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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 81680A, Tunable Laser Module

Agilent Keysight 81680ACBand Tunable Laser Module 1460 to 1580 nm The Agilent 81680A is a mode-hop-free C-band tunable laser module for the 8164A with dual low-SSE and high-power outputs. OEM user's guide tables list 1460 to 1580 nm, 0.1 pm resolution, plus or minus 0.01 nm absolute accuracy, and Output 1/2 power and SSE by band. C-band DWDM component IL/crosstalk and EDFA stimulus. Dual outputs: ultra-low SSE and high power The Agilent 81680A is a mode-hop-free C-band tunable laser module for the 8164A with dual low-SSE and high-power outputs. OEM user's guide tables list 1460 to 1580 nm, 0.1 pm resolution, plus or minus 0.01 nm absolute accuracy, and Output 1/2 power and SSE by band. C-band DWDM component IL/crosstalk and EDFA stimulus. Dual outputs: ultra-low SSE and high power Built-in wavelength control loop and Output 2 attenuator



MODEL

**Agilent / Keysight
81680A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

81680A

LISTING

<https://aumictechlabs.com/products/81680a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight 81680A is a tunable laser module delivering precise wavelength control across the C-band with mode-hop-free tuning and dual output ports optimized for distinct measurement scenarios. The instrument combines ultra-low source spontaneous emission on Output 1 with high-power capability on Output 2, making it essential for characterizing DWDM devices, optical amplifiers, and integrated photonic circuits. Polarization-maintaining fiber output preserves state of polarization for waveguide measurements requiring polarization

stability. Technical Specifications Wavelength Range: 1460 nm to 1580 nm Wavelength Resolution: 0.1 pm (12.5 MHz at 1550 nm) Mode-Hop-Free Tuning: Full wavelength range Absolute Wavelength Accuracy: ± 0.01 nm Relative Wavelength Accuracy: ± 5 pm typical; ± 2 pm Wavelength Repeatability: ± 1 pm typical; ± 0.5 pm Wavelength Stability: $\leq \pm 1$ pm typical over 24 hours at constant temperature Tuning Speed: 400 ms (1 nm) / 600 ms (10 nm) / 2.8 s (100 nm) Linewidth (Coherence Control Off): 100 kHz typical Effective Linewidth (Coherence Control On): > 50 MHz typical (1480–1580 nm) Output 1 Power (Low SSE): -4 dBm peak typical; -6 dBm (1520–1570 nm); -10 dBm (1480–1580 nm); -13 dBm minimum (1460–1580 nm) Output 2 Power (High Power): 6 dBm peak typical; 5 dBm (1520–1570 nm); 1 dBm (1480–1580 nm); -3 dBm minimum (1460–1580 nm) Power Stability: ± 0.01 dB (1 hour); ± 0.03 dB (24 hours) typical Power Repeatability: ± 0.01 dB typical Power Linearity: ± 0.1 dB Power Flatness vs. Wavelength: ± 0.2 dB typical Side-Mode Suppression Ratio: ≥ 40 dBc typical Signal-to-Source Spontaneous Emission: ≥ 63 dB/nm typical (1520–1570 nm) Relative Intensity Noise: > 58 dB/nm² typical (1480–1580 nm) Return Loss: 40 dB typical (options 021, 071) Key Features Dual optical outputs with independent power control Panda polarization-maintaining fiber with selectable connector types Wavelength repeatability ± 0.5 pm enables fast wavelength-dependent component screening Coherence control mode extends effective linewidth for reduced coherent crosstalk effects Typical Applications DWDM component characterization and alignment Optical amplifier gain and noise figure measurement Integrated photonic circuit testing Polarization-sensitive device evaluation Compatibility & Integration Operating temperature: +10°C to +35°C Storage temperature: -40°C Laser Classification: Class IIIb (FDA 21 CFR 1040.10); Class 3A (IEC 825-1:1993)

