

Title (en)  
POLARISATION CONVERTER HAVING REFLECTIVE AXICON LENS

Title (de)  
POLARISATIONSWANDLER MIT REFLEKTIVER AXIKONOPTIK

Title (fr)  
TRANSFORMATEUR DE POLARISATION MUNI D'UN SYSTÈME OPTIQUE AXICON RÉFLÉCHISSANT

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Application  
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Abstract (en)  
[origin: WO2019015902A1] The invention relates to a polarisation converter (P) comprising a reflective axicon lens (1) as well as at least one half-shaft plate (5, 6). The reflective axicon lens (1) comprises a first hollow axicon (2) having a straight frustoconical recess (2.1) and a first inner axicon (3) arranged concentrically therein and relative to an optical axis (X), wherein the conical recess (2.1) and the inner axicon (3) have the same cone angle ( $\beta$ ) and are provided with a polarisation-direction-dependently reflective coating (HR) on the spaced-apart casing surfaces (2.1, 3.1), and with an optically transparent retaining plate (4) arranged perpendicular to the optical axis (X) and having a first flat surface (4.1), on which the base surfaces (2.3, 3.3) of the axicons (2, 3) are arranged in a flush manner, wherein an inlet port (2.2) is arranged at the tip of the frustoconical recess (2.1), concentrically relative to the optical axis (X). The reflective coating (HR) is selected such that, with a beam (S) entering in a collimated manner relative to the optical axis (X), via at least one reflection on each casing surface (2.1, 3.1) of the axicons (2, 3), an overall phase difference of  $\Delta\varphi = N\pi + \pi/2$  between the fast and the slow light propagation direction is brought about on the output side.

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