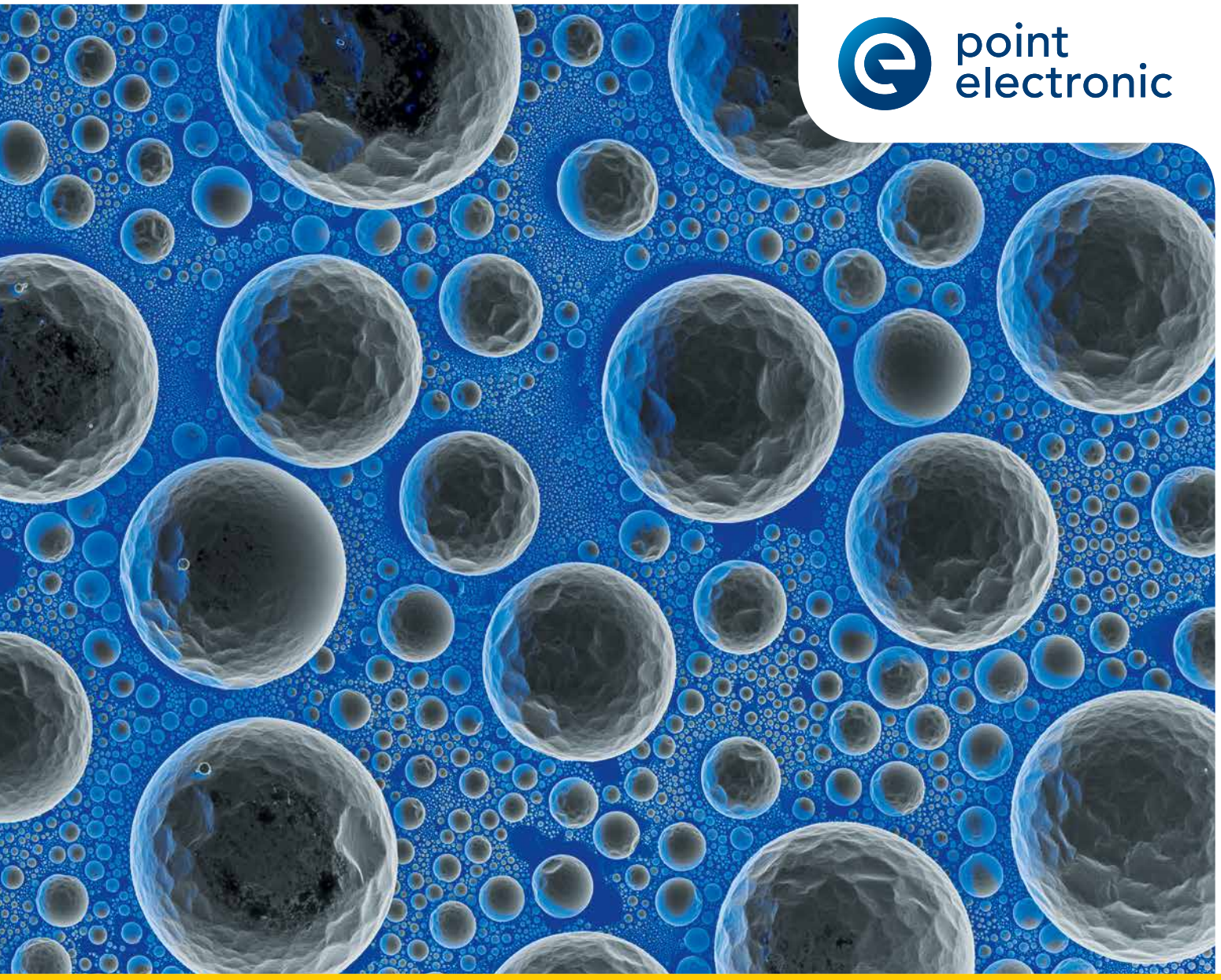

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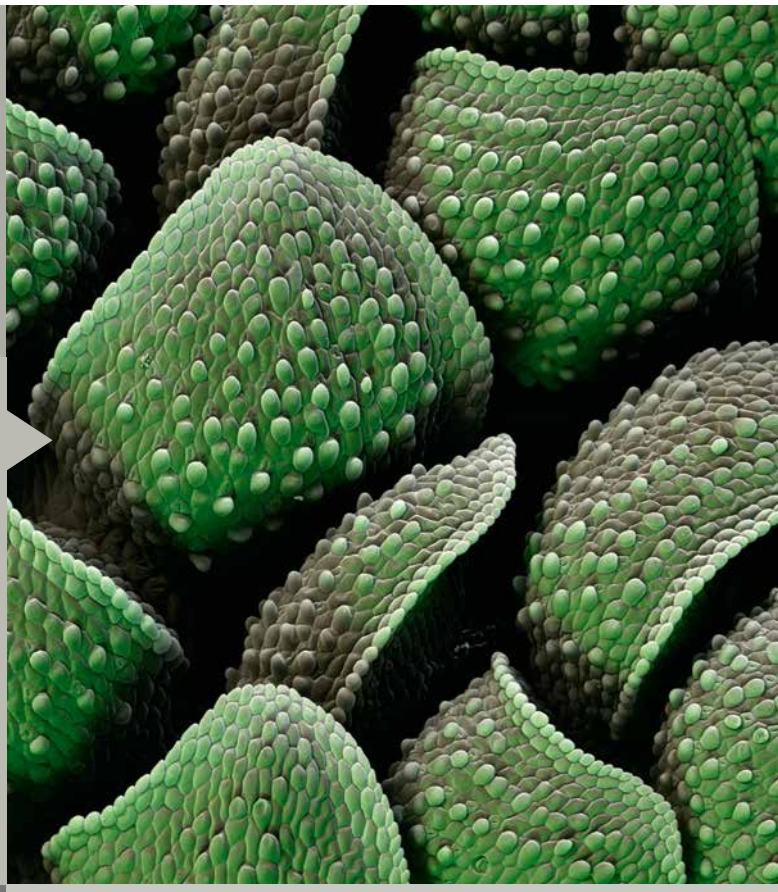
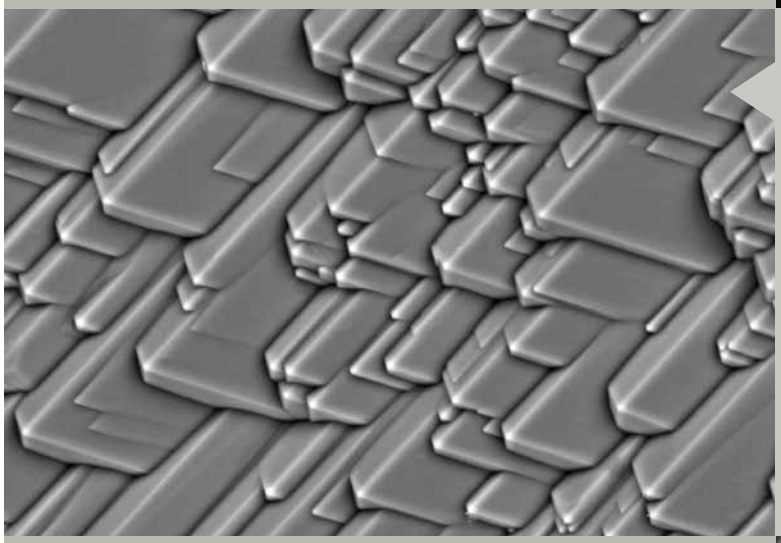
SEM acquisition

The most powerful and versatile scan generator/
image acquisition system for SEM-DISS5



Capture the highest quality SEM images

- Compose live colour images with simultaneous IL, SE and BSE
- Improve your publications with highest resolution images
- Record data in standard, open image file formats

