Agilent 800 MHz PremiumCOMPACT NMR Magnet

Step up in technology – step down in size

Data Sheet

Introduction

The Agilent 800 MHz PremiumCOMPACT NMR magnet draws on the latest superconducting wire technology to allow operation of the system at 4.2 Kelvin (K). Actively shielded 800 MHz magnets have historically operated at ~2 K, requiring constantly running vacuum pumps and a larger, more complicated cryostat to maintain system temperature. Agilent's 4.2 K system eliminates the need for pumps and their associated maintenance and monitoring requirements.

Key Benefits

- **Save laboratory space** – Because the 5 Gauss (G) fringe field extends to only 1.45 m (4.76 ft) radially, or 0.75 m (2.46 ft) from the outside of the cryostat, you have greater flexibility in positioning the magnet in your laboratory. The 5 G magnetic footprint is only 6.6 m^2 (71 ft^2).
- **Convenient** – The cryostat is significantly smaller since a second helium reservoir is not required for 4.2 K operation. The smaller, lighter magnet makes on-site commissioning easier, requires a smaller quantity of cryogens to install, and can be sited within a ceiling height of 3.54 m (11.61 ft).
- **Reduced operation costs** – The conventional cryostat design simplifies routine helium refills and reduces overall cryogen consumption. The helium refill interval is greater than 120 days.

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The Agilent 800 MHz NMR system consists of a highly homogeneous PremiumCOMPACT magnet (800 MHz ^{1}H, 18.8 Tesla), housed within a conventional low-loss helium cryostat with a nominal room-temperature bore of 54 mm.

The magnet features excellent fringe field characteristics, improved magnet shielding from external perturbations, and minimized ceiling height. These facilitate ease of system siting and improve operational safety.

System Includes

- Main magnet housed within a low-loss cryostat
- Set of anti-vibration legs
- Liquid helium and nitrogen level probes and readout unit
- Liquid helium transfer siphon and extension tube
- Braided liquid nitrogen transfer line
- Room temperature shim set
- Helium reservoir manostat

Technical Specifications

NMR frequency	800 MHz
Drift	8 Hz/hr
Operating temperature	4.2 K
Superconducting shim coils	Z^0, Z^1, Z^2, X, Y, ZX, ZY, XY, X^2-Y^2
Radial 5 G stray field from magnet center	145 cm/57.1 in
Axial 5 G stray field from magnet center	255 cm/100.4 in
Magnet radius (including flanges)	75 cm/29.5 in
Axial 5 G height above floor	390 cm/153.6 in
Axial 5 G depth below floor	120 cm/47.3 in
System weight, operational	4,000 kg/8,820 lb
Vibration isolation using pneumatic legs	Included as standard
Minimum ceiling height	379 cm/149.2 in
Minimum ceiling height (optional transfer)	354 cm/139.4 in
Liquid helium refill volume	260 L
Liquid helium hold time	120 days
Liquid nitrogen refill volume	215 L
Liquid nitrogen hold time	21 days

Ordering Information, Separate Sale

Description	Part number
Agilent PremiumCOMPACT NMR Magnet System, 800 MHz, 54 mm bore	0192152900

www.agilent.com

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