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Data Sheet

August 13, 2026

KEYSIGHT / AGILENT / HP

Keysight / Agilent / HP 83440B DC-6 GHz Lightwave Detector

HP Agilent 83440B DC to 6 GHz Lightwave Converter The HP/Agilent 83440B isaDC-coupled unamplified InGaAs optical-to-electrical converter with greater than 6 GHz optical bandwidth (-3 dB). Hermetically sealed photodiode, 9/125 um single-mode fiber input with interchangeable connector adapters, and precision 3.5 mm electrical output. Designed to mount at an oscilloscope or analyzer front panel to minimize cable distortion. High-speed optical pulse and eye measurements on digitizing oscilloscopes; lightwave frequency-domain response with electrical network analyzers; SONET/SDH receiver work with Opt 050 50 ohm termination and Bessel-Thomson filters. The HP/Agilent 83440B isaDC-coupled unamplified InGaAs optical-to-electrical converter with greater than 6 GHz optical bandwidth (-3 dB). Hermetically sealed photodiode, 9/125 um single-mode fiber input with interchangeable connector adapters, and precision 3.5 mm electrical output. Designed to mount at an oscilloscope or analyzer front panel to minimize cable distortion. High-speed optical pulse and eye measurements on digitizing oscilloscopes; lightwave frequency-domain response with electrical network analyzers; SONET/SDH receiver work with Opt 050 50 ohm termination and Bessel-Thomson filters.



MODEL	CALIBRATION
Keysight / Agilent / HP 83440B	Available on request
CONDITION	STATUS
Used	In stock
RFQ / SKU	LISTING
83440B	https://aumictechlabs.com/products/83440b-2/

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight/Agilent/HP 83440B is a DC to 6 GHz lightwave detector that converts modulated optical signals into electrical waveforms for analysis on standard test instruments. Built around a hermetically sealed, unamplified InGaAs photodiode, the 83440B delivers high-fidelity O/E conversion with minimal signal distortion. Its direct-mount probe design connects to instrument front panels via a precision 3.5 mm microwave coaxial connector, eliminating external cable losses and coupling artifacts that degrade measurement accuracy. Engineered for telecommunications component characterization, laser performance validation, and general fiber optic measurements, the 83440B combines fast temporal response with broad bandwidth to capture both pulse shapes and spectral content in a single instrument connection. Technical Specifications Bandwidth: 6 GHz (3 dB optical) Rise/Fall Time (10–90%): <80 ps Pulse Response (FWHM): 73 ps System Aberrations (2 ps FWHM pulse): 10% peak-to-peak maximum, 5% typical DC Responsivity at 1300 nm: 35 V/W minimum (into 50 Ω load) Deflection Factor at 1300 nm: 29 μ W/div (Agilent 54120 family oscilloscope) Deflection Factor at 1550 nm: 31 μ W/div (Agilent 54120 family oscilloscope) Noise Equivalent Power: 2 μ W RMS maximum Photodiode: Hermetically sealed, unamplified InGaAs Optical Input: Universal interface, compatible with 9/125 μ m fiber Electrical Output Connector: Precision 3.5 mm microwave coaxial Key Features Direct-mount probe eliminates external cabling and connector losses Low internal distortion preserves signal integrity across the full 6 GHz band High conversion gain enables use with standard electrical instruments Fast <80 ps rise/fall time resolves nanosecond and sub-nanosecond optical events Option 050 includes 50 Ω termination with fourth-order Bessel-Thomson response for SDH/SONET filter compatibility Typical Applications Fiber optic telecommunications system characterization Laser and optical modulator performance optimization Optical pulse shape and timing analysis High-speed optical signal spectral measurements Component testing in optical communication networks Compatibility & Integration The 83440B connects to the front panel of Agilent/Keysight electrical instruments and oscilloscopes. Its universal optical interface accommodates standard fiber connectors via optional adapters.

