



20 to 50°C

Blackbody Source Model 989

- Improves accuracy of Fever Detection Systems
- Covers 20°C to 50°C with Fast Thermal Response
- Check Non-Contact Thermometers

Isotech first introduced the Model 988 to assist in relation to the SARS outbreak during the early 2000s. It was used to increase the accuracy of thermal imagers measuring human skin temperature in temperature screening of applications. It can also be used to check non-contact clinical thermometers. Following the increased demand in relation to COVID-19, Isotech have now introduced an updated blackbody source, Model 989.

Model 989 has the same performance as the earlier 988 but is smaller and has two easy mounting points fitted allowing for easy mounting. When used in conjunction with IR cameras the device can easily be suspended from above or below using standard tripod mounting brackets.

The upgraded controller can either be locked to a single temperature or it can be adjusted over a new wider temperature range of 20°C to 50°C. Model 989 also has a PC interface fitted as standard. It allows the temperature to be both monitored and adjusted from a PC.

This blackbody source meets the demand for a simple, cost effective but high accuracy device for the calibration of thermal imagers and infrared thermometers that are used at temperatures around that of the human body.

Unlike heat only devices, this model uses a solid state thermoelectric heat pump so that the block can be both cooled and heated. This brings two benefits, the blackbody can maintain its set point in high ambient temperature conditions and it can also operate below the ambient temperature.



Optional
Extension Tubes



<http://www.isotech.co.uk>

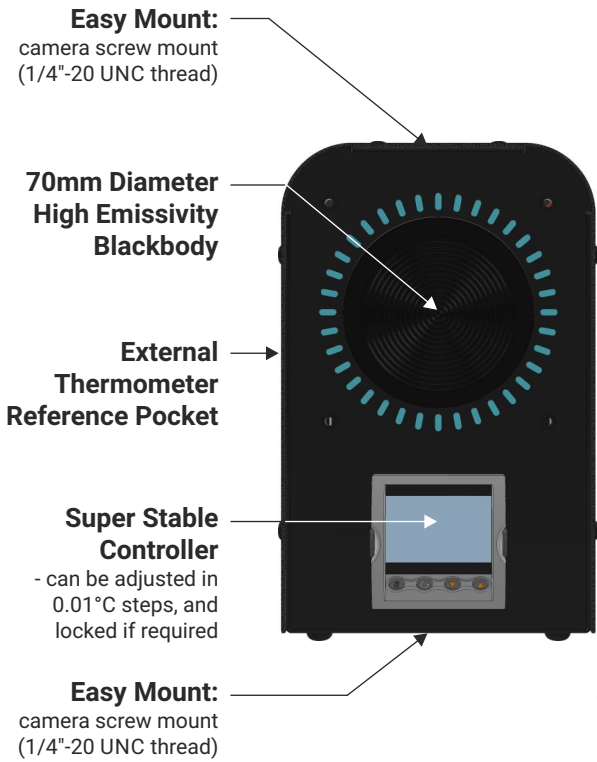
Response time is very fast, typically less than five minutes to achieve the required temperature (see graphs). The Model 989 can be used either horizontally or vertically.

The device features a high emissivity ridged plate that is 70mm in diameter. The temperature of the plate can be set from 20°C to 50°C to a resolution of 0.01°C.

To reduce sensitivity to air drafts and ambient temperature effects, a stainless steel tube can be fitted in front of the plate with evaluation showing this has advantage over an open plate design.

The longer tube length is 210mm while the shorter tube length is 40mm long and is particularly useful for checking medical thermometers.

For applications where the unit is used at a single fixed temperature, e.g. 38°C, the set temperature on the controller can be locked to prevent accidental change or tampering. The operating unit can be changed from Celsius to Fahrenheit.



