

## KEYSIGHT TECHNOLOGIES (AGILENT HP)

# 81531A

The Keysight (Agilent/HP) 81531A is an InGaAs-based optical power sensor module designed for use with the HP 8153A Lightwave Multimeter mainframe. It provides high-sensitivity power measurements across a wide wavelength range of 800 to 1700 nm, making it suitable for standard single-mode and multimode optical fiber testing.

## SPECIFICATIONS

### General

|            |                                          |
|------------|------------------------------------------|
| Interfaces | HP 8153A proprietary backplane interface |
| Display    | None (uses mainframe display)            |

### Physical

|                       |                                    |
|-----------------------|------------------------------------|
| Power Supply          | Powered by host HP 8153A mainframe |
| Operating Temperature | 0 °C to +55 °C °C                  |
| Dimensions (W×H×D)    | 32 mm × 75 mm × 335 mm mm          |
| Weight                | 0.5 kg kg                          |

### Optical Characteristics

|                         |                |
|-------------------------|----------------|
| Wavelength Range        | 800 to 1700 nm |
| Detector Material Type  | InGaAs         |
| Power Measurement Range | +3 to -90 dBm  |

### Measurement Accuracy and Linearity

|                                      |                                                             |
|--------------------------------------|-------------------------------------------------------------|
| Noise Floor (Equivalent Noise Power) | < 1.5 pW peak-to-peak (1200 to 1600 nm, 1 s averaging time) |
|--------------------------------------|-------------------------------------------------------------|

### Optical Interface and Connectivity

|                                                    |                                                            |
|----------------------------------------------------|------------------------------------------------------------|
| Compatible Fiber Types                             | 9/125 μm to 100/140 μm                                     |
| Maximum Acceptance Angle / Numerical Aperture (NA) | ≤ 0.3                                                      |
| Supported Connector Adapters                       | HP 81000 series connector adapters (FC, SC, ST, DIN, etc.) |
| Connection Interface to Host Mainframe             | HP 8153A Lightwave Multimeter slot                         |

### Physical and Mechanical Specifications

|                     |                |
|---------------------|----------------|
| Form Factor         | Plug-in module |
| Host Slot Occupancy | 1 slot         |

**Optical Specifications**

|                         |                                                    |
|-------------------------|----------------------------------------------------|
| Sensor Diameter         | 1 mm                                               |
| Maximum Input Power     | +10 dBm                                            |
| Calibration Uncertainty | ±2.5% (at 1300 nm / 1550 nm, reference conditions) |
| Linearity               | ±0.02 dB (+3 to -70 dBm)                           |

**Environmental**

|                     |                                       |
|---------------------|---------------------------------------|
| Storage Temperature | -40 °C to +70 °C                      |
| Operating Humidity  | 95% R.H. max @ 40 °C (non-condensing) |

**Performance**

|                         |                                            |
|-------------------------|--------------------------------------------|
| Polarization Dependence | < ±0.01 dB (typical @ 1310 nm and 1550 nm) |
| Warm-up Time            | 40 min                                     |
| Averaging Time Range    | 20 ms to 3600 s (mainframe controlled)     |

**TECHNOLOGY**

InGaAs Optical Power Sensor

**APPLICATIONS**

Optical power measurement and fiber optic testing

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.