

# DATASHEET

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



### Key Features:

- X channel tuneable to  $^{19}\text{F}$ .
- Fast channel adjustment for all nuclei within seconds.
- Full access to all nuclei around  $^2\text{H}$  on the X channel .

NMR Nucleus	Signal/Noise	Sample, noise range
$^1\text{H}$	$\geq 240:1$	0.1% Ethylbenzene in Chloroform-D / Noise = 200 Hz, LB = 1 Hz
$^1\text{H}$	$\geq 50:1^*$	2mM Sucrose in 90% $\text{H}_2\text{O}$ / 10% $\text{D}_2\text{O}$ / AQ=1s, Noise = 1.5ppm
$^{19}\text{F}_{[\text{X}]}$ (DEC)	$\geq 180:1$	TFT in Chloroform-D / Noise = 1 ppm, LB = 0.5 Hz ( $^1\text{H}$ decoupled)
$^{31}\text{P}$	$\geq 100:1$	TPP in Acetone-D6 / Noise = 5 ppm, LB = 5 Hz
$^{13}\text{C}$	$\geq 100:1$	ASTM (40% Dioxane in Benzene-D6) / Noise = 40 ppm, LB = 3.5 Hz
$^{15}\text{N}$	$\geq 15:1$	90% Formamide in DMSO-D6 / Noise = 2 ppm, LB = 0.3 Hz

NMR Nucleus	Pulse Width	Description:
$^1\text{H}$	$\leq 14 \mu\text{s}$	<b>QUAD 300 X,F/H-D-5-Z</b> is a two radio frequency channel probe, optimized for X detection. The X channel covers $^{19}\text{F}$ and the nuclei range between $^{31}\text{P}$ and $^{15}\text{N}$ . The second probe circuit is tuned to $^1\text{H}$ . 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 $-100^\circ\text{C}$ 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.
$^{19}\text{F}_{[\text{X}]}$	$\leq 15 \mu\text{s}$	
$^{31}\text{P}$	$\leq 15 \mu\text{s}$	
$^{13}\text{C}$	$\leq 12 \mu\text{s}$	
$^{15}\text{N}$	$\leq 15 \mu\text{s}$	

Feature	Rated	Parameters/Sample
$^1\text{H}$ Line shape non-spinning	$\leq 0.8/7/14\text{Hz}$	@ 50%/0.55%/0.11% peak height / Sample 1% Chloroform in Acetone-D6
$^1\text{H}$ 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 0.1mg $\text{GdCl}_3$ in $\text{D}_2\text{O}$ +1% $\text{H}_2\text{O}$
VT-range	$-100 \dots +150^\circ\text{C}$	
Z-Gradient	60 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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