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Refrigerated Bath/Circulators

For your applications requiring heating and cooling, look to NESLAB's Refrigerated Bath/Circulators. Five different models with various bath sizes, options and features meet virtually every cooling need you may have. These compact units are designed to offer the ultimate in temperature stability for calibration applications, the highest cooling capacity for in-bath reaction control, and the industry's most powerful circulating pump for remote control and cooling of instrumentation. NESLAB Refrigerated Bath/Circulators outperform all other brands any way you look at them. Call us, and we'll gladly tell you how.

Refrigerated *Bath/Circulators*

What should you look for in a refrigerated bath? Well, they are basically designed to do three things. Control the temperature of the reservoir, cool the fluid, and circulate this fluid externally. NESLAB Refrigerated Bath/Circulators perform all three functions extremely well. This is the NESLAB trademark. We don't compromise the features important to our users.

Our temperature stability in the work area is ±0.01°C. That means the temperature remains steady to a very tight tolerance which provides you with an excellent calibration source. We accomplish this stability using state of the art microprocessor controllers along with excellent agitation in the bath area. This combination provides rock solid stability. When it comes to heat removal, our refrigeration system accomplishes what no other product on the market can, removing 500 Watts of heat from your application. This means you can cool more equipment, glassware, or instrumentation than you would normally expect from a bench top circulator. Of course, our refrigeration system is totally environmentally responsible. Our circulating pump out performs any other pumping system available. It combines a strong flow rate with unmatched pressure to circulate farther, even through small I.D. tubing. Combining our strong circulating pump with powerful refrigeration translates into more cooling at greater distances. Our customers often report that they can cool twice as much equipment, twice as far away. You no longer have to locate your bath/circulator adjacent to your application.



NESLAB circulating pumps are force/suction pumps. One stage forces fluid out while the other draws the fluid in. This provides the versatility of circulating through a closed system, an open container, or two independent applications. Combined with our powerful cooling capacities, one NESLAB unit can often do the job of two less powerful circulators.

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Refrigeration - NESLAB Refrigerated Bath/Circulators combine a powerful CFC-free refrigeration system balanced by a cycling stainless steel heater to provide precise temperature control and optimum stability. Oversized hermetic refrigeration compressors are permanently sealed for reliable, maintenance-free operation. Oversized compressors mean more cooling capacity, quicker temperature changes and longer life.





Analog controller



Digital controller



Microprocessor controller

Controllers - NESLAB's constant temperature refrigerated RTE Series feature three controller choices to meet your specific needs: analog, digital, and microprocessor. All are designed for precise control and convenient operation. The analog controller gives you full control over temperature parameters at an economical price. The digital controller features remote sensing capabilities and RS-232 connection which provides direct computer communication. The microprocessor controller has the features of the digital controller and adds multi-step programming, adjustable high and low temperature safeties, and the ability to remove the controller for remote operation.

Refrigerated Bath/Circulators

RTE Series

NESLAB leads the laboratory and industrial markets by being the first to introduce a complete line of CFC-free Baths/Circulators. Our refrigeration system is continuously operational below 50°C and is balanced by a cycling heater. Above 50°C, the compressor will shut off to take advantage of ambient conditions for temperature control. This translates to energy savings and rapid heat up. The RTE-111, 211, and 221 feature seamless stainless steel tanks with rounded corners, removable front grilles, and smooth controller surfaces for convenient cleaning. Built in handles provide sturdy, safe leverage for easy moving. The microprocessor controller offers multistep programming with built in RS-232 and remote sensing capabilities. This controller is removable for remote operation from the bath. NESLAB Bath/Circulators are recognized for strong circulation. Our strong circulating pump provides twice the pump pressure as any other brand available. The pump motor has a large 5/16”(.8cm) diameter one piece shaft which is part of the pump rotor. Pump fittings are 1/4”(.64cm) MPT for convenience, and the angled design allows bath fluid to drain back into the reservoir before making tubing changes. The RTE-111, 211, and 221 provide generous CFC-free cooling for your demanding applications. You can choose analog, digital, or microprocessor control functions. These baths are designed to be compact and are ideal for your benchtop cooling needs. NESLAB Refrigerated Bath/Circulators are specially designed to outperform any other brand on the market. Compare cooling capacity in Watts or BTU/hr and you’ll see why owning a NESLAB Refrigerated Bath/Circulator is clearly a better value.

