Product Specifications

The ULT Series refrigerated bath recirculators are self-contained, compact, cooling units designed for circulating to external applications. They provide temperature stability for calibration applications and for instrumentation cooling.

NESLAB ULT Series Bath Circulators

Designed to achieve low temperatures and maintain excellent temperature stability for consistent results

Typical laboratory applications for the ULT Series - 90°C to + 10°C:

- **Heat exchangers**
- **Cloud point/Pour point**
- **Calibration**
- **Cell freezing**
- **Viscosity studies**
- **Kinetic cooling**
- **Cooling GC ovens**
- **Petroleum studies**

Note: The ULT 80DZT unit temperature range is -80°C to +80°C

Low Temp Good Value

The NESLAB ULT Series controls the temperature of the reservoir, cools the fluid, and circulates this fluid externally. Temperature remains steady to a very tight tolerance to give you an excellent calibration source.

When it comes to heat removal, the environmentally responsible refrigeration system lets you cool more equipment, glassware, or instrumentation than you can with a benchtop circulator. A good value for low temperature applications.

The ULT Series has an industrial-grade circulating pump that delivers consistent flow which allows fluid to circulate long distances, even through small I.D. tubing. And you no longer need to locate your bath circulator next to your application.

Plus for those applications requiring a wider temperature range, such as reaction vessel heating and cooling, Thermo Electron Corporation offers an optional extended temperature range ULT unit that can circulate between -80°C and +80°C.

Choose Range of Options

While each ULT unit comes with many standard features, a full range of options and accessories is available to meet your specific application needs.

Thermo Electron Corporation has a well-established reputation in temperature control through its NESLAB and HAAKE product lines. Formerly independent companies, NESLAB and HAAKE have joined forces within Thermo to provide proven temperature control technology along with global service and support. With over 75 years of extensive industry experience, Thermo professionals worldwide continue to develop and support the solutions that help you analyze, detect, measure, and control your application with increasingly advanced precision.

NESLAB ULT Series Specifications

	ULT 80ZT	ULT 80	ULT 95
Temperature range*	-80°C to +80°C	-80°C to +10°C	-90°C to -30°C
Temperature stability	+/- 0.03°C	+/- 0.03°C	+/- 0.02°C
Cooling capacity			
60 Hz	250 watts at -70°C	250 watts at -70°C	350 watts at -80°C\
50 Hz	200 watts at -70°C	200 watts at -70°C	280 watts at -80°C
Compressor	2 x 1 hp	2 x 1 hp	2 x 1.5 hp
Heater	1200 watts	1200 watts	1650 watts
Bath volume			
gallon	4.0	4.0	4.0
liter 15.1	15.1	15.1	
Unit dimensions			
H x W x D in	47.50 x 27.375 x 17.75	47.50 x 27.375 x 17.75	48 x 32.125 x 21.50
H x W x D cm	102.7 x 69.2 x 45.1	102.7 x 69.2 x 45.1	119.4 x 81.6 x 54.6
Bath opening/Bath depth			
W x L/D in	7 x 5.4/9.5	7 x 5.4/9.5	2 in diameter fill port
W x L/D cm	17.8 x 13.7/24.1	17.8 x 13.7/24.1	5.1 cm diameter fill port
Pump performance			
60 Hz (LPM)	10 LPM @ 0' head, 12' max	10 LPM @ 0' head, 12' max	16 LPM @ 0' head, 21' max
(GPM)	2.6 GPM @ 0' head, 12' max	2.6 GPM @ 0' head, 12' max	3.3 GPM @ 0' head, 21' max
50 Hz (LPM)	10 LPM @ 0' head, 11' max	10 LPM @ 0' head, 11' max	12.4 LPM @ 0' head, 31' max
(GPM)	2.6 GPM @ 0' head, 11' max	2.6 GPM @ 0' head, 11' max	3.3 GPM @ 0' head, 31' max
Pump	force and suction	force and suction	increased agitation
Unit weight			
lb	336	336	370
kg	152.4	152.4	168

Pumping specifications were determined using water. Stability determined using fluid with specific gravity of 0.6 for both models. ULT 95: - 30ºC fluid temperature. ULT 80: - 20ºC fluid temperature. Ambient temperature of 20ºC for both models. Specifications subject to change.