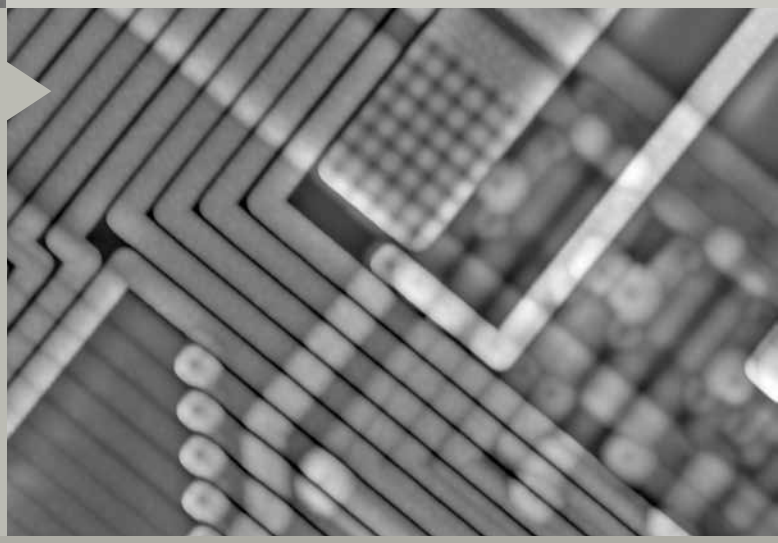


Free your data with network and Windows 10 compatibility

- Upgrade to modern hardware and software
- Record data to any Windows PC over USB2
- Collaborate with standard screen share and remote connection

Build your own custom acquisition workflows

- Edit, add, reorder, reconfigure your own workflow
- Start from templates for live view, high resolution, video recording, mapping modes
- Fully configure each scan profile in your workflows



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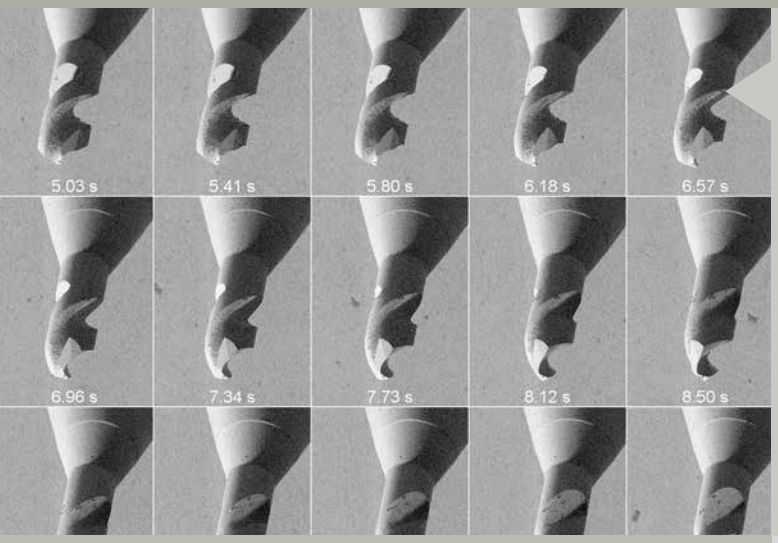
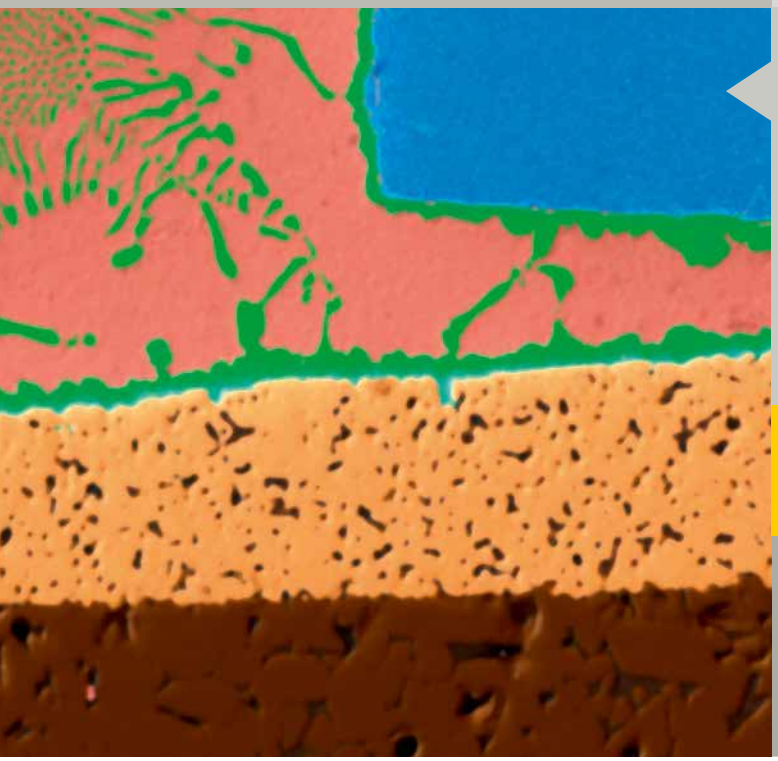


