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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 81680B, Tunable Laser Module

Warm Up Time: less than 20 minutes; immediate operation after boot-up Host Mainframe: 8164B Lightwave Measurement System, bottom slot Connector Interfaces Required: two 81000xl-series interfaces Wavelength, dual-output identity, and 1520 to 1570 nm sweep-span power conditions from Agilent Tunable Laser Sources Technical Specifications March 2002 (81680B rows). Safety-table CW power, beam waist, and NA from Keysight 8163/4/6 users guide discontinued-TLS laser-safety table. Do not copy the 81640B C+L power table onto 81680B. Host Mainframe: 8164B Lightwave Measurement System, bottom slot Connector Interfaces Required: two 81000xl-series interfaces Wavelength, dual-output identity, and 1520 to 1570 nm sweep-span power conditions from Agilent Tunable Laser Sources Technical Specifications March 2002 (81680B rows). Safety-table CW power, beam waist, and NA from Keysight 8163/4/6 users guide discontinued-TLS laser-safety table. Do not copy the 81640B C+L power table onto 81680B.



MODEL

**Agilent / Keysight
81680B**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

81680B

LISTING

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

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 81680B is a tunable laser module providing precise wavelength control and stable output power across the S- and C-bands for telecommunications and optical component characterization. The module delivers mode-hop-free tuning with dual optical outputs: one optimized for low source spontaneous emission ($\text{SSE} \geq 63 \text{ dB/nm}$) enabling accurate crosstalk

measurements in DWDM systems, and a second with higher power and built-in attenuation for flexible level adjustment.

Technical Specifications

Wavelength range: 1460 nm to 1640 nm (S- and C-band coverage)
Wavelength resolution: 0.1 pm (12.5 MHz at 1550 nm)
Absolute wavelength accuracy: ± 0.01 nm
Relative wavelength accuracy: ± 2 to ± 5 pm
Wavelength repeatability: ± 0.5 to ± 1 pm
Wavelength stability: $\leq \pm 1$ pm/24 hours at constant temperature
Tuning speed: 400 ms (1 nm step), 600 ms (10 nm step), 2.8 s (100 nm step)
Linewidth: 100 kHz (coherence control off); > 50 MHz (coherence control on, typical 1480–1580 nm)
Output power: Peak ≥ 6 dBm typical; minimum -60 dBm (attenuation mode)
Power stability: ± 0.01 dB/hour, ± 0.03 dB/24 hours
Power repeatability: ± 0.01 dB
Power flatness vs. wavelength: ± 0.1 to ± 0.2 dB
Side-mode suppression ratio: ≥ 40 dBc (1480–1580 nm)
Source spontaneous emission (SSE): ≥ 63 dB/nm (1520–1570 nm)

Key Features

- Mode-hop-free tuning across full operational range
- Dual output ports with independent power control
- Ultra-low SSE output for precision crosstalk analysis
- Fine wavelength resolution supporting narrow-band measurements
- Integrated optical attenuator on high-power output

Modulation Capabilities

TTL modulation input: 45% duty cycle, < 300 ns fall time, 200 Hz to 1 MHz
5 Vp-p modulation input: $< 15\%$ modulation depth, 5 kHz to 20 MHz

Typical Applications

- DWDM system characterization and validation
- Optical component and subsystem testing
- Crosstalk and signal integrity measurements
- Wavelength-dependent loss and gain analysis

