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Data Sheet

August 13, 2026

HP / AGILENT

HP / Agilent 81524A InGaAs OPTICAL HEAD, 5MM DIAMETER

HP / Agilent 81524A InGaAs Optical Head 800 to 1650 nm The HP/Agilent 81524A is a 5 mm InGaAs remote optical head for lightwave multimeters, covering 800 to 1650 nm with power range +3 to -90 dBm. It operates through an 81533B (or 81533A) interface module in 8153A and later 8163/8166 mainframes. Reference uncertainty is plus/minus 2.2 percent from 1000 to 1600 nm. Connectorized and open-beam optical power metrology; component insertion-loss setups; InGaAs sensitivity where Ge heads are noisy at low power. The HP/Agilent 81524A is a 5 mm InGaAs remote optical head for lightwave multimeters, covering 800 to 1650 nm with power range +3 to -90 dBm. It operates through an 81533B (or 81533A) interface module in 8153A and later 8163/8166 mainframes. Reference uncertainty is plus/minus 2.2 percent from 1000 to 1600 nm. Connectorized and open-beam optical power metrology; component insertion-loss setups; InGaAs sensitivity where Ge heads are noisy at low power.



MODEL

**HP / Agilent
81524A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

81524A

LISTING

<https://aumictechlabs.com/products/81524a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The HP/Agilent 81524A is an InGaAs optical head delivering precision near-infrared power measurements from 800 nm to 1650 nm. This 5 mm diameter sensor integrates with Agilent/HP lightwave multimeter mainframes via the 81533B interface module, providing measurement

uncertainty of $\pm 2.2\%$ across the 1000 nm to 1600 nm band. The head resolves to 0.001 dBm with exceptional noise performance - sub-50 pW peak-to-peak and under 5 pW averaged over 1 second in the core wavelength region. Technical Specifications Wavelength Range: 800 nm to 1650 nm Power Measurement Range: +3 dBm to -90 dBm Measurement Accuracy: $\pm 2.2\%$ (1000 nm to 1600 nm); $\pm 4\%$ ± 5 pW under specific conditions Linearity: 0 dBm to -60 dBm; +3 dBm to -70 dBm Display Resolution: 0.001 dBm Noise Performance: <50 pW peak-to-peak; <5 pW (1 second average) at 1000 nm to 1600 nm Sensor Type & Diameter: InGaAs, 5 mm Operating Temperature: 0°C to +40°C Warm-up Time: 20 minutes Applicable Fiber: Parallel beam; 9/125 μm to 100/140 μm with $\text{NA} \leq 0.3$ Key Features Low polarization-dependent loss optimized for optical component characterization High return loss performance Minimal spectral ripple Magnetic D-shape adapter for stable mounting Supplied with calibration certificate and data Typical Applications Optical communication system testing Optical component characterization and verification Near-infrared fiber optic measurements Compatibility & Integration Host Mainframes: Agilent/HP 8153A, 8163, and 8166 series Required Interface: HP 81533B Optical Head Interface Module

Features & description

From manufacturer datasheet

Features

- 5 mm InGaAs sensor element
- +3 to -90 dBm power range
- Low peak-to-peak noise less than 5 pW class
- Requires 81533B optical head interface
- Magnetic D-shape adapter family accessories

81524A Characteristics / Specifications

PARAMETER	VALUE
Model	81524A
Manufacturer	Hewlett Packard / Agilent / Keysight
Instrument Type	Optical power head
Alias	HP 81524A; Agilent 81524A; Keysight 81524A
Sensor Element	InGaAs 5 mm diameter
Wavelength Range	800 nm to 1650 nm
Power Range	+3 dBm to -90 dBm
Uncertainty At Reference Conditions	plus/minus 2.2 percent (1000 to 1600 nm)
Total Uncertainty	plus/minus 4 percent plus/minus 5 pW (1000 to 1600 nm)
Linearity 18 To 28 C Constant Temp	plus/minus 0.04 dB plus/minus 5 pW (+3 to -70 dBm)
Linearity Operating Temp Range	plus/minus 0.15 dB plus/minus 5 pW
Noise Peak To Peak Avg 1 s	less than 5 pW (1000 to 1600 nm)
Operating Temperature	0 C to +35 C
Display Resolution With Mainframe	0.001 dB/dBm (0.0001 dB/dBm on printout)
Applicable Fiber	SM and MM to 100 um core NA 0.3; parallel beam class
Head Dimensions Class	37.5 mm diameter x 140 mm length family
Net Weight Class	0.45 kg
Shipping Weight Class	1 kg
Recommended Recalibration Period	2 years
Warmup Time	20 minutes
Interface Module	81533B (also 81533A on older 8153A)
Mainframe Compatibility	8153A; 8163; 8166 family
Related High Power Sibling	81525A +27 to -70 dBm class
Related Ge Head	81521B
Analog Output Bandwidth Family	dc to 300-1000 Hz depending on range

PARAMETER	VALUE
Analog Output Voltage Family	0 to 2 V into open
Analog Output Impedance Typical	600 ohm
Bandwidth	Family: dc to 300-1000 Hz depending on range

General Specifications & Supplementary Characteristics

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Operating temperature	0 C to +35 C
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Related Ge Head	81521B
Analog Output Bandwidth Family	dc to 300-1000 Hz depending on range
Analog Output Voltage Family	0 to 2 V into open
Analog Output Impedance Typical	600 ohm Notes Numeric rows from Agilent Lightwave Multimeter optical-head specification table for 81533B + 81524A. Confirm interface module revision and connector adapter set before metrology use.

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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Notes
Numeric rows from Agilent Lightwave Multimeter optical-head specification table for 81533B + 81524A. Confirm interface module revision and connector adapter set before metrology use.

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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NIST-traceable calibration · SAM registered ·
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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.