

# ice point™ Calibration Reference Chamber

## High Precision—Uses Freezing Water to Maintain 0°C (32°F)

TRCIII



Optional

TRCIII



- ✓ A 0°C (32°F) Thermoelectric “Refrigerator”
- ✓ Eliminates Old Fashioned “Ice Bath”
- ✓ For Versatile Use in the Factory, Laboratory, Instrument Shop
- ✓ Calibration of All Temperature Instruments and Sensors
- ✓ Rugged Outer Case for Safe Portability
- ✓ Accepts Up to 6 Probes
- ✓ Available in 120 or 220 Vac Models
- ✓ NIST Traceable Calibration Available
- ✓ Companion Dry Block Probe Calibrator Available (Model CL900/950)

**Use Up to 6 Probes at One Time with TRCIII**

cell is sensed by the expansion of a bellows, which operates a microswitch and controls the cooling elements. The alternate freezing and thawing of the ice accurately maintains a 0°C (32°F) environment around the reference wells.

The automatic operational features of this instrument eliminate the need for frequent attention, required of common ice baths. On/off cycling of a pilot light indicates proper operation of the unit at ice point temperature.

Any combination of thermocouples may be used with this instrument by simply inserting the reference probes in the reference wells. Calibration of other types of temperature sensors at 0°C (32°F) may also be performed.

When accurate temperature measurements are required, the TRCIII ice point™ Chamber delivers the precision you need. The reference wells are maintained at 0°C (32°F) to within ±0.1°C and a stability of ±0.04°C for constant ambient. Continuous cycling operation maintains constant equilibrium conditions within the cell, eliminating the slow drift often experienced in common ice baths as melting

The TRCIII ice point™ Calibration Reference Chamber relies on the equilibrium of ice and distilled, deionized water at atmospheric pressure to maintain 6 reference wells at precisely 0°C (32°F). The wells extend into a sealed cylindrical chamber containing the distilled, deionized water. The outer walls of the chambers are cooled by thermo-electric cooling elements. The increase in volume produced by the creation of ice crystals within the



TRCIII ice point™ shown with companion CL950 dry block probe calibrator. See [newportUS.com](http://newportUS.com) for details.

occurs. TRP reference probes, used with the TRCIII, provide a junction from thermocouple alloys to copper wire, at the probe tip. When inserted into the TRCIII, TRP probes enable the change from thermocouple alloy to copper at 0°C (32°F), for accurate cold junction compensation.

## Thermocouple TRP Features

- ✓ Made with Special Limits of Error Material
- ✓ All Standard Calibrations Available
- ✓ Comes Complete with Mating Connectors
- ✓ Can Be Ordered with 12, 24 or 36" Leads



Sturdy handle for easy portability.

## Specifications

**Reference Wells:** 6 wells,  $\frac{5}{32}$ " ID,  $3\frac{3}{4}$ " deep; wells are thermally and electrically grounded to each other; accepts  $\frac{1}{8}$ " OD probes

