

**Nextreme™ Performance Chiller**

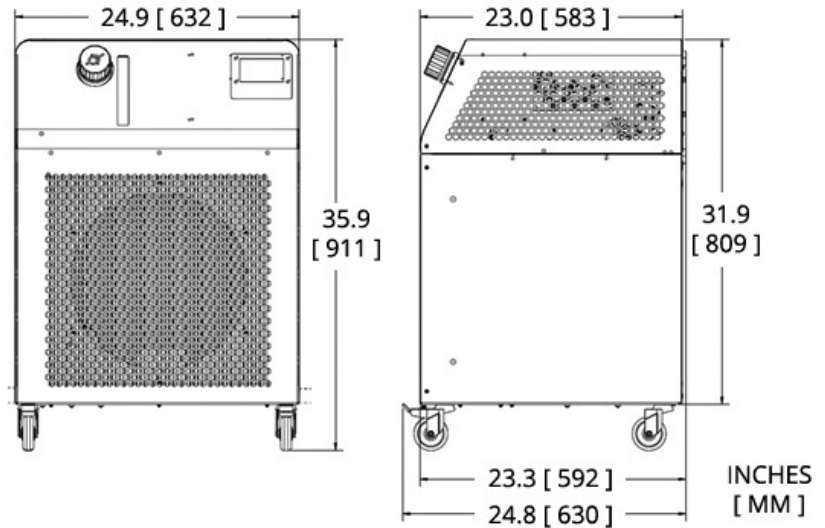
The Nextreme NRC5000 Recirculating Chiller features premium components and environmentally friendly refrigerants in a user-friendly design. It is designed to cool well below ambient and dissipate heat away from thermally sensitive equipment. Featuring variable speed motors for the compressor and condensing fan, the Nextreme NRC5000 offers a high coefficient of performance and low-noise operation. The Nextreme NRC5000 comes with several standard features and additional options allow for application-specific configurations. Power cord is **not** supplied with the unit and **must be ordered separately**.

**Features**

- Reliable Performance
- Environmentally Friendly
- User-Friendly
- Application Specific Configurations

**Applications**

- Industrial Lasers
- Additive Manufacturing
- Electron Microscopes
- Semiconductor Fabrication
- Laboratory Testing



**COOLING POWER OPERATING POINTS**

**100% Water (20°C Ambient Air)**

Cooling Power (Qc) = 4,900 Watts  
 Fluid Setpoint = 20 °C  
 Fluid ΔT @ 15.0 L/min = 4.7 °C

**100% Water (30°C Ambient Air)**

Cooling Power (Qc) = 3,800 Watts  
 Fluid Setpoint = 20 °C  
 Fluid ΔT @ 15.0 L/min = 3.7 °C

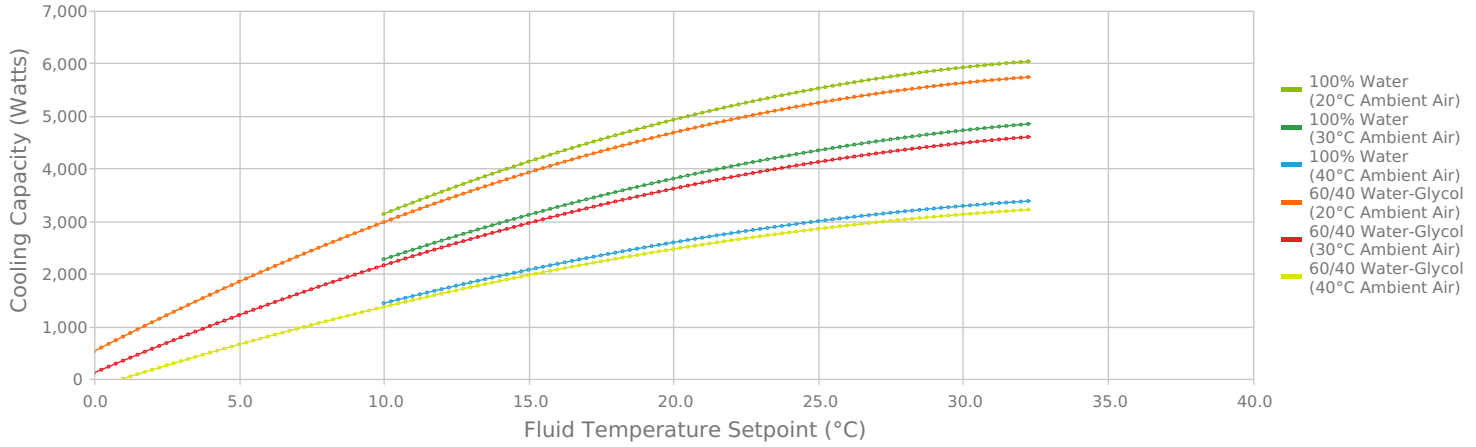
**60/40 Water-Glycol (20°C Ambient Air)**

