

Nextreme™ NRC400 Performance Chiller

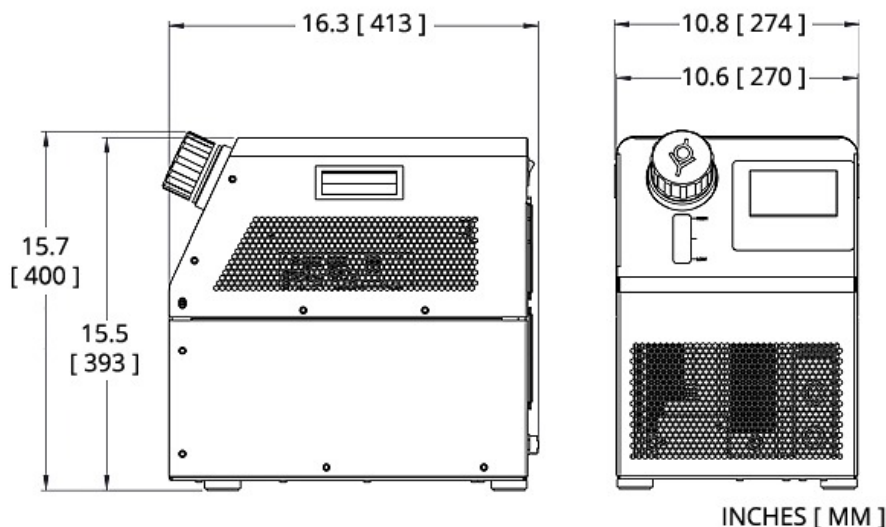
The Nextreme NRC400 is a next generation benchtop recirculating chiller using solid-state thermoelectric technology for precise temperature control of analytical and industrial equipment. It offers high heat pumping capacity for its size, improved temperature stability and lower noise operation than previous models. Utilizing custom thermoelectric coolers with premium thermoelectric materials, it delivers a higher coefficient of performance (COP). The NRC400 is a semi-closed system with a large reservoir tank requiring less refilling. It is equipped with a high-quality pump offering high MTBF with low pulsation to accommodate highly sensitive imaging and test instruments. This model comes with an option to increase chiller performance using Boost Mode. With the Boost Mode ON, the fans run at a higher speed which increases the unit's performance to the maximum cooling capacity. Users can easily control temperature setpoints and alarm settings via the high-res LCD touchscreen display. Custom configurations are available, however, MOQ applies.

Features

- Precise Temperature Control
- Compact Form Factor
- Reliable Solid-State Operation
- Intuitive GUI
- Low Noise Operation

Applications

- Analytical Imaging
- Industrial Laser Systems
- Semiconductor Test & Measurement
- Laboratory Testing
- Bath Cooling



COOLING POWER OPERATING POINTS¹

100% Water (20°C Ambient Air)

Cooling Power (Qc) = 348 Watts
Boost Mode (Qc) = 400 Watts
Fluid Setpoint = 20 °C
Fluid ΔT @ 1.0 L/min = 5.0 °C
Boost Mode Fluid ΔT @ 1.0 L/min = 6.0 °C

100% Water (30°C Ambient Air)

Cooling Power (Qc) = 205 Watts
Boost Mode (Qc) = 266 Watts
Fluid Setpoint = 20 °C
Fluid ΔT @ 1.0 L/min = 3.0 °C
Boost Mode Fluid ΔT @ 1.0 L/min = 3.8 °C

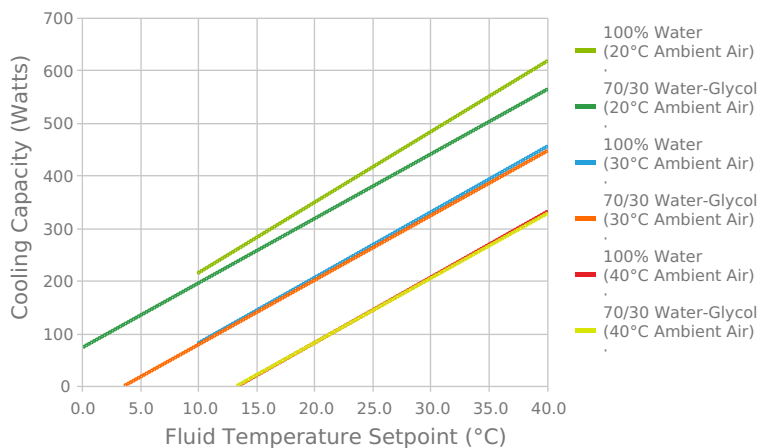
70/30 Water-Glycol (20°C Ambient Air)

