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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 81989A 1465-1575nm Tunable Laser Source

Agilent Keysight 81989A Compact Tunable Laser Source The Keysight 81989A is a compact single-slot step-tunable laser module for 8163/8164/8166 lightwave mainframes. OEM compact TLS data sheet 5988-8518EN lists 1465 nm to 1575 nm, 5 pm wavelength resolution, ± 100 pm absolute wavelength accuracy, and $\geq +13$ dBm output in the high-power band. S- and C-band stepped source applications and EDFA loading where 5 pm resolution is sufficient. Mode-hop-free step tunability across the full module range The Keysight 81989A is a compact single-slot step-tunable laser module for 8163/8164/8166 lightwave mainframes. OEM compact TLS data sheet 5988-8518EN lists 1465 nm to 1575 nm, 5 pm wavelength resolution, ± 100 pm absolute wavelength accuracy, and $\geq +13$ dBm output in the high-power band. S- and C-band stepped source applications and EDFA loading where 5 pm resolution is sufficient. Mode-hop-free step tunability across the full module range Typical 3 s tuning time for a 100 nm step



MODEL

**Agilent / Keysight
81989A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

81989A

LISTING

<https://aumictechlabs.com/products/81989a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight 81989A is a tunable laser source engineered for optical testing across the 1465 nm to 1575 nm wavelength range. This single-slot plug-in module delivers precise wavelength control and exceptional optical performance for characterizing optical amplifiers, active components, and

broadband passive optical components. The 81989A supports DWDM system simulation and nonlinear effect investigation in optical fibers and transmission links, operating within the S+C transmission band with 110 nm total wavelength coverage.

Technical Specifications

Wavelength Range: 1465 nm to 1575 nm (110 nm total coverage) Output Power: Up to +13 dBm CW; > +14.5 dBm peak (typical); > +13 dBm from 1525 nm to 1575 nm; > +10 dBm across full range Wavelength Accuracy: ± 20 pm with built-in wavemeter; ± 100 pm absolute Wavelength Resolution: 5 pm (625 MHz at 1550 nm); 1 pm option available (125 MHz at 1550 nm) Mode-Hop Free Tuning: Full wavelength range with typical 3-second tuning time for 100 nm Side-Mode Suppression Ratio: ≥ 50 dB (typical) Linewidth (Coherence Control On): > 50 MHz effective (typical) Signal-to-Source Spontaneous Emission Ratio: ≥ 45 dB/nm at +10 dBm (typical) Relative Intensity Noise: -145 dB/Hz from 0.1 GHz to 6 GHz (typical) Power Stability: 0.01 dB Extinction Ratio (Panda Fiber Option 071): 16 dB (typical) External Voltage Input: One BNC connector accepting ± 6 V maximum Operating Temperature: 10 °C to 35 °C Storage Temperature: -40 °C to +70 °C Physical Dimensions: 75 mm $\times$ 32 mm $\times$ 335 mm Weight: 0.95 kg

Key Features

- Built-in wavemeter for precise wavelength accuracy
- Coherence control and SBS suppression integrated
- Internal modulation capability
- Panda polarization-maintaining fiber option with TE mode orientation
- Class 1M laser classification per IEC 60825-1

Typical Applications

- DWDM system characterization and simulation
- Optical amplifier testing
- Active and passive optical component evaluation
- Nonlinear fiber effect investigation
- Single-channel and multi-channel test scenarios

Compatibility & Integration

The 81989A installs as a single-slot module in Keysight 8163A/B, 8164A/B, and 8166A/B lightwave mainframes. One Agilent 81000xl-series connector interface is required (not included).

81989A Characteristics / Specifications

PARAMETER	VALUE
Model	81989A
Instrument Type	Compact tunable laser source module
Series Family	Keysight 819xxA compact TLS
Wavelength Range	1465 nm to 1575 nm
Wavelength Resolution	5 pm, 625 MHz at 1550 nm
Mode Hop Free Tunability	full wavelength range
Tuning Time Typical	3 s typical for 100 nm
Absolute Wavelength Accuracy	±100 pm
Relative Wavelength Accuracy	±50 pm
Wavelength Repeatability	±5 pm
Wavelength Stability Typical 24 Hours	±5 pm typical over 24 hours at constant temperature ±0.5 K
Linewidth Typical Coherence Off	100 kHz typical
Effective Linewidth Coherence On Typical	greater than 50 MHz typical, 1525 nm to 1575 nm
Maximum Output Power Peak Typical	≥+14.5 dBm peak typical
Maximum Output Power High Band	≥+13 dBm, 1525 nm to 1575 nm
Maximum Output Power Full Range	≥+10 dBm, 1465 nm to 1575 nm
Power Linearity	±0.1 dB
Power Stability One Hour	±0.01 dB over 1 hour (typical ±0.0075 dB over 1 hour; typical ±0.03 dB over 24 hours)
Power Flatness High Band	±0.2 dB, typical ±0.1 dB, 1525 nm to 1575 nm
Power Flatness Full Range	±0.3 dB, typical ±0.15 dB, full range
Power Repeatability Typical	±0.01 dB typical
Smsr Typical	≥50 dB typical
Signal To Sse Ratio	≥45 dB/nm; ≥48 dB/nm in high-power band
Rin Typical	minus 145 dB/Hz typical, 0.1 GHz to 6 GHz

PARAMETER	VALUE
Host Mainframes	8163A/B, 8164A/B, 8166A/B single-slot modules
Fiber Type	Panda PMF, TE in slow axis aligned to connector key
Module Dimensions	75 mm x 32 mm x 335 mm
Module Weight	0.95 kg
Recommended Recalibration Period	2 years
Operating Temperature	+10 C to +35 C
Storage Temperature	minus 40 C to +70 C
Internal Digital Modulation	200 Hz to 1 MHz, 50% duty cycle, extinction ratio greater than 30 dB
Wavelength stability	Typical 24 Hours: ± 5 pm typical over 24 hours at constant temperature ± 0.5 K
Linewidth	Typical Coherence Off: 100 kHz typical
Effective linewidth	Coherence On Typical: greater than 50 MHz typical, 1525 nm to 1575 nm
Maximum output power	Peak Typical: $\geq +14.5$ dBm peak typical
Power repeatability	Typical: ± 0.01 dB typical
Power stability	One Hour: ± 0.01 dB over 1 hour (typical ± 0.0075 dB over 1 hour; typical ± 0.03 dB over 24 hours)

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	minus 40 C to +70 C
Operating temperature	+10 C to +35 C
Operating Temperature	+10 C to +35 C
Internal Digital Modulation	200 Hz to 1 MHz, 50% duty cycle, extinction ratio greater than 30 dB Notes Numeric rows from Keysight compact tunable laser data sheet 5988-8518EN.
Internal digital modulation	200 Hz to 1 MHz, 50% duty cycle, extinction ratio greater than 30 dB

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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Power Flatness Full Range	±0.3 dB, typical ±0.15 dB, full range
Power Repeatability Typical	±0.01 dB typical
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Host Mainframes	8163A/B, 8164A/B, 8166A/B single-slot modules

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Notes
Numeric rows from Keysight compact tunable laser data sheet 5988-8518EN.

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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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.