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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 81531A – Optical Head

Agilent HP 81531A InGaAs Power Sensor Module The Agilent 81531A InGaAs Power Sensor Module is a plug-in optical power sensor for the HP 8153A Lightwave Multimeter. OEM HP 8153A Technical Specifications (5962-9321E) list InGaAs sensing, 800 to 1700 nm, plus 3 to minus 90 dBm, and the reference/total uncertainty and noise rows below. Average optical power and loss measurements on 8153A dual-channel lightwave systems. 9/125 to 100/140 μm fiber NA less than or equal to 0.3 The Agilent 81531A InGaAs Power Sensor Module is a plug-in optical power sensor for the HP 8153A Lightwave Multimeter. OEM HP 8153A Technical Specifications (5962-9321E) list InGaAs sensing, 800 to 1700 nm, plus 3 to minus 90 dBm, and the reference/total uncertainty and noise rows below. Average optical power and loss measurements on 8153A dual-channel lightwave systems. 9/125 to 100/140 μm fiber NA less than or equal to 0.3 Display Resolution: 0.001 dB/dBm (0.0001 dB/dBm on printout)



MODEL

**Agilent / Keysight
81531A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

81531A

LISTING

<https://aumictechlabs.com/products/81531a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight 81531A is an InGaAs optical power sensor module designed for integration into Agilent/Keysight Lightwave Multimeter mainframes. It delivers high-accuracy optical power measurements across the near-infrared spectrum, serving telecommunications, fiber optics, and laboratory characterization applications. Technical Specifications Sensor Element: InGaAs Wavelength Range: 800 nm to 1700 nm Power Measurement Range: +3 dBm to -90 dBm

Measurement Accuracy: $\pm 2.5\%$ (1000 nm to 1650 nm) Measurement Resolution: 0.0001 dB/dBm
Linearity: Linear response from 0 dBm to -70 dBm Analog Output Bandwidth: DC to 5300 Hz
(range and module dependent) Analog Output Voltage: 0 to 2 V into open circuit Analog Output
Impedance: 600 Ω typical Maximum Input Voltage: +10 VKey Features Plug-in module architecture
for quick mainframe integration Wide spectral coverage from 800 nm to 1700 nm Dynamic range
spanning six decades of optical power High measurement resolution supports precision
component testing Factory calibrated with traceable calibration certificateTypical Applications
Optical power measurement in fiber-optic test systems, telecommunications component
characterization, laser power assessment, and optical system validation in research and
production environments.Compatibility & Integration The 81531A operates in the 8153A and 8163A
mainframes, as well as the 8164 mainframe. It is not compatible with the 8166 mainframe. Agilent
81000XI Series optical interface connectors are required separately - available options include
81000FI (FC/PC), 81000VI (ST), 81000KI (SC/PC), and 81000NI (FC/APC).

81531A Characteristics / Specifications

PARAMETER	VALUE
Sensor Element	InGaAs
Wavelength Range	800 to 1700 nm
Power Range	plus 3 to minus 90 dBm
Display Resolution	0.001 dB/dBm (0.0001 dB/dBm on printout)
Power Display Resolution Watts	0.01 pW to 10 pW depending on range
Application Fiber Type	9/125 um to 100/140 um NA less than or equal to 0.3
Reference Uncertainty	plus or minus 2.5 percent 1000 to 1650 nm
Total Uncertainty	plus or minus 5 percent plus or minus 1.5 pW 1000 to 1650 nm
Linearity 18 To 28 C Const Temp	plus or minus 0.015 dB plus or minus 1 pW 0 to minus 70 dBm
Linearity Operating Temp Const	plus or minus 0.05 dB plus or minus 1.5 pW
Noise Peak To Peak 1 s Avg	less than 1.5 pW 1200 to 1600 nm
Module Dimensions	75 mmHx 32 mmWx 335 mmDModule Mass Net: 0.6 kg
Module Mass Shipping	1 kg
Recalibration Period	2 years
Warm Up Time	20 minutes
Reference Power Level	10 uW (minus 20 dBm) CW
Reference Fiber	50 um graded index NA 0.2
Reference Temperature	23 C plus or minus 5 K
Reference Connector	Diamond HMS-10/HP
Aging Add One Year	0.3 percent
Aging Add Two Years	0.6 percent
Spectral Width Source For Spec	less than 10 nm
Mainframe	HP 8153A
Operating Temperature Via Mainframe	0 to plus 55 C
Na Greater Than 0.2 Add	1 percent uncertainty

PARAMETER	VALUE
Biconic Connector Add	plus or minus 1 percent
Operating temperature	Via Mainframe: 0 to plus 55 C
Fiber type	9/125 um to 100/140 um NA less than or equal to 0.3

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
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Biconic Connector Add	plus or minus 1 percent Notes From HP 8153A Lightwave Multimeter Technical Specifications power sensor module columns (5962-9321E). Specs apply at end of 2 m fiber with Diamond HMS-10 connectors unless noted.

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 (5962-9321E) list InGaAs sensing, 800 to 1700 nm, plus 3 to minus 90 dBm, and the reference/total uncertainty and noise rows below.

Applications
Average optical power and loss measurements on 8153A dual-channel lightwave systems.

Key Features
Plug-in 8153A sensor module
0.001 dB display resolution
9/125 to 100/140 um fiber NA less than or equal to 0.3
HP-IB programmable via mainframe
2 year recalibration period

Technical Specifications

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Notes

From HP 8153A Lightwave Multimeter Technical Specifications power sensor module columns (5962-9321E). Specs apply at end of 2 m fiber with Diamond HMS-10 connectors unless noted.

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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<https://aumictechlabs.com>

NIST-traceable calibration · SAM registered ·
30-day returns
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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.