

## KEYSIGHT TECHNOLOGIES (AGILENT HP)

# 81636B

The Keysight Technologies 81636B is a Fast Power Sensor Module designed for use within the Keysight 8163A/B, 8164A/B, and 8166A/B Lightwave Multimeter mainframes. It features high-speed data logging capability and an InGaAs sensor element, making it ideal for fast, accurate optical power measurements and optical component characterization over the 1250 nm to 1640 nm wavelength range.

## SPECIFICATIONS

### General

|                    |                                                |
|--------------------|------------------------------------------------|
| Interfaces         | None (uses host mainframe backplane interface) |
| Display            | None (uses mainframe display)                  |
| Warm-up Time       | 20 min                                         |
| Number of Channels | 1                                              |

### Physical

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Power Supply               | Powered internally by the host mainframe slot |
| Operating Temperature      | 0 °C to 40 °C °C                              |
| Dimensions (W×H×D)         | 75 mm × 32 mm × 125 mm mm                     |
| Weight                     | 0.1 kg kg                                     |
| Sensor Connector Interface | Keysight 81000xl flexible connector interface |

### Optical Performance

|                          |                                                                    |
|--------------------------|--------------------------------------------------------------------|
| Sensor Element           | InGaAs                                                             |
| Wavelength Range         | 1250 nm to 1640 nm                                                 |
| Power Measurement Range  | -80 dBm to +10 dBm                                                 |
| Maximum Safe Input Power | +16 dBm                                                            |
| Applicable Fiber Type    | Single-mode (9/125 μm) to Multimode (up to 62.5/125 μm, NA ≤ 0.24) |
| Sensor Interface Type    | Accepts 81000xl series connector adapters                          |

### Accuracy and Calibration

|                                |                                                   |
|--------------------------------|---------------------------------------------------|
| Reference Conditions           | 1310 nm and 1550 nm, at 23 °C ± 5 °C              |
| Total Power Uncertainty        | ±3.0% (1250 nm to 1630 nm)                        |
| Linearity (-60 dBm to +10 dBm) | < ±0.02 dB (typically ±0.015 dB)                  |
| Linearity (-70 dBm to -60 dBm) | < ±0.04 dB                                        |
| Noise (Peak-to-Peak)           | < 10 pW (1250 nm to 1600 nm, 1 s averaging time)  |
| Zero Drift                     | < 10 pW (over 30 minutes at constant temperature) |

Measurement Capabilities

|                        |                                                          |
|------------------------|----------------------------------------------------------|
| Minimum Averaging Time | 25 $\mu$ s                                               |
| Maximum Averaging Time | 10 s                                                     |
| Data Logging Capacity  | 100,000 points                                           |
| Sampling Rate          | Up to 40,000 samples/s (at 25 $\mu$ s sampling interval) |

Meter Compatibility & System Integration

|                       |                                    |
|-----------------------|------------------------------------|
| Compatible Mainframes | Keysight 8163A/B, 8164A/B, 8166A/B |
|-----------------------|------------------------------------|

Physical Dimensions & Weight

|                       |        |
|-----------------------|--------|
| Module Slots Required | 1 slot |
|-----------------------|--------|

Environmental Parameters

|                           |                                      |
|---------------------------|--------------------------------------|
| Storage Temperature Range | -40 $^{\circ}$ C to +70 $^{\circ}$ C |
|---------------------------|--------------------------------------|

Measurement Performance

|                         |                                       |
|-------------------------|---------------------------------------|
| Polarization Dependence | < $\pm$ 0.01 dB (1550 nm)             |
| Spectral Ripple         | < $\pm$ 0.015 dB (1520 nm to 1620 nm) |
| Return Loss             | > 55 dB                               |

Environmental

|                    |                |
|--------------------|----------------|
| Operating Humidity | Non-condensing |
|--------------------|----------------|

Sensor Performance

|                             |      |
|-----------------------------|------|
| Sensor Active Area Diameter | 1 mm |
|-----------------------------|------|

Optical Features

|                            |      |
|----------------------------|------|
| Maximum Numerical Aperture | 0.24 |
|----------------------------|------|

Accuracy

|                                                 |                                     |
|-------------------------------------------------|-------------------------------------|
| Calibration Uncertainty at Reference Conditions | $\pm$ 2.2% (at 1310 nm and 1550 nm) |
|-------------------------------------------------|-------------------------------------|

TECHNOLOGY

Fiber Optic (InGaAs)

APPLICATIONS

Optical Power Measurement & High-Speed Logging

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