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Interested committees:

Title: BS EN IEC 80000-13 Quantities and units

Part 13: Information science and technology

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

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- ii) affects other national standard(s)
- iii) requires additional national guidance or information

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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.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

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 Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.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

- **Annotated drafts are not acceptable and will be rejected.**
- 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.	



25/767/CD

COMMITTEE DRAFT (CD)

PROJECT NUMBER: IEC 80000-13 ED2	
DATE OF CIRCULATION: 2023-08-11	CLOSING DATE FOR COMMENTS: 2023-10-06
SUPERSEDES DOCUMENTS: 25/765/RR	

IEC TC 25 : QUANTITIES AND UNITS	
SECRETARIAT: Italy	SECRETARY: Mr Andrea Nafi
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 1,TC 13,TC 57,TC 65,TC 100	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CD to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY	

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Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Recipients of this document are invited to submit, with their comments, notification of any local regulations or technical reasons that may exist and should be considered should this proposal proceed, recognizing that failure to address such requirements could result in the need for new or existing "In Some Countries" clauses. (SEE [AC/22/2007](#) OR [NEW GUIDANCE DOC](#)).

TITLE:

Quantities and units - Part 13: Information science and technology

NOTE FROM TC/SC OFFICERS:

The revision of IEC 80000-13:2008 ED1 has been approved by TC 25 members through questionnaire 25/761/Q (See also 25/763/RQ)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

QUANTITIES AND UNITS –

Part 13: Information science and technology

FOREWORD

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International Standard IEC 80000-13 ED2.0 has been prepared by IEC Technical Committee 25: Quantities and units.

This second edition cancels and replaces the first edition published in 2008. This edition constitutes a technical revision.

This edition includes the following significant technical change with respect to the previous edition:

- addition of new prefixes for binary multiples.

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

FDIS	Report on voting
25/XXX/FDIS	25/XXX/RVD

Full information on the voting for the approval of this standard 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 has been drafted in accordance with the 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/standardsdev/publications.

IEC 80000 consists of the following parts, under the general title *Quantities and units*:

Part 6: *Electromagnetism*

Part 13: *Information science and technology*

Part 15: *Logarithmic and related quantities* (under development)

Part 16: *Printing and writing rules* (under development)

Part 17: *Time dependency* (under development)

The following parts are published by ISO:

Part 1: *General*

Part 2: *Mathematics*

Part 3: *Space and time*

Part 4: *Mechanics*

Part 5: *Thermodynamics*

Part 7: *Light and radiation*

Part 8: *Acoustics*

Part 9: *Physical chemistry and molecular physics*

Part 10: *Atomic and nuclear physics*

Part 11: *Characteristic numbers*

Part 12: *Condensed matter physics*

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

The National Committees are requested to note that for this document the stability date is 202X.

THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED AT THE PUBLICATION STAGE.

INTRODUCTION

0.1 Arrangements of the tables

The tables of quantities and units in ISO/IEC 80000 are arranged so that the quantities are presented on the left-hand pages and the units on the corresponding right-hand pages.

All units between two full lines on the right-hand pages belong to the quantities between the corresponding full lines on the left-hand pages.

0.2 Tables of quantities

The names in English and in French of the most important quantities within the field of this document are given together with their symbols and, in most cases, their definitions. These names and symbols are recommendations. The definitions are given for identification of the quantities in the International System of Quantities (ISQ), listed on the left hand pages of Table 1; they are not intended to be complete.

The scalar, vectorial or tensorial character of quantities is pointed out, especially when this is needed for the definitions.

In most cases only one name and only one symbol for the quantity are given; where two or more names or two or more symbols are given for one quantity and no special distinction is made, they are on an equal footing. When two types of italic letters exist (for example as with ϑ and θ ; φ and ϕ ; a and α ; g and g) only one of these is given. This does not mean that the other is not equally acceptable. It is recommended that such variants should not be given different meanings. A symbol within parenthesis implies that it is a reserve symbol, to be used when, in a particular context, the main symbol is in use with a different meaning.

