

DATASHEET

300 X,F/H-D-5-Z



Key Features:

- X channel tuneable to ^{19}F .
- Fast channel adjustment for all nuclei within seconds.

NMR Nucleus	Signal/Noise	Sample, noise range
^1H	$\geq 240:1$	0.1% Ethylbenzene in Chloroform-D / Noise = 200 Hz, LB = 1 Hz
$^{19}\text{F}_{\text{[X]}}$ (DEC)	$\geq 180:1$	TFT in Chloroform-D / Noise = 1 ppm, LB = 0.5 Hz (^1H decoupled)
^{31}P	$\geq 100:1$	TPP in Acetone-D6 / Noise = 5 ppm, LB = 5 Hz
^{13}C	$\geq 100:1$	ASTM (40% Dioxane in Benzene-D6) / Noise = 40 ppm, LB = 3.5 Hz
^{15}N	$\geq 15:1$	90% Formamide in DMSO-D6 / Noise = 2 ppm, LB = 0.3 Hz

NMR Nucleus	Pulse Width
^1H	$\leq 14 \mu\text{s}$
$^{19}\text{F}_{\text{[X]}}$	$\leq 15 \mu\text{s}$
^{31}P	$\leq 15 \mu\text{s}$
^{13}C	$\leq 12 \mu\text{s}$
^{15}N	$\leq 15 \mu\text{s}$

Description: QUAD 300 X,F/H-D-05-Z is a two radio frequency channel probe, optimized for X detection. The X channel covers ^{19}F and the nuclei range between ^{31}P and ^{15}N . The second probe circuit is tuned to ^1H . The probe is equipped with actively shielded single-axis gradient. All channels including lock can be tuned and matched without removing the probe. The probe can be operated at temperatures between -100°C and $+150^\circ\text{C}$ using the appropriate accessories (not included). This probe is equipped with FCA (fast channel adjustment) which enables tuning and matching of all channels within seconds without drift.

Feature	Rated	Parameters/Sample
^1H Line shape non-spinning	$\leq 0.8/7/14\text{Hz}$	@ 50%/0.55%/0.11% peak height / Sample 1% Chloroform in Acetone-D6
^1H Line shape spinning	$\leq 0.6/6/12\text{Hz}$	@ 50%/0.55%/0.11% peak height / Sample 1% Chloroform in Acetone-D6
Gradient recovery time	$\leq 100 \mu\text{s}$	95% Signal amplitude with 5 ms square $\pm 37.5 \text{ G/cm}$ / Sample 0.1 mg GdCl_3 in D_2O +1% H_2O
VT-range	$-50 \dots +100^\circ\text{C}$	
Z-Gradient	50 Gauss/cm (@10A)	

* These specifications are only valid for 300 MHz QUAD spectrometers. Probe performance on other systems may be up to 15% lower due to different configurations (shim system, preamp) .

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