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NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB/T 18311.47-2026

Replacing GB/T 18311.16-2007

Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-47: Examinations and measurements - End face geometry of PC/APC spherically polished ferrules using interferometry

纤维光学互连器件和无源器件 基本试验和测量程序 第3-47部分：检查和测量 采用干涉法测量PC/APC球面抛光型插针的端面几何尺寸

(English Translation)

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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 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" together constitute the fiber optic interconnect...

National standard system for testing methods of interconnected and passive devices.

This document is Part 3-47 of GB/T 18311 "Basic Test and Measurement Procedures for Fiber Optic Interconnect Devices and Passive Devices".

GB/T 18311 has published the following parts.

---Part 3-1.Inspection and Measurement of Visual Inspection;

---Part 3-2.Inspecting and Measuring Polarization-Dependent Loss in Single-Mode Fiber Optics;

---Part 3-3.Inspecting and Measuring Changes in Attenuation and Return Loss (Multi-channel);

---Parts 3-4.Inspecting and Measuring Attenuation;

---Parts 3-6.Inspecting and Measuring Return Loss;

---Part 3-20.Inspecting and Measuring the Directivity of Fiber Optic Splitter Devices;

---Part 3-26.Inspection and Measurement of Angular Deviation Between Fiber Optic and Briquette Axis;

---Part 3-28.Inspecting and Measuring Instantaneous Losses;

---Part 3-30.Inspecting and Measuring Polishing Angles and Fiber Positions of Single-Tube Multi-Core Fiber Optic Connectors;

---Parts 3-34.Inspecting and measuring attenuation of randomly mated connectors;

---Parts 3-47.Inspection and Measurement. The end face geometry of PC/APC spherically polished pins is measured using interferometry.

This document replaces GB/T 18311.16-2007 "Basic Test and Measurement Procedures for Fiber Optic Interconnect Devices and Passive Devices".

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Preface Part 3-16.Inspection and Measurement of the End Face Radius of Spherically Polished Sleeves, compared with GB/T 18311.16-2007, except for structural adjustments Aside from editorial changes, the main technical changes are as follows.

---The overview and apparatus (see Chapters 3 and 4 of the 2007 edition) have been removed;

---Interferometry has been added (see Chapter 4);

---Increased interferometer performance requirements (see Chapter 5);

---The measurement method has been changed (see Chapter 6, Chapter 5 in the 2007 edition);

---The details of the regulations have been changed (see Chapter 7, Chapter 6 of the 2007 edition);

---A normative appendix, "Interferometer Calibration," has been added (see Appendix A).

This document is equivalent to IEC 61300-3-47:2014 "Fundamental Test and Measurement Procedures for Fiber Optic Interconnects and Passive Devices".

Preface, Parts 3-47.Inspection and Measurement. Interferometric measurement of the end face geometry of PC/APC spherically polished pins.

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

---A new chapter on "Normative References" has been added;

---Added the symbol "A" to 3.3;

---The original title of Figure 3a) is corrected to "Fiber Height A (Fiber Recess)", which is different from Figure 3b).

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

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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 18311 is proposed to consist of the following parts.

---Part 3-1.Inspection and Measurement of Appearance. The purpose is to determine the procedures for inspecting and measuring appearance.

---Part 3-2.Inspecting and Measuring Polarization-Dependent Loss in Single-Mode Fiber Optics. The aim is to determine the polarization-dependent loss.

Inspection and measurement procedures.

---Part 3-3.Dynamic monitoring of attenuation and return loss changes. The aim is to determine attenuation and return loss.

Inspection and measurement procedures for dynamic monitoring of changes.

---Parts 3-4.Inspecting and Measuring Attenuation. The purpose is to determine the procedures for inspecting and measuring attenuation.

---Parts 3-6.Checking and Measuring Return Loss. The purpose is to determine the procedures for checking and measuring return loss.

---Parts 3-7.Examining and measuring the wavelength dependence of attenuation and return loss in single-mode components. The aim is to determine the relevant product...

Procedures for checking and measuring the wavelength correlation of image attenuation and return loss.

---Part 3-11.Inspecting and Measuring Connection and Separation Forces. The purpose is

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