

Selection of Displacement-Type Optical Attenuators



Article Overview

Displacement-type (gap-loss) optical attenuators reduce signal power by introducing a controlled air gap between fibers, and selecting the right one requires attention to fiber type, connector, wavelength, attenuation value, and environmental conditions.

Understanding Displacement-Type Attenuators

Displacement-type optical attenuators, also called gap-loss attenuators, work by spacing the input and output fibers at a small, precise gap, causing a portion of the optical signal to dissipate in the air rather than being fully coupled to the output fiber. This method is particularly effective for single-mode systems where high optical power could saturate the receiver, such as in long-haul or DWDM networks. They are typically installed close to the transmitter to prevent receiver saturation and ensure effective attenuation.

Key Selection Criteria

1. Fiber Type: Choose an attenuator compatible with your fiber: single-mode for long-distance or high-power systems, and multimode for short-distance applications. Multimode systems rarely require displacement-type attenuators because their sources usually do not saturate receivers. 2. Connector Type: Ensure the attenuator matches your system connectors, such as LC, SC, ST, or FC, and consider the polish type: UPC (flat) or APC (angled) depending on your system's reflectance requirements. 3. Wavelength Compatibility: Select an attenuator that maintains a f...

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A Comprehensive Guide to Variable Optical Attenuators (VOA): Types ...

However, with various mechanical and electronic designs available, choosing the right VOA can be challenging. In this

Contact Us

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