


## Fast Neutron Spectrometer - 100

<p><b>Features</b></p> <ul style="list-style-type: none"> <li>Unsurpassed resolution &lt; 20 keV (thermal peak)</li> <li>Matched preamplifier</li> <li>Notch filter for reduction of microphonics</li> <li>Compact, lightweight</li> </ul>	
<p><b>Introduction</b></p> <p>The BTI FNS-100 is a high efficiency, high resolution fast neutron spectrometer. The detector is a multi-wire <sup>3</sup>He ion chamber with a dense quenching gas. The availability of both high efficiency and exceptional resolution in one instrument makes the FNS-100 useful for nuclear science and engineering, materials refind and radiation protection.</p> <p>The FNS-100 is supplied with an integral cadmium and boron shield to reduce its sensitivity to thermal neutrons. The residual thermal neutron peak is a convenient feature for energy calibration and stability monitoring. The FNS-100 spectrometer, as provided with custom preamplifier and notch filter, is fully compatible with standard spectroscopy electronics (not provided) like those used with Ge spectrometer systems.</p>	
<p><b>Specification</b></p> <p><b>PERFORMANCE</b></p> <p><b>Spectral Range:</b> 0.1-5.0 MeV</p> <p><b>Resolution:</b></p> <p style="margin-left: 20px;">Thermal: &lt; 20 keV FWHM</p> <p style="margin-left: 20px;">1 MeV: &lt; 30 keV FWHM</p> <p><b>Efficiency, absolute @ 1 MeV:</b> <math>3 \times 10^2</math></p> <p><b>PHYSICAL SIZE</b></p> <p><b>Detector:</b> 6.4 x 57.4 cm (diameter x length) (2.5 x 22.6 in)</p> <p><b>Effective Length:</b> 15 cm (5.9 in)</p> <p><b>Preamplifier:</b> 11.0 x 8.0 x 4.0 cm (4.3 x 3.1 x 1.6 in)</p>	<p><b>POWER REQUIREMENTS</b></p> <p><b>Anode Bias:</b> + 3000V</p> <p><b>Grid Bias:</b> +850V</p> <p><b>Preamplifier:</b> ± 12V (NIM std)</p> <p><b>OUTPUT</b></p> <p><b>Amplitude:</b> -50 mV/MeV</p> <p><b>Impedance:</b> 50 Ω</p> <p><b>Risetime:</b> 0.2 to 5 μs (10 to 90%)</p> <p><b>Falltime:</b> Approximately 1 ms</p> <p><b>Shaping:</b> 4 μs Gaussian</p>