RS232 Serial Port
The microprocessor controller features a direct RS-232 serial port





Seamless Stainless Steel Tank
Rounded corners for convenient cleaning and a reservoir drain for quick and easy fluid changes



Removable Grille
The RTE family of products all are equipped with a removable front grille for easy and convenient routine cleaning



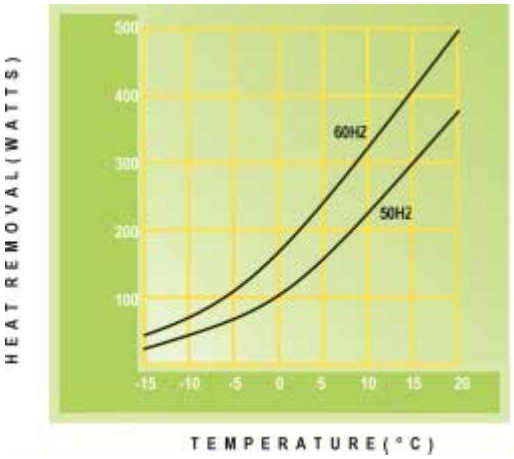
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Refrigerated Bath/Circulator Specifications

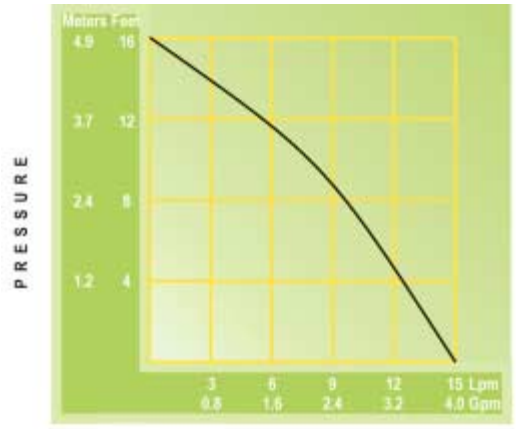
MODEL	RTE-111
TEMPERATURE RANGE	
Analog:	-25°C to +100°C
Digital/Microprocessor:	-25°C to +150°C
50 Hz Models:	
Analog:	-18°C to +100°C
Digital/Microprocessor:	-18°C to +150°C
TEMPERATURE STABILITY	±0.01°C, Analog ±0.1°C
COOLING CAPACITY	500 Watts at 20°C
50 Hz Models	375 Watts at 20°C
PUMPING CAPACITY	15 Lpm at 0' head Max Head 16' (4.9 M)
HEATER	800 Watt
WORK AREA (L x W x D) In.	$4^{3/4}$ x 8 x 6
Cm.	12.1 x 20.3 x 15.2
BATH VOLUME Gallons/Liters:	1.9/7.0
DIMENSIONS (H x W x D) In.	25 x $10^{5/16}$ x $15^{7/8}$
Cm.	63.5 x 26.2 x 40.3
POWER REQUIREMENTS	115V, 60 Hz, 12 Amps
50 Hz Models:	220-240V, 50 Hz, 7.5 Amps
SHIPPING WEIGHT	86 Lbs/39 Kgs

Stability, pump and cooling capacity specifications to +5°C determined using water, other specifications determined using fluid with specific heat of 0.6, ambient 20°C. Reservoir volume measured to midpoint of designated fill lines. Work area measured to tank top. 1000W heaters for 50 Hz models. Specifications subject to change.

Cooling Capacity



Pumping Capacity



FEATURES

- Versatile combination force/suction pump
- Rapid cool down with no waiting
- Choose analog, digital or remote microprocessor controller
- Built in handles for safe leverage
- High temp/ low liquid safety
- Designed for UL, CSA, CE, and IEC

Best Seller

Digital Controller
Features a bright green LED display and allows the user to select variables for temperature display

Direct Interface
A direct RS-232 port allows for computer control

Remote Sensor Accessory Port
Both the microprocessor and digital controllers offer this feature



Proportional Control
The digital controller also features proportional control with auto load reset for rapid temperature stabilization under changing heatloads

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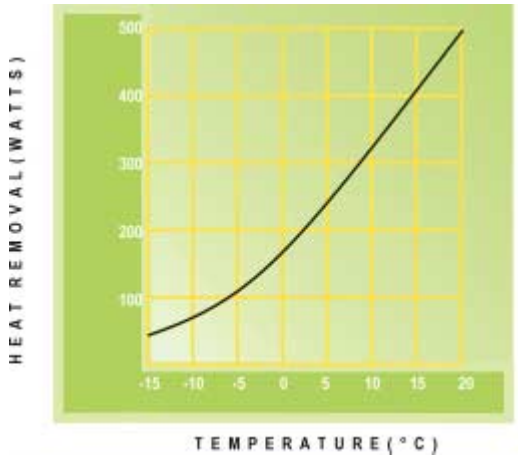
Refrigerated Bath/Circulator Specifications

