

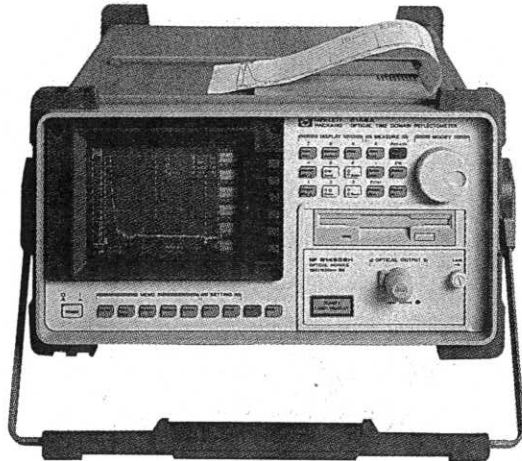
LIGHTWAVE TEST EQUIPMENT

Optical Time Domain Reflectometer – Optical Loss Test Set/Power Meter

HP 8146A, 8140A

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- High-resolution and long-range capability in one module
- Automatic link characterization in less than 7 seconds
- Optional built-in printer, floppy disk drive, and memory card reader



- Modular design
- Sources and sensors for all common wavelength ranges
- Standalone LED source, power meter and loss test set



HP 8140A with 81401A sensor module and 81412A LED source module

HP 8146A Optical Time Domain Reflectometer

The HP 8146A is a high-performance optical time domain reflectometer for installation, field maintenance, and bench applications. Plug-in modules are available for all common wavelengths and single- and multimode fibers.

Each module can be used as a high-resolution or long-range module (switch-selectable). With 30 dB dynamic range and 3 m event deadzone in one module (HP 81462SM), the complete link can be tested. In less than 7 seconds the HP 8146A will automatically characterize the link with up to 100 reflective and non-reflective events. The minimum detectable splice loss is 0.05 dB.

For documentation purposes, the HP 8146A features an optional built-in printer, 3½-in floppy disk drive or a memory card reader.

Specifications

Module	HP 81462SH	HP 81463SH	HP 81465SH
Wavelength	1310 ± 20 nm	1550 ± 20 nm	1310/1550 ± 20 nm
Dynamic range	30 dB	27 dB	30/27 dB
Event deadzone	3 m	3 m	3 m
Attenuation deadzone	30 m	40 m	30/40 m

Module	HP 81461MH	HP 81462MH	HP 81464MH
Wavelength	850 ± 10 nm	1300 ± 10 nm	850/1300 ± 10 nm
Dynamic range	25 dB	28 dB	25/28 dB
Event deadzone	3 m	3 m	3 m
Attenuation deadzone	20 m	25 m	20/25 m

Span: 1 to 200 km

Distance Accuracy: ± 0.5 m ± sample spacing ± meas. distance × 10⁻⁴ (± 1.5 m for 850 nm)

Compare Mode: Two waveforms can be compared on screen

Size: 340 mm W × 190 mm H × 465 mm D (13.4 in × 7.5 in × 18.3 in)

Weight: Net, 15 kg (33 lb), including one module

Ordering Information

	Price
HP 8146A Optical Time Domain Reflectometer	\$12,100
Opt 001 Additional dc Input	\$770
Opt 003 3½-in Floppy Disk Drive	\$250
Opt 002 Thermal Printer	\$1,100
Opt 004 Memory Card Reader	\$630
HP 81462SH 1310 nm, Single-Mode Module	\$14,250
HP 81463SH 1550 nm, Single-Mode Module	\$17,500
HP 81465SH 1310/1550 nm, Single-Mode Module	\$23,750
HP 81461MH 850 nm, Multimode Module	\$10,200
HP 81462MH 1300 nm, Multimode Module	\$13,500
HP 81464MH 850/1300 nm, Multimode Module	\$22,000
HP 81460SA MS-DOS PC-Based OTDR Emulation SW	\$1,050
HP 81000AI/FI/GI/KI/SI/VI/WI Interface (each)*	\$170

(see page 564)

HP 8140A Optical Loss Test Set/Power Meter

The HP 8140A is a compact, lightweight instrument for hand-held operation in the installation and maintenance of optical links and component characterization. It may be configured as a power meter, a stand-alone source, or a loss test set.

As a power meter, it is an ideal tool for the measurement of the output power of transmitter modules and of power levels at the fiber end, and for the check for "dark" fibers.

The HP 8140A, in a standalone source or loss test set configuration, covers all wavelengths commonly used in datacom LANs and telecommunications networks. Its main applications include the insertion loss of optical passive components and the total link loss to check for power budgets.

Specifications

Power Meter/Sensor	HP 81400A	HP 81401A
Wavelength range	400 to 1100 nm	750 to 1700 nm
Fiber type	up to 100/140 μm	up to 100/140 μm
Measurement range	+10 to -70 dBm 1 pW to 10 mW	+3 to -70 dBm 1 pW to 2 mW
Noise floor	<3 pW pp	<3 pW pp
Measurement uncertainty	±5%	±5%***
Calibrated wavelength	660/780/820/850 nm	820/850/1300/1550 nm
Sensor element	Si	InGaAs

Loss Test Set/Source	HP 81411A	HP 81412A	HP 81413A
Wavelength	850 ± 10 nm	1300 ± 20 nm	1550 ± 20 nm
Spectral bandwidth (FWHM)	<50 nm	<140 nm	<200 nm
Output power (into 50/125 μm)*	> -17 dBm	> -20 dBm	> -25 dBm
Dynamic range (into 50/125 μm)*	> 53 dB	> 50 dB	> 45 dB
Stability (15 min, cons. temp, 0° to 40° C)**	±0.03 dB	±0.03 dB	±0.03 dB

* Typically 20 dB less into single-mode fiber

** After 5-min. warmup

*** Add 2% for 820 nm and 850 nm

Size: 81 mm W × 185 mm H × 41 mm D (3.2 in × 7.2 in × 1.6 in)

Weight: Net, 600 g (incl. source, sensor, 4 batteries, and 2 connector interfaces)

Ordering Information

	Price
HP 8140A Optical Loss Test Set (mainframe)	\$790
HP 81400A Optical Sensor 400 to 1100 nm	\$440
HP 81401A Optical Sensor 750 to 1700 nm	\$890
HP 81411A LED Module 850 nm	\$790
HP 81412A LED Module 1300 nm	\$1,350
HP 81413A LED Module 1550 nm	\$1,900
HP 81000AI/FI/GI/KI/SI/VI/WI Interface	\$170
HP 8140CC Carrying Case (each)	\$120

For the most current prices and product information, contact your local Hewlett-Packard sales office—see page 665.