Cooling Power (Qc) = 317 Watts
Boost Mode (Qc) = 388 Watts
Fluid Setpoint = 20 °C
Fluid ΔT @ 1.0 L/min = 4.8 °C
Boost Mode Fluid ΔT @ 1.0 L/min = 5.9 °C

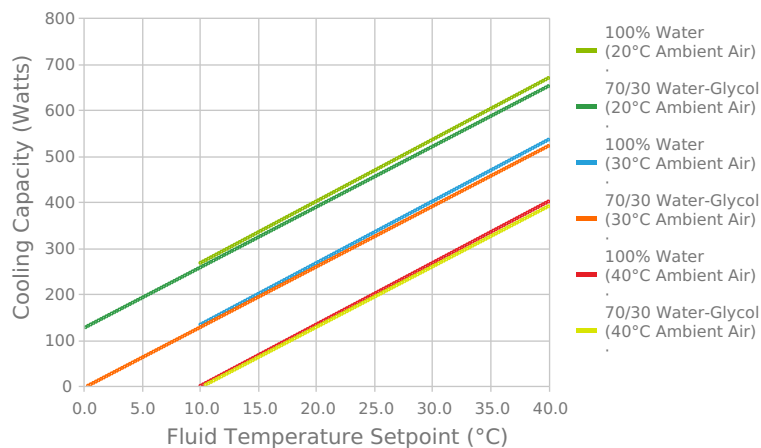
70/30 Water-Glycol (30°C Ambient Air)

Cooling Power (Qc) = 200 Watts
Boost Mode (Qc) = 258 Watts
Fluid Setpoint = 20 °C
Fluid ΔT @ 1.0 L/min = 3.0 °C
Boost Mode ΔT = 3.9 °C

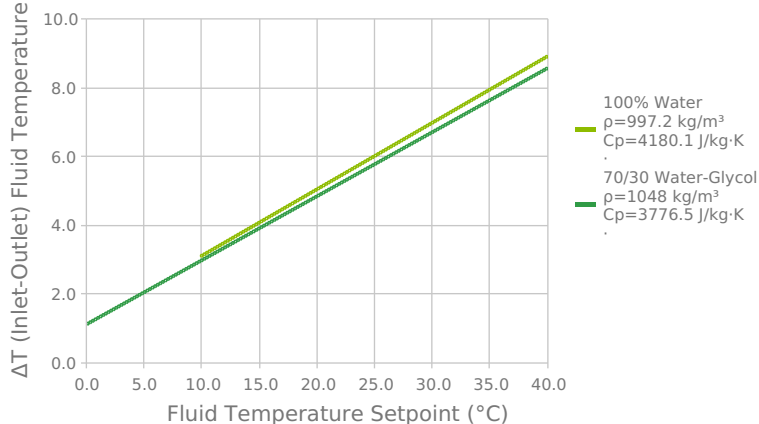
NRC400-T0-00-PC2 Cooling Capacity
1 L/min Fluid Flow (Boost Mode OFF)



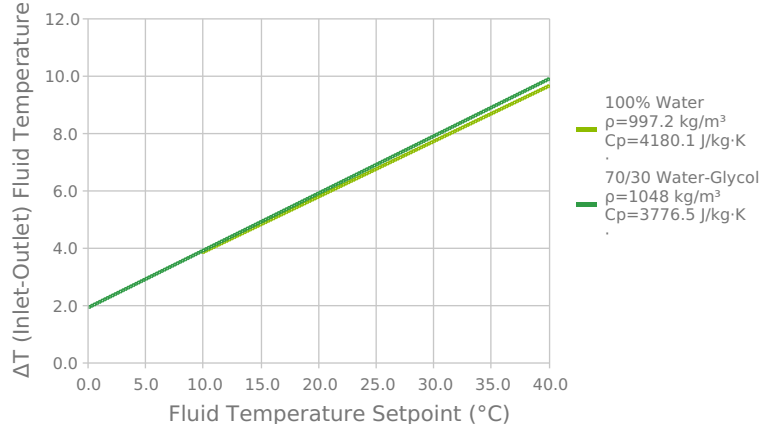
NRC400-T0-00-PC2 Cooling Capacity
1 L/min Fluid Flow (Boost Mode ON)



