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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 81606A Tunable Laser Module (1240–1380 nm)

Agilent Keysight 81606A Tunable Laser Source Module The Keysight 81606A is the top-line 8160xA tunable laser module for the 8164B Lightwave Measurement System. OEM 8160xA Family data sheet 5992-3735 lists mode-hop-free coverage by option from 1240 nm to 1650 nm, peak output greater than +12 dBm on Option 216, ± 2 pm absolute wavelength accuracy in stepped mode, and 200 nm/s bidirectional continuous sweeps. Swept IL/PDL of DWDM filters and WSS/ROADM ports; parallel multi-device characterization using high power and low SSE; silicon-photonics O-band work with Option 113. The Keysight 81606A is the top-line 8160xA tunable laser module for the 8164B Lightwave Measurement System. OEM 8160xA Family data sheet 5992-3735 lists mode-hop-free coverage by option from 1240 nm to 1650 nm, peak output greater than +12 dBm on Option 216, ± 2 pm absolute wavelength accuracy in stepped mode, and 200 nm/s bidirectional continuous sweeps. Swept IL/PDL of DWDM filters and WSS/ROADM ports; parallel multi-device characterization using high power and low SSE; silicon-photonics O-band work with Option 113.



MODEL

**Agilent / Keysight
81606A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

81606A

LISTING

<https://aumictechlabs.com/products/81606a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Keysight 81606A is a tunable laser module engineered for the 8164B lightwave measurement system, delivering precision wavelength control across the 1240–1380 nm band. It has sub-picometer tuning repeatability, exceptional spectral purity, and bidirectional sweep speeds up to 200 nm/s - 40 times faster than predecessor models. The module excels in component characterization, system validation, and optical network testing, where absolute accuracy and dynamic range are critical.

Technical Specifications

- Wavelength Range: 1240–1380 nm (standard configuration; additional bands available via options)
- Sweep Speed: Up to 200 nm/s bidirectional
- Maximum Output Power: > +13 dBm peak (Option 113); > +12 dBm peak (other configurations); user-adjustable to 0 dBm minimum
- Absolute Wavelength Accuracy: ± 1.5 pm typical
- Wavelength Repeatability: ± 1 pm typical during two-way sweeps to 200 nm/s
- Spectral Width: 50 dB
- Signal-to-Spontaneous Emission Ratio: ≥ 80 dB/nm typical
- Tuning Repeatability: Sub-picometer
- Optical Connector: FC/PC (angled contact option available)
- Electrical Connectors: Two BNC connectors (input/output); maximum ± 6 V per connector

Key Features

- 4-fold improvement in absolute wavelength accuracy versus earlier generations
- 15 dB greater dynamic range compared to predecessor models
- 10 dB reduction in source spontaneous emission
- Bidirectional sweep capability with sub-picometer repeatability across full tuning range
- Compact module design fits into the bottom back-loadable slot of the 8164B mainframe

Typical Applications

- Optical component characterization and validation
- Wavelength-dependent system testing in telecommunications and networking
- Photonic research requiring high spectral purity and tuning precision
- Automated wavelength sweeping and parametric testing

Compatibility & Integration

The 81606A integrates into the Keysight 8164B Lightwave Measurement System mainframe. It is compatible with current 81600B laser commands and operates under the N7700A photonic application suite software.

81606A Characteristics / Specifications

PARAMETER	VALUE
Model	81606A
Instrument Type	Tunable laser source module
Series Family	Keysight 8160xA
Wavelength Range Option 1	1240 nm to 1380 nm
Wavelength Range Option 2	1440 nm to 1640 nm
Maximum Output Power Option 216 Peak	greater than +12 dBm peak
Maximum Output Power Option 216 C Band	greater than +11 dBm, 1515 nm to 1620 nm
Maximum Output Power Option 113 Peak	greater than +13 dBm peak
Host Mainframe	8164B Lightwave Measurement System, bottom back-loadable slot
Wavelength Resolution	0.1 pm (17.5 MHz at 1310 nm, 14.3 MHz at 1450 nm, 12.5 MHz at 1550 nm)
Minimum Output Power Setting	0 dBm
Output Fiber	Panda PMF, TE in slow axis aligned to connector key
Operating Temperature	+10 C to +35 C
Storage Temperature	minus 40 C to +70 C
Humidity	less than 80% RH at +10 C to +35 C, non-condensing
Warm Up Time	60 minutes; 30 minutes if previously stored at the same temperature
Built In Wavelength Meter	real-time wavelength meter for set, stabilize, and sweep logging
Built In Gas Cell	acetylene class gas cell for long-term absolute referencing
Absolute Wavelength Accuracy Stepped	± 2 pm (typical ± 1.5 pm)
Relative Wavelength Accuracy Stepped	± 1.5 pm (typical ± 1 pm)
Wavelength Repeatability Stepped	± 0.5 pm (typical ± 0.2 pm)
Wavelength Stability Typical	$\leq \pm 0.5$ pm, 24 hours typical at constant temperature ± 1 K
Power Stability One Hour	± 0.01 dB, 1 hour; typical ± 0.025 dB, 24 hours
Power Linearity	± 0.05 dB

