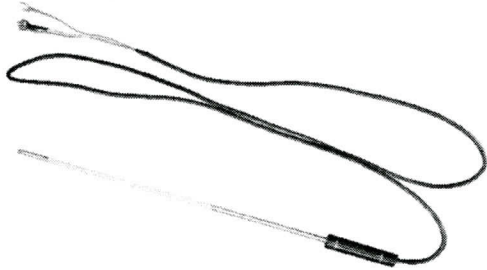


BL617 Standard Platinum Resistance Thermometer (SPRT)



The Standard Platinum Resistance Thermometer (SPRT) is a kind of device to measure temperature through a change in electrical resistance of a wire length. SPRT is the stipulated interpolation instrument for realizing the International Temperature Scale of 1990 between the defining fixed points, over the range from 13.8033 K (the triple point of equilibrium-hydrogen, $-259.3467^{\circ}\text{C}$) to 961.78°C (the freezing point of silver). The transfer function of the SPRT is electrical resistance as a function of temperature; therefore, an accurate measurement of resistance, referred to a fixed resistance base, is an essential component of the measurement chain.

KEY FEATURES

- Ranges -200°C to 420°C
- Fused quartz sheathed
- $W(\text{Ga}) \geq 1.11807$, $W(\text{Hg}) \leq 0.844235$
- Resistance at 0°C (Rtpw): 25Ω
- Meets all ITS-90 requirements.

APPLICATIONS

- Reference thermometer for very accurate temperature measurements
- Comparative calibration in tube furnaces and liquid baths

SPECIFICATION

Part Number	BL617-0	BL617-1	BL617-2
Annual drift @ 0.01°C	$\leq 0.5\text{mk}$	$\leq 1\text{mk}$	$\leq 3\text{mk}$
Stability	$\leq 2\text{mk}$	$\leq 4\text{mk}$	$\leq 8\text{mk}$
Self-heating	$\leq 1.5\text{mk}$	$\leq 2.5\text{mk}$	$\leq 3\text{mk}$
Temperature Range	-200°C to 420°C		
Rtpw	$25.5\Omega \pm 0.5\Omega$		
Resistance ratio	$W(\text{Ga}) \geq 1.11807$, $W(\text{Hg}) \leq 0.844235$		
Measurement Current	1mA		
Platinum diameter	0.05mm		
Sensor length	60mm		
Sensor material	Platinum		
Head diameter	$\phi 21\text{mm}$		
Head length	103mm		
Sheath diameter	$\phi 7 \pm 0.5\text{mm}$		
Sheath length	$470 \pm 10\text{mm}$		
Sheath material	Quartz		
Insulation Resistance	$>1000\text{ M}\Omega$ at room temperature		
Characterizations	ITS-90, IEC-751(DIN 385)		
Cable	2m PTFE insulated copper wire cable		
Connection leads	Four Gold-plated Copper Spades		
Gas in sheath	Inert gas		

SCOPE OF DELIVERY

- BL617 Standard platinum resistance thermometer
- Wooden carrying case

OPTIONAL ACCESSORIES AND SERVICE

- ISO17025 Calibration Certificate (P/N: CAL-617)
- Readout device

ORDERING MODEL NUMBER

- BL617-N: SPRT, -200°C to 0°C , $\leq 0.5\text{mk}$, Quartz
- BL617-0: SPRT, 0°C to 420°C , $\leq 0.5\text{mk}$, Quartz
- BL617-1: SPRT, -200°C to 420°C , $\leq 1\text{mk}$, Quartz
- BL617-2: SPRT, -200°C to 420°C , $\leq 3\text{mk}$, Quartz