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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18310.14-2025

Replacing GB/T 18310.14-2003

**Fibre optic interconnecting devices and passive components -
Basic test and measurement procedures - Part 2-14: Tests -
High optical power**

纤维光学互连器件和无源器件 基本试验和测量程序 第2-14部分：试验 高光功率
(English Translation)

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References

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

GB/T 18310 "Basic Test and Measurement Procedures for Fiber Optic Interconnects and Passive Devices - Part 2: Tests" GB/T 18309 "Basic Test and Measurement Procedures for Fiber Optic Interconnects and Passive Devices - Part 1: General Principles and Guidelines" and GB/T 18311 "Basic Test and Measurement Procedures for Fiber Optic Interconnects and Passive Devices - Part 3: Inspection and Measurement" together constitute National standard system for testing methods of fiber optic interconnect devices and passive devices.

This document is based on GB/T 18310 "Basic Test and Measurement Procedures for Fiber Optic Interconnects and Passive Devices - Part 2: Tests".

Parts 2-14. GB/T 18310 has published the following parts.

- Part 2-1. Test Vibrations (Sinusoidal);
- Part 2-2. Testing the durability of mating;
- Parts 2-4. Testing the holding power of optical fibers/cables;
- Parts 2-5. Testing Torsion/Twisting;
- Parts 2-6. Testing the tensile strength of the locking mechanism;
- Parts 2-9. Test Impact;
- Part 2-12. Test Impacts;
- Part 2-14. Experiments with high light power;
- Part 2-17. Testing at Low Temperatures;

- Part 2-18. Testing Dry Heat-High Temperature Durability;
- Part 2-19. Constant Temperature and Humidity Tests;
- Part 2-21. Temperature-Humidity Combined Cyclic Test;
- Part 2-22. Test Temperature Variation;
- Part 2-23. Testing the seal of non-pressurized junction boxes;
- Part 2-26. Test Salt Spray;
- Part 2-39. Experimental Sensitivity to External Magnetic Fields;
- Part 2-42. Testing the static end load of the connector;
- Part 2-45. Testing for water immersion durability;
- Part 2-48. Test temperature and humidity cycles.

This document replaces GB/T 18310.14-2003 "Basic Test and Measurement Procedures for Fiber Optic Interconnect Devices and Passive Components" Part 2-14. Test Maximum Input Power, compared with GB/T 18310.14-2003, except for structural adjustments and editorial changes, the main technical differences are...

The techniques have changed as follows.

- Added terms, definitions, and abbreviations (see Chapter 3);
- The measuring apparatus was modified, replacing the beam splitter and excitation unit with a splitter (see Chapter 4, Chapter 3 of the 2003 edition);
- An environmental test chamber and metal-doped optical fibers have been added to the measuring device (see Chapter 4);
- Performance requirements for measuring devices such as light sources and photodetectors have been added (see Chapter 4);
- The measurement procedures and test steps have been modified, including pretreatment, initial inspection and measurement, final inspection and measurement, etc. (see Chapter 5, Chapter 4 of the 2003 edition);
- The severity levels of the tests have been increased, including optical power, wavelength, temperature, relative humidity, and duration (see Chapter 6);
- Three new examples of high optical power measurement have been added, including multi-wavelength input measurement, bidirectional input measurement, and series measurement (see Appendix A).

This document is equivalent to IEC 61300-2-14:2021 "Fundamental test and measurement procedures for fiber optic interconnects or passive components" Part 2-14. Experiments on

high light power.

The following minimal editorial changes have been made to this document.

a) Correct the incorrect item numbering "f)~q)" in Chapter 7 to "a)~l)".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the Ministry of Industry and Information Technology of the People's Republic of China.

Introduction

Fiber optic interconnects and passive devices play a crucial role in fiber optic products and applications. With the advancement of optical communication technology and products...

With the continuous emergence of new technologies, testing and measurement techniques for fiber optic interconnects and passive devices have also developed rapidly. To ensure that product testing and measurement procedures are conducted in a timely manner...

To promote international coordination and trade, the IEC has developed and published the IEC 61300 series of test and measurement procedures standards, covering...

It covers the measurement and testing of optical performance, mechanical properties, and environmental adaptability of fiber optic interconnects and passive devices, and is a leading international standard.

The basic standards for supporting product inspection and acceptance.

my country has established a standardized system of testing and measurement procedures for fiber optic interconnect devices and passive devices in accordance with the IEC 61300 series standards.

The system includes GB/T 18309 "Basic Test and Measurement Procedures for Fiber Optic Interconnects and Passive Devices - Part 1: General Principles and Guidelines", GB/T 18310 "Basic Test and Measurement Procedures for Fiber Optic Interconnects and Passive Devices - Part 2: Tests" and GB/T 18311 "Basic Test and Measurement Procedures for Fiber Optic Interconnects and Passive Devices, Part 3: Inspection and Measurement" aims to establish product specifications.

It provides a complete and unified set of methodologies and standards for product testing and verification.

GB/T 18310 is proposed to consist of the following parts.

---Part 2-1. Test Vibrations (Sine). The purpose is to determine the test procedure for vibrations (sine).