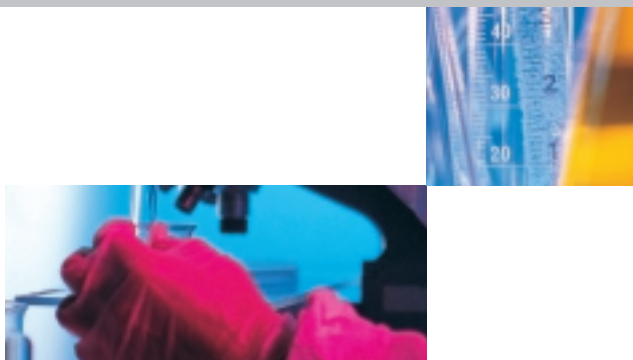


The RTE and EX Series feature superior cooling and heating power, expansive temperature ranges, powerful force and suction pumps, and sophisticated digital control technology to ensure accuracy and reproducibility of your liquid temperature procedures.

NESLAB RTE Series and EX Series of Bath Circulators

Ideal for cooling and heating below, at or above ambient temperatures



RTE Series -40°C to +200°C and EX Series ambient to +200°C typical applications:

- Lasers
- Condensers
- Rotary evaporators
- Reaction vessels
- Calibration
- Analytical instrumentation
- Gel electrophoresis

Captures Results

Meet the NESLAB power performers: the RTE Series of refrigerated bath circulators and the EX Series of heating bath circulators. Featuring powerful cooling and heating power, expansive temperature ranges, and sophisticated controller technology, these robust compact units are designed to offer the ultimate in temperature stability and reliability for either external circulation or in-bath applications.

With an industrial-grade force and suction pump that provides twice as much pressure as other systems, you can circulate fluid long distances to both open containers and closed loop systems. This gives you the flexibility to meet a range of application needs.

Both the RTE and EX Series provide excellent agitation in the bath for improved uniformity and stability. The SmartSense controller ensures that your RTE and EX system is performing at its peak.

Backed By a Two-Year Warranty

Thermo NESLAB RTE Series and EX Series carry a full 24-month warranty when purchased new from Thermo. For you, it means peace of mind. For us, it means we believe in our products.



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 business with increasingly advanced precision.

NESLAB RTE Series Specifications

	RTE 7	RTE 10	RTE 17	RTE 740
Temperature range	-25°C to + 150°C	-25°C to + 150°C	-25°C to + 150°C	- 40°C to + 200°C
Temperature stability	±0.01°C	±0.01°C	±0.01°C	±0.01°C
Cooling capacity				
60 Hz	500 watts at 20°C	500 watts at 20°C	500 watts at 20°C	800 watts at 20°C
230V/50 Hz	500 watts at 20°C	500 watts at 20°C	500 watts at 20°C	700 watts at 20°C
Heater				
60 Hz	800 watts	800 watts	1600 watts	800 watts
230V/50 Hz	2000 watts	2000 watts	2000 watts	2000 watts
Bath volume*				
gal	1.9	2.6	4.5	1.9
L	7	10	17	7
Bath dimensions				
W x L x D in	6.6 x 6.8 x 6	8.8 x 8.1" x 6	8.8 x 8.1 x 9	6.6 x 7.3 x 6
W x L x D cm	16.8 x 17.3 x 15.2	22.4 x 20.6 x 15.2	22.4 x 20.6 x 22.9	16.8 x 18.3 x 15.2
Pumping performance				
60 Hz (LPM)	15 LPM @ 0' head	15 LPM @ 0' head	15 LPM @ 0' head	15 LPM @ 0' head
230V/50 Hz (GPM)	4 GPM @ 0' head	4 GPM @ 0' head	4 GPM @ 0' head	4 GPM @ 0' head
Pump	"Z" pump force and suction	"Z" pump force and suction	"Z" pump force and suction	"Z" pump force and suction
Pump head				
60 Hz	Max head 16' (4.9M)	Max head 16' (4.9M)	Max head 16' (4.9M)	Max head 16' (4.9M)
50 Hz	Max head 11' (3.3M)	Max head 11' (3.3M)	Max head 11' (3.3M)	Max head 11' (3.3M)
Unit dimensions				
H x W x D in	23.62 x 9.25 x 17.50	23.62 x 11.37 x 18.87	26.62 x 11.37 x 18.87	23.62 x 11.37 x 18.87
H x W x D cm	60.0 x 23.5 x 44.5	60.0 x 28.9 x 47.9	67.6 x 28.9 x 47.9	67.6 x 28.9 x 47.9
Work area dimensions				
L x W x D in	7.25 x 6.62 x 6	9.37 x 8.75 x 6	9.37 x 8.75 x 6	7.25 x 6.62 x 6
L x W x D cm	18.3 x 16.8 x 15.2	23.9 x 22.4 x 15.2	23.9 x 22.4 x 15.2	18.3 x 16.8 x 15.2
Power requirements				
115V, 60 Hz,	12 amps	12 amps	16 amps	16 amps
100V, 50-60 Hz	12 amps	12 amps	16 amps	16 amps
230V, 50 Hz	12 amps	12 amps	12 amps	12 amps
Unit weight				
lb	59.5	67.25	70.25	87
kg	27	30.5	31.9	39.5

