



liquid temperature calibration baths

Liquid Calibration Baths

The Techne liquid calibration bath (LCB) series offer compact, accurate and reliable liquid baths which can be used for external circulation or temperature calibration of thermal sensors.

- -35°C to 250°C
- Three different capacities available; 5, 7 or 12 litres
- Temperature stability; $\pm 0.005^\circ\text{C}$ depending on choice of control unit
- Fully insulated bath for excellent heat retention
- Analogue or digital temperature selection, depending on choice of control unit
- Includes cover, lid and bridging plate

When temperature calibration is required the compact liquid baths offers excellent stability over the entire temperature range. The LCBs can be also be used for external circulation to maintain temperatures of samples in viscometers, photometers, refractometers, fermenters and other reaction vessels.

All models of LCB offer exceptional thermal stability from -35°C to 250°C . The baths are fully insulated on all sides and base and are fitted with a cooling coil for connection to a cold water supply for use at temperatures around ambient. The minimum temperature achievable is -35°C when a Dip or Flow Cooler is added to the system.* For the full specifications of the thermoregulators see pages 24 and 25.

Each bath is supplied complete with lid, drain tap, carry handles, a cooling coil and hole with bung to position a certified sensor.

The TechneWorks software package is available for the TU-20 thermoregulators free of charge from www.techne.com (see page 11 for details).

Technical Specification

	5 litre	7 litre	12 litre
Working depth L x W x H (mm)	125	175	300
Dimensions L x W x H (mm)	351 x 260 x 183	351 x 260 x 233	351 x 260 x 358
Thermoregulator L x W x H (mm)	237 x 124 x 260	237 x 124 x 260	237 x 124 x 260
Bath opening (mm)	140 x 140	140 x 140	140 x 140

Ordering Information

Product Code	Description
FBCAL05D	LCB insulated liquid calibration bath with cooling coil, 5 litre capacity
FBCAL07D	LCB insulated liquid calibration bath with cooling coil, 7 litre capacity
FBCAL12D	LCB insulated liquid calibration bath with cooling coil, 12 litre capacity

*LCB baths fitted with a TU-20HT thermoregulator are not suitable for use with a Flow Cooler.

Liquid Calibration Bath	LCB-5/7/12	LCB-5/7/12
Thermoregulator	/TU-20D	/TU-20HT
Bath Capacity	5 / 7 / 12 litres	5 / 7 / 12 litres
Operating temperature range ¹	-35 to 200°C	ambient $+10$ to 250°C
Working temperature range ²	25 to 200°C	30 to 250°C
Stability at -35°C (short term*)	± 0.015	N/A
Stability at 0°C (short term*)	± 0.020	N/A
Stability at 50°C (short term*)	± 0.005	± 0.005
Stability at 100°C (short term*)	± 0.015	± 0.015
Stability at 200°C (short term*)	± 0.024	± 0.024
Stability at 250°C (short term*)	N/A	± 0.040
Uniformity $^\circ\text{C}$ (full range**)	0.008	0.008
Accuracy $^\circ\text{C}$ (full range)	± 0.5	± 0.5

1) With an FC-500 flow cooler;

2) ambient of 20°C

*Short term stability is over a 15 minute period, for 1 hour double the values shown

**Two SPRT's 3" apart in the working area of bath



TU-20D Tempunit®

- A wider temperature range of -40°C* to 200°C
- Excellent temperature stability: $\pm 0.005^\circ\text{C}$ at 40°C
- 1.8kW heater power for fast heat up
- 4 digit setting with a bright LED digital temperature display
- This unit incorporates an RS232 connection
- User adjustable over-temperature cut-out
- Low liquid level cut-out as standard

