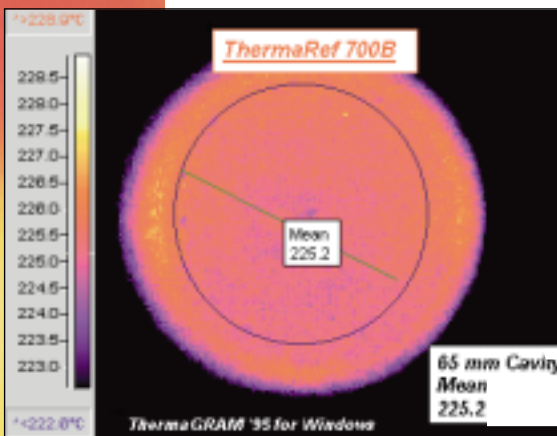


THERMAREF® 700B

Large Aperture Blackbody Radiation Primary Reference Source



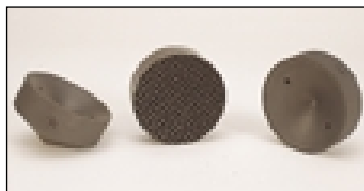
CALIBRATION

The Thermoteknix **ThermaRef® 700B** is a large aperture blackbody radiation reference source. It provides a primary standard for the calibration of pyrometers, infrared linescanners and imaging radiometers for temperatures up to 700°C (1300°F). Featuring a large, 65 mm diameter aperture, an emissivity >0.995 and excellent uniformity, it is an ideal reference unit for both fixed and portable instruments.



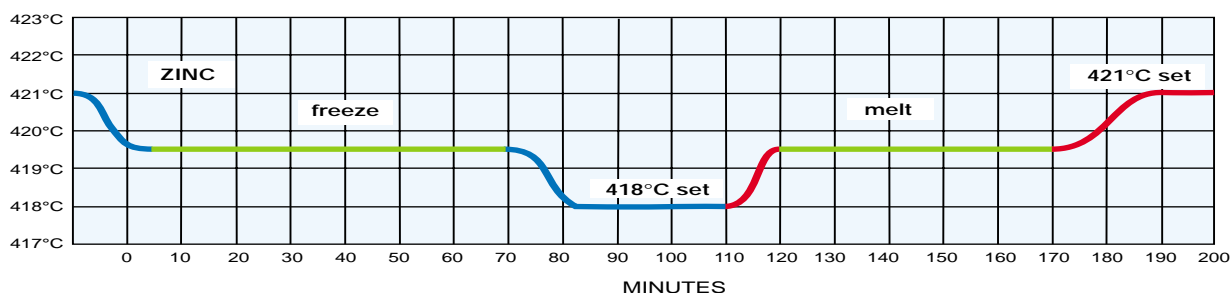
For increased accuracy and traceability to National Standards up to temperatures of 700°C, a removable premium grade Type N thermocouple is available as an accessory. This enables direct comparison to be made with the built in controller value. Regular certification can be made to NAMAS/NIST standards without the need to return the complete blackbody unit for annual calibration. Thermocouple connections and temperature readouts are provided directly on the instrument.

 **THERMOTEKNIX**

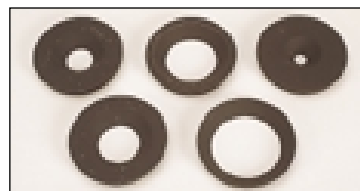


The **ThermaRef® 700B** can also be used as a true physical temperature calibration standard using a selection of fixed point temperature puck accessories. The patented pucks contain 99.999% purity metal and give a freeze or melt curve which is flat to $\pm 0.01^\circ\text{C}$. By adjusting the setpoint of the **ThermaRef® 700B** to a value slightly

above/below the melt/freeze point, a constant absolute temperature is obtained as the metal changes state. The melt plateau is constant between 1 and 6 hours depending upon the puck type and settings. The fixed point references can be used for absolute standardisation of external instruments as well as for verification of the **ThermaRef® 700B** and thermocouple performance. Indirect radiation from the cavity walls results in an overall radiometric uncertainty of $\pm 0.25^\circ\text{C}$.



A set of aperture rings are available in sizes of 10, 20, 30, 40 and 50mm diameters. These fit directly into the cavity for optimum performance and avoidance of specula or reflective errors. The accessory ring apertures can be used simultaneously with the fixed point metal pucks for further increases in emissivity.



SPECIFICATION	PART NUMBER
ThermaRef® 700B	PB 410001
Temperature range:	Ambient + 10°C (Ambient + 18°F) to 700°C (1300°F)
Cavity:	
Type:	Blackened Inconel, 120° cone
Diameter:	65mm (2.6 inch)
Length:	185mm (7.3 inch)
Emissivity:	>0.995
Stability:	<0.5°C (<0.9°F) over 8 hours
Uniformity:	<1.25% reading
Controller:	Eurotherm Cal 3200
Meter:	Eurotherm 91e
Heating rate:	Approx 80 mins to 700°C (1300°F)
Power consumption:	1.4kVA
Power supply:	110/120 or 220/240V ac, 50 to 60 Hz
Case size:	305 (L) x 265 (W) x 180 (H) mm approx. 12 (L) x 10 (W) x 7 (H) in. approx.
Weight:	14 kg (30lb)

ACCESSORIES	PART NUMBER
Transport and Storage case	QS 41 0025
Premium standard Type N probe	QB 41 0001
NAMAS Certification (Accuracy: Better than 0.4% reading)	QB 41 0002
RS 232 Control Interface	EB 51 0001
Aperture set	OB 41 0001
5x Aperture rings: 50mm, 40mm, 30mm, 20mm and 10mm	

ACCESSORIES
Fixed point temperature reference pucks
Diameter: 65mm
Emissivity: >0.985
Melt plateau: 1 - 6 hours
Puck material: Graphite (Teflon for Gallium)

Metal	Melting Point °C	Part Number
Gallium	29.7	OB 41 0002
Indium	156.6	OB 41 0003
Tin	231.93	OB 41 0004
Zinc	419.53	OB 41 0005



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