*Bath reservoir volume is measured to midpoint of designated fill lines.

**A remote sensor option allows you to control the temperature in an external vessel. The sensor comprises a resistance temperature detector (RTD) with a tether. The standard tether is 6 ft. long, and a variety of lengths and diameters is available to suit most any application need.

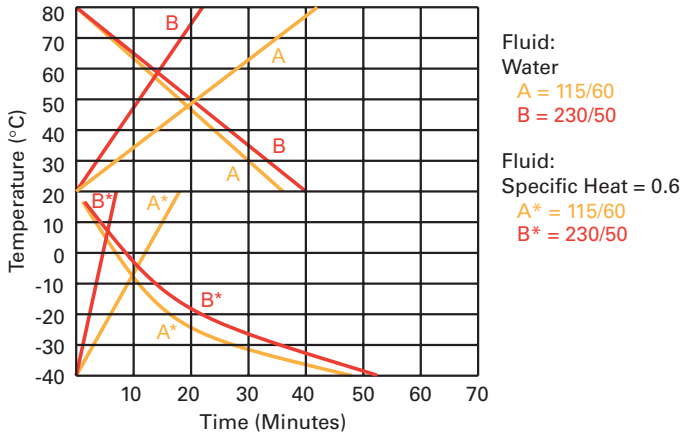
Stability, pump performance and cooling capacity specifications to +5 °C were determined using water. Other specifications were determined using fluid with specific heat of 0.6 ambient, 20 °C. Flammable fluids should never be used with these units. Specifications subject to change without notice.



