BS EN 62129-1:2016

BSI Standards Publication

Calibration of wavelength/optical frequency measurement instruments

Part 1: Optical spectrum analyzers

bsi.

National foreword

This British Standard is the UK implementation of EN 62129-1:2016. It is identical to IEC 62129-1:2016. It supersedes BS EN 62129:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/86, Fibre optics.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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

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EUROPEAN STANDARD

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English Version

Calibration of wavelength/optical frequency measurement instruments - Part 1: Optical spectrum analyzers (IEC 62129-1:2016)

Étalonnage des appareils de mesure de longueur d'onde/appareil de mesure de la fréquence optique - Partie 1: Analyseurs de spectre optique (IEC 62129-1:2016)

Kalibrierung von Messgeräten für die Wellenlänge/optische Frequenz - Teil 1: Optische Spektrumanalysatoren (IEC 62129-1:2016)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

The text of document 86/477/CDV, future edition 1 of IEC 62129-1, prepared by IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62129-1:2016.

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) 2016-12-03
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-06-03

This document supersedes EN 62129:2006.

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

Endorsement notice

The text of the International Standard IEC 62129-1:2016 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 60793-2-50	NOTE	Harmonized as EN 60793-2-50.
IEC 61315	NOTE	Harmonized as EN 61315.
IEC 62129-2	NOTE	Harmonized as EN 62129-2.
IEC 62522	NOTE	Harmonized as EN 62522.
IEC 60359:2001	NOTE	Harmonized as EN 60359:2002 (not modified).
IEC 61290-3-1	NOTE	Harmonized as EN 61290-3-1.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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

NOTE 1 When 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.

Publication	Year	Title	EN/HD	Year
IEC 60050-731	-	International Electrotechnical Vocabulary - Chapter 731: Optical fibre communication	-	-
IEC 60793-2	series	Optical fibres - Part 2: Product specifications	EN 60793-2	series
IEC 60825-1	-	Safety of laser products - Part 1: Equipment classification and requirements	EN 60825-1	-
ISO/IEC 17025	-	General requirements for the competence of testing and calibration laboratories	EN ISO/IEC 17025	-
ISO/IEC Guide 98-3	2008	Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CALIBRATION OF WAVELENGTH/OPTICAL FREQUENCY MEASUREMENT INSTRUMENTS –

Part 1: Optical spectrum analyzers

FOREWORD

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International Standard IEC 62129-1 has been prepared by IEC technical committee 86: Fibre optics.

This first edition of IEC 62129-1 cancels and replaces the first edition of IEC 62129, published in 2006. This edition constitutes a technical revision.

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

a) update of term and definitions;
b) update of calibration conditions;
c) calculation change of uncertainties related to wavelength temperature dependence, power linearity, power level temperature dependence;
d) move of Annex E to the bibliography.

The text of this standard is based on the following documents:

CDV	Report on voting
86/477/CDV	86/483/RVC

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62129 series, published under the general title *Calibration of wavelength/optical frequency measurements instruments*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

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CALIBRATION OF WAVELENGTH/OPTICAL FREQUENCY MEASUREMENT INSTRUMENTS –

Part 1: Optical spectrum analyzers

1 Scope

This part of IEC 62129 specifies procedures for calibrating an optical spectrum analyzer that is developed for use in fibre-optic communications and designed to measure the power distribution of an optical spectrum. It does not apply to an optical wavelength meter that measures only centre wavelengths, a Fabry-Perot interferometer or a monochromator that has no display unit.

2 Normative references

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

IEC 60050-731, *International Electrotechnical Vocabulary – Chapter 731: Optical fibre communication* (available at http://www.electropedia.org)

IEC 60793-2 (all parts), *Optical fibres – Part 2: Product specifications*

IEC 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-731 and the following apply.

3.1
accredited calibration laboratory
calibration laboratory authorized by an appropriate national organization to issue calibration certificates that demonstrates traceability to national standards

3.2
calibration
set of operations that establish, under specified conditions, the relationship between the values of quantities indicated by a measuring instrument and the corresponding values realized by standards

Note 1 to entry: The results of a calibration permit either the assignment of measurand values to the indications or the determination of corrections with respect to the indications.