Features & description

From manufacturer datasheet

Built-in wavelength control loop

Panda PMF Options 071/072 Fits the 8164B bottom TLS slot Specified swept performance up to 80 nm/s (family) Technical Specifications Model: 81680B Instrument Type: Tunable laser source module Series Family: Agilent 8164xB/8168xB TLS Wavelength Range: 1460 nm to 1580 nm Wavelength Resolution Family: 0.1 pm, 12.5 MHz at 1550 nm Maximum Tuning Speed Family: 80 nm/s Mode Hop Free Sweep Span: 1520 nm to 1570 nm at flat output power $\geq$ minus 6 dBm (Output 1) or $\geq$ +3 dBm (Output 2) Output Ports: dual, Output 1 low SSE and Output 2 high power Laser Type: EC-Laser InGaAsP Maximum Cw Output Power Safety Table: less than 15 mW Beam Waist Diameter: 9 μ m Numerical Aperture: 0.1 Laser Class: IEC 60825-1 Class 1M Max Permissible Cw Output Power Safety: 163 mW Output Isolation Typical Family: 50 dB typical Return Loss Typical Option 072: 60 dB typical

Polarization Extinction Ratio Typical: 16 dB typical

Internal Digital Modulation Family: 50 percent duty cycle, 200 Hz to 300 kHz External Analog Modulation Family: $\geq \pm 15$ percent modulation depth, 5 kHz to 20 MHz Operating Temperature: +10 C to +35 C Storage Temperature: minus 40 C to +70 C Humidity: less than 80 percent RH at 10 C to 35 C, non-condensing Warm Up Time: less than 20 minutes; immediate operation after boot-up Recalibration Period Family: 2 years Host Mainframe: 8164B Lightwave Measurement System, bottom slot Connector Interfaces Required: two 81000xl-series interfaces Notes Wavelength, dual-output identity, and 1520 to 1570 nm sweep-span power conditions from Agilent Tunable Laser Sources Technical Specifications March 2002 (81680B rows). Safety-table CW power, beam waist, and NA from Keysight 8163/4/6 users guide discontinued-TLS laser-safety table. Do not copy the 81640B C+L power table onto 81680B.

81680B Characteristics / Specifications

PARAMETER	VALUE
Model	81680B
Instrument Type	Tunable laser source module
Series Family	Agilent 8164xB/8168xB TLS
Wavelength Range	1460 nm to 1580 nm
Wavelength Resolution Family	0.1 pm, 12.5 MHz at 1550 nm
Maximum Tuning Speed Family	80 nm/s
Mode Hop Free Sweep Span	1520 nm to 1570 nm at flat output power $\geq$ minus 6 dBm (Output 1) or $\geq$ +3 dBm (Output 2)
Output Ports	dual, Output 1 low SSE and Output 2 high power
Laser Type	EC-Laser InGaAsP
Maximum Cw Output Power Safety Table	less than 15 mW
Beam Waist Diameter	9 μ m
Numerical Aperture	0.1
Laser Class	IEC 60825-1 Class 1M
Max Permissible Cw Output Power Safety	163 mW
Output Isolation Typical Family	50 dB typical
Return Loss Typical Option 0	60 dB typical
Polarization Extinction Ratio Typical	16 dB typical
Internal Digital Modulation Family	50 percent duty cycle, 200 Hz to 300 kHz
External Analog Modulation Family	$\geq \pm 15$ percent modulation depth, 5 kHz to 20 MHz
Operating Temperature	+10 C to +35 C
Storage Temperature	minus 40 C to +70 C
Humidity	less than 80 percent RH at 10 C to 35 C, non-condensing
Warm Up Time	less than 20 minutes; immediate operation after boot-up
Recalibration Period Family	2 years

PARAMETER	VALUE
Host Mainframe	8164B Lightwave Measurement System, bottom slot
Connector Interfaces Required	two 81000xl-series interfaces
Wavelength resolution	Family: 0.1 pm, 12.5 MHz at 1550 nm
Output isolation	Typical Family: 50 dB typical
Return loss	Typical Option 072: 60 dB typical
Polarization extinction ratio	Typical: 16 dB typical

81680B Specifications

PARAMETER	VALUE
Agilent 81680B Tunable Laser Source Module	Overview
Key Features	Two optical outputs: ultra-low SSE and high power
Panda PMF Options 071/072	Fits the 8164B bottom TLS slot
Technical Specifications	Model: 81680B

