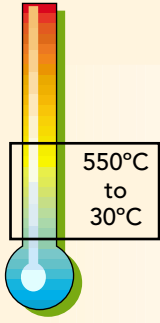


510 Medusa

P.O.T.T.S.



The most accurate way to calibrate temperature sensors is by immersing them in a series of very pure substances as they freeze or melt.

The freezing (or melting) temperatures of pure substances are fixed and absolute and have been given legal status in the form of the International Temperature Scale of 1990.

When calibrating sensors by directly immersing them in various Points on The Temperature Scale, there is no need to compare the sensor's calibration to another sensor. Thus the calibration is closer to the ITS-90 Scale and has therefore more authority and smaller uncertainties.

Against this approach has been the cost of the fixed point cells, as they are called, and their apparatus combined with the complexity of use.

For this reason only a few laboratories have chosen to calibrate directly to the ITS-90 Scale using fixed point cells and apparatus.

The enhanced controller will allow for operation at 30°C for the Gallium in ambients up to 23°C.

The Medusa 510 is a new apparatus designed to create and maintain Fixed Points simply, automatically and economically. Supplied with the very latest technology digital indicator, timer and controller.

Model No.	510
Temperature Range	30°C to 550°C
Absolute Stabilities	Over 30 Minutes:
Metal Block Bath	±0.03°C
Blackbody Source	±0.1°C
Surface Sensor	
Calibrator	±0.5°C
ITS-90 Fixed Point	±0.001°C
Heating / Cooling	See Graph
Stabilisation	15 minutes
Calibration Volume	45mm diameter x 285mm deep
Uniformity	±0.2°C (at 100°C)
Controller Resolution	0.1 to 0.01 (4 digit display)
Indicator Resolution	0.1 to 0.01 (4 digit display)
Indicator Units	°C, °F, K
Communications	Supplied as standard with serial interface, PC adaptor cable and Cal Notepad. Refer to page 46
Power	1000W, 108-130 or 208-240VAC, 50/60Hz
Overall dimensions	Height 430mm Width 310mm Depth 300mm
Weight	17kg
How to Order	
	510 Medusa P.O.T.T.S.
	Please specify voltage required

Fixed Point Cells Available:

Material	Temperature °C	Uncertainty °C
Gallium	29.7646	±.001
Indium	156.598	±.001
Tin	231.928	±.002
Zinc	419.527	±.005
Lead	327.462	±.010

Automated Calibration using Fixed Point Cells
 Temperature range 30°C to +550°C
 Calibrate absolutely at the fixed points of ITS-90 or by comparison

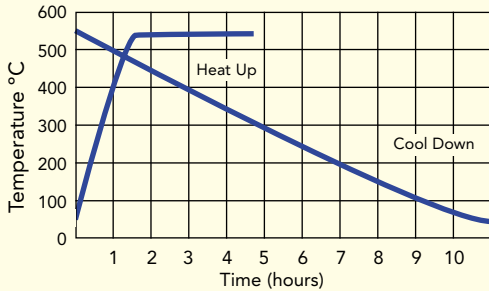


P POINTS O ON T THE T TEMPERATURE S SCALE

510 Medusa

P.O.T.T.S.

Medusa 1 Heat Up / Cool Down Graph

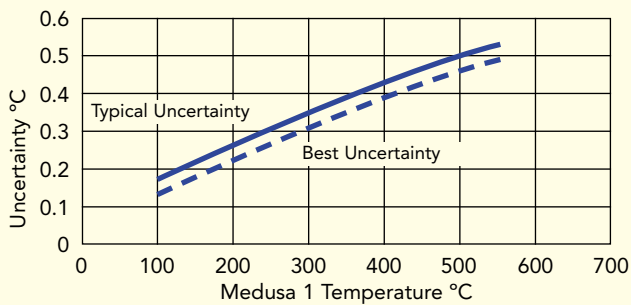


Indium, Tin, Lead and Zinc Fixed Points all look the same, being an ingot of very pure metal placed in a graphite crucible which, to keep dirt, moisture and air out are sealed, usually in quartz glass. To avoid the use of quartz glass the graphite crucibles are sealed into metallic containers without contamination of the pure ingot inside the crucible.

As well as a fixed point apparatus the Medusa apparatus can be used as a comparison bath by the addition of a drilled insert, and the use of the in-built indicator and sensor as a reference.

Accessories are also available to convert the Medusa into a black body source and a surface sensor calibrator.

Medusa 1 Uncertainty Graph



Best Uncertainty - Using TTI2 and A 935-14-95 Calibrated System
 Typical Uncertainty - Using TTI1 and A 935-14-95 Calibrated System

Slim Cell



Options

Metal Block Bath	Standard Insert 6 x 8mm holes x 250mm deep. Adjustable Equalising Block Non-standard Insert - please consult Isotech
Stirred Liquid Bath	Not Available
Stirred Ice/Water Bath	Not Available
Blackbody Source	Blackbody Target
Surface Sensor Calibrator	Surface Sensor Calibrator Kit
ITS-90 Fixed Point Apparatus	ITL M 17401 Slim Gallium Cell ITL M 17668 Slim Indium Cell ITL M 17669 Slim Tin Cell ITL M 17670 Slim Lead Cell ITL M 17671 Slim Zinc Cell

Additional accessories

935-14-95 Semi-Standard Probe
931-22-58 Carrying Case
UKAS 5 Point Comparison Calibration