In this English edition the quantity names in French are printed in an italic font, and are preceded by *fr.* The gender of the French name is indicated by (m) for masculine and (f) for feminine, immediately after the noun in the French name.

0.3 Tables of units

0.3.1 General

The names of units for the corresponding quantities are given together with the international symbols and the definitions. These unit names are language-dependent, but the symbols are international and the same in all languages. For further information, see the SI Brochure (9th edition 2019, updated in 2022) from BIPM and ISO 80000-1.

The units are arranged in the following way:

a) The coherent SI units are given first. The SI units have been adopted by the General Conference on Weights and Measures (Conférence Générale des Poids et Mesures, CGPM). The use of coherent SI units, and their decimal multiples and submultiples formed with the SI prefixes are recommended, although the decimal multiples and submultiples are not explicitly mentioned.

b) Some non-SI units are then given, being those accepted by the International Committee for Weights and Measures (Comité International des Poids et Mesures, CIPM), or by the International Organization of Legal Metrology (Organisation Internationale de Métrologie Légale, OIML), or by ISO and IEC, for use with the SI.

Such units are separated from the SI units in the item by use of a broken line between the SI units and the other units.

c) Non-SI units currently accepted by the CIPM for use with the SI are given in small print (smaller than the text size) in the "Conversion factors and remarks" column.

d) Non-SI units that are not recommended are given only in annexes in some parts of ISO/IEC 80000. These annexes are informative, in the first place for the conversion factors, and are not integral parts of the standard. These deprecated units are arranged in two groups:

1) units in the CGS system with special names;

2) units based on the foot, pound, second, and some other related units.

e) Other non-SI units given for information, especially regarding the conversion factors, are given in another informative annex.

0.3.2 Remark on units for quantities whose dimensional exponents are all equal to zero

The coherent unit for any quantity whose dimensional exponents are all equal to zero is the number one, symbol 1. When the value of such a quantity is expressed, the unit symbol 1 is generally not written out explicitly. There is no agreement on how to refer to such quantities. They have been called dimensionless quantities (although this term should now be avoided), quantities with dimension one, quantities with dimension number, or quantities with the unit one.

EXAMPLE

Refractive index $n = 1,53 \times 1 = 1,53$

Prefixes shall not be used to form multiples or submultiples of this unit. Instead of prefixes, powers of 10 are recommended.

EXAMPLE

Reynolds number $Re = 1,32 \times 10^3$

Plane and solid angles, when expressed in radians and steradians respectively, are also treated within the SI as quantities with the unit one. The symbols rad and sr are written explicitly where appropriate, in order to emphasize that, for radians or steradians, the quantity being considered is, or involves the plane angle or solid angle respectively. However, it is a long-established practice in mathematics and across all areas of science to make use of $\text{rad} = 1$ and $\text{sr} = 1$. For historical reasons the radian and steradian are treated as derived units.

0.4 Numerical statements in this International Standard

The sign $=$ is used to denote “is exactly equal to”, the sign $\approx$ is used to denote “is approximately equal to”, and the sign $:=$ is used to denote “is by definition equal to”.

Numerical values of physical quantities that have been experimentally determined always have an associated measurement uncertainty. This uncertainty should always be specified. In this standard, the magnitude of the uncertainty is represented as in the following example.

EXAMPLE

$l = 2,347\ 82(32)\ \text{m}$

193 In this example, $l = a(b)$ m, the numerical value of the uncertainty b indicated in parentheses
194 is assumed to apply to the last (and least significant) digits of the numerical value a of the
195 length l . This notation is used when b represents one standard uncertainty (estimated
196 standard deviation) in the last digits of a . The numerical example given above may be
197 interpreted to mean that the best estimate of the numerical value of the length l , when l is
198 expressed in the unit metre, is 2,347 82, and that the unknown value of l is believed to lie
199 between $(2,347\ 82 - 0,000\ 32)$ m and $(2,347\ 82 + 0,000\ 32)$ m with a probability determined
200 by the standard uncertainty 0,000 32 m and the probability distribution of the values of l .

201