Bigger Work Area

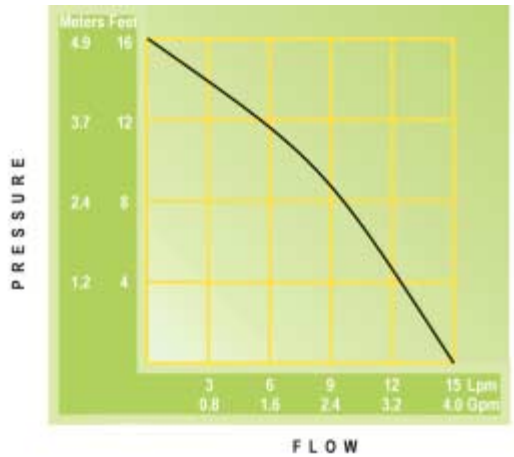
MODEL	RTE-211(pictured on pg 5)	RTE-221(pictured on pg 4)
TEMPERATURE RANGE		
Analog:	-25°C to +100°C	-23°C to +100°C
Digital/Microprocessor:	-25°C to +150°C	-23°C to +150°C
50 Hz Models:		
Analog:	-23°C to +100°C	-21°C to +100°C
Digital/Microprocessor:	-23°C to +150°C	-21°C to +150°C
TEMPERATURE STABILITY	±0.01°C, Analog ±0.1°C	±0.01°C, Analog ±0.1°C
COOLING CAPACITY	500 Watts at 20°C	500 Watts at 20°C
50 Hz Models	500 Watts at 20°C	500 Watts at 20°C
PUMPING CAPACITY	15 Lpm at 0' head Max Head 16' (4.9 M)	15 Lpm at 0' head Max Head 16' (4.9 M)
HEATER	800 Watt	800 Watt/800 Watt Boost
WORK AREA (L x W x D) In.	$9^{1/4}$ x 10 x 6	$9^{1/4}$ x 10 x 9
Cm.	23.5 x 25.4 x 15.2	23.5 x 25.4 x 22.9
BATH VOLUME Gallons/Liters:	3.2/12.1	5.4/20.5
DIMENSIONS(H x W x D) In.	25 x $12^{3/8}$ x $18^{3/8}$	$27^{7/8}$ x $12^{3/8}$ x $18^{3/8}$
Cm.	63.5 x 31.4 x 46.7	70.8 x 31.4 x 46.7
POWER REQUIREMENTS	115V, 60 Hz, 12 Amps	115V, 60 Hz, 16 Amps
50 Hz Models:	220-240V, 50 Hz, 7.5 Amps	220-240V, 50 Hz, 10 Amps
SHIPPING WEIGHT	99 Lbs/45 Kgs	106 Lbs/48 Kgs

Stability, pump and cooling capacity specifications to +5°C determined using water, other specifications determined using fluid with specific heat of 0.6, ambient 20°C. Reservoir volume measured to midpoint of designated fill lines. Work area measured to tank top. 1000W heaters for 50 Hz models. Specifications subject to change.

Cooling Capacity



Pumping Capacity



APPLICATIONS

- Spectrophotometers
- Refractometers
- Electrophoresis
- Rotary Evaporators
- Isoelectric Focusing
- Calibration
- Chromatography
- Condensers
- Densitometers
- Laboratory Cooling
- Polarimeters

ACCESSORIES

- Remote Sensors
- Test Tube Racks
- Flow Controllers
- Control Tethers
- Leveling Device
- Bath Fluid
- Flexible Tubing
- Autorefill Device
- Sealable Reservoir Cover
- Insulating Balls
- NEScom Software

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Refrigerated Bath/Circulator Specifications

Economy Model

MODEL	RTE-101
TEMPERATURE RANGE	-12°C to +130°C
TEMPERATURE STABILITY	±0.03°C
COOLING CAPACITY	350 Watts at 20°C
PUMPING CAPACITY 50 Hz Models	11.5 Lpm at 0' head max Head 14.5' (4.4 M) 10 Lpm at 0' head max Head 11' (3.4 M)
HEATER	800 Watt
WORK AREA (L x W x D) In. Cm. 50 Hz Models (L x W x D) In. Cm.	$4^{3/4}$ x 6 x $4^{3/4}$ 12.1 x 15.2 x 12.1 5 x 5 x5 12.7 x 12.7 x 12.7
BATH VOLUME Gallons/Liters: 50 Hz Models	1.3/4.9 1.2/4.5
DIMENSIONS (H x W x D) In. Cm. 50 Hz Models (H x W x D) In. Cm.	$22^{3/4}$ x $10^{1/8}$ x $14^{1/2}$ 57.8 x 25.7 x 36.8 $22^{7/8}$ x $10^{3/8}$ x $15^{1/8}$ 58.1 x 26.4 x 38.4
POWER REQUIREMENTS 50 Hz Models:	115V, 60 Hz, 11 Amps 220-240V, 50 Hz, 8 Amps
SHIPPING WEIGHT 50 Hz Models	62 Lbs/28.1 Kgs 65 Lbs/29.5 Kgs

