

ITS-90

FIXED POINTS

ELEMER pure-metal fixed point cells are specially designed for dry-block ELEMER-KT calibrators

- Smaller dimensions of fixed point cells allows to decrease their cost and make it more transportable
- Stainless steel case cells much less fragile than quartz glass and suitable for industrial calibrating
- The realization of fixed point cells are easily automated through our programmable ELEMER-KT temperature calibrators



ITS-90 fixed point cells specifications

Cells	Temperature	Uncertainty*	Calibrator model
Triple Point of Mercury (TPHg)	-38,8344 °C	±1,2 mK	ELEMER-KT-150
Melting Point of Gallium (MPGa)	29,7646 °C	±1,2 mK	ELEMER-KT-150
Freezing Point of Indium (FPIIn)	156,5985 °C	±4 mK	ELEMER-KT-650
Freezing Point of Tin (FPSn)	231,928 °C	±4 mK	ELEMER-KT-650
Freezing Point of Zinc (FPZn)	419,527 °C	±10 mK	ELEMER-KT-650

Cell types

Type	Sealed metal	Resealable metal
Features	<ul style="list-style-type: none"> • Simplicity and convenience • Protected against contamination • Protected against ambient pressure variation (sealed to 1 atm with pure argon at the freeze temperature) • Transportable between labs (Robust stainless steel case) 	<ul style="list-style-type: none"> • Closer to ITS-90 temperature • Sealed with port for gas supply • Resettable pressure • Transportable between labs (Robust stainless steel case)

ETS

REFERENCE THERMOMETERS



Highly accurate temperature measurement with reference thermometers

Model	Sheath material	Temperature range	Uncertainty*						
			TPW (0,01 °C)	MPGa (29,7646 °C)	FPIIn (156,5985 °C)	FPSn (231,928 °C)	FPZn (419,527 °C)	FPAI (660,323 °C)	FPCu (1084,62 °C)
ETS-1S-1 (ETS-1Q-1)	Leuco Sapphire (Fused quartz)	0...+660,323 °C	2 mK	2 mK	5 mK	5 mK	10 mK	10 mK	—
ETS-1S-2 (ETS-1Q-2)	Leuco Sapphire (Fused quartz)	0...+660,323 °C	10 mK	10 mK	20 mK	20 mK	20 mK	30 mK	—
ETS-2S-1 (ETS-2Q-1)	Leuco Sapphire (Fused quartz)	0...+419,527 °C	2 mK	2 mK	5 mK	5 mK	10 mK	—	—
ETS-3M-1	Inconel	0...+231,928 °C	2 mK	2 mK	5 mK	5 mK	—	—	—
ETS-4S-2 (ETS-4Q-2)	Leuco Sapphire (Fused quartz)	+419,527...+1084,62 °C	—	—	—	—	70 mK	100 mK	150 mK

*These are expanded uncertainties of measurement with a coverage probability of 95% and have a coverage factor of $k = 2$.