KEYSIGHT TECHNOLOGIES (AGILENT HP)

N8486AR

The Keysight Technologies N8486AR is a high-performance thermocouple waveguide power sensor designed for accurate RF and microwave power measurements in the Ka-band (26.5 GHz to 40.0 GHz). Operating across a power range of -35 dBm to +20 dBm, this WR-28 waveguide sensor features excellent VSWR (1.08 max) and built-in EEPROM calibration table storage for seamless compatibility with EPM, EPM-P, and P-series power meters.

SPECIFICATIONS

General

Interfaces	12-pin male connector (sensor cable port), BNC female (calibration input)
Display	No built-in display (displays via host power meter)
Net Weight	0.26 kg (0.57 lbs)
Calibration Cycle	1 year

Physical

Power Supply	Supplied by compatible Keysight power meter
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	48 mm × 38 mm × 135 mm mm
Weight	0.26 kg kg

Measurement & Performance

Frequency Range	26.5 GHz to 40.0 GHz
Power Measurement Range	-30 dBm to +20 dBm (1 µW to 100 mW)
Sensor Technology	Thermocouple
Maximum Continuous Wave (CW) Input Power	+25 dBm (316 mW)
Maximum Peak Input Power	+30 dBm (1 W) for <10 µs duration
Maximum Voltage Standing Wave Ratio (VSWR)	1.40
Power Linearity (-35 to +15 dBm)	Power Linearity (-30 to +15 dBm) = ±0.52% (at 25 °C ± 10 °C)
Power Linearity (+15 to +20 dBm)	Power Linearity (+15 to +20 dBm) = ±0.80% (at 25 °C ± 10 °C)
Zero Set	≤ 200 nW
Zero Drift	≤ ±40 nW (within 1 hour after zeroing)
Measurement Noise	≤ 110 nW (with average of 512, at 25 °C ± 5 °C)

RF & Physical Interface

RF Input Port Type	WR-28 Waveguide
Waveguide Flange Designation	UG-599/U
Reference Calibration Port	BNC (female)
Host Connection Port	12-pin male
Host Connection Cable Compatibility	Keysight 11730A series

System Compatibility

Compatible Power Meters	Keysight EPM (N1913A, N1914A, E4418B, E4419B), EPM-P (E4416A, E4417A), P-Series (N1911A, N1912A)

Calibration

Calibration Factor Storage	EEPROM (standard model) / Paper table (Option CFT)
Reference Calibration Input Frequency	50 MHz
Reference Calibration Input Power	1 mW (0 dBm)

Environmental & Safety

Operating Temperature Range	0 °C to 55 °C
Storage Temperature Range	-40 °C to 70 °C
Operating Humidity Range	Up to 95% RH at 40 °C (non-condensing)
Storage Humidity Range	Up to 90% RH at 65 °C (non-condensing)
Operating Altitude	Up to 4,600 m (15,000 ft)
Storage Altitude	Up to 15,240 m (50,000 ft)
Shock Resistance	30 g half-sine, 11 ms duration
Vibration Resistance	Random: 5 to 500 Hz, 3.21 g rms
Environmental Compliance	MIL-PRF-28800F Class 3

RF Connector/Interface

Waveguide Size	WR-28

Performance

Calibration Factor Uncertainty (Max)	±4.8% (26.5 to 40.0 GHz)
Calibration Factor Uncertainty (Typical)	±2.2% (26.5 to 40.0 GHz)
Temperature Coefficient (-35 to +15 dBm)	< 0.15% / °C (0 to 55 °C)
Temperature Coefficient (+15 to +20 dBm)	< 0.20% / °C (0 to 55 °C)

Ordering Information

Available Options	Option 100 (Standard version with integrated EEPROM), Option CFT (Legacy-compatible version requiring manual calibration factor entry, no EEPROM)

Inputs & Outputs

Sensor Connector Type	Keysight 12-pin male custom connector

TECHNOLOGY

Thermocouple Power Sensor

APPLICATIONS

RF & Microwave Power Measurement