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Ergonomics of human-system interaction – Part 302: Terminology for electronic visual displays (ISO 9241-302:2008)

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EUROPEAN STANDARD

EN ISO 9241-302

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English Version

**Ergonomics of human-system interaction - Part 302:
Terminology for electronic visual displays (ISO 9241-302:2008)**

Ergonomie de l'interaction homme-système - Partie 302:
Terminologie relative aux écrans de visualisation
électroniques (ISO 9241-302:2008)

Ergonomie der Mensch-System-Interaktion - Teil 302:
Terminologie für elektronische optische Anzeigen (ISO
9241-302:2008)

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SS-EN ISO 9241-302:2008 (E/F)

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Foreword

This document (EN ISO 9241-302:2008) has been prepared by Technical Committee ISO/TC 159 "Ergonomics" in collaboration with Technical Committee CEN/TC 122 "Ergonomics", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2009, and conflicting national standards shall be withdrawn at the latest by May 2009.

This document supersedes EN 29241-3:1993, EN ISO 13406-1:1999, EN ISO 13406-2:2001, EN ISO 9241-7:1998, EN ISO 9241-8:1997.

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The text of ISO 9241-302:2008 has been approved by CEN as a EN ISO 9241-302:2008 without any modification.

Ergonomics of human-system interaction —

Part 302:

Terminology for electronic visual displays

Ergonomie de l'interaction homme-système —

Partie 302:

Terminologie relative aux écrans de visualisation électroniques

1 Scope

This part of ISO 9241 provides a comprehensive terminology for electronic visual displays and explains the terms and definitions used in the other parts of ISO 9241.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CIE 17.4:1987, *International Lighting Vocabulary*²⁾
[IEC 60050-845] *International Electrotechnical Vocabulary — Lighting*

1 Domaine d'application

La présente partie de l'ISO 9241 fournit une terminologie d'ensemble relative aux écrans de visualisation électronique et explique les termes et définitions utilisés dans toutes les autres parties de l'ISO 9241.

2 Références normatives

Les documents de référence suivants sont indispensables pour l'application du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

CIE 17.4:1987, *Vocabulaire International de l'Éclairage*²⁾
[CEI 60050-845] *Vocabulaire Électrotechnique International — Éclairage*

2) International Commission on Illumination.

2) Commission Internationale de l'Éclairage.

SS-EN ISO 9241-302:2008 (E/F)

3 Terms and definitions

3 Termes et définitions

3.1 Photometry

3.1 Photométrie

3.1.1 arbitrary symbol

symbol employing an extended subscript notation convention

NOTE See Table 1 for an example and its explanation.

3.1.1 symbole arbitraire

symbole adoptant la convention de notation d'indice élargie

NOTE Le Tableau 1 donne un exemple et son explication.

**Table 1 — Arbitrary symbol, $A_{ill,object(mdir)}$
Tableau 1 — Symbole arbitraire, $A_{ill,objet(mdir)}$**

Position Position	Explanation Explication	Example Exemple	Explanation for the example Explication pour l'exemple
A A	Physical quantity Grandeur physique	L L	Luminance Luminance
ill ill	Illumination condition Conditions d'éclairage	dark sombre	Darkroom condition Condition de chambre noire
object objet	Measured object Objet mesuré	HS HS	Measuring the high state Mesure de l'état d'activation
mloc mloc	Measurement location Point de mesure	CL CL	Centre location Point central
mdir mdir	Measurement direction Direction de la mesure	UL UL	Upper left En haut à gauche
B B	Spectral wavelength Longueur d'onde spectrale	410 410	Wavelength $\lambda = 410$ nm Longueur d'onde $\lambda = 410$ nm
NOTE If the position B is omitted, then it is not applicable, or refers to the $V(\lambda)$ corrected value. NOTE Si la position B est omise, elle n'est pas applicable, ou elle fait référence à la valeur corrigée $V(\lambda)$.			

3.1.2 area luminance

average luminance of an area of the screen or virtual image that has a diameter that subtends 2° to 10°

NOTE 1 Unit: cd/m².

NOTE 2 It is also defined as the luminance of a circular area of the screen that has a diameter of at least 10 pixels. The point is to assure that the luminance of an individual pixel has less than a 2 % effect on the average luminance of the area being measured.

3.1.2 luminance de surface

luminance moyenne d'une surface de l'écran ou d'une image virtuelle qui a un diamètre qui sous-tend 2° à 10°

NOTE 1 Unité: cd/m².

NOTE 2 Elle est aussi définie comme la luminance d'une surface circulaire de l'écran qui a un diamètre d'au moins 10 pixels. Ce point doit garantir que la luminance d'un pixel individuel a un effet inférieur à 2 % sur la luminance moyenne de la surface qui est mesurée.

3.1.3 background luminance

luminance of an area of the screen or virtual image with no graphic images present

NOTE Unit: cd/m².

3.1.4 contrast

(perceptual sense) assessment of the difference in appearance of two or more parts of a field seen simultaneously or successively (hence: brightness contrast, lightness contrast, colour contrast, etc.)

[CIE 17.4:1987, definition 845-02-47]

**3.1.5 Lambert's cosine law
Lambert's law**

for a surface element whose radiance or luminance is the same in all directions of the hemisphere above the surface

$$I(\theta) = I_n \cos(\theta) \quad (1)$$

where $I(\theta)$ and I_n are the radiant or luminous intensities of the surface element in a direction at an angle, θ , from the normal to the surface and in the direction of that normal, respectively

[CIE 17.4:1987, definition 845-04-56]

3.1.6 Lambertian surface

ideal surface for which the radiation coming from that surface is distributed angularly according to Lambert's cosine law

NOTE 1 For an ideal diffuse reflectance standard:

$$\rho_{\text{STD}} = \pi \cdot q_{\text{STD}} \quad (2)$$

where

ρ_{STD} is the diffuse reflectance

q_{STD} is the luminance coefficient.

NOTE 2 See CIE 17.4:1987, definition 845-04-57.

3.1.3 luminance d'arrière-plan

luminance d'une surface de l'écran ou d'une image virtuelle en l'absence de toute image graphique

NOTE Unité: cd/m².

3.1.4 contraste

(sens perceptif) évaluation de la différence d'aspect de deux ou plusieurs parties du champ observé, juxtaposées dans l'espace ou dans le temps (d'où: contraste de luminosité, contraste de clarté, contraste de couleur, etc.)

[CIE 17.4:1987, définition 845-02-47]

**3.1.5 loi du cosinus de Lambert
loi de Lambert**

propriété d'un élément de surface dont la luminance énergétique ou lumineuse est la même dans toutes les directions de l'hémisphère au-dessus de la surface

$$I(\theta) = I_n \cos(\theta) \quad (1)$$

où $I(\theta)$ et I_n sont les intensités énergétiques ou lumineuses de l'élément de surface dans une direction faisant un angle, θ , avec la normale à la surface et dans la direction de cette normale respectivement

[CIE 17.4:1987, définition 845-04-56]

3.1.6 surface lambertienne

surface idéale pour laquelle le rayonnement provenant de cette surface a une répartition angulaire conforme à la loi du cosinus de Lambert

NOTE 1 Pour une référence de facteur de réflexion diffuse idéale:

$$\rho_{\text{STD}} = \pi \cdot q_{\text{STD}} \quad (2)$$

où

ρ_{STD} est le facteur de réflexion diffuse

q_{STD} est le coefficient de luminance.

NOTE 2 Voir la définition 845-04-57 de CIE 17.4:1987.