DATASHEET

Slim-Fixed-Point-Cells

Isotech

Distributed by AKRIBIS

Slim Fixed Point Cells
Sealed

- Ultra Pure >99.9999% 6N
- 35 Year Plus History
- For Optimal Realisations

Water

The Isotech B8 30 130 Cell is small enough to fit into portable Dry Blocks such as the Venus and Europa models. For the larger blocks like the Oceanus Isotech recommend the B 12 46 210 with its increased immersion depth

Gallium and Mercury Cells

Like the B8 Cell the Slim Gallium Cell can be used in portable blocks like the Venus and Europa, or in stirred liquid baths. The Hydra and Orion have accessories available to support the cells.

Indium to Copper

Isotech's Slim Cells have been in constant use since their introduction in 1990. The cells have always been made from the highest quality graphite and 6N (99.9999%) pure metals.

After further investment in the lab, and gaining smaller uncertainties from UKAS, we reviewed and further refined our range of metal clad cells to give better accuracy and performance. The new professional ranges of cells have more metal inside providing an active immersion depth in the metal of 160mm.

Metal Clad

Isotech produced the first metal clad cells in 1990 and have much experience in the manufacture and calibration of high quality proven metal clad cells.

Metal clad cells are recommend for all points from Indium to Aluminium.

Quartz Clad

These cells are recommended for Silver and Copper points, whilst available for the lower temperature points the metal clad versions are recommended as they are more robust, have the same performance and are more cost effective.

Equipment for Slim Cells

The Slim Cells can be used in the same apparatus as the larger cells, and the greater immersion depth will give the lowest uncertainties.

Cost effective dedicated desktop apparatus like the POTTS, "Points on the Temperature Scale" can be used to automatically bring the cell to the plateau. These simple to use systems conveniently provide long flat plateau for low uncertainty calibration of thermometers.

UKAS certification of our Slim Cells

The new, longer metal clad fixed point cells are intercompared to our reference cells for smallest uncertainties. Isotech now offer two UKAS services depending on the amount of measurements we make on the cell under test.

In our standard and recommended service we perform one melt, one freeze and one intercomparison. In our premium service, in order to reduce uncertainties we perform two or three melts, two or three freezes and two intercomparisons.

The two optional UKAS services with the uncertainties are tabulated below:

Isotech UKAS Calibration Uncertainties (k=2)

Cell	Premium Service UKAS Schedule Note 4	Standard Service UKAS Schedule Note 5
Mercury	±0.5mK	±1mK
Water	±0.1mK (B12)	±0.5mK
Gallium	±0.5mK	±1mK
Indium	±0.6mK	±2mK
Tin	±0.8mK	±2mK
Zinc	±1mK	±2mK
Aluminium	±2mK	±6mK

UKAS CALIBRATION
0175

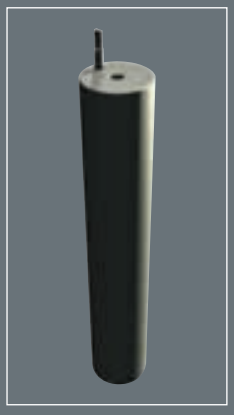
The latest schedule can be found on the Isotech website or at www.ukas.org

AKRIBIS www.akribis.info contact@akribis.info

Available Types Cells	Temperature	Uncertainty[1]	Additional Uncertainty[2]	Model Metal Clad	Model
Water	0.01°C	±0.5mk	±0.3mk	N/A	B8 30 130
Water	0.01°C	±0.1mk	±0.3mk	N/A	B12 40 210
Water	0.01°C	±0.1mk	±0.3mk	N/A	B12 46 210
Gallium	29.7646°C	±0.5mk	±0.3mk	17401M	N/A
Mercury	-38.8344°C	±0.5mk	±0.1mk	17724M	N/A
Higher Temperature					**Quartz Clad**
Indium	156.5985°C	±0.6mk	±0.7mk	17668ML	17668QS
Tin	231.928°C	±0.8mk	±0.8mk	17669ML	17669QS
Zinc	419.527°C	±1mk	±1.5mk	17671ML	17671QS
Aluminium	660.323°C	±2mk	±3mk	17672ML	17672QS
Silver	961.78°C	±15mk		N/A	17673QS
Copper	1084.62°C			N/A	17674QS

Isotech cells are of the highest purity available. Open cells conform to CCT/2000-13. Sealed cells are sealed to one atmosphere with 6N pure argon at the freeze temperature.

Metal



- Robust
- Protected Against Contamination and Ambient Pressure Effects
- Easily Transportable Between Labs

Quartz

- Silver and Copper points available

Slim Gallium

- Robust
- Fits in Isotech Dry Blocks

Slim Mercury

- Robust
- Fits in Europa-6

Water Triple

- Low cost
- Fits in Dry Blocks

Nominal Dimensions Cell	Outside Dia.	Inside Dia.	Height	Material Depth
Slim Metal	37	8	220	160
Slim Quartz	38	8	226	160
Slim Mercury	36	9	235+140	130
Slim Gallium	35	10	200+45	140
Water B8 30 130	30	8	160	130
Water B12 40 210	40	12	365	210
Water B12 46 210	46	12	365	210

A free report is available, **www.isotech.co.uk/pdfs/SlimCells.pdf**

N.B. Other SPRTs may give different results depending on the stem conduction properties.

1. *The uncertainty applies when the cells are sufficiently immersed in deep apparatus.*
2. *When these cells are used in bench-top apparatus the additional uncertainty should be included for stem conduction effects. The value is typical for the 670 SPRT, others SPRTs may give different results depending on the stem conduction properties.*

AKRIBIS · www.akribis.info · contacto@akribis.info