

# 8480 Series diode and thermocouple power sensor specifications

## Maximum SWR and power linearity

Model	Frequency range	Maximum SWR	Power linearity <sup>1</sup>	Maximum power	Connector type	Weight
<b>25-Watt sensors, 1 mW to 25 W (0 dBm to +44 dBm)</b>						
8481B	10 MHz to 18 GHz	10 MHz to 2 GHz: 1.10 2 GHz to 12.4 GHz: 1.18 12.4 GHz to 18 GHz: 1.28	+35 dBm to + 44 dBm: ( $\pm 4\%$ )	0 °C to 350 °C: 30 W avg <sup>2</sup> 35 °C to 550 °C: 25 W avg 0.01 to 5.8 GHz: 500 W pk 5.8 to 18 GHz: 125 W pk 500 W, $\mu$ s per pulse	Type-N(m)	0.8 kg (1.75 lb)
8482B	100 kHz to 4.2 GHz	100 kHz to 2 GHz: 1.10 2 GHz to 4.2 GHz: 1.18	+35 dBm to + 44 dBm: ( $\pm 4\%$ )	0 °C to 350 °C: 30 W avg <sup>2</sup> 35 °C to 550 °C: 25 W avg 0.01 to 5.8 GHz: 500 W pk 5.8 to 18 GHz: 125 W pk 500 W, $\mu$ s per pulse	Type-N(m)	0.8 kg (1.75 lb)
<b>3-Watt sensors, 100 <math>\mu</math>W to 3 W (-10 dBm to +35 dBm)</b>						
8481H	10 MHz to 18 GHz	10 MHz to 8 GHz: 1.20 8 GHz to 12.4 GHz: 1.25 12.4 GHz to 18 GHz: 1.30	+25 dBm to + 35 dBm: ( $\pm 5\%$ )	3.5 W avg, 100 W pk 100 W, $\mu$ s per pulse	Type-N(m)	0.2 kg (0.38 lb)
8482H	100 kHz to 4.2 GHz	100 kHz to 4.2 GHz: 1.20	+25 dBm to + 35 dBm: ( $\pm 5\%$ )	3.5 W avg, 100 W pk 100 W, $\mu$ s per pulse	Type-N(m)	0.2 kg (0.38 lb)
<b>100-mW sensors, 1 <math>\mu</math>W to 100 mW (-30 dBm to +20 dBm)</b>						
8485A	50 MHz to 26.5 GHz	50 MHz to 100 MHz: 1.15 100 MHz to 2 GHz: 1.10 2 GHz to 12.4 GHz: 1.15 12.4 GHz to 18 GHz: 1.20 18 GHz to 26.5 GHz: 1.25	+10 dBm to + 20 dBm: ( $\pm 3\%$ )	300 mW avg, 15 W pk 30 W, $\mu$ s per pulse	APC-3.5mm(m)	0.2 kg (.38 lb)
Option 8485A-033	26.5 MHz to 33 GHz	26.5 GHz to 33 GHz: 1.40	+10 dBm to + 20 dBm: ( $\pm 3\%$ )	300 mW avg, 15 W pk 30 W, $\mu$ s per pulse	APC-3.5mm(m)	0.2 kg (.38 lb)
8481A	10 MHz to 18 GHz	10 MHz to 30 MHz: 1.40 30 MHz to 50 MHz: 1.18 50 MHz to 2 GHz: 1.10 2 GHz to 12.4 GHz: 1.18 12.4 GHz to 18 GHz: 1.28	+10 dBm to + 20 dBm: ( $\pm 3\%$ )	300 mW avg, 15 W pk 30 W, $\mu$ s per pulse	Type-N (m)	0.2 kg (0.38 lb)
8482A	100 kHz to 4.2 GHz	100 kHz to 300 kHz: 1.60 300 kHz to 1 MHz: 1.20 1 MHz to 2 GHz: 1.10 2 GHz to 4.2 GHz: 1.30	+10 dBm to + 20 dBm: ( $\pm 3\%$ )	300 mW avg, 15 W pk 30 W, $\mu$ s per pulse	Type-N (m)	0.2 kg (0.38 lb)
8483A (75-ohm)	100 kHz to 2 GHz	100 kHz to 600 kHz: 1.80 600 kHz to 2 GHz: 1.18	+10 dBm to + 20 dBm: ( $\pm 3\%$ )	300 mW avg, 10 W pk	Type-N (m) (75-ohm)	0.2 kg (0.38 lb)
R8486A	26.5 GHz to 40 GHz	26.5 GHz to 40 GHz: 1.40	+10 dBm to + 20 dBm: ( $\pm 3\%$ )	300 mW avg, 15 W pk 30 W, $\mu$ s per pulse	Waveguide flange UG-599/U	0.26 kg (0.53 lb)
Q8486A	33 GHz to 50 GHz	33 GHz to 50 GHz: 1.50	+10 dBm to + 20 dBm: ( $\pm 3\%$ )	300 mW avg, 15 W pk 30 W, $\mu$ s per pulse	Waveguide flange UG-383/U	0.26 kg (0.53 lb)
V8486A	50 GHz to 75 GHz	50 GHz to 75 GHz: 1.06	+10 dBm to + 20 dBm: ( $\pm 2\%$ ) -30 dBm to + 10 dBm: ( $\pm 1\%$ )	200 mW avg, 40 W pk (10, $\mu$ s per pulse, 0.5% duty cycle)	Waveguide flange UG-385/U	0.4 kg (0.9 lb)
W8486A	75 GHz to 110 GHz	75 GHz to 110 GHz: 1.08	( $\pm 2\%$ )	200 mW avg, 40 W pk (10, $\mu$ s per pulse, 0.5% duty cycle)	Waveguide flange UG-387/U	0.4 kg (0.9 lb)
8487A	50 MHz to 50 GHz	50 MHz to 100 MHz: 1.15 100 MHz to 2 GHz: 1.10 2 GHz to 12.4 GHz: 1.15 12.4 GHz to 18 GHz: 1.20 18 GHz to 26.5 GHz: 1.25 26.5 GHz to 40 GHz: 1.30 40 GHz to 50 GHz: 1.50	+10 dBm to + 20 dBm: ( $\pm 3\%$ )	300 mW avg, 15 W pk 30 W, $\mu$ s per pulse	2.4 mm (m)	0.14 kg (.28 lb)

