

Title (en)
OPTICAL ELEMENT, LUMINAIRE AND LIGHTING SYSTEM

Title (de)
OPTISCHES ELEMENT, LEUCHTE UND BELEUCHTUNGSSYSTEM

Title (fr)
ÉLÉMENT OPTIQUE, LUMINAIRE ET SYSTÈME D'ÉCLAIRAGE

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Abstract (en)
The present invention is directed to an optical element (1) for controlling a light distribution pattern of a light source (101) radiating first light beams (L1) to a first geometric quarter-space (Q1) and second light beams (L2) to a second geometric quarter-space (Q2), the first and second geometric quarter-spaces (Q1, Q2) being defined by mutually perpendicular first and second geometric planes (P1, P2) so that the first geometric plane (Pi) constitutes a boundary between the first and second geometric quarter-spaces (Q1, Q2). The optical element (1) is made of a transparent piece (2). The optical element (1) comprises a first cavity (3) for receiving the light source (101), a second cavity (4) being delimited by a reflection surface (5) of the transparent piece (2) towards the first cavity (3) for controlling at least part of the second light beams (L2) by reflecting the at least part of the second light beams (L2) to the first geometric quarter-space (Q1), and a lens-section (30) of the transparent piece (2) at least partially bordering the first cavity (3) for acting as a lens for controlling a light distribution pattern of the first light beams (L1). The reflection surface (5), in a sectional view with a sectional plane being perpendicular to the first and second geometric planes (P1, P2) and when viewed parallel to the first and second geometric planes (P1, P2), has an arcuate contour (50), and in a sectional view with a sectional plane parallel to the second geometric plane (P2) and when viewed orthogonally to the second geometric plane (P2), has a wing shaped contour (51) with a central convex section (52) protruding towards the first cavity (3) or the first geometric plane (Pi), and at each side of the central convex section (52) along the first geometric plane (Pi), a concave section (53, 54) bulged away from the first cavity (3) or the first geometric plane (P1), so that a total internal reflection takes place at the reflection surface (5) when the at least part of the second light beams (L2) arrive, from inside the transparent piece (2), at the reflection surface (5).

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