

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Fibre optic sensors –
Part 2-1: Temperature measurement – Temperature sensors based on fibre
Bragg gratings**

**Capteurs fibroniques –
Partie 2-1: Mesure de la température – Capteurs de température basés
sur des réseaux de Bragg à fibres**



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references	7
3 Terms, definitions, abbreviated terms and symbols of quantities.....	7
3.1 Terms and definitions.....	8
3.2 Abbreviated terms.....	11
3.3 Symbols of quantities.....	12
4 Design and characteristics of an FBG temperature sensor.....	13
4.1 Fibre Bragg grating (FBG).....	13
4.2 Dependence of Bragg wavelength on temperature	13
4.3 Design features.....	14
5 Performance parameters	14
6 Test apparatuses for performance parameter determination	15
6.1 Temperature calibration equipment.....	15
6.2 Optical spectrum analyzer and interrogator	16
6.3 Broadband light source	16
7 Test procedures of performance parameters.....	16
7.1 Sample preparation and test set-up	16
7.2 Bragg wavelength λ_{Bref}	17
7.2.1 Measuring procedure	17
7.2.2 Evaluation	18
7.2.3 Reporting.....	18
7.3 FBG peak spectral width	18
7.3.1 Measuring procedure	18
7.3.2 Evaluation	18
7.3.3 Reporting.....	18
7.4 FBG reflectivity	18
7.4.1 Measuring procedure	18
7.4.2 Evaluation	18
7.4.3 Reporting.....	19
7.5 Side-lobe suppression ratio.....	19
7.5.1 Measuring procedure	19
7.5.2 Evaluation	20
7.5.3 Reporting.....	20
7.6 Signal-to-noise ratio.....	21
7.6.1 Measuring procedure	21
7.6.2 Evaluation	21
7.6.3 Reporting.....	21
7.7 Characteristic curve	22
7.7.1 Measuring procedure	22
7.7.2 Evaluation	23
7.7.3 Reporting.....	27
7.8 Thermal time constant.....	28
7.8.1 Measuring procedure	28
7.8.2 Evaluation	28

7.8.3	Reporting.....	28
7.9	Sensor stability	29
7.9.1	Measuring procedure	29
7.9.2	Evaluation	29
7.9.3	Reporting.....	29
Annex A (informative)	Blank detail specification	30
A.1	General.....	30
A.2	Mechanical and optical set-up.....	30
A.3	Operational characteristics	30
A.4	Limiting parameters	31
A.5	Further information given upon request.....	31
Annex B (informative)	Examples of specific temperature calibration equipment.....	32
B.1	Simple liquid bath	32
B.2	Liquid tube-thermostat	33
B.3	Solid-state calibration equipment	34
Annex C (informative)	Contributions to measurement uncertainty	37
Bibliography		38
Figure 1	– Principal test set-up for FBG	17
Figure 2	– Determination of the FBG reflectivity from the reflection spectrum (left) and transmission spectrum (right).....	19
Figure 3	– Side-lobes in the case of a single FBG temperature sensor.....	20
Figure 4	– Signal-to-noise ratio determination.....	21
Figure 5	– Example of a polynomial fit of calibration points $\lambda_{B,i}(T_{N,i})$	24
Figure 6	– Example of a third-order polynomial fit	25
Figure 7	– Example of a fourth-order polynomial fit	26
Figure 8	– Example of a polynomial fit of the sensitivity	27
Figure 9	– Typical response time curve.....	28
Figure B.1	– Schematic representation of a simple liquid bath [3]	32
Figure B.2	– Schematic representation of liquid calibration device for connection to laboratory liquid thermostats [4]	33
Figure B.3	– Schematic representation of a long-tube fluid calibration device [3]	34
Figure B.4	– Schematic representation of a solid-state calibration device for higher temperatures [4]	35
Figure B.5	– Schematic representation of a dry-block calibrator for calibrating an FBG temperature sensor at higher temperatures.....	36
Table 1	– Calibration bath fluids.....	15

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FIBRE OPTIC SENSORS –

**Part 2-1: Temperature measurement –
Temperature sensors based on fibre Bragg gratings**

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IEC 61757-2-1 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics. It is an International Standard.

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

FDIS	Report on voting
86C/1725/FDIS	86C/1737/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/standardsdev/publications.

A list of all parts in the IEC 61757 series, published under the general title *Fibre optic sensors*, can be found on the IEC website.

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

INTRODUCTION

This document is based on the guideline VDI/VDE 2660 Blatt 2:2020-04, *Technical temperature measurement – Optical temperature sensor based on fibre Bragg gratings – Recommendation on temperature measurement and statement of measurement uncertainty* [1]¹. It was prepared in cooperation with VDI/VDE-GMA Technical Committee 2.17 "Fibre optic measurement techniques".

The IEC 61757 series is published with the following logic: the sub-parts are numbered as IEC 61757-M-T, where M denotes the measure and T, the technology.

¹ Numbers in square brackets refer to the Bibliography.

FIBRE OPTIC SENSORS –

Part 2-1: Temperature measurement – Temperature sensors based on fibre Bragg gratings

1 Scope

This part of IEC 61757 specifies the terminology, characteristic performance parameters and related test methods of optical temperature sensors based on fibre Bragg gratings (FBG) that carry out temperature measurements in the temperature range between –260 °C and 600 °C.

Generic specifications for fibre optic sensors are defined in IEC 61757.

2 Normative references

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.

IEC 60050 (all parts), *International Electrotechnical Vocabulary (IEV)* (available at www.electropedia.org)

IEC 61757, *Fibre optic sensors – Generic specification*

IEC 61757-1-1:2020, *Fibre optic sensors – Part 1-1: Strain measurement – Strain sensors based on fibre Bragg gratings*

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

3 Terms, definitions, abbreviated terms and symbols of quantities

For the purposes of this document, terms and definitions given in IEC 60050 (all parts), IEC 61757, IEC 61757-1-1, and the following apply.

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