Simple Operation:
switch on and within minutes the 989 is stable and ready

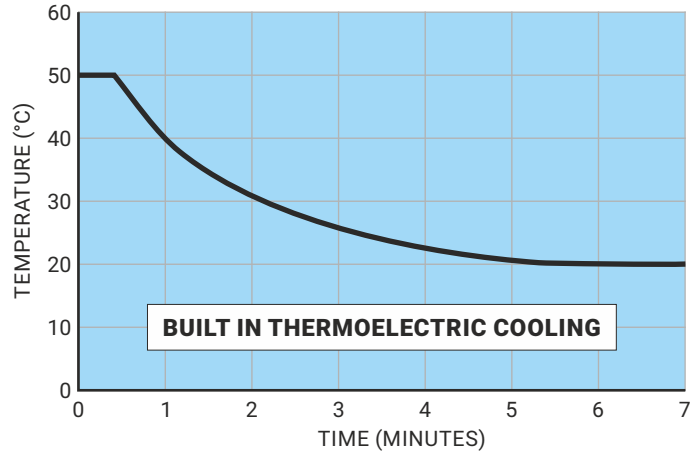
PC Interface included:
free software to monitor, optional communications cable

Safe low voltage operation:
main power supply included, universal input

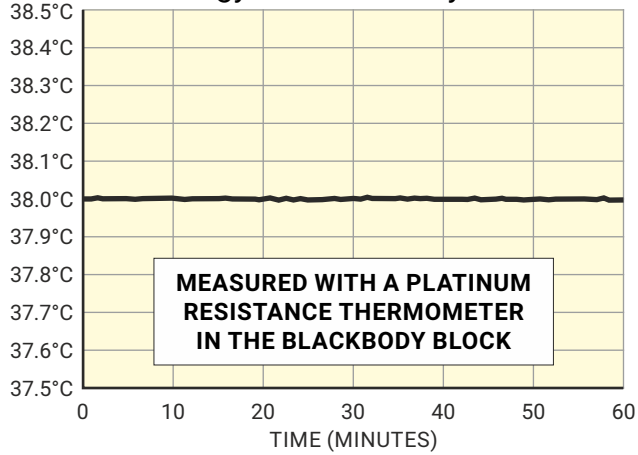
Model	989	Dimensions	H 200mm (7.87") W 135mm (5.31") D 170mm (6.70")
Temperature Range	20°C to 50°C	Weight	4kg
Resolution	±0.01°C		
Target Size using Extension Tube	70mm Diameter 54mm Diameter	How to Order	
Emissivity	0.97 ±0.02	Model 989	Blackbody Source
Combined Accuracy / Stability	±0.2°C (0.3°F)		Universal voltage input 80-264 V supplied as standard
PC Interface	Included, RS422 (optional RS232 convertor lead)	Accessories	
Units	°C, °F, K	935-16-112	RS422 to RS232 Converter Lead
Block Stability	<0.01°C	935-14-82/BW	Isotech 935-14-82 Calibration Probe
Display	Three Colour LCD, Temperature and Set Temperature	989/01	Calibration Kit: Isotech TTI-10 with 935-14-82/TTI Probe and UKAS System Calibration, Uncertainty 0.02°C
Set Point Lock	Set temperature can be locked and password protected	988-02-06	Short Tube: 40mm
Automatic Start Up	No user intervention required	988-02-03	Long Tube: 210mm
Set Point Ramp Rate	Included: switch on to control heating and cooling rates		
Self Test	Automatic - Scrolling text diagnostic display		
Power	60 Watts		
Voltage	12 Vdc		

