

Product Catalog

# Recirculating Chillers

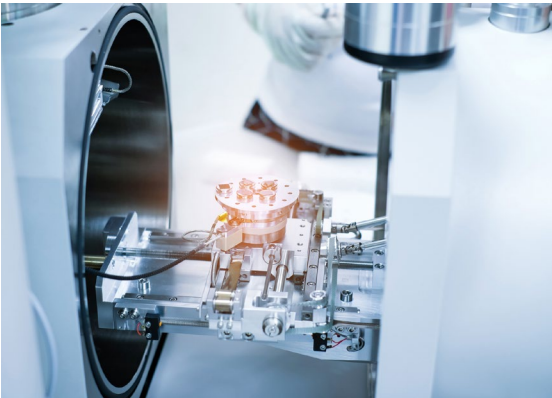
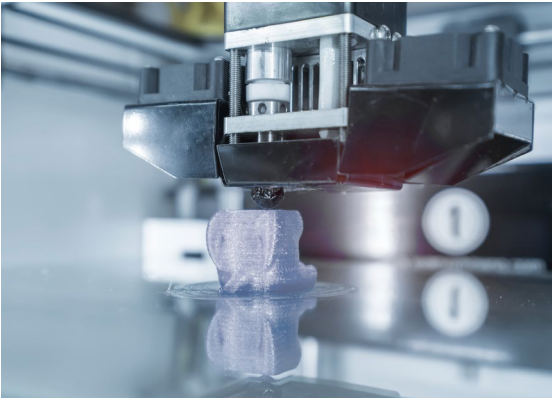


The Next-Generation Chillers

Performance Chiller Platform from Tark Thermal Solutions is the next generation of recirculating chillers that feature premium components at a mid-level price. The platform features high-quality components, environmentally friendly refrigerants, low-noise designs and a user-friendly operation for reliable, precise temperature control of analytical, medical and industrial equipment.

Fits Your Application Needs

Design engineers in every industry are facing demands for higher performance with reduced energy consumption and lower noise levels. Performance Chiller Platform offers a high coefficient of performance in a smaller and lighter package compared to previous versions. Laboratory technicians, R&D engineers and equipment operators will appreciate the quiet, “set it and forget it” operation and high performance components that minimize system downtime.



This chiller line is designed to cool well below ambient temperature and dissipate heat away from thermally sensitive equipment. It is designed for OEM companies, businesses both large and small, and research facilities, laboratories and universities that need an energy-efficient chiller platform versatile enough to support the cooling needs of their entire equipment installation.

Industrial

- Laser Cutting & Marking
- Printing
- X-Ray Scanning
- Packaging
- Additive Manufacturing
- Semiconductor Fabrication

Analytical

- Mass Spectrometers
- Chromatography
- Microscopes
- Biotech

Analytical

- Imaging
- Pharmaceutical
- Surgical Laser



PERFORMANCE	NRC400			NRC1200			NRC2400			NRC5000		
Cooling capacity¹	10°C	20°C	30°C	10°C	20°C	30°C	10°C	20°C	30°C	10°C	20°C	30°C
	0.3 kW	0.4 kW	0.5 kW	0.7 kW	1.6 kW	2.3 kW	1.7 kW	2.8 kW	3.9 kW	3.1 kW	4.9 kW	5.9 kW
Setpoint Range	-5°C to 40°C			-10°C to 40°C			-10°C to 40°C			-10°C to 40°C		
Temperature Stability	±0.05°C			±0.1°C			±0.1°C			±0.1°C		
Nominal Flow Rate¹ (50Hz / 60Hz)	1 lpm @ 1.05 bar			15 lpm @ 1.5 bar / 15 lpm @ 2.6 bar			15 lpm @ 1.5 bar / 15 lpm @ 2.6 bar			15 lpm @ 1.7 bar / 15 lpm @ 2.8 bar		
Maximum available pressure	1.18 bar			5.3 bar			5.3 bar			5.3 bar		
Refrigerant	N/A			R 513A			R 513A			R 513A		
STORAGE												
Temperature (w/o coolant)	0°C to 50°C			-25°C to 70°C			-25°C to 70°C			-25°C to 70°C		
Humidity	5% to 95%, non-condensing			5% to 95%, non-condensing			5% to 95%, non-condensing			5% to 95%, non-condensing		
OPERATION												
Coolant	Water or Water/Glycol			Water or Water/Glycol			Water or Water/Glycol			Water or Water/Glycol		
Temperature²	10°C to 40°C			15°C to 40°C			15°C to 40°C			15°C to 40°C		
Relative Humidity	35% to 85%			30% to 80%			30% to 80%			30% to 80%		
Altitude	≤2,000 meters			≤2,000 meters			≤2,000 meters			≤2,000 meters		
INPUT												
Voltage	115 – 230 VAC			100 – 120 VAC or 220 – 230 VAC			220 – 230 VAC			220 – 230 VAC		
Frequency	50/60 Hz			50/60 Hz			50/60 Hz			50/60 Hz		
PHYSICAL												
Dimensions (W x D x H)	27.4 X 41.3 X 40			45 X 52 x 67 cm			48 X 52 x 75 cm			63 x 59 x 91 cm		
Weight (w/o coolant)	24 kg			48 kg			54 kg			100 kg		
Coolant Capacity	1 L			5 L			5 L			5 L		
Couplings	Quick-Connect (3/8 in ID Tubing)			1/2" NPT			1/2" NPT			1/2" NPT		

