

**Nextreme™ Performance Chiller**

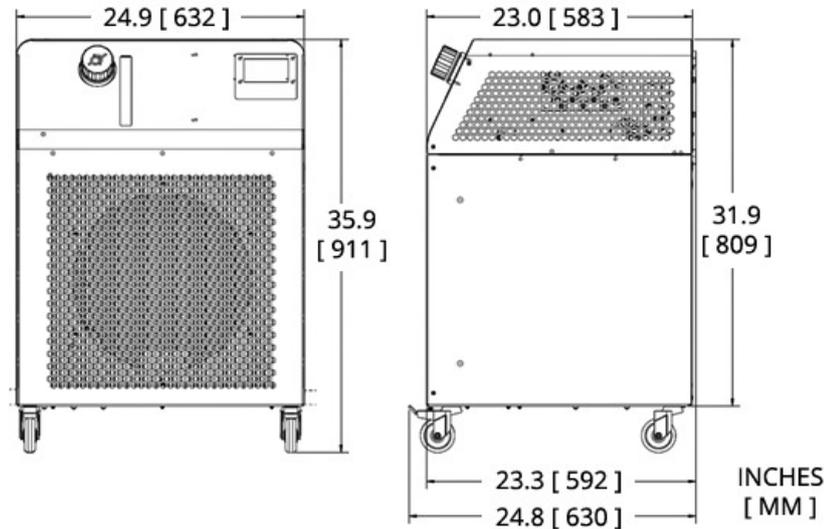
The Nextreme NRC5000 Recirculating Chiller features premium components and environmentally friendly refrigerants in a user-friendly design. It is designed to cool well below ambient and dissipate heat away from thermally sensitive equipment. Featuring variable speed motors for the compressor and condensing 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

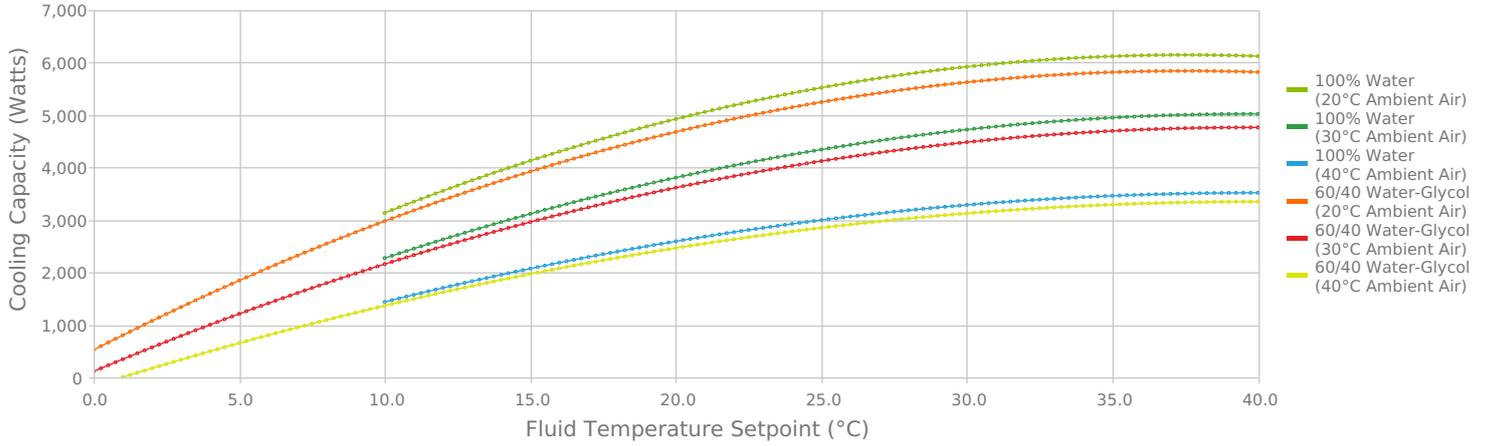
**60/40 Water-Glycol (20°C Ambient Air)**

