# Three common types of optical splitters



## Overview

This guide covers what optical fiber splitters are, the main types of optical fiber splitters you should know about, how to pick the right one, and how to install and maintain it properly.

## Key Takeaways

The three main types of optical splitters are Fused Biconical Taper (FBT) splitters, Planar Lightwave Circuit (PLC) splitters, and centralized vs distributed splitters based on network architecture. 1. Fused Biconical Taper (FBT) SplittersFBT splitters are created by fusing and tapering two or more optical fibers together, allowing light to couple from one fiber to another.

They are commonly used for low-channel applications such as 1: 2 or 1: 4 splits, making them suitable for small networks or short-distance deployments.

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T splitters are cost-effective and simple to manufacture but can be sensitive to wavelength variations and have less uniform signal distribution compared to PLC splitters. 2. Planar Lightwave Circuit (PLC) SplittersPLC splitters use integrated waveguide technology on a quartz substrate to split light evenly across multiple outputs.

They are ideal for high-channel applications, supporting ratios like 1: 32 or 1: 64, which makes them perfect for FTTH networks and large-scale PON deployments.

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C splitters provide uniform signal distribution, wavelength insensitivity, and compact design, though they are more expensive and technically complex to manufacture. 3. Centralized vs Distributed Splitters (Network Architecture)Optical splitters can also be categorized based on deployment architecture: Centralized Splitters: Located at a central office or cabinet, serving multiple users from a single location.

They allow flexible customer assignment via fiber jumpers and are easier to manage for network changes. Distributed Splitters: Installed closer to end users in closures or pedestals. Once deployed, the customer assignment is fixed, making them suitable for stable, long-term network layouts.

### Key Considerations

When selecting a splitter, important specifications include: Split Ratio: Determines how many outputs a single input fiber can serve (e.g., 1: 2, 1: 8, 1: 32). Higher ratios reduce signal power per output. Insertion Loss: The signal power lost during splitting.

Lower insertion loss ensures better signal quality for end users. Return Loss: Measures reflected light; higher values reduce interference and improve network performance. These three types—FBT, PLC, and centralized/distributed splitters—cover the main approaches to splitting optical signals in modern fiber networks, each suited to different scales, applications, and deployment strategies.

## Article Content

Optical Fiber Splitter Types — Complete Guide | TTI Fiber

This guide covers what optical fiber splitters are, the main types of optical fiber splitters you should know about, how to pick the right one, and how to install and maintain it properly. What Is

Optical Splitters Demystified: The Silent Heroes Powering Your FTTH ...

Fiber-to-the-Home (FTTH / FTTx): The most common application, distributing signals to multiple subscribers. Passive Optical Networks (PON): Like GPON, EPON, and XGS-PON

Comprehensive Guide to Optical Splitters

An optical splitter is a crucial passive fiber optic device that splits and combines optical signals. It can distribute the optical energy transmitted through a single fiber to two or more fibers in a

Fiber Optic Splitter: How It Works & Types Guide

Learn how fiber optic splitters work, types (PLC, FBT), and uses in FTTH/data centers. Understand signal splitting, key specs, and how to choose the right splitter.

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Types of Optical Fiber Splitters You Should Know About

This guide covers what optical fiber splitters are, the main types of optical fiber splitters you should know about, how to pick the right one, and how to install and maintain it properly.

Understanding Fiber Optic Splitters: Principles, Parameters, Types ...

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

What is Fiber Optic Splitter and Types

Optical splitters can be divided into two types based on their working principles: Planar Lightwave Circuit (PLC) optical splitters and Fused Biconic Tapered (FBT) optical splitters.

What Are the Different Types of Fiber Splitter Available?

Learn about different types of fiber splitter, including PLC and FBT splitters, features, applications, and how to choose the right one.

Fiber Optic Splitter Types

In this blog, we''ll explore the common types of fiber optic splitters, their configurations, and packaging options to help you choose the best solution

Optical Splitters: Split Ratios, Splitting Architectures & PON Network ...

This guide focuses on two critical aspects of optical splitters that define FTTH performance: split ratios (how signals are divided) and splitting architectures (how splitters are

How Passive Optical Networks Work – Wray Castle

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Network Fibre Optics: How Modern Optical Networks Work

Introduction to Network Fibre Optics Network fibre optics forms the backbone of modern internet, cloud computing, and telecommunications infrastructure across the UK and globally. Since

Optical Splitters Demystified: The Silent Heroes Powering Your FTTH ...

explains how optical splitters enable FTTH, their types (FBT vs. PLC), key ratios, and how they integrate with LINK-PP optical modules for a seamless network.

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The Working Principle and Application Scenarios of Fiber Optic Splitters

Explore the working principle of fiber optic splitters, their types, and real-world application scenarios in PON networks, FTTH, and more (1).

What is an Optical Splitter? The Ultimate Guide to Fiber Optic Splitters

Optical splitters are the unsung heroes of the internet age. They allow us to share high-speed fiber connections affordably. Whether you choose an FBT splitter for a small project or a PLC

Couplers & Splitters

Couplers & Splitters Fiber, connectors, and splices rank as the most important passive devices. However, closely following are tap ports, switches, wavelength-division multiplexers, bandwidth

Optical Splitters in Modern Networks

Classified by Manufacturing Technique There are two main types of optical splitters based on manufacturing techniques: Fused Biconic Taper (FBT) splitter and Planar Lightwave Circuit (PLC)

List of Different Types of Fiber Optic Splitters | Zoom Line Networks

Learn about different types of fiber optic splitters and their uses. Contact Zoomline for any fiber optic splitter installation.

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