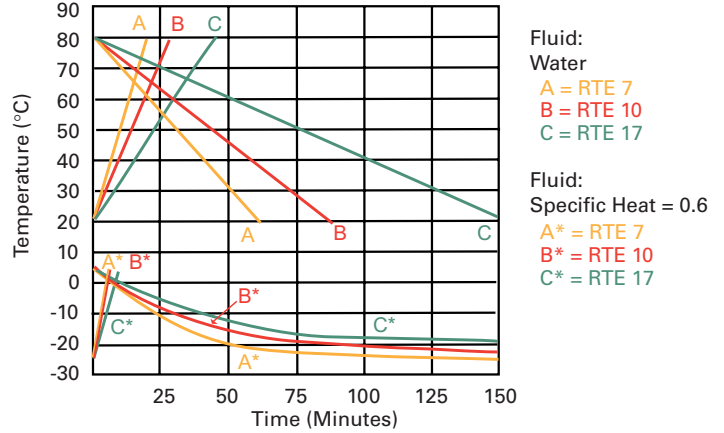
NESLAB RTE Series family

NESLAB RTE Series Performance Curves

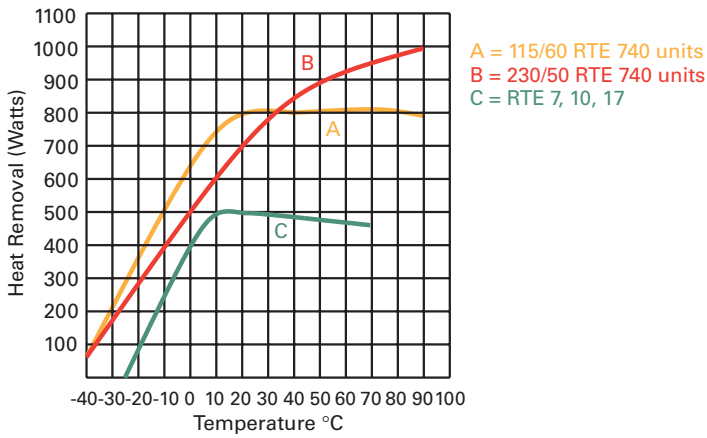
RTE 740



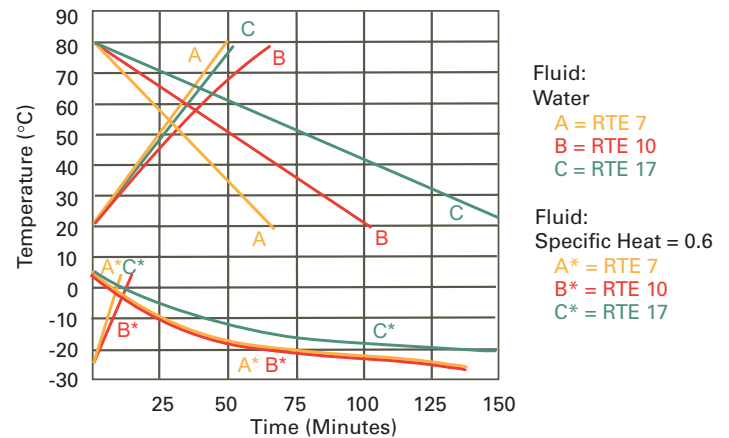
RTE 7, 10, 17 230V/50 Hz Units



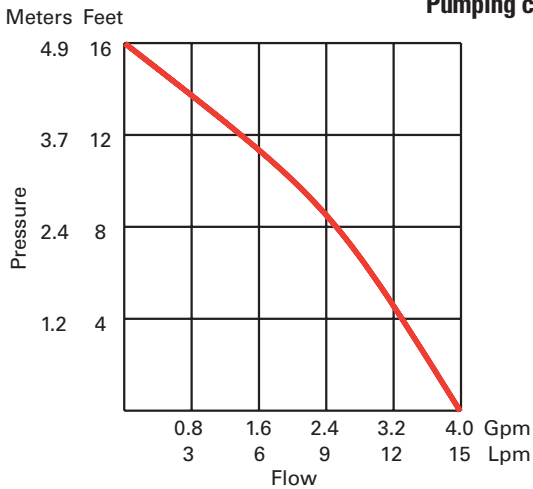
Cooling Capacity



RTE 7, 10, 17 115V/60 Hz Units



Pumping capacity



NESLAB EX Series Specifications

	EX 7	EX 10	EX 17	EX 35
Temperature range	Ambient +12°C to 200°C	Ambient +12°C to 200°C	Ambient +12°C to 200°C	Ambient +12°C to 200°C
Temperature stability	±0.01°C	±0.01°C	±0.01°C	±0.01°C
Heater				
60 Hz	800 watts	800 watts	1600 watts	1600 watts
50 Hz	2000 watts	2000 watts	2000 watts	2000 watts
Bath volume*				
gal	1.9	2.6	4.5	9.3
L	7	10	17	35
Bath dimensions				
W x L x D in	6.8 x 7 x 6	8.8 x 9.4 x 6	8.8 x 9.4 x 6	8.8 x 15.5 x 12
W x L x D cm	17.3 x 17.8 x 15.2	22.4 x 23.9 x 15.2	22.4 x 23.9 x 15.2	22.4 x 39.4 x 30.5
Pumping performance				
60 Hz (LPM)	15 LPM @ 0' head	15 LPM @ 0' head	15 LPM @ 0' head	15 LPM @ 0' head
50 Hz (GPM)	15 LPM @ 0' head	15 LPM @ 0' head	15 LPM @ 0' head	15 LPM @ 0' head
Pump	"Z" pump force and suction	"Z" pump force and suction	"Z" pump force and suction	"Z" pump force and suction
Pump head				
60 Hz	Max head 16' (4.9M)	Max head 16' (4.9M)	Max head 16' (4.9M)	Max head 16' (4.9M)
50 Hz	Max head 16' (4.9M)	Max head 16' (4.9M)	Max head 16' (4.9M)	Max head 16' (4.9M)
Unit dimensions				
H x W x D in	14.62 x 9.25 x 17.50	14.62 x 11.37 x 18.25	17.62 x 11.37 x 18.25	20.62 x 11.37 x 25.37
H x W x D cm	37.2 x 23.5 x 44.5	37.1 x 28.9 x 46.4	44.8 x 28.9 x 46.4	52.39 x 28.9 x 64.5
Work area dimensions				
L x W x D in	7.25 x 6.62 x 6	9.37 x 8.75 x 6	9.37 x 8.75 x 9	15.5 x 8.75 x 12
L x W x D cm	18.3 x 16.8 x 15.2	23.9 x 22.4 x 15.2	23.9 x 22.4 x 22.9	39.4 x 22.4 x 30.5
Power requirements				
115V, 60 Hz,	9 amps	9 amps	16 amps	16 amps
100V, 50-60 Hz	9 amps	9 amps	16 amps	16 amps
230V, 50 Hz	10 amps	10 amps	10 amps	10 amps
Unit weight				
lb				
kg				