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

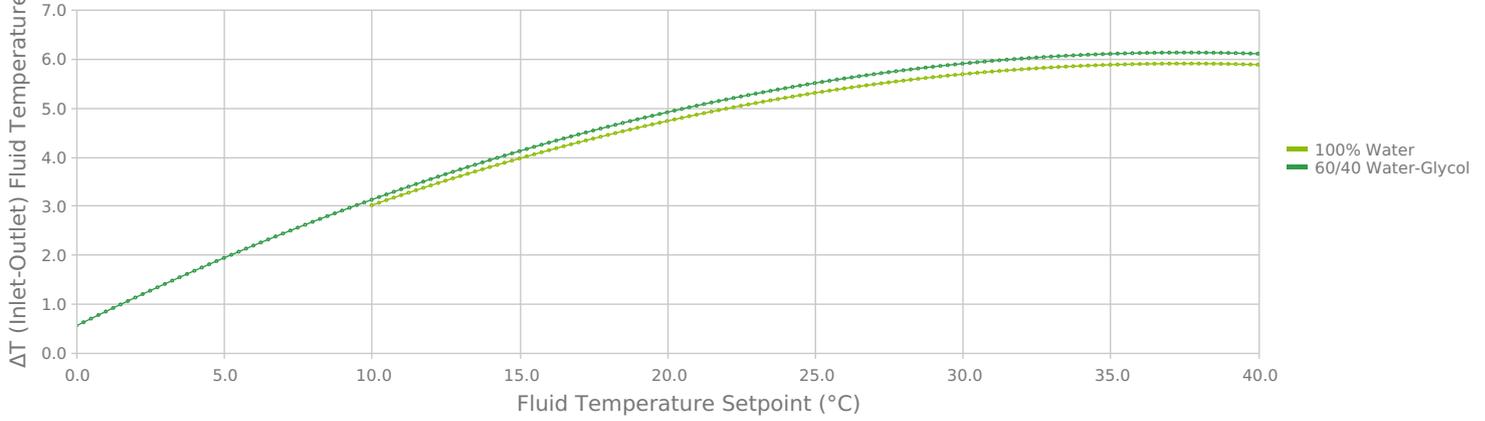
**60/40 Water-Glycol (30°C Ambient Air)**

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

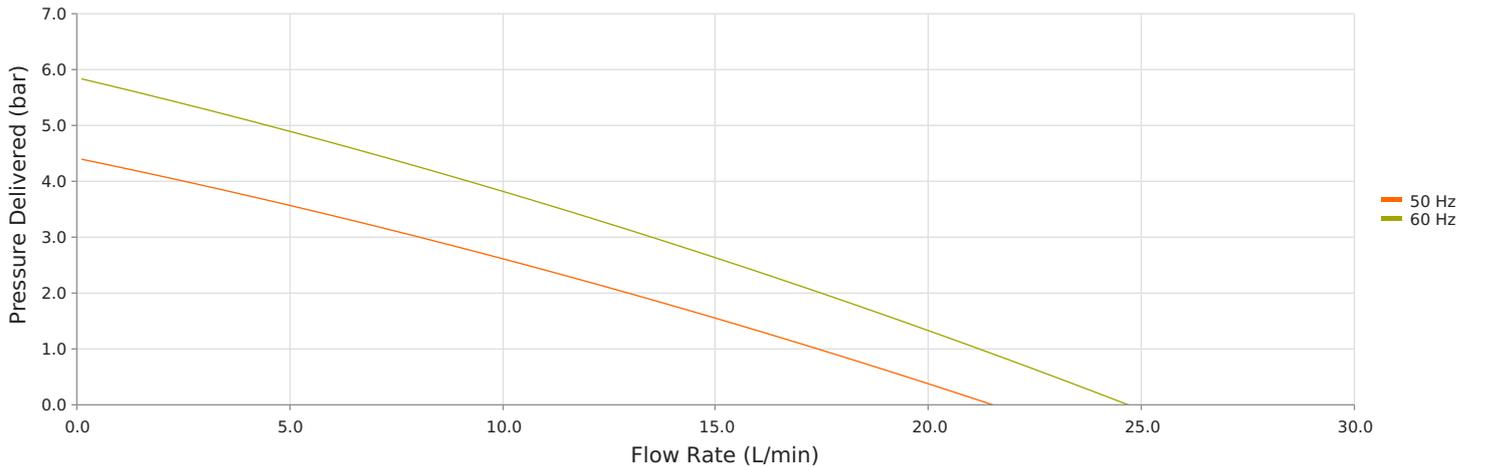
NRC5000-A1-20-ST1 Cooling Capacity  
15 L/min Fluid Flow



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
<b>Sound Pressure Level at Nominal Cooling Capacity (50 Hz)<sup>1</sup></b>	65 dBA
<b>Sound Pressure Level at Nominal Cooling Capacity (60 Hz)<sup>1</sup></b>	69 dBA

