

1 to 16 Plug-in Optical Splitter

Article Overview

A 1x16 optical splitter is a passive device that divides a single optical input into 16 output fibers, commonly implemented using Planar Lightwave Circuit (PLC) technology for uniform, low-loss signal distribution.

Overview

A 1x16 optical splitter is a passive fiber optic component that takes one input signal and distributes it evenly across 16 output fibers. It is widely used in passive optical networks (PONs), fiber-to-the-home (FTTH), fiber-to-the-building (FTTB), and multi-dwelling unit (MDU) deployments, allowing a single optical line to serve multiple endpoints without active amplification .

Types of 1x16 Splitters

o Planar Lightwave Circuit (PLC) Splitters

- o Uses silica-based planar waveguide technology.
- o Provides high uniformity, low insertion loss, and stable wavelength performance.
- o Suitable for high-density and large-scale networks.
- o Typical insertion loss: ≤ 13.2 dB; polarization dependent loss (PDL) ≤ 0.3 dB; return loss ≥ 50 dB .
- o Compact, blockless design for easy integration into fiber trays or enclosures.

o Fused Biconical Taper (FBT) Splitters

- o Uses fused fiber cores to split light.
- o Less uniform than PLC, more sensitive to wavelength variations.
- o Typically used in smaller-scale or cost-sensitive applications .

Key Features

- o Wavelength Range: 1260-1650 nm, compatible with standard fiber optic transmission windows .
- o Power Handling: Up to 300 mW for single-mode devices .
- o Even Split Ratio: Ensures consistent optical power across all 16 outputs.
- o Passive Operation: Requires no external power, enhancing reliability and reducing maintenance.
- o Connector Options: LC, SC, FC, or ST connectors; can also be unconnectorized for splicing .
- o Environmental Stability: Compliant with Telcordia GR-1209 and GR-1221 standards for long-term reliability .

Applications

- o FTTH/FTTB: Distributes optical signals from the central office to multiple homes or units.
- o MDU Deployments: A single fiber can serve multiple apartments or offices, reducing cabling costs.



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- o GPON Networks: Enables a single PON interface to serve multiple subscribers efficiently.
- o Cascading Splitters: Multiple 1x16 splitters can be cascaded for larger networks, e.g., 1x64 or 1x128 configurations .

Advantages of PLC over FBT

- o Better channel uniformity and low insertion loss.
- o Wavelength-insensitive, making it suitable for multi-wavelength networks.
- o Compact and scalable for high-density deployments.
- o More durable and environmentally stable, ideal for outdoor or long-term installations . In summary, a 1x16 optical splitter, particularly a PLC type, is a reliable, passive solution for distributing a single optical signal to multiple outputs with minimal loss, high uniformity, and long-term stability, making it essential for modern fiber optic networks .

Thorlabs offers a varied selection of single mode (SM), polarization-maintaining (PM), multimode (MM), and double-clad fiber

The Lgx Plc Splitter 1x16 with Sc Upc Connectors leverages advanced planar lightwave circuit technology for reliable 1-to-16 signal

This PLC Splitter is a 1x16, with 1 input and 16 output fibers with an even split ratio across all fibers

A 1x16 PLC Splitter is a compact and reliable solution that splits one input fiber

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ABS PLC Splitter 1x16 Optic Splitters SC APC Planar waveguide light optical distributor (PLC Splitter), is a kind of

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Corning's QuickPath(TM) PLC optical splitters reduce insertion loss and deliver high performance. These devices enable more effective

A 1x16 PLC Splitter (Planar Lightwave Circuit Splitter) is a passive optical device used to evenly distribute

Optosun PM (Polarization maintaining) splitters ensure that the polarization of linear polarized light waves in the fiber are maintained

Fiber PLC Splitter 1x16 Mini plug-in Type PLC Splitter is based on planar lightwave circuit technology. Fiber-Mart 1x16

Overview The patent pending Plugin Optics USBM TM "Universal Splitter Bulkhead Module" was designed to integrate into pedestal,

From fiber amplifiers to power monitoring and fiber optical instrumentation, the 1x16 PM Coupler Module serves as a

Web: <https://www.kremgroup.co.za>

