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Data Sheet
August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 81640B Tunable Laser Source

Agilent 81640B Tunable Laser Source Module The Agilent 81640B isalow-SSE C+L-band tunable laser module for the 8164B Lightwave Measurement System. OEM Agilent 81480/680/640B and 81672/482/682/642B Tunable Laser Sources data sheet (March 2002) lists 1495 to 1640 nm, 0.1 pm resolution, 80 nm/s maximum tuning, ±10 pm absolute wavelength accuracy, and dual outputs (low SSE and high power). DWDM passive-component IL and crosstalk; Fiber Bragg grating characterization withapower meter; C- and L-band stimulus for amplifiers and integrated optics. The Agilent 81640B isalow-SSE C+L-band tunable laser module for the 8164B Lightwave Measurement System. OEM Agilent 81480/680/640B and 81672/482/682/642B Tunable Laser Sources data sheet (March 2002) lists 1495 to 1640 nm, 0.1 pm resolution, 80 nm/s maximum tuning, ±10 pm absolute wavelength accuracy, and dual outputs (low SSE and high power). DWDM passive-component IL and crosstalk; Fiber Bragg grating characterization withapower meter; C- and L-band stimulus for amplifiers and integrated optics.

MODEL	CALIBRATION
Agilent / Keysight 81640B	Available on request
CONDITION	STATUS
Used	In stock
RFQ / SKU	LISTING
81640B	https://aumictechlabs.com/products/81640b-2/

NIST-traceable cal · SAM registered · 30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 81640B is a continuous wave tunable laser source engineered for optical component testing, metrology, and research. It delivers stable, precise optical power across tunable wavelengths with narrow linewidth performance. The instrument supports both internal

and external modulation, making it suitable for complex optical system characterization in laboratory and integration environments.Technical Specifications Laser Output Type: Continuous Wave (CW) Tunable Laser Source Wavelength Range: Module-dependent Tuning Speed: Module-dependent Wavelength Accuracy: Specified in picometers (pm) Wavelength Stability: Specified in pm/°C or pm/hour Linewidth: Specified in kHz or MHz Output Power Range: Specified in dBm or milliwatts (mW) Power Stability: Specified in dB or % per hour/minute Power Accuracy: Specified in dB or % Polarization: Single-mode or multi-mode fiber output with polarization extinction ratio (PER) Mode Field Diameter (MFD): Approximately 9 µm for standard single-mode fiber Return Loss: Specified in dB Modulation Capabilities Amplitude Modulation (AM): Internal or external, frequency and depth specified by module Frequency Modulation (FM): Internal or external, frequency range and deviation specified by module On/Off Modulation: Pulsed operation with specified switching speedsKey Features Narrow spectral linewidth for high-resolution spectroscopy and interferometry Tunable wavelength operation across module-specific ranges Long-term and short-term wavelength stability for precision measurements Flexible modulation options for dynamic optical testing Single-mode and multi-mode fiber output configurations Return loss performance optimized to prevent laser instabilityTypical Applications Optical component characterization and device testing Spectroscopic measurements requiring narrow linewidth sources Interferometric metrology and optical system development Research environments demanding wavelength-tunable CW sourcesCompatibility & Integration Control Interface: GPIB (IEEE 488.2), SCPI command language Standard rack-mountable or benchtop form factors Warm-up time required to reach stable operating parameters

