



DPC: 23/30474278 DC

BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

Date: 26 May 2023

Origin: International

Latest date for receipt of comments: 12 July 2023

Project No. 2023/01079

Responsible committee: GEL/86/3 Fibre optic systems and active devices

Interested committees:

Title: Draft BS EN IEC 63267-3-61 Fibre optic interconnecting devices and passive components -Fibre optic connector optical interfaces for enhanced macrobend multimode fibres. Part 3-61: Connector parameters of physically contacting 50 µm core diameter fibres – Non-angled 2,5 mm and 1,25 mm diameter cylindrical full zirconia ferrules for reference connection applications.

Please notify admin.start@bsigroup.com if you are aware of any keywords that might assist in clarifying or identifying the standard or of the content of this standard:

- i) has any issues related to 3rd party IPR, patent or copyright
- ii) affects other national standard(s)
- iii) requires additional national guidance or information

WARNING: THIS IS A DRAFT AND MUST NOT BE REGARDED OR USED AS A BRITISH STANDARD. THIS DRAFT IS NOT CURRENT BEYOND 12 July 2023

This draft is issued to allow comments from interested parties; all comments will be given consideration prior to publication. No acknowledgement will normally be sent. **See overleaf for information on the submission of comments.**

No copying is allowed, in any form, without prior written permission from BSI except as permitted under the Copyright, Designs and Patent Act 1988 or for circulation within a nominating organization for briefing purposes. Electronic circulation is limited to dissemination by e-mail within such an organization by committee members.

Further copies of this draft may be purchased from BSI Shop <http://shop.bsigroup.com> or from BSI Customer Services, Tel: +44(0) 20 8996 9001 or email cservices@bsigroup.com. British, International and foreign standards are also available from BSI Customer Services.

Information on the co-operating organizations represented on the committees referenced above may be obtained from <https://standardsdevelopment.bsigroup.com/>.

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
------------------	------------------------

1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (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.	



86B/4765/CD

COMMITTEE DRAFT (CD)

PROJECT NUMBER:
IEC 63267-3-61 ED1

DATE OF CIRCULATION:
2023-05-19

CLOSING DATE FOR COMMENTS:
2023-08-11

SUPERSEDES DOCUMENTS:
86B/4705/NP, 86B/4743A/RVN

IEC SC 86B : FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS	
SECRETARIAT: Japan	SECRETARY: Mr Shigeru Tomita
OF INTEREST TO THE FOLLOWING COMMITTEES:	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	

This document is still under study and subject to change. It should not be used for reference purposes.

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:

Fibre optic interconnecting devices and passive components - Fibre optic connector optical interfaces for enhanced macrobend multimode fibres – Part 3-61: Connector parameters of physically contacting 50 µm core diameter fibres – Non-angled 2,5 mm and 1,25 mm diameter cylindrical full zirconia ferrules for reference connection applications

NOTE FROM TC/SC OFFICERS:

Copyright © 2023 International Electrotechnical Commission, IEC. All rights reserved. It is permitted to download this electronic file, to make a copy and to print out the content for the sole purpose of preparing National Committee positions. You may not copy or "mirror" the file or printed version of the document, or any part of it, for any other purpose without permission in writing from IEC.

CONTENTS

1		
2	1	Scope.....5
3	2	Normative references 5
4	3	Terms and definitions. 6
5	4	Attenuation grade 6
6	5	Description 6
7	6	Criteria for a fit within the reference performance grade 7
8	6.1	Geometry of reference plug after termination.....7
9	6.2	End face geometry of reference plug after termination.....9
10	6.3	Use of selected fibre in reference-grade connectors 9
11	7	Reference adapter.....9
12	8	Calculated attenuation of random mated Grade R_{m1} reference connections 9
13		Annex A (informative) Attenuation test limits of reference grade R_{m1} connectors to
14		grade B_m connectors 11
15	A.1	Introduction 11
16	A.2	Performance grade B_m test limit against R_{m1} reference connector..... 11
17		Annex B (informative) Maximum allowed spherical fibre undercut 12
18		
19		Figure 1 – Geometrical requirements for fibre core location after termination relative to
20		the ferrule axis and the connector plug key 7
21		Figure 2 - Interface dimensions for PC ferrule.....8
22		Figure 3 - Calculated attenuation of random mated Grade R_{m1} reference connectors 10
23		Figure B.1 – Allowable undercut as a function of endface radius and apex offset – 4,9
24		N minimum contact force 12
25		Figure B.2 – Allowable undercut as a function of end face radius and apex offset – 2,9
26		N minimum contact force 13
27		
28		Table 1 – Multimode attenuation grade at 850 nm.....6
29		Table 2 - Optical interface parameter values for 2,5 mm diameter PC ferrules for
30		multimode reference connectors grade R_{m1} 8
31		Table 3 - Optical interface parameter values for 1,25 mm diameter PC ferrules for
32		multimode reference connectors grade R_{m1} 9
33		Table A.1 – Performance grade test limits at 850 nm 11
34		

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC INTERCONNECTING DEVICES AND
PASSIVE COMPONENTS -****FIBRE OPTIC CONNECTOR OPTICAL INTERFACES FOR ENHANCED
MACROBEND MULTIMODE FIBRES-****Part 3-61: Connector parameters of physically contacting 50 µm core
diameter fibres – Non-angled 2,5 mm and 1,25 mm diameter cylindrical full
zirconia ferrules for reference connection applications**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 63267-3-61 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This document and IEC 63267-2-2 fully replaces IEC 61755-6-2.

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

FDIS	Report on voting
XX/XX/FDIS	XX/XX/RVD