

Title (en)
COLLIMATOR AND FOCUSING OPTIC

Title (de)
KOLLIMATOR UND FOKUSSIERENDE OPTIK

Title (fr)
COLLIMATEUR ET OPTIQUE DE FOCALISATION

Publication
EP 1204888 A1 20020515 (EN)

Application
EP 00960174 A 20000721

Priority
• US 0040443 W 20000721
• US 14548999 P 19990721
• US 20943800 P 20000608

Abstract (en)
[origin: WO0107939A1] The present invention provides a high gain collimator (30) producing generally uniform intensity profiles for use in lithography and other applications. A focusing optic (42) is also provided. The collimator includes an optic (42) and a guide channel (50) downstream of the optic. The guide channel preferably includes polycapillary tubes (80) and/or microchannel plates. The polycapillary tubes (80) are used to collimate or focus the central portion of the X-ray beam in a circular, elliptic, square, or rectangular shape. A conical, parabolic resonance reflector (40) or grazing incidence reflector with a shape similar to the polycapillary collimator (30) is used to increase the solid angle collected and produce a circular, square, etc. annular X-ray beam whose inside dimensions are approximately equal to the exit dimensions of the polycapillary collimator (30). The annular beam shape, intensity profile and collimation angle is adjusted, if necessary, by an absorber (230), or polycapillary tubes (80) to provide the desired intensity profile at the exit aperture of the hybrid X-ray collimator optic.

IPC 1-7
G02B 5/124; **G21K 1/02**; **G21K 5/04**

IPC 8 full level
G02B 5/10 (2006.01); **G02B 5/124** (2006.01); **G02B 6/04** (2006.01); **G02B 19/00** (2006.01); **G02B 27/30** (2006.01); **G03F 7/20** (2006.01); **G21K 1/02** (2006.01); **G21K 1/06** (2006.01)

CPC (source: EP)
B82Y 10/00 (2013.01); **G03F 7/70166** (2013.01); **G21K 1/025** (2013.01); **G21K 1/06** (2013.01)

Citation (search report)
See references of WO 0107939A1

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)
WO 0107939 A1 20010201; AU 7137300 A 20010213; EP 1204888 A1 20020515; JP 2003528333 A 20030924

DOCDB simple family (application)
US 0040443 W 20000721; AU 7137300 A 20000721; EP 00960174 A 20000721; JP 2001512975 A 20000721