

NMR Probe Specifications

Model	JEOL Resonance 5mm 600MHz broadband Z-gradient high resolution ROYAL NMR probe (NM-03830RO5 or NM-03831RO5S)																																																							
Applicable Instrument	ECZ, ECA, and ECX 600MHz 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 600MHz standard bore magnets. The LF coil can be tuned to observe any nucleus from ^{31}P to ^{15}N . The HF coil may be tuned from ^1H to ^{19}F (see Note). 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 <table> <tr> <td>^1H sensitivity</td><td>$\geq 960:1$</td><td>0.1% Ethyl Benzene[†]</td></tr> <tr> <td></td><td>$\geq 800:1$</td><td>0.1% Ethyl Benzene[‡]</td></tr> <tr> <td>^{19}F sensitivity</td><td>$\geq 850:1$</td><td>0.05% TFT[§]</td></tr> <tr> <td>^{13}C sensitivity</td><td>$\geq 330:1$</td><td>ASTM[†]</td></tr> <tr> <td></td><td>$\geq 280:1$</td><td>ASTM[‡]</td></tr> <tr> <td>^{13}C sensitivity</td><td>$\geq 360:1$</td><td>10% Ethyl Benzene</td></tr> <tr> <td></td><td>$\geq 310:1$</td><td>10% Ethyl Benzene[‡]</td></tr> <tr> <td>^{31}P sensitivity</td><td>$\geq 150:1$</td><td>0.0485M TPP</td></tr> <tr> <td>^{15}N sensitivity</td><td>$\geq 40:1$</td><td>90% Formamide w/o NOE</td></tr> </table> Pulse Widths <table> <tr> <td>^1H pulse width</td><td>$\leq 9 \mu\text{s}$</td><td>@30W</td></tr> <tr> <td>^{19}F pulse width</td><td>$\leq 10 \mu\text{s}$</td><td>@30W</td></tr> <tr> <td>^{13}C pulse width</td><td>$\leq 13 \mu\text{s}$</td><td>@125W</td></tr> <tr> <td>^{31}P pulse width</td><td>$\leq 15 \mu\text{s}$</td><td>@125W</td></tr> <tr> <td>^{15}N pulse width</td><td>$\leq 24 \mu\text{s}$</td><td>@150W</td></tr> </table> Lineshape <table> <tr> <td>^1H spinning lineshape</td><td>$\leq 6/12 \text{ Hz}$</td><td>1% chloroform (0.55%/0.11%)</td></tr> <tr> <td>^1H Non-spin lineshape</td><td>$\leq 8/16 \text{ Hz}$</td><td>1% chloroform (0.55%/0.11%)</td></tr> </table> Spinning Sidebands (SSB) $\leq 1\%$ Resolution <table> <tr> <td>^1H resolution, spinning</td><td>$\leq 0.5 \text{ Hz}$</td><td>1% chloroform (FWHM)</td></tr> <tr> <td>^1H resolution, non-spin</td><td>$\leq 0.8 \text{ Hz}$</td><td>1% chloroform (FWHM)</td></tr> </table> 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 -100°C to $+150^\circ\text{C}$		^1H sensitivity	$\geq 960:1$	0.1% Ethyl Benzene [†]		$\geq 800:1$	0.1% Ethyl Benzene [‡]	^{19}F sensitivity	$\geq 850:1$	0.05% TFT [§]	^{13}C sensitivity	$\geq 330:1$	ASTM [†]		$\geq 280:1$	ASTM [‡]	^{13}C sensitivity	$\geq 360:1$	10% Ethyl Benzene		$\geq 310:1$	10% Ethyl Benzene [‡]	^{31}P sensitivity	$\geq 150:1$	0.0485M TPP	^{15}N sensitivity	$\geq 40:1$	90% Formamide w/o NOE	^1H pulse width	$\leq 9 \mu\text{s}$	@30W	^{19}F pulse width	$\leq 10 \mu\text{s}$	@30W	^{13}C pulse width	$\leq 13 \mu\text{s}$	@125W	^{31}P pulse width	$\leq 15 \mu\text{s}$	@125W	^{15}N pulse width	$\leq 24 \mu\text{s}$	@150W	^1H spinning lineshape	$\leq 6/12 \text{ Hz}$	1% chloroform (0.55%/0.11%)	^1H Non-spin lineshape	$\leq 8/16 \text{ Hz}$	1% chloroform (0.55%/0.11%)	^1H resolution, spinning	$\leq 0.5 \text{ Hz}$	1% chloroform (FWHM)	^1H resolution, non-spin	$\leq 0.8 \text{ Hz}$	1% chloroform (FWHM)
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[†] 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 .

Data and specifications are subject to change without notice.

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