

DATASHEET

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



Key Features:

- ^{19}F on X AND ^1H channel enabling $^{19}\text{F}\{^1\text{H}\}$ and e.g. $^{13}\text{C}\{^{19}\text{F}\}$.
- Fast channel adjustment for all nuclei within seconds.
- Superior ^1H sensitivity and water suppression.
- Full access to all nuclei around ^2H on the X channel .

NMR Nucleus	Signal/Noise	Sample, noise range
^1H	$\geq 500:1^*$	0.1% Ethylbenzene in Chloroform-D / Noise = 200 Hz, LB = 1 Hz
^1H	$\geq 100:1^*$	2mM Sucrose in 90% H_2O / 10% D_2O / AQ=1s, Noise = 1.5ppm
$^{19}\text{F}_{\text{[H]}}$	$\geq 450:1$	TFT in Chloroform-D / Noise = 1 ppm, LB = 2 Hz
$^{19}\text{F}_{\text{[X]}}$ (DEC)	$\geq 220:1$	TFT in Chloroform-D / Noise = 1 ppm, LB = 0.5 Hz
^{31}P	$\geq 200:1$	TPP in Acetone-D6 / Noise = 5 ppm, LB = 5 Hz
^{13}C	$\geq 200:1$	ASTM (40% Dioxane in Benzene-D6) / Noise = 40 ppm, LB = 3.5 Hz
^{15}N	$\geq 25:1$	90% Formamide in DMSO-D6 / Noise = 2 ppm, LB = 0.3 Hz

NMR Nucleus Pulse Width

^1H	$\leq 10 \mu\text{s}$
$^{19}\text{F}_{\text{[H]}}$	$\leq 12 \mu\text{s}$
$^{19}\text{F}_{\text{[X]}}$	$\leq 15 \mu\text{s}$
^{31}P	$\leq 15 \mu\text{s}$
^{13}C	$\leq 15 \mu\text{s}$
^{15}N	$\leq 20 \mu\text{s}$

Description: QUAD 400 X,F/H,F-D-5-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 can be tuned either for ^1H or ^{19}F . 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
^1H Line shape non-spinning*	$\leq 0.8/7/14\text{Hz}$
^1H Line shape spinning	$\leq 0.6/6/12\text{Hz}$
VT-range	$-100 \dots +150^\circ\text{C}$
Z-Gradient	50 Gauss/cm (@10A)

Parameters/Sample

@ 50%/0.55%/0.11% peak height / Sample 1%
Chloroform in Acetone-D6

@ 50%/0.55%/0.11% peak height / Sample 1%
Chloroform in Acetone-D6

* These specifications are only valid for 400 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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