

Tescan EXLO 1200

TESCAN EXLO 1200 is our most advanced *ex situ* lift-out system to date—designed for fast, easy, and reproducible manipulation of FIB-prepared S/TEM specimens.

Each TESCAN EXLO 1200 system includes motorized focus control, motorized lens changer and zoom, motorized XYZR manipulator with rotation, glass tip puller, active suspension, and a flexible graphical user software interface for semi-automated *ex situ* manipulation. The system can handle sample sizes (e.g., wafers or small pieces of samples) of up to 300 mm in diameter and offers the flexibility of adding a second XYZ motorized manipulator.

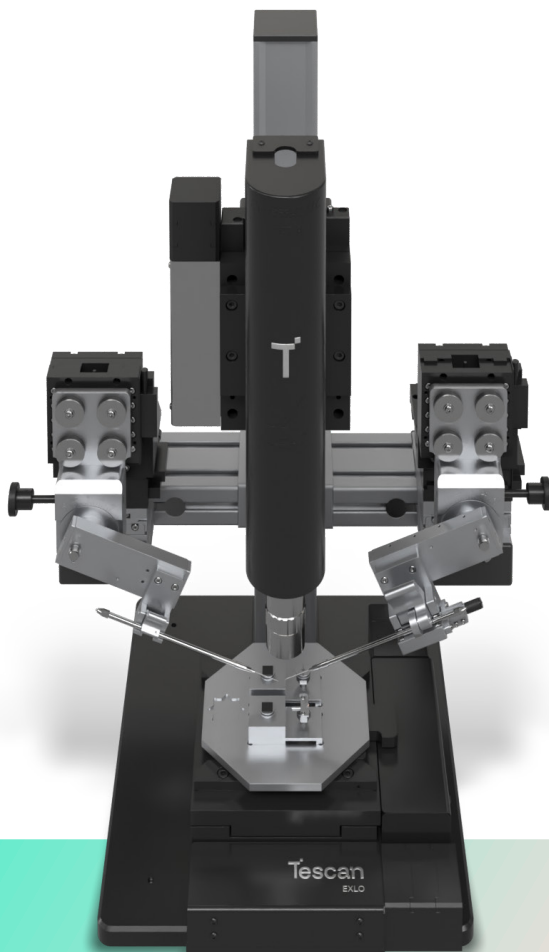
The parfocal zoom microscope provides an unprecedented and continuous horizontal field of view from ~ 3 mm down to 60 µm—enabling precise visual control throughout the manipulation process. The UI can import or export a text file or CSV file of saved X, Y specimen

coordinates. Global and nested saves are available for any motor or stage position for semi-automated operation from specimen to grid and back.

The TESCAN EXLO 1200 is perfect for *ex situ* lift out of several tens of specimens per hour and can support multiple FIB instruments. When bundled with TESCAN's TEM AutoPrep Pro™ for preparing unattended specimens for S/TEM analysis, the system can significantly increase throughput and decrease the cost per specimen.

Optional accessories further enhance the system's versatility:

- The Pick&Place™ holder simplifies *ex situ* lift-out handling.
- The Aspirato™ module offers vacuum-assisted *ex situ* manipulation for delicate operations.
- EXpressLO™ PGrids allow for front-side or back-side *ex situ* lift-out of various specimen sizes without the need for a carbon support film.
- EXpressLO-Z™ grids, made from nanocrystalline diamond, minimize X-ray overlap interference, reduce fluorescence and Bremsstrahlung during EDS analysis, and improve data quality.



TEM lamella
ex situ lift-out



Parfocal
zoom



Programmable
joystick



Autofocus



Rotational
micromanipulator



Click to
center ROI



300 mm
wafer sample



Remote
control

Product Specifications

Stage

Motorized stage travel (X & Y)	300 x 300 mm
Maximum specimen height	137 mm
Maximum specimen size	> 300 mm
Maximum specimen weight (XY moves)	81 kg

Optics

Parfocal zoom	
Horizontal field width (HFW)	60 μ m to 3 mm
Working distance	20 mm
Resolution	< 1 μ m
Light source	LED
Motorized focus travel	100 mm

Image acquisition

Maximum frame size (px x px)	1284 x 1024
Image and video formats	JPG/BMP/TIF/PNG/AVI

Camera

Camera	USB3
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Manipulator

Single motorized micromanipulator	
XYZ travel	25 mm
Omnidirectional repeatability (XYZ)	1 μ m
Maximum and minimum velocities	1 μ m/s to 5 mm/s
Minimum step size	1 μ m
Continuous 360° rotation	
Precision of rotation	1°
Compucentric rotation	
Mouse gesture control	
2 nd manipulator (non-rotational)	Optional
Coordinate system transfer format	CSV/TXT

User interface

Control PC	Intel Core i5-14400, 10-core 4.7 GHz, RAM 1 x 8 GB DDR5 4800 MHz, 515 GB SSD M.2, GPU Intel UHD 730, Windows 11 Pro 64-bit
Keyboard and mouse	
Monitor	32"
Programmable joystick with buttons (model) X-Keys	
EXpressLO graphical user interface	

