

Title (en)  
REFRACTIVE PRODUCTION OF A CONCENTRICALLY FANNED STRUCTURED BUNDLE OF LIGHT BEAMS, OPTICAL MEASURING DEVICE WITH REFRACTIVE DEFLECTION ELEMENT

Title (de)  
REFRAKTIVE ERZEUGUNG EINES KONZENTRISCH AUFGEFÄCHERTEN STRUKTURIERTEN LICHTSTRAHLENBÜNDELS, OPTISCHE MESSVORRICHTUNG MIT REFRAKTIVEM ABLENKUNGSELEMENT

Title (fr)  
PRODUCTION PAR RÉFRACTION D'UN FAISCEAU DE RAYONS LUMINEUX À STRUCTURE CONCENTRIQUEMENT DÉDOUBLÉE, DISPOSITIF DE MESURE OPTIQUE COMPRENANT UN ÉLÉMENT DE DÉFLECTION PAR RÉFRACTION

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Application  
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Abstract (en)  
[origin: WO2008092820A1] The present invention describes an optical deflection element (450) for the refractive production of a spatially structured bundle of light beams (422), which is fanned concentrically to an optical axis (417) of the deflection element (450). The optical deflection element (450) is provided with a base body (452), which is made, at least in some areas, of an optically transparent material, and has a light input side (460) and a light output side (470). The light input side (460) is configured such that a primary bundle of light beams (411) can be coupled in the base body (452). In relation to the optical axis (417) of the deflection element (450), the light output side (470) has a cylindrically symmetrical contour, which defines a recess in the base body (452). The fanning of the primary bundle of light beams (411) is achieved by refraction on rotationally symmetric interfaces (471, 472), which are variably inclined in relation to the optical axis (417). The invention further relates to an optical measuring device (100) for the three-dimensional measurement of a cavity formed in an object, the measuring device (100) comprising the optical deflection element (150, 450) mentioned above. The present invention further relates to a method for producing a concentrically fanned, spatially structured bundle of light beams (422), using the optical deflection element (150) mentioned above.

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