

KEYSIGHT TECHNOLOGIES (AGILENT HP)

81630B

The Keysight Technologies (Agilent) 81630B is a high-power optical power sensor module designed for use with the 8163A/B, 8164A/B, and 8166A/B Lightwave mainframe systems. Featuring an InGaAs detector, it is engineered for high-power optical measurements, boasting a range from -70 dBm up to +28 dBm with superior linearity and accuracy, making it ideal for testing high-power amplifiers, transmitters, and passive components.

SPECIFICATIONS

General

Interfaces	None on module (uses host mainframe interfaces: GPIB, LAN, USB, RS-232)
Display	None (uses host mainframe display)

Physical

Power Supply	Powered directly by host mainframe slot
Operating Temperature	0 °C to +40 °C °C
Dimensions (W×H×D)	75 mm × 32 mm × 282 mm mm
Weight	0.5 kg kg

Optical Performance

Wavelength Range	970 nm to 1650 nm
Sensor Element (Detector Type)	InGaAs (High Power)
Power Measurement Range	-70 dBm to +28 dBm
Maximum Safe Input Power	+30 dBm
Uncertainty at Reference Conditions	±3.0 % (at 1310 nm and 1550 nm)
Total Relative Uncertainty	±0.15 dB (970 nm to 1600 nm, -50 dBm to +23 dBm)
Linearity (at 23 °C ± 5 °C, -50 to +23 dBm)	< ±0.05 dB
Linearity (at 23 °C ± 5 °C, +23 to +28 dBm)	< ±0.15 dB
Linearity (at 23 °C ± 5 °C, -70 to -50 dBm)	< ±0.15 dB
Linearity over Operating Temperature (-50 to +23 dBm)	< ±0.10 dB
Linearity over Operating Temperature (+23 to +28 dBm)	< ±0.20 dB
Linearity over Operating Temperature (-70 to -50 dBm)	< ±0.20 dB
Noise Floor (1200 nm to 1600 nm, 1 s peak-to-peak)	< 50 pW
Noise Floor (970 nm to 1650 nm, 1 s peak-to-peak)	< 250 pW
Number of Power Channels	1
Polarization Dependence	< ±0.01 dB (1200 nm to 1600 nm)
Integrating Sphere Aperture Diameter	5 mm

Timing and Data Acquisition

Minimum Averaging Time	100 µs
Maximum Averaging Time	10 s
Data Logging Capacity	Up to 100,000 points (mainframe dependent)

Optical Interface and Compatibility

Fiber Type Compatibility	Single-mode (SM) and Multi-mode (MM) up to 100 µm core diameter
Maximum Numerical Aperture (NA)	0.3
Optical Connector Adapter System	81000xl series interchangeable adapters
Compatible Connector Adapters	FC (81000FI), SC (81000KI), ST (81000VI), DIN (81000SI), MU (81000LI), LC (81000MI), E2000 (81000HI)

Mainframe and System Integration

Compatible Mainframes	8163A/B, 8164A/B, 8166A/B
Number of Instrument Slots Required	1
Hot-Swappability Support	No
Remote Control Command Set	SCPI compliant (via mainframe)
Trigger Inputs/Outputs	Available via host mainframe backplane

Environmental and Reliability

Storage Temperature Range	-40 °C to +70 °C
Operating Humidity Range	15% to 95% R.H. (non-condensing)
Warm-up Time	40 minutes
Recommended Calibration Interval	2 years

Compliance and Standards

Calibration Traceability	Traceable to NIST and PTB
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Analog Output

Analog Output Voltage Range	0 to 2 V into open circuit
Analog Output Bandwidth	DC to 10 kHz (ranges 1 to 4), DC to 10 Hz (ranges 5 to 6)
Analog Output Connector	BNC female
Analog Output Impedance	600 Ω (nominal)

Calibration

Reference Power Level	100 μW (-10 dBm)
Reference Wavelengths	1310 nm

Wavelength

Wavelength Setting Resolution	0.01 nm
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Performance

Maximum Sampling Rate	10 kHz
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Compliance

EMC Compliance	IEC 61326-1 / EN 61326-1
Safety Compliance	IEC 61010-1 / EN 61010-1

TECHNOLOGY

InGaAs Optical Power Sensor

APPLICATIONS

High-power optical power measurement and fiber optic 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.