

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

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Application
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Abstract (en)
[origin: WO03059643A1] A diffractive security element (2) is subdivided into partial surfaces that have an optically active structure (9) at boundary surfaces while being embedded between two layers of a layer composite (1) made of plastic. At least the base layer (4) of the layer composite (1) that is to be illuminated is transparent. The optically active structure (9) comprises, as a basic structure, a diffraction grating of the zero order with a period length of no greater than 500 nm. Inside at least one of the partial surfaces, an integrated optical waveguide (5) having a layer thickness (s) and made 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), whereby the profile depth of the optically active structure (9) is a predetermined proportion of the layer thickness (s). When illuminated with white incident light (13) in the zero diffraction order, the security element (2) produces diffracted light (14) of a high intensity and intensive color.

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Citation (search report)
See references of WO 03059643A1

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