Expand your microscope boundaries with the best scan generator

- Record dynamic events with fast frame rates
- Avoid specimen charging with line and frame averages
- Prevent noise with mains synchronization

Develop new characterisation methods or instrumentation

- Standard analog and digital signal inputs
- Fully configurable scan signals and scan parameters
- API for scan control and image acquisition



Take your microscope on the upgrade path

- Add SEM controls for a complete electronics upgrade
- Add software upgrade options for lithography, topography, large area mapping
- Add more detectors and electronics for EDS, EBIC, EBAC/RCI

SEM acquisition

point electronic

The scan generator/image acquisition system is fully integrated and software controlled

- The turnkey system includes installation and training
- Scan generator and image acquisition are combined into one USB2 system
- Scanning and imaging cables are available for all SEM interfaces

Optional video processor is available for extended imaging channels

- Channel independent brightness and contrast controls
- Hardware mixed output for simultaneous acquisition with SE, CL or EDS
- USB2 controlled and fully integrated with the acquisition software

SEM acquisition

DISS5 is the most powerful and versatile acquisition system for SEM

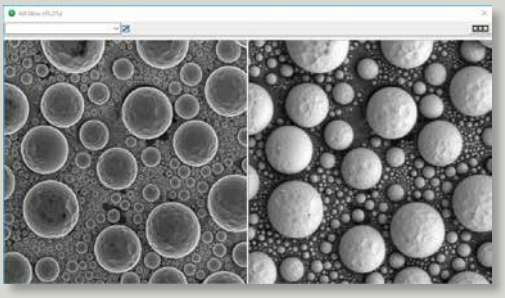
- Very large image resolution, up to 16k x 16k pixels
- Very fast scanning speed, down to 200ns dwell time
- Flexible 4 analog inputs and 12 digital inputs
- Versatile triggers/synchronization for pixel, line and frame

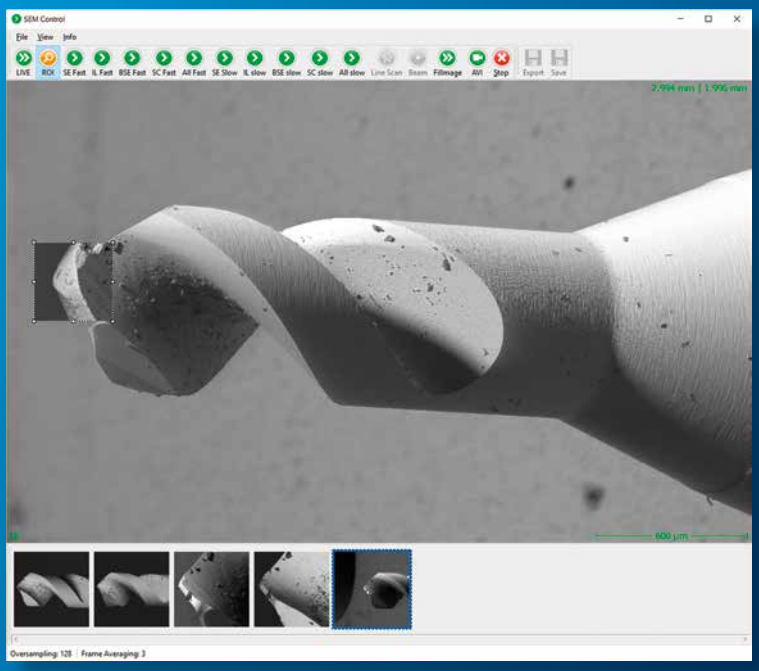
Optional SE, BSE and EDS detectors extend the use of standard SEMs

