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Data Sheet

August 13, 2026

HP / AGILENT

HP / Agilent 81637B Fast Power Meter

Agilent 81637B Fast InGaAs Optical Power Sensor Module The Agilent/Keysight 81637B is the high-performance fast power sensor in the 8163xB family: InGaAs, 1250 nm to 1640 nm, +10 dBm to -80 dBm, 25 us minimum averaging. Polarization and spectral-ripple uncertainty are less than plus/minus 0.005 dB (versus typical 0.015 dB on 81636B). Return loss is greater than 55 dB. Analog output is included. It occupies one slot in 8163B/8164B/8166B mainframes. Fast optical power logging and swept-wavelength measurements; low-PDL component test; production insertion-loss with 25 us averaging; analog-output monitoring. The Agilent/Keysight 81637B is the high-performance fast power sensor in the 8163xB family: InGaAs, 1250 nm to 1640 nm, +10 dBm to -80 dBm, 25 us minimum averaging. Polarization and spectral-ripple uncertainty are less than plus/minus 0.005 dB (versus typical 0.015 dB on 81636B). Return loss is greater than 55 dB. Analog output is included. It occupies one slot in 8163B/8164B/8166B mainframes. Fast optical power logging and swept-wavelength measurements; low-PDL component test; production insertion-loss with 25 us averaging; analog-output monitoring.

**MODEL****HP / Agilent
81637B****CALIBRATION****Available on
request****CONDITION****Used****STATUS****In stock****RFQ / SKU****81637B****LISTING**<https://aumictechlabs.com/products/81637b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The HP/Agilent 81637B Fast Power Meter delivers high-speed optical power measurement with exceptional dynamic range for demanding test and characterization applications. Data acquisition completes in 25 μ S, enabling real-time analysis across swept wavelength and WDM component

testing. The instrument captures up to 100,000 data points and maintains ± 0.005 dB PDL dependency - critical for polarization-sensitive device characterization without range switching penalties. Technical Specifications Data Acquisition Time: 25 μ S Dynamic Range: 90 dB total; greater than 55 dB within single range without switching Data Storage Capacity: 100,000 data points Polarization Dependent Loss (PDL): ± 0.005 dB Spectral Ripple: Present Key Features The fast 25 μ S sampling rate supports high-resolution swept-wavelength measurements and transient power monitoring. Single-range dynamic range exceeding 55 dB eliminates measurement artifacts from autoranging, while the 90 dB total range accommodates both high-power and low-power regimes. Exceptionally low PDL dependency ensures accurate results on devices where polarization effects compromise standard meters. Onboard storage of 100,000 points enables post-acquisition analysis without continuous PC data streaming. Typical Applications Swept lambda characterization of optical components PDL-critical device testing and validation WDM component performance over wavelength High-speed power monitoring in research and manufacturing environments Compatibility & Integration The 81637B integrates with Keysight 816xB family optical mainframes and modules. Optical interface connectors are sold separately. The meter operates on AC 100 to 240 V $\pm$ 10%, 50/60 Hz supply voltage. Note: Keysight 8163B Series modules are not compatible with the HP 8153A Lightwave Multimeter.

Features & description

From manufacturer datasheet

Features

- Fast sensor: 25 us minimum averaging versus 100 us on 81632B
- High-performance PDL/ripple less than plus/minus 0.005 dB
- Return loss greater than 55 dB versus greater than 40 dB on 81636B
- Manual-range dynamic range typically greater than 55 dB on +10 and 0 dBm ranges
- Analog output 0 to 2 V; 17 kHz 3 dB bandwidth on high ranges
- Fits 8163B/8164B/8166B

81637B Characteristics / Specifications

PARAMETER	VALUE
Model	81637B
Manufacturer	Agilent / Keysight
Instrument Type	Fast optical power sensor module (plug-in)
Sensor Element	InGaAs
Wavelength Range	1250 nm to 1640 nm
Power Range	+10 dBm to -80 dBm
Display Resolution	0.0001 dB/dBm; 0.01 pW to 10 pW depending on range
Applicable Fiber	standard SM and MM up to 100 um core, NA 0.3 or less
Uncertainty At Reference	plus/minus 3 percent (1260 nm to 1630 nm)
Total Uncertainty	plus/minus 5 percent plus 20 pW (1260 nm to 1630 nm)
Relative Uncertainty Polarization	less than plus/minus 0.005 dB
Spectral Ripple	less than plus/minus 0.005 dB
Linearity At 23 plus/minus 5 C	less than plus/minus 0.02 dB plus 20 pW (CW +10 to -60 dBm, 1260 to 1630 nm)
Linearity Over Operating Temp	less than plus/minus 0.06 dB plus 20 pW
Return Loss	greater than 55 dB
Noise Peak To Peak	less than 20 pW
Averaging Time Minimal	25 us
Analog Output	included
Dynamic Range Manual 0 dBm	typically greater than 55 dB
Dynamic Range Manual minus 10 dBm	typically greater than 52 dB
Dynamic Range Manual minus 20 dBm	typically greater than 45 dB
Analog Bandwidth High Ranges	17 kHz (3 dB at +10/0/-10/-20 dBm)
Dimensions	75 mm x 32 mm x 335 mm
Weight	0.5 kg
Recommended Recalibration	2 years

