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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 81650A High Power Optical Head

HP Agilent Keysight 81650A 1310 nm Fabry Perot Laser Source Module The Agilent 81650A isaFabry-Perot laser source module for 8163/8164/8166 Lightwave mainframes. OEM 81663A DFB / 8165xA Fabry-Perot data sheet (5988-1570EN) lists 1310 nm plus or minus 15 nm, output greater than 0 dBm, short-term CW stability less than plus or minus 0.005 dB (15 minutes), and 0 to 6 dB attenuation in 0.1 dB steps. Stable CW stimulus for IL, return-loss, and component test at the stated FP wavelength; coherence-control mode for low back-reflection sensitivity. The Agilent 81650A isaFabry-Perot laser source module for 8163/8164/8166 Lightwave mainframes. OEM 81663A DFB / 8165xA Fabry-Perot data sheet (5988-1570EN) lists 1310 nm plus or minus 15 nm, output greater than 0 dBm, short-term CW stability less than plus or minus 0.005 dB (15 minutes), and 0 to 6 dB attenuation in 0.1 dB steps. Stable CW stimulus for IL, return-loss, and component test at the stated FP wavelength; coherence-control mode for low back-reflection sensitivity. Insensitivity to back reflections with coherence control



MODEL

**Agilent / Keysight
81650A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

81650A

LISTING

<https://aumictechlabs.com/products/81650a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Keysight 81650A is a single-wavelength Fabry-Perot laser source module engineered for insertion loss, optical return loss, and polarization dependent loss (PDL) measurements of

broadband components and fiber. Operating at 1310 nm with exceptional back-reflection insensitivity and stabilized output across short and long-term measurement intervals, this module integrates into compatible Keysight Lightwave mainframe systems to deliver precise optical characterization capabilities.

Technical Specifications

Laser Performance Fabry-Perot laser diode at 1310 nm center wavelength Wavelength tolerance: ± 15 nm Spectral width (rms): 0 dBm (1 mW minimum), maximum CW 15.6 mW Output attenuation: adjustable 0 dB to 6 dB in 0.1 dB steps

Stability & Control Short-term power stability (15 min): $< \pm 0.005$ dB typ Long-term power stability (24 h): ± 0.03 dB typ Back-reflection insensitivity ($RL \geq 14$ dB): ± 0.003 dB typ Internal coherence control for linewidth broadening Digital modulation: 270 Hz, 330 Hz, 1 kHz, 2 kHz, and 200 kHz to 10 kHz (50% duty cycle) Optical Interface Single-mode fiber: 9/125 μm Output connector: straight contact

Physical Characteristics Dimensions: 75 mm (H) $\times$ 32 mm (W) $\times$ 335 mm (D) Weight: 0.5 kg Warm-up time: 60 minutes (20 minutes if stored at same temperature)

Key Features Back-reflection insensitivity enables measurements without optical isolators in many applications Dual-timescale stability supports both dynamic and static characterization Adjustable output power extends measurement dynamic range Internal modulation sources simplify test setups for coherence and linewidth studies

Typical Applications Component insertion loss characterization Optical return loss (ORL) measurement Polarization dependent loss (PDL) analysis Broadband fiber and component evaluation

Compatibility & Integration The 81650A operates exclusively as a plug-in module within these Keysight mainframe systems: 8163A/B Lightwave Multimeter 8164A/B Lightwave Measurement System 8166A/B Lightwave Multichannel System Use with optical power meter modules for complete measurement solutions. Operating temperature: 0°C to +45°C; storage: -40°C to +70°C. Class 1 laser per IEC 60825-1 and FDA CFR 21.

