Recirculating Chillers

NESLAB chillers are world-renowned for their quality and reliability. For over 35 years, NESLAB has been the industry leader in innovation and dependability making our equipment the preferred chiller for the majority of companies world-wide. The use of hot gas bypass temperature control in a chiller, today's industry standard, was developed by NESLAB. Forward thinking concepts like this, along with superior performance, make NESLAB chillers the number one choice to cool your valuable equipment, improve your processes, and save on costly tap water usage.
Using a chiller for your water cooled equipment is a wise decision for many reasons. Your valuable equipment needs to operate at its maximum level of performance. Cooling with tap water, tower water, and building chilled water can prove unreliable or cause problems. Fluctuations in temperature, pressure, and flow, as well as minerals and particulates, can produce unreliable results and damage to your equipment. A NESLAB chiller will eliminate all of these problems and save you money. Running tap water through your equipment or process is very expensive. You pay twice for the use of water. Running 4 gallons of water, 24 hours per day, 7 days a week, 52 weeks per year can potentially send 2,000,000 gallons of water down the drain per year. As you can see, by recirculating, a NESLAB chiller can pay for itself in a very short time.

Deciding on which NESLAB chiller to use is simple. Use our easy to read charts on the following pages to determine which model best suits your needs. What is your heat load requirement? What temperature do you need to circulate? What is your flow and pressure need? Do you need a simple workhorse chiller or a highly sophisticated chiller? If you are not sure of your equipment’s water cooling requirements or need advice on how to best utilize our chiller, call our Applications Engineers. We have extensive cross reference information on most equipment and the experience to advise you on which NESLAB chiller will meet your needs exactly.
NESLAB is the industry leader in chiller design and innovation. We were the first to use the hot gas bypass method of temperature control in a chiller. It is now considered the industry standard. Hot gas bypass works by routing the hot, uncondensed refrigerant back through the reservoir coil when heating is needed. This eliminates on/off cycling of compressors and the addition of energy-wasting heater. You get better temperature control, greater energy efficiency, and increased compressor life.

NESLAB also introduced the industry’s first completely CFC-free portable chiller in our CFT Series. We feel a responsibility to use the most environmentally friendly refrigerants available. Our HX Series uses an HCFC refrigerant which is universally accepted as an environmentally friendly alternative to CFC’s.

Which chiller series should you use?

**CFT Series**
Heat removal capabilities from 580 watts to 11,000 watts. Basic, simple, a dependable performer. 
(Pages 33-34)

**HX Series**
Heat removal capabilities from 2000 watts to 75,000 watts. Many pumps, controllers, and hundreds of options available. 
(Pages 35-42)

**System Series**
Complete, packaged, Water to Water Heat Exchangers with built-in pump and temperature controller. 
(Pages 45-48)
Recirculating Chillers - CFT Series
As the original designer of the small portable chiller, NESLAB introduced the CFT Series to cool precise analytical equipment. It now cools virtually every water cooled application including laboratory, medical, semiconductor, industrial, and laser industries. This tried and true design has made the CFT Series the number one choice among equipment manufacturers. The heart of the CFT Series is the CFC-free refrigeration system which provides long life, maintenance free operation. All CFT Series chillers also feature a rugged, sealed PVC reservoir. The sealed design minimizes fluid evaporation and eliminates maintenance allowing you to focus on your work instead of the chiller. The sealed reservoir also allows circulation to an open container; something not possible with an unsealed reservoir, adding to the versatility of your CFT. In addition, the CFT Series incorporates a built-in fluid bypass system to protect the chiller in the event of an external line blockage.

