



MODEL 1040

NanoMill® TEM Specimen Preparation System

The NanoMill system uses an ultra-low energy, concentrated ion beam to produce the highest quality specimens for transmission electron microscopy.

Model 1040 NanoMill® TEM Specimen Preparation System Specifications

Ion source

Filament-based ion source combined with electrostatic lens system

Variable voltage (50 eV to 2 kV), continuously adjustable

Beam current density up to 1 mA/cm²

Beam diameter as small as 1 μm at 2,000 eV

Faraday cup for ion beam current monitoring with a range of 1 to 2,000 pA

Field-replaceable apertures

Specimen stage

Load lock allows specimen exchange in less than 10 seconds

Transfer rod for specimen exchange

Milling angle range of -12 to +30°

Vacuum system

Turbomolecular drag pump backed by an oil-free diaphragm pump

Chamber vacuum measurement with a combination cold cathode and Pirani gauge with a range of atmosphere to 1 x 10⁻⁸ mbar

System base vacuum of 3 x 10⁻⁷ mbar

Operating vacuum of 1 x 10⁻⁴ mbar

Gas

Automated using mass flow control technology

Flow rate up to 2 sccm

Integral particulate filter

Inert gas (argon) with recommended purity of 99.999%

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Specimen targeting	Ion beam capable of being targeted at one spot on the specimen surface or scanned within a selected area
User interface	Menu-driven interface Programmable milling cycles with system status displayed
Chamber illumination	User-controlled chamber illumination to facilitate specimen exchange
Specimen cooling	Liquid nitrogen conductive cooling with automatic temperature interlocks Stage temperature to $-170\text{ }^{\circ}\text{C}$ System cool-down time less than 20 minutes Specimen cool-down time less than 5 minutes Dewar hold time up to 6 hours Integral load lock heater ensures rapid specimen warming times to ambient temperature
Automatic termination	Process termination by time or temperature
Imaging	SED-based imaging technology 3 mm field of view Everhart-Thornley detector Specimen image displayed on graphical user interface
Dimensions	39 in (991 mm) width x 58 in (1,474 mm) height x 31 in (788 mm) depth
Weight	507 lb (230.5 kg)
Power	110/220 V AC, 50/60 Hz, 1,000 W
Warranty	One year
Service contract	Available upon request



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NanoMill is a registered trademark of E.A. Fischione Instruments, Inc.
The NanoMill® system is the subject of United States Patent Nos.
7,132,673 and 7,504,623. Other patents pending.
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