

Cold baths



- Stability to $\pm 0.0007\text{ }^{\circ}\text{C}$
- Best digital temperature controller available
- “Super Tweak” function provides set-point resolution to $0.00003\text{ }^{\circ}\text{C}$
- 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 $-40\text{ }^{\circ}\text{C}$, and each one is built using CFC-free refrigerants. Hart’s proprietary controller design and unique tank construction produce bath stabilities to $\pm 0.001\text{ }^{\circ}\text{C}$ 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 97. 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.

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.



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

Cold baths

Specifications	7008	7040	7037	7012	7011
Range	−5 °C to 110 °C	−40 °C to 110 °C		−10 °C to 110 °C	
Stability	± 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)	
Uniformity	± 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)	
Temperature Setting	Digital display with push-button data entry				
Set-Point Resolution	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	
Display Resolution	0.01 °C				
Digital Setting Accuracy	± 1 °C				
Digital Setting Repeatability	± 0.01 °C			± 0.005 °C	
Heaters	500 and 1000 Watts				
Access Opening (call for customs)	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)
Depth	331 mm (13 in)	305 mm (12 in)	457 mm (18 in)		305 mm (12 in)
Wetted Parts	304 stainless steel				
Power	115 V ac (± 10 %), 60 Hz, 14 A or 230 V ac, 50 or 60 Hz, 8 A, specify	115 V ac (± 10 %), 60 Hz, 16 A or 230 V ac (± 10 %), 50 or 60 Hz, 9 A (specify voltage and frequency)		115 V ac (± 10 %), 60 Hz, 14 A or 230 V ac (± 10 %), 50 Hz, 7 A, specify	
Volume	42 liters (11.2 gal)	27 liters (7.2 gal)	42 liters (11.2 gal)		27 liters (7.2 gal)
Weight	61 kg (135 lb)	63.5 kg (140 lb)	68 kg (150 lb)		56.7 kg (125 lb)
Size (HxWxD)	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)
Automation Package	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

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