The standard digital microprocessor controller shows the recirculating temperature and the setpoint to a resolution of 1°C, and maintains the recirculating temperature to ±0.5°C of the setpoint. Should you be concerned about protecting your equipment or your CFT, we have included a user adjustable high and low temperature limit safety, displaying the error should the chiller reach one of these limits. If you have special cooling water requirements for your application, chances are we can meet your needs with one of the many options available. High and low temperature ranges, condenser air filter packages, deionized water packages and convenient accessories such as tubing and fluids make the CFT Series the perfect choice for your liquid temperature control needs.
## Recirculating Chiller Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CFT-25</th>
<th>CFT-33</th>
<th>CFT-75</th>
<th>CFT-150</th>
<th>CFT-300</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TEMPERATURE RANGE</strong></td>
<td>+5°C to +30°C</td>
<td>+5°C to +30°C</td>
<td>+5°C to +30°C</td>
<td>+5°C to +35°C</td>
<td>+5°C to +35°C</td>
</tr>
<tr>
<td><strong>TEMPERATURE STABILITY</strong></td>
<td>±0.5°C</td>
<td>±0.5°C</td>
<td>±0.5°C</td>
<td>±0.5°C</td>
<td>±1.0°C</td>
</tr>
<tr>
<td><strong>COOLING CAPACITY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 Hz Models</td>
<td>580 Watts at 20°C</td>
<td>950 Watts at 20°C</td>
<td>2100 Watts at 20°C</td>
<td>4500 Watts at 20°C</td>
<td>10650 Watts at 20°C</td>
</tr>
<tr>
<td></td>
<td>1978 BTU/hr at 20°C</td>
<td>3240 BTU/hr at 20°C</td>
<td>7161 BTU/hr at 20°C</td>
<td>15345 BTU/hr at 20°C</td>
<td>36315 BTU/hr at 20°C</td>
</tr>
<tr>
<td></td>
<td>499 Kcal/hr at 20°C</td>
<td>817 Kcal/hr at 20°C</td>
<td>1806 Kcal/hr at 20°C</td>
<td>3870 Kcal/hr at 20°C</td>
<td>9181 Kcal/hr at 20°C</td>
</tr>
<tr>
<td>50 Hz Models</td>
<td>475 Watts at 20°C</td>
<td>1000 Watts at 20°C</td>
<td>1900 Watts at 20°C</td>
<td>3735 Watts at 20°C</td>
<td>9000 Watts at 20°C</td>
</tr>
<tr>
<td></td>
<td>1620 BTU/hr at 20°C</td>
<td>3410 BTU/hr at 20°C</td>
<td>6485 BTU/hr at 20°C</td>
<td>12735 BTU/hr at 20°C</td>
<td>30690 BTU/hr at 20°C</td>
</tr>
<tr>
<td></td>
<td>408 Kcal/hr at 20°C</td>
<td>860 Kcal/hr at 20°C</td>
<td>1634 Kcal/hr at 20°C</td>
<td>3212 Kcal/hr at 20°C</td>
<td>7759 Kcal/hr at 20°C</td>
</tr>
<tr>
<td><strong>RESERVOIR VOLUME</strong></td>
<td>Gallons/Liters:</td>
<td>.375/1.4</td>
<td>1.1/4.2</td>
<td>1.8/6.8**</td>
<td>5.625/21.29</td>
</tr>
<tr>
<td><strong>DIMENSIONS</strong></td>
<td>(H x W x D) In.</td>
<td>22 x 12 1/2 x 21</td>
<td>24 1/2 x 14 1/4 x 22</td>
<td>26 1/2 x 14 7/8 x 24 1/2</td>
<td>36 1/4 x 21 3/8 x 27 3/4</td>
</tr>
<tr>
<td></td>
<td>Cm.</td>
<td>55.9 x 31.8 x 53.34</td>
<td>62.2 x 37.5 x 55.9</td>
<td>67.3 x 37.8 x 62.2</td>
<td>93.3 x 54.3 x 70.5</td>
</tr>
<tr>
<td><strong>POWER REQUIREMENTS</strong></td>
<td>50 Hz Models:</td>
<td>115V, 60 Hz, 10 Amps</td>
<td>115V, 60 Hz, 13 Amps</td>
<td>208-230V, 60 Hz, 9 Amps</td>
<td>208-230V, 60 Hz, 13 Amps</td>
</tr>
<tr>
<td></td>
<td>220-240V, 50 Hz, 6 Amps</td>
<td>220-240V, 50 Hz, 7 Amps</td>
<td>220-240V, 50 Hz, 10 Amps</td>
<td>220-240V, 50 Hz, 12 Amps</td>
<td>220-240V, 50 Hz, 3Ø</td>
</tr>
<tr>
<td><strong>SHIPPING WEIGHT</strong></td>
<td>132 Lbs/59.9 Kgs</td>
<td>160 Lbs/72.6 Kgs</td>
<td>215 Lbs/97.5 Kgs</td>
<td>311 Lbs/141.1 Kgs</td>
<td>450 Lbs/204.1 Kgs</td>
</tr>
</tbody>
</table>

