MODEL **1061**

SEM Mill

A state-of-the-art ion milling and polishing system. It is compact, precise, and consistently produces high-quality scanning electron microscopy (SEM) samples in the shortest amount of time for a wide variety of applications.

Model 1061 SEM Mill specifications	
Ion sources	Two TrueFocus ion sources Variable energy (100 eV to 10.0 keV) operation Beam current density up to 10 mA/cm^2 Milling angle range of 0 to +10° Choice of single or dual ion source operation Manual or motorized (optional) ion source angle adjustment Independent ion source energy control Adjustable spot size Faraday cups for the direct measurement of beam current from each ion source; allows optimization and adjustment of the ion source parameters for specific applications
Sample stage	Sample size: • Cross section* Maximum: 10 x 10 x 4.0 mm [0.39 x 0.39 x 0.157 in.] Minimum: 3 x 3 x 0.7 mm [0.12 x 0.12 x 0.028 in.] • Planar 32 mm diameter x 25 mm height [1.25 x 1 in.] Automatic sample thickness sensing to establish the milling plane and maximize throughput 360° sample rotation with variable rotation speed Sample rocking Magnetic encoder provides absolute positioning accuracy
User interface	Instrument operation controlled via 254 mm [10 in.], ergonomically adjustable touch screen

* Standard size; other sizes available upon request.

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Vacuum system	Turbomolecular drag pump and an oil-free, multi-stage diaphragm pump Vacuum sensing with a cold cathode, full-range gauge
Process gas	UHP argon (99.999%); nominal 15 psi delivery pressure required Automatic gas control using two mass flow controllers
Automatic termination	Automatic termination by time or temperature
In situ viewing and imaging	Sample can be monitored in situ in the milling position when using either the stereo or the high-magnification microscope Viewing window protected by a programmable shutter that prevents buildup of sputtered material and preserves the ability to observe the sample in situ
Sample cooling (optional)	Liquid nitrogen conductive cooling with integral dewar and automatic temperature interlocks Dewar access positioned close to instrument operator Ability to program and maintain a specific temperature between ambient and cryogenic Choice of: • Standard dewar capacity (3 to 5 hours of cryo conditions) • Extended dewar capacity (12+ hours of cryo conditions)
Vacuum or inert gas transfer capsule (optional)	Allows transfer or storage of a sample at vacuum or in an inert gas environment
Cross-section station (optional)	Produces pristine cross-section samples Samples are secured to the mask by an adhesive Allows precise positioning of the area of interest – X, Y, and θ Effective for use with a wide variety of materials, including semiconductor devices, multilayers, ceramics, and hard/brittle materials Prepared region of interest is flat and free from damage for subsequent SEM imaging and analysis Accommodates a wide range of sample and mask sizes: • Sample and mask align both laterally and angularly • Multiple uses from a single mask

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Clamping cross-section station (optional)	Produces pristine cross-section samples Ideal for samples that can be damaged by exposure to adhesives; samples are secured via a clamping mask, without adhesives Allows precise positioning of the area of interest – X, Y, and θ Effective for use with a wide variety of materials, including semiconductor devices, multilayers, ceramics, and hard/brittle materials Prepared region of interest is flat and free from damage for subsequent SEM imaging and analysis Accommodates a wide range of sample and mask sizes: • Sample and mask align both laterally and angularly • Multiple uses from a single mask
Stack light (optional)	Stack light indicator for determining milling operations status from a distance
Microscope (optional)	Load lock window accommodates the following microscopes: • 7 to 45X stereo microscope attachment for direct specimen observation • 525X high-magnification microscope and CMOS (complementary metal oxide semiconductor) camera system for site-specific image acquisition and display • 1,960X high-magnification microscope and CMOS camera system for site-specific image acquisition and display
Sample illumination	Both the high-magnification and stereo microscopes have light sources that provide top-down, user adjustable, reflected sample illumination
Enclosure	Width (includes room on either side for service access: 127 cm [50 in.] Height: • Minimum height (without microscope or stack light options): 61 cm [32 in.] • Maximum height (with stack light option): 77 cm [38 in.] Depth (includes room for service access and exhaust fan air flow): 102 cm [40 in.] Enclosure design offers easy access to internal components when performing maintenance tasks

Model 1061 SEM Mill specifications	
Weight	73 kg [161 lb.]
Power	100/120/220/240 VAC, 50/60 Hz, 720 W
Warranty	One year
Service contracts	Contact sales@fischione.com for pricing

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