



**125 to 1100°C**

# Furnaces Heatpipe

- Essentially Gradient Free
- Heatpipe Operation from Indium to Copper
- Simple Use - no zone offsets to adjust

Isotech metrology furnaces have more than 35 years of proven use and are widely used by the worlds' leading NMIs. For the optimal use of fixed point cells the temperature uniformity should be less than 10mK over the length of the fixed point sample CCT/2000-13, "Optimal Realization of the Defining Points of the ITS-90..."

Isotech heatpipe furnaces offer essentially gradient free operation; heatpipes provide the ideal conditions for the creation and maintenance of ITS-90 fixed point cells. Unlike some other companies Isotech can provide heat pipe furnaces to suit Indium, Tin, Zinc, Aluminum, Silver and Copper fixed points.

Plateau length is determined by the difference in temperature between the heatpipe and cell - this can be adjusted to give a plateau of any length of up to tens of hours. Our controllers offer extra resolution and allow adjustment to 0.1°C right up to 1090°C. The Potassium and Sodium models have a cooling coil in the lid with connections to circulate tap water to keep the furnace lid cool protecting the SPRT and reducing heat load into the lab.

A pre warming tube with a temperature approximately equal to that of the heat pipe made of a unique and gas-tight material, is provided to heat the SPRT prior to it being placed in a cell.

The furnaces feature an adjustable independent and adjustable over temperature device to protect expensive cells and SPRTs as well as a second internal over temperature safety device.



## Accessories

Accessories include equalizing blocks, a fan assembly to keep thermometer handles cool and a thermometer holder. With an equalizing block it is possible to use the furnace for comparison calibration.



### Isotech Heatpipe Furnaces

Model	Temperature Range	Heat Pipe Type	Cells
17702W	125 to 250°C	Water	Indium Tin
17702P	400 to 1000°C	Potassium	Zinc Aluminium Silver
17702S	500 to 1100°C	Sodium	Aluminium Silver Copper



