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Data Sheet

July 31, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 81635A Optical Channel Analyzer

Agilent/Keysight 81635A Dual Optical Power Sensor Module The Agilent/Keysight 81635A is a dual-channel InGaAs optical power sensor module for the Keysight (formerly Agilent/HP) Lightwave Measurement platform. Keysight documentation positions it as the dual-channel, cost-effective power sensor option in the 8163x family, providing two independent optical power channels in one mainframe slot for simultaneous multiport measurements. The 81635A is intended for absolute and relative optical power measurements on single-mode and multimode fiber systems across the 800 nm to 1650 nm band. Typical uses include component and subsystem characterization, dual-port comparison, insertion-loss and relative-power measurements, synchronized logging with tunable lasers, and general lightwave multimeter / multichannel system testing in R&D, manufacturing, and calibration environments. The Agilent/Keysight 81635A is a dual-channel InGaAs optical power sensor module for the Keysight (formerly Agilent/HP) Lightwave Measurement platform. Keysight documentation positions it as the dual-channel, cost-effective power sensor option in the 8163x family, providing two independent optical power channels in one mainframe slot for simultaneous multiport measurements. The 81635A is intended for absolute and relative optical power measurements on single-mode and multimode fiber systems across the 800 nm to 1650 nm



MODEL

**Agilent / Keysight
81635A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

81635A

LISTING

<https://aumictechlabs.com/products/81635a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight 81635A is a dual-channel optical power sensor module for precision optical power measurements across communication and test environments. It houses two InGaAs detector channels in a single-slot 816x Lightwave mainframe module, supporting parallel multichannel measurements without external rack space penalties. The 81635A delivers absolute power measurements from +10 dBm to -80 dBm with $\pm 3\%$ uncertainty across the 800 nm to 1650 nm wavelength band, making it suitable for broadband and wavelength-division multiplexed system characterization.

Technical Specifications

- Dual InGaAs detectors, 2 independent channels
- Wavelength range: 800 nm to 1650 nm
- Power measurement range: +10 dBm to -80 dBm
- Power uncertainty: $\pm 3\%$
- Polarization dependence: $< \pm 0.015$ dB
- Fiber compatibility: Standard single-mode and multi-mode fibers up to 62.5 μm core; NA $\leq 0.24/0.3$ depending on model variant
- Data logging capacity: 20,000 samples maximum
- Averaging time: Minimum 100 μs
- Analog output: 0 to 2 V proportional to optical signal strength (2 V at full input power)
- Front-panel BNC connector for analog output

Key Features

- Dual-channel simultaneous measurements in a compact single-slot form factor
- Hardware trigger lines and event triggering for synchronized data acquisition
- Triggered synchronization with tunable laser modules for spectral measurement capability
- Autorange support with option to disable for fixed-reference analog output consistency
- Real-time data logging with minimum/maximum value recording and stability monitoring
- Configurable sampling and hardware timer integration for external control schemes

Typical Applications

- Optical power trending and stability analysis, spectral characterization via swept tunable laser sources, dual-channel comparative measurements, and long-term monitoring with automated event logging and triggering.

Compatibility & Integration

- All Keysight 816x series Lightwave mainframes.
- Requires Agilent 81618A (single module) or 81619A (dual module) Interface Modules.
- Accepts standard single-mode and multi-mode fibers through Agilent/Keysight flexible connector adapters or bare-fiber adapters.

Features & description

From manufacturer datasheet

Features

- Dual InGaAs sensor channels in one plug-in module
- Wavelength range 800 nm to 1650 nm
- Power range -80 dBm to +10 dBm
- Compatible with standard SM and MM fiber up to 62.5 μ m core, NA less than or equal to 0.24
- Averaging times from 100 μ s minimum up to 10 s
- High-speed data logging of up to about 20,000 samples per sensor (mainframe-supported)
- Min-max tracking for power variation monitoring
- Power readout in W, dBm, or dB relative to reference
- Front-panel optical inputs with interchangeable 81000xl connector adapters
- Operates in Keysight/Agilent 8163B, 8164B, 8166B and earlier 816xA lightwave mainframes
- Remote control via SCPI and 816x VXI Plug&Play / Command Expert support

Specifications

PARAMETER	VALUE
Model	81635A
Instrument Type	Dual Optical Power Sensor Module (plug-in)
Sensor Element	InGaAs (dual)
Wavelength Range	800 nm to 1650 nm
Power Range	-80 dBm to +10 dBm
Applicable Fiber Type	Standard single-mode and multimode up to 62.5 um core size, NA less than or equal to 0.24
Maximum Safe Input Power	+16 dBm
Analog Output	None
Averaging Time (minimal)	100 us
Recommended Recalibration Period	2 years