81650A Characteristics / Specifications

PARAMETER	VALUE
Model	81650A
Instrument Type	Fabry Perot laser source module
Series Family	Agilent 8165xA Fabry Perot laser sources
Laser Type	Fabry Perot
Center Wavelength	1310 nm plus or minus 15 nm
Fiber Type	single-mode 9/125 um
Spectral Bandwidth Rms	less than 3.5 nm rms
Output Power	greater than 0 dBm (1 mW)
Cw Power Stability Short Term	less than plus or minus 0.005 dB, 15 minutes
Cw Power Stability Short Term Typical Coherence On	typical less than plus or minus 0.003 dB with coherence control active
Cw Power Stability Long Term Typical	typical plus or minus 0.03 dB, 24 hours
Cw Stability To Back Reflection Typical	typical plus or minus 0.003 dB, RL greater than or equal to 14 dB
Output Attenuation Range	0 dB to 6 dB
Output Attenuation Step	0.1 dB
Internal Modulation Fixed	270 Hz, 330 Hz, 1 kHz, 2 kHz
Internal Modulation Free Select	200 Hz to 10 kHz
Modulation Duty Cycle	50 percent pulse shaped
Coherence Control	internal linewidth broadening
Output Connector Class	straight output connectors required
Specification Path	end of a 2 m fiber cable with Diamond HMS-10/Agilent connectors, attenuation 0.0 dB
Laser Safety Class	Class 1 per IEC 60825-1 (2001)
Dimensions	75 mm x 32 mm x 335 mm
Weight	0.5 kg
Recalibration Period	2 years

PARAMETER	VALUE
Operating Temperature	0 C to 45 C
Humidity	non-condensing
Warm Up Time	60 minutes; 20 minutes if previously stored at the same temperature
Stability Temperature Window	controlled environment, deltaTplus or minus 1 C
Host Mainframes	8163A/B, 8164A/B, 8166A/B
Center Wavelength Display	center wavelength is shown on the display
Bandwidth	Rms: less than 3.5 nm rms
Linewidth	broadening
Attenuation	Range: 0 dB to 6 dB
Power stability	Short Term: less than plus or minus 0.005 dB, 15 minutes

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	0 C to 45 C
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Humidity	non-condensing
Warm Up Time	60 minutes; 20 minutes if previously stored at the same temperature
Stability Temperature Window	controlled environment, deltaTplus or minus 1 C
Host Mainframes	8163A/B, 8164A/B, 8166A/B
Center Wavelength Display	center wavelength is shown on the display Notes Numeric rows from Agilent 81663A DFB Laser, 8165xA Fabry-Perot Laser data sheet 5988-1570EN standard-module (0 dBm) table and supplementary performance, plus Agilent 8163A Selected Specifications for the 81652A wavelength pair. 81650A column of Table 1.
Internal digital modulation	200 Hz to 10 kHz
Fiber type	single-mode 9/125 um
Model	81650A
Instrument Type	Fabry Perot laser source module
Series Family	Agilent 8165xA Fabry Perot laser sources
Laser Type	Fabry Perot
Center Wavelength	1310 nm plus or minus 15 nm
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Output Attenuation Range	0 dB to 6 dB
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PARAMETER	VALUE
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Output Connector Class	straight output connectors required
Specification Path	end of a 2 m fiber cable with Diamond HMS-10/Agilent connectors, attenuation 0.0 dB
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Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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PARAMETER	VALUE
Weight	0.5 kg
Recalibration Period	2 years
Operating Temperature	0 C to 45 C
Humidity	non-condensing
Warm Up Time	60 minutes; 20 minutes if previously stored at the same temperature
Stability Temperature Window	controlled environment, deltaTplus or minus 1 C
Host Mainframes	8163A/B, 8164A/B, 8166A/B
Center Wavelength Display	center wavelength is shown on the display

Notes

Numeric rows from Agilent 81663A DFB Laser, 8165xA Fabry-Perot Laser data sheet 5988-1570EN standard-module (0 dBm) table and supplementary performance, plus Agilent 8163A Selected Specifications for the 81652A wavelength pair. 81650A column of Table 1.

Laser Safety

Laser Safety Class: Class 1 per IEC 60825-1 (2001) Dimensions: 75 mm x 32 mm x 335 mm Weight: 0.5 kg
Recalibration Period: 2 years Operating Temperature: 0 C to 45 C Humidity: non-condensing Warm Up
Time: 60 minutes; 20 minutes if previously stored at the same temperature Stability Temperature Window:
controlled environment, deltaTplus or minus 1 C Host Mainframes: 8163A/B, 8164A/B, 8166A/B Center
Wavelength

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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NIST-traceable calibration · SAM registered ·
30-day returns
NAICS 423690 · 811210 · 541380
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.