

Title (en)
OPTICAL ILLUMINATION SYSTEM FOR GUIDING EUV RADIATION

Title (de)
OPTISCHES BELEUCHTUNGSSYSTEM ZUR FÜHRUNG VON EUV-STRAHLUNG

Title (fr)
SYSTÈME D'ÉCLAIRAGE OPTIQUE SERVANT À GUIDER UN RAYONNEMENT EUV

Publication
EP 4179388 A1 20230517 (DE)

Application
EP 21703905 A 20210205

Priority

- DE 102020208665 A 20200710
- EP 2021052823 W 20210205

Abstract (en)
[origin: WO2022008102A1] The invention relates to an optical illumination system for guiding EUV radiation (3i) between a source region (4) of an EUV light source (2) and an object field, in which an object to be imaged can be arranged. The illumination system has EUV mirror components which sequentially guide the EUV radiation (3i) between the source region and the object field. At least one reflection segment (8, 15) of one of the EUV mirror components can be subjected within a beam path of the EUV radiation (3i) to radiation in a range of angles of incidence ($\Delta\alpha$) between a minimum angle of incidence and a maximum angle of incidence. An optical diffraction component for suppressing stray light radiation (36i) carried with in the beam path is arranged on the reflection segment (8, 15). The optical diffraction component is designed in such a manner that the stray light radiation (36i) is suppressed in the entire range of angles of incidence with a suppression ratio between an intensity of the stray light (36i) incident on the reflection segment (8, 15) and an intensity of the stray light (36i) exiting from the reflection segment (8, 15) in the direction of the beam path, the suppression ratio being better than 1000. The result is an improved stray light suppression.

IPC 8 full level
G02B 5/18 (2006.01); **G03F 7/20** (2006.01); **G21K 1/06** (2006.01)

CPC (source: EP KR)
G02B 5/1838 (2013.01 - EP KR); **G03F 7/70158** (2013.01 - EP KR); **G03F 7/70191** (2013.01 - EP KR); **G03F 7/702** (2013.01 - EP KR); **G03F 7/70941** (2013.01 - EP KR); **G21K 1/062** (2013.01 - EP KR); **G21K 1/067** (2013.01 - EP KR)

Citation (search report)
See references of WO 2022008102A1

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

Designated extension state (EPC)
BA ME

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
WO 2022008102 A1 20220113; DE 102020208665 A1 20220113; EP 4179388 A1 20230517; KR 20230036135 A 20230314

DOCDB simple family (application)
EP 2021052823 W 20210205; DE 102020208665 A 20200710; EP 21703905 A 20210205; KR 20237004521 A 20210205