Features & description

From manufacturer datasheet

Built-in wavelength control loop and Output 2 attenuator

PMF standard 200 Hz-300 kHz internal digital modulation 8164A back-loadable TLS module Technical Specifications Model: 81680A Instrument Type: Tunable laser source module Series Family: Agilent 81480A/81680A/81640A TLS for 8164A Wavelength Range: 1460 nm to 1580 nm Wavelength Resolution: 0.1 pm, 12.5 MHz at 1550 nm Mode Hop Free Tuning Range: 1460 nm to 1580 nm Absolute Wavelength Accuracy: plus or minus 0.01 nm (one month, plus or minus 5 K after wavelength zeroing, CW, vacuum wavelength meter) Wavelength Repeatability: plus or minus 1 pm, typical plus or minus 0.5 pm Wavelength Stability Typical 24 Hour: less than or equal to plus or minus 1 pm typical, 24 hours at constant temperature Tuning Speed Typical: 400 ms / 600 ms / 2.8 s for 1/10/100 nm steps Linewidth Typical Coherence Off: 100 kHz typical Minimum Output Power Output 1: minus 13 dBm Attenuation Mode Floor Output 2: minus 60 dBm in attenuation mode Power Stability 1 Hour: plus or minus 0.01 dB, 1 hour; typical plus or minus 0.03 dB, 24 hours Power Repeatability Typical: plus or minus 0.01 dB typical Power Linearity Output 1: plus or minus 0.1 dB Power Linearity Output 2: plus or minus 0.3 dB Sidemode Suppression Typical: greater than or equal to 40 dBc in the stated SMSR band

81680A Characteristics / Specifications

PARAMETER	VALUE
Model	81680A
Instrument Type	Tunable laser source module
Series Family	Agilent 81480A/81680A/81640A TLS for 8164A
Wavelength Range	1460 nm to 1580 nm
Wavelength Resolution	0.1 pm, 12.5 MHz at 1550 nm
Mode Hop Free Tuning Range	1460 nm to 1580 nm
Absolute Wavelength Accuracy	plus or minus 0.01 nm (one month, plus or minus 5 K after wavelength zeroing, CW, vacuum wavelength meter)
Wavelength Repeatability	plus or minus 1 pm, typical plus or minus 0.5 pm
Wavelength Stability Typical 24 Hour	less than or equal to plus or minus 1 pm typical, 24 hours at constant temperature
Tuning Speed Typical	400 ms / 600 ms / 2.8 s for 1/10/100 nm steps
Linewidth Typical Coherence Off	100 kHz typical
Minimum Output Power Output	minus 13 dBm
Attenuation Mode Floor Output	minus 60 dBm in attenuation mode
Power Stability 1 Hour	plus or minus 0.01 dB, 1 hour; typical plus or minus 0.03 dB, 24 hours
Power Repeatability Typical	plus or minus 0.01 dB typical
Power Linearity Output	plus or minus 0.1 dB
Sidemode Suppression Typical	greater than or equal to 40 dBc in the stated SMSR band
Relative Intensity Noise Typical	minus 145 dB/Hz in the stated RIN band
Laser Type Safety Table	InGaAsP FP-laser, less than 15 mW max CW at connector, 9 um beam waist, NA 0.1
Host Mainframe	Agilent 8164A Lightwave Measurement System, back-loadable TLS slot
Bnc Absolute Maximum	plus or minus 6 V on modulation BNCs
Storage Temperature	minus 40 C to plus 70 C
Warm Up	1 hour for warranted specs (footnote 9/10)
Relative Wavelength Accuracy	plus or minus 5 pm, typical plus or minus 2 pm

PARAMETER	VALUE
Effective Linewidth Coherence On Typical	greater than 50 MHz, 1480 to 1580 nm at maximum flat output power
Output 1 Peak Power Typical	greater than or equal to minus 4 dBm peak typical (1520-1570 nm)
Output 1 Power Bands	greater than or equal to minus 6 dBm (1520-1570); minus 10 dBm (1480-1580); minus 13 dBm (1460-1580)
Output 2 Peak Power Typical	greater than or equal to plus 6 dBm peak typical (1520-1570 nm)
Output 2 Power Bands	greater than or equal to plus 5 dBm (1520-1570); plus 1 dBm (1480-1580); minus 3 dBm (1460-1580)
Sse Output 1 1520 To 15	greater than or equal to 63 dB/nm (1520-1570); typical 58/53 dB/nm wider bands
Sse Output 2 1520 To 15	greater than or equal to 45 dB/nm (1520-1570); 40/35 dB/nm wider bands
Signal To Total Sse Output	greater than or equal to 60 dB (1520-1570 nm)
Rin Band	minus 145 dB/Hz typical, 1480 to 1580 nm
Wavelength stability	Typical 24 Hour: less than or equal to plus or minus 1 pm typical, 24 hours at constant temperature
Linewidth	Typical Coherence Off: 100 kHz typical
Effective linewidth	Coherence On Typical: greater than 50 MHz, 1480 to 1580 nm at maximum flat output power
Attenuation	Mode Floor Output 2: minus 60 dBm in attenuation mode
Power repeatability	Typical: plus or minus 0.01 dB typical
Power stability	1 Hour: plus or minus 0.01 dB, 1 hour; typical plus or minus 0.03 dB, 24 hours
Power linearity	Output 1: plus or minus 0.1 dB
Relative intensity noise	Typical: minus 145 dB/Hz in the stated RIN band

