

ICS 33.180.99
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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 46385.1-2025

Optical circuit boards - Part 1: General

光路板 第1部分：总则

(English Translation)

Issued on: October 31, 2025

Implemented on: February 1, 2026

Issued by: State Administration for Market Regulation

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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.

This document is Part 1 of GB/T 46385 "Optical Circuit Boards". GB/T 46385 has already published the following parts.

---Part 1: General Provisions;

---Part 2: Basic Test and Measurement Procedures - Guidelines for Optical Property Measurement Conditions;

---Part 2-1. Basic Test and Measurement Procedures for Optical Attenuation and Isolation Measurement;

---Part 2-2. Basic Test and Measurement Procedures for Dimensional Measurement;

---Parts 2-4. Basic Test and Measurement Procedures for Optical Transmission Tests Without Input/Output Pigtail Optical Circuit Boards this document is modified to adopt IEC 62496-1:2008 "Optical circuit boards - Part 1: General".

Compared with IEC 62496-1:2008, this document has undergone many structural adjustments. A comparison of the structural numbering changes between the two documents is provided below.

See Appendix A for the table.

This document differs significantly from IEC 62496-1:2008 in several technical aspects. The relevant clauses are indicated in vertical margins.

Straight lines (|) are marked. A summary of these technical differences and their reasons can be found in Appendix B.

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

High-density optical interconnects are a significant trend in high-capacity, low-latency communication networks. As a typical product of high-density optical interconnect technology, optical circuit boards are based on an integrated structure of optical fiber or optical waveguide, which carries optical devices and enables optical interconnection between optical devices or systems, is crucial for supercomputing.

This provides new board-level optical interconnect solutions for fields such as computers, data centers, and broadband communications. GB/T 46385 "Optical Circuit Boards" aims to standardize optical...

The terminology definitions, technical requirements, measurement procedures, and test methods for circuit boards are essential for improving domestic standards for fiber optic interconnect devices and passive devices.

Establishing a system and standardizing the research, development, and testing of optical circuit boards, as well as guiding the technological and industrial development of optical circuit boards, is of great significance. This is to meet the needs of the optical circuit board industry.

The requirements, GB/T 46385, are proposed to consist of the following parts.

---Part 1: General Provisions. The purpose is to standardize the terminology and product classification of optical circuit boards, and to clarify common technical requirements and testing methods.

And quality evaluation.

---Part 2: Basic Test and Measurement Procedures - Guidelines for Optical Characteristic

Measurement Conditions. The purpose is to determine the optical characteristics measurement conditions for optical circuit boards.

The encoding rules and information of quantity conditions.

---Part 2-1.Basic Test and Measurement Procedures for Optical Attenuation and Isolation Measurement. The purpose is to standardize the optical attenuation and isolation of optical circuit boards.

Methods for measuring separation.

---Part 2-2.Basic Test and Measurement Procedures for Dimensional Measurement. The purpose is to standardize the methods for measuring the dimensions of optical circuit boards.

---Parts 2-4.Basic Test and Measurement Procedures for Optical Transmission Without Input/Output Pigtail Optical Circuit Boards. The purpose is to standardize...

A method for measuring the optical transmission performance of fiber optic circuit boards without input/output pigtails.

---Parts 2-5.Basic Test and Measurement Procedures for Flexural Testing of Flexible Optoelectronic Composite Panels. The purpose is to standardize the testing procedures for flexible optoelectronic composite panels.

Methods for flexural testing of plywood.

---Part 3: General Performance Principles and Guidelines. The purpose is to standardize the general performance requirements and evaluation methods for optical circuit boards.

---Part 3-1.Performance of Glass Fiber Optic Pigtail Flexible Optical Circuit Boards. The purpose is to standardize glass fiber optic pigtail flexible optical circuit boards.

Performance requirements and evaluation methods.

---Part 4: Interface General Principles and Guidelines. The purpose is to standardize the general interface requirements for optical circuit boards.

---Part 4-1.Waveguide-type optical circuit board assembly with single-row twelve-channel PMT connectors for interface termination. The purpose is to standardize the termination.

Interface requirements for waveguide-type optical circuit board assemblies with single-row twelve-channel PMT connectors.

---Part 4-214.Waveguide-type optical circuit board assembly with single-row 32-channel PMT connectors at the interface termination. The purpose is to standardize...

Interface requirements for waveguide-type optical circuit board assemblies that terminate with single-row 32-channel PMT connectors.