

Table 1-1. Specifications

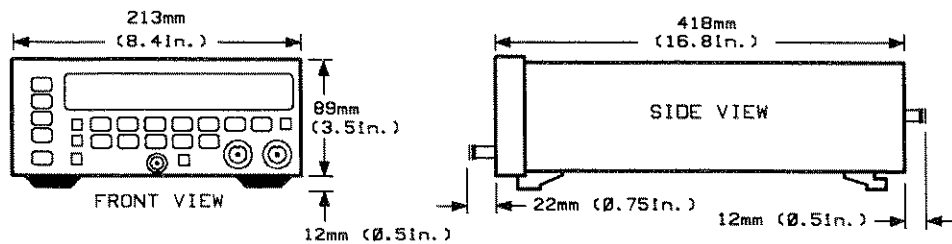
Electrical Characteristics	Performance Limits	Conditions
<b>Meter</b>		
Frequency range	100 kHz to 26.5 GHz	Sensor dependent
Power range	-70 dBm to +44 dBm (100 pW to 25W)	Sensor dependent
Dynamic range	50 dB total range	5 ranges of 10 dB steps for 50 dB total
<b>Inputs</b>		
Rear panel output	Channel A and B	Multiplexed dual sensors
Measurement modes	0-1 volt analog	Without digital filtering 1kΩ output impedance BNC connector
Display units	A, B, A-B, B-A, A/B, B/A	Normal or relative all modes
Resolution	Watts or dBm	Absolute A, B, A-B, B-A
Normal	Percent or dB	Ratio A/B, B/A
High	Percent or dB	Relative
Accuracy	0.1% full scale (0.01 dB)	Auto filter watts or percent
Instrumentation, includes sensor linearity <sup>1</sup>	0.01 dB	dBm or dB
Single channel mode:	0.01% full scale	Manual filter watts or percent
Dual channel mode: <sup>2</sup>	0.001dB	dBm or dB
(ratio or difference)	Multiply single channel specifications by 2	
Zero set (digital settability of zero)	±0.02 dB	Within same calibration range
	Plus ±0.02 dB	Outside calibration range
	±0.5% full scale	Most sensitive range. Decrease percentage by a factor of 10 for each higher range ± one count.
	±2% full scale	If using the HP 8484A, 8481D, 8485D, 8486D, or 8487D Power Sensors
<b>EMI</b>		
	Radiated and Conducted Emissions and Radiated and Conducted Susceptibility are within the requirements of RE02, CE03, RS01/03 and CS01/02 called out in MIL-STD-461C, and within the requirements of VDE 0871 and CISPR Publication 11.	

1 When operating in Range 5, add the corresponding sensor power linearity percentage.

2 Accuracy does not depend on the meter being in Normal or Relative mode.

Table 1-1. Specifications (continued)

Electrical Characteristics	Performance Limits	Conditions
Power reference	1.00 mW	Internal 50 MHz oscillator factory set to $\pm 0.7\%$ traceable to National Bureau of Standards.
Power reference accuracy	$\pm 1.2\%$ $\pm 0.9\%$	Worst case RSS for one year.
<b>General</b>		
Operating temperature range	0° C to 55° C	
Power Requirements	65 VA, 35 watts	Maximum
Line Voltage	100, 120, 220, or 240 Vac, +5% to -10%	
Line Frequency	48 to 66 Hz  360 to 440 Hz	All specified line voltages may be used.  Limited to line voltages of 100 or 120 Vac.
Power Dissipation	<10 VA (8 watts max)	
Remote Operation	HP-IB	All functions except power switch, clear entry, HP-IB address
Compatibility	HP-IB interface	SH1, AH1, T5, TE0, L3, LE0, SR1, RL1, PP1, DC1, DT1, C0
Memory	Non-volatile	Contains complete meter operating state of both channels plus contents of store/recall registers
Operating and non-operating environment	Temperature, humidity, shock, and vibration type tested to MIL-T-28800B Class V requirements.	
Safety	Meets requirements of IEC 348	
Net weight	5.9 kg (13 lbs.)	
Dimensions	89mm H x 213mm W x 418mm D (3.5 H x 8.4 W x 16.8 inches D) (3.5 H x 8.4 W x 16.8 inches D)	EIA and IEC racking standards: 3.5 H x 0.5 W x 17 D



Note: For ordering cabinet accessories, the module sizes are 3-1/2H, 1/2MW, and 17D.

