KEYSIGHT TECHNOLOGIES (AGILENT HP)

81657A

The Keysight (Agilent) 81657A is a dual-wavelength Fabry-Perot (FP) laser source module designed for use with the Keysight 8163A/B, 8164A/B, and 8166A/B mainframe systems. Operating at 1550 nm and 1625 nm, it provides a stable and reliable optical signal for testing single-mode optical fibers and passive components. Its compact, single-slot design and interchangeable connector interface make it a versatile tool for telecom and optical fiber research and manufacturing environments.

SPECIFICATIONS

General

Interfaces	System integrated via mainframe backplane (GPIB, LAN, USB depending on mainframe)
Display	None (monitored via mainframe display interface)

Physical

Power Supply	Powered by host mainframe
Operating Temperature	0 °C to 45 °C °C
Dimensions (W×H×D)	32 mm × 75 mm × 236 mm mm
Weight	0.5 kg

Wavelength Characteristics

First Center Wavelength	1550 nm ± 20 nm
Second Center Wavelength	1625 nm ± 15 nm
Spectral Bandwidth (FWHM)	< 15 nm (typical)

Optical Power Characteristics

Short-term Power Stability	±0.02 dB (15 min at constant temperature)
Long-term Power Stability	±0.05 dB (24 h at constant temperature)

Polarization & Fiber Specifications

Output Fiber Type	9/125 µm Single-Mode Fiber (SMF)
Optical Connector Interface	Keysight 81000xI series (user-exchangeable: FC, SC, ST, etc.)

Modulation Capabilities

Internal Modulation Frequencies	270 Hz, 350 Hz, 1 kHz, 2 kHz
Internal Modulation Duty Cycle	50% (nominal)

System Integration & Software

Mainframe Compatibility	Agilent / Keysight 8163A/B, 8164A/B, 8166A/B
Required Slots	1 mainframe slot
SCPI Command Support	Yes, via mainframe host

Physical & Power Specifications

Warm-up Time	1 hour

Environmental & Safety Compliance

Laser Safety Class	Class 1M
Storage Temperature Range	-40 °C to +70 °C
Operating Humidity Range	Non-condensing

Optical Specifications

Laser Type	Fabry-Perot (FP)
Number of Optical Outputs	1 (shared port)

TECHNOLOGY

Fabry-Perot (FP) Laser

APPLICATIONS

Optical fiber testing, telecom component verification, insertion loss measurement

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