- High-performance SE detector electronics
- Standard and low-kV BSE detectors and electronics
- Practical and affordable EDS for SEM and STEM

Simultaneous signals are displayed using tiled image windows

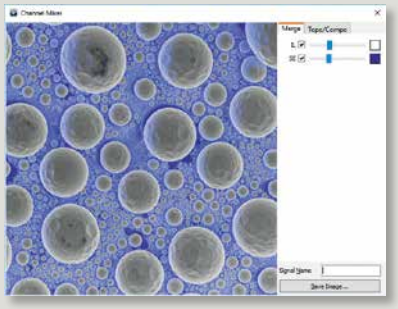
- Up to 4 simultaneous imaging signals, including SE, IL, BSE, CL
- Up to 12 elemental maps with EDS
- Brightness and contrast may be manual or automatic





Complete and mature software interface for all SEMs

- All scanning and acquisition parameters are available to the end user
- Magnification and accelerating voltage are obtained automatically from the SEM
- Advanced Region of Interest (ROI) scan with independent zoom control



Composed colour images are produced live from simultaneous signal sources

- All available signals may be mixed
- Colour and intensity are fully configurable
- Result is displayed live during the acquisition

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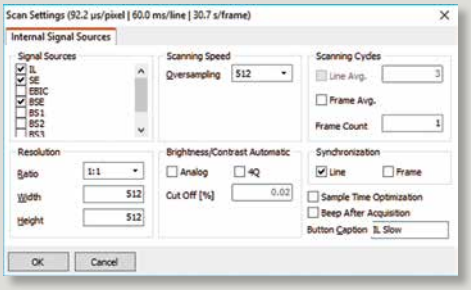
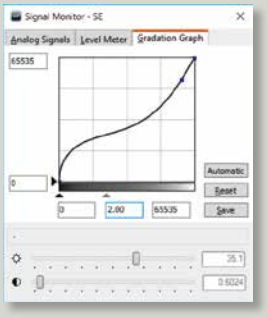
SEM acquisition

Scan profiles are fully configurable to produce custom workflows

- Fast live scans for SEM alignment and navigation
- Simultaneous scans for co-localization and mixing
- High-resolution scans for mapping and analysis



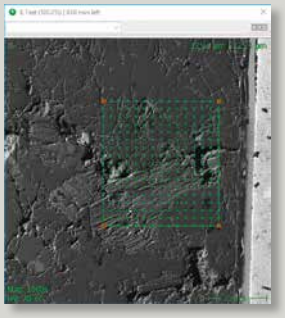
Live signal monitor tool adds complete image information and grayscale optimisation



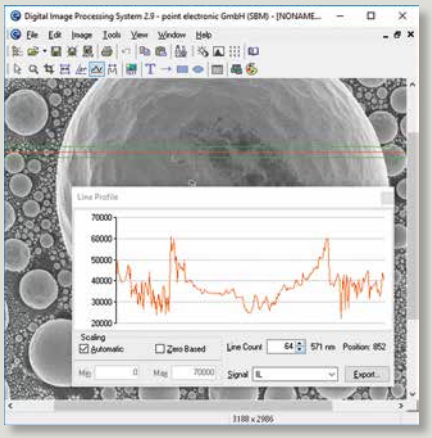
- Live signals are displayed for optimisation
- For ease of use, multiple live signals are displayed simultaneously
- The gradation graph illuminates difficult