Table 1-2. Supplemental Characteristics

<b>Zero drift of sensors</b>	
As a % of full scale, 1 hour, at constant temperature after 24 hours warmup.	
Decrease percentage by a factor of 10 for each higher range.	
<b>Sensors:</b>	
HP 8481A, 8481B, 8481H, 8482A, 8482B, 8482H, 8483A, 8485A, R8486A, Q8486A, W8486A, and 8487A:	<±0.1% of full scale on range 1.
<b>Sensors:</b>	
HP 8484A, 8481D, 8485D, 8486D, and 8487D:	<±2.0% of full scale on range 1.
<b>Measurement speed</b>	
Over HP-IB and free running trigger.	
Single channel	20 readings per second
Dual channel	2 readings per second
<b>Channel switching delay</b>	200 ms
<b>Power reference</b>	
Frequency	50 MHz nominal
SWR	1.05 maximum
Connector	Type N female
<b>Meter adjustments:</b>	
<b>CAL FACTOR</b>	Key pad entry or programmable. Sets calibration factor for the meter. Overrides current value. Range: 1–150% in 0.1% increments.
<b>ZERO</b>	Key pad entry or programmable. Zeros all 5 ranges, reference oscillator automatically switched off during zeroing.
<b>CAL ADJ</b>	Automatic, key pad entry or programmable. Calibrates meter using internal 1.00 mW reference or external reference oscillator. Reference Cal Factor settable from 50.0% to 120.0%.
<b>OFFSET</b>	Key pad entry or programmable. Range: –99.99 to +99.99 dB in 0.01 dB increments.
<b>Digital Filter Length</b>	Keypad entry or programmable. Averages power readings from 1 to 512 successive values in increments by factors of 2 (1, 2, 4, . . . 256, 512).
<b>High/Low Power Limits</b>	Programmable only. Activates Service Request and flashing front panel indicator. Individual channel values from –299.99 to +299.99 dBm in 0.001 dB increments.
<b>STORE/RECALL Registers</b>	Nineteen registers to store complete operating state of meter for later recall.
<b>REL</b>	Key pad entry or programmable. Displays all successive measurements relative to the last displayed value when activated. Units are in dB or %.

**Table 1-3. Additional Supplemental Characteristics**

**Meter Noise**

As a % of full scale, with constant temperature, range 1, measured over a one minute interval, and two standard deviations.

Decrease noise by a factor of 10 for each higher range for all sensors and all filters.

**Sensors:**

HP 8481A, 8481B, 8481H, 8482A, 8482B, 8482H, 8483A, 8485A, R8486A, Q8486A, W8486A, and 8487A:

Filter Number	Noise (%)
0	6.0
1	2.4
2	1.8
3	0.9
4	0.7
5	0.5
6	0.4
7	0.3
8	0.2
9	0.15

**Sensors:**

HP 8484A, 8481D, 8485D, and 8487D:  
Multiply noise levels by 4 for all filters.

**Sensors:**

HP R/Q8486D:  
Multiply noise levels by 6 for all filters.

**Settling Time**

0 to 99% settled readings over the bus. AUTO filter, range hold, 10 dB decreasing power step.

**Single channel**

Range	Settling Time
1	<3.0 s
2	<1.0 s
3	<150 ms
4-5	<100 ms

Manual filter, range hold, 10 dB decreasing power step.

**Single channel**

Filter Number	Response Time(s)
0	0.10
1	0.15
2	0.25
3	1.0
4	1.4
5	2.2
6	3.7
7	6.9
8	14.0
9	27.0

**Dual channel (ratio or difference mode):**

Approximately the sum of the individual response times of each channel, plus channel switching delay.