

## Cold Baths



- Stability to  $\pm 0.0007$  °C
- Best digital temperature controller available
- “Super Tweak” function provides set-point resolution to  $0.00003$  °C
- Excellent for maintaining fixed-point cells

Hart Scientific’s temperature calibration baths are known around the world as the best calibration baths made. If you’re looking for a cold bath, no one gives you more choices than Hart.

These five baths operate at temperatures as low as  $-40$  °C, and each one is built using CFC-free refrigerants. Hart’s proprietary controller design and unique tank construction produce bath stabilities to  $\pm 0.001$  °C or better. These baths are so stable and uniform that national labs use them for comparison calibrations and fixed-point cell maintenance.

Each bath (except the 7011) is fully automatable with a bath interface package and Hart’s MET/TEMP II automation software package described on page 81. When we automate a bath, we automate it completely with computer-controlled solenoid

valves for precision balancing of the heating and cooling system. MET/TEMP II performs all calibration tasks automatically, using your PC.

With a Hart cold bath, you can forget external coolants. Internal refrigeration systems are all that’s needed to reach each bath’s coldest temperature. Most cold baths may be ordered with an optional pumping lid for supplying external cooling requirements.

Each bath has unique characteristics that make it perfect for specific jobs. Some baths are excellent for SPRTs, some are great with thermistors, and some are perfect for maintaining triple point of water cells. A 7008IR bath can even be used to maintain the temperature of a blackbody cone.



*This Hart Model 7008-IR features a NIST-designed cone-shaped target.*

Regardless of your application, Hart has a bath that gets the job done, and done better than anyone else can do it. Call us today and tell us about your application.

# Cold Baths

Specifications	7008	7040	7037	7012	7011
<b>Range</b>	-5 °C to 110 °C	-40 °C to 110 °C		-10 °C to 110 °C	
<b>Stability</b>	±0.0007 °C at 25 °C (water) ±0.001 °C at 25 °C (mineral oil)	±0.002 °C at -40 °C (ethanol) ±0.0015 °C at 25 °C (water) ±0.003 °C at 100 °C (oil 5012)		±0.0008 °C at 0 °C (ethanol) ±0.0008 °C at 25 °C (water) ±0.003 °C at 100 °C (oil 5012)	
<b>Uniformity</b>	±0.003 °C at 25 °C (water) ±0.004 °C at 25 °C (mineral oil)	±0.004 °C at -40 °C (ethanol) ±0.002 °C at 25 °C (water) ±0.004 °C at 100 °C (oil 5012)		±0.003 °C at 0 °C (ethanol) ±0.002 °C at 25 °C (water) ±0.004 °C at 100 °C (oil 5012)	
<b>Temperature Setting</b>	Digital display with push-button data entry				
<b>Set-Point Resolution</b>	0.002 °C; high-resolution mode, 0.00003 °C	0.01 °C; high-resolution mode, 0.00007 °C		0.002 °C; high-resolution mode, 0.00003 °C	
<b>Display Resolution</b>	0.01 °C				
<b>Digital Setting Accuracy</b>	±1 °C				
<b>Digital Setting Repeatability</b>	±0.01 °C			±0.005 °C	
<b>Heaters</b>	500 and 1000 Watts				
<b>Access Opening (call for customs)</b>	324 x 184 mm (12.75 x 7.25 in)	127 x 254 mm (5 x 10 in)	162 x 292 mm (6.38 x 11.5 in)	127 x 254 mm (5 x 10 in)	
<b>Depth</b>	331 mm (13 in)	305 mm (12 in)	457 mm (18 in)	305 mm (12 in)	
<b>Wetted Parts</b>	304 stainless steel				
<b>Power</b>	115 VAC (±10 %), 60 Hz, 14 A or 230 VAC, 50 or 60 Hz, 8 A, specify	115 VAC (±10 %), 60 Hz, 16 A or 230 VAC (±10 %), 50 or 60 Hz, 9 A (specify voltage and frequency)		115 VAC (±10 %), 60 Hz, 14 A or 230 VAC (±10 %), 50 Hz, 7 A, specify	
<b>Volume</b>	42 liters (11.2 gal)	27 liters (7.2 gal)	42 liters (11.2 gal)		27 liters (7.2 gal)
<b>Weight</b>	61 kg (135 lb)	63.5 kg (40 lb)	68 kg (150 lb)		56.7 kg (125 lb)
<b>Size (HxWxD)</b>	610 x 775 x 483 mm (24 x 30.5 x 19 in)	622 x 768 x 483 mm (24.5 x 30.25 x 19 in)	775 x 768 x 483 mm (30.5 x 30.25 x 19 in)	762 x 686 x 401 mm (30 x 27 x 15.8 in)	559 x 686 x 401 mm (22 x 27 x 15.8 in)
<b>Automation Package</b>	Interface- <i>it</i> software and RS-232 computer interface are available for setting the bath temperature via an external computer. For IEEE-488, add the 2001-IEEE to the automation package. (Interfaces not available for Model 7011.)				

## Ordering Information

<b>7008</b>	Standard Bath, -5 °C to 110 °C, high capacity	<b>2010</b>	Access Cover, 127 x 254 mm (5 x 10 in), Lexan (7011, 7040)	<b>2069</b>	8X Magnifier Scope, with mounts
<b>7011</b>	Standard Bath, -10 °C to 110 °C	<b>2010-5</b>	Access Cover, 162 x 292 mm (6.38 x 11.5 in), Lexan (7037)	<b>7008IR</b>	7008, modified to accept an IR cone
<b>7012</b>	Standard Bath, -10 °C to 110 °C, deep	<b>2011</b>	Access Cover, 184 x 324 mm (7.25 x 12.75 in), Lexan (7008)	<b>2033</b>	IR Cone (NIST design)
<b>7037</b>	Standard Bath, -40 °C to 110 °C, deep	<b>2016-7008</b>	Fluid Level Adapter, 7008		
<b>7040</b>	Standard Bath, -40 °C to 110 °C	<b>2016-7011</b>	Fluid Level Adapter, 7011		
<b>2001-7008</b>	Automation Package for 7008	<b>2016-7012</b>	Fluid Level Adapter, 7012		
<b>2001-7012</b>	Automation Package for 7012	<b>2016-7037</b>	Fluid Level Adapter, 7037		
<b>2001-7037</b>	Automation Package for 7037	<b>2016-7040</b>	Fluid Level Adapter, 7040		
<b>2001-7040</b>	Automation Package for 7040	<b>2071</b>	Bath Cart, 7011, 7012 (312 mm [12.3 in] H)		
<b>2001-IEEE</b>	Add for IEEE-488 (requires Automation Package)	<b>2073</b>	Bath Cart, 7008, 7037, 7040 (216 mm [8.5 in] H)		
<b>2007</b>	Access Cover, 127 x 254 mm (5 x 10 in), Stainless Steel (7011, 7040)	<b>2027-5901</b>	TPW Holding Fixture (7012, 7037)		