Specifications listed for standard units circulating water at 20°C ambient. Performance specifications will be affected by changes in temperature, ambient or coolant. *Standard circulating pump for 50Hz models is PD-1. **1.25 gallons/4.73 liters for 50Hz units. Specifications subject to change.

### APPLICATIONS

- Condenser Cooling
- Diffusion Pumps
- Turbo-Molecular Pumps
- Vacuum Systems
- GC/MS
- Lasers
- Electron Microscopes
- ICP
- FTIR
- Plasma Etch Equipment
- Sputtering Systems
- AA Graphite Furnace
- Resistance Welders
**Recirculating Chillers - HX Series**

The HX Series of chillers are NESLAB’s versatile, highly configurable chiller series that can go from a simple workhorse to a highly sophisticated chiller via the many options available. This makes it effectively suitable for use in laboratory, laser, industrial, semiconductor, or medical applications. Since its introduction in the late sixties, the HX Series has undergone continuous design enhancements and improvements. But, some things haven’t changed for over 35 years; dependable performance, use of the highest quality materials, and a design that will be trouble free for many years.

Your HX chiller is a solid investment to protect and maximize the performance of your valuable equipment. The HX Series comes in a variety of standard configurations. To meet your needs exactly, we offer choices of controllers, pumps, temperature ranges, and condenser designs. If you’re not sure which version would be the most suitable for your application, contact one of our Applications Engineers. They have the expertise necessary to make the perfect recommendation.

*Digital Temperature Controller*

An LED readout displays recirculating temperature and setpoint, both with a resolution of 1°C. A low liquid level indicator guards against fluid evaporation or circulating leaks. Idle and Cool lights are essential for diagnostics and operating status.

*TC-400 Temperature Controller*

A fully programmable, self-diagnostic microprocessor controller featuring:
- Recirculating fluid and setpoint temperature to a 1°C resolution
- Process flow rate readout
- Low level, high temperature, low temperature, and low flow fault with alarm
- User adjustable alarm limits
- Analog interface
- Remote sensor interface (remote sensor purchased separately)

*Options include:*
- Remote sensor
- Remote controller
- Resistivity display for deionized water applications
- RS-232 or RS-485 serial communications interface
- 0.1°C temperature resolution

