

Tescan EXLO 800

TESCAN EXLO 800 represents our most advanced *ex situ* lift-out system to date and was designed to offer fast, easy, and reproducible manipulation of FIB-prepared S/TEM specimens.

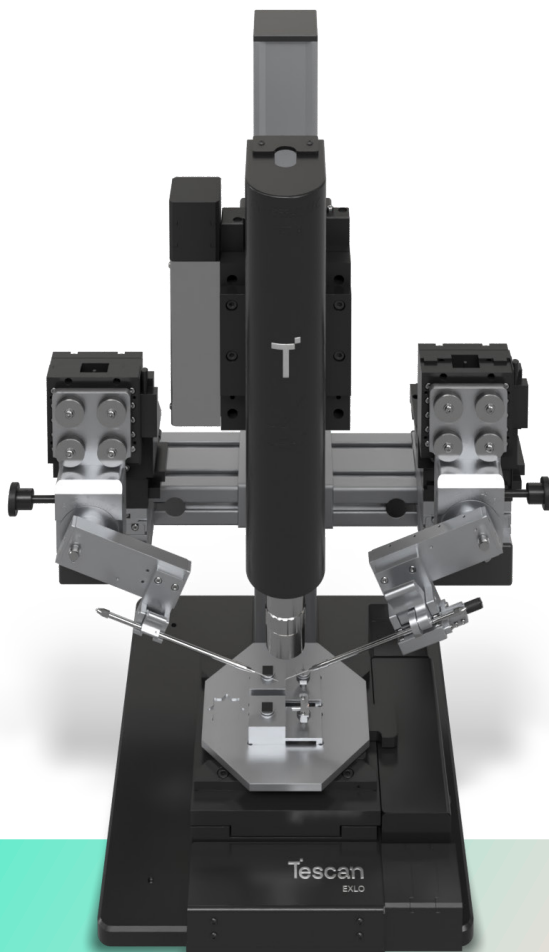
Each TESCAN EXLO 800 system comes fully equipped with a suite of advanced features designed for seamless, semi-automated *ex situ* manipulation. These include motorized focus control, a motorized lens changer and zoom, and a motorized XYZR manipulator with rotation for precise specimen handling. Additional components such as a glass tip puller, active suspension, and a user-friendly graphical software interface ensure smooth and efficient operation. The system can handle a wide range of sample sizes—including wafers and smaller specimens—up to 200 mm in diameter, and offers the flexibility of adding an optional second XYZ motorized manipulator for enhanced versatility and throughput.

The parfocal zoom microscope provides an unprecedented and continuous horizontal field of view— from ~ 3 mm down to 60 μm . 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.

Engineered for high-throughput environments, TESCAN EXLO 800 is ideal for *ex situ* lift-out of several tens of specimens per hour and is compatible with multiple FIB instruments. When bundled with TESCAN's TEM AutoPrep Pro™ for preparing unattended specimens for S/TEM analysis, TESCAN EXLO 800 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



200 mm
wafer sample



Remote
control

Product Specifications

Stage

Motorized stage travel (X & Y)	200 x 200 mm
Maximum specimen height	170 mm
Maximum specimen size	> 200 mm
Maximum specimen weight (XY moves)	40 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 200 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

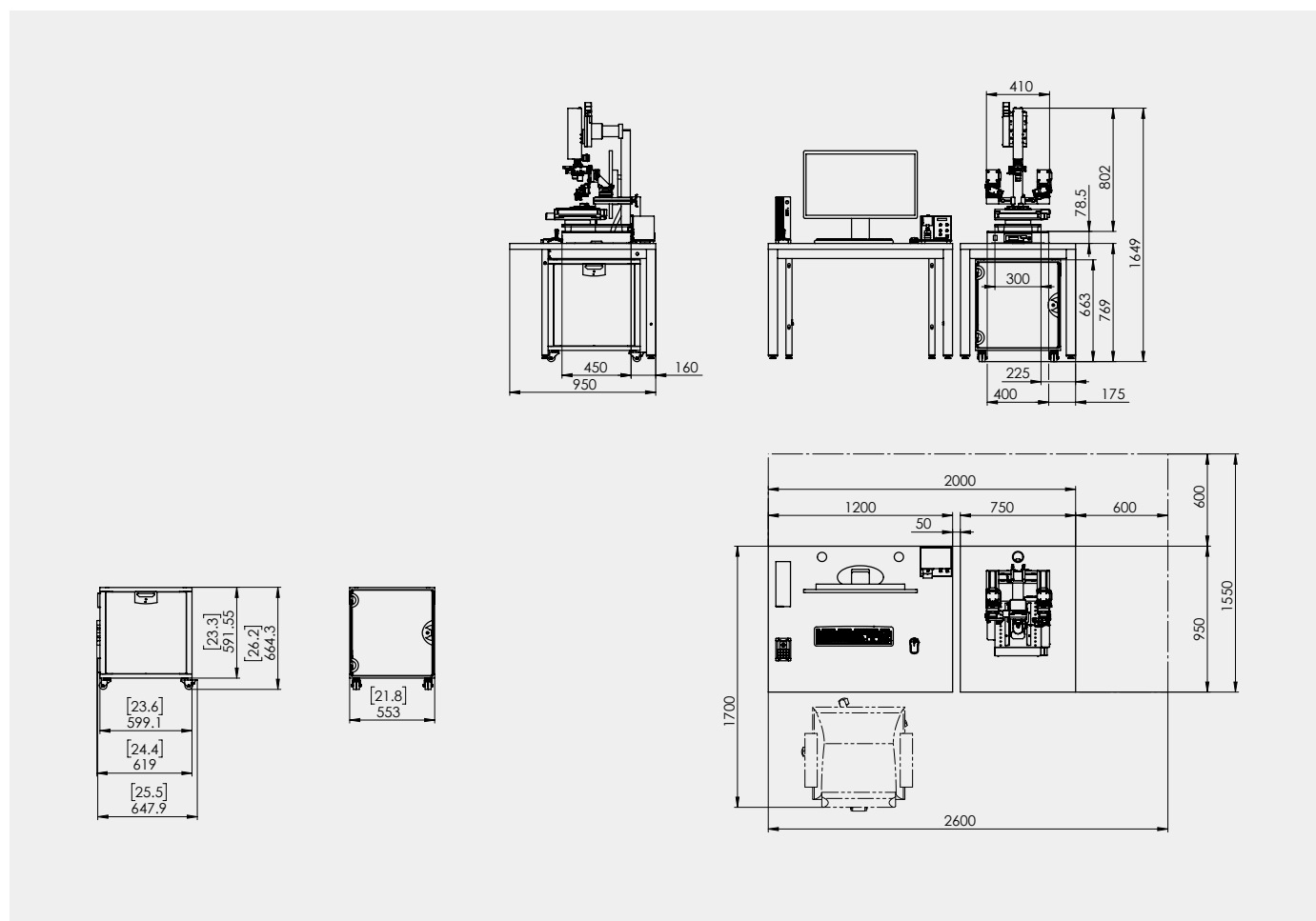
Environmental requirements

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 TESCANA 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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