

What are the different models of fiber optic splitters

Article Overview

Fiber optic splitters are primarily classified into PLC (Planar Lightwave Circuit) and FBT (Fused Biconical Taper) types, each suited for different network scales and applications.

Overview

A fiber optic splitter is a passive device that divides a single optical signal into multiple outputs or combines multiple inputs into one, without requiring electrical power. They are essential in FTTH (Fiber to the Home), PON (Passive Optical Networks), and other optical communication systems to efficiently share a single fiber among multiple users or devices .

Main Types

1. Planar Lightwave Circuit (PLC) Splitters

- o Technology: Uses photolithography to create waveguides on a silica glass substrate, allowing precise and uniform light distribution .
- o Split Ratios: Supports high split counts, such as 1x16, 1x32, 1x64, or even 1x128 .
- o Advantages: Uniform signal distribution, low insertion loss, wide wavelength range (1260-1650 nm), temperature stability, and high reliability .
- o Applications: Ideal for large-scale networks, FTTH deployments, data centers, and high-density telecom networks.
- o Packaging Options:
 - o Bare Fiber: No connectors, spliced directly to network fibers.
 - o Micro Tube: Encapsulated in micro steel tubes for junction boxes.
 - o ABS Box: Compact plastic enclosure for indoor use.
 - o LGX Box: Metal enclosure with standard fiber interfaces for plug-and-play integration.
 - o Rack Mounted: Designed for 19-inch racks in data centers .

2. Fused Biconical Taper (FBT) Splitters

- o Technology: Two or more fibers are fused and stretched under heat to form a tapered structure that splits light according to a predetermined ratio .
- o Split Ratios: Typically smaller splits like 1x2, 1x4, or 2x2.
- o Advantages: Cost-effective for low-split applications, simple design.
- o Limitations: Less precise than PLC, sensitive to wavelength variations, not ideal for high-split or WDM applications .

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o Applications: Small networks, cost-sensitive deployments, or situations where only a few outputs are needed.

Other Classifications

o Indoor vs. Outdoor Splitters: Outdoor splitters are rugged, weatherproof, and often housed in IP-rated enclosures for pole-mounted or underground use. Indoor splitters are compact and designed for controlled environments like equipment rooms or fiber distribution boxes .

o Balanced Splitters (2xN): Have two input fibers and N outputs, used for redundancy or distributing multiple signals proportionally .

o Multiplexed Splitters (2:8, 4:16): Combine multiple inputs into multiple outputs, useful for distributing separate signals like data and video .

Summary

o PLC splitters are preferred for high-density, large-scale networks due to uniformity, scalability, and stability.

o FBT splitters are suitable for smaller, cost-sensitive networks with fewer outputs.

o Splitters can be packaged in various forms to suit installation environments, from bare fiber to rack-mounted units. Understanding these types helps in selecting the right splitter for network size, application, and environmental conditions, ensuring efficient and reliable optical signal distribution .

Learn about different types of fiber splitter, including PLC and FBT splitters, features,

Optical splitters can be divided into box-type optical splitters, tray-type optical splitters, rack-mounted optical splitters,

A fiber splitter, also known as a beam splitter, is a passive optical device that splits an optical signal into multiple

A fiber optic splitter is a fiber optic passive device that splits/combines optical signals, and generally separates or

These various methods can be mixed in a network to best meet the performance and cost requirements for the network. The next

In a recent FBA 101 Series article, FBA defined several splitter architectures. This article aims to summarize the pros and cons of

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An optical splitter is a crucial passive fiber optic device that splits and combines optical

Fiber splitter typically have at least 2 ports and can have up to 128 ports. The two most commonly used fiber optic

The working principle of fiber splitters is relatively simple, and the signal distribution is achieved through the principle

Click and know about different types of fiber optic splitter here: the definition of fiber optic splitter, typical types of PLC

The common types of fiber optic splitters include the planar waveguide splitter, tree-like splitter, star coupler, and Wavelength

Yingda offer full range of optical splitter in bare fiber, steel tube, abs module, lgx module,

This guide focuses on two critical aspects of optical splitters that define FTTH performance: split ratios (how signals

This guide covers what optical fiber splitters are, the main types of optical fiber splitters you should know about, how

Explore the workings of fiber optic splitters, their technical specifications, and wide-ranging

According to the principle, fiber optic splitters can be divided into Fused Biconical Taper (FBT) splitter and Planar Lightwave Circuit

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