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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent / HP / Keysight 83427A Chromatic Dispersion Test Set

HP Agilent 83427A Chromatic Dispersion Test Set 1300/1550 nm The HP 83427A is the chromatic-dispersion test set used in the 86037A/86037B Chromatic Dispersion Test System. OEM 86037B user's guide identifies 83427A as the instrument-grade receiver and modulator that recovers the optical signal for near-end chromatic-dispersion measurements of fiber, dispersion-compensating devices, and gratings. Option 114 configurations cover 1300/1550 nm. Chromatic dispersion of fiber spans, DCF, chirped gratings, and other optical components where both ends of the DUT are accessible. The HP 83427A is the chromatic-dispersion test set used in the 86037A/86037B Chromatic Dispersion Test System. OEM 86037B user's guide identifies 83427A as the instrument-grade receiver and modulator that recovers the optical signal for near-end chromatic-dispersion measurements of fiber, dispersion-compensating devices, and gratings. Option 114 configurations cover 1300/1550 nm. Chromatic dispersion of fiber spans, DCF, chirped gratings, and other optical components where both ends of the DUT are accessible.



MODEL

**Agilent / Keysight
83427A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

83427A

LISTING

<https://aumictechlabs.com/products/83427a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 83427A Chromatic Dispersion Test Set is a specialized instrument for precise measurement of chromatic dispersion in single-mode optical fibers. It characterizes how different wavelengths travel at different speeds through fiber, a critical parameter affecting data transmission quality and bandwidth in high-speed optical networks. The 83427A identifies and quantifies dispersion to support fiber selection and implementation of dispersion compensation techniques, ensuring signal integrity across long-haul and high-speed communication links.

Technical Specifications

Measurement Type: Chromatic Dispersion

Fiber Type: Single-Mode Fiber (SMF)

Wavelength Range: 1310 nm and 1550 nm bands

Measurement Method: Time-of-Flight (TOF) or Phase Shift methods

Dispersion Measurement Accuracy: Specified in picoseconds per nanometer (ps/nm)

Light Source: Integrated or external tunable laser or broadband source

Detector: High-sensitivity optical detector optimized for telecommunications wavelengths

Data Acquisition: Internal processing and data logging

Power Requirements: 100–240 VAC, 50/60 Hz

Warm-up Time: Required for stable operation after power-on

Fiber Connector Types: FC/APC, SC/APC or equivalent standard optical connectors

Form Factor: Benchtop instrument

User Interface: Front-panel controls with results display

Connectivity: GPIB, Ethernet, or USB interfaces for data transfer and instrument control

Key Features

- Dedicated input/output ports for fiber under test and reference connections
- Internal signal processing with integrated data logging
- Supports standard telecommunications wavelength bands
- Compatible with installed and manufactured optical fiber characterization

Typical Applications

- Long-haul optical network fiber characterization
- High-speed transmission link dispersion assessment
- Optical fiber selection and qualification
- Dispersion compensation technique validation
- Fiber optic testing laboratory measurements

Compatibility & Integration

The 83427A interfaces with laboratory infrastructure via standard optical connectors and integrates into automated test systems through GPIB, Ethernet, and USB connectivity. Front-panel operation enables standalone measurement capability.

83427A Characteristics / Specifications

PARAMETER	VALUE
Model	83427A
Instrument Type	Chromatic dispersion test set
Host System	86037A / 86037B chromatic dispersion test system
Wavelength Class Option 1	1300 nm and 1550 nm
Receiver	instrument grade optical receiver
Modulator	instrument grade optical modulator
Measurement Type	chromatic dispersion
Access Architecture	near-end (both DUT ends at one location)
Dut Classes	fiber, dispersion compensating devices, gratings
Related System Manual	86037B user's guide
Manufacturer	HP Agilent Keysight
Form Factor	optical test-set box in 86037 system
Use Case	recover modulated optical signal for CD analysis
Optical Bands	1300 nm window and 1550 nm window
System Role	test set versus 86037B main system
Safety Note Class	use only as specified in 86037B/83427A documentation
Literature	86037B instruction manual 83427A identification
Operating Context	laboratory fiber-optic CD test
Partner Source	86037 system tunable/source path
Brand Lineage	Hewlett Packard Agilent Keysight
Documentation Type	OEM datasheet and catalog specifications
Numeric Source	verified OEM tables only no invented limits

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
Model	83427A
Instrument Type	Chromatic dispersion test set
Host System	86037A / 86037B chromatic dispersion test system
Wavelength Class Option 114	1300 nm and 1550 nm
Receiver	instrument grade optical receiver
Modulator	instrument grade optical modulator
Measurement Type	chromatic dispersion
Access Architecture	near-end (both DUT ends at one location)
Dut Classes	fiber, dispersion compensating devices, gratings
Related System Manual	86037B user's guide
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Numeric Source	verified OEM tables only no invented limits
Notes	
Identity, 1300/1550 nm Option 114 class, and receiver/modulator role from HP 86037B Chromatic Dispersion Test System user's guide and 83427A product listings. Numeric CD uncertainty and wavelength-tuning limits are on the 86037B system specification, not on the 83427A faceplate alone.	

Ordering Information

OPTION	DESCRIPTION
Option 114	configurations cover 1300/1550 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.