*Easy Access*

Hinged top opens for easy access to internal components

*Smart Design*

Stainless steel reservoir and heat exchanger ensures fluid compatibility

Reservoir drain for quick fluid changes
Recirculating Chiller Specifications

**MODEL**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>HX-75</th>
<th>HX-150</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TEMPERATURE RANGE</strong></td>
<td>+5°C to +35°C</td>
<td>+5°C to +35°C</td>
</tr>
<tr>
<td><strong>TEMPERATURE STABILITY</strong></td>
<td>±0.1°C</td>
<td>±0.1°C</td>
</tr>
<tr>
<td><strong>COOLING CAPACITY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 Hz Models</td>
<td>2000 Watts at 20°C</td>
<td>4500 Watts at 20°C</td>
</tr>
<tr>
<td></td>
<td>6820 BTU/hr at 20°C</td>
<td>15345 BTU/hr at 20°C</td>
</tr>
<tr>
<td></td>
<td>1720 Kcal/hr at 20°C</td>
<td>3970 Kcal/hr at 20°C</td>
</tr>
<tr>
<td>50 Hz Models</td>
<td>1660 Watts at 20°C</td>
<td>3735 Watts at 20°C</td>
</tr>
<tr>
<td></td>
<td>5660 BTU/hr at 20°C</td>
<td>12735 BTU/hr at 20°C</td>
</tr>
<tr>
<td></td>
<td>1428 Kcal/hr at 20°C</td>
<td>3212 Kcal/hr at 20°C</td>
</tr>
<tr>
<td><strong>PUMP</strong></td>
<td>Specify from pump graphs</td>
<td>Specify from pump graphs</td>
</tr>
<tr>
<td><strong>RESEVOIR VOLUME</strong></td>
<td>Gallons/Liters:</td>
<td>5/18.9</td>
</tr>
<tr>
<td><strong>DIMENSIONS (H x W x D) In.</strong></td>
<td>Gallons/Liters:</td>
<td>5/18.9</td>
</tr>
<tr>
<td></td>
<td>Dimension:</td>
<td>353/4 x 231/4 x 183/4</td>
</tr>
<tr>
<td></td>
<td>Dimensions:</td>
<td>90.8 x 59.0 x 47.6</td>
</tr>
<tr>
<td><strong>POWER REQUIREMENTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 Hz Models:</td>
<td>208-230V, 60 Hz, 12 Amps</td>
<td>208-230V, 60 Hz, 17 Amps</td>
</tr>
<tr>
<td>50 Hz Models:</td>
<td>220-240V, 50 Hz, 11 Amps</td>
<td>220-240V, 50 Hz, 14 Amps</td>
</tr>
<tr>
<td><strong>SHIPPING WEIGHT</strong></td>
<td>261 Lbs/118.4 Kgs</td>
<td>320 Lbs/145.2 Kgs</td>
</tr>
</tbody>
</table>

Specifications listed for standard units circulating water at 20°C ambient. Performance specifications will be affected by changes in temperature, ambient or coolant. Cooling capacity and amperage ratings based on units with CP-25 pump, may be affected by optional pumps. Specifications subject to change.

**APPLICATIONS**
- Lasers
- Process Cooling
- Medical Lasers
- Linear Accelerators
- Diffusion Pumps
- Turbo-Molecular Pumps
- Vacuum Systems
- Plasma Etch Equipment
- Sputtering Systems

**ACCESSORIES**
- External Pressure Reducer
- External Temperature Readout
- Plumbing Packages
- Circulating Hose
- Hose Insulation
Recirculating Chiller Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>HX-300</th>
<th>HX-500</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TEMPERATURE RANGE</strong></td>
<td>+5°C to +35°C</td>
<td>+5°C to +35°C</td>
</tr>
<tr>
<td><strong>TEMPERATURE STABILITY</strong></td>
<td>±0.1°C</td>
<td>±0.1°C</td>
</tr>
<tr>
<td><strong>COOLING CAPACITY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 Hz Models</td>
<td>10000 Watts at 20°C</td>
<td>15700 Watts at 20°C</td>
</tr>
<tr>
<td></td>
<td>34100 BTU/hr at 20°C</td>
<td>53500 BTU/hr at 20°C</td>
</tr>
<tr>
<td></td>
<td>8593 Kcal/hr at 20°C</td>
<td>13502 Kcal/hr at 20°C</td>
</tr>
<tr>
<td>50 Hz Models</td>
<td>8300 Watts at 20°C</td>
<td>13030 Watts at 20°C</td>
</tr>
<tr>
<td></td>
<td>28303 BTU/hr at 20°C</td>
<td>44430 BTU/hr at 20°C</td>
</tr>
<tr>
<td></td>
<td>7132 Kcal/hr at 20°C</td>
<td>11206 Kcal/hr at 20°C</td>
</tr>
<tr>
<td><strong>PUMP</strong></td>
<td>Specify from pump graphs</td>
<td>Specify from pump graphs</td>
</tr>
<tr>
<td><strong>RESERVOIR VOLUME</strong></td>
<td>Gallons/Liters:</td>
<td>15/56.8</td>
</tr>
<tr>
<td><strong>DIMENSIONS (H x W x D) In. (Cm.)</strong></td>
<td>457/8 x 333/4 x 251/4</td>
<td>116.5 x 85.7 x 64.1</td>
</tr>
<tr>
<td><strong>POWER REQUIREMENTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 Hz Models:</td>
<td>208-230V, 60 Hz, 21 Amps 3Ø</td>
<td>208-230V, 60 Hz, 38 Amps 3Ø</td>
</tr>
<tr>
<td></td>
<td>380-420V, 50 Hz, 12 Amps 3Ø</td>
<td>380-420V, 50 Hz, 17 Amps 3Ø</td>
</tr>
<tr>
<td><strong>SHIPPING WEIGHT</strong></td>
<td>477 Lbs/216.4 Kgs</td>
<td>746 Lbs/338.4 Kgs</td>
</tr>
</tbody>
</table>