Features & description

From manufacturer datasheet

Features

- Unamplified InGaAs photodiode with integral bias regulation

83440B Characteristics / Specifications

PARAMETER	VALUE
Model	83440B
Manufacturer	Hewlett Packard / Agilent / Keysight
Instrument Type	Lightwave O/E Converter
Family	83440C DC-20 GHz; 83440D DC-30 GHz (2.4 mm)
Alias	83440B; HP 83440B; Agilent 83440B
Bandwidth Optical	DC to greater than 6 GHz (-3 dB optical)
Pulse Width	less than 73 ps FWHM (FWHM = $0.44/BW_{opt}$ approx $0.312/BW_{el}$)
Photodiode	hermetic unamplified InGaAs
Conversion Gain 1300 nm	35 V/W minimum into 50 ohm
Conversion Gain 1550 nm	32.5 V/W minimum into 50 ohm
DC Responsivity 1300 nm	0.70 A/W (-3.1 dB)
DC Responsivity 1550 nm	0.65 A/W (-3.7 dB)
Opt 050 Gain 1300 nm	16.5 V/W
Opt 050 Gain 1550 nm	15 V/W
Wavelength Response	1000 nm to 1600 nm
Compatible Fiber	9/125 um single mode
RF Connector	3.5 mm male 50 ohm (83440B/C)
Output Impedance	unterminated (50 ohm terminated for Opt 050)
Maximum Operating Optical	+3 dBm peak
Maximum Safe Optical	+10 dBm peak
Equivalent Optical Noise	2 uW rms maximum
DC Bias	+10 V to +15 V dc required
Bias Port	LEMO quick-connect
Deflection 1300 nm	29 uW/div min on 54120 family
Optical Connectors	HMS-10 FC/PC ST SC DIN 47256 (order option)

PARAMETER	VALUE
Related 83440C	DC to 20 GHz
Related 83440D	DC to 30 GHz 2.4 mm
Related Source	83400A lightwave source module
Power Accessory	87421A 15 V or 11899A probe power Notes Specs from Agilent 83440B/C/D high-speed lightwave converter data sheet. Optical connector option is mandatory on order. Confirm Opt 050 versus unterminated output on the unit.
Bandwidth	(-3 dB). Hermetically sealed photodiode, 9/125 um single-mode fiber input with interchangeable connector adapters, and precision 3.5 mm electrical output. Designed to mount at an oscilloscope or analyzer front panel to minimize cable distortion.
Conversion Gain	1300 nm: 35 V/W minimum into 50 ohm

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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Family	83440B/C/D
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Pulse Width	less than 73 ps FWHM (FWHM = 0.44/BWopt approx 0.312/BWel)
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Conversion Gain 1550 nm	32.5 V/W minimum into 50 ohm
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Opt 050 Gain 1300 nm	16.5 V/W
Opt 050 Gain 1550 nm	15 V/W
Wavelength Response	1000 nm to 1600 nm

Specifications

PARAMETER	VALUE
Compatible Fiber	9/125 um single mode
RF Connector	3.5 mm male 50 ohm (83440B/C)
Output Impedance	unterminated (50 ohm terminated for Opt 050)

Specifications

PARAMETER	VALUE
Maximum Operating Optical	+3 dBm peak
Maximum Safe Optical	+10 dBm peak
Equivalent Optical Noise	2 uW rms maximum

Specifications

PARAMETER	VALUE
DC Bias	+10 V to +15 V dc required
Bias Port	LEMO quick-connect
Deflection 1300 nm	29 uW/div min on 54120 family

Specifications

PARAMETER	VALUE
Optical Connectors	HMS-10 FC/PC ST SC DIN 47256 (order option)
Related 83440C	DC to 20 GHz
Related 83440D	DC to 30 GHz 2.4 mm

Related Source: 83400A lightwave source module

Power Accessory: 87421A 15 V or 11899A probe power

Notes

Specs from Agilent 83440B/C/D high-speed lightwave converter data sheet. Optical connector option is mandatory on order. Confirm Opt 050 versus unterminated output on the unit.

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.