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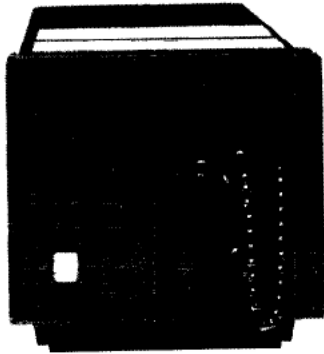
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- Calibrated O/E conversion
- DC to 400 MHz bandwidth
- $\pm 0.3\text{dB}$ conversion accuracy



HP 81519A

The HP 81519A is a linear transducer which converts optical signals into their electrical equivalents. The instrument is designed as a front-end interface to conventional electronic test equipment and as a general purpose receiving device for testing fiber optic modules and systems.

A PIN diode, calibrated at 850nm, serves as opto/electric converter in the range between 550 and 950nm. The characteristic curve on top of the instrument indicates the transducer gain in this range.

With the wide demodulation frequency band of DC to 400 MHz and an intrinsic transition time of less than 1.1 ns, the HP 81519A is a valuable tool for testing fiber optic devices in computer, local area network and aerospace applications. When operating in conjunction with other equipment, measurements such as pulse response and bandwidth in the time and frequency domains can be performed accurately.

With the adjustable offset, the conversion window can be conveniently shifted between 0 and 1 mW in accordance with the optical input power.

HP 81519A Specifications

Optical Characteristics

Wavelength range: 550 to 950 nm, cal for 850 nm
Input: Adapts to core diameters up to 80 μm ; N.A. ≤ 0.2
Input swing: 1 mW (min. low level 0mW, max. high 1.5 mW)
Input connector: Diamond® HFS1
Connector uncertainty: $\pm 0.1\text{ dB}$

Transducer Characteristics

Conversion, opto/electric
Conversion gain: -1 V/mW ; **Accuracy:** $\pm 0.3\text{dB} \pm 10\mu\text{W}$
Small signal bandwidth: DC to 400 MHz (@ -3.0dB)
Flatness of conversion: $\pm 0.3\text{dB}$ (DC to 150 MHz)
NEP: $< 700\text{nW}$ (rms); **Distortion:** typ. 20dB (40dBel.)

Output (into 50 Ohm)

Range: $\pm 0.5\text{V}$; Output impedance: 50 Ohm $\pm 2\%$

Response

Transition time: $\leq 1.1\text{ ns}$; Perturbations: $< 10\%$ of ampl.

General

Environmental

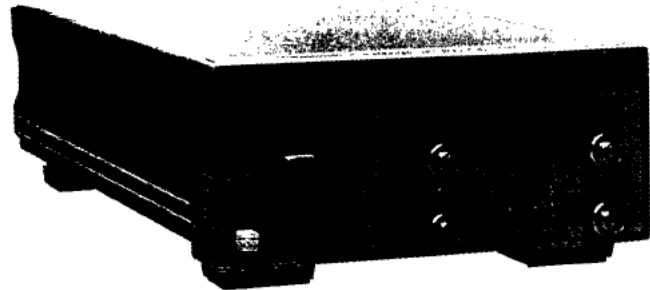
Storage temperature: -40°C to $+70^\circ\text{C}$
Operating temperature: 0°C to $+55^\circ\text{C}$
Humidity: 95% R.H. from 0°C to $+40^\circ\text{C}$
Power: 115/230 Vrms, $+10\%$, -22% , 48 to 66 Hz, 16VA max.
Weight: net 1.7 kg (3.6 lbs), shipping 2.4 kg (5 lbs)
Size: 95mm(H) x 105mm(W) x 345mm(D) (3.8" x 4.3" x 13.6")

Ordering Information

HP 81519A Optical Receiver
 Opt 910: Extra operating and service manual

Price
 \$3100
 \$ 20

- Insertion loss $< 3.5\text{dB}$ incl. two connectors
- Crosstalk attenuation $> 50\text{dB}$
- Repeatability 0.2dB



HP 8159A



The HP 8159A Optical Switch features two optical inputs, A_{in} and B_{in} , and two outputs, A_{out} and B_{out} . The following switch combinations can be chosen either manually or via HP-IB: A_{in} to A_{out} , B_{in} to B_{out} or A_{in} to B_{out} .

In areas where reference measurements are of great interest, e.g. in production environments, the HP 8159A helps to save valuable test time, formerly spent for time-consuming re-connections between the device under test and the reference power meter. Full programmability permits R&D or production engineers to truly automate their measurements.

The high switching rate of 20Hz shortens the measuring time, thus increasing the throughput. With excellent switching repeatability of 0.2dB and high performance Diamond® connectors, the HP 8159A specifically assists the user in performing accurate, reliable and repeatable measurements.

The HP 8159A features customer-exchangeable connector adapters to accommodate Diamond® HMS-10/HP, FC/PC, DIN 47256 and ST connectorized optical cables.

HP 8159A Specifications

Optical Characteristics

Fiber type: 50/125 μm , G.I.
Numerical aperture: 0.2 ± 0.02
Input/Output connector: Diamond® HMS-10/HP, FC/PC, DIN 47256, ST

Insertion loss (incl. 2 connectors, for all switching paths): $< 3.5\text{dB}$
Typical: $< 2.8\text{dB}$
Switch repeatability (1000 cycles, $\pm 2^\circ\text{C}$ window): 0.2dB window
Crosstalk attenuation: $> 50\text{dB}$

Supplementary Performance Characteristics

Wavelength range: 780 - 1350nm
Switching rate: 20 Hz
Settling time: $< 25\text{ms}$
Lifetime: 10^6 cycles

General

HP-IB capability
Interface function: SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT0, C0

Environmental

Storage temperature: -40°C to $+75^\circ\text{C}$
Operating temperature: 0°C to $+55^\circ\text{C}$
Humidity: $< 95\%$ R.H. from 0°C to $+40^\circ\text{C}$
Power: 100/120/220/240Vrms, 48 - 400Hz, $+5\%$, -10% , 35VA max
Weight: net 3.75kg (8.3lbs), shipping 7.8kg (17.2lbs)
Size: 89mm(H) x 212.3mm(W) x 345mm(D) (3.5" x 8.36" x 13.6")

Ordering Information

HP 8159A Optical Switch
 Opt 907: Front handle kit HP P/N 5061-9688
 Opt 908: Rack flange kit HP P/N 5061-9672
 Opt 910: Add. operating and service manual
 P/N 5061-9701 Bail handle kit

Price
 \$4785
 \$50
 \$50
 \$40
 \$38

☎ Fast-Ship product—see page 758.



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