DATASHEET

Semi-Standard-PRTs

Isotech

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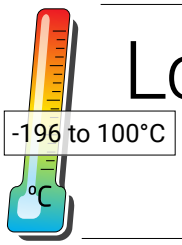
ISOTECH



Low Temperature Reference Probe

935-14-154

- 8mm sensing element helps minimise the effects of axial temperature gradients
- 4mm diameter suits many dry blocks including Model 526
- Designed for low temperature use across the range -196°C to 100°C

The 935-14-154 is a semi-standard platinum resistance thermometer designed for laboratories working at low temperatures. It is intended for use as a reference thermometer in dry block calibration and was designed to suit the Model 526

Its sensing element is just 8mm long. Temperature in a dry block is not perfectly uniform along the depth of the well, so a shorter sensing element spans less of the axial temperature gradient and averages over a smaller temperature range. This helps reduce the effect of axial non-uniformity on the measurement.

The probe has a 4mm diameter, 300mm long sheath, a 17.5mm diameter handle and spring cable relief at the cable entry. It uses the same construction as the Isotech 935-14 semi-standard series, with a handmade, coil-wound Pt100 sensing element and four-wire cable.

Why Choose the Isotech Model 935-14-154?

- Suited to the Model 526. It fits the standard insert supplied with the instrument, so no custom insert is required.
- -196°C to 100°C. The range reaches the boiling point of nitrogen at its lower end.
- Spring cable relief. The cable entry is supported where a probe is handled most, which matters on an instrument moved between a block, a bath and a dewar.
- Published annual stability. The semi-standard series is specified at ≤0.010 Ω/year.

Applications

Ultra-Low Validation	Reference measurement for cold chain and bio-banking storage
Cryogenic Work	Direct measurement at the boiling point of nitrogen
Dry Block Calibration	A reference thermometer for low temperature block calibrators
Environmental Chambers	Verification of chamber performance across the low temperature range

Specification	
Temperature Range	-196°C to 100°C
Sensing Length	8mm
Sheath Diameter	4mm
Sheath Length	300mm
Handle Diameter	17.5mm
Sensor	Pt100, Coil-Wound, 4-Wire

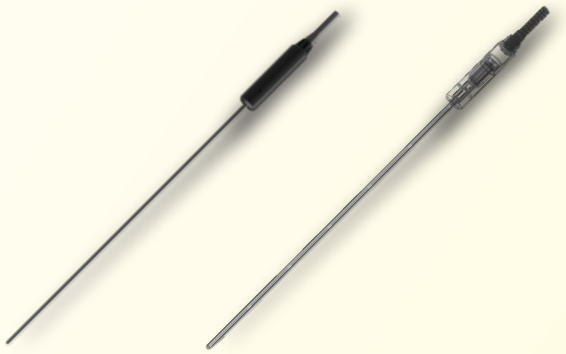
Low Temperature Reference Probe
935-14-154

Specification

Specification	935-14-154		
Temperature Range	-196°C to 100°C	Sensor	Pt100, Coil-Wound element
Sensing Length	8mm	Connection	4-Wire
Sheath Diameter	4mm	R_0	100 Ω ± 0.05 Ω
Sheath Length	300mm	α	0.003850 ± 0.000005
Sheath Material	Stainless Steel	Standard	IEC 60751
Handle Diameter	17.5mm	Stability	≤0.010 Ω/year
Cable Entry	Spring Cable Relief	Recommended Current	1 mA
Cable Length & Type	2m	Self-Heating	0.004°C at 1 mA
Termination	Bare Wire (Unless Otherwise Stated)		

Support & Long-Term Reliability

- Accredited calibration. Isotech has held UKAS accreditation for electrical & temperature measurement since 1986.
- Long-term support. Isotech equipment is designed for long service life, with support available for decades.
- Recalibration. Isotech can recalibrate its own thermometers & advise on suitable recalibration intervals based on the instrument, its use & the required level of measurement confidence.



Complete Calibration Systems

Isotech can supply the complete temperature measurement chain: Dry Blocks, Liquid Baths, Reference Thermometers, Thermometry Bridges & Precision Thermometers, with software to automate the calibration & record the results.

Model 526	Ultra-Low Dry Block Calibrator, -115°C to 50°C
935-14 series	Semi-standard PRTs for other diameters, lengths & ranges
milliK	Precision thermometer readout for lengths & ranges
I-Cal Easy	Software to automate the calibration & record the results

Ordering Information

Order as 935-14-154. When ordering, state the readout the probe will be used with, the termination required and the calibration points needed, so that the probe is supplied ready for use.