

Model 1107-8

RF CALIBRATION AND MEASUREMENT PRODUCTS

- **Used to calibrate RF Power Sensors in the 26.5 to 40 GHz frequency range**
- **Standards are directly traceable to NIST**
- **Thermistor Standards are temperature controlled**
- **0.01 to 10 mW dynamic range**
- **Primary and Working Transfer Standard configurations**

Waveguide RF Power Transfer Standard

TEGAM Temperature Stabilized Waveguide RF Power Transfer Standards enable the precise measurement of microwave power in the 26.5 to 40 GHz frequency range.

These units are extremely rugged, highly accurate, and stable with time and temperature. They are ideal for use as standards for the transfer of calibration factors to other RF standards and power sensors. Units are supplied with ANSI/NCSL Z540-1-1994 NIST traceable calibration data. A2LA Accredited Calibrations are optional.

These models are designed for use with dc self-balancing bridges such as the TEGAM Model 1806 and 1804.

System configurations employing instruments of this extreme accuracy typically achieve calibration factor transfer results normally found only in primary standards laboratories.

The Model 1107-8 is a Thermistor Standard and Waveguide coupler combination. The Model 1107-8 comes with a waveguide termination. With the termination installed, it is a terminating standard that can be used to calibrate feedthrough type power standards and for other applications requiring direct measurement of RF power. With the termination removed, the Model 1107-8 is a feedthrough standard used for the calibration of bolometer, thermocouple and diode power sensors.

This model features a WR-28 waveguide flange. Bias connectors are binding posts with standard 0.75" spacing for banana plugs. The connector for the internal heater is compatible with the heater control circuit on TEGAM Models 1805B, 1806, and 1820.



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WAVEGUIDE RF POWER TRANSFER STANDARD

Specifications

	1107-8 (without termination)	1107-8 (with termination)
Frequency Range	26.5 to 40 GHz	26.5 to 40 GHz
Power Range	0.01 to 10 mW (-20 to 10 dBm)	0.01 to 10 mW (-20 to 10 dBm)
Interface	WR-28 Waveguide Flange	WR-28 Waveguide Flange
Max VSWR	1.20 from 26.5 to 40 GHz	1.20 from 26.5 to 40 GHz
Power Linearity	<0.1% from 1 to 10 mW	<0.1% from 1 to 10 mW
Insertion Loss	3 dB max	6 dB max
Individual calibrations traceable to NIST supplied at the following frequencies:	26.5 GHz 27 to 40 GHz in 1 GHz steps	26.5 GHz 27 to 40 GHz in 1 GHz steps
Calibration Factor Accuracy	$\pm 1.75\%$ from 26.5 to 40 GHz	$\pm 2.1\%$ from 26.5 to 40 GHz
Calibration Factor Drift	<0.5% per year	<0.5% per year
Thermistor DC Bias Power	13 \pm 2 mW	13 \pm 2 mW
Thermistor Resistance at Bias	200 Ohms	200 Ohms
Temperature		
Operating	+12° to +40°C (+54° to 104°F)	+12° to +40°C (+54° to 104°F)
Storage	-55° to +75°C (-67° to +167°F)	-55° to +75°C (-67° to +167°F)
Warm up time	2 hours	2 hours
Weight	5.82 lbs (2.64 kg)	5.86 lbs (2.66 kg)
Physical Dimensions		
Height	11.2 in (285 mm)	11.2 in (285 mm)
Width	9.4 in (239 mm)	9.4 in (239 mm)
Depth	12.4 in (315 mm)	15.4 in (391 mm)

This data sheet was current when it was produced. However, products are constantly being updated and improved. Because of this some differences may occur between the descriptions herein and the current product. Prices and specifications may be changed without notice.



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