

Title (en)

METHOD AND DEVICE FOR OPTICALLY INSPECTING A TEST OBJECT WITH AN AT LEAST PARTIALLY REFLECTIVE SURFACE

Title (de)

VERFAHREN UND VORRICHTUNG ZUM OPTISCHEN INSPIZIEREN EINES PRÜFLINGS MIT EINER ZUMINDEST TEILWEISE REFLEKTIERENDEN OBERFLÄCHE

Title (fr)

PROCÉDÉ ET DISPOSITIF D'INSPECTION OPTIQUE D'UN SPÉCIMEN DOTÉ D'UNE SURFACE AU MOINS EN PARTIE RÉFLÉCHISSANTE

Publication

**EP 2531836 A1 20121212 (DE)**

Application

**EP 11705434 A 20110201**

Priority

- DE 102010007396 A 20100203
- EP 2011000459 W 20110201

Abstract (en)

[origin: WO2011095322A1] A device for optically inspecting a test object with an at least partially reflective surface (22) has a camera (12) with a number of pixels (48) and an illuminating device (14) comprising a plurality of spatially distributed light sources (16). A workpiece receiving portion is used to position the test object relative to the illuminating device (14) and to the camera (12) such that light from the light sources (16) is reflected to the camera (12) via the surface (22). An analyzing and controlling unit (32) generates a series of different illumination patterns (38, 38'; 40) on the surface (22), wherein different light sources (16) are switched on in the course of the series. According to one aspect of the invention, an individual light origin region (60), which represents a spatial distribution of individual light contributions (56, 58) that the light sources (16) generate on at least one pixel (48) via the surface (22), is determined using the images for the at least one pixel (48), said images being received with the camera. Properties of the test object (20) are determined using the individual light origin region (60).

IPC 8 full level

**G01N 21/47** (2006.01); **G01B 11/25** (2006.01); **G01N 21/88** (2006.01)

CPC (source: EP US)

**G01B 11/245** (2013.01 - EP US); **G01B 11/25** (2013.01 - EP US); **G01B 11/2527** (2013.01 - EP US); **G01N 21/4738** (2013.01 - EP US); **G01N 21/8806** (2013.01 - EP US); **G01N 21/8851** (2013.01 - EP US); **H04N 7/18** (2013.01 - US); **H04N 23/56** (2023.01 - US); **G01N 2021/8829** (2013.01 - EP US)

Citation (search report)

See references of WO 2011095322A1

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)

**DE 102010007396 A1 20110804**; **DE 102010007396 B4 20131002**; EP 2531836 A1 20121212; US 2012327295 A1 20121227; US 8823869 B2 20140902; WO 2011095322 A1 20110811

DOCDB simple family (application)

**DE 102010007396 A 20100203**; EP 11705434 A 20110201; EP 2011000459 W 20110201; US 201213565375 A 20120802