



PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification⁶:

G02F 1/13.3

A2

(11) International Publication Number:

WO 96/02016

(43) International Publication Date:

25 January 1996 (25.01.96)

(21) International Application Number:

PCT/IB95/00528

(22) International Filing Date:

29 June 1995 (29.06.95)

(30) Priority Data:

94202006.6

12 July 1994 (12.07.94)

EP

(34) Countries for which the regional or
international application was filed:

AT et al.

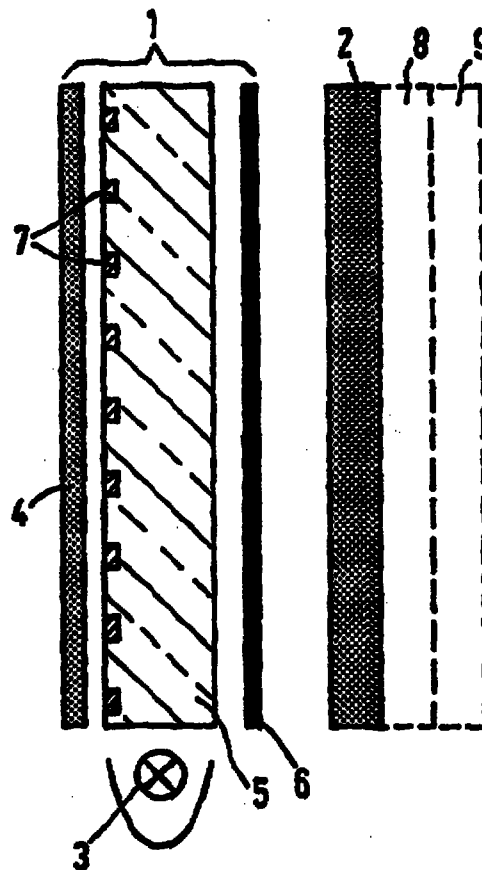
(81) Designated States: JP, KR, SG, European patent (AT, BE, CH,
DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published

Without international search report and to be republished
upon receipt of that report.(71) Applicant: PHILIPS ELECTRONICS N.V. [NL/NL]; Groe-
newoudseweg 1, NL-5621 BA Eindhoven (NL).(71) Applicant (for SE only): PHILIPS NORDEN AB [SE/SE];
Kottbygatan 5, Kista, S-164 85 Stockholm (SE).(72) Inventors: VAN HAAREN, Johannes, Albertus, Matthijs,
Maria; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
BROER, Dirk, Jan; Groenewoudseweg 1, NL-5621 BA
Eindhoven (NL).(74) Agent: STOLK, Steven, Adolph; Internationaal Octrooibureau
B.V., P.O. Box 220, NL-5600 AE Eindhoven (NL).(54) Title: ILLUMINATION SYSTEM, LINEAR POLARIZER FOR SUCH AN ILLUMINATION SYSTEM AND A DISPLAY DEVICE
COMPRISING SUCH AN ILLUMINATION SYSTEM

(57) Abstract

The application relates to an illumination system comprising a radiation source and a broadband, cholesteric polarizer. Such a polarizer includes a layer of a polymeric material having a cholesteric ordering, the material being ordered such that the axis of the molecular helix is oriented transversely to the layer. The broadband character of the polarizer is obtained by increasing the pitch of the molecular helix from a minimum value at a first surface of the cholesteric layer to a maximum value at the second surface of the layer. In accordance with the invention, the polarizer must be positioned in the illumination system in such a manner that the second surface of the cholesteric layer faces the radiation source. By virtue thereof, the illumination system attains a surprisingly low viewing-angle dependence of the brightness and the colour. This property is further improved by using a quarter lambda plate having a negative anisotropy in the refractive index. The application further relates to a linear polarizer for use in this illumination system and to a display device which is provided with such a linear polarizer.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	GB	United Kingdom	MR	Mauritania
AU	Australia	GE	Georgia	MW	Malawi
BB	Barbados	GN	Guinea	NE	Niger
BE	Belgium	GR	Greece	NL	Netherlands
BF	Burkina Faso	HU	Hungary	NO	Norway
BG	Bulgaria	IE	Ireland	NZ	New Zealand
BJ	Benin	IT	Italy	PL	Poland
BR	Brazil	JP	Japan	PT	Portugal
BY	Belarus	KE	Kenya	RO	Romania
CA	Canada	KG	Kyrgyzstan	RU	Russian Federation
CF	Central African Republic	KP	Democratic People's Republic of Korea	SD	Sudan
CG	Congo	KR	Republic of Korea	SE	Sweden
CH	Switzerland	KZ	Kazakhstan	SI	Slovenia
CI	Côte d'Ivoire	LI	Liechtenstein	SK	Slovakia
CM	Cameroon	LK	Sri Lanka	SN	Senegal
CN	China	LU	Luxembourg	TD	Chad
CS	Czechoslovakia	LV	Latvia	TG	Togo
CZ	Czech Republic	MC	Monaco	TJ	Tajikistan
DE	Germany	MD	Republic of Moldova	TT	Trinidad and Tobago
DK	Denmark	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	US	United States of America
FI	Finland	MN	Mongolia	UZ	Uzbekistan
FR	France			VN	Viet Nam
GA	Gabon				

9700240-6