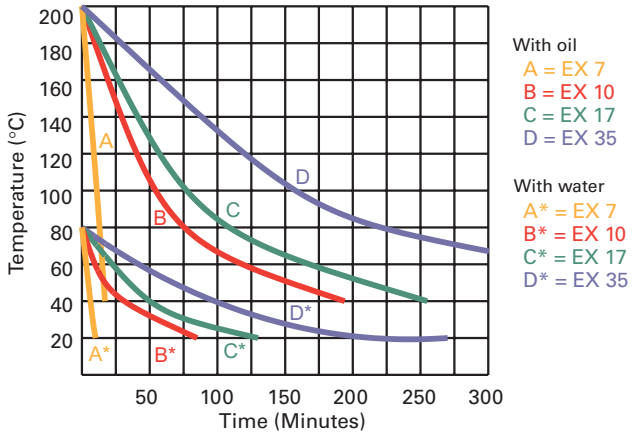
Stability, pump specifications to 90 °C were determined using water. Other specifications were determined with silicon oil. Reservoir volume measured to midpoint of designated fill line. Work area measured to tank top. Flammable fluids should never be used with these units. Specifications subject to change without notice.



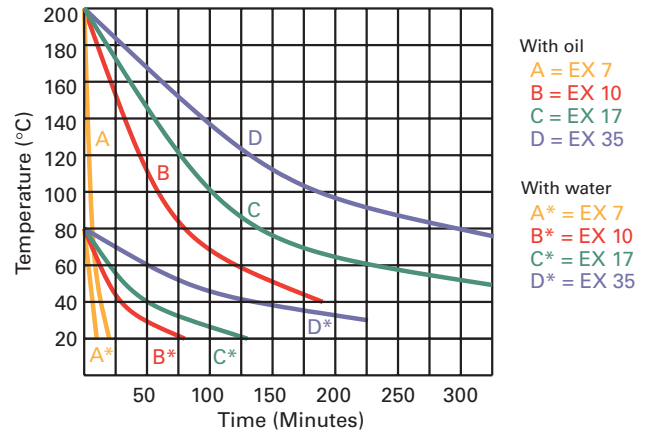
NESLAB EX Series family

NESLAB EX Series Performance Curves

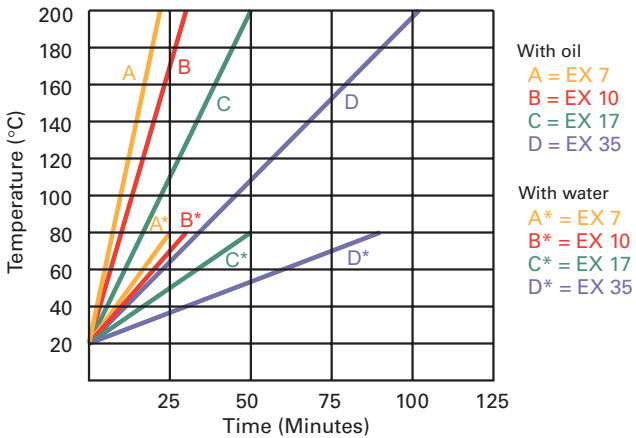
Ramp Down 230V/50Hz Units



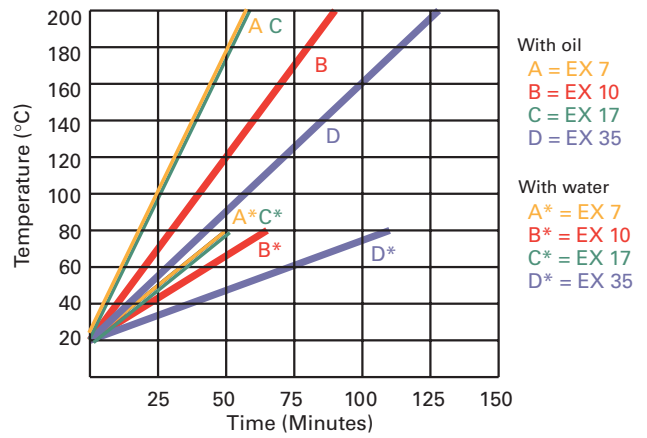
Ramp Down 115V/60Hz Units



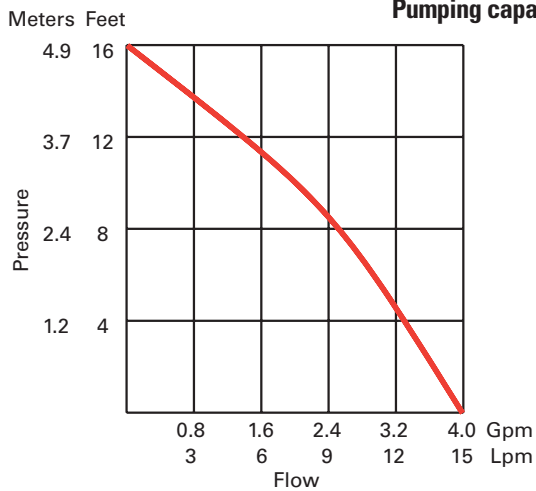
Ramp Up 230V/50Hz Units



Ramp Up 115V/60Hz Units



Pumping capacity



NESLAB RTE Series and EX Series Features

Feature	Benefit
Full range cooling (RTE Series only)	Allows compressor to operate over entire temperature range
Front grille (RTE Series only)	Allows quick access to the condenser for routine cleaning
Refrigeration system (RTE Series only)	Provides CFC-free refrigeration system offering precise temperature control and optimum stability
Tap water cooling coil (EX Series only)	Maintains temperatures near ambient or for rapid cool down from elevated temperatures
Circulating pump	Combines a strong flow rate with unmatched pressure to circulate farther, even through small I.D. tubing delivering consistent flow when working with dense or viscous fluids