EXpressLO software

Multiuser account management	
Global icon saves	
Nested saves	
Click to center region of interest	
Autofocus	
Read/save positions from/to file	
Unified UI for joystick programming	
Video recording	

Other accessories

Active antivibration system	
Pick&Place holder kit with Praxis samples	
Glass tip puller with glass rods	
EXpressLO PGrids (Cu)	
EXpressLO-Z NCD grids	Optional
Aspirato (vacuum-assisted lift-out module) Optional	
Sample platen	small sample and 300 mm wafer

Installation requirements

Power supply	Power supply: 230 V $\pm$ 10% / 50 Hz (or 120 V / 60 Hz-optional)
Room for installation	2600 x 2300 mm

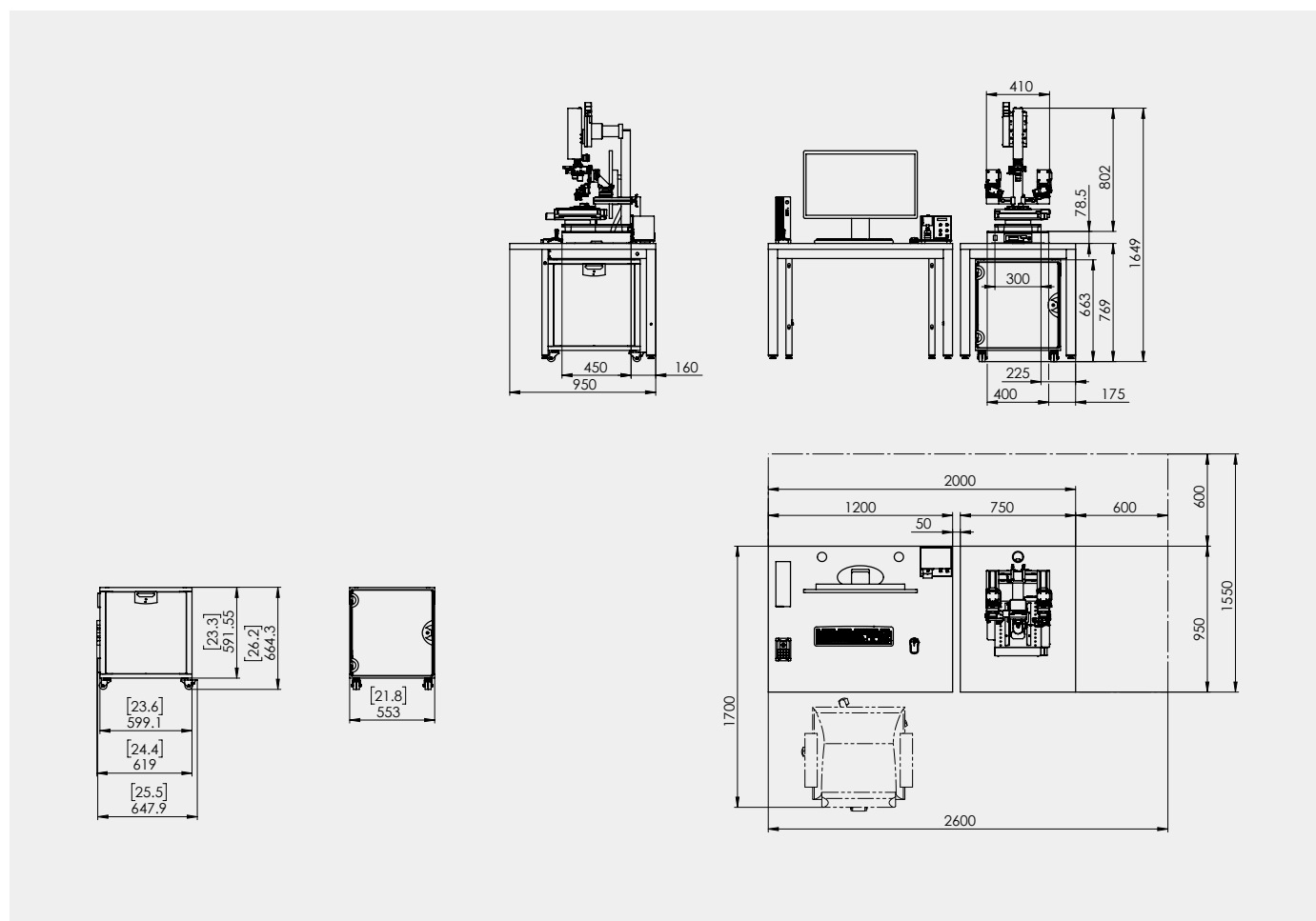
Environmental requirements

Temperature	17–24°C
Humidity	< 65 %
Vibrations	Vibrations: < 10 μ m/s below 30 Hz, < 20 μ m/s above 30 Hz
Acoustic level	< 60 dBC

Training

Introductory: By TESCOAN engineer after installation

Footprint of the system



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We are constantly improving the performance of our products, so all specifications are subject to change without notice.

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www.tescan.com/end-user-licence-agreement-1-0

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