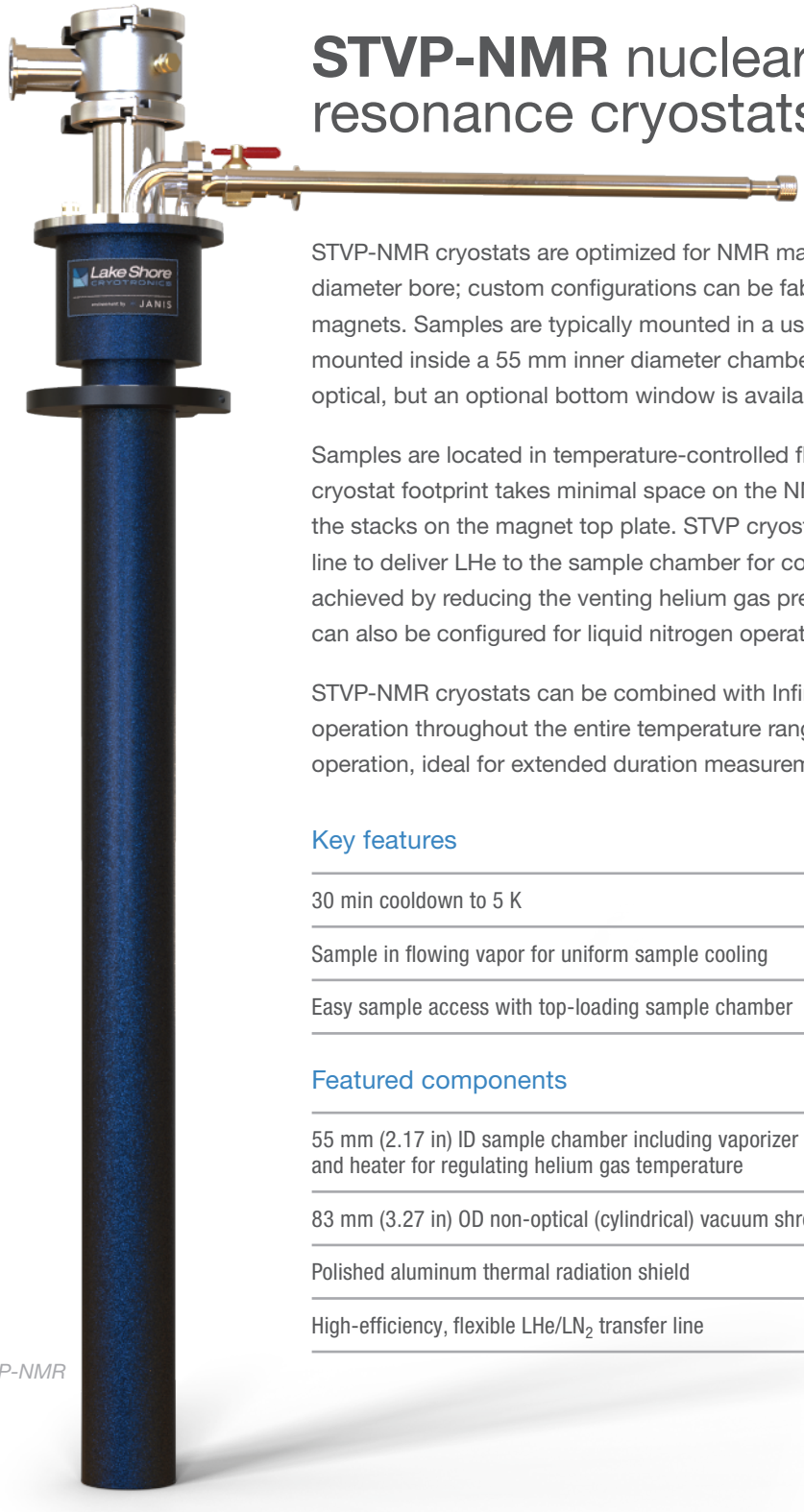
Lake Shore CRYOTRONICS

environment by JANIS

SuperTran-VP Cryostats

STVP-NMR nuclear magnetic resonance cryostats <2 K to 325 K



STVP-NMR

STVP-NMR cryostats are optimized for NMR magnets with an 89 mm (3.5 in) diameter bore; custom configurations can be fabricated for larger or smaller magnets. Samples are typically mounted in a user-supplied NMR insert, and mounted inside a 55 mm inner diameter chamber. These cryostats are typically non-optical, but an optional bottom window is available upon request.

Samples are located in temperature-controlled flowing helium vapor. The small cryostat footprint takes minimal space on the NMR magnet, easily fitting between the stacks on the magnet top plate. STVP cryostats use a high-efficiency transfer line to deliver LHe to the sample chamber for cooling. Temperatures below 4.2 K are achieved by reducing the venting helium gas pressure using a vacuum pump. They can also be configured for liquid nitrogen operation.

STVP-NMR cryostats can be combined with Infinite Helium for cryogen-free operation throughout the entire temperature range. This enables unattended cryostat operation, ideal for extended duration measurements.

