BS EN 62572-3:2014

BSI Standards Publication

Fibre optic components and devices — Reliability standards

Part 3: Laser modules used for telecommunication

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National foreword

This British Standard is the UK implementation of EN 62572-3:2014. It is identical to IEC 62572-3:2014. It supersedes BS EN 62572-3:2012 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee GEL/86, Fibre optics, to Subcommittee GEL/86/3, Fibre optic systems and active devices.

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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English Version

Fibre optic active components and devices - Reliability standards - Part 3: Laser modules used for telecommunication (IEC 62572-3:2014)

Composants et dispositifs actifs en fibres optiques - Normes de fiabilité - Partie 3: Modules laser utilisés pour les télécommunications (CEI 62572-3:2014)

Aktive Lichtwellenleiterbauelemente und -geräte - Zuverlässigkeitsnormen - Teil 3: Lasermodule für Telekommunikationsanwendungen (IEC 62572-3:2014)

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

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Foreword

The text of document 86C/1234/FDIS, future edition 2 of IEC 62572-3, prepared by SC 86C "Fibre optic systems and active devices" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62572-3:2014.

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)	2015-04-24
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2017-07-24

This document supersedes EN 62572-3:2012.

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Endorsement notice

The text of the International Standard IEC 62572-3:2014 was approved by CENELEC as a European Standard without any modification.

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 60068-2-1	-	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	-
IEC 60068-2-14	-	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	-
IEC 60747-1	-	Semiconductor devices - Part 1: General	-	-
IEC 60749-6	-	Semiconductor devices - Mechanical and climatic test methods - Part 6: Storage at high temperature	EN 60749-6	-
IEC 60749-8	-	Semiconductor devices – Mechanical and climatic test methods – Part 8: Sealing	EN 60749-8	-
IEC 60749-10	-	Semiconductor devices - Mechanical and climatic test methods - Part 10: Mechanical shock	EN 60749-10	-
IEC 60749-11	-	Semiconductor devices - Mechanical and climatic test methods - Part 11: Rapid change of temperature - Two-fluid-bath method	EN 60749-11	-
IEC 60749-12	-	Semiconductor devices - Mechanical and climatic test methods - Part 12: Vibration, variable frequency	EN 60749-12	-
IEC 60749-25	-	Semiconductor devices - Mechanical and climatic test methods - Part 25: Temperature cycling	EN 60749-25	-
IEC 60749-26	-	Semiconductor devices - Mechanical and climatic test methods - Part 26: Electrostatic discharge (ESD) sensitivity testing - Human body model (HBM)	EN 60749-26	-
IEC/TR 62572-2	-	Fibre optic active components and devices - Reliability standards - Part 2: Laser module degradation	-	-
MIL-STD-883	-	Test methods and procedures for microelectronics	-	-

CONTENTS

INTRODUCTION

The laser modules covered by this International Standard are purchased by system suppliers (SS) to be inserted in equipment, which in turn are supplied/sold to a system operator (SO) or a network operator (see definitions in Clause 3).

For the system operator to act as an informed buyer, he/she should have knowledge of the potential risks posed by the use of critical components..

Optoelectronic component technology is continuing to develop. Consequently, during product development phases, many failure mechanisms in laser modules have been identified. These failure mechanisms, if undetected, could result in very short laser lifetime in system use.

FIBRE OPTIC ACTIVE COMPONENTS AND DEVICES – RELIABILITY STANDARDS –

Part 3: Laser modules used for telecommunication

1 Scope

This part of IEC 62572 deals with reliability assessment of laser modules used for telecommunication.

The aim of this standard is

– to establish a standard method of assessing the reliability of laser modules in order to minimize risks and to promote product development and reliability;
– to establish means by which the distribution of failures with time can be determined. This should enable the determination of equipment failure rates for specified end of life criteria.

In addition, guidance is given in IEC TR 62572-2.

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 60068-2-1, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-14, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60747-1, *Semiconductor devices – Part 1: General*

IEC 60749-6, *Semiconductor devices – Mechanical and climatic test methods – Part 6: Storage at high temperature*

IEC 60749-8, *Semiconductor devices – Mechanical and climatic test methods – Part 8: Sealing*

IEC 60749-10, *Semiconductor devices – Mechanical and climatic test methods – Part 10: Mechanical shock*

IEC 60749-11, *Semiconductor devices – Mechanical and climatic test methods – Part 11: Rapid change of temperature – Two-fluid-bath method*

IEC 60749-12, *Semiconductor devices – Mechanical and climatic test methods – Part 12: Vibration, variable frequency*

IEC 60749-25, *Semiconductor devices – Mechanical and climatic test methods – Part 25: Temperature cycling*

IEC 60749-26, *Semiconductor devices – Mechanical and climatic test methods – Part 26: Electrostatic discharge (ESD) sensitivity testing – Human body model (HBM)*