

# AVANCE DMX 500 MHz Probes and Features

Probe		Made By	Tuning Range	Specifications	Applications
<b>Solution</b>	<b>5mm BBFO</b>	Bruker	$^{15}\text{N} - ^{31}\text{P}$ and $^{19}\text{F}$ w/ $^1\text{H}$ decoupling  Automatic Tuning/Matching	-100 °C - +150 °C  Pulse Width/ Power Level: $^1\text{H} - 12.75\mu\text{s}/6\text{dB}$ $^{19}\text{F} - 12.25\mu\text{s}/3\text{dB}$ $^{13}\text{C} - 9.4\mu\text{s}/5\text{dB}$ $^{15}\text{N} - 14.4\mu\text{s}/3\text{dB}$	* 1D $^1\text{H}$ , $^{13}\text{C}$ , $^{31}\text{P}$ , etc. * 2D COSY, HMQC, NOESY, etc. * $^{19}\text{F}/^1\text{H}$ Double Resonance * X/ $^1\text{H}/^{19}\text{F}$ Triple Resonance * Gradient Shimming * Modern Gradient Experiments including Water Suppression
	<b>10mm BBO</b>	Bruker	$^{109}\text{Ag} - ^{31}\text{P}$ $^1\text{H}$	-130 °C - +150 °C Pulse Width: $^{13}\text{C} < 15 \mu\text{s}$	* 1D $^1\text{H}$ , $^{13}\text{C}$ , $^{31}\text{P}$ , etc. * 2D COSY, HMQC, NOESY, etc.
	<b>5mm HCN</b>	Bruker	$^1\text{H}$ $^{13}\text{C}$ $^{15}\text{N}$	-50 °C - +80 °C $^1\text{H} < 10 \mu\text{s}$ ; $^{13}\text{C} < 15 \mu\text{s}$ ; $^{15}\text{N} < 40 \mu\text{s}$	* 1D $^1\text{H}$ , $^{13}\text{C}$ , $^{15}\text{N}$ , and $^2\text{H}$ * 2D COSY, HMQC, NOESY, etc. * 3D HNCA...for Biopolymers
	<b>5mm grad-HCN</b>	Bruker	$^1\text{H}$ $^{13}\text{C}$ $^{15}\text{N}$	-50 °C - +80 °C $^1\text{H} < 10 \mu\text{s}$ ; $^{13}\text{C} < 15 \mu\text{s}$ ; $^{15}\text{N} < 40 \mu\text{s}$ XYZ-Gradient	* 1D, 2D, and 3D $^1\text{H}$ , $^{13}\text{C}$ , $^{15}\text{N}$ , and $^2\text{H}$ related experiments, esp. for Macromolecules
<b>Solid-State</b>	<b>2.5mm CPMAS</b>	Bruker	$^{15}\text{N} - ^{31}\text{P}$ $^1\text{H}$ and $^{19}\text{F}$	-50 °C - +120 °C $^1\text{H} \sim 1.5\mu\text{s}$ ; X $\sim 2\mu\text{s}$ Spinning Rate: 35 kHz	* 1D BD, MAS, CPMAS, Editing * 1D $^1\text{H}$ CRAMPS, $^{19}\text{F}$ Observe * 2D HETCOR, MQMAS, etc.
	<b>4mm CPMAS</b>	Bruker	$^{15}\text{N} - ^{31}\text{P}$ $^1\text{H}$	-50 °C - +120 °C $^1\text{H} \sim 1.5\mu\text{s}$ ; X $\sim 2.5\mu\text{s}$ Spinning Rate: 15 kHz	* 1D BD, MAS, CPMAS, Editing * 1D $^1\text{H}$ Observe (CRAMPS) * 2D HETCOR, MQMAS, etc.
	<b>5mm CPMAS</b>	Doty Sci.	$^{103}\text{Rh} - ^{31}\text{P}$ $^1\text{H}$	-50 °C - +120 °C $^1\text{H} \sim 2.5\mu\text{s}$ ; X $\sim 4\mu\text{s}$ Spinning Rate: 14 kHz	* 1D BD, MAS, CPMAS, Editing * 2D HETCOR, MQMAS, etc.
	<b>5mm HCN- or HCX-MAS</b>	Home Built	$^1\text{H}$ $^{13}\text{C}$ $^{15}\text{N}$ or X( $^{29}\text{Si}$ )	5 °C - +150 °C $^1\text{H} \sim 1.5\mu\text{s}$ ; X $\sim 2.5\mu\text{s}$ Spinning Rate: 14 kHz	* 1D and 2D as above * Triple Resonance Expts: REDOR, etc.