Title (en)

Quasi optical component for microwave radiation.

Title (de)

Quasi-optische Komponente für Mikrowellenstrahlung.

Title (fr)

Composante quasi-optique pour rayonnement à micro-ondes.

Publication

**EP 0438738 A1 19910731 (DE)**

Application

**EP 90124755 A 19901219**

Priority

- CH 11490 A 19900115
- CH 181990 A 19900529

Abstract (en)

[origin: JPH04332433A] PURPOSE: To guide an electron beam of high quality in a gyrotron by arranging a cooled absorber in the proximity of the front of a quasi-optical element, and by absorbing at least one of strong secondary peaks caused by diffraction. CONSTITUTION: A quasi-optical structure includes a quasi-optical mirror 18a as a quasi-optical element, and a hollow cylindrical vessel 17 as an absorber. An incident microwave travels in a prescribed incidence direction, and is reflected from the mirror 18a in the direction of a principal axis 19. The mirror 18a has a diameter D smaller than 50 times the wavelength of microwave, and a cross-sectional size of the mirror 18a is relatively made smaller. Thus, the microwave is entirely diffraced in a mirror 16a. The absorbing vessel 17 is carried as close to the mirror 18a as possible so that a secondary peak 20 is absorbed. Moreover, the cooled absorbing vessel 17 is provided to absorb at least one of maximum peaks of the strong secondary peak 20 caused by the cross-sectional size diffraction. Therefore, an electron beam of high quality can be guided within a gyrotron.

Abstract (de)

Eine quasi-optische Komponente für Mikrowellenstrahlung umfasst ein quasi-optisches Element (16a), welches einfallende Mikrowellenstrahlung entlang einer Hauptachse (19) ausstrahlt und welches eine charakteristische Querabmessung (D) hat, die kleiner als das 50-fache einer Wellenlänge ist. Sie zeichnet sich dadurch aus, dass eine gekühlte Absorptionsvorrichtung (17) vorgesehen ist, die nahe vor dem quasi-optischen Element (16a) so angeordnet ist, dass zumindest ein leistungsstarkes Nebenmaximum (20) der durch die charakteristische Querabmessung bedingten Beugung vernichtet wird. <IMAGE>

IPC 1-7

H01J 23/30; H01J 25/02; H01P 3/20

IPC 8 full level

**H01J 25/00** (2006.01); **H01J 23/30** (2006.01); **H01J 25/02** (2006.01); **H01P 3/20** (2006.01)

CPC (source: EP US)

**H01J 23/30** (2013.01 - EP US); **H01J 25/025** (2013.01 - EP US); **H01P 3/20** (2013.01 - EP US)

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