

NMR Probe Specifications

Model	JEOL Resonance 5 mm 500 MHz broadband Z-gradient high resolution SuperCool NMR probe with closed loop gas cooling, operating temperature <70K	
Applicable Instrument	ECZ 500 MHz NMR systems. For other models, please contact JEOL Resonance for specifications.	
Description	Broadband high resolution NMR probe for both direct and indirect detection fitted with an actively shielded Z-axis gradient for 5mm sample tubes on 500MHz standard bore magnets. The LF coil can be tuned to observe ^{31}P to ^{15}N , except for ^9Be to ^{199}Hg . The HF coil may be tuned from ^1H to ^{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	$\geq 1600:1$ 0.1% Ethyl Benzene [†]
		$\geq 1400:1$ 0.1% Ethyl Benzene [‡]
	^{19}F sensitivity	$\geq 900:1$ 0.05% TFT [§]
	^{13}C sensitivity	$\geq 850:1$ ASTM [†]
		$\geq 740:1$ ASTM [‡]
	^{31}P sensitivity	$\geq 300:1$ 0.0485M TPP [‡]
	^{15}N sensitivity	$\geq 80:1$ 90% Formamide w/o NOE [‡]
	Pulse Widths	
	^1H pulse width	$\leq 10 \mu\text{s}$ @ 30W
	^{19}F pulse width	$\leq 16 \mu\text{s}$ @ 30W
	^{13}C pulse width	$\leq 10 \mu\text{s}$ @ 90W
	^{31}P pulse width	$\leq 166 \mu\text{s}$ @ 90W
	^{15}N pulse width	$\leq 15 \mu\text{s}$ @ 150W
	Lineshape	
	^1H spinning lineshape	$\leq 6/12 \text{ Hz}$ 1% chloroform (0.55%/0.11%)
	Spinning Sidebands (SSB)	$\leq 1\%$
	Resolution	
	^1H resolution	$\leq 0.45 \text{ Hz}$ 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	

[†] 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 .