

Title (en)

Optical system for permanent luminous signals of different colours, especially for railway signalling

Title (de)

Optische Anlage für dauernde Lichtsignale verschiedener Farben, insbesondere für Eisenbahnsignalisierung

Title (fr)

Système optique pour signaux de différentes couleurs, lumineux en permanence, en particulier pour la signalisation ferroviaire

Publication

EP 0351380 B1 19970205 (FR)

Application

EP 89830310 A 19890704

Priority

IT 944888 A 19880715

Abstract (en)

[origin: EP0351380A2] In order to form an optical system for permanent luminous signals of three different colours, in particular for railway signalling, which has a smaller size, a greater luminosity and a higher stigmatism as compared with the systems known hitherto, and comprising three light sources 5 of different colour, with three corresponding mirrors 3 and three corresponding dichroic filters 6,7,8 arranged according to the Goulier-Prande pentagonal prism, and with an aspheric emergence lens 9, it is provided for the aspheric lens 9 to be arranged with its focal point F coinciding with the centre 10 of the pentagonal prism, and for a divergent lens 11 of quadric surface and with virtual focus to be placed between the said centre 10 and the said aspheric lens 9, and with the axes of the divergent lens 11 and of the aspheric lens 9 coinciding. The said divergent lens 11 is of the negative-elliptical meniscus type, the spherical convex face of which, turned towards the aspheric lens 9, has its centre of curvature coinciding with the focal point of the said aspheric lens, and the concave face of which, ellipsoidal or spherical, can be obtained from Descartes' general equation. As an alternative, the divergent lens 11 is of the concave plano-hyperbolic type, or spherical plano-concave type, with the concave face turned towards the aspheric lens 9 and with the focal point coinciding with that of the said aspheric lens 9. The said mirrors 3 are of the parabolic type with maximum relative output. <IMAGE>

IPC 1-7

B61L 5/18; G08G 1/095

IPC 8 full level

B61L 5/18 (2006.01); **G08G 1/095** (2006.01)

CPC (source: EP)

B61L 5/18 (2013.01); **G08G 1/095** (2013.01)

Designated contracting state (EPC)

AT BE CH DE ES FR GB GR IT LI LU NL SE

DOCDB simple family (publication)

EP 0351380 A2 19900117; **EP 0351380 A3 19910313**; **EP 0351380 B1 19970205**; AT E148665 T1 19970215; DE 68927750 D1 19970320; DE 68927750 T2 19970904; IT 1224982 B 19901030; IT 8809448 A0 19880715

DOCDB simple family (application)

EP 89830310 A 19890704; AT 89830310 T 19890704; DE 68927750 T 19890704; IT 944888 A 19880715