## New Features

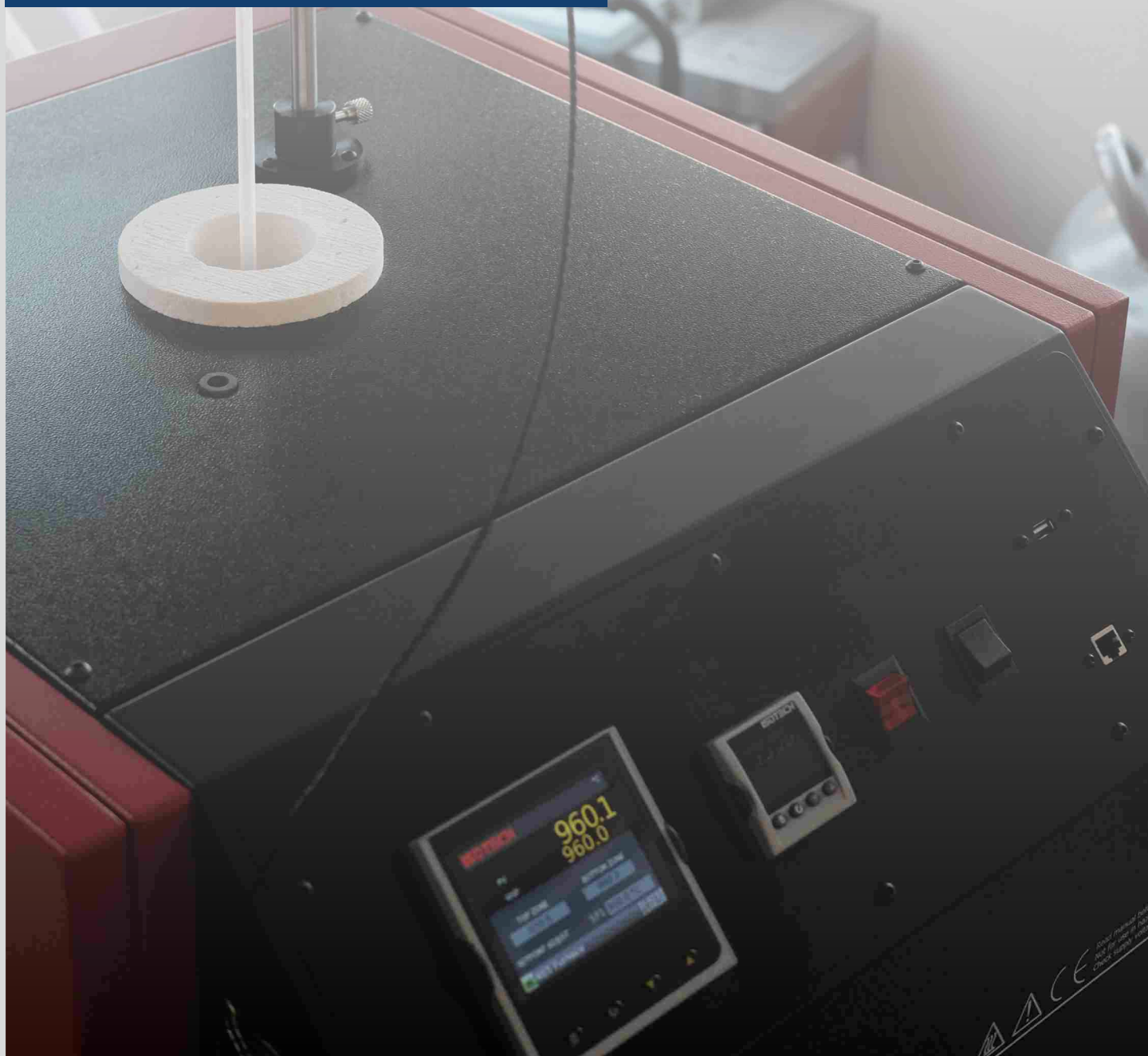


From our own ongoing experience and customer feedback we have updated the Isotech Furnace Range to deliver the same proven performance and advanced features but with a number of convenience upgrades to make your life easier.

The controllers have now been relocated to the top for easier operation, we now include an SPRT Stand and Cable Tidies to keep your standards safe and Accessory Pods to keep the furnace tops free from clutter. Our furnaces are programmable to automatically melt and freeze cells and feature both USB and Ethernet interfaces with bright crystal clear displays.

### Specification

<b>Uncertainty</b>	<1mk (with cells)
<b>Uniformity</b>	<10mK over length of fixed point sample
<b>Control</b>	0.1°C Resolution: Gain Scheduling Action and Power Feedback
<b>Interface</b>	Ethernet and USB Host
<b>Core Size</b>	52 x 432mm
<b>Dimensions</b>	Height 960mm Width 600mm Depth 690mm
<b>Weight</b>	115kg
<b>How to Order</b>	Please specify model and Voltage required





**125 to 1100°C**

# Furnaces Dual

- Essentially Gradient Free
- Heatpipe Operation from Indium to Copper
- Simple Use - no zone offsets to adjust

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Plateau length is determined by the difference in temperature between the heatpipe and cell - this can be adjusted to give a plateau of any length of up to tens of hours. Our controllers offer extra resolution and allow adjustment to 0.1°C right up to 1090°C. The Potassium and Sodium models have a cooling coil in the lid with connections to circulate tap water to keep the furnace lid cool protecting the SPRT and reducing heat load into the lab.

A pre warming tube with a temperature approximately equal to that of the heat pipe made of a unique and gas-tight material, is provided to heat the SPRT prior to it being placed in a cell.

The furnaces feature an adjustable independent and adjustable over temperature device to protect expensive cells and SPRTs as well as a second internal over temperature safety device.



In addition to the heatpipe furnaces described the Dual Furnaces incorporate a second furnace which, because of its unique design, will safely (and without contamination) pre and post-condition the thermometers.

There is also a separate storage enclosure for up to four thermometers with adequate support for the thermometer head.

With the Dual Furnace the thermometers are removed from their storage enclosure and placed in the preconditioning furnace. The furnace is slowly heated to the Cell temperature. The thermometers are protected from contamination by a slow air flux around them. One by one the thermometers are transferred into the cell for 20 to 30 minutes for calibration and thence back to the conditioning furnace. When all the thermometers have been calibrated, the conditioning furnace is slowly cooled back to 400°C whence the thermometers can safely be removed into room temperature.