FAST OPERATION

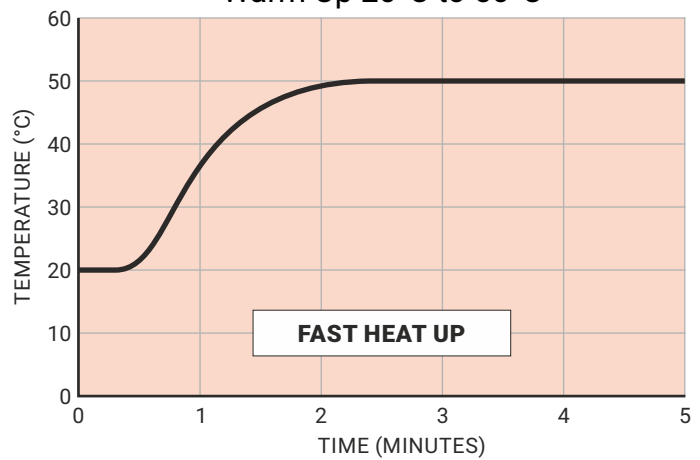
Cool Down 50°C to 20°C



Metrology Grade Stability <math><0.005^{\circ}\text{C}</math>



Warm Up 20°C to 50°C



FEATURING EASY MOUNT SYSTEM

Can be bench mounted



Can be used vertically



Can be mounted from the top



Can be mounted from below



989/01

ISOTECH TTI-10



989 BLACKBODY SOURCE



935-14-82/TTI PRT

Model 989 features a reference thermometer pocket that is located in the blackbody block just below the surface. If desired a calibrated platinum resistance thermometer can be added for traceability. Isotech can provide either ISO 17025, UKAS Calibrated Model 938-14-82/TTI Semi Standard Thermometer or TTI-10 High Accuracy Digital Readout with a Model 938-14-82 /TTI Thermometer, UKAS Calibrated, Uncertainty 0.02°C, 20 mK.

The reference thermometer pocket also allows for easy checking and recalibration of the model 989 Blackbody.

The earlier Model 988 is still available for legacy applications.

Note that when the 988-02-03 accessory is added the tube dimensions and opening are identical to the earlier Model 988.

Blackbody Source Model 988

- Improves Accuracy of Fever Detection Systems
- Covers 20°C to 45°C with Fast Response
- Check Non-Contact Thermometers

First introduced to assist in checking the performance of temperature measuring devices during the SARS outbreak during the early 2000s, the Isotech Model 988 Blackbody Source is now also helping in relation to coronavirus. It can be used to increase the accuracy of non-contact fever detection systems helping in the fight against COVID-19. Applications also include checking non-contact clinical thermometers.

This blackbody source meets the demand for a simple, cost effective but high accuracy device for the calibration of thermal imagers and infrared thermometers that are used at temperatures around that of the human body.

Unlike heat only devices, this model uses a solid state thermoelectric heat pump so that the block can be both cooled and heated. This brings two benefits, the blackbody can maintain temperature in high ambient temperature conditions and it can also operate below the ambient temperature.

Response time is very fast, typically less than five minutes to achieve the required temperature. (See graphs)

The Model 988 can be used either horizontally or vertically.

The device features a high emissivity ridged plate that is 70 mm diameter. The temperature of the plate can be set from 20°C to 45°C to a resolution of 0.1°C.

To reduce sensitivity to air drafts and ambient temperature effects, a stainless steel tube is fitted in front of the plate with evaluation showing this has advantages over an open plate design. The standard tube length is 210mm and there is an option of a short version, 40mm long that is particularly useful for checking medical thermometers.

For applications where the unit is used at a single fixed temperature, e.g. 38°C, the set temperature on the controller can be locked to prevent accidental change or tampering. The operating unit can be switched from Celsius to Fahrenheit.

Model	988
Temperature Range	20°C to 45°C
Resolution	±0.1°C
Target Size	70mm Diameter
Tube Diameter	54mm Diameter
Emissivity	0.97 ±0.02
Controlled Accuracy	±0.2°C (0.3°F)
Stability	
Power	60 Watts
Voltage	12 VDC
Dimensions	H 220mm
	W 225mm
	D 115mm
	Net including tube
	4kg
Weight	
Accessories	Switch Mode Power Supply as Standard
	100-240 VAC
How to Order	
Model 988	with 210mm Tube
Model 988 Short	with 40mm Tube

Fast Heat up & Cool Down

Model 988 Application
Part of an airport fever detection system.

988 can be used horizontally or vertically. It is easily supported. (Stand is not included)

988 can be used to improve accuracy of thermal imagers.

988 Short Suitable for Medical Thermometers

CALIBRATION SOLUTIONS | MODEL 989 | PROVISIONAL DATASHEET - EDITION 1.02