

# 300 MHz HTS-NMR SPECTROMETER MAGNET



MODEL: **300M-SP-NMR**

STATUS: **TURNKEY SYSTEM IN DEVELOPMENT**

DELIVERY: **MAGNET ONLY**



**COMPACT BORE**  
TURNKEY SYSTEM ETA 2026

Building on our legacy of high-resolution dry NMR, HTS-110 proudly introduces an all-new single-phase 300 MHz magnet that's helium-free, energy-efficient, and purposefully designed to be more compact than ever before. Engineered with 2nd-generation HTS coils this system makes high-resolution NMR more accessible—no complex infrastructure required.

- **Compact Footprint and Small Bore.** Space-saving design fits in standard labs or fume hoods; unique bore size optimizes efficiency
- **Single-Phase Power.** No need for 3-phase electricity—run on a simple outlet or even a UPS backup
- **High-Temperature Superconductor.** Enhanced wire technology reduces cooling demands and improves efficiency
- **User-Driven R&D.** We welcome feedback on the smaller bore design and other usability features —help shape our final production model

This compact HTS system is designed for

- Pharmaceutical and Chemical R&D: Reaction monitoring, structural analysis, real-time process control
- Academic and Teaching Labs: Simplify training and daily operation
- Mobile or Remote Setups: Compact design paired with vibration tolerance opens up new installation possibilities (e.g., cart-based usage, fume hood, pilot plant)
- Industrial QA/QC: In-line or near-line NMR detection without the overhead of cryogenes

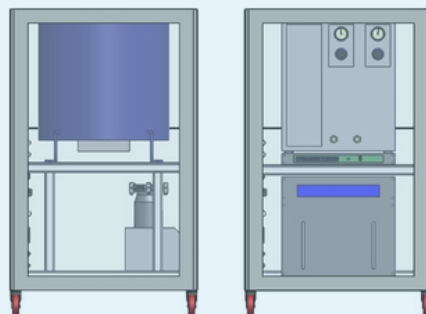
**~7.05 TESLA**  
FOR 300 MHz <sup>1</sup>H RESONANCE

**SINGLE PHASE**  
~ 1.2 KW POWER USAGE

**CRYOGEN-FREE**  
NO LIQUID HELIUM

## 1ST GENERATION HTS

400 MHz High-Resolution Spectroscopy



~1,315mm x ~1,800mm

## 2ND GENERATION HTS

300 MHz High-Resolution Spectroscopy



~456mm x ~774mm



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, LNL, MSL (NZ), NIST, NUS (SLS), PAL, RAL, RTRI, TATA, TPS, and TUM (FRMII).

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MODEL: **300M-SP-NMR**

INSTRUMENT PARTNER OR **BESPOKE HTS SYSTEMS**

## PRELIMINARY SPECIFICATIONS

Operating Frequency	300 MHz ( <sup>1</sup> H)
Magnet Type	2nd-generation HTS coils, fully cryogen-free
Field Strength	~7.05 T
<b>Bore Diameter</b>	<b>Non-standard, compact bore</b> (Instrument integration R&D underway)
Fringe Field	5 Gauss line within instrument enclosure
Power Requirements	Cryocooler < 1.2 kW (single-phase)
Dimensions (l,w,h)	~774 x 456 x 818 mm (floor standing)
Mass	~180 kg

## SITE AND OPERATING ENVIRONMENT

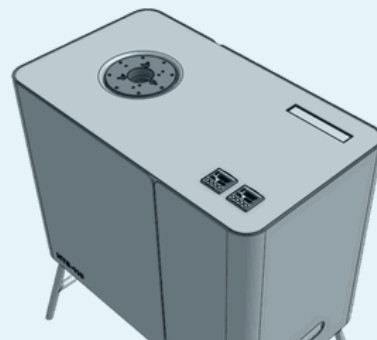
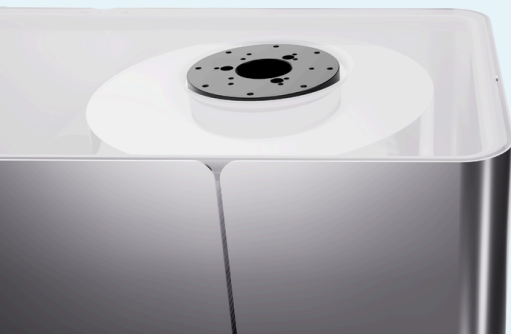
- Helium-Free: no deliveries, dewars, transfers, or venting required
- Power: single-phase AC <1.2 kW (suitable for standard outlets or a UPS)
- Cooling: onboard sealed cryocooler with minimal servicing—no cryogen training required
- Optional water chiller for the cryocooler if no facility water line is available
- Installation: sits on the floor or can be adapted for caster-based mobility, no special vibration isolation needed
- Safety: low fringe field due to integrated iron yoke; final anchoring method or seismic considerations may apply

## SYSTEM COMPONENTS

- **Magnet Sub-System.** Fully integrated HTS magnet, self-shielded with an iron yoke and vacuum jacket, plus the miniature cryocooler assembly
- **Power Supply.** High-stability power supply designed for ramping, field maintenance, and integrated with quench protection
- **Monitoring Electronics.** Monitor real-time coil temperatures and voltages; active protection circuitry is built in to safeguard the magnet
- **Warranty & Support.** 1-year standard warranty on all magnet sub-systems

## POTENTIAL ADD-ONS

- Mobile trolley
- Vacuum pump
- Internal water chiller
- Sample handling and automation
- NMR console and software
- Remote operation and web-based monitoring
- Extended service agreements



## ENQUIRY AND DELIVERY PROCESS: **BESPOKE HTS SYSTEM**

**Initial Discussion.** We gather key specs to frame your project's scope and performance goals.

**Feasibility Modeling.** Preliminary EM calculations, quench risk analysis, mechanical assessments and conductor recommendation.

**Detailed Design.** Finalise coil layout, design the cryostat, integrate quench electronics, and specify mechanical reinforcements for high-field stability.

**Manufacturing, Validation & Delivery.**

## **MAGNET PLATFORM READY**

INSTRUMENT PARTNERS | BESPOKE SYSTEMS

EST **\$200,000 - \$250,000 USD**  
INTEGRATIONS & OPTIONS DEPENDENT



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