



**670**

Standard Platinum Resistance  
Thermometers 25.5  $\Omega$ , primary lab,  
-200°C to 670°C

The 670 Family consists of quartz sheath (recommended) and metal sheath models with Ro of 25.5  $\Omega$ .

## Description

The 670 Family consists of quartz sheath (recommended) and metal sheath models with Ro of 25.5  $\Omega$ . The 670SQ is our latest thermometer, to be specifically designed to give optimum performance up to the Aluminium point. Its construction permits the four internal platinum lead wires to expand and contract in the same manner as those of silver-point thermometers. The all-quartz construction of the sheath gives the most stable performance with minimal drift, and a unique platinum radiation shield prevents heat radiating up the inside of the sheath. The 670SQ can be supplied with RTPW and Wga only or with full UKAS calibration. "With calibration" means that you will get an ITS-90 accepted Fixed Point calibration. For best accuracy, the recommended maximum measuring current for the 670SQ is 1 mA. The 670SQ 650 mm long is our recommended SPRT offering ultra stability, vibration, shock, immersion (recommended sufficient immersion: 270 mm) and self heating characteristics.

# Specifications

## General specifications

Measuring range	-200°C to 670°C
Nominal resistance	25.5 Ω or 100 Ω
Resistance ratio	W <sub>ga</sub> > 1.11807 as required by ITS-90
Sensitivity	0.1 Ω /°C (25.5 Ω) 0.4 Ω /°C (100 Ω)
Long term drift	From 0.001°C / year depending on use

## Models 25.5 Ω

Reference	Temperature range	Sheath	Diameter	Length	Sensing length	Standard	Notes
670SQ/25/480	-200 to 670°C	Quartz	7.5 mm	480 mm	35 mm	ITS-90	Recommended for wide range use in the Primary laboratory
670SQ/25/650	-200 to 670°C	Quartz	7.5 mm	650 mm	35 mm	ITS-90	
670SL/25/480	-200 to 165°C	Metal	6 mm	480 mm	35 mm	ITS-90	Metal sheathed low temperature model
670/SH/25/480	-80 to 670°C	Metal	6 mm	480 mm	35 mm	ITS-90	Metal sheathed high temperature model
670/SH/25/650	-80 to 670°C	Metal	6 mm	650 mm	35 mm	ITS-90	

## Typical uncertainties of 670 SPRTs with UKAS calibration

Fixed point	°C	Gamme 1	Gamme 2	Gamme 3	Gamme 4	Gamme 5	Gamme 6
TP Argon	-189.3442	0,5 mK		0,5 mK	0,5 mK	0,5 mK	0,5 mK
TP Mercury	-38.8344	0,3 mK	0,3 mK	0,3 mK	0,3 mK	0,3 mK	0,3 mK
TP Water	0.01	0,1 mK	0,1 mK	0,1 mK	0,1 mK	0,1 mK	0,1 mK
MP Gallium	29.7646		0,2 mK				
FP Indium	156.5985			1 mK	1 mK		

FP Tin	231.928				1 mK	1 mK	1 mK
FP Zinc	419.527					1.2 mK	1.2 mK
FP Aluminium	660.323						2 mK

# Models and accessories

**670** Standard Platinum Resistance Thermometers, SPRTs, Primary laboratory, -200°C to 670°C Delivered in standard with:

- Traceable certificate at Water Triple Point and Melting Point of Gallium
- Carrying case

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