

MODEL K29A / K29B

Triple Point of Water Cells

The Triple Point of Water (TPW), the temperature of pure water, ice and water vapor in thermal equilibrium, is the reference temperature for resistance ratios in platinum resistance thermometry. Its assigned value on both the Kelvin Thermodynamic Temperature Scale and the ITS-90 is 273.16 K (.01 C t90). The easiest to use and most cost-effective of all the defining fixed points, the TPW provides the ultimate in accuracy for calibration of precision thermometers of many types.

Pond Engineering constructs TPW Cells of high-quality borosilicate glass (also available in quartz) using precision bore glass tubing (standard 11 or 13mm inside diameter, other sizes available on special order) as the thermometer well. Following thorough cleaning of the cell interior, the cell is filled with ultra-pure degassed water, evacuated and flame sealed.

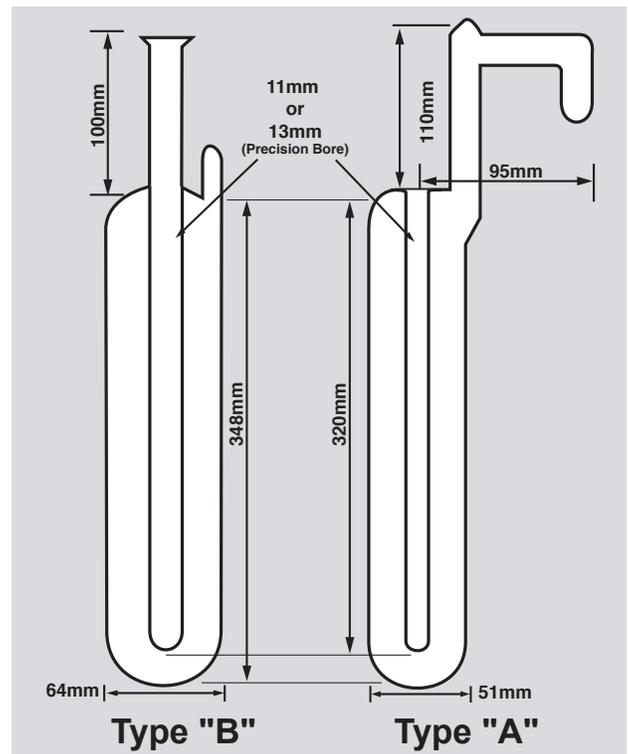
Pond Engineering manufactures both Type A and B styles. The portion of the glassware extending above the top of type A cells (the "handle") indicates the cell's partial air pressure. Significantly larger in diameter, type B cells allow users to form a thicker mantle and can be better guarded from heat transfer from above the cell, extending mantle lifetimes. The small glass protrusion at the top of the cell body also serves as a low resolution indicator of the partial pressure of air in the cell.

Uncertainty, reproducibility and stability of the temperature realized in a TPW Cell are nothing short of phenomenal. Pond Engineering TPW Cells are guaranteed to realize a temperature within +0.000 0, -0.000 2 K of the theoretical ideal TPW. Furthermore, this high standard of accuracy is guaranteed for five whole years.

Low-cost maintenance systems make TPW cells more efficient than conventional ice baths, even for routine calibration work. To alleviate the natural concerns associated with sealed glass cells, each pond Engineering cell comes with a full 3-year, no cost replacement warranty. If, for any reason, a cell is broken, simply return the pieces with an explanation and we will replace it free as many as three times. Once users grow comfortable with cell preparation and handling procedures, cells are rarely broken.



SPECIFICATIONS



All specifications subject to change without notice.

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TO ORDER, OR FOR MORE INFORMATION:

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KEY TECHNICAL FEATURES

1

Constructed of high quality, specially treated borosilicate glass, the Triple Point of Water Cells carry a three year replacement warranty against breakage, for any reason. Just return the pieces and we'll replace it free.

2

Available contact-enhancing aluminum bushings minimize thermometer self-heating and allow faster thermal response.

3

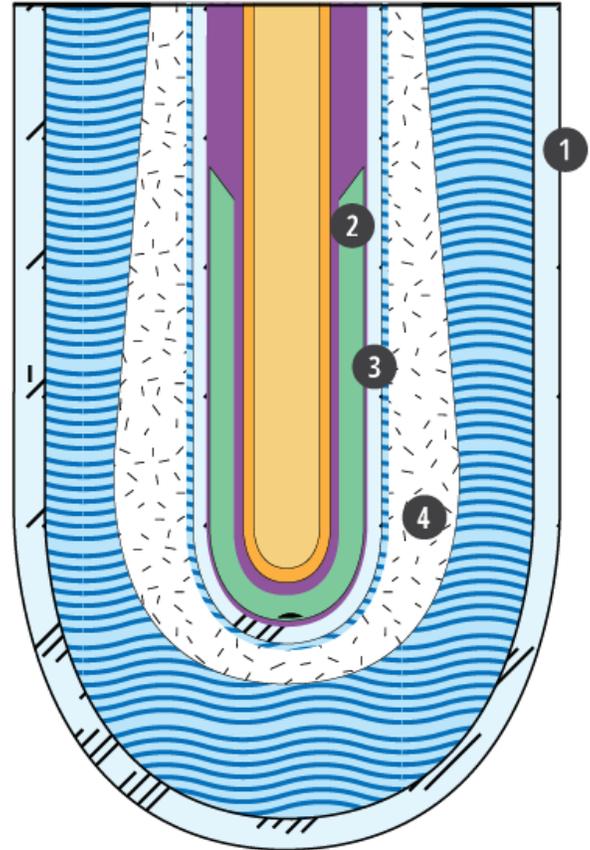
Center Well, with inside diameter of 11 or 13mm, constructed of precision bore glass tubing.

4

A properly formed mantle, consisting of two liquid to solid interfaces, is easily and quickly realized using the K29I or K29iX Immersion Cooler. With a proper mantle, accuracy is guaranteed for five years to be within $+0.000\ 0\ \text{C}$, $-0.000\ 2\ \text{C}$ of the ideal fixed point.

When used with Pond Engineering Model K29M Maintenance System mantle lifetimes can exceed four weeks without operator attention.

Available in both Type A and B styles.



POINT OF APPLICATION

