KEYSIGHT TECHNOLOGIES (AGILENT HP)

81570A

The Keysight 81570A is a high-performance Variable Optical Attenuator (VOA) module designed for Keysight/Agilent 8163A/B, 8164A/B, and 8166A/B Lightwave Multimeter mainframes. It operates over a broad wavelength range of 1200 nm to 1700 nm and is optimized for standard single-mode fiber applications, offering low insertion loss, high attenuation accuracy, and excellent repeatability.

SPECIFICATIONS

General

Interfaces	None (controlled via mainframe GPIB, LAN, or USB)
Display	None (uses mainframe display)
Recommended Recalibration Period	2 years

Physical

Power Supply	Powered by mainframe
Operating Temperature	0 °C to 45 °C °C
Dimensions (W×H×D)	32 mm × 75 mm × 335 mm mm
Weight	0.5 kg kg
Form Factor	Single-slot module

Optical Performance

Wavelength Range	1200 nm to 1700 nm
Fiber Type	Single-mode 9/125 µm
Attenuation Range	0 dB to 60 dB
Insertion Loss	<= 1.0 dB (typical 0.7 dB, excluding connectors)
Return Loss	> 45 dB (typical > 55 dB with angled connectors)
Maximum Input Power	+23 dBm
Attenuation Resolution	0.001 dB
Polarization Dependent Loss (PDL)	< 0.05 dB peak-to-peak @ 1550 nm (typically < 0.02 dB)
Spectral Ripple	< 0.01 dB (typical)
Attenuation Repeatability	+/- 0.01 dB (typical)
Attenuation Uncertainty (<= 15 dB)	+/- 0.05 dB
Attenuation Uncertainty (15 to 30 dB)	+/- 0.08 dB
Attenuation Uncertainty (30 to 45 dB)	+/- 0.15 dB
Attenuation Uncertainty (45 to 60 dB)	+/- 0.25 dB
Polarization Mode Dispersion (PMD)	< 0.01 ps
Shutter Isolation	>= 80 dB

Control & Interface

Transition Time	Typically 100 ms
Optical Connectors	Requires two Keysight 81000xI connector adapters
Mainframe Compatibility	Keysight / Agilent 8163A/B, 8164A/B, 8166A/B

Environmental

Storage Temperature Range	-40 °C to +70 °C
Operating Humidity	< 95% R.H. at 0 °C to 40 °C (non-condensing)
Storage Humidity	Non-condensing

Calibration

Wavelength Setting Resolution	0.1 nm

Performance

Warm-up Time	20 min

TECHNOLOGY

Fiber Optic

APPLICATIONS

Optical Signal Attenuation