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Data Sheet
August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 81628C,Optical Head (Dual Channel)

HP Agilent Keysight 81628C High Power Integrating Sphere Optical Head The Keysight 81628C is an InGaAs integrating-sphere optical head for the N7749C interface. OEM 8162-C data sheet lists 800 to 1700 nm (specified 970 to 1630 nm unless stated), minus 60 to +40 dBm, +40.5 dBm maximum safe input, plus or minus 3.0 percent uncertainty at reference conditions, andarequired heat sink above +34 dBm. Highest-power EDFA, Raman, and pump measurements to +40 dBm witharemote integrating sphere; open-beam power with analog output on the N7749C; high-power metrology with low speckle sensitivity for broadband sources. The Keysight 81628C is an InGaAs integrating-sphere optical head for the N7749C interface. OEM 8162-C data sheet lists 800 to 1700 nm (specified 970 to 1630 nm unless stated), minus 60 to +40 dBm, +40.5 dBm maximum safe input, plus or minus 3.0 percent uncertainty at reference conditions, andarequired heat sink above +34 dBm. Highest-power EDFA, Raman, and pump measurements to +40 dBm witharemote integrating sphere; open-beam power with analog output on the N7749C; high-power metrology with low speckle sensitivity for broadband sources.

MODEL	CALIBRATION
Agilent / Keysight 81628C	Available on request
CONDITION	STATUS
Used	In stock
RFQ / SKU	LISTING
81628C	https://aumictechlabs.com/products/81628c-2/

NIST-traceable cal · SAM registered · 30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 81628C is a dual-channel optical head engineered for high-power optical measurements across the near-infrared spectrum. Built around an InGaAs detector with integrating sphere technology, it delivers the highest accuracy in its product family at elevated optical power levels and interfaces directly with the Keysight N7749C optical head interface for integrated test automation.Technical Specifications Detector Type: InGaAs with integrating sphere Wavelength Range: 800 nm to 1700 nm Maximum Input Power: +40 dBm (with included heat sink) Input Signal Acceptance: Single-mode fiber (NA ≤ 0.2), multi-mode fiber (NA ≤ 0.4), parallel beams up to 3 mm diameter Aperture Diameter: 8 mm Measurement Averaging: 100 µs to 10 s Data Logging: Dual 1M sample buffers with internal or external triggering Operating Humidity: Maximum 80% relative humidity, non-condensing Operating Altitude: Up to 2000 mKey Features Dual 1M sample buffers enable continuous data acquisition with flexible trigger modes Analog output provides linear or logarithmic voltage signals proportional to optical power, ideal for closed-loop alignment systems High-power integrating sphere optimized for accurate measurements at elevated signal levels Flexible input accommodation across single-mode, multi-mode, and free-space configurationsTypical Applications High-power optical power characterization, automated fiber-optic alignment, optical transmission testing, and laboratory optical power measurement where broad spectral coverage and measurement accuracy at high power levels are required.Compatibility & Integration Designed for the Keysight N7749C optical head interface. Backward compatible with previous-generation optical heads including 81620B and 81628B. Supports a wide range of fiber connector adapters, bare fibers, and open-beam configurations.

Features & description

From manufacturer datasheet

Polarization Dependent Uncertainty Typical: typical less than plus or minus 0.006 dB