Specifications listed for standard units circulating water at 20°C ambient. Specifications will be affected by changes in temperature, mbient, or coolant. Cooling capacity and amperage ratings based on units with CP-25 pump, may be affected by optional pumps. Specifications subject to change.

**APPLICATIONS**
- Lasers
- Process Cooling
- MRI
- Medical Lasers
- Linear Accelerators
- Diffusion Pumps
- Vacuum Systems
- Plasma Etch Equipment

**ACCESSORIES**
- External Pressure Reducer
- External Temp. Readout
- Plumbing Packages
- Circulating Hose
- Hose Insulation
- Algicide
### Recirculating Chiller Specifications

#### HX-750

<table>
<thead>
<tr>
<th>MODEL</th>
<th>TEMPERATURE RANGE</th>
<th>TEMPERATURE STABILITY</th>
<th>COOLING CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+5°C to +35°C</td>
<td>±0.1°C</td>
<td></td>
</tr>
</tbody>
</table>

- **60 Hz Models**
  - 24000 Watts at 20°C
  - 81840 BTU/hr at 20°C
  - 20640 Kcal/hr at 20°C
- **50 Hz Models**
  - 19920 Watts at 20°C
  - 67925 BTU/hr at 20°C
  - 17131 Kcal/hr at 20°C

#### HX-900

<table>
<thead>
<tr>
<th>MODEL</th>
<th>TEMPERATURE RANGE</th>
<th>TEMPERATURE STABILITY</th>
<th>COOLING CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+5°C to +35°C</td>
<td>±1.0°C</td>
<td></td>
</tr>
</tbody>
</table>

- **60 Hz Models**
  - 38000 Watts at 25°C
  - 129580 BTU/hr at 25°C
  - 327800 Kcal/hr at 25°C
- **50 Hz Models**
  - 31500 Watts at 25°C
  - 107415 BTU/hr at 25°C
  - 27155 Kcal/hr at 25°C

#### PUMP

- Specify from pump graphs

#### RESERVOIR VOLUME

- **HX-750**
  - Gallons/Liters: 40/151.4
- **HX-900**
  - Gallons/Liters: 15/56.8

#### DIMENSIONS (H x W x D) In. Cm.

- **HX-750**
  - 63 3/4 x 46 x 29 *
  - 161.9 x 116.8 x 73.7 *
- **HX-900**
  - 63 3/4 x 46 x 29
  - 161.9 x 116.8 x 73.7

#### POWER REQUIREMENTS

- **50 Hz Models**
  - 208-230V, 60 Hz, 40 Amps 3Ø
  - CP-100 38 gpm @ 40 psi 60Hz
  - 208-230V, 50 Hz, 32 Amps 3Ø
  - CP-100 28 gpm @ 30 psi 50Hz

- **60 Hz Models**
  - 380-420V, 50 Hz, 21 Amps 3Ø

#### SHIPPING WEIGHT

- **HX-750**
  - 971 Lbs/440.4 Kgs
- **HX-900**
  - 1250 Lbs/567 Kgs

Specifications listed for standard units circulating water at 20°C ambient. Specifications will be affected by changes in temperature, ambient, or coolant. Cooling capacity and amperage ratings based on units with CP-25 pump, may be affected by optional pumps.

