

Planar waveguide optical splitter type



AI Overview

Planar waveguide optical splitters (PLC splitters) are passive devices that evenly distribute optical signals from one or two inputs to multiple outputs, ideal for PON and FTTH networks. Overview PLC splitters are fabricated using planar waveguide technology, typically on a silica substrate, and are designed to split or combine optical signals with high precision and reliability. They are widely used in passive optical networks (PON), connecting the central office (OLT) to multiple end-user terminals (ONTs/ONUs) and supporting architectures like EPON, GPON, and BPON.

Key Selection Criteria

- 1. Splitting Ratio and Configuration** PLC splitters are available in 1xN and 2xN configurations, where N can range from 2 to 64 outputs. Centralized PON architecture often uses a 1x32 splitter at the central office, while distributed PON architecture may use a 1x4 splitter at the OLT followed by 1x8 or 1x4 splitters in the field. Choose the splitting ratio based on the number of subscribers and network topology.
- 2. Insertion Loss and Uniformity** PLC splitters offer low insertion loss and high channel-to-channel uniformity, which is critical for maintaining signal quality across all outputs. Typical insertion loss increases slightly with higher split ratios; for example, a 1x32 splitter has higher loss than a 1x4 splitter.
- 3. Packaging Options** Common packages include bare fiber, blockless, ABS, LGX, and rack-mount. Mechanical dimensions and connectorization affect installation flexibility. For instance, 1x2 to 1x8 splitters often use PS packages, while 1x16 and 1x32 use PL or PM packages. Consider environmental protection and ease of integration into existing enclosures.
- 4. Wavelength Range and Reliability** PLC splitters support a wide operating wavelength range (typically 1260–1650 nm) and are highly reliable for long-term deployment. They meet industry standards such as GR-1209-CORE and GR-1221-CORE, ensuring durability in telecom networks.
- 5. Cost and Scalability** PLC splitters are cost-effective for large-scale deployments, especially when high splittin...

Article Content

PLANAR LIGHTWAVE CIRCUITS

The EM4 high reliability, high grade and superior performance planar lightwave circuits (PLC) based planar waveguide optical signal splitters are the component of choice to combine or split optical

PLC Splitter PRODUCTS

We provides whole series of 1xN and 2xN splitter products that are tailored for specific applications. All products meet GR-1209-CORE and GR-1221-CORE requirements. Specified without connectors.

Large core optical planar splitter for visible and infrared region ...

Abstract We report about design, fabrication and optical properties of large core multimode optical polymer splitter for visible and infrared spectral region. The splitters were designed by beam

PLC (Planar Lightwave Circuit) Splitter Module Technology

Planar lightwave circuit (PLC) splitter is a type of optical power management device that is fabricated using silica optical waveguide technology to distribute optical signals from Central Office

PLC Splitters

Precision Micro-optics provides 1xN and 2xN series of splitters. Three packaging types are available fan-out PLC splitter, module PLC splitter, or rack mount PLC splitter shown below.

PLC Splitters

PLC Splitter Product Description: Planar lightwave circuit (PLC) splitter is fabricated using silica optical waveguide technology and offers a low cost solution for optical signal distribution. It has low insertion

PLC Splitter: The Ultimate Guide to Efficient Light Distribution

A PLC Splitter divides one optical signal into multiple outputs, ensuring reliable, efficient fiber optic network connections for homes and businesses.

What Is PLC Splitter and How Does it Works?

PLC splitter, or the Planar Waveguide Circuit splitter, is a passive device to divide one or two optical signals to multiple signals uniformly or combine multiple signals to one or two optical

Fiberdyne Labs, Inc. Planar Lightwave Circuit (PLC) Splitter

Planar lightwave circuit (PLC) splitter is a type of optical power management device that is fabricated using silica optical waveguide technology to distribute optical signals from Central Office (CO) to

Fiber-optic splitter

Fiber-optic splitter A fiber-optic splitter, also known as a beam splitter, is based on a quartz substrate of an integrated waveguide optical power distribution device, similar to a coaxial cable transmission

Introduction to Optical Waveguides | Springer Nature Link

This chapter presents an introduction to the optical waveguides including planar and nonplanar structures. Additionally, an analysis of planar waveguides based on ray-optical approach

Planar Lightwave Circuit (PLC)

Planar Lightwave Circuit (PLC) utilizes semiconductor processes such as photolithography, etching, and deposition to create optical paths on substrates, enabling the

A Novel Planar Waveguide Super-Multiple-Channel Optical Power Splitter

In this paper, we have proposed a novel planar waveguide optical-power-splitter design with a large number of splitting channels. The design uses the wavefront lateral interference in light propagation

Fiber Optic Splitter Types FTB And PLC – Topfiberbox

Fiber Optical splitter, known as fiber optic beam splitter, is an integrated waveguide optical power distribution device, similar to a coaxial cable transmission system. Fiber optic splitters are an

What is a PLC Splitter and How Does a PLC Splitter Work? -

Some typical types can widely be used in optical network applications like bare fiber splitter, blockless splitter, ABS splitter, fan-out splitter, rack-mount splitter, LGX splitter, mini plug-in type splitter, and

Information about PLC Splitter. PLC Splitter (Planar light ...

PLC Splitter (Planar light-wave circuit splitter) is a type of optical power management device that is fabricated using silica optical Waveguide technology. A PLC is a micro-optical

Understanding Planar Lightwave Circuit (PLC) | FS Community

In the optical communication industry, the devices widely used in planar optical waveguide technology mainly include optical splitters, AWG (Arrayed Waveguide Gratings), MZ

An optical splitter with super multi-channels based on planar waveguide ...

In this paper, we proposed an optical splitter planar waveguide design with super multi channels. The design utilizes the wavefront interference and spatial filtering theory.

Planar Light Circuit (PLC) Optical Splitters

Planar Light Circuit (PLC) Optical Splitters Planar light circuit (PLC) splitters are fully passive optical branching devices that exhibit uniform signal splitting for the most advanced optical networks.

Contact Us

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