Speckle Noise 0p1 To 100 Pm Typical: typical less than plus or minus 0.02 dB, 0.1 pm to 100 pm source linewidth Speckle Noise Above 100 Pm Typical: typical less than plus or minus 0.002 dB, greater than 100 pm source linewidth Linearity Below Minus 20 Dbm: less than plus or minus 0.03 dB plus 10 log term with 2.5 nW, CW minus 40 dBm to +38 dBm at 23 C plus or minus 5 C Linearity Minus 20 To Plus 10 Dbm: less than plus or minus 0.03 dB Linearity 10 To 20 Dbm: less than plus or minus 0.06 dB Linearity 20 To 37 Dbm: less than plus or minus 0.09 dB Linearity 37 To 38 Dbm: less than plus or minus 0.10 dB Operating Temperature Linearity Add: add plus or minus 0.03 dB over the operating temperature range Linearity At Fixed Power Range Typical: typical less than plus or minus 0.01 dB, within 10 dB of range maximum Return Loss Nominal: nominal greater than 75 dB Noise Peak To Peak: less than 5 nW Analog Bandwidth At Plus 40 Dbm Typical: 3.5 kHz typical analog bandwidth at +40 dBm Analog Bandwidth At 0 Dbm Typical: 1.8 kHz typical analog bandwidth at 0 dBm Analog Bandwidth At Minus 20 Dbm Typical: 0.12 kHz typical analog bandwidth at minus 20 dBm Host Interface: N7749C two or four channel optical head interface

81628C Characteristics / Specifications

PARAMETER	VALUE
Model	81628C
Instrument Type	High power integrating sphere optical power head
Series Family	Keysight 8162-C optical heads
Sensor Element	InGaAs integrating sphere
Wavelength Range	800 nm to 1700 nm
Specification Wavelength Range	970 nm to 1630 nm unless stated differently
Power Range	minus 60 dBm to +40 dBm, 800 nm to 1700 nm
Maximum Safe Input Power	+40.5 dBm CW and peak
Heat Sink Threshold	heat sink must be used above +34 dBm
Minimum Averaging Time	100 us
Applicable Fiber	standard SM NA less than or equal to 0.2; MM NA less than or equal to 0.4
Open Beam	diameter less than or equal to 3 mm on the center of the sphere input
Uncertainty At Reference Conditions	plus or minus 3.0 percent
Total Uncertainty To Plus 10 Dbm	plus or minus 4.0 percent plus or minus 5 nW, less than or equal to +10 dBm
Total Uncertainty 10 To 20 Dbm	plus or minus 4.5 percent, typical plus or minus 3.5 percent at 23 C plus or minus 5 C and 50 percent plus or minus 10 percent humidity, greater than +10 dBm to less than or equal to +20 dBm
Total Uncertainty 20 To 38 Dbm	plus or minus 5.0 percent, greater than +20 dBm to less than or equal to +38 dBm
Polarization Dependent Uncertainty Typical	typical less than plus or minus 0.006 dB
Speckle Noise 0p1 To 100 Pm Typical	typical less than plus or minus 0.02 dB, 0.1 pm to 100 pm source linewidth
Speckle Noise Above 100 Pm Typical	typical less than plus or minus 0.002 dB, greater than 100 pm source linewidth
Linearity Below Minus 20 Dbm	less than plus or minus 0.03 dB plus 10 log term with 2.5 nW, CW minus 40 dBm to +38 dBm at 23 C plus or minus 5 C

PARAMETER	VALUE
Linearity Minus 20 To Plus 10 Dbm	less than plus or minus 0.03 dB
Linearity 10 To 20 Dbm	less than plus or minus 0.06 dB
Linearity 20 To 37 Dbm	less than plus or minus 0.09 dB
Linearity 37 To 38 Dbm	less than plus or minus 0.10 dB
Operating Temperature Linearity Add	add plus or minus 0.03 dB over the operating temperature range
Linearity At Fixed Power Range Typical	typical less than plus or minus 0.01 dB, within 10 dB of range maximum
Return Loss Nominal	nominal greater than 75 dB
Noise Peak To Peak	less than 5 nW
Analog Bandwidth At Plus 40 Dbm Typical	3.5 kHz typical analog bandwidth at +40 dBm
Analog Bandwidth At 0 Dbm Typical	1.8 kHz typical analog bandwidth at 0 dBm
Analog Bandwidth At Minus 20 Dbm Typical	0.12 kHz typical analog bandwidth at minus 20 dBm
Host Interface	N7749C two or four channel optical head interface
Operating Temperature	0 C to +40 C; max 35 C if optical power greater than or equal to +30 dBm
Warm Up Time Family	40 minutes
Recalibration Period Family	2 years
Storage Temperature Family	minus 40 C to +70 C
Operating Humidity Family	less than or equal to 80 percent, non-condensing
Bandwidth	At Plus 40 Dbm Typical: 3.5 kHz typical analog bandwidth at +40 dBm
Linewidth	Speckle Noise Above 100 Pm Typical: typical less than plus or minus 0.002 dB, greater than 100 pm source linewidth
Storage temperature	Family: minus 40 C to +70 C
Humidity	Family: less than or equal to 80 percent, non-condensing
Return loss	Nominal: nominal greater than 75 dB