**Reference Temperature:** 0°C

**Accuracy:**  $\pm 0.1^\circ\text{C}$  or better

**Stability:**  $\pm 0.04^\circ\text{C}$  for constant ambient

**Environmental Ambient:** 2 to 32°C (35 to 90°F)

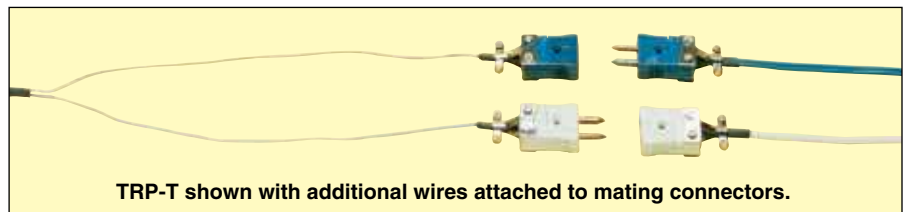
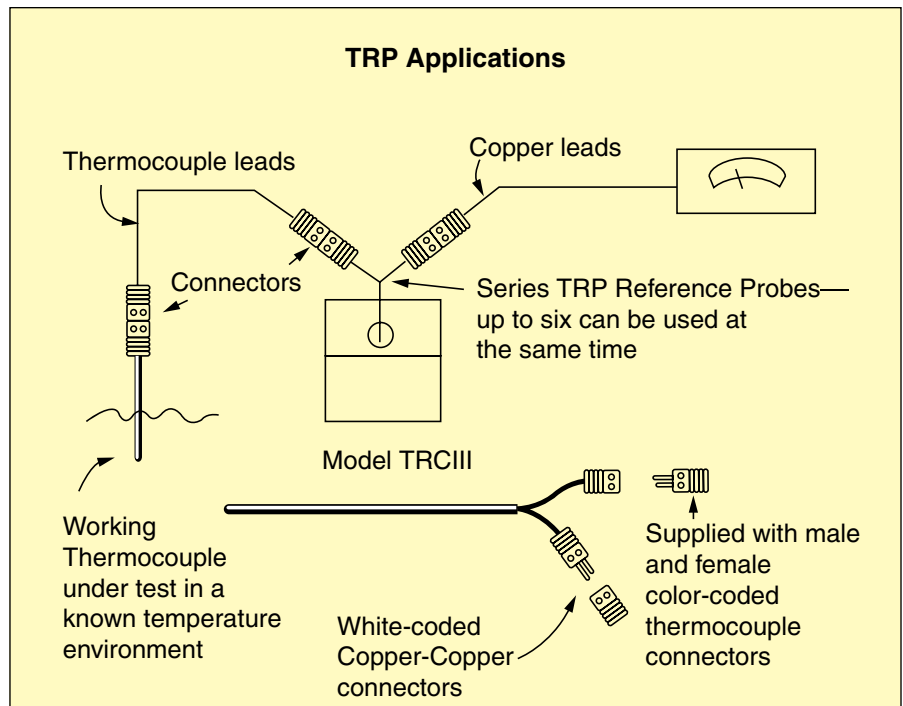
**Power Required:** 115/220 V, 60 Hz, 100 Watts

**Stabilization Time:** 2 or 3 hours depending on ambient temperature and thermal load

### Dimensions:

305 H x 159 W x 322 mm D (12.0 x 6.25 x 12.7")

**Weight:** 9.5 kg (21 lb)



**Caution:**  
Unit must not be allowed to freeze or damage will result.

## Thermocouple TRPs

Model No.	Thermocouple Material Type	
	+	-
TRP-K	CHROME $\Omega$	ALOME $\Omega$
TRP-T	Copper	Constantan
TRP-E	CHROME $\Omega$	Constantan
TRP-J	Iron	Constantan
TRP-S	Platinum	Platinum 10% Rh
TRP-R	Platinum	Platinum 13% Rh
TRP-B	Platinum 30% Rh	Platinum 6% Rh
TRP-C	W 5% Re	W 26% Re
TRP-D	W 3% Re	W 25% Re

For thermocouple Types J, K, T, E, standard length is 12". For 24" or 36" long leads add suffix "-24" or "-36" to model number, for an additional cost.

For thermocouple Types R, S, B, C, G, D, standard length is 6". Add appropriate suffix for each additional 6", for an additional cost.

**To Order Visit [newportUS.com/trciii](http://newportUS.com/trciii) for Pricing and Details**

Model No.	Description
TRCIII	ice point™ reference 120 Vac operation
TRCIII-220	ice point™ reference 220 Vac operation
CAL-3	NIST-traceable calibration

Comes complete with operator's manual, mineral oil and power cord 1.8 m (6').

**Ordering Example:** TRCIII, ice point™ reference cell, TRP-K, TRP-J, TRP-T, TRP-E, Type J, K, T and E temperature reference probes.

OCW-3, OMEGACARE™ extends standard 1-year warranty to a total of 4 years.