

Cryogen-Free Magnet for Solid State NMR

600 MHz Wide RT Bore Magnet



NMR superconducting magnets deliver high magnetic field homogeneity over the sample volume and good enough temporal field stability. The NMR experiments are typically conducted at fixed field, in persistent mode. Our cryogen-free systems provide this environment, while eliminating the need for liquid cryogenics. The Cryogenic NMR magnets are very flexible compared to traditional systems. With a cryocooled NMR magnet, there is no consumption of liquid helium, so there is no need to have removable current leads to reduce the heat load to the system. This allows the user to set the field at any level up to the maximum rated field for long term operation. It also allows the magnetic field to be dynamically swept between zero to maximum field as required, making them the most versatile NMR magnets available commercially. The field can be changed to any value, from 0 up to the maximum and can be made stable for high resolution experiment, within an hour after the ramp.

Technical Specifications

54 or 89 wide RT bore systems

Model	CFM-600 MHz
Maximum central operating field at 4K	14.1 Tesla
Equivalent Maximum Proton frequency	600 MHz
Shimmed central homogeneity	1 ppm over 10 mm sphere HHLW
Cryo-shims	Z1, Z2, X, Y, C2, S2, ZX, ZY
Long-term drift rate	≤ 0.1 ppm/hr
Room temperature bore	54 or 89mm diameter
Field Sweep	0 T to 14.1 T
Typical initial cool-down to operating temperature	< 100 hrs
Actively Shielded	Yes

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Using Cryogenic 5 Tesla CFM and Vector Network Analyser (VNA)

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Key features

- » Top or bottom load probe
- » Fast field settling (within an hour)
- » Multifield option without compromising of resolution
- » No cryogenic experience required
- » Turn-key operation
- » Low cost of ownership
- » Minimal maintenance
- » Minimal quench hazards
- » Automatically controlled by Labview

