

Power sensor module specifications (Autorange mode)

	Agilent 81635A	Agilent 81634B
Sensor element	InGaAs (dual)	InGaAs
Wavelength range	800 – 1650 nm	800 – 1700 nm
Power range	+10 to –80 dBm	+10 to –110 dBm
Applicable fiber type	Standard SM and MM up to 62.5 μm core size, NA ≤0.24	Standard SM and MM up to 100 μm core size, NA ≤0.3
Uncertainty (accuracy) at reference conditions ^[1]	± 3 % (1200 nm to 1630 nm)	± 2.5 % (1000 nm to 1630 nm)
Total uncertainty ^[2]	± 5% ± 20 pW ^{[8], [9]} (1200 nm to 1630 nm)	± 4.5% ± 0.5 pW (1000 nm to 1630 nm)
Relative uncertainty: - due to polarization ^[3] - spectral ripple (due to interference) ^[4]	typ. ± 0.015 dB typ. ± 0.015 dB	< ± 0.005 dB < ± 0.005 dB
Linearity (power): ^[5] - at 23°C ± 5°C - at operating temp. range	CW +10 to –60 dBm (1200 nm to 1630 nm) < ± 0.02 dB ± 20 pW ^[9] < ± 0.06 dB ± 20 pW ^[9]	CW +10 to –90 dBm (1000 nm to 1630 nm) < ± 0.015 dB ± 0.2 pW < ± 0.05 dB ± 0.5 pW
Return loss ^[7]	> 40 dB	> 55 dB
Noise (peak to peak) ^{[5], [6]}	< 20 pW	< 0.2 pW
Averaging time (minimal)	100 μs	100 μs
Analog Output	none	included
Dimensions (H x W x D)	75 mm x 32 mm x 335 mm (2.8" x 1.3" x 13.2")	
Weight	0.5 kg	
Recalibration period	2 years	
Operating temperature	+10°C to +40°C	0°C to +45°C
Humidity	Non-condensing	Non-condensing
Warm-up time	20 min	20 min

^[1] Reference conditions:

- Power level 10 μW (-20dBm), continuous wave (CW)
- Fiber 50 μm graded-index, NA=0.2
- Ambient temperature 23°C ± 5°C
- On day of calibration (add ± 0.3 % for aging over one year, add ± 0.6 % over two years)
- Spectral width of source < 10nm (FWHM)
- Wavelength setting at powermeter must correspond to source wavelength ±0.4 nm

^[2] Operating Conditions:

- Fiber ≤ 50 μm, NA ≤ 0.2
- Only Agilent 81635A: For fiber 62.5 μm graded-index (NA=0.24) : add ± 2 %
- Within one year after calibration, add 0.3 % for second year

- Add ± 1% for Biconic connector
- Operating temperature range as specified
humidity: none condensing

- ^[3] All states of polarization at constant wavelength (1550 nm ± 30 nm) and constant power, straight connector, T = 23°C ± 5°.
For angled connector (8°) add ± 0.01 dB typ.

- ^[4] Conditions:
Wavelength 1550 nm ± 30 nm, fixed state of polarization, constant power,
Temperature 23°C ± 5°C
Linewidth of source ≥ 100 MHz, angled connector 8°.

- ^[5] At const. Temperature (ΔT = ± 1 °C)

- ^[6] Averaging time 1s, T = 23°C ± 5°C, observation time 300 s.
Wavelength range 1200-1630 nm.

^[7] Conditions:

Wavelengths 1310nm ± 30 nm and 1550nm ± 30 nm.
Standard single mode fiber, angled connector min 8°.
T = 23°C ± 5°C

- ^[8] For wavelengths > 1600 nm add ± 0.06%/nm

- ^[9] For input power > 2 mW add ± 0.02dB