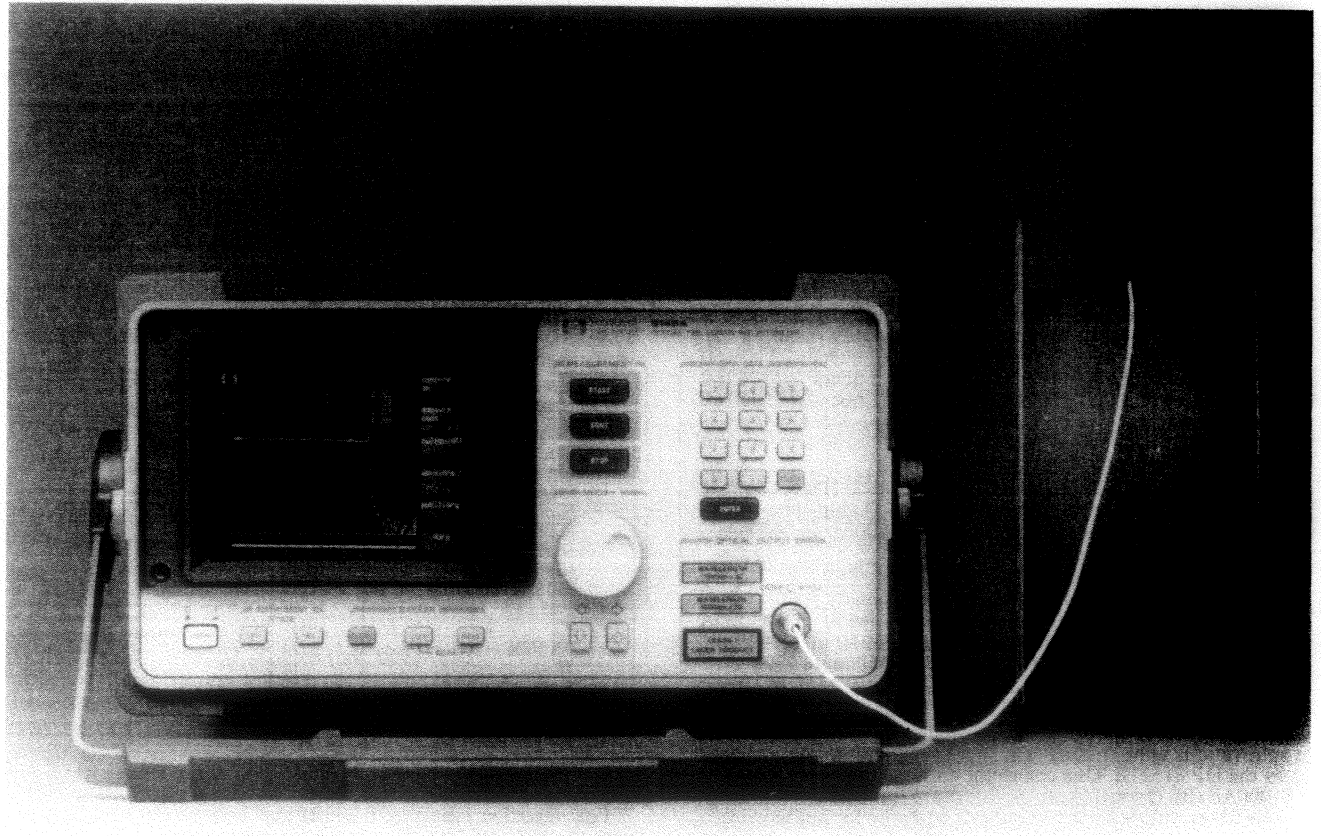


LIGHTWAVE TEST EQUIPMENT

Optical Time Domain Reflectometer

Model 8145A option 002 (1300nm), option 003 (1550nm), option 023 (1300nm/1550nm)

- Dynamic range of 28dB (1300nm)/26dB (1550nm) with single-mode fiber
- Customer-installable laser modules (1300nm or 1550nm)
- Easy-to-learn softkey-guided menu concept
- Non-volatile memory for more than 100 waveforms
- Rugged and light-weight



HP 8145A



The HP model 8145A is a high performance optical time domain reflectometer for field maintenance and bench applications. A unique data correlation technique increases the dynamic range to more than 28dB at 1300nm (26dB at 1550nm, regardless, whether the 1300nm module is installed) single-mode and drastically reduces the measurement time.

For field maintenance the HP 8145A features light weight and rugged design. It may be operated on batteries (12 to 30V DC), due to its low power consumption, or mains (90 to 260V AC). Display resolution is 0.01dB and 1m over the entire range of 200km.

Unhandy dataloggers and external disk drives which are sensitive to temperature changes, humidity and dust are not needed any more, as a plug-in non-volatile memory module (HP 81450A) stores more than 100 traces, each with all related measurement information. If immediate documentation is required, any data set can be directly printed or plotted out using a Thinkjet, Quietjet or any HP-IB plotter without a controller.

For bench applications including performance tests on optical fibers and cables in design and production the HP 8145A OTDR offers an excellent set of features.

Any previously taken trace may be recalled as reference and compared against the presently sampled one. This ensures fast and easy detection of inhomogeneities and attenuation changes.

The HP 8145A has an easy-to-learn softkey guided operating concept. The user can blank unwanted keys for even easier operation. The OTDR is also fully HP-IB programmable.

By means of two optional laser modules the HP 8145A operates at either of the wavelengths 1300nm, 1550nm or both. The laser modules are user-installable.