1. Nominal capacity rating is given at 20°C ambient temperature, sea level, and 60Hz operation.  
2. For ambient conditions outside this range, please contact Tark Thermal Solutions.

Value Chiller Platform

Value Chiller Platform from Tark Thermal Solutions offers reliable, cost-efficient temperature control. Based on the design for the Performance Chiller Series, the Value line offers the same ease of use, high reliability, and low maintenance features as the Performance Series but at a lower cost through materials (brass instead of stainless steel), simpler components (single speed instead of variable speed compressor) and different control system (switches instead of sensors). This provides more competitive pricing to OEMs looking for a packaged solution with their instrument.

Fits Your Application Needs

Value Chillers can be configured and engineered to meet unique requirements for analytical, industrial and medical applications. Design engineers can make modifications to the Value Chiller—such as supplying hose kits, modifying factory settings on the display, or changing out pump types—offering OEMs customized solutions with the cost and delivery times of off-the-shelf products.

Eco-Friendly Chiller

Natural Refrigerant Chiller offers all users a cost-effective and reliable thermal management solution that is compliant with foreseeable future regulations with regards to refrigerant use. Part of the the family of chiller products, the EFC line offers the same ease of use, low maintenance features that makes it ideal for cooling sensitive electronics in industrial and analytical equipment. By using natural R290 refrigerant, the EFC Chillers achieve similar performance with a near-zero Global Warming Potential (GWP) when compared to traditional hydrofluorocarbon (HFC) refrigerants.

Fits Your Application Needs

The Eco-Friendly Chiller can be configured to meet unique application requirements. Units run on universal input of 200-240V, 50/60Hz, which means that they can operate anywhere in the world. Offering application-specific configurations, the EFC Chiller is used in a wide range of demanding applications including analytical instrumentation, industrial, medical, semiconductor, laser systems and more.

As the EU moves to ban fluorinated refrigerants by 2027 under the F-gas regulation, our EFC 2400 is compliant with these regulations.



PERFORMANCE	VRC1200			VRC2400			VRC4500		
Cooling capacity <sup>1</sup>	10°C	20°C	30°C	10°C	20°C	30°C	10°C	20°C	30°C
	1.1kW	1.2kW	1.5kW	2.0kW	2.7kW	3.4kW	3.0kW	4.9kW	6.1kW
Setpoint Range	5°C to 40°C			5°C to 40°C			5°C to 40°C		
Temperature Stability	±0.5°C			±0.5°C			±0.5°C		
Nom. Flow Rate <sup>1</sup> (50Hz / 60Hz) BT Nom. Flow Rate <sup>1</sup> (50Hz / 60Hz) BV	15 L/min @ 1.8 Bar - 15 L/min @ 2.9 Bar 9 L/min @ 5 Bar - 10.5 L/min @ 5 Bar			15 L/min @ 1.8 Bar - 15 L/min @ 2.9 Bar 14.4 L/min @ 5 Bar - 17.4 L/min @ 5 Bar			15 L/min @ 1.8 Bar - 15 L/min @ 2.9 Bar 14.4 L/min @ 5 Bar - 17.4 L/min @ 5 Bar		
Maximum available pressure BT Maximum available pressure BV	5 bar 6.5 bar			3.5 bar 6.5 Bar			5 bar 6.5 bar		
Refrigerant	R 513A			R 513A			R 513A		
STORAGE									
Temperature (w/o coolant)	-25°C to 70°C			-25°C to 70°C			-25°C to 70°C		
Humidity	5% to 95%, non-condensing			5% to 95%, non-condensing			5% to 95%, non-condensing		
OPERATION									
Coolant	Water or Water/Glycol			Water or Water/Glycol			Water or Water/Glycol		
Temperature <sup>2</sup>	15°C to 40°C			15°C to 40°C			15°C to 40°C		
Relative Humidity	30% to 80%			30% to 80%			30% to 80%		
Altitude	<2,000 meters			<2,000 meters			<2,000 meters		
INPUT									
Voltage	230 VAC			230 VAC			230 VAC		
Frequency	50/60 Hz			50/60 Hz			50/60 Hz		
PHYSICAL									
Dimensions (W x D x H)	56.3 x 48.2 x 69.9 cm			48.2 x 56.3 x 69.9			56.3 x 57.9 x 81.8		
Weight (w/o coolant) BT / BV	51 / 58 kg			56 / 63 kg			67 / 74 kg		
Coolant Capacity	5 L			5 L			5 L		
Couplings	1/2" NPT			1/2" NPT			1/2" NPT		

