

LN2 COOLED 1 TESLA HTS SHORT SOLENOID

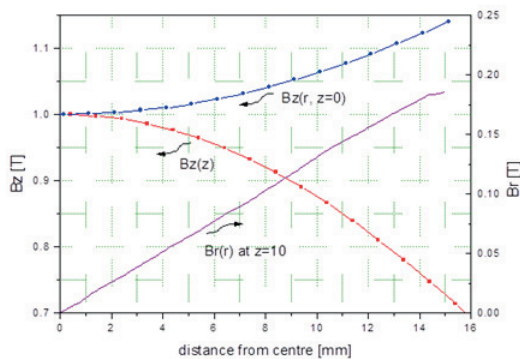


A COST-EFFECTIVE HTS MAGNET OFFERING UNRIVALLED SIMPLICITY AND LOW-VIBRATION OPERATION



Engineered for optical surface analysis and materials science, the LN series eliminates technical complexity while providing exceptional optical access and rapid-turnaround performance for a wide range of laboratory environments. This is an alternative to our cryogen-free mechanical cryocooler systems, using a liquid nitrogen dewar for cooling power.

- **Ultra-Low Vibration Operation:** Uses liquid nitrogen cooling instead of mechanical cryocoolers to ensure a stable environment for sensitive microscopy and high-resolution imaging.
- **Superior Optical & Geometric Access:** Features a low-profile cryostat with large room-temperature bores (38 mm or 80 mm) and wide viewing angles for integrated laser and microscope setups.
- **High Experimental Throughput:** Achieve peak performance faster with a typical cooldown time of under 5 hours and rapid field ramping from zero to full field in less than 60 seconds.
- **True Multi-Orientation Design:** The robust, portable system (as light as 15 kg) can be operated vertically, horizontally, or at a tilted angle to suit specific laboratory configurations.
- **Efficient Turnkey Solution:** A complete, low-maintenance package featuring low LN2 consumption (<0.5 L/hr), integrated vacuum systems, and active magnet protection electronics.



Field profiles for LN40 model

Generated fields are suited to:

- MOKE (Magneto-optic Kerr effect)
- Magnetic domain imaging
- Brillouin light scattering
- Magnetic circular dichroism
- Hysteresis loop plotting
- Scanning laser microscopy
- Hall effect measurements
- Variable temperature optical cryostat

1 TESLA
PEAK FIELD

<15 KG MASS
LN40 MODEL

<5 HOUR
FAST COOL-DOWN



HTS-110's global client base includes tier-one data storage companies; manufacturers; universities; and national research institutes including ALBA, ANL, ANSTO, BNL, CAS, FZJ, HZB, ILL, IMRE, JAXA, LNLS, MSL (NZ), NIST, NUS (SSLS), PAL, RAL, RTRI, TATA, TPS, and TUM (FRMII).

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MODEL SPECIFICATIONS	LN40	LN80
Bore size (mm)	38	80
Peak field (T)	1	1
Height (mm)	57	100
Cryostat OD (mm)	208	250
Max. operating current (A)	65	55
Magnet mass (kg)	<15	<35

SITE AND OPERATING REQUIREMENTS

- **Cryogenics.** Requires standard, unpressurised liquid nitrogen. Typical system cooldown time is under 5 hours.
- **Utilities.** Standard single-phase power outlet for the power supply and monitoring electronics.
- **Maintenance.** Minimal maintenance required. Periodic vacuum system checks are recommended.

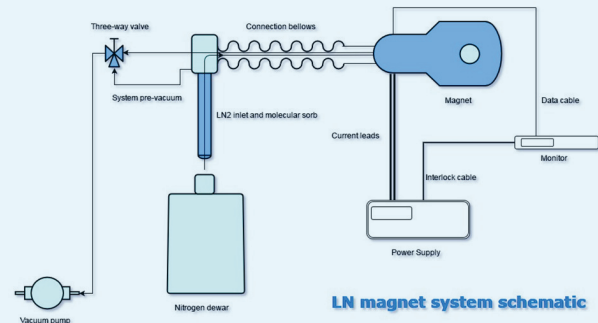


SYSTEM COMPONENTS

- **Magnet Sub-System.** Compact HTS solenoid within an integrated, low-profile vacuum cryostat
- **LN2 Cooling System.** Includes flexible transfer hoses and a standard unpressurised liquid nitrogen dewar
- **Power Supply.** Unipolar power supply included as standard (Bipolar and high-stability configurations available as options)
- **Integrated Pump.** Vacuum pump included for LN2 circulation and cryostat maintenance
- **Magnet Monitor.** Dedicated unit with integrated sensors for active magnet protection
- **Warranty & Support.** 1-year standard warranty on all magnet sub-systems

POTENTIAL ADD-ONS

- **Customisable range of user-changeable poles for specialist applications, with the option of adjustable pole gaps**
- Closed loop field control
- Unipolar supplies available in standard and high stability configurations
- Bipolar power supply
- Extended service agreements



LN magnet system schematic

ENQUIRY AND DELIVERY PROCESS

Initial Consultation or Feasibility Study

Discuss your needs to confirm if a turnkey, customised or bespoke magnet is suitable.

Application and Options Assessment

Verify specifications, supply a quote with lead time, and reserve stock or capacity.

Production and Testing

We build, test, and QC the system to rigorous standards.

Delivery and Integration

On-site installation and operational training, plus lifetime support.



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