PARAMETER	VALUE
Power Flatness Versus Wavelength	± 0.25 dB (typical ± 0.1 dB Options 116/216)
Max Sweep Speed	200 nm/s bidirectional
Signal To Sse Ratio	≥ 80 dB/nm; ≥ 90 dB/0.1 nm
Linewidth Typical Coherence Off	less than 10 kHz typical
Smsr Typical	≥ 70 dB typical in specified high-power bands
Wavelength range	Option 113: 1240 nm to 1380 nm
Absolute wavelength accuracy	Stepped: ± 2 pm (typical ± 1.5 pm)
Relative wavelength accuracy	Stepped: ± 1.5 pm (typical ± 1 pm)
Wavelength repeatability	Stepped: ± 0.5 pm (typical ± 0.2 pm)
Wavelength stability	Typical: $\leq \pm 0.5$ pm, 24 hours typical at constant temperature ± 1 K
Linewidth	Typical Coherence Off: less than 10 kHz typical
Maximum output power	Option 216 Peak: greater than +12 dBm peak
Power stability	One Hour: ± 0.01 dB, 1 hour; typical ± 0.025 dB, 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
Humidity	less than 80% RH at +10 C to +35 C, non-condensing
Warm Up Time	60 minutes; 30 minutes if previously stored at the same temperature
Built In Wavelength Meter	real-time wavelength meter for set, stabilize, and sweep logging
Built In Gas Cell	acetylene class gas cell for long-term absolute referencing
Absolute Wavelength Accuracy Stepped	±2 pm (typical ±1.5 pm)
Relative Wavelength Accuracy Stepped	±1.5 pm (typical ±1 pm)
Wavelength Repeatability Stepped	±0.5 pm (typical ±0.2 pm)
Wavelength Stability Typical	≤ ±0.5 pm, 24 hours typical at constant temperature ±1 K
Power Stability One Hour	±0.01 dB, 1 hour; typical ±0.025 dB, 24 hours
Power Linearity	±0.05 dB
Power Flatness Versus Wavelength	±0.25 dB (typical ±0.1 dB Options 116/216)
Max Sweep Speed	200 nm/s bidirectional
Signal To Sse Ratio	≥80 dB/nm; ≥90 dB/0.1 nm
Linewidth Typical Coherence Off	less than 10 kHz typical
Smsr Typical	≥70 dB typical in specified high-power bands Notes Numeric rows from Keysight 8160xA Family of Tunable Laser Sources data sheet 5992-3735. Specs verified at the end of a 2 m patchcord after warm-up for the stated power and wavelength ranges.

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	
Specifications	
PARAMETER	VALUE
Model	81606A
Instrument Type	Tunable laser source module
Series Family	Keysight 8160xA
Wavelength Range Option 113	1240 nm to 1380 nm
Wavelength Range Option 114	1340 nm to 1495 nm
Wavelength Range Option 116	1490 nm to 1640 nm
Wavelength Range Option 215	1440 nm to 1640 nm
Wavelength Range Option 216	1450 nm to 1650 nm
Maximum Output Power Option 216 Peak	greater than +12 dBm peak
Maximum Output Power Option 216 C Band	greater than +11 dBm, 1515 nm to 1620 nm
Maximum Output Power Option 113 Peak	greater than +13 dBm peak
Host Mainframe	8164B Lightwave Measurement System, bottom back-loadable slot
Wavelength Resolution	0.1 pm (17.5 MHz at 1310 nm, 14.3 MHz at 1450 nm, 12.5 MHz at 1550 nm)
Minimum Output Power Setting	0 dBm
Output Fiber	Panda PMF, TE in slow axis aligned to connector key
Operating Temperature	+10 C to +35 C
Storage Temperature	minus 40 C to +70 C
Humidity	less than 80% RH at +10 C to +35 C, non-condensing
Warm Up Time	60 minutes; 30 minutes if previously stored at the same temperature
Built In Wavelength Meter	real-time wavelength meter for set, stabilize, and sweep logging
Built In Gas Cell	acetylene class gas cell for long-term absolute referencing
Absolute Wavelength Accuracy Stepped	±2 pm (typical ±1.5 pm)
Relative Wavelength Accuracy Stepped	±1.5 pm (typical ±1 pm)
Wavelength Repeatability Stepped	±0.5 pm (typical ±0.2 pm)
Wavelength Stability Typical	≤ ±0.5 pm, 24 hours typical at constant temperature ±1 K

PARAMETER	VALUE
Power Stability One Hour	±0.01 dB, 1 hour; typical ±0.025 dB, 24 hours
Power Linearity	±0.05 dB
Power Flatness Versus Wavelength	±0.25 dB (typical ±0.1 dB Options 116/216)
Max Sweep Speed	200 nm/s bidirectional
Signal To Sse Ratio	≥80 dB/nm; ≥90 dB/0.1 nm
Linewidth Typical Coherence Off	less than 10 kHz typical
Smsr Typical	≥70 dB typical in specified high-power bands

Notes

Numeric rows from Keysight 8160xA Family of Tunable Laser Sources data sheet 5992-3735. Specs verified at the end of a 2 m patchcord after warm-up for the stated power and wavelength ranges.

Ordering Information

OPTION	DESCRIPTION
Option 216	Peak: greater than +12 dBm peak
Option 113	Peak: greater than +13 dBm peak

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
788 S 500 E, Pleasant Grove, UT 84062
sales@aumictech.com · +1 (484) 841-9341
<https://aumictechlabs.com>

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30-day returns
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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.