## 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>	200 - 230 VAC / 208 - 240 VAC
<b>Frequency</b>	50 / 60 Hz
<b>Current</b>	< 9.1 Amps
<b>Input Power Connection</b>	C19 Receptacle
<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>	103 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>
	Flow Control Valve and Flow Sensing Kit	387004277	This externally installed valve is for reducing the overall flow to the application. Full flow continues through the chiller to maintain high heat transfer rates and temperature stability. The flow meter is for measuring coolant flow rate and is installed externally to the chiller with both a local display (GPM) and connectivity to the chiller LCD display. The flow rate local display is only on NRC products. This kit is for all refrigerant chillers: EFC2400, NRC1200, NRC2400, NRC5000, VRC1200, VRC2400, and VRC4500.
	Water Filter Kit	387004279	Hot swappable, 5-micron water filter for filtering particulates from the coolant circuit.
	Flow Bypass Kit	387010608	This externally installed valve is for reducing the overall flow to the application. Full flow continues through the chiller to maintain high heat transfer rates and temperature stability. This kit does not contain a flow meter.
	Pressure Bypass Kit	387010420	This pressure bypass kit prevents high pressure operation and can either operate partially open or open when there is a change in operation (e.g., flow to application stopped). It can be used for flow control but operates with less precision. This pressure bypass maintains full flow through the chiller heat exchanger.

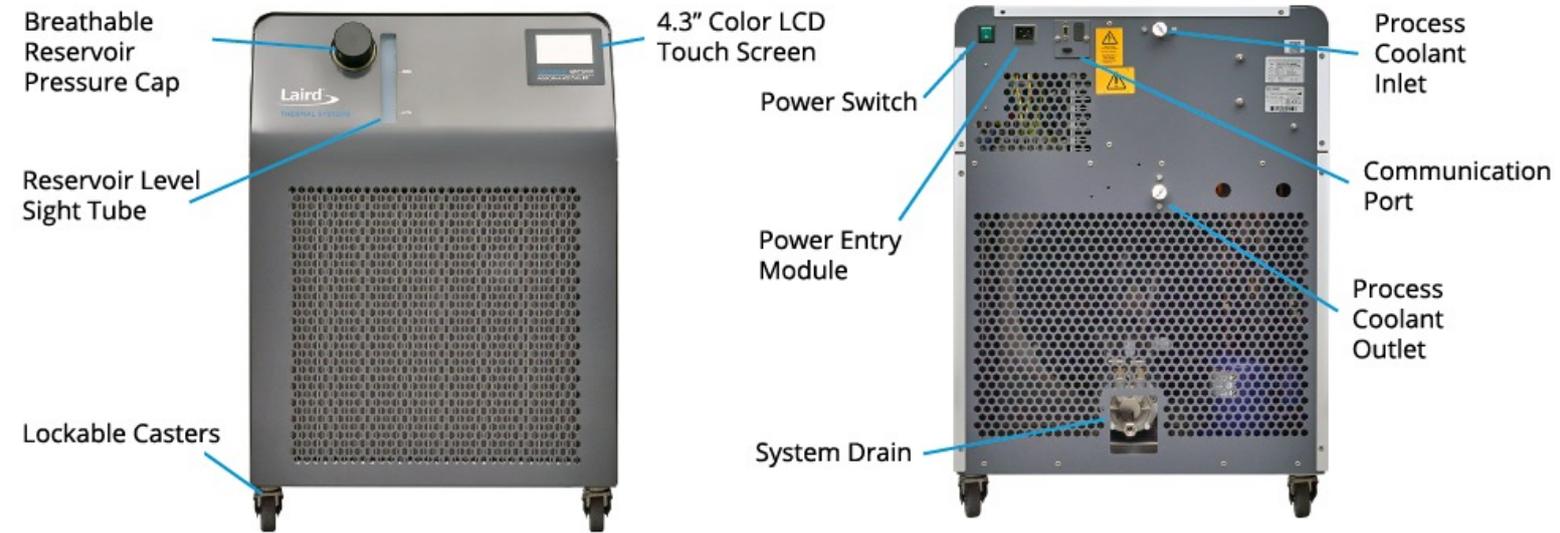
# Cord Options

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

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

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Revision: 04 Date: 09-03-2025

Print Date: 09-03-2025