PARAMETER	VALUE
Operating Temperature	+10 C to +40 C
Humidity	non-condensing
Warm Up	20 min
Host Mainframes	8163B, 8164B, 8166B and 816xA
Related Economy Fast	81636B same power range with typical 0.015 dB PDL
Related High Power	81630B -70 to +28 dBm
Bandwidth	High Ranges: 17 kHz (3 dB at +10/0/-10/-20 dBm)

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	+10 C to +40 C
Operating Temperature	+10 C to +40 C
Humidity	non-condensing
Warm Up	20 min
Host Mainframes	8163B, 8164B, 8166B and 816xA
Related Economy Fast	81636B same power range with typical 0.015 dB PDL
Related High Power	81630B -70 to +28 dBm Notes Specs from Agilent 81632B/3B/4B/6B/7B Power Sensor Modules user's guide Table 4 (81637B column). Add plus/minus 0.06 percent per nm above 1600 nm and plus/minus 0.02 dB above 2 mW. Confirm 81637B versus 81636B (economy fast) on the module label.

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.

performance fast power sensor in the 8163xB family: InGaAs, 1250 nm to 1640 nm, +10 dBm to -80 dBm, 25 us minimum averaging. Polarization and spectral-ripple uncertainty are less than plus/minus 0.005 dB (versus typical 0.015 dB on 81636B). Return loss is greater than 55 dB. Analog output is included. It occupies one slot in 8163B/8164B/8166B mainframes.

Applications
Fast optical power logging and swept-wavelength measurements; low-PDL component test; production insertion-loss with 25 us averaging; analog-output monitoring.

- Key Features
- Fast sensor: 25 us minimum averaging versus 100 us on 81632B
 - High-performance PDL/ripple less than plus/minus 0.005 dB
 - Return loss greater than 55 dB versus greater than 40 dB on 81636B
 - Manual-range dynamic range typically greater than 55 dB on +10 and 0 dBm ranges
 - Analog output 0 to 2 V; 17 kHz 3 dB bandwidth on high ranges
 - Fits 8163B/8164B/8166B

Technical Specifications

Technical Specifications

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Model	81637B
Manufacturer	Agilent / Keysight
Instrument Type	Fast optical power sensor module (plug-in)
Sensor Element	InGaAs
Wavelength Range	1250 nm to 1640 nm
Power Range	+10 dBm to -80 dBm
Display Resolution	0.0001 dB/dBm; 0.01 pW to 10 pW depending on range
Applicable Fiber	standard SM and MM up to 100 um core, NA 0.3 or less
Uncertainty At Reference	plus/minus 3 percent (1260 nm to 1630 nm)
Total Uncertainty	plus/minus 5 percent plus 20 pW (1260 nm to 1630 nm)
Relative Uncertainty Polarization	less than plus/minus 0.005 dB
Spectral Ripple	less than plus/minus 0.005 dB
Linearity At 23 plus/minus 5 C	less than plus/minus 0.02 dB plus 20 pW (CW +10 to -60 dBm, 1260 to 1630 nm)
Linearity Over Operating Temp	less than plus/minus 0.06 dB plus 20 pW
Return Loss	greater than 55 dB
Noise Peak To Peak	less than 20 pW
Averaging Time Minimal	25 us
Analog Output	included

Dynamic Range Manual +10 dBm: typically greater than 55 dB

Specifications

PARAMETER	VALUE
Dynamic Range Manual 0 dBm	typically greater than 55 dB
Dynamic Range Manual minus 10 dBm	typically greater than 52 dB
Dynamic Range Manual minus 20 dBm	typically greater than 45 dB
Analog Bandwidth High Ranges	17 kHz (3 dB at +10/0/-10/-20 dBm)
Dimensions	75 mm x 32 mm x 335 mm
Weight	0.5 kg
Recommended Recalibration	2 years
Operating Temperature	+10 C to +40 C
Humidity	non-condensing
Warm Up	20 min
Host Mainframes	8163B, 8164B, 8166B and 816xA
Related Economy Fast	81636B same power range with typical 0.015 dB PDL
Related High Power	81630B -70 to +28 dBm

Notes

Specs from Agilent 81632B/3B/4B/6B/7B Power Sensor Modules user's guide Table 4 (81637B column). Add plus/minus 0.06 percent per nm above 1600 nm and plus/minus 0.02 dB above 2 mW. Confirm 81637B versus 81636B (economy fast) on the module label.

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.