1. Nominal capacity rating is given at 20°C ambient temperature, sea level, and 60Hz operation.  
2. For ambient conditions outside this range, please contact Tark Thermal Solutions

PERFORMANCE		EFC2400	
Cooling capacity <sup>1</sup>	10°C	20°C	30°C
	2.2kW	2.35kW	2.5kW
Setpoint Range	-10°C to 40°C		
Temperature Stability	±0.1°C		
Nom. Flow Rate <sup>1</sup> (50Hz / 60Hz)	12 L/min @ 1.4 Bar - 12 L/min @ 2.6 Bar		
Maximum available pressure	3.9 Bar		
Refrigerant	R 290		
STORAGE			
Temperature (w/o coolant)	-20°C to 70°C		
Humidity	5% to 95%, non-condensing		
OPERATION			
Coolant	Water or Water/Glycol		
Temperature <sup>2</sup>	10°C to 40°C		
Relative Humidity	30% to 80%		
Altitude	<2,000 meters		
INPUT			
Voltage	230 VAC		
Frequency	50/60 Hz		
PHYSICAL			
Dimensions (W x D x H)	49.8 x 52.9 x 74.2 cm		
Weight	54.5 kg		
Coolant Capacity	5 L		
Couplings	1/2" NPT		







## Compressor-Based Chillers

- High performance variable speed motors provide **lower noise and 50% reduced power consumption** compared to previous versions.
- **Half the Global Warming Potential** compared to traditional HFC refrigerants.
- Optical fluid level sensors **improves reliability** compared to mechanical fluid switches
- The optional "hot swappable" 5-micron water filter **maximizes uptime**
- **Intuitive LCD** touchscreen display

## Thermoelectric-Based Chillers

- Solid-state Thermoelectrics offer **high reliability with minimal maintenance**
- Thermoelectrics deliver **high temperature stability** at 0.05°C
- **Portable** and **compact form factor**
- Premium components result in **low noise and vibration**
- **Zero Global Warming Potential** as no harmful refrigerants are being used
- Centrifugal pump offers **low pulsation** for cooling sensitive optoelectronics
- **Intuitive LCD** touchscreen display



## Model Numbering

EXAMPLE: NRC2400-A1-20-ST1

Basic Model No	Cooling Engine	Electrical Configuration	Pump Options
Compressor-based chillers			
NRC1200 NRC2400 NRC5000	A1 Air Cooled/ R513A	10 <sup>1</sup> 100-120V~, 1ph, 50/60 Hz 20 220-230V~, 1ph, 50/60Hz	ST1 Stainless, Turbine Pump
VRC1200 VRC2400 VRC4500	A1 Air Cooled/ R513A	20 230V~, 1ph, 50/60Hz	BT1 Brass, Turbine Pump BV1 Rotary, Vane Pump BV2 Rotary, Vane Pump
Natural refrigerant compressor-based chillers			
EFC2400	A1 Air Cooled/ R290	20 230V~, 1ph, 50/60Hz	BT1 Brass, Turbine Pump
Thermoelectric-based chillers			
NRC400	T0 Air Cooled/ Thermoelectric	00 115-230V~, 2.17-4.35 A, 1ph, 50/60Hz	PC2 Plastic, Centrifugal Pump

## About Tark Thermal Solutions

Tark Thermal Solutions designs, develops and manufactures thermal management solutions for demanding applications across global medical, industrial, transportation and telecommunications markets.

We manufacture one of the most diverse product portfolios in the industry ranging from active thermoelectric coolers and assemblies to temperature controllers and liquid cooling systems.

With unmatched thermal management expertise, our engineers use advanced thermal modeling and management techniques to solve complex heat and temperature control problems. We have more than 50 years of experience in the design, manufacture and servicing of thermal management solutions with millions of installations in operation today.

**Contact us** for a solution to your next thermal management challenge.

**Learn more by visiting** [www.tark-solutions.com](http://www.tark-solutions.com)



### TTS-BRO-PERFORMANCE-CHILLER-PLATFORM

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