serving as an end mirror of the external cavity, a back facet (25) opposite to said front facet (24) and a bent waveguide. The gain medium (13) is configured to emit an intra-cavity optical beam into the external cavity along an intra-cavity optical axis (26) and to couple a front facet optical beam out of the external cavity from the front facet (24) along a second output optical axis (31), the intra-cavity optical axis (26) the said second output optical axis (31) forming a gain medium angle  $\alpha$  not smaller than  $10^\circ$ . The laser module (1) also includes a multi-functional optical element (27) arranged outside the external cavity along the second output optical axis (31), the multi-functional optical element having an input facet (40) partially reflective so as to reflect a first portion of the front facet optical beam and an exit facet (41) through which the remaining portion of the front facet optical beam is transmitted, the transmitted portion giving rise to the output optical beam (32) along the first output optical axis (X), wherein the input (40) and exit facets (41) form an optical element angle  $\beta$  comprised between  $5^\circ$  and  $45^\circ$  and wherein an incidence angle  $\beta$  between the second output optical axis (31) and an axis (N) normal to the input facet (40) is comprised between  $30^\circ$  and  $70^\circ$ .

IPC 8 full level

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CPC (source: EP)

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Citation (search report)

See references of WO 2008119363A1

Citation (examination)

US 2002097766 A1 20020725 - TSUKIJI NAOKI [JP], et al

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