

KEYSIGHT TECHNOLOGIES (AGILENT HP)

81600B

The Keysight (Agilent) 81600B is a high-performance Tunable Laser Source (TLS) module designed for the 8164A and 8164B Lightwave Measurement System mainframes. Renowned for its rapid sweep speed, exceptional wavelength accuracy, and excellent spectral purity, it is the industry standard for testing dense wavelength division multiplexing (DWDM) components, optical amplifiers, and silicon photonics devices.

SPECIFICATIONS

General

Interfaces	GPIB, LAN, USB (provided via 8164A/B mainframe)
Display	None (uses 8164A/B mainframe display)

Physical

Power Supply	Powered directly by the 8164A/B mainframe slot
Operating Temperature	10 °C to 40 °C °C
Dimensions (W×H×D)	75 mm × 150 mm × 340 mm mm
Weight	2.5 kg kg

Optical Output Characteristics

Wavelength Range (Option 200)	1440 nm to 1640 nm
Wavelength Range (Option 160)	1450 nm to 1650 nm
Wavelength Range (Option 150)	1490 nm to 1640 nm
Wavelength Range (Option 130)	1260 nm to 1375 nm
Peak Output Power (Option 200)	>= +3 dBm
Peak Output Power (Option 160)	>= +5 dBm
Peak Output Power (Option 150)	>= +5 dBm
Peak Output Power (Option 201)	>= +7 dBm
Optical Power Repeatability	+/- 0.01 dB (typical)
Optical Power Stability (Short-Term)	+/- 0.01 dB (over 1 hour at constant temperature)
Optical Power Flatness vs. Wavelength	+/- 0.1 dB (typically)
Polarization Extinction Ratio (PER)	>= 18 dB (typically 20 dB)
Fiber Type	Panda Polarization Maintaining Fiber (PMF)

Wavelength Control & Tuning

Absolute Wavelength Accuracy	+/- 10 pm (typical +/- 3.6 pm)
Wavelength Repeatability	+/- 1 pm (typical +/- 0.5 pm)
Relative Wavelength Accuracy	+/- 2 pm (typical +/- 1 pm)
Wavelength Resolution	0.1 pm (12.5 MHz at 1550 nm)
Max Continuous Sweep Speed	up to 80 nm/s
Mode-Hop-Free Tuning Range	Full wavelength range

Spectral Purity & Stability

Side-Mode Suppression Ratio (SMSR)	>= 45 dB (typically > 50 dB)
Signal-to-Source Spontaneous Emission Ratio (Option 200)	>= 70 dB/nm (at peak, typically >= 80 dB/nm)
Signal-to-Source Spontaneous Emission Ratio (Option 160)	>= 70 dB/nm
Effective Linewidth (FWHM)	< 100 kHz (typically 50 kHz, coherence control off)
Coherence Control (Linewidth Broadening)	> 50 MHz (typically, with coherence control enabled)
Wavelength Stability (Short-Term)	+/- 1 pm (over 24 hours)

Power, Physical & Environmental

Warm-up Time	1 hour
Specified Accuracy Operating Temperature	15 °C to 35 °C
Storage Temperature Range	-40 °C to +70 °C
Relative Humidity Range	< 80% R.H. (non-condensing)

Compliance & Safety

Laser Safety Class	Class 1M (IEC 60825-1)
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Wavelength Specifications

Wavelength Range (Option 140)	1370 nm to 1495 nm
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Optical Outputs

Number of Optical Outputs (Option 130 / 140 / 150 / 160)	1 (Low SSE)
Number of Optical Outputs (Option 200 / 201)	2 (Output 1: High Power, Output 2: Low SSE)
Return Loss (with angled connector)	> 60 dB (typical)

Power Specifications

Power Linearity	±0.05 dB
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Modulation

Internal Modulation	200 Hz to 200 kHz (square wave, 50% duty cycle)
External Analog Modulation	External Digital Modulation = 300 Hz to 1 MHz

Wavelength Specs

Wavelength Range (Option 201)	1455 nm to 1640 nm
Wavelength Tuning Time (Typical)	250 ms (1 nm step), 400 ms (10 nm step), 800 ms (100 nm step)

Power Specs

Peak Output Power (Option 130)	≥ +5 dBm
Peak Output Power (Option 140)	≥ +5 dBm
Absolute Power Accuracy	±0.15 dB
Power Stability (Long-Term)	±0.03 dB (24 h)

Spectral Purity Specs

Signal-to-Source Spontaneous Emission Ratio (Option 130)	≥ 70 dB/nm (typ. ≥ 75 dB/nm)
Signal-to-Source Spontaneous Emission Ratio (Option 140)	≥ 70 dB/nm (typ. ≥ 75 dB/nm)
Signal-to-Source Spontaneous Emission Ratio (Option 150)	≥ 70 dB/nm (typ. ≥ 75 dB/nm)
Signal-to-Source Spontaneous Emission Ratio (Option 201)	≥ 80 dB/nm (Low SSE port), ≥ 55 dB/nm (High Power port)
Relative Intensity Noise (RIN)	< -145 dB/Hz (typical, at 10 MHz to 1 GHz, at peak power)

TECHNOLOGY

Tunable External Cavity Diode Laser (ECDL)

APPLICATIONS

DWDM component testing, optical amplifier characterization, and silicon photonics testing

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.