

Title (en)  
FREQUENCY-CONVERTING LASER DEVICE

Title (de)  
FREQUENZUMWANDELNDES LASERGERÄT

Title (fr)  
APPAREIL LASER À CONVERSION DE FRÉQUENCE

Publication  
**EP 4272288 A1 20231108 (DE)**

Application  
**EP 22715545 A 20220302**

Priority  
• DE 102021202391 A 20210311  
• EP 2022055236 W 20220302

Abstract (en)  
[origin: WO2022189223A1] A frequency-converting laser device (2) that is efficient but at the same time has a simple structure comprises an optical resonator (4) that has two resonator mirrors (6, 8), specifically a coupling-out mirror (6) and an end mirror (8). The laser device (2) furthermore comprises an optically active medium (10) for generating light of a first frequency (f1) and an optically nonlinear medium (18) for converting light of the first frequency (f1) into light of another frequency (f2, f3). The optically active medium (10) and the optically nonlinear medium (18) are in this case arranged in a beam path between the resonator mirrors (6, 8). The laser device (2) furthermore comprises a first polarization-influencing laser optic (20) that polarizes the light of the first frequency (f1), reflected by the coupling-out mirror (6) in the direction of the end mirror (8), such that a frequency conversion of the light thus polarized of the first frequency (f1) is suppressed, in particular minimized, when passing through the nonlinear medium (18).

IPC 8 full level  
**H01S 3/109** (2006.01); **H01S 3/08** (2023.01); **H01S 3/0941** (2006.01); **H01S 3/11** (2023.01); **H01S 3/117** (2006.01); **H01S 3/16** (2006.01)

CPC (source: EP US)  
**G02F 1/3507** (2021.01 - US); **G02F 1/3551** (2013.01 - US); **H01S 3/08054** (2013.01 - EP); **H01S 3/10061** (2013.01 - US); **H01S 3/109** (2013.01 - EP US); **H01S 3/1611** (2013.01 - US); **H01S 3/1673** (2013.01 - US); **H01S 3/09415** (2013.01 - EP); **H01S 3/1109** (2013.01 - EP); **H01S 3/117** (2013.01 - EP); **H01S 3/1611** (2013.01 - EP); **H01S 3/1673** (2013.01 - EP)

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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

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
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**DE 102021202391 A 20210311**; CN 202280019215 A 20220302; EP 2022055236 W 20220302; EP 22715545 A 20220302; JP 2023555172 A 20220302; US 202318464400 A 20230911