*Water cooled dimensions same as HX-500. Specifications subject to change.

---

### TC-400 Temperature Controller

A fully programmable, self-diagnostic microprocessor controller featuring:
- Recirculating fluid and setpoint temperature to a 1°C resolution
- Process flow rate readout
- Low level, high temperature, low temperature, and low flow fault with alarm
- User adjustable alarm limits
- Analog interface
- Remote sensor interface (remote sensor purchased separately)

---

### APPLICATIONS

- Lasers
- Process Cooling
- MRI
- NMR Magnet
- Vacuum Systems
- Plasma Etch Equipment
- Sputtering Systems
- Power Supplies
Recirculating Chillers  
HX Series - Indoor/Outdoor

NESLAB’s HX-1000 and HX-2000 are high capacity chillers designed for indoor or outdoor installation. The largest of our recirculating chiller family, these heavy duty, industrial units are ideal for handling the heavy heat loads of high capacity lasers, medical imaging equipment, and industrial processing equipment. In addition to these applications, the HX-1000 and HX-2000 are ideal for laboratory or hospital/clinic settings when it is necessary to discharge heat outside.

Air Cooled Refrigeration
Two large condensing fans are mounted at the top of the units. They draw air through the system and discharge it at the top, and are completely self-contained and designed to withstand rain and harsh weather.

A large industrial grade pump provides strong pressure for circulating at distances, and excellent fluid agitation for temperature uniformity. A digital control box remotes by cable to a convenient internal location. It provides all of the features of our TC-400 including high temperature, low temperature, low flow, and low level safeties. The refrigeration system is controlled by our hot gas bypass, which eliminates compressor cycling on and off and greatly enhances compressor life.

Electrical Enclosure
The electrical components are designed to NEMA 4 Code for operational safety. All electronics are encased in a durable, locking enclosure for protection from tampering and outdoor conditions.
Recirculating Chiller Specifications

**MODEL**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>HX-1000</th>
<th>HX-2000</th>
</tr>
</thead>
</table>

**TEMPERATURE RANGE**

- +10°C to +25°C

**TEMPERATURE STABILITY**

- ±1.0°C

**COOLING CAPACITY**

<table>
<thead>
<tr>
<th>Models</th>
<th>60 Hz Models</th>
<th>50 Hz Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>HX-1000</td>
<td>53000 Watts at 25°C</td>
<td>43990 Watts at 25°C</td>
</tr>
<tr>
<td></td>
<td>18730 BTU/hr at 25°C</td>
<td>150005 BTU/hr at 25°C</td>
</tr>
<tr>
<td></td>
<td>45544 Kcal/hr at 25°C</td>
<td>37800 Kcal/hr at 25°C</td>
</tr>
<tr>
<td>HX-2000</td>
<td>75000 Watts at 25°C</td>
<td>62250 Watts at 25°C</td>
</tr>
<tr>
<td></td>
<td>255750 BTU/hr at 25°C</td>
<td>212270 BTU/hr at 25°C</td>
</tr>
<tr>
<td></td>
<td>64450 Kcal/hr at 25°C</td>
<td>53490 Kcal/hr at 25°C</td>
</tr>
</tbody>
</table>

**PUMP**

- CP-100

**RESERVOIR VOLUME**

| Gallons/Liters: | 14/53 | 14/53 |

**DIMENSIONS (H x W x D) In.**

- 73" x 58" x 30"  | 76 x 67" x 34"
- 186.7" x 147.3" x 76.2" | 193" x 170.8" x 86.4"

**POWER REQUIREMENTS**

<table>
<thead>
<tr>
<th>50 Hz Models:</th>
<th>440-480V, 60 Hz, 33 Amps 3Ø</th>
<th>380-420V, 50 Hz, 30 Amps 3Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>HX-1000</td>
<td>75000 Watts at 25°C</td>
<td>62250 Watts at 25°C</td>
</tr>
<tr>
<td></td>
<td>255750 BTU/hr at 25°C</td>
<td>212270 BTU/hr at 25°C</td>
</tr>
<tr>
<td></td>
<td>64450 Kcal/hr at 25°C</td>
<td>53490 Kcal/hr at 25°C</td>
</tr>
</tbody>
</table>

**SHIPPING WEIGHT**

- 1612 Lbs/731.2 Kgs
- 2061 Lbs/934.9 Kgs

Specifications listed for HX-1000 and HX-2000 circulating at 25°C, ambient 21°C, with 50% Ethylene Glycol as coolant. Specifications will be affected by changes in temperature, ambient, or fluids. Specifications subject to change.