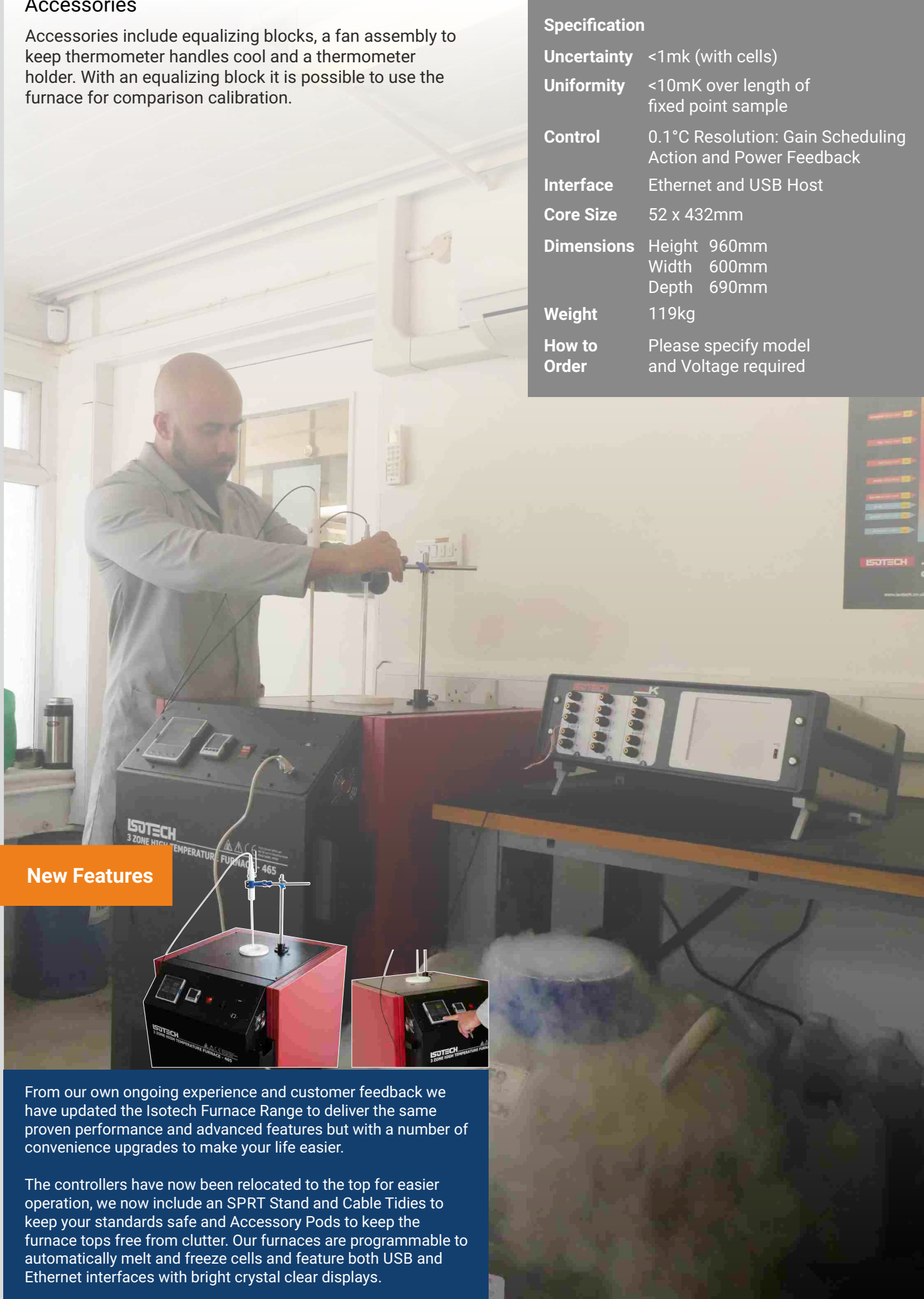
Isotech Dual Furnaces			
Model	Temperature Range	Heatpipe Type	Cells
17707	125 to 250°C	Water	Indium Tin
17706	400 to 1000°C	Potassium	Zinc Aluminium Silver
17705	500 to 1100°C	Sodium	Aluminium Silver Copper

## Accessories

Accessories include equalizing blocks, a fan assembly to keep thermometer handles cool and a thermometer holder. With an equalizing block it is possible to use the furnace for comparison calibration.

### Specification

<b>Uncertainty</b>	<1mk (with cells)
<b>Uniformity</b>	<10mK over length of fixed point sample
<b>Control</b>	0.1°C Resolution: Gain Scheduling Action and Power Feedback
<b>Interface</b>	Ethernet and USB Host
<b>Core Size</b>	52 x 432mm
<b>Dimensions</b>	Height 960mm Width 600mm Depth 690mm
<b>Weight</b>	119kg
<b>How to Order</b>	Please specify model and Voltage required



## New Features

From our own ongoing experience and customer feedback we have updated the Isotech Furnace Range to deliver the same proven performance and advanced features but with a number of convenience upgrades to make your life easier.

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