

Model HP8158B
General Information

Table 1-1. Specifications

Specifications describe the instrument's warranted performance. They are measured with Diamond® HMS-10/HP and DIN 47256 connectors. For the specifications to be valid for the DIN 47256 connectors, Siemens and Diamond® connectors should be used for multimode and Diamond® for single-mode.

Optical Characteristics

Specifications are measured at 850nm (opt 001) or at 1300nm and 1550nm (opt 002), using a CW laser diode source with constant output power and fibers with 50/125 μm (NA=0.2, GI for Opts.001 and 002) and 9/125 μm (NA=0.1 for Opt.002).

Wavelength Range:

opt 001: 600nm to 1200nm

opt 002: 1200nm to 1650nm

Connector Type: Diamond® HMS-10/HP and DIN 47256

Applicable Fiber Type: all fiber types with $\text{NA} \leq 0.3$

Attenuation Range (excl. insertion loss): 60.00dB

Insertion loss (incl. both connectors)

	HMS-10/HP		DIN 47256	
	single-mode 9 μm	multimode 50 μm	single-mode 9 μm	multimode 50 μm
worst case	< 4.0dB	< 2.0dB	< 5.0dB	< 2.0dB
typical	2.0dB	1.0dB	2.5dB	1.0dB

Accuracy (Linearity):

multimode: < $\pm 0.2\text{dB}$

single-mode: < $\pm 0.4\text{dB}$

Repeatability (of attenuation after any parameter has been changed and reset): < $\pm 0.04\text{dB}$

Display

Display Range: 0.00 to 64.00dB

Display Resolution: 0.01dB (min. step size)

Supplementary Performance Characteristics

(Description of non-warranted typical performance parameters)

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

single-mode (9 μm): < 0.2dB

multimode (50 μm): < 0.1dB

Return Loss (excl. connector): > 27dB

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Operating Modes

Output disable: Optical signal path interrupted.

Single: Instrument matched to single-mode fiber. (Opt.002 only)

Multi: Instrument matched to multimode fiber.

λ : Entry 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: $\pm 99.99\text{dB}$

General

Recalibration period: 1 year

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

HP-IB Capability

All modes and parameters can be programmed.

Listen (time for HP8158B to receive, verify and execute a message).

Output disable/enable, attenuation, λ : < 20 to 400ms (depending on actual setting/programmed parameter)

Cal: < 5ms

Talk (time for HP8158B to transmit a message).

Query commands: < 1ms/character

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

Environmental

Storage temperature: -40°C to $+75^{\circ}\text{C}$

Operating temperature: 0°C to $+55^{\circ}\text{C}$

Humidity: <95% R.H. from 0°C to 40°C

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

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, 212.3mm W, 345mm D (3.5"x8.36"x13.6")

Weight: net 6.3 kg (13.9 lbs), shipping 10.6 kg (23.4 lbs)

For adapter cables and other accessories see latest Ordering Guide.

Data subject to change.