

Types of Fiber Optic Connector End Faces



Article Overview

The main fiber optic connector end face types are PC, UPC, and APC, each differing in polish, shape, and return loss performance.

Overview of End Face Types

PC (Physical Contact) connectors have a slightly curved end face, allowing the fiber cores to make direct contact. This reduces air gaps and minimizes signal reflection, providing stable performance for general data, video, and voice transmission. Standard connectors like SC, FC, and ST often use PC end faces, with an industrial standard return loss of around -40dB . UPC (Ultra Physical Contact) connectors are an enhanced version of PC connectors. They feature a dome-shaped convex surface achieved through optimized polishing technology, which improves surface smoothness and reduces reflected light. UPC connectors typically achieve a return loss of -50dB, making them suitable for high-speed networks, telecom, cable TV, and data centers . APC (Angled Physical Contact) connectors have an 8-degree angled end face. This design reflects back-reflected light into the fiber cladding rather than back into the core, significantly reducing back reflection. APC connectors offer the best return loss performance, around -60dB, and are commonly used in FTTx, WDM systems, and other applications sensitive to signal reflection. APC connectors are usually color-coded green for easy identification, while UPC connectors are blue .

Key Differences

Feature	PC	UPC	APC
End Face Shape	Slightly curved	Dome-shaped convex	8° angled
Polishing	Standard	Optimized extended polishing	Angled polishing
Return Loss	~ -40dB	~ -50dB	~ -60dB
Applications	General data, video, and voice transmission	High-speed networks, telecom, cable TV, and data centers	High-speed networks, FTTx, WDM systems, and other applications sensitive to signal reflection

Article Content

Fiber Optic Connector Types

FC Connector FC fiber connector was the first optical fiber connector to use a ceramic ferrule, but unlike the plastic bodied SC and

Fiber Optic Connectors Figure 1

Fiber-to-fiber interconnection can consist of a splice, a permanent connection, or a connector, which differs from the splice in its

Fiber Optic Connector Types – The Ultimate Guide

Learn all fiber optic connector types: LC, SC, ST, FC, MPO/MTP plus PC/UPC/APC end faces. Compare specs,

Fiber Optic Connectors Selection Guide: Types, Features,

Fiber optic connectors are used to align and join two or more fibers together to provide a means for attaching to, or decoupling from,

How Many Fiber Connector Types Do You Know?

Fiber optic connectors that come in various configurations and types are important components of fiber optic cables.

Understanding Fiber Optic Connectors: Types, Differences, and ...

Fiber optic connectors are essential components in modern communications networks, enabling seamless data

How to precisely align the fiber end faces of fiber optic connectors ...

Fiber optic connectors are the most basic optical passive devices in optical fiber communication systems. The most basic technical

Fiber Optic Connectors: Detailed Guide to Types and Uses

Fiber optic connector types explained: LC, SC, ST, MPO, MTP. Learn key differences for your network setup.

Optical fiber connector

They come in various types like SC, LC, ST, and MTP, each designed for specific applications. In all, about

Types of Fiber Optic Cable Connectors and Their Uses

Choosing the correct connector type ensures ideal performance of the fiber optics cables and devices. Learn more about the types of

Fiber Optic Connector Types Explained | FiberCablesDirect

Fiber optic connectors are an essential component of any fiber optic network, allowing for the connection and transmission of optical

The FOA Reference For Fiber Optics

Choosing a connector type for any installation should consider if the connector is compatible with the systems planned to utilize the

Comprehensive Guide to Fiber Connector Types: LC, SC, ST, FC,

Discover the comprehensive guide on fiber connector types including LC, SC, ST, FC, MTP/MPO, and more. Learn

Fiber Optic Connectors | MEETOPTICS Academy

The function of fiber optic connectors is to align and connect two or more fibers together to provide a

Fiber Connector types characteristics | Kingfisher International

Application note: Overview of fiber optic connector theory, common connector types, typical characteristics, problems and solutions.

Fiber Optic Connector Types Fully Explained | FiberMania OEM

Explore detailed fiber optic connector types. Learn their features, appearances, capabilities, with images to help you

Everything You Need to Know About Fiber Connector Types

Fiber connectors are an essential part of the process, providing a reliable and safe way to connect fiber optic cables.

Fiber Optic Connectors | Common types of fiber optic

The optical fibers are fixed within a small precision ceramic pin, the so-called ferrule, and the end face is

Fiber Optic Connector Types

In the present fiber connector market, there are about 100 fiber optic cable connectors in total. And the most commonly used fiber

Fiber Connector Types: The Ultimate Guide - VCELINK

Fiber connectors come in different types according to polishing methods, booth length, and transmission media.

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.watermanfinance.co.za>

Email: sales@watermanfinance.co.za

Phone: +49-176-8294713

Address: Neue Mainzer Str. 66-68, 60311 Frankfurt am Main, Germany

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