Force and suction pump	Provides versatility of circulating through a closed system, open system, or two applications by forcing fluid out while the other draws the fluid in
Heater	Offers rapid cool down with no waiting
Stainless steel bath	Provides maximum cooling efficiency and easy cleaning
Hydro-seal lid with nitrogen purge port	Minimizes moisture build up during low temperature operation
Bath drain	Allows for fast and tidy fluid changes
Digital temperature controller	Provides precise set point and readout to a resolution of 0.1°C at convenient locations
Handles	Provides easy lifting, safe leverage, and easy moving
Safety device	Offers low level shut-off device
RS-232 and RS-485	Connects to computer directly
Seamless bath reservoirs	Offers convenient and easy cleaning
Compact design	Maximizes valuable bench space
Automatic load reset	Compensates for changes in the bath load, eliminating shifts in set point accuracy
Digital display	Offers user simple operation and ensures accuracy and reproducibility of procedures
Two-year warranty	Offers you peace of mind

Digital Controllers



Digital One

- bright LED digital display
- user selectable resolution
- 0.1°C or 0.01°C
- user adjustable low temperature and high temperature alarm limits
- user selectable fault conditions
 - continuous run with visual alert
 - shut down with visual alert
- automatic reservoir refill port
- low reservoir fluid level shut-off