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	Family: minus 40 C to +70 C
Operating temperature	Linearity Add: add plus or minus 0.03 dB over the operating temperature range
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Humidity	Family: less than or equal to 80 percent, non-condensing
Operating Temperature Linearity Add	add plus or minus 0.03 dB over the operating temperature range
Linearity At Fixed Power Range Typical	typical less than plus or minus 0.01 dB, within 10 dB of range maximum
Return Loss Nominal	nominal greater than 75 dB
Noise Peak To Peak	less than 5 nW
Analog Bandwidth At Plus 40 Dbm Typical	3.5 kHz typical analog bandwidth at +40 dBm
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Analog Bandwidth At Minus 20 Dbm Typical	0.12 kHz typical analog bandwidth at minus 20 dBm
Host Interface	N7749C two or four channel optical head interface
Warm Up Time Family	40 minutes
Recalibration Period Family	2 years
Storage Temperature Family	minus 40 C to +70 C
Operating Humidity Family	less than or equal to 80 percent, non-condensing Notes Numeric rows from Keysight 8162-C and N7749C Optical Power Meter Heads data sheet (3121-1226.EN), 81628C table, analog-bandwidth table, and general specifications. Wavelength not within 1340 to 1490 nm water-absorption caveat per footnote 7. Operation above +38 dBm is at operator risk per the OEM safety note.

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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Model	81628C
Instrument Type	High power integrating sphere optical power head
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Sensor Element	InGaAs integrating sphere
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Heat Sink Threshold	heat sink must be used above +34 dBm
Minimum Averaging Time	100 us
Applicable Fiber	standard SM NA less than or equal to 0.2; MM NA less than or equal to 0.4
Open Beam	diameter less than or equal to 3 mm on the center of the sphere input
Uncertainty At Reference Conditions	plus or minus 3.0 percent
Total Uncertainty To Plus 10 Dbm	plus or minus 4.0 percent plus or minus 5 nW, less than or equal to +10 dBm

Total Uncertainty 10 To 20 Dbm: plus or minus 4.5 percent, typical plus or minus 3.5 percent at 23 C plus or minus 5 C and 50 percent plus or minus 10 percent humidity, greater than +10 dBm to less than or equal to +20 dBm

Specifications

PARAMETER	VALUE
Total Uncertainty 20 To 38 Dbm	plus or minus 5.0 percent, greater than +20 dBm to less than or equal to +38 dBm
Polarization Dependent Uncertainty Typical	typical less than plus or minus 0.006 dB
Speckle Noise 0p1 To 100 Pm Typical	typical less than plus or minus 0.02 dB, 0.1 pm to 100 pm source linewidth
Speckle Noise Above 100 Pm Typical	typical less than plus or minus 0.002 dB, greater than 100 pm source linewidth

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Linearity Minus 20 To Plus 10 Dbm	less than plus or minus 0.03 dB
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Operating Temperature Linearity Add	add plus or minus 0.03 dB over the operating temperature range
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Recalibration Period Family	2 years
Storage Temperature Family	minus 40 C to +70 C
Operating Humidity Family	less than or equal to 80 percent, non-condensing

Notes
Numeric rows from Keysight 8162-C and N7749C Optical Power Meter Heads data sheet (3121-1226.EN), 81628C table, analog-bandwidth table, and general specifications. Wavelength not within 1340 to 1490 nm water-absorption caveat per footnote 7. Operation above +38 dBm is at operator risk per the OEM safety note.

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

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