

Nuclear Magnetic Resonance Spectrometer



Make: Bruker

Model: AVANCE-III 400MHz FT-NMR Spectrometer

Key Specifications:

Magnet	Type: Superconducting magnet, actively shielded; Field Strength: 9.4 Tesla; Frequency: 400 MHz for ^1H ; Bore Size: 54 mm; Stability: Field drift ≤ 0.1 ppm/hour; Helium Holding Time: 9 months; Nitrogen Holding Time: >16 days.
FT Console	High-performance, digital control and acquisition system; directional connection with linear amplification and highly flexible acquisition for superior performance at high resolution.
Receiver/Digital Receiver Amplifier	High-bandwidth receiver capable of simultaneous detection of multiple nuclei, including ^1H , ^{13}C , ^{15}N , ^{19}F , and ^{31}P . Provides pulse shaping, quadrature detection, and high dynamic range for optimized experiments in liquid state NMR.
Pre-amplifier Unit	Low-noise GaAs design broadband preamplifier with standard filters for lock and high-resolution measurements, optimized for both proton and heteronuclear detection.
Gradient Accelerated Spectroscopy	Actively shielded Z-gradient system for generation of 30 Gauss/cm or better gradients. Meets gradient linearity and resolution specifications.
Broadband Probe	High-resolution broadband probe, capable of observing nuclei from ^{31}P to ^{15}N range, with automatic tuning and matching capability for enhanced sensitivity.
Variable Temperature	Variable temperature control for operation from -150°C to $+180^\circ\text{C}$ with high precision and stability, suitable for long-term measurements.
Automatic Sample Changer	Automatic sample changer with capacity for >24 sample tubes with 24 spinners.