

Temperature Stabilized Resistance Standards

New Series of High to Ultra High Value Resistance Standards



6636 SERIES FEATURES

- ◆ Resistance Range: 10 M Ω to 100 T Ω in Decades
- ◆ Temperature Coefficient ± 0.2 ppm/ $^{\circ}\text{C}$
- ◆ Stabilities Low as < 6 ppm/year
- ◆ Solid N-Type Connections
- ◆ Eliminates temperature Bath Requirements
- ◆ Ambient Temperature Range: $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$
- ◆ Internal PRT Stability : $\pm 0.01^{\circ}\text{C} / \text{Year}$
- ◆ Custom Internal Temperature Set Points
- ◆ Temperature Regulation: $\pm 0.01^{\circ}\text{C}/\text{year}$
- ◆ Guarded Resistance Element Chamber
- ◆ Custom Values Available
- ◆ CE Marked

GUILDLINE INSTRUMENTS 6636 SERIES is a modular series of Temperature Stabilized Resistance Standards that are rack mountable or simply set on a bench. The 6636 Series provides a logical extension to the popular 6634A series of Temperature Stabilized Resistance Standards.

The 6636 can be configured with up to 6 standard resistance values covering the range of 10 M Ω to 100 T Ω in decades. Each resistance element is isolated and has two N-type terminal connections at the back panel. Special resistance values are available.

High and ultra high resistance standards have inherently large temperature coefficients. The resistance elements are maintained at $30 \pm 0.01^{\circ}\text{C}$ in a temperature stabilized chamber. Chamber temperature set points of 35°C and $40^{\circ}\text{C} \pm 0.01^{\circ}\text{C}$ are available on request. Temperature monitoring is provided by a precision PRT sensor installed in the chamber. The unit can be used in a wide working temperature surrounding of $23 \pm 5^{\circ}\text{C}$ with very minimal temperature effects on the value of resistance.

The Unique Design of model 6636 Allows Primary Laboratories to Significantly Improve their High to Ultra High Value Resistance Standards Measurement Uncertainties

Since all elements are enclosed in a shielded chamber with a tightly controlled temperature, the uncertainty on these high and ultra high resistance standard is significantly reduced. For example, the temperature coefficient of a 100G element in the 6636 is 25 times better than a 100G Standard Air Resistor in a laboratory environment control of 1°C .

Resistance elements are electrically isolated and bonded to an aluminium block to reduce thermal gradients in the inner chamber. The inner chamber is designed to electrically shield the individual elements and a guard terminal at the back panel.

For the first time, primary Laboratories can significantly reduce their high and ultra high value resistance measurement uncertainties.

6636 SERIES OF TEMPERATURE STABILIZED RESISTANCE STANDARDS

6636 SPECIFICATIONS

Nominal Resistance (Ω)	Nominal Initial Tolerance ¹ (± ppm)	Calibration Uncertainty ² (± ppm)	12 Month Stability (±ppm)	Temperature Coefficient (± ppm/°C)	Maximum Voltage (V)
10 M	35	10	6	0.2	1000 V
100 M	50	15	15	0.2	1000 V
1 G	100	80	20	0.2	1000 V
10 G	200	100	100	1	1000 V
100 G	500	500	200	10	1000 V
1 T	1000	1000	500	15	1000 V
10 T	3500	3000	750	25	1000 V
100 T	6000	5000	1000	35	1000 V

Note 1: Nominal initial tolerance is defined as the maximum variation of resistance mean values as initially adjusted at the point of sale.

Note 2: Calibrated in ambient conditions of 23 °C, referred to the unit of resistance as maintained by the National Research Council of Canada or the NIST and expressed as a total uncertainty with a coverage factor of k = 2. A calibration report stating the measurement values and uncertainty is provided with each unit.

GENERAL SPECIFICATIONS

Temperature Stability	± 0.01 °C over 1 year						
Resistance Range	10 MΩ to 100 TΩ. (Special values up to 100 TΩ are available at time of order. For lower values see Guildline 6634A Temperature Stabilized Resistance Standard Series.						
PRT Sensor :	1 Year Stability ± 0.01 °C	Resistance 100 ohms ± 0.1% at 0°C	0-100°C Temperature Coefficient 0.392 ohms/°C				
Power Requirements	100, 120, 220, 240V ± 10%		Frequency: 50/60 Hz ± 10%		15 VA Maximum		
Environmental:	Operating		18 °C to 28 °C (64 ~ 80 °F), < 50% RH, non-condensing				
	Storage		-20 °C to 60 °C (-4 ~ 140 °F), < 90% RH, non-condensing				
Dimensions	Height		Width		Depth		Weight
	132 mm	5.2 in	440 mm	17.4 in	503 mm	19.8 in	11 kg 24 lbs
Note:	Add 10mm (0.4 in) to height for bench top feet						

ORDERING INFORMATION

GUILDLINE IS DISTRIBUTED BY:

6636-6/100T	Standard with 6 Decade Elements 1GΩ to 100TΩ
6636-6/10T	Standard with 6 Decade Elements 100MΩ to 10TΩ
6636-6/1T	Standard with 6 Decade Elements 10MΩ to 1TΩ
6636-5/100T	Standard with 5 Decade Elements 10GΩ to 100TΩ
6636-5/10T	Standard with 5 Decade Elements 1GΩ to 10TΩ
6636-5/1T	Standard with 5 Decade Elements 100MΩ to 1TΩ
6636-5/100G	Standard with 5 Decade Elements 10MΩ to 100GΩ
6636-5/10G	Standard with 5 Decade Elements 1MΩ to 10GΩ
6636/SSRV	Single element substitution of any decade value
6636/SPRV	Single element substitution of any special value
/TM6636	Technical Manual (Included)
/ST-X	Optional Internal Temperature Set point (Specify 35°C or 40°C)
Note: Report of Calibration and Calibration Certificate Included (ISO17025 accredited)	
65225	Leadset for Teraohmmeter
*Other Precision Leads Available – Call and tell us your requirements	
Optional Calibration Services (Charge)	
/Cal	Additional CAL Point (Please specify voltage levels)

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