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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 86146B Benchtop High Performance Optical Spectrum Analyzer

Agilent Keysight 86146B Optical Spectrum Analyzer With Filter Mode The Agilent 86146B is a high-performance benchtop OSA covering 600 nm to 1700 nm with filter-mode single-mode monochromator output for dropping tightly spaced DWDM channels. OEM 8614xB family datasheets list plus or minus 0.01 nm wavelength accuracy after internal calibration in the 1480-1570 nm band and filter-mode applications. DWDM channel drop and time-domain analysis of isolated channels, WDM system characterization, and high-dynamic-range OSA measurements. The Agilent 86146B is a high-performance benchtop OSA covering 600 nm to 1700 nm with filter-mode single-mode monochromator output for dropping tightly spaced DWDM channels. OEM 8614xB family datasheets list plus or minus 0.01 nm wavelength accuracy after internal calibration in the 1480-1570 nm band and filter-mode applications. DWDM channel drop and time-domain analysis of isolated channels, WDM system characterization, and high-dynamic-range OSA measurements. Filter mode single-mode monochromator output



MODEL

**Agilent / Keysight
86146B**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

86146B

LISTING

<https://aumictechlabs.com/products/86146b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 86146B is a benchtop optical spectrum analyzer delivering high-resolution spectral analysis from 600 nm to 1750 nm. Built on a double-pass monochromator design, it achieves superior sensitivity and dynamic range while maintaining fast sweep speeds - critical for DWDM component characterization, broadband passive component testing, and active optical source/amplifier analysis. The instrument provides selectable resolution bandwidths from 0.04 nm to 10 nm via internal and external optical paths, enabling precise spectral separation of closely-spaced channels and broadband features. Wavelength accuracy reaches ± 10 pm at the 1480–1570 nm band following internal calibration with enhanced wavelength correction, and reproducibility is ± 0.003 nm. Amplitude accuracy of ± 0.35 dB at -20 dBm (1550 nm, 20–30 °C) supports reliable power measurements across the operating range. Dynamic range performance at 0.1 nm RBW includes -60 dB at ± 100 GHz offset from 1550 nm and -40 dB at ± 25 GHz offset, enabling detection of weak spectral components near strong signals. Tuning repeatability of ± 0.002 nm ensures consistent measurement results across multiple acquisitions. Multiple resolution bandwidth options, trace averaging, and comprehensive marker functions simplify detailed spectral analysis in laboratory and field environments. The instrument supports both internal self-calibration and external reference source calibration to meet stringent accuracy requirements in WDM network deployment and dense optical component development.

Technical Specifications

Wavelength Range: 600 nm to 1750 nm

Resolution Bandwidth (internal path): 0.06 nm, 0.07 nm, 0.1 nm, 0.14 nm, 0.2 nm, 0.33 nm, 0.5 nm, 1 nm, 2 nm, 5 nm, 10 nm

Resolution Bandwidth (external path): 0.04 nm, 0.05 nm, 0.07 nm, 0.1 nm, 0.2 nm, 0.3 nm, 0.5 nm, 1 nm, 2 nm, 5 nm, 10 nm

Wavelength Accuracy (after internal calibration, 1480–1570 nm): ± 0.01 nm

Wavelength Accuracy (after internal calibration, 1570–1620 nm): ± 0.025 nm

Wavelength Reproducibility (≤ 1 min): ± 0.003 nm

Tuning Repeatability: ± 0.002 nm

Absolute Wavelength Accuracy (factory calibration, 2 yr cycle): ± 0.5 nm

Amplitude Accuracy (-20 dBm @ 1550 nm, 20–30 °C): ± 0.35 dB

Amplitude Accuracy (general): ± 0.5 dB

Close-In Dynamic Range @ 0.1 nm RBW (± 100 GHz @ 1550 nm): -60 dB

Close-In Dynamic Range @ 0.1 nm RBW (± 25 GHz @ 1550 nm): -40 dB

Amplitude Stability: 10 mdB

Key Features

- Double-pass monochromator design for high sensitivity and dynamic range
- Fast sweep speeds with trace averaging
- Multiple marker functions for precise peak and spectral feature location
- Internal and external optical path configurations
- Noise marker bandwidth accuracy (1525–1610 nm): $\pm 2\%$ for ≥ 0.5 nm RBW; $\pm 3\%$ for 0.2 nm RBW; $\pm 7\%$ for 0.1 nm RBW; $\pm 12\%$ for 0.06 nm RBW

Typical Applications

- WDM system testing and validation
- DWDM component characterization
- Passive optical component analysis
- Active optical source and amplifier evaluation
- Dense optical network development

Compatibility & Integration

Supports internal self-calibration and external reference source calibration for enhanced accuracy across the full wavelength range.

