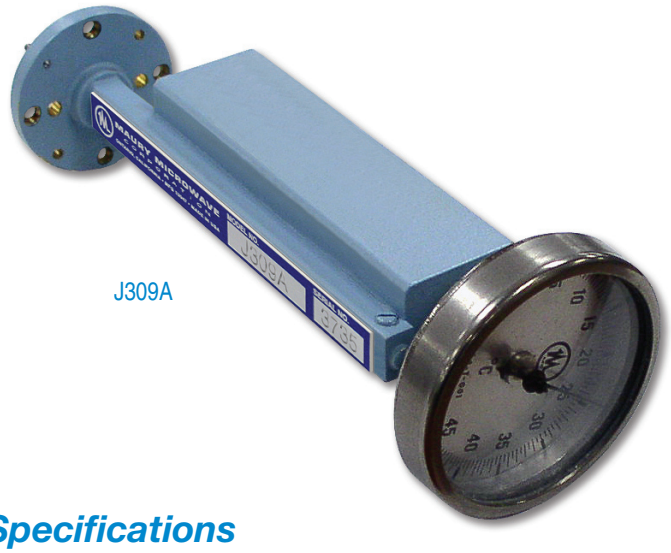
PRECISION WAVEGUIDE AMBIENT TERMINATIONS

Series 309 (2.1 to 110.0 GHz)



J309A

Description

Maury series 309 precision ambient terminations are extremely accurate and stable waveguide terminations for precision microwave noise temperature measurements and calibration[1]. These terminations consist of a thermally-designed absorber type terminating element which is housed in a massive copper housing with the balance of its waveguide section filled with polystyrene foam in order to prevent circulating air currents.[2]

The inherent mechanical design provides an extremely stable device. The input waveguide flange is provided with precision indexing holes for excellent repeatability and the unit is gold plated with external surfaces painted. These units are provided with a dial-type thermometer which is calibrated from –5°C to 45°C with better than 0.5°C resolution and accuracy. The thermometer receptacle in the housing will also accept an Agilent E2308A temperature probe for remote read-out application when used with a thermometer or multi meter.

Maury produces a comprehensive line of precision ambient terminations in both coaxial and waveguide structures for precision noise measurement applications. We solicit your requirements for other devices of this type, as well as other calibration type instruments, such as cryogenic and elevated temperature noise sources.

1 Stelzreid, C. T., *Operating Noise –Temperature Calibration of Low Noise Receiving Systems*, Microwave Journal, June 1971.

2 Models V309A and Z309A use a mylar window in place of the polystyrene foam.

3 Maximum VSWR is 1.10 for these models.

4 Accuracy of input equivalent noise temperature is determined by accuracy of temperature measuring instrument.

5 Dial thermometer, thread-in stem type, calibrated from –5°C to 45°C in 0.5°C increments and with an accuracy of better than 0.5°C.

6 Environmental temperature range based on dial thermometer provided, range can be extended. Consult our sales Department for assistance.

Specifications

Frequency Range ..... In waveguide bands

VSWR ..... 1.05 maximum, (1.02 typical)[3]

VSWR, Stability ..... Less than 0.005 VSWR over it's temperature range

Equivalent Noise Temperature .....Prevalent ambient[4]

Provided Thermometer ..... Maury 2659-17[5]

Environmental Temperature Range ..... –5°C to 45°C[6]

Flange ..... Precision cover with indexing holes

Available Models

MODEL	FREQUENCY RANGE (GHz)	EIA WR NUMBER	MATES WITH EQUIVALENT FLANGE
R309B	2.10 – 2.40	430	UG435/U
S309A	2.695 ± 0.05	284	UG584/U
E309A	3.70 – 4.20	229	CPR229F
G309A	4.995 ± 0.05	187	UG149A/U
F309A	5.925 – 6.425	159	CPR159F
C309C	5.925 – 6.425	137	UG344/U
H309A	7.05 – 10.0	112	UG51/U
X309A	8.20 – 12.4	90	UG39/U
M309A	10.0 – 15.0	75	MPF75
P309A	12.4 – 18.0	62	UG419/U
N309A	17.5 – 21.5	51	MPF51
K309B	21.0 – 23.0	42	UG595/U
U309B	36.0 – 38.0	28	UG599/U
J309A	33.0 – 50.0	22	UG383/U
V309A	50.0 – 75.0	15	UG385/U[3]
Z309A	75.0 – 110.0	10	UG385/U[3]

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