1. Negligible deviation except for those power ranges noted.

2. For pulses greater than 30 W, the maximum average power (Pa) is limited by the energy per pulse (E) in W,  $\mu$ s according to  $P_a = 30 \cdot 0.02 \cdot E$ .

## 8480 Series diode and thermocouple power sensor specifications

Model	Frequency range	Maximum SWR	Power linearity <sup>1</sup>	Maximum power	Connector type	Weight
<b>High-sensitivity sensors, 100 pW to 10 μW (–70 dBm to –20 dBm)</b>						
8481D <sup>3</sup>	10 MHz to 18 GHz	10 MHz to 30 MHz: 1.40 30 MHz to 4 GHz: 1.15 4 GHz to 10 GHz: 1.20 10 GHz to 15 GHz: 1.30 15 GHz to 18 GHz: 1.35	–30 dBm to –20 dBm: (±1%)	100 mW avg, 100 mW pk	Type-N (m)	0.16 kg (0.37 lb)
8485D <sup>3</sup>	50 MHz to 26.5 GHz	0.05 GHz to 0.1 GHz: 1.19 0.1 GHz to 4 GHz: 1.15 4 GHz to 12 GHz: 1.19 12 GHz to 18 GHz: 1.25 18 GHz to 26.5 GHz: 1.29	–30 dBm to –20 dBm: (±2%)	100 mW avg, 100 mW pk	APC-3.5mm (m)	0.2 kg (.38 lb)
Option 8485D-033	50 MHz to 33 GHz	26.5 GHz to 33 GHz: 1.35	–30 dBm to –20 dBm: (±2%)	100 mW avg, 100 mW pk	APC-3.5mm (m)	0.2 kg (.38 lb)
8487D <sup>3</sup>	50 MHz to 50 GHz	0.05 GHz to 0.1 GHz: 1.19 0.1 GHz to 2 GHz: 1.15 2 GHz to 12.4 GHz: 1.20 12.4 GHz to 18 GHz: 1.29 18 GHz to 34 GHz: 1.37 34 GHz to 40 GHz: 1.61 40 GHz to 50 GHz: 1.89	–30 dBm to –20 dBm: (±2%)	100 mW avg, 100 mW pk 10 W, μs per pulse	2.4 mm (m)	0.2 kg (0.38 lb)
R8486D <sup>3</sup>	26.5 GHz to 40 GHz	26.5 GHz to 40 GHz: 1.40	–30 dBm to –25 dBm: (±3%) –25 dBm to –20 dBm: (±5%)	100 mW avg, or pk 40 V dc max	Waveguide flange UG-599/U	0.26 kg (0.53 lb)
Q8486D <sup>3</sup>	33 GHz to 50 GHz	33 GHz to 50 GHz: 1.40	–30 dBm to 25 dBm: (±3%) –25 dBm to –20 dBm: (±5%)	100 mW avg, or pk 40 V dc max	Waveguide flange UG-383/U	0.26 kg (0.53 lb)

1. Negligible deviation except for those power ranges noted.

2. For pulses greater than 30 W, the maximum average power (Pa) is limited by the energy per pulse (E) in W, μs according to  $P_a = 30 \cdot 0.02 \cdot E$ .

3. Includes 11708A 30 dB attenuator for calibrating against 0 dBm, 50 MHz power reference. The 11708A is factory set to 30 dB ±0.05 dB at 50 MHz, traceable to NIST. SWR < 1.05 at 50 MHz.



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