Key features

- 30 min cooldown to 5 K
- Sample in flowing vapor for uniform sample cooling
- Easy sample access with top-loading sample chamber

Featured components

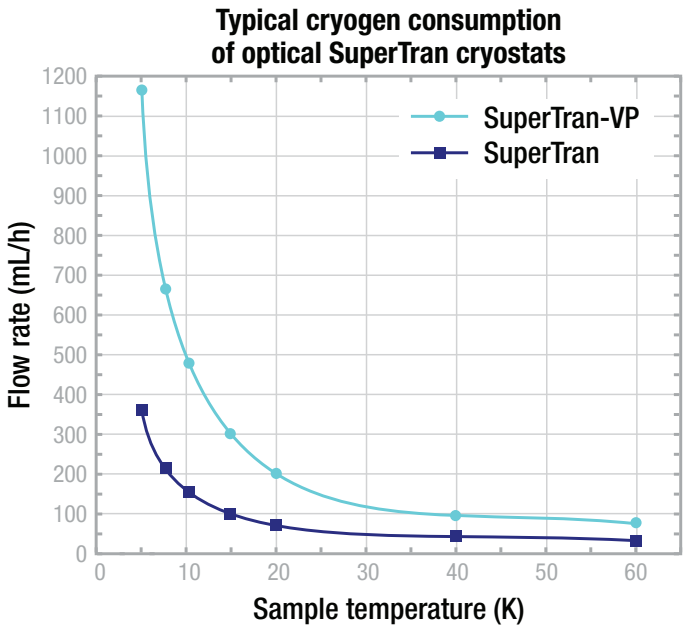
- 55 mm (2.17 in) ID sample chamber including vaporizer (heat exchanger) with control thermometer and heater for regulating helium gas temperature
- 83 mm (3.27 in) OD non-optical (cylindrical) vacuum shroud to fit within many NMR magnets
- Polished aluminum thermal radiation shield
- High-efficiency, flexible LHe/LN_2 transfer line

Specifications

	STVP-NMR
Temperature range	<2 K (1.5 K in single-shot mode) to 325 K (420 K optional)
Typical temperature stability[1]	±50 mK
Orientation[2]	Vertical for operation <4.5 K
Cooldown time (LHe to 5 K)	30 min
Cryogen consumption (LHe room temp to 4.2 K)	0.5 L
Cryogen consumption (LHe at 5 K)	1.4 L/h
Height (approximate)	Customer-specified to fit magnet
Inner space (at sample region)	55 mm (2.16 in)
Weight (excluding transfer line, approximate)	7 kg (15.4 lb)
Shipping weight (cryostat + line, approximate)	79 kg (174 lb)
Shipping dimensions (cryostat + line, approximate)	1905 × 990.6 × 431.8 mm (75 × 39 × 17 in)

[1] Measured with temperature controller

[2] Cryogen consumption may be higher during non-vertical operation



Complete your setup

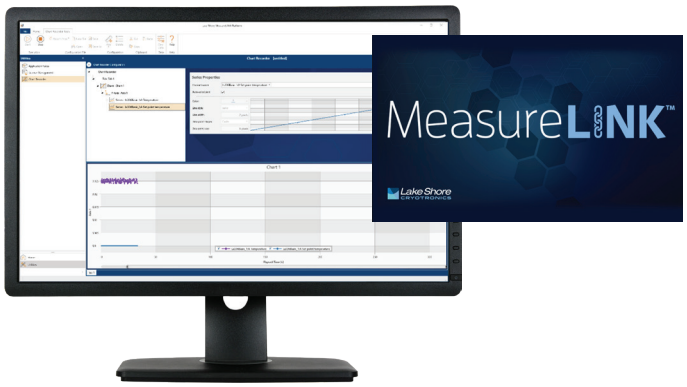
Temperature control

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.

Cryogen-free operation

Optional add-on

Cryostats can be combined with Infinite Helium for fully cryogen-free operation throughout the entire temperature range. This enables unattended cryostat operation, ideal for extended duration measurements.

Configure your cryostat

1. Select cryostat variant

STVP-NMR	Optical, <2 K to 325 K, calibrated Cernox®
CUSTOM	Custom configurations are available to fit your experiment needs—contact Sales for details

2. Select cryostat configurations

Optional bottom window

See our cryostat window selection guide for additional information.

WR-STD-FS	Fused silica
WR-UV-FS	UV-grade fused silica
WR-STD-SAPH	Sapphire
WR-STD-ZNSE	ZnSe

3. Select pump (optional)

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

10RVP	General-purpose mechanical pumping station
10DDP	General-purpose mechanical pumping station with LN_2 cold trap and isolation valve
TS-85-D	Turbopumping station

4. Select cryostat wiring

We offer a variety of both unwired and wired feedthroughs to complete your measurement setup. Please refer to the cryostat feedthroughs and wiring guide for more information.

5. Select optional setup configurations

Cryogen-free operation

INFHE-20	Infinite Helium recirculating cooler with base temperature down to <7 K
INFHE-15	Infinite Helium recirculating cooler with base temperature down to <8 K
RGC4-10	RGC Series recirculating cooler with base temperature down to <10 K

Measurement instrumentation

Cryostats come standard with one temperature controller.

336	Model 336 temperature controller
335	Model 335 temperature controller
325	Model 325 temperature controller

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

7. Select additional accessories

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

CX-1050-CU-HT-1.4M	Cernox® magnetic field independent, calibrated
CF-100	LHe storage Dewar
LN-50	LN_2 storage Dewar configured for use with SuperTran cryostats

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