TU-20HT Tempunit®

- This sophisticated Tempunit® covers a wide temperature range of -40°C* to 250°C
- Excellent temperature stability: $\pm 0.005^\circ\text{C}$ at 40°C
- 1.8kW heater power for fast heat up
- 4 digit setting with a bright LED digital temperature display
- RS232 connection supplied with TechneWorks software package and connecting lead as standard
- User adjustable over-temperature cut-out with an audible alarm fitted
- Low liquid level cut-out as standard

Technical Specification

Specifications to DIN 12876	TU-20D	TU-20HT
Temperature range *	-40°C to +200°C	-40°C to +250°C
Temperature selection	Digital	Digital
Temperature stability using water @ 40°C	$\pm 0.005^\circ\text{C}$	$\pm 0.005^\circ\text{C}$
Method of control	PID	PID
Temperature sensor	PRT	PRT
Adjustable over-temperature cut-out	Yes	Yes
Low liquid level cut-out	Yes	Yes
PC Interface	Yes RS232	Yes RS232
Heating/Pumping		
Pump capacity litres/minute	10	N/A internal circulation only
Pump capacity (mbar)	145	-
Nominal heater power at 120V (W)	1500	1500
Nominal heater power at 240V (W)	1800	1800
Cooling coil	Option	Option
Extension below base (mm)	145	145
Dimensions L x W x H (mm)	237 x 124 x 260	237 x 124 x 260
TechneWorks software package	TechneWorks#	TechneWorks#

* Refrigeration or cooling coil required for below ambient cooling (see Techne Flow and Dip Coolers and the cooling coil). The TU-20HT can only be used with the Dip Coolers.

(See page 11 for details)

Ordering Information

Product Code	Description
FTU20DDC	TU-20D, advanced thermoregulator with RS232, -40°C to 200°C, (supplied with clamp)
FTU20HDC	TU-20HT, advanced high temperature thermoregulator with RS232 and TechneWorks software, -40°C to +250°C, (supplied with clamp)
FCCO1	Cooling Coil



TU-20D



TU-20HT



RU-200 and FC-500 models

Dip and Flow Coolers

The Techne Dip and Flow Coolers work in conjunction with a Techne thermoregulator (see pages 24 and 25). The bath liquid flows through the unit which continually extracts heat from the bath fluid by means of the heat exchanger which is built into the unit. The cooling head of the Techne Dip Cooler fits neatly and unobtrusively into the corner of the bath and can be secured with a specially designed mounting bracket (supplied).

Techne Dip and Flow coolers are designed for use when ambient temperatures down to -35°C are required.

- Four models
- Compact refrigeration units for achieving temperatures down to -35°C*
- Cooling head of the Dip Cooler fits neatly into the corner of a Techne liquid bath (RU Series Dip Coolers)
- Designed for use with Techne liquid baths

Technical Specification

Cooling (at 20°C ambient)	FC-200	FC-500	RU-200	RU-500
Minimum achievable temperature	-20 °C	-35 °C	-20 °C	-35 °C
Cooling capacity: 20°C (Watts)	140W	210W	145W	240W
Cooling capacity: 0°C (Watts)	140W	210W	145W	240W
Cooling capacity: -10°C (Watts)	110W	200W	110W	230W
Internal capacity (ml)	200ml	200ml	–	–
Nominal dimensions (excluding handles/coil) Overall (mm) - width	235	370	235	370
length	420	430	420	430
height	300	325	300	325
Coil dimensions (mm) length	–	–	85	85
diameter	–	–	75	75
Hose length to coil (mm)	–	–	1250	1250
Shipping weight	19	39	19	39

*At an ambient of 20°C, using a mixture of 40% water, 40% antifreeze and 20% ethanol



Ordering Information

Model#	Product Code	Description
Circulators and flow coolers		
FC-200	FFC2D	FC-200 flow cooler, -20°C
FC-500	FFC5D	FC-500 flow cooler, -35°C
Dip coolers		
RU-200	FRU2D	RU-200 dip cooler, -20°C
RU-500	FRU5D	RU-500 dip cooler, -35°C



FC-200