

Hydra 798

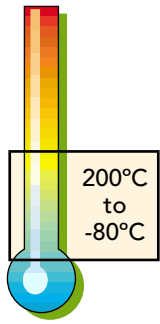
Range of Stirred Liquid Baths

Precision calibration of thermometers calls for the use of stirred liquid calibration baths. The new Hydra models set new standards in terms of price to performance ratio. Now Calibration Engineers and Metrologists can choose from a range of baths that offer good immersion depth, parallel tube action, giving the best uniformity and smallest calibration uncertainties, and wide temperature ranges.

Hydra offers these features in a new price class, don't settle for a bath with shallow immersion or simple stirred action when with these baths provide good depth of immersion and good temperature uniformity.

The immersion depth of 300mm allows the requirements of "Supplementary Information to the ITS-90" to be met. This publication from BIPM recommends immersion depths of 15 to 20cm from -50°C to 50°C, and from 20 to 27cm at 200°C. Many baths in this price range are simply not deep enough to meet this requirement. Rather than simply stirring a square tank of liquid the Hydra uses parallel tube action for superior temperature uniformity. The calibration volume is cylindrical to suit thermometers, not a large square tank. The bath is filled with just 5 litres of liquid reducing filling and ongoing cost of ownership as liquids are replenished. The 798H features a cooling coil which can be attached to an external source of either cold water or gas to further reduce cool down times.

Accessories allow a wide range of thermometers, for example, to be readily clamped by the Sensor Support and ITS-90 fixed points cells are accommodated with the adjustable cell holder.



Key Features...

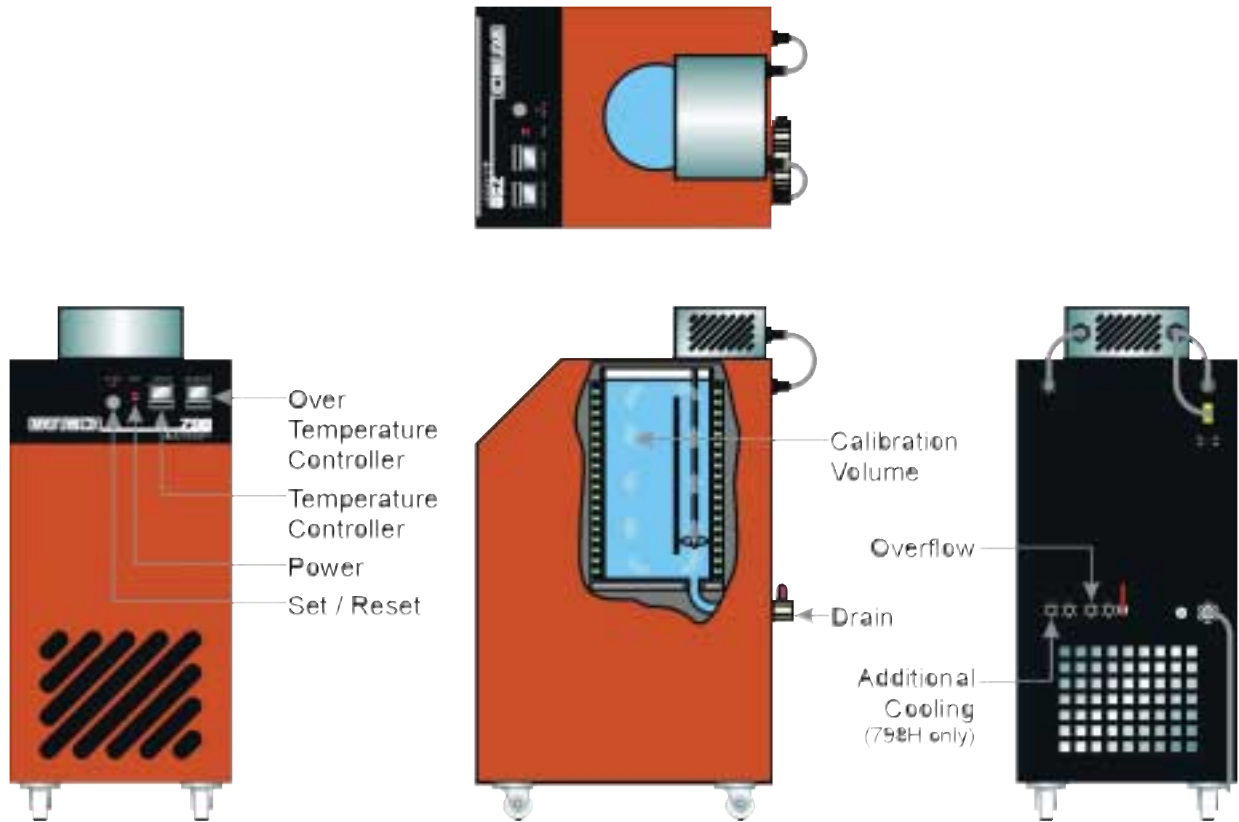
- **Parallel Tube Action...**
Liquid flows up the rear volume of the bath and down the working volume. This action creates very small vertical and axial gradients. This gives the smallest overall uncertainties.
- **Heating...**
All heating is outside the container. By using a large area nickel foil heater the complete bath wall is heated uniformly.
- **Cooling...**
The cooling is built-in and also surrounds the calibration volume creating a low temperature ambient in which the heater can function efficiently.
- **Wider Temperature Range...**
A unique cooling system cools the unit as well as enabling the bath to heat up to 125°C (121°C is a key sterilization temperature).
- **Commercial Grade Chillers...**
The chillers are one third horse power commercial grade units, not cheaper domestic grade as used by some manufacturers.
- **Stability...**
Better than $\pm 0.01^\circ\text{C}$ over the complete temperature range.
- **Calibration Depth...**
Double the depth of some baths. The Hydra Range has up to 300mm depth of immersion.
- **Circular Design...**
The circular design eliminates 'cold corners' found in tank shaped calibration baths.
- **Fast Cool Down...**
The Hydra cools from ambient to -80°C in just 180 minutes.

