

Title (en)  
DIFFRACTION GRATING-BASED OPTICAL IDENTIFICATION ELEMENT

Title (de)  
BEUGUNGSGITTER-GESTÜTZTES OPTISCHES IDENTIFIKATIONSELEMENT

Title (fr)  
ELEMENT D'IDENTIFICATION OPTIQUE BASE SUR UN RESEAU DE DIFFRACTION

Publication  
**EP 1540588 A1 20050615 (EN)**

Application  
**EP 03749667 A 20030912**

Priority

- US 0328874 W 20030912
- US 41054102 P 20020912
- US 64568903 A 20030820
- US 64568603 A 20030820

Abstract (en)  
[origin: WO2004025559A1] An optical identification element 8 includes an optical substrate 10 having at least one diffraction grating 12 disposed therein. The grating 12 has a one or more of colocated pitches Lambda which represent a unique identification N bit digital code that is detected when illuminated by incident light 24. The incident light 24 may be directed transversely onto the side or onto an end of the substrate 10 with a narrow band (single wavelength) or multiple wavelength source, in which case the code is represented by a spatial distribution of light or a wavelength spectrum, respectively. The element 8 can provide a large number of unique codes, e.g., greater than 67 million codes, and can withstand harsh environments. The element 8 can be used in any application that requires sorting, tagging, tracking or identification, and can be made on a micron scale "microbeads" if desired, or larger "macro-elements" for larger applications. The code may be digital binary or may be other numerical bases.

IPC 1-7  
**G06T 5/00**

IPC 8 full level  
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CPC (source: EP)  
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Citation (search report)  
See references of WO 2004025559A1

Citation (examination)

- WO 2004034012 A2 20040422 - VIRTUAL ARRAYS INC [US], et al
- WO 0063419 A1 20001026 - VIRTUAL ARRAYS INC [US]
- WO 02059602 A2 20020801 - SRU BIOSYSTEMS LLC [US]

Designated contracting state (EPC)  
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**WO 2004025559 A1 20040325**; **WO 2004025559 A9 20050414**; **WO 2004025559 B1 20050310**; AU 2003267196 A1 20040430; CA 2498906 A1 20040325; EP 1540588 A1 20050615

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