

FINAL VERSION

VERSION FINALE

**Optical fibre cables –
Part 2-31: Indoor cables – Detailed specification for optical fibre ribbon cables
for use in premises cabling**

**Câbles à fibres optiques –
Partie 2-31: Câbles intérieurs – Spécification particulière pour les câbles à fibres
optiques en ruban utilisés dans le câblage de locaux**



CONTENTS

FOREWORD	3
INTRODUCTION to Amendment	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 General requirements	7
5 Particular requirements	7
5.1 Fibre selection for cable testing	7
5.2 Environmental requirements – Temperature cycling	7
5.3 Transmission requirements	8
5.3.1 Attenuation of cabled fibre	8
5.3.2 Fibre bandwidth requirements	8
Bibliography	9
Table 1 – Multimode cable maximum attenuation coefficient (dB/km)	8
Table 2 – Single-mode cable maximum attenuation coefficient (dB/km)	8
Table 3 – Minimum multimode fibre bandwidth (MHz·km)	8

INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRE CABLES –

Part 2-31: Indoor cables – Detailed specification for optical fibre ribbon cables for use in premises cabling

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.

This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC 60794-2-31 edition 3.1 contains the third edition (2019-04) [documents 86A/1923/FDIS and 86A/1933/RVD] and its amendment 1 (2020-11) [documents 86A/2013/CDV and 86A/2056/RVC].

This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.

International Standard IEC 60794-2-31 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This third edition constitutes a technical revision.

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

- a) incorporation of the OM5 cabled fibre performance category;
- b) incorporation of the OS1a cabled fibre performance category;
- c) cabled fibre performance categories OM1, OM2 and OS1 are no longer normative, and are retained for information.

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

A list of all the parts in the IEC 60794 series, published under the general title *Optical fibre cables*, can be found on the IEC website.

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability 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.

INTRODUCTION to Amendment

This amendment adds an important update considered during development of the base publication, IEC 60794-2-31:2019.

As regards minimum multimode fibre bandwidth requirements (Table 3), this amendment provides new guidance as concerns effective modal bandwidth in the 840 nm to 953 nm wavelength range which was not considered mature enough during the development of IEC 60794-2-31:2019.

It is expected that the content of this amendment will be incorporated into the future edition 4 of IEC 60794-2-31.

OPTICAL FIBRE CABLES –

Part 2-31: Indoor cables – Detailed specification for optical fibre ribbon cables for use in premises cabling

1 Scope

This part of IEC 60794 presents the detailed requirements specific to this type of cable to ensure compatibility with the series of International Standards ISO/IEC 11801, *Information technology – Generic cabling for customer premises* (Parts 1 to 6).

The requirements of family specification IEC 60794-2-30 are applicable to cables covered by this document.

The particular requirements detailed in Clause 4 define either a specific option in relation to the requirements of IEC 60794-2-30 or additional requirements.

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 60793-2-10:—, *Optical fibres – Part 2-10: Product specifications – Sectional specification for category A1 multimode fibres*¹

IEC 60793-2-50:2018, *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres*

IEC 60794-1-1:2015, *Optical fibre cables – Part 1-1: Generic specification – General*

IEC 60794-2-10:2011, *Optical fibre cables – Part 2-10: Indoor optical fibre cables – Family specification for simplex and duplex cables*

IEC 60794-2-30, *Optical fibre cables – Part 2-30: Indoor cables – Family specification for ribbon cables*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

¹ Edition 7 under preparation. Stage at the time of publication: IEC DECFDIS 60793-2-10:2019.