Title (en)

DIFFRACTIVE SECURITY ELEMENT HAVING AN INTEGRATED OPTICAL WAVEGUIDE

Title (de)

DIFFRAKTIVES SICHERHEITSELEMENT MIT INTEGRIERTEM OPTISCHEN WELLENLEITER

Title (fr)

ELEMENT DE SECURITE A DIFFRACTION A GUIDE D'ONDE OPTIQUE INTEGRE

Publication

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Application

EP 02806315 A 20021102

Priority

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- EP 0212243 W 20021102

Abstract (en)

[origin: US7102823B2] A diffractive security element (2) is divided into surface portions, having an optically effective structure (9) at interfaces embedded between two layers of a layer composite (1) of plastic material. At least the base layer (4), which is to be illuminated, of the layer composite (1) is transparent. The optically effective structure (9) as a base structure has a zero order diffraction grating with a period length of at most 500 nm. In at least one of the surface portions an integrated optical waveguide (5) with a layer thickness (s) of a transparent dielectric is embedded between the base layer (4) and an adhesive layer (7) of the layer composite (1) and/or a protective layer (6) of the layer composite (1), wherein the profile depth of the optically effective structure (9) is in a predetermined relationship with the layer thickness (s). Upon illumination with white incident light (13) the security element (2) produces light (14) which is diffracted in the zero diffraction order, of high intensity and with an intensive color.

IPC 1-7

B42D 15/00

IPC 8 full level

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CPC (source: EP KR US)

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