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 percent RH at 10 C to 35 C, non-condensing
Warm Up Time	less than 20 minutes; immediate operation after boot-up
Recalibration Period Family	2 years
Host Mainframe	8164B Lightwave Measurement System, bottom slot
Connector Interfaces Required	two 81000xl-series interfaces Notes Wavelength, dual-output identity, and 1520 to 1570 nm sweep-span power conditions from Agilent Tunable Laser Sources Technical Specifications March 2002 (81680B rows). Safety-table CW power, beam waist, and NA from Keysight 8163/4/6 users guide discontinued-TLS laser-safety table. Do not copy the 81640B C+L power table onto 81680B.
Internal digital modulation	Family: 50 percent duty cycle, 200 Hz to 300 kHz
External analog modulation	Family: $\geq \pm 15$ percent modulation depth, 5 kHz to 20 MHz
Internal Digital Modulation Family	50 percent duty cycle, 200 Hz to 300 kHz
External Analog Modulation Family	$\geq \pm 15$ percent modulation depth, 5 kHz to 20 MHz
Operating Temperature	+10 C to +35 C
Storage Temperature	minus 40 C to +70 C
Humidity	less than 80 percent RH at 10 C to 35 C, non-condensing
Warm Up Time	less than 20 minutes; immediate operation after boot-up
Recalibration Period Family	2 years
Host Mainframe	8164B Lightwave Measurement System, bottom slot
Connector Interfaces Required	two 81000xl-series interfaces Notes Wavelength, dual-output identity, and 1520 to 1570 nm sweep-span power conditions from Agilent Tunable Laser Sources Technical Specifications March 2002 (81680B rows). Safety-table CW power, beam waist, and NA from Keysight 8163/4/6 users guide discontinued-TLS laser-safety table. Do not copy the 81640B C+L power table onto 81680B.

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.

performance up to 80 nm/s (family)	
Technical Specifications	
Technical Specifications	
PARAMETER	VALUE
Model	81680B
Instrument Type	Tunable laser source module
Series Family	Agilent 8164xB/8168xB TLS
Wavelength Range	1460 nm to 1580 nm
Wavelength Resolution Family	0.1 pm, 12.5 MHz at 1550 nm
Maximum Tuning Speed Family	80 nm/s
Mode Hop Free Sweep Span	1520 nm to 1570 nm at flat output power ≥ minus 6 dBm (Output 1) or ≥ +3 dBm (Output 2)
Output Ports	dual, Output 1 low SSE and Output 2 high power
Laser Type	EC-Laser InGaAsP
Maximum Cw Output Power Safety Table	less than 15 mW
Beam Waist Diameter	9 um
Numerical Aperture	0.1
Laser Class	IEC 60825-1 Class 1M
Max Permissible Cw Output Power Safety	163 mW
Output Isolation Typical Family	50 dB typical
Return Loss Typical Option 072	60 dB typical
Polarization Extinction Ratio Typical	16 dB typical
Internal Digital Modulation Family	50 percent duty cycle, 200 Hz to 300 kHz
External Analog Modulation Family	≥ ±15 percent modulation depth, 5 kHz to 20 MHz
Operating Temperature	+10 C to +35 C
Storage Temperature	minus 40 C to +70 C
Humidity	less than 80 percent RH at 10 C to 35 C, non-condensing
Warm Up Time	less than 20 minutes; immediate operation after boot-up
Recalibration Period Family	2 years
Host Mainframe	8164B Lightwave Measurement System, bottom slot

PARAMETER	VALUE
Connector Interfaces Required	two 81000xI-series interfaces

Notes

Wavelength, dual-output identity, and 1520 to 1570 nm sweep-span power conditions from Agilent Tunable Laser Sources Technical Specifications March 2002 (81680B rows). Safety-table CW power, beam waist, and NA from Keysight 8163/4/6 users guide discontinued-TLS laser-safety table. Do not copy the 81640B C+L power table onto 81680B.

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