



# MODEL 1080

## PicoMill<sup>®</sup> TEM specimen preparation system

Combines an ultra-low energy, inert gas ion source and a scanning electron column with multiple detectors to yield optimal TEM specimens.

### Model 1080 PicoMill<sup>®</sup> TEM specimen preparation system specifications

<b>Applications</b>	<p>Primary: Microelectronics and semiconductor transmission electron microscopy (TEM) specimen preparation</p> <p>Secondary: Any other specimens requiring optimal results</p> <p>Ideal for when FIB preparation is combined with aberration corrected TEM</p>
<b>Ion source</b>	<p>Filament-based ion source combined with electrostatic lens system</p> <p>Variable voltage (50 eV to 2 kV), continuously adjustable</p> <p>Beam current density up to 8 mA/cm<sup>2</sup></p> <p>Beam size &lt; 1 μm</p>
<b>Electron source</b>	<p>Accelerating voltage up to 10 keV</p> <p>Working distance of 16 mm</p> <p>Faraday cup for electron beam current monitoring with a range of 1 to 2,000 pA</p>
<b>Goniometer</b>	<p>TEM style</p> <p>X, Y, and Z axes movement and α tilt</p> <p>Specimen exchange of &lt; 30 seconds</p> <p>Milling angle range of -15 to +90°</p> <p>Viewing range -15 to 180°</p>
<b>Holder</b>	<p>Side-entry, TEM-style holder</p> <p>Compatible with all major TEMs</p>
<b>Ion beam targeting</b>	<p>Ion beam can be targeted to a specific point on the specimen surface or scanned within a selected area</p>
<b>User interface</b>	<p>Menu-driven with system status displayed</p>

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<b>Gas</b>	Ion source gas: UHP 99.999% argon Gas control: Automated using mass flow control technology Pneumatic supply: Compressed dry air or dry nitrogen at 2 to 7 bar
<b>Imaging</b>	Secondary electron detector/Everhart-Thornley detector <ul style="list-style-type: none"><li>• Electron imaging with 2 mm field of view</li><li>• Ion-induced secondary electron imaging with 1.9 mm field of view</li><li>• Specimen image displayed on PicoMill system user interface</li></ul> Solid-state backscatter electron detector Solid-state scanning/transmission electron (STEM) detector
<b>Vacuum system</b>	Turbomolecular drag pump backed by an oil-free diaphragm pump Specimen chamber pressure: <ul style="list-style-type: none"><li>• Base vacuum of <math>3 \times 10^{-6}</math> mbar</li><li>• Operating vacuum of <math>1 \times 10^{-4}</math> mbar</li></ul> Electron column: Base vacuum of $1 \times 10^{-6}$ mbar Specimen goniometer: Atmosphere to 1 mbar (pre-pump) Vacuum gauges: <ul style="list-style-type: none"><li>• Cold cathode for specimen chamber and electron column</li><li>• Pirani gauge for goniometer</li></ul>
<b>Automatic termination</b>	Termination by time, electron signal, or manual process
<b>Dimensions</b>	80.75 in. [205.51 cm] width x 57.85 in. [146.94 cm] height x 50.13 in. [127.33 cm] depth
<b>Weight</b>	500 lbs. [227 kg]
<b>Power</b>	208-240 VAC, 50/60 Hz, 1,100 W
<b>Warranty</b>	One year
<b>Service contract</b>	Download <a href="#">service contract information</a>

\*Standard side-entry TEM specimen holders cannot be used in the PicoMill system because they do not provide access to the specimen for ion milling. However, the PicoMill system holder can be used in both the PicoMill system and in corresponding electron microscopes.



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