Cooling Power (Qc) = 4,700 Watts  
 Fluid Setpoint = 20 °C  
 Fluid ΔT @ 15.0 L/min = 4.9 °C

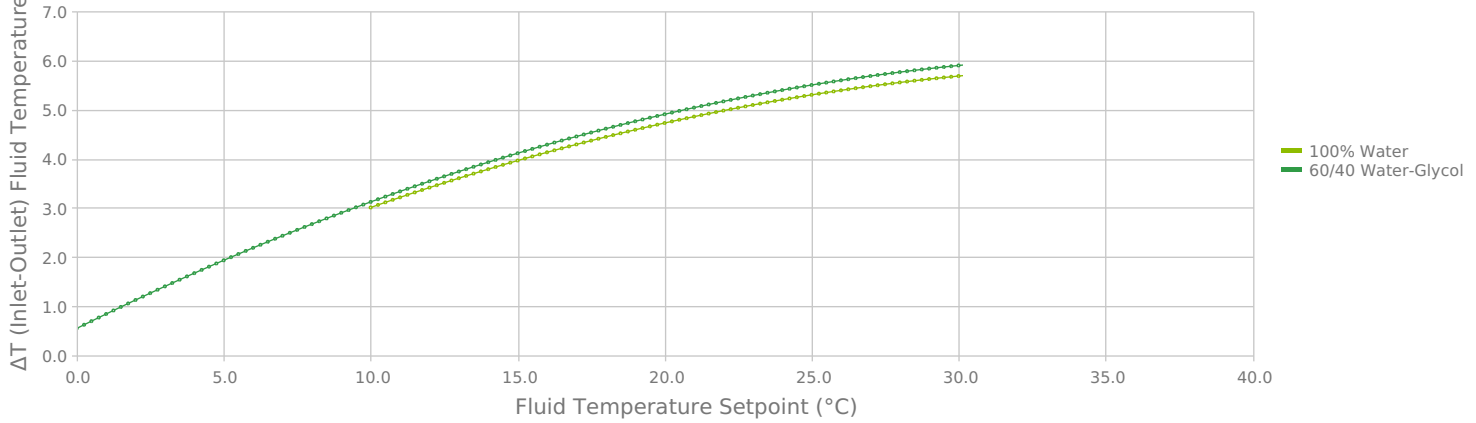
**60/40 Water-Glycol (30°C Ambient Air)**

Cooling Power (Qc) = 3,600 Watts  
 Fluid Setpoint = 20 °C  
 Fluid ΔT @ 15.0 L/min = 3.8 °C

