



# Maintenance Bath Water Triple Point

The Isotech 18233 Water Triple Point Maintenance Bath is widely used by the worlds' leading NIMs. In a recent International study cells from 21 of the worlds leading laboratories were inter-compared, the study used two Isotech 18233 Baths to maintain the cells during the inter-comparisons.

It will maintain the water triple point for long periods of time (many months, with occasional attention) so that this fundamental fixed point of thermometry is continuously available.

The Bath ensures total safety of the cells with dual electrical safety circuits and the passive safety of the design, see below.

The Isotech Model 18233 Water Triple Point Maintenance Bath is not an adaptation of general-purpose commercial equipment, but is specifically designed to maintain and safeguard 1 to 4 Water Triple Point Cells, for the calibration of thermometers on the International Temperature Scale of 1990.

It will ensure the integrity of the cells against catastrophic freezing, which can break the glass envelope.

The case of the bath is made of special-quality double-skinned laminated wood for best thermal resistance and stability.

Cooling is accomplished by efficient solid-state Peltier chilling modules, powered so that the rate of temperature change is very small. Solid state cooling ensures minimal power consumption, silent operation and no vibration.

Two safety circuits are provided to prevent cell breakage by excessive ice formation. The controls can be set to a resolution of better than 0.001°C. If control fails in such a mode that the Peltier chillers are full on, a warning light is lit to give the operator 20 minutes in which to take appropriate action. If no action is taken, the apparatus is automatically switched off and the cells are allowed to warm slowly.

Passive safety is provided by the physics of ice. If the Peltier chillers become too cold, the first ice which forms is on the water tank surfaces directly in contact with the chillers, effectively inhibiting further rapid transfer of freezing to the bath water.

A specific stirring rate of bath fluid is provided by bubble agitation which prevents the water from stratifying.

The bath is extensively tested at Isotech for two weeks or more, during which use the control and alarm circuits are set and checked for optimum performance. It is released only when Isotech is entirely satisfied with its performance.

The bath has a long and successful history and is relied on by many National Laboratories throughout the world. This history of successful use is one of the most important reasons for choosing Isotech products.

No Ice required, Automatic, Vibration free,  
Electrical noise free, Solid state cooling,  
Double safety circuits



Model	ITL-M-18233
Temperature Range	+0.01°C ± 0.3°C
Accuracy	±0.001°C ±0.0001°C in Cell
Ambient Limits	18°C to 28°C
Time to temperature	na
Power	150W typical, 100-130 or 208-240VAC* 50/60Hz (*field changeable)
Dimensions	Height 910mm Width 635mm Depth 710mm Weight 66kgs

**Options**  
Triple Point of Water Cells

**How to order**  
ITL-M-18233 Water Triple Point Maintenance Bath

Please specify which type of cells will be used so that we can supply the correct cell holder.