

## **Probe: HFX**

Part Number: SW50P38N09

### **Specifications**

#### ***Mechanical Specifications:***

*Field:* 500MHz 89mm bore.

*Spinning system:* 3.2mm Vespel

*Maximum spin rate:* 25kHz

*Stability:* The greater of +/- 0.1% of spin rate or 5 Hz, over 24 Hours.

*Active Sample Volume:* 20ul (std. volume rotors)

*Sample Temperature:*

*Range:* +100 C to -50 C

#### ***RF Specifications:***

*Tuning Range (X channel):*  $^{31}\text{P}$  to  $^{15}\text{N}$

*Maximum  $B_1$  field strengths (Duty cycle not to exceed 1.5%):*

$^1\text{H}$ :

$T_{90}^1=2.0\mu\text{s}$  @ 40ms maximum length (<400 Watts at probe).

Tuning Bandwidth:  $\geq -1$  to  $+2$  MHz

$^{19}\text{F}$ :

$T_{90}^1=2.0\mu\text{s}$  @ 40ms maximum length (<400 Watts at probe).

Tuning Bandwidth:  $\geq -1$  to  $+2$  MHz

$^1\text{H}$  &  $^{19}\text{F}$  operating simultaneously:

$T_{90}^1=2.3\mu\text{s}$  @ 10ms maximum length (<400 Watts at probe).

$^{13}\text{C}$ :

$T_{90}^1=2.0\mu\text{s}$  @ 20ms maximum length (<350 Watts at probe).

$^{15}\text{N}$ :

$T_{90}^1=3.6\mu\text{s}$  @ 20ms maximum length (<550 Watts at probe).

*Interchannel Isolation:* H and F will exhibit a minimum of 30dB of isolation.

#### ***NMR Specifications:***

*Shimming on Adamantane:*

0.06 ppm FWHM, FW10% M 0.15ppm.

*Signal to Noise: HMB*

$^{13}\text{C}$ : S/N  $\geq 99:1$  (HMB, 4 scans, matched filter according to our standard test protocol)

*Background:*

$^{13}\text{C}$ : The standard probe will be constructed of modern engineering materials that minimize the presence of  $^{13}\text{C}$  background (as measured via. cross polarization using spin temperature alternation.)

$^{19}\text{F}$ : The standard probe will exhibit  $^{19}\text{F}$  background.

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<sup>1</sup>  $T_{90}=[T_{360}-T_{180}]/2$