*Good Immersion Depth,
reducing stem conduction errors*
*Parallel Tube Action, giving the best uniformity and
smallest calibration uncertainties*
Wide Temperature Ranges, -80°C to 200°C



Hydra 798

Range of Stirred Liquid Baths




| Model No. | HYDRA 798L | HYDRA 798M | HYDRA 798H |
|--------------------------|---|---|---|
| Temperature Range | -80°C to 125°C | -40 C to 125°C | Ambient to 200°C |
| Volume | 150mm Diameter, 300mm Deep, (5 Litres) | | |
| Absolute Stability | ±0.01°C | ±0.01°C | ±0.01°C |
| Best Comparison Accuracy | ±0.002°C | ±0.002°C | ±0.002°C |
| Communications | RS422 as standard | | |
| Uniformity (125°C Oil) | Vertical 0.002°C, Horizontal 0.001°C to 0.0025°C | | |
| Uniformity (200°C Oil) | Vertical 0.005°C, Horizontal 0.001°C to 0.0035°C | | |
| Options | 400mm Wide, 615mm Deep, 800mm Tall | | |
| Safety | Compliant to CE Regulations | | |
| Power | 2.5KW | 1.5KW | 800W |
| | 110V 50/60Hz or 230V 50/60Hz | 110V 50/60Hz or 230V 50/60Hz | 110V 50/60Hz or 230V 50/60Hz |
| How to Order | 798L Please state Voltage required. Please state Accessories required. | 798M Please state Voltage required. Please state Accessories required. | 798H Please state Voltage required. Please state Accessories required. |

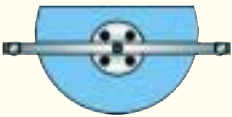
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Range of Stirred Liquid Baths


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| 1. Lid | 798-05-01 | Liquid Volume Lid <i>Included</i> |
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| 2. Equalizing Block | 798-05-02A | Aluminium Equalizing Block, 4 pockets, 8mm diameter, 160mm deep |
| | 798-05-02B | Copper Equalizing Block, 4 pockets, 8mm diameter, 160mm deep |
| | 798-05-02C | Special Aluminium Equalizing Block <i>To suit customer requirements.</i> |
| | 798-05-02D | Special Copper Equalizing Block <i>To suit customer requirements.</i> |



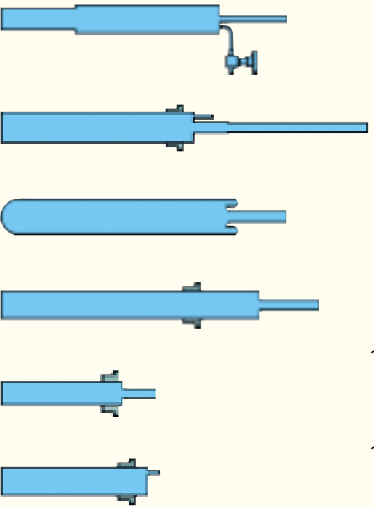
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| 3. Dual Cell Holder | 798-05-03 | Standard Dual Cell Holder <i>Includes interchangeable Cell adaptors</i> |
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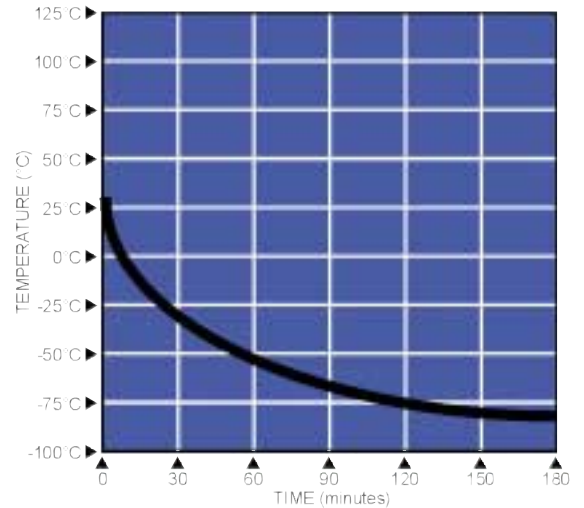
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| 4. Sensor Holder | 798-05-04 | Standard Sensor Holder <i>Holds up to 12 sensors between 3mm diameter and 8mm diameter</i> |
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| 5. Fixed Point Cells | 463 | Carbon Dioxide Triple Point Cell <i>-56.602°C</i> |
| | 17724 | Mercury Triple Point Cell <i>-38.8344°C</i> |
| | C12 | Water Triple Point Cell <i>0.01°C</i> |
| | 17401 | Gallium Melt Point Cell <i>29.7646°C</i> |
| | 17401M | Slim Gallium Melt Point Cell <i>29.7646°C</i> |
| | 17668M | Indium Freeze Point Cell <i>156.5985°C</i> |



Cool Down Graph...



Warm Up Graph...

