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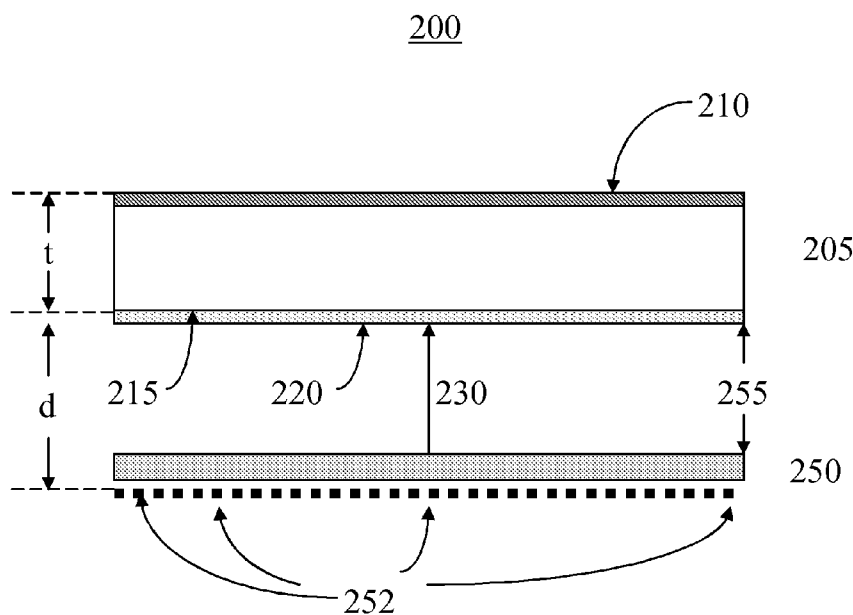
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[Continued on next page]

(54) Title: ENGINEERED ANTIGLARE SURFACE TO REDUCE DISPLAY SPARKLE

FIG. 2



(57) Abstract: A transparent substrate having an antiglare surface with reduced display sparkle. The transparent substrate has a roughened antiglare surface and a diffraction element below the antiglare surface. The diffraction element reduces sparkle by filling gaps between sub-pixels in a pixelated display with orders of diffraction. A display system comprising the transparent substrate and a pixelated display is also provided.

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SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. G02F1/1335
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
G02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2011/062849 A1 (CARLSON KRISTA L [US] ET AL) 17 March 2011 (2011-03-17) paragraph [0058]; example 7 -----	1-3,5,8, 27,28, 30-32
X	US 2007/242362 A1 (TAKADA KATSUNORI [JP] ET AL TAKAO HIROYUKI [JP] ET AL) 18 October 2007 (2007-10-18) the whole document ----- -/--	1-5,7-9, 27-32, 34,36

Further documents are listed in the continuation of Box C.

See patent family annex.

- * Special categories of cited documents :
- "A" document defining the general state of the art which is not considered to be of particular relevance
 - "E" earlier application or patent but published on or after the international filing date
 - "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
 - "O" document referring to an oral disclosure, use, exhibition or other means
 - "P" document published prior to the international filing date but later than the priority date claimed
 - "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
 - "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
 - "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
 - "&" document member of the same patent family

Date of the actual completion of the international search 21 August 2012	Date of mailing of the international search report 22/11/2012
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel: (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Lüsse, Georg
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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2012/038778

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DARREN K P HUCKABY ET AL: "36.2: Quantifying "Sparkle" of Anti-Glare Surfaces", SID 2009, 2009 SID INTERNATIONAL SYMPOSIUM, SOCIETY FOR INFORMATION DISPLAY, LOS ANGELES, USA, vol. XXXX, 31 May 2009 (2009-05-31), pages 511-513, XP007017107, ISSN: 0009-966X the whole document</p> <p style="text-align: center;">-----</p>	<p>1-9, 27-36</p>

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/038778

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

2-9, 28-36

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 2-9, 28-36

Transparent substrate (optionally combined with, and disposed in front of a pixelated display: claim 27) comprising an anti-glare surface and a diffraction element (optionally between the display and the AG surface: ditto), wherein the diffraction element is specified in detail with regard to its position, material, physical properties, etc.

2. claims: 10-13, 21, 37-40, 48

Transparent substrate (optionally combined with, and disposed in front of a pixelated display: claim 27) comprising an anti-glare surface and a diffraction element (optionally between the display and the AG surface: ditto), wherein the AG surface structure is specified.

3. claims: 14-20, 41-47

Transparent substrate (optionally combined with, and disposed in front of a pixelated display: claim 27) comprising an anti-glare surface and a diffraction element (optionally between the display and the AG surface: ditto), wherein the chemical nature of the substrate is specified.

4. claims: 22-26, 49-53

Transparent substrate (optionally combined with, and disposed in front of a pixelated display: claim 27) comprising an anti-glare surface and a diffraction element (optionally between the display and the AG surface: ditto), wherein the photophysical properties of the combined system are defined.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2012/038778

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2011062849 A1	17-03-2011	CN 102548922 A EP 2477954 A1 KR 20120081146 A TW 201124353 A US 2011062849 A1 WO 2011034898 A1	04-07-2012 25-07-2012 18-07-2012 16-07-2011 17-03-2011 24-03-2011
US 2007242362 A1	18-10-2007	NONE	