

## Ultra-Cool™ Wide Temperature Recirculating Chillers

### The Ultra-Cool delivers:

- Large capacity recirculators for maximum cooling and heating from -40°C to +130°C
- Ideal for applications that require high capacity cooling
- Air-cooled for convenient system placement
- The widest precision-controlled temperature range available

Ultra-Cool recirculating chillers are specifically designed for continuous, 24-hour duty, delivering industrial capacity fluid circulation for applications that require temperatures from -40°C to +130°C. With 10kW of heat, Ultra-Cool offers the widest precision-controlled temperature range in the industry.

Ultra-Cool's high capacity cooling and pumping abilities make it ideal for reaction vessel applications, replacements for equipment water cooling, or as dedicated coolers for large water-cooled equipment or instrumentation.

Standard units are air-cooled for convenient system placement, and include an internal high-pressure bypass to protect your equipment. Ultra-Cool can also be supplied as a water-cooled unit to minimize heat transfer to the installation site.

### Features at a glance:

- Standard digital/RS232 control permitting precision control of all temperature parameters
- ±0.5°C stability
- Wide temperature ranges:
  - 15°C to +30°C (standard)
  - 40°C to +130°C
- Mechanical refrigeration, air or water-cooled
- Compact footprint



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### Applications:

- > Reaction vessels
- > Lasers
- > AA graphite furnace
- > Condenser cooling
- > Diffusion pumps
- > Turbo-molecular pumps
- > Vacuum systems
- > GC/MS
- > Electron microscopes
- > ICP
- > Plasma etch equipment
- > Sputtering systems
- > Power supplies



### Options for UC500, UC500LT, UC750, UC750LT

#### Heater Options:

- Heaters are only available for models UC500LT and UC750LT*
- 4kW to 130°C
  - 10kW to 130°C (460V or 380V only) (20 GPM pump only)

#### Pump Options:

- 8 gpm, 86 psi positive displacement
- 20 gpm @ 45 psi centrifugal

#### Cooling Option:

- Water-cooled system

#### Electrical Options:

- 220V/50 Hz/3 ph\*
  - 460V/60 Hz/3 ph
  - 380V/50 Hz/3 ph\*
- \* For 50 Hz units, decrease heat removal by 17%.

#### Controller Option:

- Standard digital control has PID, RS232 computer interface and low fluid indicator.
- Deluxe digital control (required for +130°C units) has PID RS232, external temperature sensor, and an alarm package including: low fluid, low flow, and over-temp with an external contact closure.

## Fluid Selection Facts

For best pumping or stirring results, choose a fluid medium with a kinematic viscosity of 20 centistokes or less over the full operating temperature range. Remember, the heat exchanger in the recirculating cooler may be several degrees colder than your process.

## Ultra-Cool Model Specifications

|                                     |        | UC500   | UC500LT <sup>1</sup>                                  | UC750   | UC750LT <sup>1</sup>                                  |
|-------------------------------------|--------|---|---|---|---|
| <b>Heat Removal</b><br>(watts/BTUs) | +20°C  | 15500/52850   | 12500/42625   | 24000/81910   | 17000/57970   |
|                                     | +10°C  | 14100/48080   | 12100/41295   | 18000/61435   | 16000/54560   |
|                                     | 0°C    | 11100/37850   | 12000/40955   | 14000/47780   | 15000/51150   |
|                                     | -10°C  | 6800/23202  | 8200/27960  | 9000/30690  | 11000/37510   |
|                                     | -15°C  | -   | 7300/24915  | -   | 9000/30690  |
|                                     | -20°C  | -   | 6000/20460  | -   | 8000/27280  |
|                                     | -30°C  | -   | 3600/12285  | -   | 4500/15345  |
| <b>Temperature Range C°</b>         |        | -15 to 30   | -40 to 30   | -15 to 30   | -40 to 30   |
| <b>Reservoir(liters):</b>           |        | 21  | 21  | 21  | 21  |
| <b>Compressor:</b>                  |        | 6 hp  | 6 hp  | 7 1/2 hp  | 7 1/2 hp  |
| <b>Controls Standard:</b>           |        | Digital/RS232   | Digital/RS232   | Digital/RS232   | Digital/RS232   |
| <b>Option:</b>                      |        | Deluxe digital  | Deluxe digital  | Deluxe digital  | Deluxe digital  |
| <b>Stability ±°C:</b>               |        | 0.5   | 0.5   | 0.5   | 0.5   |
| <b>Heater (optional):</b>           |        | -   | 130°C/4 kW<br>or 10 kW <sup>2</sup>                   | -   | 130°C/4 kW<br>or 10 kW <sup>2</sup>                   |
| <b>Pump Standard:Centrifugal</b>    |        | 20 gpm @ 45 psi                                       | 20 gpm @ 45 psi                                       | 20 gpm @ 45 psi                                       | 20 gpm @ 45 psi                                       |
| <b>Option:Positive Displacement</b> |        | 8 gpm to 86 psi                                       | 8 gpm to 86 psi                                       | 8 gpm to 86 psi                                       | 8 gpm to 86 psi                                       |
| <b>Dimensions:</b>                  | inches | 37 x 37 x 41  | 37 x 37 x 41  | 37 x 37 x 41  | 37 x 37 x 41  |
| <b>W x D x H</b>                    | cm     | 94 x 94 x 104   | 94 x 94 x 104   | 94 x 94 x 104   | 94 x 94 x 104   |
| <b>Weight:</b>                      | lbs/kg | 700/318   | 700/318   | 800/363   | 800/363   |
| <b>Electrical:</b>                  |        | 208/230V<br>60 Hz/3 ph                                | 208/230V,<br>60 Hz/3 ph                               | 208/230V,<br>60 Hz/3 ph                               | 208/230V,<br>60 Hz/3 ph                               |
| <b>Option:</b>                      |        | 220V/50 Hz/3 Ph<br>380V/50 HZ/3 Ph<br>460V/60 Hz/3 Ph | 220V/50 Hz/3 Ph<br>380V/50 HZ/3 Ph<br>460V/60 Hz/3 Ph | 220V/50 Hz/3 Ph<br>380V/50 HZ/3 Ph<br>460V/60 Hz/3 Ph | 220V/50 Hz/3 Ph<br>380V/50 HZ/3 Ph<br>460V/60 Hz/3 Ph |

\*Specifications noted above are dependent on fluid choice, fluid temperatures, ambient temperature and electrical supply. Please contact the factory to further discuss your requirements.

1. When air-cooled units are manufactured with the heater option, derate the heat removal by 10%.
2. 4kW heat option for UC500LT and UC750LT adds 11 amps to utility requirement. 10kW heat option for UC500LT and UC750LT with 380 or 460 volts adds 12 amps to utility requirement.



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