



# MODEL 1040

## NanoMill<sup>®</sup> 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<sup>®</sup> 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/cm<sup>2</sup>

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<sup>-8</sup> mbar

System base vacuum of 3 x 10<sup>-7</sup> mbar

Operating vacuum of 1 x 10<sup>-4</sup> 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%

## Model 1040 NanoMill® TEM Specimen Preparation System Specifications

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



E.A. Fischione Instruments, Inc.  
9003 Corporate Circle  
Export, PA 15632 USA  
Tel: +1 724.325.5444  
Fax: +1 724.325.5443  
info@fischione.com  
www.fischione.com



Fischione is proudly represented in  
Australia and New Zealand by  
AXT Pty. Ltd.  
1/3 Vuko Pl., Warriewood  
NSW 2102 Australia  
T. +61 (0)2 9450 1359 F. +61 (0)2 9450 1365  
W. www.axt.com.au E. info@axt.com.au

©2013 E.A. Fischione Instruments, Inc. All rights reserved.  
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.  
Document Number SP1040 Revision 00 07/2013