



OA5000 Series Attenuators.

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Optical Attenuator

OA5002

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FEATURES

- Broad Wavelength Range
 - 1100 to 1600 nm
- Supports Single-mode Fiber
 - OA5002 10 μm (Single-mode)
- Support Multiple Connector Styles
 - (FC, ST, SC and DIN)
- GPIB, IEEE-488.2 Controllable

APPLICATIONS

- Evaluate Receiver Sensitivity as a Function of Optical Power
- General Development of Fiber Optic Equipment
- SDH/SONET, Fibre Channel and Ethernet Standards Testing
- OTDR Attenuation Measurement Calibration
- Optical Power Meter Linearity Calibration
- Manufacturing Test of Fiber Optic Equipment

A Vital Link in Optical Systems Analysis

Tektronix Programmable Optical Attenuators provide a convenient, accurate and cost-effective means of controlling optical power levels in fiber optic media.

The OA5002 instrument provides variable attenuation of single-mode fiber optic signals commonly used in communications equipment. Attenuation levels can be varied manually, using the front-panel controls or automatically via programmable, IEEE-488.2 interface.

The single filter design eliminates measurement dark spots caused by "range changes" and an internal mechanical motion algorithm provides outstanding repeatability.

Typical Applications

Communication standards using optical components typically require that the receiver operate over a given optical power range. This specification is tested by monitoring the bit error rate (BER) as a function of optical power.

Transmission System Design

Using the OA5002 Optical Attenuator with either the TDS/CSA8000, CSA803, 11800 or TDS700C/500C oscilloscopes,

network equipment designers can characterize, with repeatable results, the system performance over the specified optical power range.

SDH/SONET Compliance Testing

SDH/SONET compliant signal levels may be as high as +2 dBm to as low as -34 dBm. To verify the performance of SONET equipment over these signal levels, it is necessary to have calibrated attenuators with at least this much range. The OA5002 is the attenuator of choice for SDH/SONET testing.

Manufacturing and Other Automated Test Applications

Because the OA5002 Optical Attenuator is GPIB Programmable, these units can be operated in a completely automated environment. With the step size of 0.01 dB and a calibrated attenuation range of 0 to 60 dB (continuous), measuring parameters, such as receiver linearity, is quickly and reliably accomplished. Also, with its storable attenuation levels, the OA5002 Optical Attenuator are very useful for repeat measurements in manufacturing environments.

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CHARACTERISTICS

	OA5002
Wavelength Range	1100 to 1600 nm
Fiber Size	9 μ m Single Mode fiber
Insertion Loss	≤ 2.0 dB (1100 to 1350 nm)
	≤ 2.5 dB (1350 to 1600 nm)
Return Loss	≤ -45 dB
Attenuation Range	≥ 60 dB (1100 to 1350 nm)
	≥ 50 dB (1350 to 1600 nm)
Disable	≥ 100 dB
Accuracy	± 0.15 dB (typ. 0.05 dB) at 1310 \pm 20 nm
	± 0.15 dB (typ. 0.05 dB) at 1550 \pm 20 nm (0 to 40 dB)
	± 0.20 dB at 1550 \pm 20 nm (≥ 40 dB)
Repeatability	± 0.05 dB (typ. 0.02 dB)
Linearity	± 0.10 dB (typ. 0.05 dB) (1100 to 1600 nm)
Max. Input Power	+3 dBm (2 mW)
Max. Nondestruct Power	+10 dBm (100 mW) Avg.
	+20 dBm (200 mW) Peak

Note: ^(a)For further technical information request Product Data Sheet #3TW-8032-1. ^(b)For information on OA5000 Series compatibility with other fiber sizes, contact your local Tektronix sales office.

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