Features & description

From manufacturer datasheet

Built-in real-time wavelength control loop

Mode-hop-free tuning over the full wavelength range Panda PMF output (Options 071/072) Fits the 8164B bottom TLS slot Technical Specifications Model: 81640B Instrument Type: Tunable laser source module Series Family: Agilent 8164xB/8168xB TLS Wavelength Range: 1495 nm to 1640 nm Wavelength Resolution: 0.1 pm, 12.5 MHz at 1550 nm Mode Hop Free Tuning Range: full wavelength range Maximum Tuning Speed: 80 nm/s Absolute Wavelength Accuracy Static: ±10 pm Absolute Wavelength Accuracy At 5 Nm Per S: ±0.4 pm typical Absolute Wavelength Accuracy At 40 Nm Per S: ±1.0 pm typical Absolute Wavelength Accuracy At 80 Nm Per S: ±2.5 pm typical Relative Wavelength Accuracy Static: ±5 pm, typical ±2 pm Wavelength Repeatability: ±0.8 pm, typical ±0.5 pm Wavelength Stability 24 Hour Typical: ≤ ±1 pm typical, 24 hours at constant temperature Linewidth Typical Coherence Off: 100 kHz typical Effective Linewidth Coherence On Typical: greater than 50 MHz, 1510 to 1620 nm at flat output power Output 1 Peak Power Typical: ≥ minus 5 dBm peak typical Output 1 Power 1520 To 1610 Nm: ≥ minus 7 dBm Output 2 Peak Power Typical: ≥ +4 dBm peak typical Output 2 Power 1520 To 1610 Nm: ≥ +2 dBm Minimum Output Power Output 1: minus 13 dBm (minus 60 dBm in attenuation mode)

Polarization Extinction Ratio Typical: 16 dB typical

Laser Class: IEC 60825-1 Class 1M Operating Temperature: +10 C to +35 C Warm Up Time: less than 20 minutes; immediate operation after boot-up Host Mainframe: 8164B Lightwave Measurement System, bottom slot Notes Numeric rows from Agilent 81480/680/640B and 81672/482/682/642B Tunable Laser Sources Technical Specifications, March 2002, 81640B table. Absolute accuracy is valid for one month within ±4.4 K after automatic wavelength zeroing.

81640B Characteristics / Specifications

PARAMETER	VALUE
Model	81640B
Instrument Type	Tunable laser source module
Series Family	Agilent 8164xB/8168xB TLS
Wavelength Range	1495 nm to 1640 nm
Wavelength Resolution	0.1 pm, 12.5 MHz at 1550 nm
Mode Hop Free Tuning Range	full wavelength range
Maximum Tuning Speed	80 nm/s
Absolute Wavelength Accuracy Static	±10 pm
Absolute Wavelength Accuracy At 5 Nm Per S	±0.4 pm typical
Absolute Wavelength Accuracy At 40 Nm Per S	±1.0 pm typical
Absolute Wavelength Accuracy At 80 Nm Per S	±2.5 pm typical
Relative Wavelength Accuracy Static	±5 pm, typical ±2 pm
Wavelength Repeatability	±0.8 pm, typical ±0.5 pm
Wavelength Stability 24 Hour Typical	≤ ±1 pm typical, 24 hours at constant temperature
Linewidth Typical Coherence Off	100 kHz typical
Effective Linewidth Coherence On Typical	greater than 50 MHz, 1510 to 1620 nm at flat output power
Output 1 Peak Power Typical	≥ minus 5 dBm peak typical
Output 1 Power 1520 To 1610 Nm	≥ minus 7 dBm
Output 2 Peak Power Typical	≥ +4 dBm peak typical
Output 2 Power 1520 To 1610 Nm	≥ +2 dBm
Minimum Output Power Output	minus 13 dBm (minus 60 dBm in attenuation mode)
Power Linearity Output	±0.1 dB
Power Stability 1 Hour	±0.01 dB, 1 hour

