

NMR Probe Specifications

Model	JEOL Resonance 10 mm 500 MHz broadband Z-gradient high resolution SuperCool NMR probe with open loop liquid nitrogen cooling, operating temperature <85K		
Applicable Instrument	ECZ 500 MHz NMR systems.		
Description	Broadband high resolution NMR probe for direct detection fitted with an actively shielded Z-axis gradient for 10mm sample tubes on 500MHz standard bore magnets. The LF coil can be tuned to observe ^{31}P , ^{13}C , ^{29}Si , and ^{15}N . 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		
	^{13}C sensitivity	$\geq 1100:1$	ASTM
	^{31}P sensitivity	TBD	0.0485M TPP
	^{15}N sensitivity	TBD	90% Formamide w/o NOE
	Pulse Widths		
	^1H pulse width	$\leq 27 \mu\text{s}$	@ 30W
	^{99}F pulse width	TBD	@ 30W
	^{13}C pulse width	$\leq 27 \mu\text{s}$	@ 90W
	^{31}P pulse width	TBD	@ 90W
	^{15}N pulse width	TBD	@ 150W
	Lineshape		
	^{13}C spinning lineshape	$\leq 5/10 \text{ Hz}$	1% chloroform (0.55%/0.11%)
	Resolution		
	^{13}C resolution (spin)	$\leq 0.4 \text{ Hz}$	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 0°C to +150°C		
	Cooling Requirements:		
	8 Liters/Day liquid Nitrogen Consumption with Fill-On-The-Fly		

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