Advanced line scan and mapping tools fully integrate EDS and CL for imaging

- Manual point and line scans are provided for flexible control of acquisition parameters
- Mapping tool provides control of map location, step size, sub-pixel scans
- Mapping parameters and data is exported to spread-sheet and plain text formats



Digital Image Processing System 2 (DIPS2) software provides further offline functions



- Measurements of points, lines and angles
- Line profile extraction from multi-signal images
- Image annotation, colouring and export

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Detailed technical specifications

SEM acquisition module (DISS 5)

Hardware interface	USB 2.0
Simultaneous inputs (i.e. SE, BSE)	4x, 12-bit
Mapping signals (i.e. EDS)	12x, 16-bit
Scanning interface	Pre-configured for SEM and analytical add-ons
Synchronization interface	Pixel, line, frame
Scan size	16,384 x 16,384 pixels max.
Pixel dwell time	200 ns … 6 milliseconds
Pixel over-sampling	32,000x max.
Line averaging	50x max.
Frame averaging	256x max.
Synchronization	Mains power
ROI scan	Yes

PC/Laptop, Display

PC/Laptop	Intel Core i3 minimum
	2x USB 2.0 minimum
Displays	1,280 x 1,024 resolution minimum
	2x displays recommended
Operating systems	Windows 10 … Windows XP
	Network connection recommended

Acquisition software (DISS 5)

SEM mag, kV information	Automated SEM communication
Brightness & Contrast controls	manual/automatic
	channel independent control
Image mixing tool	Independent colour/channel
	Independent intensity/channel
	Topographic and compositional profiles for BSE
Scan profiles	live frame display template
	region of interest (ROI) template
	slow scan template
	area mapping template
	line scan template
	video recording template
Signal monitor	Analogue Signals profiles
	Level Meter graphs
	Gradation Graph tool

SEM acquisition

Software API	Yes
Image caption overlay	Yes
Default file formats	8 and 16-bit multi-page TIFF
Export file formats	BMP, JPEG, PNG, GIF
Context sensitive help	English, German

Analysis software (DIPS 5)

Magnification/scale information	Automated scale management
Image caption overlay	Configurable live and image export overlays
Image information display	All relevant acquisition parameters
Image mix (SE, EBAC/RCI, etc.)	Configurable colour assignment
Editable LUT (look up table)	False colour, GGR file format
Pseudo-surface view	Pan, zoom, rotation, tilt controls
	Emission, ambient, diffuse lighting
	Original texture or false colouring
	BMP image export
Distance, area measurements	Live display
Data extraction	Multiple lines and points
	Simultaneous signal extraction
	Individual, per line or per signal diagrams
	Optional smoothing
	Absolute/relative scaling
Operating system	Windows 10 … Windows XP
Context sensitive help	English, German

Parts and Cables

SEM mixed control & acquisition cable	Standard 1x
USB cables	Standard 1x
USB memory stick	Standard 1x
PC, keyboard, mouse	Optional 1x
Displays	Optional 2x

Software packages

SEM acquisition USB driver	Digital Image Scanning System 5
Acquisition software	DISS 5
Analysis software	DIPS 5