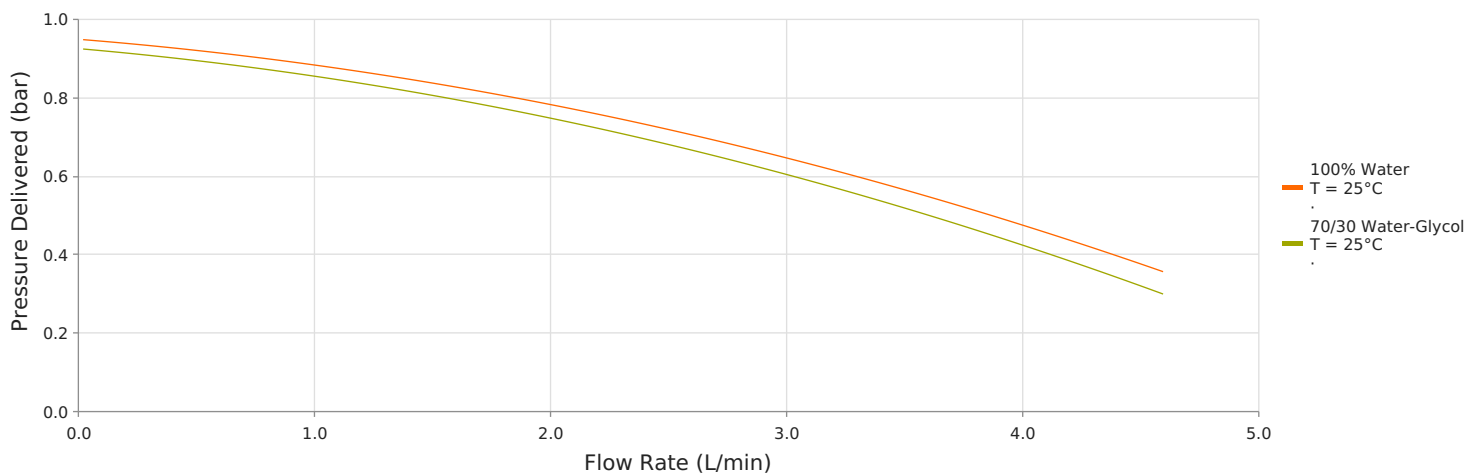
NRC400-T0-00-PC2 ΔT (Inlet-Outlet) Fluid Temperature
Max System Cooling at 20°C Ambient Air
1 L/min Fluid Flow (Boost Mode OFF)



NRC400-T0-00-PC2 ΔT (Inlet-Outlet) Fluid Temperature
Max System Cooling at 20°C Ambient Air
1 L/min Fluid Flow (Boost Mode ON)



NRC400-T0-00-PC2 - Chiller Pump Curves



TECHNICAL SPECIFICATIONS

Performance

| | |
|-------------------------------------------------------|-------------------------------------------|
| Maximum Cooling Capacity² | 348 W Boost Mode OFF, 400 W Boost Mode ON |
| Setpoint Range | -5°C to 40°C |
| Temperature Stability | ±0.05°C |
| Nominal Operating Flowrate (60 Hz)¹ | 1.0 L/min @ 0.9 Bar |
| Nominal Operating Flowrate (50 Hz)¹ | 1.0 L/min @ 0.9 Bar |

Operation

| | |
|------------------------------------------------|--------------------------------------------|
| Coolant | Water or Water/Glycol |
| Operating Temperature | 15°C to 40°C |
| Storage temperature range (w/o coolant) | 0°C to 50°C |
| Humidity range | 35% to 85% |
| Storage Humidity range | 5% to 95%, non-condensing |
| Input Voltage | 100 - 230 VAC |
| Frequency | 50/60 Hz |
| Current | < 4.85 Amps |
| Maximum Forward Pressure | 0.88 Bar |
| Compliance | ANSI / UL / CSA / IEC EN 61010-1 Edition 3 |

