



DPC: 24 / 30497917 DC

BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

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Part 1-2: Generic - Terminology and letter symbols

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E-mail: csc@bsigroup.com

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

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- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



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IEC TC 110 : ELECTRONIC DISPLAYS		
SECRETARIAT: Japan		SECRETARY: Mr Yoshi SHIBAHARA
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 100		HORIZONTAL FUNCTION(S):
ASPECTS CONCERNED:		

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TITLE:

Electronic displays – Part 1-2: Generic – Terminology and letter symbols

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRONIC DISPLAYS –

Part 1-2: Generic – Terminology and letter symbols

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IEC 62977-1-2 has been prepared by IEC technical committee 110: Electronic displays. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
XX/XX/FDIS	XX/XX/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

ELECTRONIC DISPLAYS –

Part 1-2: Generic – Terminology and letter symbols

1 Scope

This part of IEC 62977 provides the terms, definitions, and symbols related to optical measurement and evaluation methods applicable to electronic displays and their components.

NOTE This document is a basis for facilitating communication between display industry stakeholders in the process of standards development.

2 Normative references

There are no normative references in this document.

3 Terms, definitions, abbreviated terms and letter symbols

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

CIE maintains a terminological database for use in standardization at the following address:

- ILV: International Lighting Vocabulary: available at <https://cie.co.at/e-ilv>

3.1 Classification of terms

Terms for optical measurements of electronic visual displays are classified by the following categories:

- 1) Fundamental terms related to displays (3.4)
- 2) Terms related to display operating principle and geometry (3.5)
- 3) Terms related to active matrix displays (3.6)
- 4) Terms related to active matrix displays (3.7)
- 5) Definition of symbols (3.8)
- 6) Terms related to basic measurements of emissive displays (3.9)
- 7) Terms related to colorimetry (3.10) under structure
- 8) Terms related to photometry (3.11)
- 9) Terms related to display setup and measurement apparatus (3.12)
- 10) Terms related to pixel and contrast (3.13)
- 11) Terms related to light polarization (3.14)
- 12) Terms related to spectrum measurement devices
- 13) Terms related to radiometry
- 14) Light measuring devices
- 15) Electric current measuring devices
- 16) Electric voltage measuring devices

- 39 17) Viewing direction dependence
- 40 18) Temporal characteristics
- 41 19) Spatial measurement
- 42 20) Spectral reflection and transmission
- 43 21) Spatio-temporal characteristics
- 44 22) Mechanical strength
- 45 23) Physical dimensions
- 46 24) Electrical characteristics
- 47 25) Front- and back-projection geometry Projector screens
- 48 26) 3D and stereoscopic displays
- 49 27) Interactive displays
- 50 28) Near-eye displays
- 51 29) Input test images and signals
- 52 30) colour appearance, and colour spaces
- 53 31) Metrology fundamentals
- 54 32) Glossary

55 **3.2 Abbreviated terms**

- 56 – 2K input signal format (1920x1080)
- 57 – 4K input signal format (3840x2160)
- 58 – 8K input signal format (7680x4320)
- 59 – ALS ambient light sensor
- 60 – APL average pixel level
- 61 – CAT colour adaptation transform
- 62 – CCT correlated colour temperature
- 63 – CIE Commission Internationale de d'Éclaraige (International Commission on
- 64 Illumination)
- 65 – CIELAB CIE 1976 L*a*b* colour space
- 66 – CRT cathode ray tube
- 67 – CMY cyan, magenta, yellow (can be subtractive colour primaries)
- 68 – dof_{LMD} depth-of-focus (LMD)
- 69 – DOF_{LMD} Depth of field (LMD)
- 70 – DUT display under test
- 71 – DVD digital versatile disk
- 72 – EOTF Electro-optical transfer function
- 73 – EWD eyewear display (EWD is also used for electro-wetting display)
- 74 – FHD full high definition (1920x1080)
- 75 – FPD flat panel display
- 76 – FSW full screen white
- 77 – FWHM full width at half maximum
- 78 – HD high definition (1280x720)
- 79 – ICDM International Committee for Display Metrology
- 80 – IDMS Information Display Measurements Standard
- 81 – ILMD Imaging light-measuring device

82	– IR	infrared electromagnetic radiation
83	– ISO	International Organization for Standardization
84	– ITU	International Telecommunication Union
85	– JND	just-noticeable difference
86	– LCD	liquid crystal display
87	– LED	light-emitting diode
88	– LMD	light-measuring device
89	– MC	multi-colour
90	– MCT	multi-colour test-pattern or multi-colour tile
91	– MEMS	microelectromechanical system
92	– MTF	modulation transfer function
93	– NED	near-eye display
94	– OETF	opto-electric transfer function
95	– OLED	organic LED
96	– PLED	polymer LED
97	– PD	photo diode
98	– PDP	plasma display panel
99	– RGB	red, green, blue (additive colour primaries)
100	– RMS	root mean square
101	– sRGB	standard RGB colour space
102	– SID	Society for Information Display
103	– SLET	stray light-elimination tube
104	– SPD	spectral power distribution
105	– TV	television
106	– UCS	uniform chromaticity scale
107	– UV	ultraviolet electromagnetic radiation
108	– VESA	Video Electronics Standards Association
109	– VIS	visible electromagnetic radiation
110	– WK	white and black (BW is also used as black and white)

3.3 Letter symbols (quantity symbols/unit symbols)

The letter symbols for display measurement are shown in Table 1.

Table 1 – Letter symbols (quantity symbols / unit symbols)

Definition	Symbol	Unit
Luminance of an arbitrary area centred at point (x_i, y_i) on a display measured in the direction defined by θ_R and ϕ_R	L_{dir}	cd/m ²
Maximum luminance on a display	L_{max}	cd/m ²
Minimum luminance on a display	L_{min}	cd/m ²
Directional average luminance on a display	L_a	cd/m ²
Centre luminance on a display	L_c	cd/m ²
Lateral luminance uniformity	U_{lat}	%
Vertical luminance uniformity	U_{ver}	%
Tristimulus values of CIE 1931 standard colorimetric system	X, Y, Z	