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	minus 40 C to plus 70 C
Warm Up	1 hour for warranted specs (footnote 9/10)
Relative Wavelength Accuracy	plus or minus 5 pm, typical plus or minus 2 pm
Effective Linewidth Coherence On Typical	greater than 50 MHz, 1480 to 1580 nm at maximum flat output power
Output 1 Peak Power Typical	greater than or equal to minus 4 dBm peak typical (1520-1570 nm)
Output 1 Power Bands	greater than or equal to minus 6 dBm (1520-1570); minus 10 dBm (1480-1580); minus 13 dBm (1460-1580)
Output 2 Peak Power Typical	greater than or equal to plus 6 dBm peak typical (1520-1570 nm)
Output 2 Power Bands	greater than or equal to plus 5 dBm (1520-1570); plus 1 dBm (1480-1580); minus 3 dBm (1460-1580)
Sse Output 1 1520 To 15	greater than or equal to 63 dB/nm (1520-1570); typical 58/53 dB/nm wider bands
Sse Output 2 1520 To 15	greater than or equal to 45 dB/nm (1520-1570); 40/35 dB/nm wider bands
Signal To Total Sse Output	greater than or equal to 60 dB (1520-1570 nm)
Rin Band	minus 145 dB/Hz typical, 1480 to 1580 nm Notes Numeric rows from Agilent 81480A/81680A/81640A Tunable Laser Modules User's Guide (81680A Output 1/2 columns). Absolute accuracy footnote: one month, plus or minus 5 K after wavelength zeroing.
Internal digital modulation	8164A back-loadable TLS module
Model	81680A
Instrument Type	Tunable laser source module
Series Family	Agilent 81480A/81680A/81640A TLS for 8164A
Wavelength Range	1460 nm to 1580 nm
Wavelength Resolution	0.1 pm, 12.5 MHz at 1550 nm
Mode Hop Free Tuning Range	1460 nm to 1580 nm
Absolute Wavelength Accuracy	plus or minus 0.01 nm (one month, plus or minus 5 K after wavelength zeroing, CW, vacuum wavelength meter)

PARAMETER	VALUE
Wavelength Repeatability	plus or minus 1 pm, typical plus or minus 0.5 pm
Wavelength Stability Typical 24 Hour	less than or equal to plus or minus 1 pm typical, 24 hours at constant temperature
Tuning Speed Typical	400 ms / 600 ms / 2.8 s for 1/10/100 nm steps
Linewidth Typical Coherence Off	100 kHz typical
Minimum Output Power Output	minus 13 dBm
Attenuation Mode Floor Output	minus 60 dBm in attenuation mode
Power Stability 1 Hour	plus or minus 0.01 dB, 1 hour; typical plus or minus 0.03 dB, 24 hours
Power Repeatability Typical	plus or minus 0.01 dB typical
Power Linearity Output	plus or minus 0.1 dB
Sidemode Suppression Typical	greater than or equal to 40 dBc in the stated SMSR band
Relative Intensity Noise Typical	minus 145 dB/Hz in the stated RIN band
Laser Type Safety Table	InGaAsP FP-laser, less than 15 mW max CW at connector, 9 um beam waist, NA 0.1
Host Mainframe	Agilent 8164A Lightwave Measurement System, back-loadable TLS slot
Bnc Absolute Maximum	plus or minus 6 V on modulation BNCs
Storage Temperature	minus 40 C to plus 70 C
Warm Up	1 hour for warranted specs (footnote 9/10)
Relative Wavelength Accuracy	plus or minus 5 pm, typical plus or minus 2 pm
Effective Linewidth Coherence On Typical	greater than 50 MHz, 1480 to 1580 nm at maximum flat output power
Output 1 Peak Power Typical	greater than or equal to minus 4 dBm peak typical (1520-1570 nm)
Output 1 Power Bands	greater than or equal to minus 6 dBm (1520-1570); minus 10 dBm (1480-1580); minus 13 dBm (1460-1580)
Output 2 Peak Power Typical	greater than or equal to plus 6 dBm peak typical (1520-1570 nm)
Output 2 Power Bands	greater than or equal to plus 5 dBm (1520-1570); plus 1 dBm (1480-1580); minus 3 dBm (1460-1580)
Sse Output 1 1520 To 15	greater than or equal to 63 dB/nm (1520-1570); typical 58/53 dB/nm wider bands