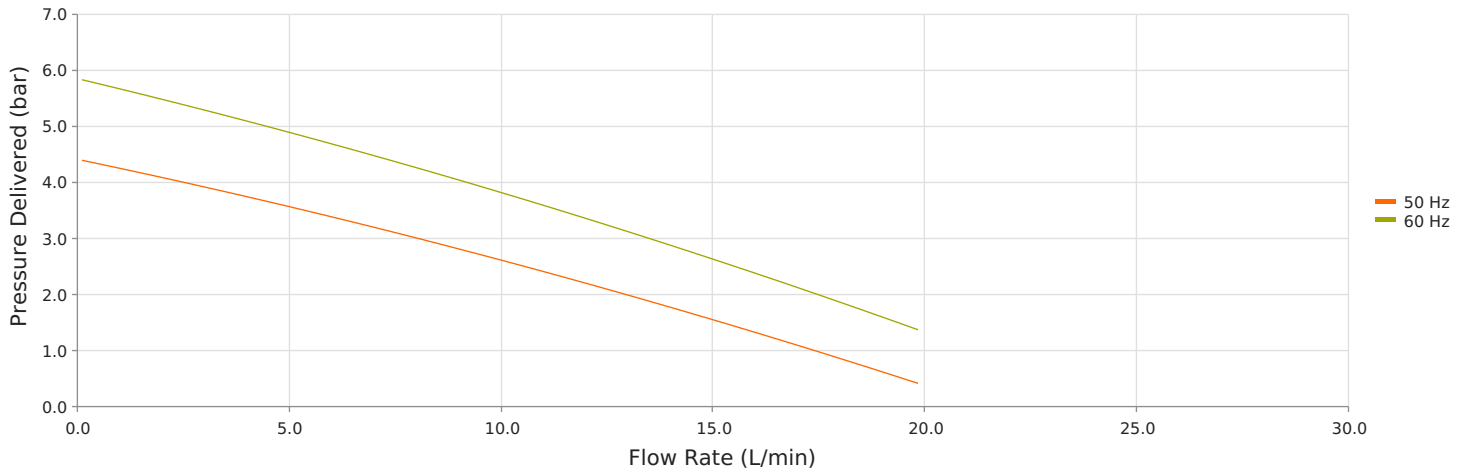
NRC5000-A1-20-ST1 Cooling Capacity  
 15 L/min Fluid Flow



NRC5000-A1-20-ST1  $\Delta T$  (Inlet-Outlet) Fluid Temperature  
 Max System Cooling at 20°C Ambient Air  
 15 L/min Fluid Flow



NRC5000-A1-20-ST1 - Pump Curve



## TECHNICAL SPECIFICATIONS

### Performance

|   |                      |
|---|----------------------|
| <b>Nominal Cooling Capacity<sup>1</sup></b>           | 4,900 W              |
| <b>Setpoint Range</b>                                 | -10°C to 40°C        |
| <b>Temperature Stability<sup>3</sup></b>              | ±0.10°C              |
| <b>Nominal Operating Flowrate (60 Hz)<sup>1</sup></b> | 15.0 L/min @ 2.8 Bar |
| <b>Nominal Operating Flowrate (50 Hz)<sup>1</sup></b> | 15.0 L/min @ 1.7 Bar |
| <b>Refrigerant</b>                                    | R 513A               |

### Operation

|  |  |
|--|--|
| <b>Coolant</b>                                 | Water or Water/Glycol                      |
| <b>Operating Temperature<sup>2</sup></b>       | 15°C to 40°C                               |
| <b>Storage temperature range (w/o coolant)</b> | -25°C to 70°C                              |
| <b>Humidity range</b>                          | 30% to 80%                                 |
| <b>Storage Humidity range</b>                  | 5% to 95%, non-condensing                  |
| <b>Altitude</b>                                | < 2,000 meters                             |
| <b>Input Voltage</b>                           | 220 - 230 VAC                              |
| <b>Frequency</b>                               | 50/60 Hz                                   |
| <b>Current</b>                                 | < 9.1 Amps                                 |
| <b>Maximum Forward Pressure</b>                | 4.1 Bar                                    |
| <b>Compliance</b>                              | ANSI / UL / CSA / IEC EN 61010-1 Edition 3 |

### Physical

|                         |            |
|-------------------------|------------|
| <b>Height</b>           | 910 mm     |
| <b>Length</b>           | 590 mm     |
| <b>Width</b>            | 630 mm     |
| <b>Weight</b>           | 100 kg     |
| <b>Coolant Capacity</b> | 5 Liters   |
| <b>Couplings</b>        | 1/2 in NPT |

## STANDARD FEATURES

|                                   |   |
|-----------------------------------|---|
| <b>Variable Speed Motors</b>      | Variable speed compressor and condensing fans for quiet operation and improved energy efficiency.   |
| <b>Semi-Closed Fluid System</b>   | Sealed fluid system with breathable reservoir cap (similar to an automobile). This prevents evaporative losses, introduction of bacteria, and the need for components to prevent fluid from draining back into the system when installed below the application. |
| <b>Optical Fluid Level Switch</b> | Fluid level sensing with no moving parts.   |
| <b>RS-232 Communications</b>      | Complete control integration of chiller into higher level assembly control system.  |
| <b>Supply Pressure Sensing</b>    | Pressure sensing for applications sensitive to high operating conditions.   |