1200W heaters for 50 Hz models. Reservoir volume/work area measured to midpoint of designated fill lines. Specifications subject to change. Stability, pump and cooling capacity specifications determined using water, 20°C bath temperature and ambient 20°C.

APPLICATIONS

- Spectrophotometers
- Refractometers
- Electophoresis
- Rotary Evaporators
- Isoelectric Focusing
- Calibration
- Condensers
- Densitometers
- Polarimeters
- General Laboratory Cooling

Compact
Space saving design maximizes valuable bench space



Microprocessor Controller
Provides reliable temperature stability for small heat loads



Full Range Cooling
Our unique full range cooling feature enables you to remove heat at temperatures as high as +130°C (60 Hz)

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Ultra Low Temperature Bath/Circulators - ULT Series

Our ULT Series is designed to achieve low temperatures and maintain excellent temperature stability without the use of ozone damaging refrigerants. The ULT products employ a cascade refrigeration system with two powerful compressors. This allows for fast cooling rates and higher heat removal capacities at low temperature. The strong, industrial grade pump delivers the consistent flow you require even when working with dense or viscous fluids. These pumps provide strong external circulation and fluid mixing in the reservoir for optimum temperature uniformity. Digital temperature controllers provide precise setpoint and readout to a resolution of 0.1°C. The stainless steel bath areas are heavily insulated to provide maximum cooling efficiency. Our sealed reservoir option (standard on ULT-95) includes a dry nitrogen bleed port which prevents moisture build-up and keeps your bath fluid dry.

Safeties
High temperature/ low liquid level cutout

Work Area
The ULT-80 offers a generous stainless steel work area for easy sample immersion



Standard Pumps
The ULT-80 features a force and suction pump which provides the flexibility of circulating through a closed system, open system, or two separate applications

For sales and service information call 800/4NESLAB or 800/258-0830 www.neslab.com
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Ultra Low Temperature Bath/Circulator Specifications

MODEL	ULT-80	ULT-95
TEMPERATURE RANGE	-80°C to +10°C	-90°C to -30°C*
TEMPERATURE STABILITY	±0.03°C	±0.2°C
COOLING CAPACITY 50 Hz Models	250 Watts at -70°C 200 Watts at -70°C	340 Watts at -80°C 280 Watts at -80°C
PUMPING CAPACITY 50 Hz Models	0-13 Lpm at 0' head max head 16' (4.9 M) 0-11 Lpm at 0' head max head 11' (3.3 M)	16 Lpm at 0' head max head 31' (9.4 M) 12.4 Lpm at 0' head max head 21' (6.4 M)
HEATING	1200 Watt	1650 Watt
WORK AREA (L x W x D) In. Cm.	$5^{3/8}$ x 7 x $9^{1/2}$ 13.7 x 17.8 x 24.1	2 inch Fill Port 5.1 diameter
BATH VOLUME Gallons/Liters	4/15.1	4/15.1
DIMENSIONS (H x W x D) In. Cm.	$47^{1/2}$ x $27^{1/4}$ x $17^{3/4}$ 120.7 x 69.2 x 45.1	47 x $32^{1/8}$ x $21^{1/2}$ 119.4 x 81.6 x 54.6
POWER REQUIREMENTS 50 Hz Models:	208-230V, 60 Hz, 18 Amps 220-240V, 50 Hz, 18 Amps	208-230V, 60 Hz, 22 Amps 220-240V, 50 Hz, 22 Amps
SHIPPING WEIGHT	336 Lbs/152.4 Kgs	370 Lbs/168 Kgs

Pumping specification determined using fluid with specific gravity of 1.0. *Temperature range for 50Hz model is -85°C to -30°C.
Specifications subject to change.

