

Cryogen-free

Cryogenic cold trap cryostats <5 K to 500 K

Lake Shore offers cryogenic cold traps (CCTs) that use mechanical coolers. These traps are primarily used in the adsorption of noble gases, including helium, neon, argon, krypton, and xenon. CCTs aid in the extraction of such gases from geological materials collected from volcanic hot springs to get insight into the planetary evolution of the Earth. They are also used to adsorb various oxygen isotopes from meteorites and polar ice caps, and ocean island olivines.

Key features

<5 K to 500 K

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Featured components

Choice of cryocooler to match performance and cooling requirements

Integrated control heater and calibrated control sensor



Specifications

		CCS-TRAP	CCS-TRAP-H
Minimum temperature options ¹	204N	<8 K	<9 K
	204	<9 K	<10 K
Maximum temperature		325 K	500 K ²
Typical temperature stability ³		±50 mK	
Cold head location		Bottom	
Cooldown time		1 h to 1.5 h	
Optical		✗	
Height (approximate)		91.4 cm (36 in)	96.5 cm (38 in)
Weight, not including flexlines or compressor (approximate)		19.1 kg (42 lb)	
Recommended maintenance		13,000 h	

Cold trap designs can be customized to fit the application. Designs can include double cold traps with independent temperature control and either one or two cold heads, flow-through designs and water traps. Special ice core traps can also be manufactured to cool user specimen tubes. While these cold traps are primarily designed for the trapping and separation of noble gases, they may also be suitable for other gases. Contact us for more information.



¹Temperatures to <5 K possible; contact us

²Nude traps only; charcoal traps are limited to 450 K

³Measured with temperature controller

Facility requirements

CCS-	Cold head	Recommended		Water-cooled				Air-cooled			
		Compressor maintenance interval	Cold head maintenance interval	60 Hz power requirements	50 Hz power requirements	Cooling water requirements	Compressor size	60 Hz power requirements	50 Hz power requirements	Cooling air requirements	Compressor size
TRAP	-204 -204N	30,000 h	13,000 h	208 to 230 VAC, 1-phase, 2.6 kW	200, 220 to 240 VAC, 1-phase, 2.25 to 2.4 kW	1.9 to 3.8 L/ min at 4 to 27 °C	444 mm × 453 mm × 617 mm high; 73 kg	208 to 230 VAC, 1-phase, 2.6 kW	200, 220 to 240 VAC, 1-phase, 2.25 to 2.4 kW	17.6 m ³ /min (60 Hz) or 14.7 m ³ /min (50 Hz)	444 mm × 453 mm × 876 mm high; 103 kg

Complete your system

Temperature control

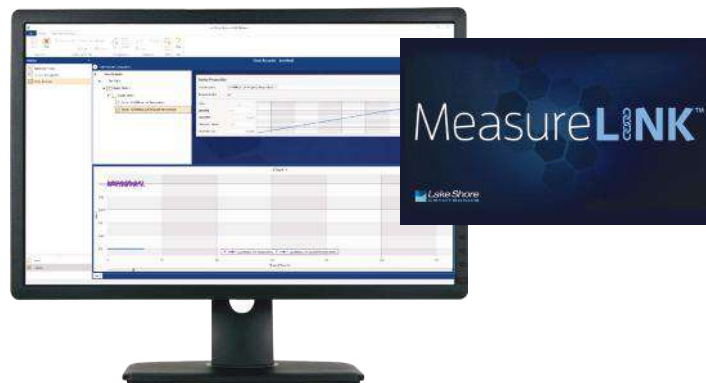
Included



Every cryostat includes a Lake Shore temperature controller and calibrated sensor.

MeasureLINK control software

Optional add-on



MeasureLINK software enables a wide range of capabilities including charting and logging, system monitoring with a cryostat-specific process view, and controlling Lake Shore equipment as well as third-party instrumentation. No programming required—drag-and-drop to create temperature sweeps, access measurements, and see real-time internal cryostat temperatures in process view.



Configure your cryostat

1. Select cryostat

CCS-TRAP	Noble gas trapping
CCS-TRAP-H	High temperature, noble gas trapping
Custom	Consult

2. Select cryostat configurations

CONSULT	Charcoal trap (best for trapping He, Ne, and Ar)
CONSULT	Nude trap (best for trapping Kr and Xe)

Cold head

204N	<8 K (CCS-TRAP); <9 K (CCS-TRAP-H)
204	<9 K (CCS-TRAP); <10 K (CCS-TRAP-H)

Compressor type

CONSULT	Substitute air-cooled compressor in place of standard water-cooled
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3. Select pump (optional)

Each cryostat requires a pump to operate. If you do not have an existing pump, select one of the pumps below.

TS-85-D	Turbopumping station
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4. Select optional system configurations

Measurement instrumentation

Cryostats come standard with one temperature controller.

336	Model 336 temperature controller
335	Model 335 temperature controller

5. Select optional control software

ML-MCS	MeasureLINK-MCS software with scripting development license; includes lifetime activation for version purchased and full MeasureLINK capability on up to 5 computers with Lake Shore instrument drivers, chart recorder functionality, and drag-and-drop measurement sequences; some application packs sold separately
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