

Closed-cycle System Cryostat Quick View

CCS-100 <4 K to 325 K



General purpose cryostat

CCS-XG <4 K to 325 K



Low-vibration cryostat

CCS-800 <4.5 K to 300 K



Mössbauer spectroscopy cryostat

■ = Sample-in-vacuum
■ = Sample-in-exchange-gas

CCS-300S <4 K to 325 K



Subcompact, optical cryostat

CCS-XG-UHV <4 K to 325 K



Low-vibration, ultra-high vacuum cryostat

CCS-900 <2 K to 800 K



Optical cryostat

CCS-300ST <4 K to 325 K



Subcompact, non-optical cryostat (alternative mounting shown)

CCS-TRAP <8 K to 450 K



Noble gas trapping cryostat

CCS-900T <2 K to 800 K



Non-optical cryostat

CCS-400 <4 K to 500 K

Optical, high-temperature (500 K) cryostat

CCS-400H <5 K to 800 K

Optical, high-temperature (800 K) cryostat

SHI-950-LT 1.5 K to 800 K

Low-temperature optical cryostat

SHI-950T-LT 1.5 K to 800 K



Low-temperature non-optical cryostat

[illegible]

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graph TD
    Mössbauer --> Optoelectronics
    Optoelectronics --> Magnetotransport
    Magnetotransport --> Noble_gas_trapping[Noble gas trapping]
    Noble_gas_trapping --> Electrical_transport[Electrical transport]
    Electrical_transport --> Quantum_computing[Quantum computing]
  
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CCS-100	Vacuum	✓						✓		✓
CCS-300S		✓						✓	✓	✓
CCS-300ST		✓							✓	✓
CCS-400		✓		✓				✓		✓
CCS-400H		✓		✓				✓		✓
CCS-XG		✓				✓		✓		✓
CCS-XG-UHV		✓				✓	✓			✓
CCS-TRAP				✓						✓
CCS-800	Exchange gas	✓		✓		✓		✓		
CCS-900		✓		✓	✓	✓		✓		✓
CCS-900T		✓		✓	✓	✓				✓
SHI-950-LT		✓		✓	✓	✓		✓		✓
SHI-950T-LT		✓		✓	✓	✓				✓

Mössbauer spectroscopy studies low energy gamma rays emitted and absorbed to understand the properties of a solid materials nuclear structure. A Mössbauer spectrometer attaches to the cryostat to excite and take measurements of the material being studied.

Magnetotransport studies materials in the presence of a magnetic field. The transport properties of charge carriers, such as their mobility and concentration, can be investigated using techniques such as magnetoresistance and Hall measurements.

Electrical transport is a technique used to study the electrical properties of materials. This can include measurements of electrical resistance, conductivity, and other properties that are important for understanding the behavior of materials in various electronic and magnetic devices.

Some approaches to **quantum computing** require cryogenic temperatures. A UHV sample environment is needed for ion trap devices, as is extremely low vibration. With other approaches, fast sample exchange is useful for pre-screening devices.