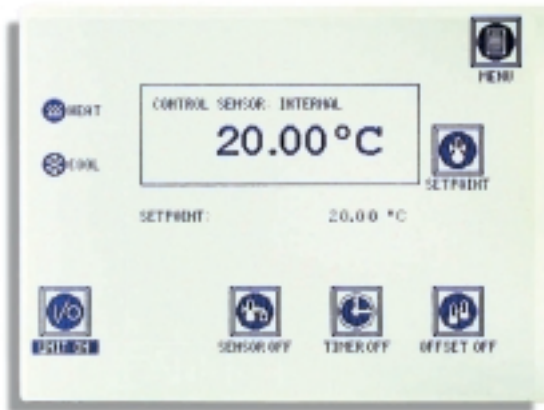
Digital Plus

Same great features as the Digital One controller plus we've added:

- remote sensor port
- RS-232 and RS-485 communications ports
- on/off timer with clock
- audible safety alarm with mute
- temperature offset display

NESLAB RTE Series and EX Series Software Accessories

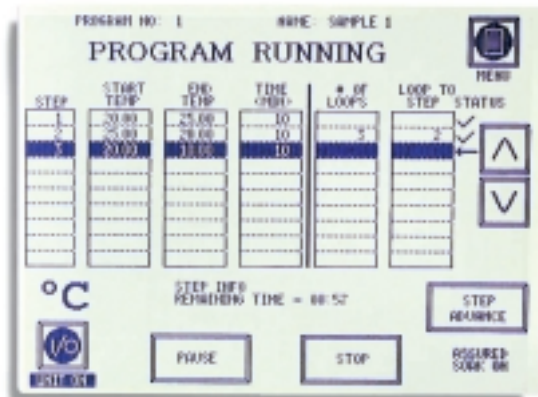
Feature	Benefit
NESLAB NEScom software RPC programming controller	Allows you to easily program and automate your entire temperature control process from a PC Transforms your RTE and EX bath circulators with Digital Plus controller into one of the most sophisticated, feature packed, bath circulator controllers available



RPC main screen

Monitor, control and change

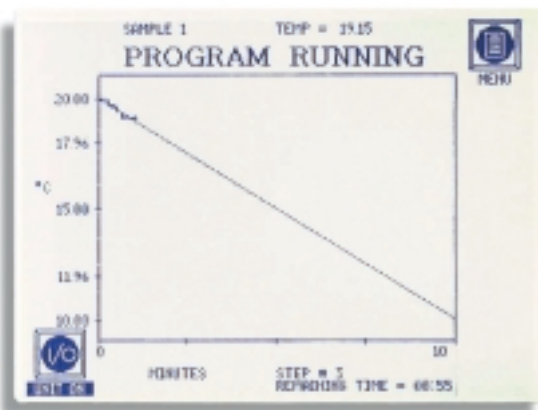
- internal/external sensor temperature
- temperature setpoint
- remote sensor
- on/off timer
- temperature offset
- temperature alarm limits
- readout resolution



RPC program running screen

Multistep programming

- 16 savable programs with alphanumeric naming
- 99 steps per program
- time range of 0 to 6500 minutes per step
- step looping
- step to function
- simple spreadsheet format



RPC chart screen

Chart screen

- visual graph of current ramp step

NESLAB RTE Series and EX Series Options

Feature	Benefit
Reservoir refill system	Attaches easily to the rear of the RTE to conserve space. Runs your equipment worry free and unattended. Automatically refills your bath from a pressured fluid source when the fluid in the bath drops below an acceptable limit due to evaporation. Specify voltage requirements
Anti reservoir overflow device	Connects to your bath circulator's drain line to prevent an accidental overflow of fluid in the reservoir
Remote sensor	Allow remote temperature control of an external vessel when circulating externally. It will maintain the set point at any place in the recirculating fluid path. The sensor is a platinum RTD and is compatible with RTE Series and EX Series bath circulators with a Digital Plus Controller
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
Test tube racks	Offers convenient handles for easy and safe placement or removal. Made of stainless steel for durability
Leveling device	Maintains a constant fluid level in an open container and allows consistent force and suction of fluid flow; eliminates the risk of overflow
Ground fault circuit controller	Plugs your RTE unit or EX unit in to the GFCI accessory to provide extra electrical protection when a GFCI wall outlet is not available. May only be used with 115 Volt, 60 Hz units
NESLAB bath fluids	
Ethylene Glycol	Allows circulation to temperatures down to -30°C in a 50/50 mixture with water
Algicide	Restricts growth of algae to protect equipment and instrumentation



FTC 350 — FlowThru cooler for the NESLAB EX Series can achieve temperatures as low as -10°C.

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