**FEATURES**

- All weather design
- High capacity circulating pump
- NEMA 4 electrical enclosure
- Hot gas bypass system

**APPLICATIONS**

- Multiple Instruments Cooling
- Heat Exchangers
- Laser Cooling
- Semiconductor Equipment
- Plastic Molding & Extrusion
Recirculating Chillers
HX Series - Low Temperature

The HX-540 low temperature chiller is ideal for applications requiring high heat removal at low temperatures. Typically, a low temperature/high heat removal chiller would require a large case to accommodate the special components needed. NESLAB’s years of experience in chiller technology has enabled us to offer this chiller in an extremely compact size. Feel free to compare to the competition. Standard features include a stainless steel reservoir, plate style heat exchanger, NEMA 4 electrical enclosure, and hot gas bypass temperature control. The sophisticated TC400 micro-

processor controller monitors all chiller functions as well as providing fluid safeties such as low reservoir liquid level, high and low temperature overshoot, and low flow. The TC400 even provides a recirculating flow readout in gallons or liter per minute, you choose. The HX-540 is perfect for use in a variety of applications. Reaction vessels in the chemical and pharmaceutical industries, quenching of cables in the fiber optics industry, and many chip manufacturing and testing processes in the semiconductor industry are just a few of the many applications where the HX-540 has become useful.
Recirculating Chiller Specifications

**HX-540**

**TEMPERATURE RANGE**
-40°C to +25°C

**TEMPERATURE STABILITY**
±0.5°C

**COOLING CAPACITY**

<table>
<thead>
<tr>
<th>Models</th>
<th>Heat Removal (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 Hz Models</td>
<td>7500 Watts at -20°C</td>
</tr>
<tr>
<td></td>
<td>25575 BTU/hr at -20°C</td>
</tr>
<tr>
<td>50 Hz Models</td>
<td>6000 Watts at -20°C</td>
</tr>
<tr>
<td></td>
<td>20460 BTU/hr at -20°C</td>
</tr>
</tbody>
</table>

**PUMP**

<table>
<thead>
<tr>
<th>Models</th>
<th>Flow Rate (gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50Hz Models</td>
<td>TU-3/6</td>
</tr>
<tr>
<td></td>
<td>5/18.4</td>
</tr>
</tbody>
</table>

**RESERVOIR VOLUME**

| Gallons/Liters: | 18.8 Lpm, 3.1 bar |

**DIMENSIONS (H x W x D)**

<table>
<thead>
<tr>
<th>Inches</th>
<th>Centimeters</th>
</tr>
</thead>
<tbody>
<tr>
<td>44 x 34 x 25 1/2</td>
<td>111.8 x 86.4 x 64.8</td>
</tr>
</tbody>
</table>

**POWER REQUIREMENTS**

<table>
<thead>
<tr>
<th>Models</th>
<th>Voltage</th>
<th>Amperes</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 Hz Models</td>
<td>440-480V, 60 Hz</td>
<td>15 Amps</td>
<td>3Ø</td>
</tr>
<tr>
<td></td>
<td>380-420V, 50 Hz</td>
<td>17 Amps</td>
<td>3Ø</td>
</tr>
</tbody>
</table>

**SHIPPING WEIGHT**

915 Lbs/415 Kgs

Specifications listed for units circulating 60% Ethylene Glycol, 20% water, and fluid with specific heat of 0.6. Specifications will be affected by changes in temperature, ambient or fluids. Specifications subject to change.

