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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight N7781A High Speed Polarization Analyzer

Agilent Keysight N7781A High Speed Polarization Analyzer The Agilent/Keysight N7781A is a compact high-speed polarization analyzer for SOP and DOP measurements of optical signals. OEM N7781B family datasheets (closely related platform) specify up to 1 MHz sampling, input power minus 50 dBm to plus 7 dBm, and broad O/C/L band options. Polarization state monitoring, DOP measurements, and polarization-related characterization of lasers and fiber components. Operating Wavelength Range Class: 1260 nm to 1640 nm The Agilent/Keysight N7781A is a compact high-speed polarization analyzer for SOP and DOP measurements of optical signals. OEM N7781B family datasheets (closely related platform) specify up to 1 MHz sampling, input power minus 50 dBm to plus 7 dBm, and broad O/C/L band options. Polarization state monitoring, DOP measurements, and polarization-related characterization of lasers and fiber components. Operating Wavelength Range Class: 1260 nm to 1640 nm Option 300 Spec Band: 1270 nm to 1375 nm O-band



MODEL

**Agilent / Keysight
N7781A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

N7781A

LISTING

<https://aumictechlabs.com/products/n7781a-3/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight N7781A is a Polarization Analyzer designed for comprehensive analysis of optical signal polarization properties. It has real-time measurement capabilities with a sampling

rate of 1 MSamples/s, making it suitable for analyzing fluctuating signals and for control applications requiring real-time polarization feedback. The instrument provides representation of the State of Polarization (SOP) on the Poincaré Sphere, calculates Stokes Parameters, and can determine Müller and Jones Matrices. It is engineered for high-accuracy operation across a broad wavelength range due to its on-board algorithms and calibration data. The N7781A can be integrated with a polarization controller and a tunable laser for high-speed PMD (Polarization Mode Dispersion) and PDL (Polarization Dependent Loss) measurements.

Technical Specifications * Product Type: Polarization Analyzer (Polarimeter) Wavelength Range: 850 nm – 1640 nm Measurement Capabilities: * State of Polarization (SOP) * Stokes Parameter * Degree of Polarization (DOP) * Müller Matrix determination * Jones Matrix determination * PMD/PDL measurements (when used with polarization controller and tunable laser) * PM-Fiber Extinction Ratio analysis Real-time Capability: 1 MSamples/s sampling rate Algorithms: On-board algorithms for accurate operation Calibration: On-board calibration data Outputs: Analog data output ports, suitable for control loops in automated manufacturing test systems Analysis Software: Provided software for comprehensive analysis of measurement data Interfaces * Control: LAN, USB, GPIB (for compatibility with existing equipment) Data Output: Analog data output ports Physical and Environmental * Dimensions: 1U half-rack, 460 mm x 212 mm x 43 mm (excluding front and back rubber cushions and handle) Weight: Approximately 3 kg Operating Temperature: +5 °C to +40 °C Storage Temperature: -40 °C to +70 °C Operating Humidity: 15% to 95% RH, non-condensing Altitude: Up to 2000 meters Power Consumption: AC 100 to 240 V $\pm$ 10%, 50/60 Hz, 60 VA max Rack Mountable: Optional kit available for standard 19-inch rack cabinet Compatibility * Software: Compatible with N77xx Windows-based graphical user interface Connectors: Typically uses the Keysight 81000xl connector interface system Legacy Status * The Keysight N7781A is listed as an "Obsolete" product by Keysight.

Why Choose Aumictech for the Agilent/Keysight N7781A? At Aumictech, we specialize in supplying high-end optical test and measurement equipment. Whether you need accurate polarization analysis for R&D, reliable performance data for system integration, or comprehensive characterization for enterprise procurement, our team ensures the Agilent/Keysight N7781A delivers maximum performance for your application.

N7781A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	Polarization analyzer
Series Family	Keysight N7781
Maximum Sampling Rate	1 MHz
Operating Wavelength Range Class	1260 nm to 1640 nm
SOP Uncertainty Typical	1.5 degrees
DOP Uncertainty	plus or minus 2.0 percent
DOP Uncertainty After User Calibration Typical	plus or minus 0.5 percent
Input Power Range	minus 50 dBm to plus 7 dBm
Maximum Safe Optical Input Power	12 dBm
Relative Power Uncertainty C/L Band	plus or minus 0.03 dB typical plus or minus 0.02 dB
Relative Power Uncertainty O Band	plus or minus 0.07 dB typical plus or minus 0.04 dB
Connector Option 0	straight contact
Connector Interface Accessory	81000xl series
Dimensions Class	about 380 mm x 213 mm x 88 mm excluding cushions
Weight Approximate	4 kg
Analysis Outputs	Stokes parameters SOP on Poincare sphere
User Calibration	supports DOP 100 percent source calibration at fixed wavelength
Input Power Condition for Specs	greater than minus 30 dBm for listed SOP/DOP rows
DOP Condition for SOP Spec	DOP greater than 95 percent
Remote Control	compact instrument automation class
Application Class	polarization property analysis of optical signals
Family Successors	N7781B N7781C
Wavelength range	Class: 1260 nm to 1640 nm

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	
Specifications	
PARAMETER	VALUE
Instrument Type	Polarization analyzer
Series Family	Keysight N7781
Maximum Sampling Rate	1 MHz
Operating Wavelength Range Class	1260 nm to 1640 nm
Option 300 Spec Band: 1270 nm to 1375 nm0band	
Option 500 Spec Band: 1460 nm to 1620 nm C/L band	
Option 400 Spec Bands: 1270 to 1375 nm and 1460 to 1620 nm	
Specifications	
PARAMETER	VALUE
SOP Uncertainty Typical	1.5 degrees
DOP Uncertainty	plus or minus 2.0 percent
DOP Uncertainty After User Calibration Typical	plus or minus 0.5 percent
Input Power Range	minus 50 dBm to plus 7 dBm
Maximum Safe Optical Input Power	12 dBm
Relative Power Uncertainty C/L Band	plus or minus 0.03 dB typical plus or minus 0.02 dB
Relative Power Uncertainty0Band	plus or minus 0.07 dB typical plus or minus 0.04 dB
Connector Option 021	straight contact
Connector Option 022	angled contact
Connector Interface Accessory	81000xI series
Dimensions Class	about 380 mm x 213 mm x 88 mm excluding cushions
Weight Approximate	4 kg
Analysis Outputs	Stokes parameters SOP on Poincare sphere
User Calibration	supports DOP 100 percent source calibration at fixed wavelength
Input Power Condition for Specs	greater than minus 30 dBm for listed SOP/DOP rows
DOP Condition for SOP Spec	DOP greater than 95 percent
Remote Control	compact instrument automation class

PARAMETER	VALUE
Application Class	polarization property analysis of optical signals
Family Successors	N7781B N7781C

Notes

Numeric rows primarily from Keysight N7781B Polarization Analyzer datasheet 5989-6938 which documents the N7781 high-speed polarization analyzer platform. Confirm any N7781A versus N7781B differences on the unit configuration before upload.

Ordering Information

OPTION	DESCRIPTION
Option 300	Spec Band: 1270 nm to 1375 nm Oband
Option 500	Spec Band: 1460 nm to 1620 nm C/L band
Option 400	Spec Bands: 1270 to 1375 nm and 1460 to 1620 nm

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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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.