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	+10 C to +40 C
Operating Temperature	+10 C to +40 C
Humidity	Non-condensing
Uncertainty (accuracy) at Reference Conditions	+/-3% (1200 nm to 1630 nm); typically less than +/-3.5% (800 nm to 1200 nm)
Total Uncertainty (operating conditions)	+/-5% +/-20 pW (1200 nm to 1630 nm); typically +/-5.5% +/-200 pW (800 nm to 1200 nm)
Relative Uncertainty due to Polarization (typical)	Less than +/-0.015 dB
Relative Uncertainty due to Spectral Ripple / Interference	Less than +/-0.005 dB
Return Loss	Greater than 40 dB
Noise (peak to peak)	Less than 20 pW (1200 nm to 1630 nm); typically less than 200 pW (800 nm to 1200 nm) Reference Conditions (Accuracy) Power level 10 uW (-20 dBm), continuous wave Fiber 50 um graded-index, NA = 0.2 Ambient temperature 23 C +/-5 C
Dimensions (HxWxD)	75 mm x 32 mm x 335 mm (2.8 in x 1.3 in x 13.2 in)
Weight	0.5 kg Platform Compatibility Requires installation incompatible Lightwave Measurement mainframe such as Keysight/Agilent 8163B Lightwave Multimeter, 8164B Lightwave Measurement System, 8166B Lightwave Multichannel System, or earlier 8163A/8164A/8166A platforms. Connector interfaces are selected via front-panel 81000-series adapters for popular fiber connector types or bare fiber.

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

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Power Range	-80 dBm to +10 dBm
Applicable Fiber Type	Standard single-mode and multimode up to 62.5 um core size, NA less than or equal to 0.24
Maximum Safe Input Power	+16 dBm
Analog Output	None
Averaging Time (minimal)	100 us
Recommended Recalibration Period	2 years

Warm-up Time: 20 min
Operating Temperature: +10 C to +40 C
Humidity: Non-condensing
Accuracy And Uncertainty

Specifications

PARAMETER	VALUE
Uncertainty (accuracy) at Reference Conditions	+/-3% (1200 nm to 1630 nm); typically less than +/-3.5% (800 nm to 1200 nm)
Total Uncertainty (operating conditions)	+/-5% +/-20 pW (1200 nm to 1630 nm); typically +/-5.5% +/-200 pW (800 nm to 1200 nm)
Relative Uncertainty due to Polarization (typical)	Less than +/-0.015 dB

Relative Uncertainty due to Spectral Ripple / Interference: Less than +/-0.005 dB
Linearity (CW, -60 dBm to +10 dBm, 1200 nm to 1630 nm): Less than +/-0.02 dB at 23 C +/-5 C; less than +/-0.06 dB over operating temperature range
Linearity (800 nm to 1200 nm, typical): Less than +/-0.02 dB at 23 C +/-5 C; less than +/-0.06 dB over operating temperature range

Specifications

PARAMETER	VALUE
Return Loss	Greater than 40 dB
Noise (peak to peak)	Less than 20 pW (1200 nm to 1630 nm); typically less than 200 pW (800 nm to 1200 nm)
Reference Conditions (Accuracy)	Power level 10 uW (-20 dBm), continuous wave

Fiber 50 um graded-index, NA = 0.2

Ambient temperature 23 C +/-5 C

On day of calibration (add +/-0.3% aging over one year; +/-0.6% over two years)

Source spectral width less than 10 nm FWHM

Wavelength setting at power sensor within +/-0.4 nm of source wavelength

Operating Notes For Uncertainty

Fiber less than or equal to 50 um, NA less than or equal to 0.2 for stated total uncertainty

For 62.5 um graded-index fiber (NA = 0.24): add +/-2%

Averaging time 1 s for specified operating uncertainty

For wavelengths greater than 1600 nm: add +/-0.06%/nm

For input power greater than 2 mW: add +/-0.02 dB

For LC connectors use 81000LI (not 81002LI); for MU connectors use 81000MI (not 81002MI)

Measurement Functions

Absolute optical power in watts or dBm

Relative power in dB referenced to stored reference

Autorangeing after warm-up and zeroing (specifications apply in autorange unless otherwise stated)

High-speed logging synchronized internally or externally, including coordinated measurements with tunable lasers

Min-max function over continuous observation or chosen sample count

Mechanical

Dimensions (HxWxD): 75 mm x 32 mm x 335 mm (2.8 in x 1.3 in x 13.2 in)

Weight: 0.5 kg

Platform Compatibility

Requires installation in incompatible Lightwave Measurement mainframe such as Keysight/Agilent 8163B Lightwave Multimeter, 8164B Lightwave Measurement System, 8166B Lightwave Multichannel System, or earlier 8163A/8164A/8166A platforms. Connector interfaces are selected via front-panel 81000-series adapters for popular fiber connector types or bare fiber.

Operational Notes

Specifications are generally valid after warm-up, after zeroing, in auto-range mode, and under the stated operating conditions. Guaranteed specifications use a coverage factor of 2 (greater than 95% confidence) unless otherwise noted; typical values describe usual but non-guaranteed performance. The dual-channel layout supports simultaneous monitoring of two optical paths without occupying a second mainframe slot.

Notes

This manual OEM source was compiled from official Keysight/Agilent Power Sensor Modules, Optical Heads, and Return Loss Modules datasheet specifications for the 81635A dual InGaAs power sensor module. The 81635A is a dual optical power sensor (two optical channels), not a spectral optical channel analyzer (OCA/OSA).

Unit photos



Available from Aumictech

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

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Aumictech

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Generated July 31, 2026

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