**FEATURES**

- High cooling capacity at low temperatures
- Semi-hermetic compressor
- High pressure circulating pump
- Designed for 24 hour, continuous duty
- Hot gas bypass system
- Water cooled condenser

**APPLICATIONS**

- Plasma Etch Chamber
- Quenching Fiber Optics Cables
- Chemical and Organic Reactions
- Gallium Arsenide Crystal Growth
- Molecular Beam Epitaxy
Recirculating Chillers

Many customization options are available on the HX and CFT Series Chillers. Below are just a few. If you do not see what you need, contact one of our Applications Engineers. Chances are we have the option available to suit your application.

**Extended Temperature Range**
Feature will allow you to set a circulating temperature outside of the range of the standard model.

**Stainless Steel/Plastic Unit**
Recirculating Chiller features stainless steel and plastic components to provide fluid compatibility for your sensitive circulating applications.

**Deionization Package**
We will install a purification system for standard ultra pure circulating requirements.

**Custom Electrical**
Recirculating Chiller can be wired for a variety of AC power sources.

**Safety Interlocks**
Recirculating Chiller warns of situations outside of your set specifications. Monitor flow, liquid level or low/high temperature.

**Safety Certifications**
Units can be customized with certified components and electrical designs to meet the safety requirements set by the following internationally recognized standards.

**CSA**
We have been granted the Category Certification Program for the Canadian Standards Association, complying to CSA 1010.1 for all products.

**CE**
All units destined for Europe are tested for compliance to the EMC and LVD directives. NESLAB’s in-house EMC lab is assessed by Interference Technologies International, Ltd., as a supplier of EMC testing services.

**IEC**
Many of our Recirculating Chiller designs meet the rigorous European safety standards of IEC 1010 or IEC 10601, and are certified through the TUV Testing Agency.

**UL**
NESLAB has been granted the Client Test Data Program for the Underwriters Laboratories, and is certified to provide UL testing in-house for Commercial Processing Chiller UL 471, Medical Electrical Equipment Component UL 2601-1, and Laboratory Electrical Equipment UL 3101-1.

**IBM Safety Specification**
NESLAB has been designing units which conform to the IBM safety spec on recirculating chillers since 1972. This option includes NEMA 12 enclosure and emergency off.

**Semi S2-93**
Our semiconductor chillers are designed and tested to comply with Semi S2-93 safety guidelines for semiconductor manufacturing equipment. These guidelines apply to equipment used in the manufacturing, metrology, assembly, and testing of semiconductor products.
Recirculating Chillers

**Accessories**

**Air Filter Package**
Snap on filter protects chillers with air cooled condensers from damage and prevents loss of performance in dusty or unclean environments.

**For Models**
- All CFT Series chillers and HX-75 through HX-750 Series chillers with air cooled condensers

**Tubing Package**
Tygon and silicon tubing available for air or water lines, fluids handling, and drainage procedures. Tygon tubing is a durable choice for applications requiring near ambient temperature ranges. Silicon tubing is available for dependable circulation at very low temperature ranges.

**For Models**
- All CFT and HX Series chillers
- System Series water to water heat exchangers
- All Bath/Circulators

**Particulate Filter Package**
Can be used on the process side or on the facility side in our water cooled condenser models to protect your equipment and chiller from harmful particulates. Available in 5, 10, 25, or 40 micron sizes, partial or full flow

**For Models**
- All CFT and HX Series chillers
- System Series water to water heat exchangers
- All Bath/Circulators

**Algicide**
Chloramin-T Algicide eliminates the growth of algae in water baths, circulators, chillers, and other laboratory apparatus. The 250 gram bottle contains enough algicide to treat 1000 liters of water.

**For Models**
- All CFT and HX Series chillers
- System Series water to water heat exchangers
- All Bath/Circulators

**Deionized Water Package**
Partial flow system maintains resistivity levels between 1 and 3 meg-ohm/cm. Available with a cartridge change indicator light. Also compatible with NESLAB’s optional resistivity readout.

**For Models**
- All CFT and HX Series chillers
- System Series water to water heat exchangers