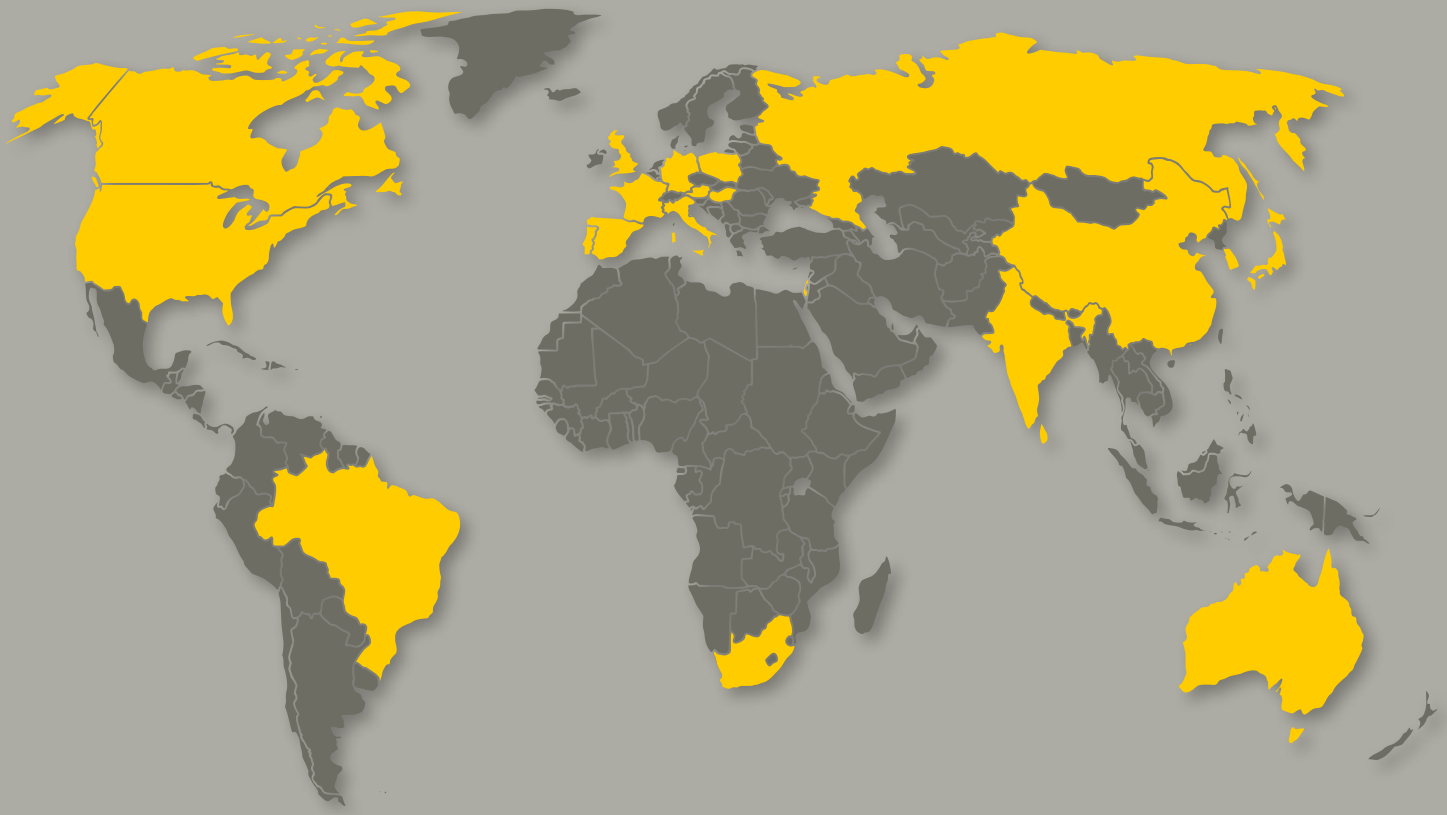
SEM acquisition

Weight and Dimensions

DISS5 module dimensions	23.5 x 8.7 x 29.5 cm
DISS5 module weight	3.4 kg
Shipping dimensions	typ. 36 x 32 x 56 cm
Shipping weight	typ. 7.5 kg

Site requirements

Power	2x mains 110/220 VAC single phase 50-60 Hz
	on the same earth as the microscope
Microscope	1x mixed scan interface and SEM signals connection
Space	DISS5 box may be placed on the SEM bench



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