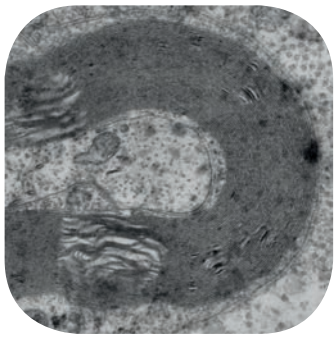
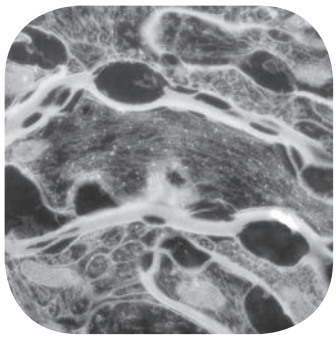
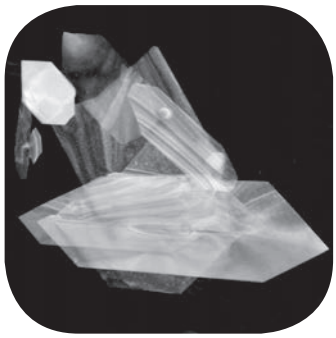
DEBEN

Tensile Testing | E-Beam Instrumentation | Detectors







Detectors

Bright and dark field SEM STEM detector

Applications:

- Materials, biological, life-science
- Grid screening, checking FIB sections, general imaging

Features:

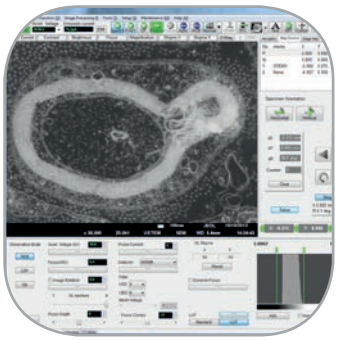
- Low kV operation (1kV to 30kV)
- 4 dark field and single bright field diodes
- Independent bright and dark field acquisition or signal mixing
- Resolution close to that of the SEM (in SE mode)
- 12 position 3.05mm grid holder
- High speed TV rate imaging
- Motorised insertion & retraction
- PC controlled with USB interface

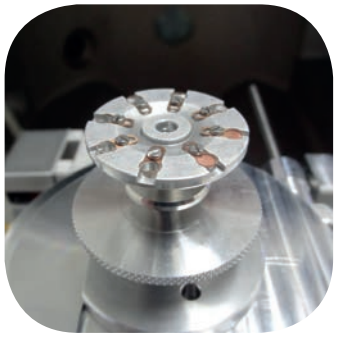
Transmission electron microscopy is widely used in the fields of Life Science and Material Science. Using the Deben Scanning Transmission Electron Microscopy detector (STEM), SEM users can acquire transmitted electron images for a fraction of the cost of a dedicated Transmission Electron Microscope (TEM).

STEM on a conventional SEM is a useful tool for biological and materials applications. However with a Deben STEM on a FE-SEM images comparable to a dedicated TEM are easily obtainable without the need for advanced experience in TEM or the large budget for such high-end equipment. The STEM detector is designed so that the specimen and area of interest are quickly found. Alignment follows normal SEM operation routines and the operator can also easily switch between STEM and SEM mode with just a click of the mouse. Operating with small beam currents between 1kV and 30kV minimises damage to delicate samples, allowing stable slow scans and time to collect images with a high pixel density.

Advantages of using the Deben STEM are, higher spatial resolution than bulk sample imaging, greater contrast of low-Z materials and a more gentle investigation of sensitive or thin materials than higher kV TEMs. Other benefits include reduced effects from contamination, less charging, and minimised beam damage.

The Deben STEM detector is configured with a four element dark field diode wired to give two independent channels and a single bright field channel via 120µm aperture.





3.05mm TEM specimen grids are easily mounted to the 12 position grid holder. Any combination of bright and dark field diodes (including reversed polarity) may be selected for processing.

The unique FIND feature allows even inexperienced microscopists to achieve good results at the touch of a button. The unrivalled scope of adjustment available to the operator then permits highly optimised images to be acquired and fed back into the SEM video system via the auxiliary video input for viewing, further processing and saving.

Motorised insertion and retraction is supplied as standad allowing keypad and PC positioning control. Alignment of the detector position is better than 20µm.

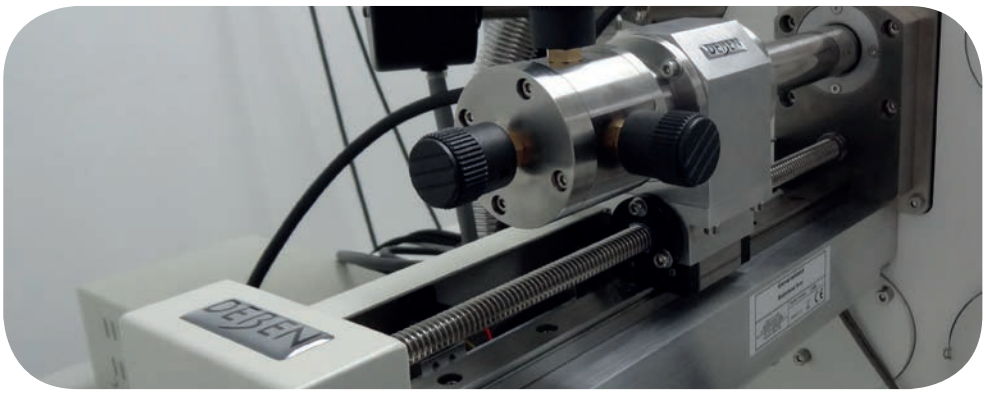
Software can be installed on the SEM or a standalone computer, acquisition parameters can be set to automatic or manual, providing ease of use for novice or expert microscopists.

Outline Specifications

- Retractable mounting mechanics including feed-through flanges and mounting adaptors to suit most SEMs
- Motorised insertion and retraction
- 12 position 3.05mm grid holder with mountings to suit SEM stage
- 3 input channels, two dark field and one bright field
- 120µm bright field aperture
- 8,000,000:1 total gain range, auto control system with imaging to TV rate
- Gen5 microprocessor controlled amplifier system with all cables and manuals
- PC software for USB system control
- Single analogue video output
- Auxiliary video input required on SEM for image display and saving
- Easy to use software control interface compatible with Windows™ XP/7.0, 32/64bit
- Operating voltage 115V or 230V, fully CE and RoHS compliant

Options

- Bellows sealing
- Manual insertion & retraction
- 8 position grid holder (for small travel stages)
- HAADF Annular STEM system
- 3 video outputs



Deben UK Ltd., Brickfields Business Park, Old Stowmarket Road, Woolpit, Bury St. Edmunds, Suffolk IP30 9QS. UK.
Tel +44 (0)1359 244 870 | **Email** info@deben.co.uk | **Web** deben.co.uk
Registered Number 3208255 | **Registered Office** Calverts Buildings, 52c Borough High Street, London SE1 1XN.