



ULTRA-LOW TEMPERATURE RECIRCULATING CHILLER

Ultra-low Temperature Recirculating Chiller provides a reliable cold source for external devices. It is ideal for applications in the pharmaceutical, chemical, biological, and advanced materials industries. Common uses include temperature control for reactors, material testing, and simulating temperature changes during various processes.

APPLICATIONS

The Torontech Ultra-low Temperature Recirculating Chiller is engineered to provide a powerful and stable source of cryogenic cooling for the most demanding scientific and industrial processes. By achieving and maintaining temperatures down to -100°C , it enables precise thermal control for applications that are unachievable with standard refrigeration, making it a critical tool for advanced research and specialized manufacturing.

This extreme cooling capability is indispensable for innovation and process control in:

- **Pharmaceutical & Chemical Synthesis:** For controlling highly exothermic or temperature-sensitive reactions in jacketed reactors, enabling the synthesis of complex molecules and specialty chemicals that require cryogenic conditions to maximize yield and purity.
- **Materials Science & Aerospace:** To perform material characterization and stress testing at extreme low temperatures, simulating the cryogenic conditions experienced by materials used in space exploration, satellites, and superconducting applications.
- **Biotechnology & Life Sciences:** For the rapid freeze-thaw of biological samples, cryopreservation of cells and tissues, and for specialized processes like lyophilization (freeze-drying) where precise, ultra-low temperature control is essential.
- **Semiconductor & Electronics Testing:** To perform reliability and performance testing of electronic components and sensors at cryogenic temperatures, simulating the extreme operational environments of high-altitude and space-based systems.

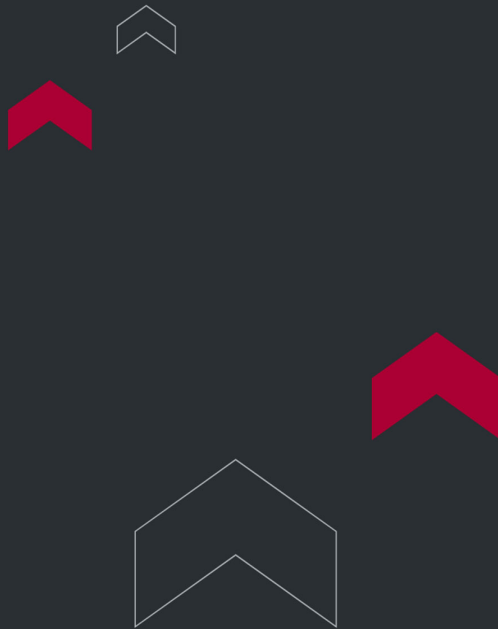
FEATURES

- **Fully Closed Circulation System:** Minimizes evaporation and degradation of heat transfer fluids.
- **Advanced Protection Functions:** Includes ultra-high pressure protection, leakage protection, compressor delayed start, thermal overload, overcurrent, and phase sequence protections.
- **Extreme Cooling Capability:** Designed for use with reactors, capable of cooling reactor materials to -70°C, -80°C, or even -100°C.
- **Overflow Protection:** Features an overflow design that automatically discharges excess liquid to prevent overfilling.

TECHNICAL SPECIFICATIONS

Model		LT-20-80
Temperature Range		-80~40°C
Temperature stability		±2°C
Cooling method		Air cooling
Cooling capacity	-40°C	2kW
	-60°C	1.4kW
	-80°C	0.45kW
Refrigerant		R404A R23
Rated power of the pump		1bar
Rated flow rate of the pump		30L/min
Outer circulation interface size		R _c 1/2

Model	LT-20-80
Reservoir capacity	10L
Dimensions	645W*1060D*1320H mm
Net weight	235kg
Protection grade	IP20
Voltage	3~, 380V, 50Hz
Overall power	4.9kW



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