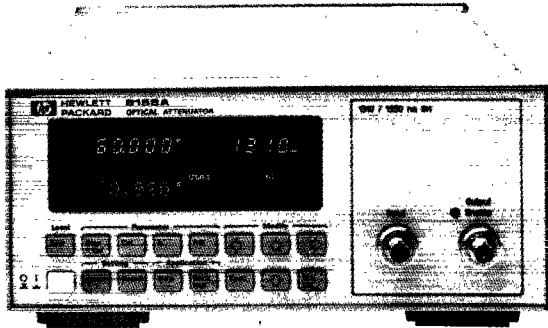


- 0.05 dB attenuation accuracy, 0.001 dB resolution
- 0.02 dB p-p polarization sensitivity
- Optional monitor output
- Back-reflector mode



### HP 8156A Attenuator

The HP 8156A is the high performance attenuator for single-mode applications.

Options are available to select the desired return loss performance between 35 dB and 60 dB. An optional 13 dB monitor output allows you to measure the signal power at the output of the attenuator. Using the built-in back-reflector mode and an external reference reflector (HP 81000BR), the HP 8156A can be used as a programmable back-reflector to measure component and system sensitivity against reflections. Manual or automatic up and down attenuation sweeps can be set for easier operation. The attenuation is automatically corrected for the entered wavelength. User-calibrations are also possible and the required datapoints can be stored within the HP 8156A.

The attenuation range is 60 dB with 0.001 dB resolution between 1250 nm and 1650 nm. Due to a novel single filter design no ranging occurs. This eliminates dark spots or potential attenuation over- or undershoots completely. Attenuation accuracy is typically better than ±0.02 dB with a polarization sensitivity of less than 0.02 dB p-p.

### Specifications

	HP 8156A Opt 100	HP 8156A Opt 101	HP 8156A Opt 121	HP 8156A Opt 201
Wavelength range	1250 to 1650 nm			
Fiber type	single-mode			
Attenuation range	60 dB			
Resolution	0.001 dB			
Return loss	> 35 dB	> 45 dB	> 45 dB	> 60 dB
Insertion loss (typical)*	4.5 dB	2.5 dB	3.3 dB	2.5 dB
Attenuation accuracy (typical)	±0.1 dB	±0.05 dB	±0.05 dB	±0.05 dB
Polarization sensitivity (typical)	<0.075 dB p-p	<0.02 dB p-p	<0.03 dB p-p	<0.02 dB p-p
Repeatability (typical)	±0.005 dB			
Switching time	20 to 400 ms			
Maximum input power	+23 dBm			

\*Includes insertion loss of two HMS-10 connectors.

**Size:** 89 mm H × 212.3 mm W × 355 mm D (3.5 in × 8.36 in × 14.0 in)

**Weight:** Net, 4.0 kg (8.8 lb); shipping, 6.0 kg (13.2 lb)

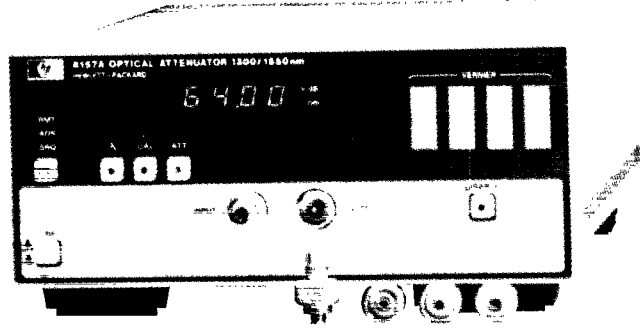
### Ordering Information

Two connector interfaces (three for Opt 121) are required for each HP 8156A.

	Price
<b>HP 8156A</b> Optical Attenuator Mainframe	\$2,500
<b>Opt 100</b> Standard Performance Version	\$3,700
<b>Opt 101</b> High Performance Version	\$5,700
<b>Opt 201</b> High Performance, High Return Loss Version	\$6,750
<b>Opt 121</b> Monitor Output	\$7,900
<b>Opt 203</b> Back Reflector Kit for Opt 201*	\$1,400
<b>HP 81000 AI/FI/GI/KI/SI/VI/WI*</b> Connector Interface (each)	\$170

\*Kit consists of 1 ea 81000SI, 1 ea 81000FI, 1 ea.81113PC, 1 ea 81000UM, and 1 ea 81000BR.

- High resolution (0.01 dB)
- Short settling time (typical 20 ms)
- For multimode and single-mode fibers (8158B)
- > 45 dB return loss (8157A)



### HP 8157A/8158B Attenuator

The HP 8158B is a programmable optical attenuator for single-mode and multimode optical fibers with a numerical aperture up to 0.3. Options are available for the short- and the long-wavelength range.

### Specifications

	HP 8158B Opt 001	HP 8158B Opt 002	HP 8157A
Wavelength range	600 to 1200 nm	1200 to 1650 nm	1200 to 1650 nm
Fiber type	all with NA <0.3	all with NA <0.3	single-mode
Attenuation range	60 dB	60 dB	60 dB
Insertion loss (typical)*	1 dB	2 dB	2 dB
Linearity (typical)	±0.05 dB	±0.05 dB	±0.05 dB
Return loss*	14 dB	14 dB	45 dB

\* depending on connector type

**Size:** 212 mm W × 89 mm H × 345 mm D (8.36 in × 3.5 in × 13.6 in)

**Weight:** Net, 5.3 kg (11.7 lb); shipping, 9.6 kg (21.2 lb)

### Ordering Information

	Price
<b>HP 8158B</b> Optical Attenuator Mainframe	\$2,900
<b>Opt 001</b> 600 to 1200 nm	\$4,300
<b>Opt 002</b> 1200 to 1650 nm	\$4,300
<b>Opt 011</b> HMS-10/HP Connector	\$710
<b>Opt 012</b> FC/PC Connector (multimode only)	\$1,020
<b>Opt 013</b> DIN 47256 Connector	\$1,020
<b>Opt 014</b> ST Connector (multimode only)	\$1,020
<b>HP 8157A</b> Optical Attenuator	\$10,100
<b>HP 81000AI/FI/GI/KI/SI/VI/WI*</b> Connector Interface (each)	\$170

\*Needed for HP 8157A; not needed for HP 8158B