PARAMETER	VALUE
Signal To Sse Output 1 1520 To 1610 Nm	≥60 dB/nm
Signal To Total Sse Output	≥55 dB, 1520 to 1610 nm
Relative Intensity Noise Typical	minus 145 dB/Hz, 1520 to 1610 nm
Output Isolation Typical	50 dB typical
Return Loss Typical Option 0	60 dB typical
Polarization Extinction Ratio Typical	16 dB typical
Laser Class	IEC 60825-1 Class 1M
Operating Temperature	+10 C to +35 C
Warm Up Time	less than 20 minutes; immediate operation after boot-up
Host Mainframe	8164B Lightwave Measurement System, bottom slot
Absolute wavelength accuracy	Static: ±10 pm
Relative wavelength accuracy	Static: ±5 pm, typical ±2 pm
Wavelength stability	24 Hour Typical: ≤ ±1 pm typical, 24 hours at constant temperature
Linewidth	Typical Coherence Off: 100 kHz typical
Effective linewidth	Coherence On Typical: greater than 50 MHz, 1510 to 1620 nm at flat output power
Attenuation	mode)
Power stability	1 Hour: ±0.01 dB, 1 hour
Power linearity	Output 1: ±0.1 dB
Relative intensity noise	Typical: minus 145 dB/Hz, 1520 to 1610 nm
Output isolation	Typical: 50 dB typical
Return loss	Typical Option 072: 60 dB typical
Polarization extinction ratio	Typical: 16 dB typical

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	+10 C to +35 C
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Warm Up Time	less than 20 minutes; immediate operation after boot-up
Host Mainframe	8164B Lightwave Measurement System, bottom slot Notes Numeric rows from Agilent 81480/680/640B and 81672/482/682/642B Tunable Laser Sources Technical Specifications, March 2002, 81640B table. Absolute accuracy is valid for one month within ±4.4 K after automatic wavelength zeroing.

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	81640B
Instrument Type	Tunable laser source module
Series Family	Agilent 8164xB/8168xB TLS
Wavelength Range	1495 nm to 1640 nm
Wavelength Resolution	0.1 pm, 12.5 MHz at 1550 nm
Mode Hop Free Tuning Range	full wavelength range
Maximum Tuning Speed	80 nm/s
Absolute Wavelength Accuracy Static	±10 pm

Absolute Wavelength Accuracy At 5 Nm Per S: ±0.4 pm typical
Absolute Wavelength Accuracy At 40 Nm Per S: ±1.0 pm typical
Absolute Wavelength Accuracy At 80 Nm Per S: ±2.5 pm typical

Specifications

PARAMETER	VALUE
Relative Wavelength Accuracy Static	±5 pm, typical ±2 pm
Wavelength Repeatability	±0.8 pm, typical ±0.5 pm
Wavelength Stability 24 Hour Typical	≤ ±1 pm typical, 24 hours at constant temperature
Linewidth Typical Coherence Off	100 kHz typical
Effective Linewidth Coherence On Typical	greater than 50 MHz, 1510 to 1620 nm at flat output power
Output 1 Peak Power Typical	≥ minus 5 dBm peak typical
Output 1 Power 1520 To 1610 Nm	≥ minus 7 dBm
Output 2 Peak Power Typical	≥ +4 dBm peak typical
Output 2 Power 1520 To 1610 Nm	≥ +2 dBm
Minimum Output Power Output 1	minus 13 dBm (minus 60 dBm in attenuation mode)
Power Linearity Output 1	±0.1 dB
Power Stability 1 Hour	±0.01 dB, 1 hour

Signal To Sse Output 1 1520 To 1610 Nm: ≥60 dB/nm

Specifications

PARAMETER	VALUE
Signal To Total Sse Output 1	≥55 dB, 1520 to 1610 nm
Relative Intensity Noise Typical	minus 145 dB/Hz, 1520 to 1610 nm
Output Isolation Typical	50 dB typical
Return Loss Typical Option 072	60 dB typical
Polarization Extinction Ratio Typical	16 dB typical
Laser Class	IEC 60825-1 Class 1M
Operating Temperature	+10 C to +35 C
Warm Up Time	less than 20 minutes; immediate operation after boot-up
Host Mainframe	8164B Lightwave Measurement System, bottom slot

Notes
Numeric rows from Agilent 81480/680/640B and 81672/482/682/642B Tunable Laser Sources Technical Specifications, March 2002, 81640B table. Absolute accuracy is valid for one month within ±4.4 K after automatic wavelength zeroing.

Laser Safety

Class 1M

Available from Aumictech

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

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