

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 March 2005 (17.03.2005)

PCT

(10) International Publication Number
WO 2005/024969 A3

(51) International Patent Classification⁷: **G02B 27/01**

(21) International Application Number:
PCT/IL2004/000814

(22) International Filing Date:
9 September 2004 (09.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
157837 10 September 2003 (10.09.2003) IL

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (for all designated States except US): **LUMUS LTD.** [IL/IL]; 24B Hess Street, Rehovot 76346 (IL).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **AMITAL, Yaakov** [IL/IL]; Sireni Street 36/4, 76229 Rehovot (IL).

(74) Agent: **WOLFF BREGMAN AND GOLLER**; P.O. Box 1352, 91013 Jerusalem (IL).

Published:

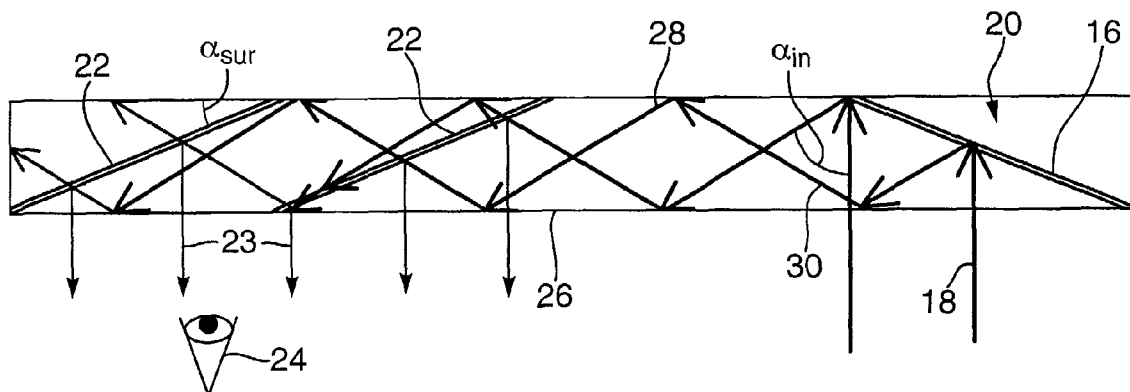
- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
11 August 2005

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SUBSTRATE-GUIDED OPTICAL DEVICES



(57) Abstract: There is provided an optical device, having a light-transmitting substrate (20) having at least two major surfaces parallel to each other and edges; a display light source; optical means for coupling light from the light source into the substrate (20) by internal reflection, and at least one partially reflecting surface (22) located in the substrate (20) which is non-parallel to the major surfaces of the substrate wherein the source emits light waves located in a given field-of-view, that the light waves are collimated, that an angular resolution is defined for the optical device, and wherein the angular deviation between any two different rays located in one of the collimated light waves, is smaller than the angular resolution.

WO 2005/024969 A3