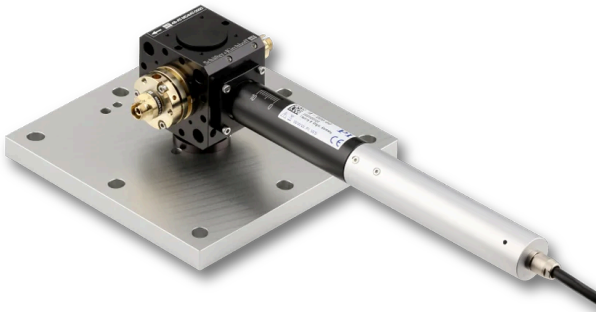
Fiber-coupled Attenuator 48AT-MD

Motorized attenuator unit for interconnecting two fiber cables



FEATURES

Fiber-coupled attenuator, motorized

- For single-moder or PM fiber cables
- Insertion loss typically 1.5 dB, extinction > 60 dB
- Adjustable
- Compact, rugged, transportable and sealed opto-mechanical units
- Very high long-term stability, efficiency and reproducability
- Can be used as interface between different types of single-mode fibers or connectors
- Motorized with servo motor

DESCRIPTION

Laser Attenuator 48AT-MD is used for reproducible and precise reduction of the power output by the laser. The collimated laser beam is constricted by a precision ball transported by a motorized micrometer screw. The subsequent single-mode fiber coupling is used as a mode filter.
This mechanically stable attenuation method allows the precise and reproducible setting of the laser power output over a wide range (typically 1.5 to > 60 dB). Unlike a power regulation by modulation of the laser current, the wavelength and polarization status of the laser beam are preserved.

The micrometer screw has a servo motor. A programmable controler with USB and RS232 interface is available.

A reproducible power attenuation is only assured for single-mode fibers with a Gaussian intensity profile. In case of a multimode fiber not only the power is attenuated but also the intensity distribution ex fiber is affected.

Fiber Couplers
A fundamental component of the Fiber-to-Fiber Coupler is the Laser Beam Coupler, which is the input into the opto-mechanical unit collimating the input radiation and, finally, couples the radiation back into the second fiber cable. The stability of the total Fiber-to-Fiber Coupler is determined by the stability of the laser beam coupler.

Coupling focal length
The best focal length for the 60SMS Laser Beam Couplers used in these systems is f' 11 - 12 mm. If the effective numerical apertures of the two fiber used with this system are different, you have to use two Laser Beam Couplers with different focal lengths.

Configuration
For selecting the 60SMS Laser Beam Couplers please refer to the 60SMS Laser Beam Couplers site

TECHNICAL DATA

Fiber-coupled Attenuator 48AT-MD

Order code	48AT-MD
Wavelengths	370 - 1700 nm, monochromatic*
Focal length	11 mm (standard)
Fiber type	single-mode or polarization-maintaining
Connector type	FC APC (standard)
Attenuation	1.5 dB to > 60 dB @ 780 nm
	* Broadband systems on request
Weight	860 gr

FAQ

48AT

Can I use the 48AT attenuator with multimode fibers?
No you should not. If used with single-mode fibers the fibers serve as a mode filter and the exiting beam is still Gaussian with reduced power. In case of a multimode fiber not only the power is attenuated but also the intensity distribution ex fiber is affected.

DOWNLOADS

990812090300.pdf (Dimensional drawing)

Adjustment_SMS.pdf (Manual)

ACCESSORIES

60EX-4	Eccentric key with a stroke of ± 0.5 mm.
9D-12	Screwdriver WS 1.2
50HD-15	Hex key WS 1.5

RELATED PRODUCTS

POLARIZATION ANALYZER SK010PA	Measurement tool for coupling into polarization-maintaining fiber cables
LASER BEAM COUPLERS SERIES 60SMS	for coupling into single-mode and polarization-maintaining fiber cables
MULTICUBE COMPONENTS	Multicube Components like mounting plates, cubes etc.

This is a printout of the page https://sukhamburg.com/products/details/48AT-MD from 5/6/2024

CONTACT

For more information please contact:
Schäfter + Kirchhoff GmbH
Kieler Str. 212
22525 Hamburg
Germany
Tel: +49 40 85 39 97-0
Fax: +49 40 85 39 97-79

info@sukhamburg.de
www.sukhamburg.com

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