

7400 cryo plus		Temperature probe calibration
7400 cryo units		October 17, 2018

7400 Series Temperature Probe Calibration

Microboard 190526 (REV 4 & 5)

Tools & Equipment

- Basic hand tools
- NIST Traceable temperature meter (Capable of -196°C)
- Small insulated LN₂ container (To be used for dipping Temperature sensors in LN₂)

Calibration Procedure

1. Disconnect unit from power source.
2. Remove Rear cover plate to expose the microboard.
3. Immerse the cabinet probe and NIST traceable temperature instrument probe in a small container of LN₂.

NOTE: Removal of the cabinet temperature sensor may be required to facilitate immersing the probe in LN₂. The probe bracket is secured by a single nut accessible from the inside rear of the cabinet.

4. Allow the probes to stabilize in the liquid a minimum of four minutes.
5. Reapply power to the cabinet.

CAUTION: Line voltage (120/230VAC) will be present on the lower half of the micro board.

6. Compare the cabinet display with the independent instrument. Both readings should read $-196^{\circ}\text{C} \pm 1^{\circ}\text{C}$ (-195 to -197).

NOTE: If the independent test instrument is not in this range, do not proceed until the proper reading can be achieved.

7. If the cabinet display is not within $-196 \pm 1^{\circ}\text{C}$ then adjust R43 on the microboard as needed. Allow a minimum of thirty seconds between adjustments for display stabilization.

NOTE: Once calibrated, the display accuracy is considered to be $\pm 3^{\circ}\text{C}$.

8. Remove power source. Reinstall probe and cover panels as needed.
9. Reapply power to cabinet.