



Cryogen-free

Large sample space cryostats <4 K to 300 K

These Lake Shore closed-cycle refrigerator cryostats cool a large cold plate in vacuum. Cold plates are available from 102 mm (4 in) to 305 mm (12 in) in diameter. RF and DC feedthroughs and wiring are available, as well as custom optical designs.

Key features

Standard 200 mm (8 in) diameter cold plate
(other sizes available)

<4 K to 300 K

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Sample in vacuum

Split design for easy access to the sample area

Featured components

DC and high-density RF feedthrough options, with thermally anchored wiring installed to the cold plate

Choice of cryocooler to match performance and cooling requirements

Integrated control heater and calibrated control sensor

Controlled radiation shield temperature for fast warmup

Includes the new Lake Shore model 346 temperature controller as standard, with 100 W output to both cryostat heaters and the capacity for reading multiple temperature sensors

Cryostat models

CCS-CP non-optical



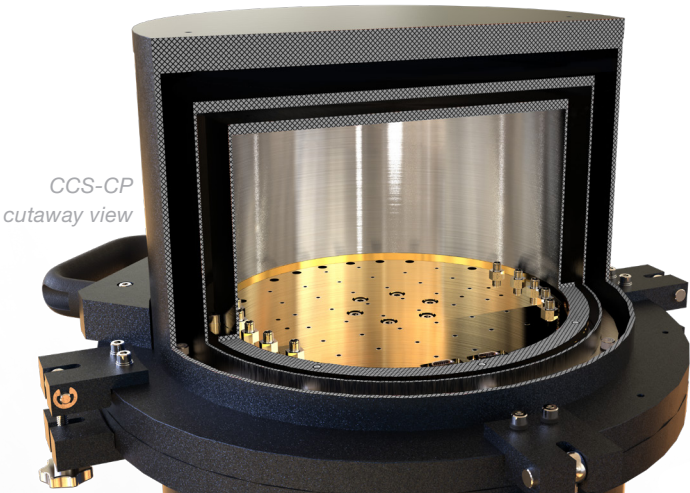
Specifications

		CCS-CP
Minimum temperature options	408	<4 K
	415	
	418	
Maximum temperature	300 K	
Typical temperature stability ¹	±50 mK	
Cold head location	Bottom	
Optical	✗ (Optional top or side windows)	
Cold plate size	200 mm (8 in) diameter standard; other sizes up to 300 mm (12 in) available	
Shielding	Cooled radiation shields on first stage and cold plate	
Recommended maintenance	13,000 h	

¹ Measured with temperature controller

Wiring options

- DC** Up to 100 PhBr wires (twisted pairs), thermally anchored at the first stage and terminated in D-sub connectors at the cold plate.
- RF** Standard SMA or high-density feedthroughs with 0 dB attenuators at the first stage and SMA connectors at the cold plate.
- 40 GHz and 67 GHz options also available.



Facility requirements

		Recommended		Water-cooled				Air-cooled			
CCS-	Cold head	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
CP	-408 -415 -418	30,000 h	10,000 h	200 VAC, 3-phase, 7.5 to 7.8 kW or 480 VAC, 3-phase, 7.5 to 7.8 kW	200 VAC, 3-phase, 6.6 to 6.9 kW or 380 to 415 VAC, 3-phase, 6.6 to 6.9 kW	6 to 9 L/min at 5 to 25 °C	443 mm × 493 mm × 532 mm high; 100 kg	200 VAC, 3-phase, 7.5 to 8.3 kW steady state or 460/480 VAC, 3-phase, 7.5 to 8.3 kW	200 VAC, 3-phase, 6.5 to 7.2 kW steady state or 380/400/415 VAC, 3-phase, 6.5 to 7.2 kW	23 m³/min	450 mm × 485 mm × 925 mm high; 155 kg

Complete your setup

Temperature control

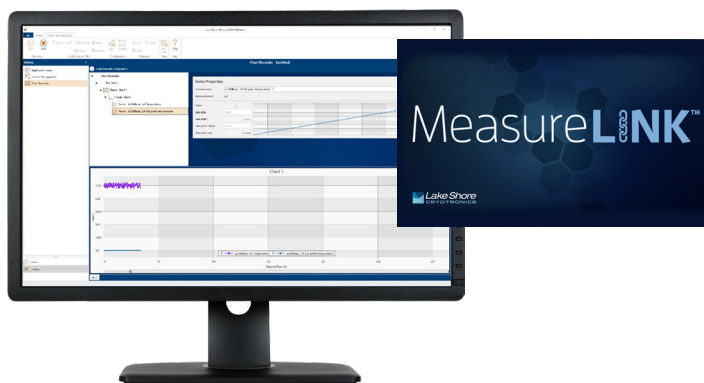
Included



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.

Source + measure + lock-in

Optional add-on



The Lake Shore M81-SSM provides highly synchronized DC, 100 kHz AC, and mixed DC + AC sourcing and measuring—including both voltage and current lock-in measurement capabilities—for low-temperature material research performed in your cryostat. It supports up to three remote-mountable source and three measure modules per a single M81-SSM-6 instrument and, owing to its modularity, allows signal and source amplifiers to be located as close as possible to the sample being characterized. This minimizes the signal wiring to the sample, reduces noise, and increases measurement sensitivity.

For low-vibration applications

Pair an ST-500-LGV
with an Infinite Helium





Configure your cryostat

1. Select cryostat

CCS-CP	Non-optical, vacuum, 200 mm (8 in) cold plate large sample space
CUSTOM	Custom configurations are available to fit your experiment needs—contact Sales for details

2. Select cryostat wiring

DC — specify number required (up to 100).
RF — specify number and frequency required:
high-density or standard configuration.

3. Select cryostat configurations

Windows

For optical variants, windows are available in multiple thicknesses and materials. Custom options include four side-looking windows or one top window. Cooled radiation shield windows also included.

Compressor type

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

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

TSJ-85-D	Turbopumping station with scroll backing pump
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5. Select optional setup configurations

Measurement instrumentation

Cryostats come standard with one temperature controller.

M81-SSM electronic synchronous source measure system

Contact us for cables and adapters for M81-SSM/cryostat integration.

M81-SSM-X	M81-SSM instrument with X = 2, 4, or 6 channels; half the channels are dedicated to sourcing and the other to measurement; see modules below
VM-10	AC/DC voltage measure module + lock-in
BCS-10	AC/DC balanced current source module
CM-10	AC/DC current measure module + lock-in
VS-10	AC/DC voltage source module
SMU-10	Source measure unit module

6. 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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7. Select additional accessories

Cryostats come standard with two installed temperature sensors. Other sensors are available—contact us.

CX-1050-CU-HT-1.4M	Cernox® magnetic field independent, calibrated
DT-670-CU-HT-1.4H	Silicon diode, calibrated

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