

HP 8158B
Optical Attenuator



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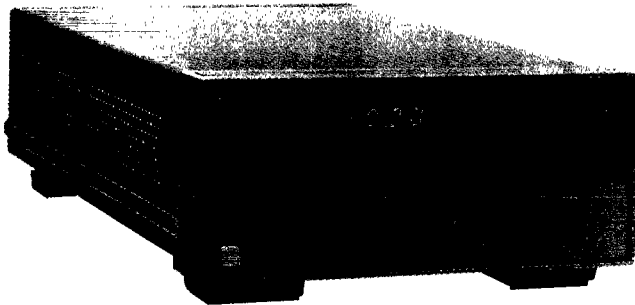
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FIBER OPTIC TEST EQUIPMENT

Optical Attenuator

Model 8158B option 001 (600-1200nm), option 002 (1200-1650nm)/Model 8157A (1200-1650nm)

- High resolution of 0.01dB
- Short settling time (typ. 20ms)
- Suited for multimode and single-mode fibers (8158B)



HP 8158B option 002 option 011



The HP 8158B Optical Attenuator is a fully programmable and highly flexible test instrument. Due to its state-of-the-art fiberless design, all applications employing fibers with a numerical aperture up to 0.3 are covered with one instrument. Multimode and single-mode measurements can thus be easily performed.

HP 8158B Specifications

All specs. are measured with Diamond® HMS-10/HP connectors

Optical Characteristics

Wavelength Range: 600-1200nm (opt. 001), 1200-1650nm (opt. 002)

Applicable Fiber Type: all fiber types with an NA ≤ 0.3

Attenuation Range (excluding insertion loss): 60.00dB

Insertion loss (incl. both connectors)

	single-mode 9µm ¹	multimode 50µm
worst case	<4.0dB	<2.0dB
typical	2.0dB	1.0dB

¹option 002 only

Linearity: ≤ ±0.4dB for single-mode, ≤ ±0.2dB for multimode

Return loss (excluding connectors): > 27dB

HP 8157A Specifications

Optical Characteristics

All specifications are measured with Diamond® HMS-10/HP connectors. The connectors must have Manufacturing Date Code Week 31-87 or higher.

Wavelength Range: 1200-1650nm

Applicable Fiber Type: single-mode fiber

Attenuation Range (excluding insertion loss): 60.00dB

Insertion loss (incl. two Diamond® HMS-10/HP connectors): ≤ 4.0dB

Linearity: ±0.2dB (typical ± 0.05dB)

Return loss (incl. Diamond® HMS-10/HP connectors and terminated fiber-end): > 33dB

HP 8157A/HP 8158B Specifications

Display

Display range: 0.00 to 64.00dB

Display resolution: 0.01dB (min. step size)

Supplementary Performance Characteristics

Repeatability (of attenuation after a max. of 6 matings with same connector):

single-mode (9µm): <0.2dB

multimode (50µm): <0.1dB (HP 8158B only)

Operating Modes

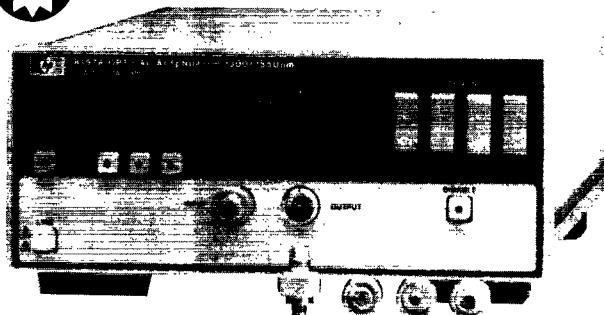
Output disable: Optical signal path interrupted

λ: Entering of wavelength for automatic correction of attenuation using typical correction values

Att: Attenuation is displayed and can be varied

Cal: Entry of calibration factor to adjust display so that displayed value indicates actual power level at output connector of attenuator. Range: ±99.99dB

- Customer-exchangeable connector adapters (8157A)
- >36dB typical return loss (8157A)



HP 8157A shown with all four available connector options (in the foreground)



The 8157A is a high performance single-mode attenuator for the 1200-1650nm wavelength range. Its excellent linearity, very high return loss and polarization insensitivity make it the ideal attenuator for bit error rate tests on fast optical systems.

General

HP-IB Capability

All modes and parameters can be programmed

Listen (time to receive, verify and set up parameter)

Output disable/enable, attenuation, λ: <20 to 550ms (HP 8157A)

λ: <20 to 400ms (HP 8158B)

(depending on actual setting/programmed parameter)

Cal: <5ms

HP-IB Interface Function Code: SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT0, C0

Recalibration period: 1 year

No warm-up time required if previously stored within operating temperature range.

Environmental

Storage Temperature: -40°C to +75°C

Operating Temperature: 0°C to +55°C

Humidity: <95% R.H. from 0°C to +40°C

Power: 100/120/220/240Vrms, +5%, -10%, 48-400Hz, 90VA max.

Battery back up (for non-volatile memory): with instrument switched off all current modes and data will be maintained for at least 10 years after instrument delivery

Dimensions: 89mm(H) x 212.3mm(W) x 345mm(D) (3.5"x 8.36"x13.6")

Weight: net 5.3kg (11.7lbs), shipping 9.6kg (21.2lbs)

Ordering Information

HP 8158B Optical Attenuator

Opt. 001: 600-1200nm

Opt. 002: 1200-1650nm

Opt. 011: Diamond® HMS-10/HP connector

Opt. 012: FC/PC connector¹

Opt. 013: DIN 47256 connector

Opt. 014: ST connector¹

HP 8157A Optical Attenuator 1200-1650nm

Opt. 011: Diamond® HMS-10/HP connector interfaces

Opt. 012: FC/PC connector interfaces

Opt. 013: DIN 47256 connector interfaces

Opt. 014: ST connector interfaces

Opt. 907: Front handle kit (HP P/N 5061-9688)

Opt. 908: Rack flange kit (HP P/N 5061-9672)

Opt. 916: Additional operating manual

P/N 5061-9701 Bail handle kit

¹multimode only

For interface adapters, cables and accessories see "Fiber Optic Test Accessories" on page 307.

☎ Fast-Ship product—see page 758.

Price

\$2240

\$3970

\$3970

\$710

\$1020

\$1020

\$1020

\$8400

\$580

\$580

\$580

\$50

\$50

\$31

\$38

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