

How to splice optical fibers inside an optical splitter

Article Overview

Splicing fibers inside an optical splitter requires careful preparation, precise alignment, and proper handling to maintain signal quality and minimize insertion loss.

Understanding the Splitter

Optical splitters, such as PLC (Planar Lightwave Circuit) splitters or FBT (Fused Biconical Taper) splitters, are passive devices that divide a single input signal into multiple outputs without requiring power. PLC splitters use waveguide circuits for uniform distribution, while FBT splitters rely on fused fibers. The splicing process must preserve the splitter's internal structure and optical performance.

Tools and Materials Needed

- Fusion splicer (preferred for low-loss, permanent connections)
- Fiber cleaver for precise fiber end preparation
- Fiber stripper to remove protective coatings
- Cleaning materials (isopropyl alcohol, lint-free wipes)
- Protective sleeves or heat-shrink tubing for splice protection
- Microscope or inspection scope to verify fiber end quality

Step-by-Step Splicing Procedure

- Prepare the Fibers
- Strip the fiber coating carefully without nicking the glass....

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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

Contact Us

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

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

Email: sales@iiss.co.za

Phone: +27 63 174 2895

Address: Unit 8, Innovation Park, 15 Rivonia Road, Sandton, Johannesburg,
2196, South Africa

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