

This is a preview of "BS EN IEC 60477-1:20...". [Click here to purchase the full version from the ANSI store.](#)



BSI Standards Publication

Laboratory resistors

Part 1: Laboratory DC resistors

This is a preview of "BS EN IEC 60477-1:20...". [Click here to purchase the full version from the ANSI store.](#)

National foreword

This British Standard is the UK implementation of EN IEC 60477-1:2022. It is identical to IEC 60477-1:2022. It supersedes BS EN 60477:1999, which will be withdrawn on 7 December 2022.

The UK participation in its preparation was entrusted to Technical Committee PEL/85, Measuring equipment for electrical and electromagnetic quantities.

A list of organizations represented on this committee can be obtained on request to its committee manager.

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2022
Published by BSI Standards Limited 2022

ISBN 978 0 539 04648 9

ICS 17.220.20; 31.040.99

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 June 2022.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

This is a preview of "BS EN IEC 60477-1:20...". [Click here to purchase the full version from the ANSI store.](#)

EUROPÄISCHE NORM

May 2022

ICS 17.220.20; 31.040.01

Supersedes EN 60477:1997 + A1:1997

English Version

**Laboratory resistors - Part 1: Laboratory DC resistors
(IEC 60477-1:2022)**

Résistances de laboratoire - Partie 1: Résistances de
laboratoire à courant continu
(IEC 60477-1:2022)

Labor-Widerstände - Teil 1: Labor-Gleichstromwiderstände
(IEC 60477-1:2022)

This European Standard was approved by CENELEC on 2022-05-04. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

This is a preview of "BS EN IEC 60477-1:20...". [Click here to purchase the full version from the ANSI store.](#)

European foreword

The text of document 85/821/FDIS, future edition 1 of IEC 60477-1, prepared by IEC/TC 85 "Measuring equipment for electrical and electromagnetic quantities" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60477-1:2022.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2023-02-04
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2025-05-04

This document supersedes EN 60477:1997 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 60477-1:2022 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60051 (series) NOTE Harmonized as EN IEC 60051 (series)

IEC 60258 NOTE Harmonized as HD 368 S1

IEC 60359:2001 NOTE Harmonized as EN 60359:2002 (not modified)

This is a preview of "BS EN IEC 60477-1:20...". Click here to purchase the full version from the ANSI store.

(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60027	series	Letter symbols to be used in electrical technology	EN IEC 60027	series
IEC 60417	series	Graphical symbols for use on equipment	-	-
IEC 61010-1	2010	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements	EN 61010-1	2010
+ A1 (mod)	2016		+ A1	2019
IEC 61010-2-030	-	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-030: Particular requirements for equipment having testing or measuring circuits	EN IEC 61010-2-030	-

This is a preview of "BS EN IEC 60477-1:20...". [Click here to purchase the full version from the ANSI store.](#)

This is a preview of "BS EN IEC 60477-1:20...". [Click here to purchase the full version from the ANSI store.](#)

CONTENTS

FOREWORD	4
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
3.1 General terms	7
3.2 Characteristic values	9
3.3 Accuracy class, class index	10
3.4 Influence quantities, reference conditions, nominal range of use	11
3.5 Uncertainty and variations	13
4 Classification and construction	16
4.1 Classification	16
4.2 Construction	16
5 Limits of intrinsic uncertainty	16
5.1 General	16
5.2 Requirement for multiple resistors	17
6 Reference conditions	17
7 Permissible variations	18
7.1 Limits of variation	18
7.2 Conditions for the determination of the variations	19
7.3 Influence of self-heating (power dissipation)	19
7.4 Influence of position	20
8 Further electrical and mechanical requirements	20
8.1 Electrical safety requirements	20
8.2 Insulation resistance	20
8.3 Storage and transport conditions	20
8.4 Terminal	20
8.5 Provision of temperature measuring facilities	21
8.6 Guarding and screening requirements	21
9 Information, markings and symbols	21
9.1 Information	21
9.2 Markings, symbols and their locations	22
9.3 Marking relating to the reference conditions and nominal ranges of use	22
Annex A (informative) Reference information	25
A.1 Thermoelectric effects (see Clause 6, Note 2)	25
A.2 Reference range and nominal range of use	25
A.3 Example of marking for a single resistor	26
A.4 Example of marking for a five-dial resistor	26
Bibliography	27
Figure A.1 – Effect of temperature	25
Figure A.2 – Example of marking for a single resistor	26
Figure A.3 – Example of marking for a five-dial resistor	26
Table 1 – Limits of intrinsic relative uncertainty and limits of relative stability	17
Table 2 – Reference conditions and permissible range of influence quantities	18