

Title (en)

GYROTRON WHISPERING GALLERY MODE COUPLER FOR DIRECT COUPLING OF RF INTO HE11 WAVEGUIDE

Title (de)

GYROTRON-FLÜSTERGEWÖLBEMODUSKOPPLER ZUR DIREKTEN KOPPLUNG VON HF IN EINEN HE11-WELLENLEITER

Title (fr)

COUPLEUR À MODE DE GALERIE DE CHUCHOTEMENTS DE GYROTRON POUR LE COUPLAGE DIRECT DE RF DANS UN GUIDE D'ONDES HE11

Publication

**EP 3259772 B1 20231004 (EN)**

Application

**EP 15882841 A 20150219**

Priority

US 2015016461 W 20150219

Abstract (en)

[origin: WO2016133509A1] A cylindrical whispering gallery mode (WGM) waveguide for a gyrotron has a series of surface dimples of increasing amplitude at beat wavelengths of an (m,n) primary mode with other co-propagating high order modes. The WGM waveguide thereby generates a series of high order modes which are directed to a launch edge, which is in close proximity to one or more mode converting reflectors which minimize the beam waist and produce a phase front for a near-gaussian mode RF at the input of a corrugated waveguide, thereby providing direct coupling of HE11 mode directly into the corrugated waveguide. The mode converting reflectors which receive RF energy from the WGM waveguide launch edge and form the minimum beam diameter near-gaussian beam at the inlet of the corrugated waveguide may be formed from a single mirror or multiple mirrors.

IPC 8 full level

**H01J 23/40** (2006.01); **H01J 25/02** (2006.01)

CPC (source: EP)

**H01J 23/40** (2013.01); **H01J 25/025** (2013.01)

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)

**WO 2016133509 A1 20160825**; EP 3259772 A1 20171227; EP 3259772 A4 20181205; EP 3259772 B1 20231004

DOCDB simple family (application)

**US 2015016461 W 20150219**; EP 15882841 A 20150219