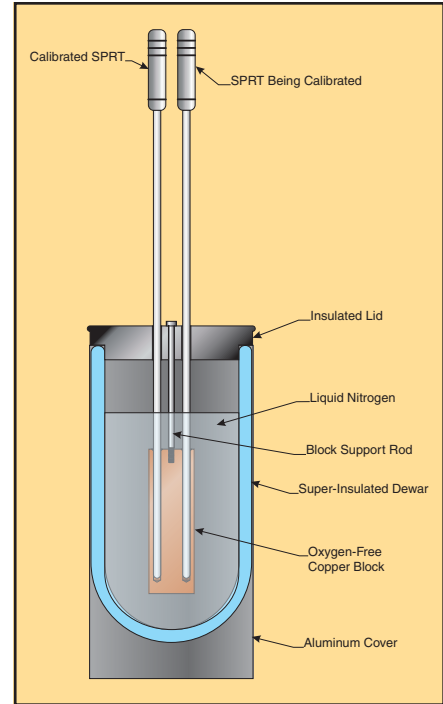


LN₂ Comparison Calibrators



- Low-cost calibrations to $-196\text{ }^{\circ}\text{C}$
- Simple to use
- Uncertainty less than 2 mK

If you need to do calibrations at the triple point of argon but don't want the complexity and cost of using an argon triple point cell, Hart's Model 7196 LN₂ Comparison Calibrators will solve your problems. And they do it for less than half the price of other argon triple point simulators.

The nominal boiling point of nitrogen is $-196\text{ }^{\circ}\text{C}$ at one atmosphere of pressure. The defining triple point of argon is $-189.3442\text{ }^{\circ}\text{C}$. While there is a difference between the nominal boiling point of nitrogen and the argon triple point, the difference can be corrected for

mathematically, and an uncertainty of less than 2 mK from the actual argon triple point is achievable.

Hart's LN₂ Comparison Calibrators consist of a super-insulated glass dewar, a high-purity copper block, and a precision-fit lid. The dewar is filled with LN₂ and the copper block is suspended in it; an SPRT is inserted into the block and a calibration is performed against your own calibrated SPRT. The Model 7196-4 includes four 8 mm (0.315 in) wells. The 7196-13 includes five 8 mm (0.315 in) wells and eight 6.35 mm (0.25 in) wells.

Hart's LN₂ Comparison Calibrators are neither expensive nor complicated to use. If you need supporting data or would like to discuss the theory of operating an LN₂ Comparison Calibrator, call Hart Scientific today. (Or come to one of our training courses, and we'll show you.)

Specifications

Temperature	Nominal $-196\text{ }^{\circ}\text{C}$ depending on atmospheric pressure
Thermal Wells	7196-4: four 8 mm (0.32 in) I.D. wells 7196-13: five 8 mm (0.32 in) I.D. wells, eight 6.35 mm (0.25 in) I.D. wells Both blocks: 275 mm immersion from top of lid to bottom of well, 150 mm immersion into copper block
Dimensions	180 mm O.D. x 385 mm high
Stability	Typically better than 2 mK
Uniformity	$< 0.4\text{ mK}$ between holes
Volume	3.5 liters of liquid nitrogen
Evaporation	Approx. 25 mm (1 in) per 45 minutes

Ordering Information

- 7196-4** LN₂ Comparison Calibrator, 4 holes
- 7196-13** LN₂ Comparison Calibrator, 13 holes

