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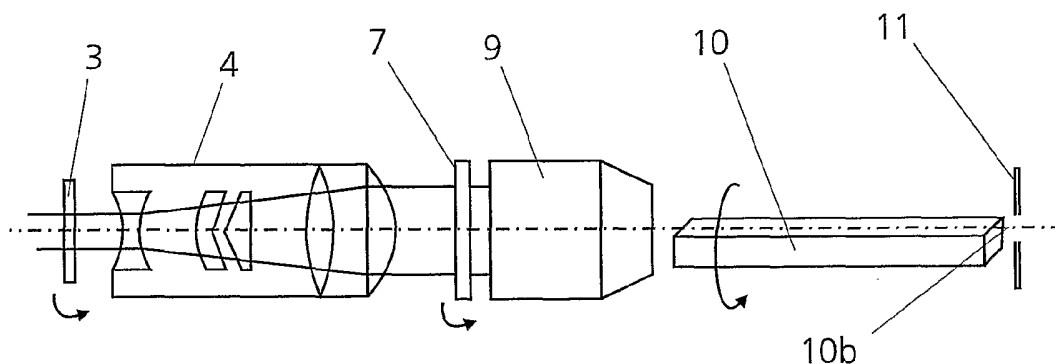
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(54) Title: ILLUMINATION SYSTEM, IN PARTICULAR FOR A PROJECTION EXPOSURE MACHINE IN SEMICONDUCTOR LITHOGRAPHY



(57) Abstract: An illumination system is provided with a light produced by a light source (1), with an optical axis and with optical elements (3, 7), in particular for a projection exposure machine in semiconductor lithography, having at least one optical element (3, 7) for producing a pupil distribution of the light beam, and having a homogenizing element (10, 24) for homogenizing the intensity of the light. For an asymmetric pupil distribution at least the optical elements (3, 7) that produce non-rotationally symmetrical light distributions, and/or the homogenizing element (10, 24) are supported rotatably about the optical axis that forms a z-axis of an x-/y-coordinate system, it being possible to set at least one rotational angle α in such a way that the pupil distribution is located on an axis or symmetrically in relation to an axis of an x'-/y'-coordinate system newly formed by the rotational angle α by means of rotating the x-/y-coordinate system by the angle α .

INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. G03F7/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G03F H01L G02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/022068 A1 (SHIOZAWA TAKAHISA) 5 February 2004 (2004-02-05) figure 1 paragraphs [0002], [0052], [0055], [0057]	1,3,4,6, 7,11,12
A	EP 1 469 352 A (ASML NETHERLANDS B.V.) 20 October 2004 (2004-10-20) paragraphs [0040] - [0045]	1-12
A	US 2004/257559 A1 (DIECKMANN NILS) 23 December 2004 (2004-12-23) abstract figure 1 paragraph [0028]	1-12
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☒ See patent family annex.

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Date of the actual completion of the international search

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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