## ACCESSORY KITS

| <b>Feature</b>                                 | <b>Kit Part Number</b> | <b>Description</b>  |
|--|------------------------|---|
| <b>Flow Control Valve and Flow Sensing Kit</b> | <b>387004277</b>       | Externally installed valve for reducing the overall flow to the application. Full flow continues through the chiller to maintain high heat transfer rates and temperature stability. Flow meter for measuring coolant flow rate. Installed external to the chiller with both a local display and connectivity to chiller LCD display. |
| <b>Water Filter Kit</b>                        | <b>387004279</b>       | Hot swappable, 5-micron water filter for filtering particulates from the coolant circuit.   |

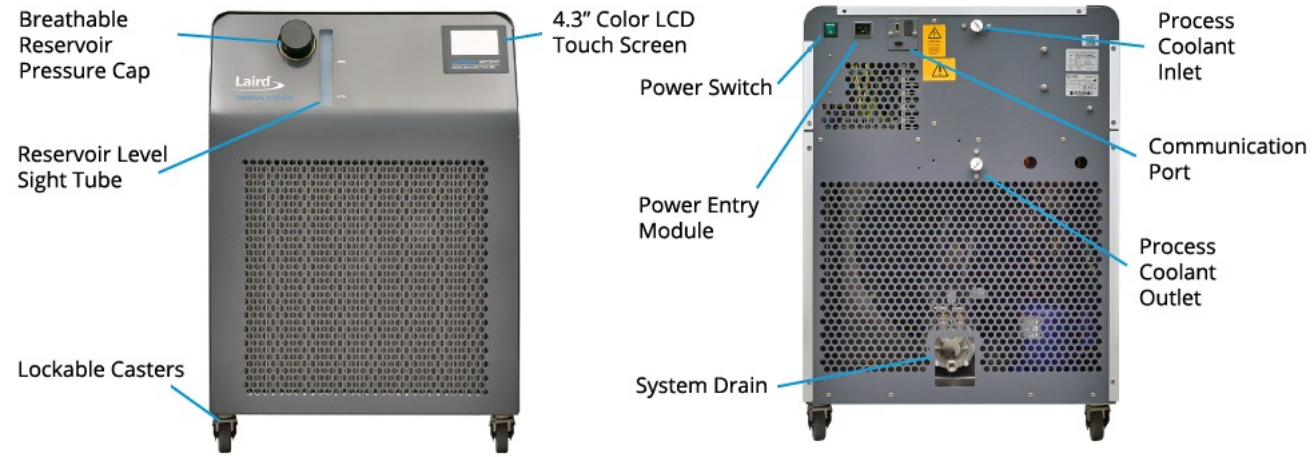
**CORD OPTIONS**

These power cords have been tested and validated on Nextreme devices.

**Power cord is not supplied with the unit and must be ordered separately.**

| MFG Part Number | Plug Type | Standard | Style        | Cable Length | Rating               | Color | Connector |
|-----------------|-----------|----------|--------------|--------------|----------------------|-------|-----------|
| 387005324       | Universal | None     | Flying Leads | 2.0 m        | 250VAC, 16A* / 20A** | Black | C19       |

\* IEC \*\* UL



**NOTES**

1. Nominal capacity rating is given at a 20°C (68°F) setpoint, 20°C (68°F) ambient temperature, sea level.
2. For ambient conditions outside this range, please contact Laird Thermal Systems.
3. Typical for nominal capacity rating. Contact LTS applications engineering for application specific performance.

Any information furnished by Laird and its agents, whether in specifications, data sheets, product catalogues or otherwise, is believed to be (but is not warranted as being) accurate and reliable, is provided for information only and does not form part of any contract with Laird. All specifications are subject to change without notice. Laird assumes no responsibility and disclaims all liability for losses or damages resulting from use of or reliance on this information. All Laird products are sold subject to the Laird Terms and Conditions of sale (including Laird's limited warranty) in effect from time to time, a copy of which will be furnished upon request.

© Copyright 2023 Laird Thermal Systems, Inc. All rights reserved. Laird™, the Laird Ring Logo, and Laird Thermal Systems™ are trademarks or registered trademarks of Laird Limited or its subsidiaries.

Nextreme™ is a trademark of Laird Thermal Systems, Inc. All other marks are owned by their respective owners.

Revision: 01 Date: 03-01-2023

Print Date: 03-05-2023