

Specification comparison

Fischione Instruments offers two bench top ion mills for scanning electron microscopy (SEM) sample preparation: the Model 1061 SEM Mill and the Model 1062 TrionMill. Compare the specifications to determine which SEM sample preparation solution is right for your application.



Model 1061 SEM Mill

Model 1062 TrionMill

TrueFocus ion sources		
Quantity*	Two	Three
Ion beam energy	100 eV to 10.0 kV	100 eV to 10.0 kV
Beam angle	0 to +10°	0 to +10°
Beam current density	Up to 10 mA/cm ²	Up to 10 mA/cm ²
Independent energy control	Yes	Yes
Motorized ion source angle adjustment*	Optional	Included
Adjustable spot size	300 µm to 5 mm	300 µm to 5 mm
Faraday cups	Yes	Yes
Allow optimization and adjustment of the ion source parameters for specific applications		
Low ion source maintenance	Yes	Yes
Sample		
Sample size*	Planar: 32 mm diameter x 25 mm height	Planar: 50 mm diameter x 25 mm height
	Cross section: 10 x 10 x 4 mm	Cross section: 10 x 10 x 4 mm
Milling area	Up to 25 mm	Up to 50 mm
Automatic sample height detection	Yes	Yes
Establishes the milling plane, which yields repeatable results		
Sample stage motion	Yes	Yes
360° stage rotation or rocking; variable rotation speed and rocking angle		
Sample loading mechanism*	Top loading; < 1 minute to pump down	Front loading with sample transfer rod; < 1 minute to pump down

*Denotes differences between the two models.

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	Model 1061 SEM Mill	Model 1062 TrionMill
Options		
Sample cooling* <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Standard dewar capacity (3 to 5 hours of cryo conditions), or Extended dewar capacity (18+ hours of cryo conditions) 	Extended dewar capacity (18+ hours of cryo conditions)
Cross-section station <ul style="list-style-type: none"> Produces pristine cross-section samples Allows precise positioning of the area of interest – x, y, and θ Accommodates a wide range of sample and mask sizes 	Yes	Yes
In situ sample viewing* All microscopes have light sources that provide top-down, user adjustable, reflected sample illumination	<ul style="list-style-type: none"> 7 to 45X stereo microscope, or 525X high-magnification microscope, or 1,960X high-magnification microscope 	<ul style="list-style-type: none"> 525X high-magnification microscope, or 1,960X high-magnification microscope
In situ sample image acquisition* CMOS (complementary metal oxide semiconductor) camera system for site-specific image acquisition and display	Available for 525X and 1,960X high magnification microscopes; not available for 7 to 45X stereo microscope	Available for 525X and 1,960X high magnification microscopes
Sample transfer mechanism to SEM*	Vacuum/inert gas transfer to glove box, then to SEM	Vacuum/inert gas/cryo transfer directly to SEM; uses active pumping to maintain high vacuum
Remote operation Enables operation of multiple milling tasks from a remote computer	Yes	Yes
Stack light indicator Allows the determination of milling operation status from a distance	Yes	Yes
Operation		
Touch screen user interface Instrument operation controlled via 10-inch, ergonomically adjustable touch screen	Yes	Yes
Automatic termination By time or temperature	Yes	Yes

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System specifications		
Argon process gas* Argon (99.995%) or better; nominal 15 psi delivery pressure required	Automatic gas control using two mass flow controllers	Automatic gas control using three mass flow controllers
Vacuum system <ul style="list-style-type: none"> • Turbomolecular drag pump and an oil-free, multi-stage diaphragm pump • Vacuum sensing with a cold cathode, full-range gauge 	Yes	Yes
Dimensions*	Width: 66 cm Height: 77 cm (maximum) Depth: 71 cm Enclosure design offers easy access to internal components	Width: 76 cm Height: 88 cm (maximum) Depth: 99 cm Enclosure design offers easy access to internal components
Weight*	73 kg	114 kg
Power*	100/120/220/240 VAC; 50/60 Hz; 720 W	100/120/220/240 VAC; 50/60 Hz; 1000 W
One year manufacturer's warranty	Yes	Yes

*Denotes differences between the two models.



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