

Title (en)
ENDOSCOPE

Title (de)
ENDOSKOP

Title (fr)
ENDOSCOPE

Publication
EP 2587983 A1 20130508 (DE)

Application
EP 11728809 A 20110622

Priority
• DE 102010025752 A 20100630
• EP 2011060406 W 20110622

Abstract (en)
[origin: WO2012000855A1] The invention relates to an endoscope and to a method for measuring the topography of a surface (4) by means of an endoscope (30, 33, 40, 44, 44'). Projection beams (12) are thereby emitted from a projection unit (6), wherein an image generating unit associated with the projection unit (6) generates phase-structured image sequences in close-up by means of a light-emitting display (42) or at a distance by means of a projection module (46) and downstream image guides (32, 50), and transmits said sequences to the projection unit (6). In this manner, both alternatives according to the invention allow sequences of phase-structured images, phase-shifted relative to each other, to be projected onto the surface to be measured and imaged by means of the projection unit, even under very spatially limited conditions. The slide changes previously required for such a procedure for generating phase-shifted images is thereby eliminated, and replaced by generating at a distance, subject only to easily controllable spatial restrictions, or generating in close-up by means of the light-emitting display (micro-display). The latter alternative in particular allows a battery-powered, capsule-shaped 3D measurement head to be inserted into cavities to be measured without any feeds (other than the guide wire). In this case, the battery powers both the micro display and the image sensor, wherein the image sensor data representing the reflection of the projected image can be either transmitted wirelessly to an analysis unit, such as a visualization computer, or stored intermediately in the capsule-shaped measurement head itself.

IPC 8 full level
A61B 1/06 (2006.01); **A61B 1/07** (2006.01); **A61B 5/107** (2006.01); **G01B 11/25** (2006.01); **G02B 23/24** (2006.01)

CPC (source: EP US)
A61B 1/00167 (2013.01 - EP US); **A61B 1/00193** (2013.01 - EP US); **A61B 1/00194** (2022.02 - EP); **A61B 1/0605** (2022.02 - EP); **A61B 1/0638** (2013.01 - EP US); **A61B 1/07** (2013.01 - EP US); **A61B 5/1076** (2013.01 - EP US); **G01B 11/2509** (2013.01 - EP US); **G01B 11/2527** (2013.01 - EP US); **G02B 23/2423** (2013.01 - EP US); **G02B 23/2461** (2013.01 - EP US); **G02B 23/2469** (2013.01 - EP US); **G02B 23/26** (2013.01 - EP US); **H04N 7/18** (2013.01 - US); **A61B 1/002** (2013.01 - EP US); **A61B 1/041** (2013.01 - EP US)

Citation (search report)
See references of WO 2012000855A1

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 102010025752 A1 20120105; EP 2587983 A1 20130508; US 2013093867 A1 20130418; WO 2012000855 A1 20120105

DOCDB simple family (application)
DE 102010025752 A 20100630; EP 11728809 A 20110622; EP 2011060406 W 20110622; US 201113807746 A 20110622