Standard Features

Feature	Benefit
Circulating pump	Delivers a consistent flow when working with dense or viscous fluids
Force/suction pump	Provides versatility of circulating through a closed system, open system, or two applications
Heater	Offers rapid heating to minimize waittime
Digital temperature controller	Provides precise setpoint and readout to a resolution of 0.01°C
Cascade refrigeration system	Provides CFC-free refrigeration system for precise temperature control and optimum stability; allows for fast cooling rates and higher heat removal capacities at low temperatures
Automatic load reset	Compensates for changes in the bath load, eliminating shifts in setpoint accuracy
Digital display	Offers the user simple operation
Stainless steel bath	Offers convenient and easy cleaning

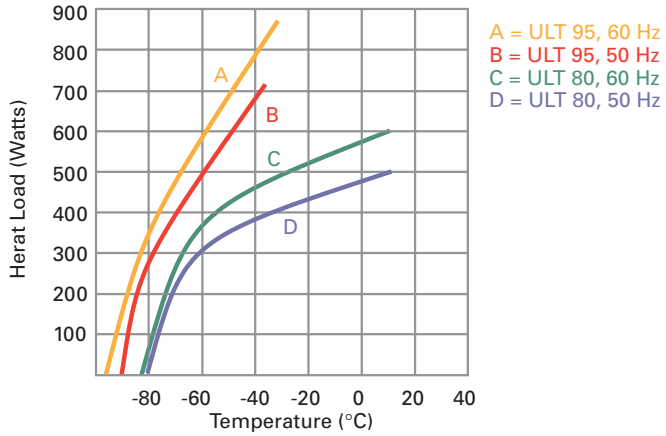
Options and Accessories

Feature	Benefit
Sealed lid for ULT 80 Series	Prevents moisture buildup
NESLAB NEScom software	Automates your entire temperature control process from a PC system
Plumbing kits	
Tygon	Allows circulation between -25°C and +100°C and includes 25' of tygon tubing, 25' of tubing insulation, and 4 hose clamps
Silicone	Allows circulation between -100°C and +100°C and includes 25' of silicone tubing, 25' of tubing insulation, and 4 hose clamps
Remote sensor	Allows remote temperature control of an external vessel when circulating. Available in a variety of lengths and diameters to match many applications
Hollow ball kit	Insulates your bath reservoir from temperature losses while allowing immersion of a variety of vessels such as flasks or test tubes. This kit contains 100 1.5" diameter balls
Stainless steel leveling device *	When circulating to an open container, this device ensures that the fluid level remains constant
Flow controller**	Quick and easy set up for external circulation to open container
Ethylene glycol	Allows circulation to temperatures down to -30°C in a 50/50 blend when mixed with water
Chloramine-T algicide	Restricts growth of algae to protect equipment and instrumentation

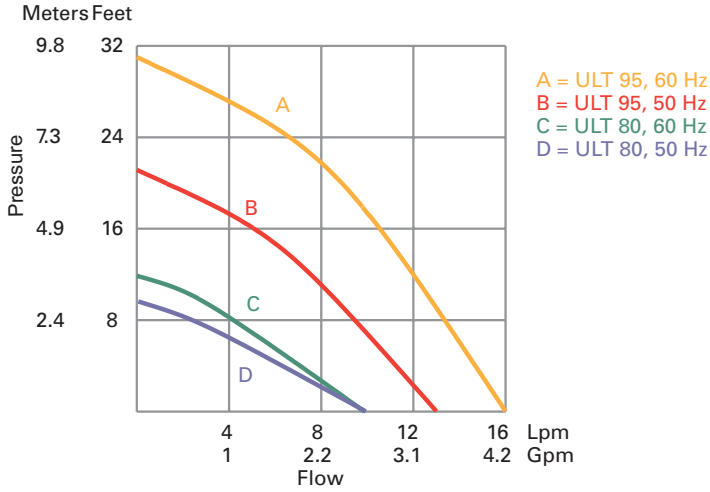
*Used with standard ring stand
**Necessary to operate stainless steel leveling device

Performance Curves

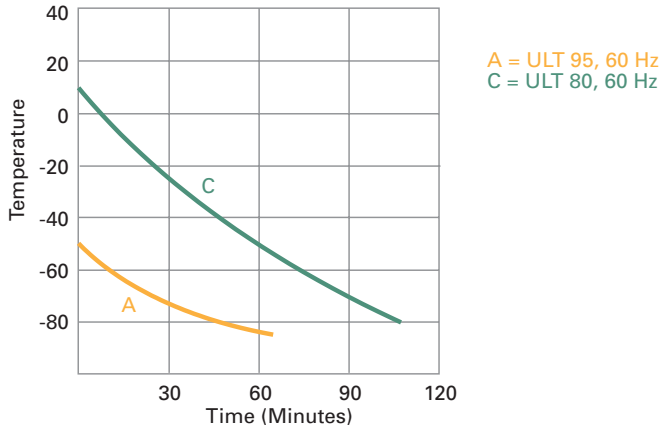
Cooling Capacity



Pumping Capacity



Time to Temperature



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