Features & description

From manufacturer datasheet

Built-in DWDM amplifier source and passive test applications

Technical Specifications Model: 86146B Instrument Type: Benchtop OSA with filter mode Wavelength Range: 600 nm to 1700 nm Span Range: 0.2 nm to full range and zero span Wavelength Accuracy 1480-1570 nm After Internal Cal: plus or minus 0.01 nm Wavelength Accuracy 1570-1620 nm After Internal Cal: plus or minus 0.025 nm Absolute Accuracy Factory Cal 2 Year: plus or minus 0.5 nm Tuning Repeatability: plus or minus 0.002 nm Reproducibility Less Than Or Equal 1 min: plus or minus 0.002 nm Span Linearity 1525-1570 nm Spans Less Than 40 nm: plus or minus 0.01 nm / plus or minus 0.02 nm class Resolution Bandwidth FWHM Settings: 0.06 0.07 0.1 0.14 0.2 0.5 1 2 5 10 nm class family table Dynamic Range At Plus Or Minus 0.5 nm 0.1 nm RBW Class: minus 70 dB class high-performance Dynamic Range At Plus Or Minus 0.2 nm Class: minus 40 dB class Filter Mode Channel Spacing Class: as tight as 12.5 GHz class brochure Form Factor: Benchtop Operating Temperature: 0 C to 55 C class family Series Family: Agilent 8614xB OSA Sibling High Performance Without Filter Mode: 86142B Wavelength Accuracy After External Reference Plus Or Minus 10 nm: plus or minus 0.01 nm Wavelength Accuracy After User Cal Full Range: plus or minus 0.2 nm at 20-30 C

Polarization Dependent Loss Class: 0.05 dB class high-performance brochure

Storage Temperature: minus 40 C to 70 C Form Factor Dimensions Class: benchtop 86140B/86142B/86146B family Notes From Agilent 8614xB Optical Spectrum Analyzers Family technical specifications for 86146B. Filter-mode path specs may differ from OSA path; confirm configuration.

86146B Characteristics / Specifications

PARAMETER	VALUE
Model	86146B
Instrument Type	Benchtop OSA with filter mode
Wavelength Range	600 nm to 1700 nm
Span Range	0.2 nm to full range and zero span
Absolute Accuracy Factory Cal 2 Year	plus or minus 0.5 nm
Tuning Repeatability	plus or minus 0.002 nm
Reproducibility Less Than Or Equal 1 min	plus or minus 0.002 nm
Resolution Bandwidth FWHM Settings	0.06 0.07 0.1 0.14 0.2 0.5 1 2 5 10 nm class family table
Dynamic Range At Plus Or Minus 0.5 nm 0.1 nm RBW Class	minus 70 dB class high-performance
Dynamic Range At Plus Or Minus 0.2 nm Class	minus 40 dB class
Filter Mode Channel Spacing Class	as tight as 12.5 GHz class brochure
Form Factor	Benchtop
Operating Temperature	0 C to 55 C class family
Series Family	Agilent 8614xB OSA
Sibling High Performance Without Filter Mode	86142B
Wavelength Accuracy After External Reference Plus Or Minus 10 nm	plus or minus 0.01 nm
Wavelength Accuracy After User Cal Full Range	plus or minus 0.2 nm at 20-30 C
Dynamic Range At Plus Or Minus 1 nm Class	minus 60 dB class
Dynamic Range At Plus Or Minus 0.8 nm Class	minus 58 dB class
Dynamic Range At Plus Or Minus 0.4 nm Class	minus 55 dB class
Filter Mode Insertion Loss Class	less than 10 dB class brochure

PARAMETER	VALUE
Polarization Dependent Loss Class	0.05 dB class high-performance brochure
Storage Temperature	minus 40 C to 70 C
Form Factor Dimensions Class	benchtop 86140B/86142B/86146B family
Bandwidth	FWHM Settings: 0.06 0.07 0.1 0.14 0.2 0.5 1 2 5 10 nm class family table