Five exchangeable connector options (Diamond HMS-10, FC/PC, DIN47256, ST and Biconic) are available, which allow easy access to the optical output for cleaning.

HP 8145A Specifications

Optical Characteristics

	option 002	option 003	option 023
Wavelength	1300±30nm	1540±30nm	both wavelength
Dynamic range one way backscatter (SNR=1)	28dB	26dB	28/26dB
Fresnel reflection (4%)	42dB	40dB	42/40dB

Both wavelength options are user-installable. If both are installed in the HP 8145A, they are switch-selectable. Dynamic range figures are independent of number of options installed.

Measurement time: 22dB dynamic range after 10 seconds (16dB after 1 second) at 1300nm on fiber without end reflection (worst case condition for break detection)

Pulsewidth: 125/250/500ns/1/2/4/8µs

Output connector: optional Diamond HMS-10, FC/PC, DIN 47256, ST, Biconic. All options are user-exchangeable.

Horizontal Parameters

Start-km: 0.000 - 199.500km (see "Resolution")

Span: 0.500km - 200.000km (see "Resolution")

Center-km: 0.250km - 199.750km (see "Resolution")

Resolution: 1m in all three cases for parameter setting and distance read-out

Accuracy: ±8m, uncertainty of fiber refractive index not included, for 125 ns pulsewidth

Refractive index: 1.4000 - 1.5999, in steps of 0.0001 settable

Length correction: 1.000 - 4.000, in steps of 0.001 settable. Serves to enter actual ratio of fiber/cable length into the OTDR

Length unit: switch-selectable between km, miles and feet

Vertical Parameters

Vertical scale: 0.20 - 5.00dB/div

Resolution: 0.01dB for parameter setting, 0.001dB for attenuation/loss read-out

Linearity: 0.05dB/dB

Zoom: All combinations of horizontal and vertical parameters can be entered while the instrument is running. Serves to zoom in on any point of the waveform and allowing close examinations without interrupting the averaging process.

Documentation

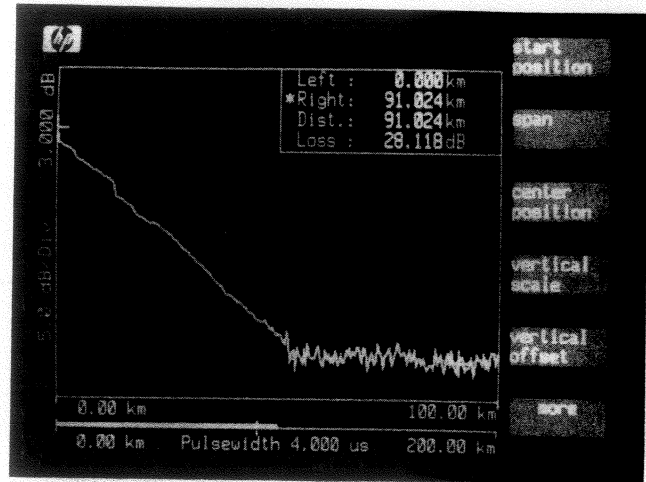
Waveform memory: 12 waveforms and related instrument settings can be stored in the HP 8145A in non-volatile memory and recalled. More than 100 waveforms and related instrument settings can be stored in each HP 81450A Memory Module and recalled. The modules contain non-volatile memory and plug into the rearpanel of the HP 8145A.

ID Codes: An identification code of up to 38 alpha-numerical characters can be entered for each memory location. All ID codes are displayed when the directory is called up.

Compare mode: Presently displayed waveform can be compared against any previously stored one, if the horizontal parameters are identical. Zooming capability is provided.

Hardcopy: Any displayed or previously stored waveform can be directly dumped to a Thinkjet, Quietjet or any HPGL plotter.

Instrument settings: storage and recall of 9 user selectable instrument settings, recall of 1 standard setting.



General

CRT: 15cm (6"), green

Laser safety class: Class 1

Recalibration period: 1 year

HP-IB Capability

All modes and parameters can be programmed

HP-IB Interface Function Codes: SH1, AH1, T5, L3, SR1, RL1, PP0, DC1, DT1, C0

Environmental

Storage temperature: -40°C to +75°C

Operating temperature: -20°C to +65°C (-10°C to +55°C to meet specs)

Humidity: 95% R.H. from 0°C to +40°C

Power

DC: 12 - 30V DC, 80W max

AC: 100/120/220/240Vrms ±10%, 90V Amax, 48-400Hz

Battery back up (for non-volatile memory): with instrument switched off all current modes and data will be maintained for at least 10 years at 25°C temp.

Dimensions: 190mm H, 340mm W, 465mm D (7.5" x 13.5" x 18.3")

Weight: net 16 kg (35.3 lbs), shipping 22 kg (48.5 lbs)

Ordering Information

8145A Optical Time Domain Reflectometer	\$12900
Opt. 002: 1300nm	\$10800
Opt. 003: 1550nm	\$14800
Opt. 023: 1300nm/1550nm	\$21800
Opt. 011: Diamond HMS-10/HP connector interface	\$305
Opt. 012: FC/PC connector interface	\$305
Opt. 013: DIN 47256 connector interface	\$305
Opt. 014: ST connector interface	\$305
Opt. 015: Biconic connector interface	\$305
Opt. 050: DC power cable	\$770
Opt. W30: 3 years of return repair service	\$625
81450A: Memory module	\$1100

The connector-interfaces for Diamond HMS-10/HP FC/PC, DIN47256, ST and Biconic connectors are available as additional accessories.

For adapter cables and other accessories see "Lightwave Test Accessories" on page 309.