

## Power Sensor Module Specifications

	81530A	81536A	81531A	81532A
<b>Sensor Element</b>	Si	InGaAs	InGaAs	InGaAs
<b>Wavelength Range</b>	450 to 1020 nm	800 to 1700 nm	800 to 1700 nm	800 to 1700 nm
<b>Power Range</b>	+3 to -100 dBm	+3 to -70 dBm	+3 to -90 dBm	+3 to -110 dBm
<b>Uncertainty (Accuracy) at Reference Conditions<sup>a</sup></b>	±2.5% (600 to 1020 nm)	±2.5% (1000 to 1650 nm)	±2.5% (1000 to 1650 nm)	±2.5% (1000 to 1650 nm)
<b>Total Uncertainty<sup>b</sup></b>	±5% ±0.5 pW (600 to 1020 nm)	±5% ±50 pW (1000 to 1650 nm)	±5% ±1.5 pW (1000 to 1650 nm)	±5% ±0.5 pW (1000 to 1650 nm)
<b>Linearity (Power)</b> 18° to 28°C, Constant Temp.	0 to -90 dBm ±0.015 dB, ±0.3 pW	0 to -50 dBm ±0.015 dB, ±30 pW	0 to -70 dBm ±0.015 dB, ±1 pW	0 to -90 dBm ±0.015 dB, ±0.3 pW
Operating Temp. Range, Constant Temp.	±0.05 dB, ±0.5 pW	±0.05 dB, ±50 pW	±0.05 dB, ±1.5 pW	±0.05 dB, ±0.5 pW
<b>Noise (Peak-to-Peak)</b> (Avg. Time 1 second)	<0.5 pW (700 to 900 nm)	<50 pW (1200 to 1600 nm)	<1.5 pW (1200 to 1600 nm)	<0.5 pW (1200 to 1600 nm)
<b>Operating Temperature</b>	0° to +55°C			
<b>Display Resolution</b>	0.001 dB/dBm, (0.0001 dB/dBm on printout), 0.01 to 10 pW (depending on power range) The display may vary by ±1 count; ±3 counts in -50 dBm range of sensor modules			
<b>Applicable Fiber Type</b>	9/125 μm to 100/140 μm, NA ≤0.3			
<b>Dimensions</b>	75 mm H × 32 mm W × 335 mm D (2.8 in × 1.3 in × 13.2 in)			
<b>Weight</b>	Net: 0.6 kg (1.3 lb)/ Shipping: 1 kg (2.2 lb)			
<b>Recalibration Period</b>	Two years			
<b>Warm-up Time</b>	20 minutes			

- a. At the following reference conditions:
- Power level 10 μW (-20 dBm) CW.
  - Fiber 50 μm graded-index, NA=0.2, fully excited.
  - Ambient temperature 23° ±5°C.
  - Diamond HMS-10 connector.
  - At day of calibration (add 0.3% for aging over one year; 0.6% for two years).
  - Spectral width of source <10 nm.
- b. At the following operating conditions:
- Fiber ≤50 μm, NA ≤0.2.
  - For NA >0.2, add 1%.
  - Ambient temperature 0° to 55°C, non-condensing.
  - Add ±1% if Biconic connector is used.
  - Within one year after calibration (add 0.3% for second year).

## Supplementary Performance Characteristics

Add 1% to total uncertainty for full wavelength range.

Outside the specified wavelength range, the noise will increase by up to five times the values shown in this table.

<b>Analog Output</b>	
Bandwidth	≥dc, ≤300 to 4000 Hz, depending on range and sensor module
Output Voltage	0 to 2 V into open
Output Impedance	600Ω typical
Maximum Input Voltage	±10 V