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	minus 40 C to 70 C
Operating temperature	0 C to 55 C class family
Operating Temperature	0 C to 55 C class family
Series Family	Agilent 8614xB OSA
Sibling High Performance Without Filter Mode	86142B
Wavelength Accuracy After External Reference Plus Or Minus 10 nm	plus or minus 0.01 nm
Wavelength Accuracy After User Cal Full Range	plus or minus 0.2 nm at 20-30 C
Dynamic Range At Plus Or Minus 1 nm Class	minus 60 dB class
Dynamic Range At Plus Or Minus 0.8 nm Class	minus 58 dB class
Dynamic Range At Plus Or Minus 0.4 nm Class	minus 55 dB class
Filter Mode Insertion Loss Class	less than 10 dB class brochure
Polarization Dependent Loss Class	0.05 dB class high-performance brochure
Form Factor Dimensions Class	benchtop 86140B/86142B/86146B family Notes From Agilent 8614xB Optical Spectrum Analyzers Family technical specifications for 86146B. Filter-mode path specs may differ from OSA path; confirm configuration.

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 benchtop OSA covering 600 nm to 1700 nm with filter-mode single-mode monochromator output for dropping tightly spaced DWDM channels. OEM 8614xB family datasheets list plus or minus 0.01 nm wavelength accuracy after internal calibration in the 1480-1570 nm band and filter-mode applications.

Applications
DWDM channel drop and time-domain analysis of isolated channels, WDM system characterization, and high-dynamic-range OSA measurements.

Key Features
Filter mode single-mode monochromator output
High-performance OSA wavelength accuracy
600 nm to 1700 nm coverage
Internal gas-cell wavelength calibrator option path
Built-in DWDM amplifier source and passive test applications

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Model	86146B
Instrument Type	Benchtop OSA with filter mode
Wavelength Range	600 nm to 1700 nm
Span Range	0.2 nm to full range and zero span

Wavelength Accuracy 1480-1570 nm After Internal Cal: plus or minus 0.01 nm
Wavelength Accuracy 1570-1620 nm After Internal Cal: plus or minus 0.025 nm

Specifications

PARAMETER	VALUE
Absolute Accuracy Factory Cal 2 Year	plus or minus 0.5 nm
Tuning Repeatability	plus or minus 0.002 nm
Reproducibility Less Than Or Equal 1 min	plus or minus 0.002 nm

Span Linearity 1525-1570 nm Spans Less Than 40 nm: plus or minus 0.01 nm / plus or minus 0.02 nm class
Resolution Bandwidth FWHM Settings: 0.06 0.07 0.1 0.14 0.2 0.5 1 2 5 10 nm class family table
Dynamic Range At Plus Or Minus 0.5 nm 0.1 nm RBW Class: minus 70 dB class high-performance
Dynamic Range At Plus Or Minus 0.2 nm Class: minus 40 dB class

Specifications

PARAMETER	VALUE
Filter Mode Channel Spacing Class	as tight as 12.5 GHz class brochure
Form Factor	Benchtop
Operating Temperature	0 C to 55 C class family

PARAMETER	VALUE
Series Family	Agilent 8614xB OSA
Sibling High Performance Without Filter Mode	86142B

Wavelength Accuracy After External Reference Plus Or Minus 10 nm: plus or minus 0.01 nm
Wavelength Accuracy After User Cal Full Range: plus or minus 0.2 nm at 20-30 C
Dynamic Range At Plus Or Minus 1 nm Class: minus 60 dB class
Dynamic Range At Plus Or Minus 0.8 nm Class: minus 58 dB class
Dynamic Range At Plus Or Minus 0.4 nm Class: minus 55 dB class

Specifications

PARAMETER	VALUE
Filter Mode Insertion Loss Class	less than 10 dB class brochure
Polarization Dependent Loss Class	0.05 dB class high-performance brochure
Storage Temperature	minus 40 C to 70 C
Form Factor Dimensions Class	benchtop 86140B/86142B/86146B family

Notes
From Agilent 8614xB Optical Spectrum Analyzers Family technical specifications for 86146B. Filter-mode path specs may differ from OSA path; confirm configuration.

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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