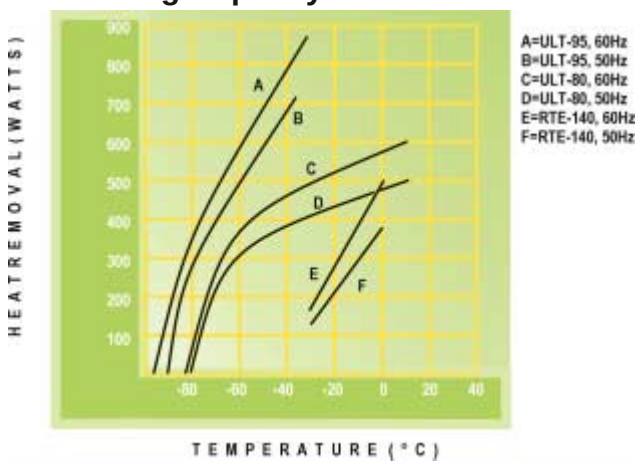
APPLICATIONS

- Heat Exchangers
- Cloud Point/Pour Point
- Calibration
- Cell Freezing
- Viscosity Studies
- Kinetic Cooling
- Cooling GC Ovens
- Petroleum Studies

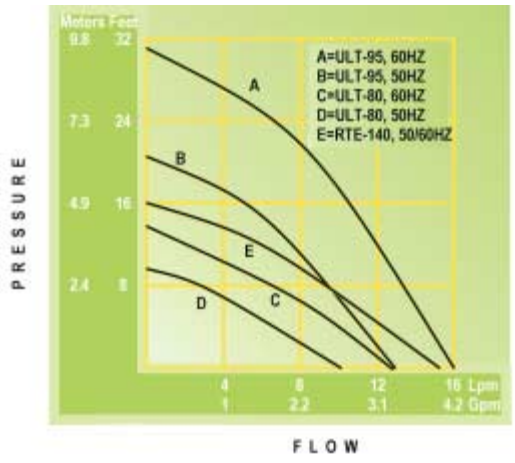
ACCESSORIES

- Silicon Tubing
- NEScom Software
- Sealed Lid

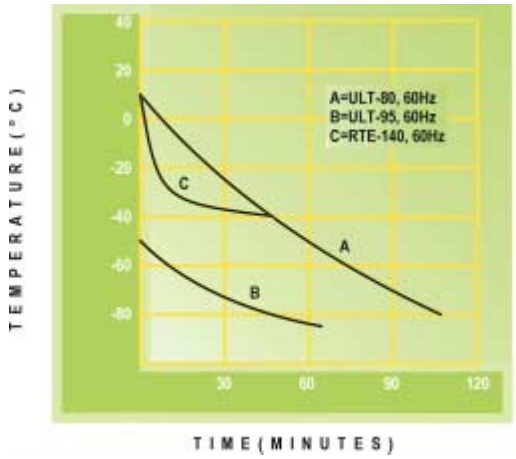
Cooling Capacity



Pumping Capacity



Time to Temperature



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Low Temperature Bath/Circulator Specifications

Benchtop

MODEL	RTE-140
TEMPERATURE RANGE Analog: Digital/Microprocessor:	 -40°C to +100°C -40°C to +150°C
TEMPERATURE STABILITY	±0.05°C
COOLING CAPACITY 50 Hz Models	175 Watts at -30°C 125 Watts at -30°C
PUMPING CAPACITY	15 Lpm at 0' head Max Head 16' (4.9 M)
HEATER	800 Watt
WORK AREA (L x W x D) In. Cm.	$4^{3/4}$ x 8 x 5 12.1 x 20.3 x 12.7
BATH VOLUME Gallons/Liters:	1.9/7.2
DIMENSIONS (H x W x D) In. Cm.	26 x $12^{3/8}$ x $18^{3/8}$ 66 x 31.4 x 46.7
POWER REQUIREMENTS 50 Hz Models:	115V, 60 Hz, 16 Amps 220-240V, 50 Hz, 8.6 Amps
SHIPPING WEIGHT	99 Lbs/45 Kgs

Stability specifications using water. Specifications shown are for digital and microprocessor controllers, ±0.1 for analog controllers. 1000 Watt heaters for 50Hz models. Performance curves on page 10. Specifications subject to change.

APPLICATIONS

- Heat Exchangers
- Cloud Point/Pour Point
- Low Temperature Calibration
- Cell Freezing
- Viscosity Studies
- Kinetic Cooling
- Cooling GC Ovens
- Petroleum Studies

ACCESSORIES

- Silicon Tubing
- NEScom Software



Versatile Controllers
The microprocessor controller features a direct RS-232 serial port (see page 4 for analog/digital controller features)



Seamless Stainless Steel Tank
Rounded corners for convenient cleaning and a reservoir drain for quick and easy fluid changes



Removable Grille
The RTE family of products is equipped with a removable front grille for easy and convenient routine cleaning



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