Physical

| | |
|-------------------------|--------------------------------------------------------|
| Height | 400 mm |
| Length | 413 mm |
| Width | 274 mm |
| Weight | 24 kg |
| Coolant Capacity | 1 Liters |
| Couplings | Refer to the NRC400 user manual for guidance (page 21) |

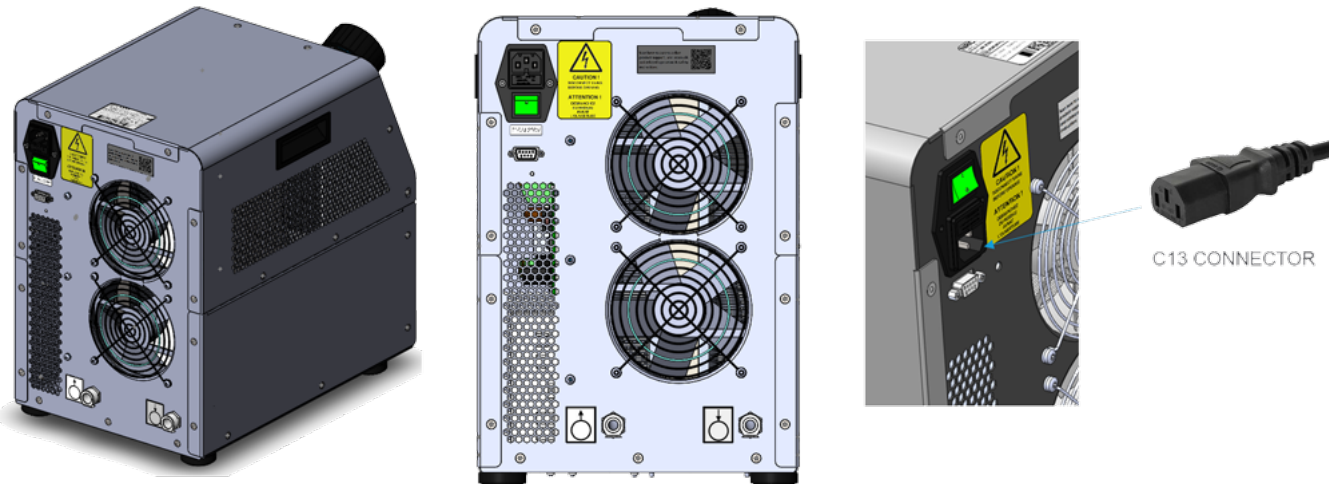
CORD OPTIONS

All compliance testing and validation have been done with these specific cord models.

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

| MFG Part Number | Plug Type | Standard | Style | Cable Length | Conductor Cross-Section | Color | Connector |
|-----------------|----------------|-------------|----------|--------------|-------------------------|-------|-----------|
| 387009619 | Australia | AS 3112 | straight | 2.0 m | 3 x 1.5 mm ² | Black | C13 |
| 387009620 | Europlug | CEE 7 / VII | straight | 2.0 m | 3 x 1.5 mm ² | Black | C13 |
| 387009621 | China | GB 2099 | straight | 2.0 m | 3 x 1.5 mm ² | Black | C13 |
| 387009622 | Japan | JIS 8303 | straight | 2.0 m | 3 x 2 mm ² | Black | C13 |
| 387009623 | United Kingdom | BS 1363 | straight | 2.0 m | 3 x 1.5 mm ² | Black | C13 |
| 387009624 | United States | NEMA 5-15P | straight | 2.0 m | 3 x 2 mm ² | Black | C13 |

LIQUID INTERFACE



NOTES

- Performance curve deviation is within +/-5%
- Maximum Cooling Capacity rated at 20°C Ambient Air and 20°C Fluid Temperature w/ Boost Mode On
- Use water as coolant for control temperatures above 10°C
- To prevent freezing, use coolant with up to 30% glycol below 10°C
- For alternate coolants please contact Laird Thermal Systems

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