



Ballantine Laboratories, Inc.

1251/1351 Micropotentiometer



Product Description

The BLI Series of Micropotentiometers consist of a Model 1251 terminating resistor and a Model 1351 Thermoelement housing. These micropots are true RMS current to voltage converters for calibrating AC instruments. The NIST calibration range is from dc to 500 MHz (available to 1.2 GHz)

Features

- Precision low-level AC Generator
- Can be used as primary standard
- UHF Thermocouple
- Usable from DC to 1.2 GHz

Product Specifications

Radial Resistors: Available in nominal values from 0.5 to 22 ohms with a $\pm 30\%$ tolerance. Each resistor is supplied soldered in a Type N female coaxial connector.

Housings: Normally supplied with either a 5, 10 or 15 mA UHF type thermocouple. Higher thermocouple ratings are available on request. Heater to thermocouple voltage must not exceed + 50 V dc or peak ac. Heater current is limited to 150% of rating.

Voltage Range: 800 microvolts to 1.4 volts dependent on combination of radial resistor and thermocouple selected. Each combination will have a nominal output voltage equal to the product of resistance and rated thermocouple current, and can be varied from 1/3 to 1-1/3 of this nominal output.

Outputs greater than 1.4 volts can be obtained by using higher thermocouple ratings.

Frequency: DC to 1.2 GHz

DC Reversal: The DC reversal error of the standard thermoelement is nominally $\pm 0.2\%$. Thermoelements with a DC reversal error of ± 0.005 (5 mA only) can be supplied on special request.

Thermal Elements for Micro Pot's

BLI P/N	Application
27-02951-0	5 mA, 0.2% R/E, used in 1351-05 housing
27-02952-0	10 mA, 0.2% R/E, used in 1351-10 housing
27-02953-0	15 mA, 0.2% R/E, used in 1351-15 housing
27-02954-0	25 mA, 0.2% R/E, used in 1351-25 housing
27-02955-0	50 mA, 0.2% R/E, used in 1351-50 housing
27-02975-0	100 mA, 0.2% R/E, used in 1351-100 housing

Uncertainty of AC-DC Difference Calibration (ppm)

Range	20Hz – 50Hz	20kHz	50kHz	100kHz	1MHz
100 mV	40	30	50	100	250
30 mV	60	60	70	150	300
10 mV	80	80	100	200	400
3 mV	120	120	150	250	450
1 mV	200	200	250	300	500
	5MHz		100 – 900MHz		1 GHz
1 mV – 2.2 V	0.2%		1.2%		1.3%

Product Ordering Information

Model Description

1251-xx, Terminating Resistors, Reduced Correction Factors: 0.5, 1.0, 1.28, 1.5, 2.2, 2.8, 3.3, 4.7, 6.8, 10, 15, 20, and 22 ohm. $\pm 30\%$.

1351-xx Thermoelement housing for 1251. Resistor values: 2.5 mA, 5 mA, 10 mA, 15 mA, 25 mA, 50 mA and 100 mA.

Options

-09, Additional data points at 700 and 900 MHz, 1251-xx only.