PARAMETER	VALUE
Sse Output 2 1520 To 15	greater than or equal to 45 dB/nm (1520-1570); 40/35 dB/nm wider bands
Signal To Total Sse Output	greater than or equal to 60 dB (1520-1570 nm)
Rin Band	minus 145 dB/Hz typical, 1480 to 1580 nm Notes Numeric rows from Agilent 81480A/81680A/81640A Tunable Laser Modules User's Guide (81680A Output 1/2 columns). Absolute accuracy footnote: one month, plus or minus 5 K after 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	81680A
Instrument Type	Tunable laser source module
Series Family	Agilent 81480A/81680A/81640A TLS for 8164A
Wavelength Range	1460 nm to 1580 nm
Wavelength Resolution	0.1 pm, 12.5 MHz at 1550 nm
Mode Hop Free Tuning Range	1460 nm to 1580 nm
Absolute Wavelength Accuracy	plus or minus 0.01 nm (one month, plus or minus 5 K after wavelength zeroing, CW, vacuum wavelength meter)
Wavelength Repeatability	plus or minus 1 pm, typical plus or minus 0.5 pm
Wavelength Stability Typical 24 Hour	less than or equal to plus or minus 1 pm typical, 24 hours at constant temperature
Tuning Speed Typical	400 ms / 600 ms / 2.8 s for 1/10/100 nm steps
Linewidth Typical Coherence Off	100 kHz typical
Minimum Output Power Output 1	minus 13 dBm
Attenuation Mode Floor Output 2	minus 60 dBm in attenuation mode
Power Stability 1 Hour	plus or minus 0.01 dB, 1 hour; typical plus or minus 0.03 dB, 24 hours
Power Repeatability Typical	plus or minus 0.01 dB typical
Power Linearity Output 1	plus or minus 0.1 dB
Power Linearity Output 2	plus or minus 0.3 dB
Sidemode Suppression Typical	greater than or equal to 40 dBc in the stated SMSR band
Relative Intensity Noise Typical	minus 145 dB/Hz in the stated RIN band
Laser Type Safety Table	InGaAsP FP-laser, less than 15 mW max CW at connector, 9 um beam waist, NA 0.1
Host Mainframe	Agilent 8164A Lightwave Measurement System, back-loadable TLS slot
Bnc Absolute Maximum	plus or minus 6 V on modulation BNCs
Storage Temperature	minus 40 C to plus 70 C
Warm Up	1 hour for warranted specs (footnote 9/10)

PARAMETER	VALUE
Relative Wavelength Accuracy	plus or minus 5 pm, typical plus or minus 2 pm
Effective Linewidth Coherence On Typical	greater than 50 MHz, 1480 to 1580 nm at maximum flat output power
Output 1 Peak Power Typical	greater than or equal to minus 4 dBm peak typical (1520-1570 nm)
Output 1 Power Bands	greater than or equal to minus 6 dBm (1520-1570); minus 10 dBm (1480-1580); minus 13 dBm (1460-1580)
Output 2 Peak Power Typical	greater than or equal to plus 6 dBm peak typical (1520-1570 nm)
Output 2 Power Bands	greater than or equal to plus 5 dBm (1520-1570); plus 1 dBm (1480-1580); minus 3 dBm (1460-1580)
Sse Output 1 1520 To 1570	greater than or equal to 63 dB/nm (1520-1570); typical 58/53 dB/nm wider bands
Sse Output 2 1520 To 1570	greater than or equal to 45 dB/nm (1520-1570); 40/35 dB/nm wider bands
Signal To Total Sse Output 1	greater than or equal to 60 dB (1520-1570 nm)
Rin Band	minus 145 dB/Hz typical, 1480 to 1580 nm

Notes

Numeric rows from Agilent 81480A/81680A/81640A Tunable Laser Modules User's Guide (81680A Output 1/2 columns). Absolute accuracy footnote: one month, plus or minus 5 K after wavelength zeroing.

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.