

NMR Probe Specifications

Model	JEOL Resonance 5 mm 400 MHz broadband Z-gradient high resolution SuperCool NMR probe with open loop liquid nitrogen cooling, operating temperature <85K
Applicable Instrument	ECZ 400 MHz NMR systems.
Description	For other models, please contact JEOL Resonance for specifications. Broadband high resolution NMR probe for both direct and indirect detection fitted with an actively shielded Z-axis gradient for 5mm sample tubes on 400MHz standard bore magnets. The LF coil can be tuned to observe ^{31}P to ^{15}N , except ^9Be to ^{199}Hg . The HF coil is tuned to ^1H or ^{19}F §. The probe is fitted with a ^2H lock. The probe is compatible with the JEOL Autotune accessory unit (NM-61160ATZ). The probe includes one (1) variable temperature compatible sample spinner.

Specifications	Signal-to-Noise	
	^1H sensitivity	$\geq 1050:1$ 0.1% Ethyl Benzene†
		$\geq 915:1$ 0.1% Ethyl Benzene‡
	^{19}F sensitivity	$\geq 550:1$ 0.05% TFT‡
	^{13}C sensitivity	$\geq 410:1$ ASTM†
		$\geq 355:1$ ASTM‡
	^{31}P sensitivity	$\geq 120:1$ 0.0485M TPP‡
	^{15}N sensitivity	$\geq 50:1$ 90% Formamide w/o NOE‡
	Pulse Widths	
	^1H pulse width	$\leq 10 \mu\text{s}$ @ 30W
	^{99}F pulse width	$\leq 14 \mu\text{s}$ @ 30W
	^{13}C pulse width	$\leq 11 \mu\text{s}$ @ 90W
	^{31}P pulse width	$\leq 30 \mu\text{s}$ @ 90W
	^{15}N pulse width	$\leq 27 \mu\text{s}$ @ 150W
	Lineshape	
	^1H non-spin lineshape	$\leq 10/18 \text{ Hz}$ 1% chloroform (0.55%/0.11%)
	Resolution	
	^1H resolution (non-spin)	$\leq 0.8 \text{ Hz}$ 1% chloroform (FWHM)
	Z-gradient	
	The probe is fitted with an actively shielded single Z-axis gradient coil capable of 30G/cm with 10A current.	
	Variable Temperature	
	Variable temperature range is -40°C to +150°C	
	Cooling Requirements:	
	8 Liters/Day liquid Nitrogen Consumption with Fill-On-The-Fly	

† Thin wall NMR sample tube, 0.24mm

‡ Standard wall NMR sample tube, 0.38mm

§ The probe may have a ^{19}F background when observing ^{19}F .