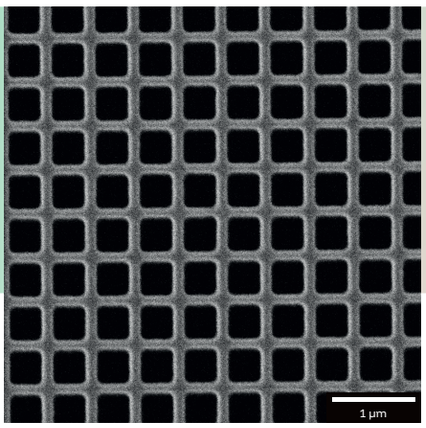
Tescan Essence™ EBL kit

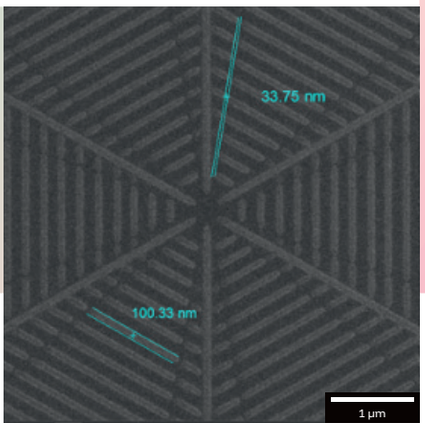
Dedicated software module for high precision electron beam nanopatterning for SEM and FIB-SEM

Working in tandem with TESCAN's fast electrostatic beam blanker and BrightBeam™ technology, the EBL kit offers a fully integrated, seamless operation, providing a one-stop solution for a wide range of micro and nano applications, including photonics, plasmonics, sensors, spintronics, micro/nanomechanical devices, microfluidics chips, and even surface modifications for embryonal cell growth.
To achieve optimal lithographic results with artifact free imaging of sensitive samples, pair the EBL kit with TESCAN CLARA low energy imaging, creating a comprehensive fabrication and analytical microscope elevated by the nanoprototyping toolbox.

Image of a grayscale exposure of a bitmap image from Brno



Detailed SEM image of nanodots after sample developing and before metal deposition.



Example of a hexagonal pattern developed to enhance the adhesion of embryonal cell to the surface.

Key Benefits

Save valuable design to device time with ultra-high-quality imaging for structural analysis of exposed resist or final devices combining cost-effective EBL solution with ultra-high resolution low kV field free imaging using TESCAN BrightBeam™ technology

Modify surface sensitive samples while minimizing the damage to the active layer but still achieve high precision of the fabricated structures thanks to the ultra-high resolution of the BrightBeam™ column at low kV

Enjoy the seamless EBL experience by taking advantage of the fully integrated Essence™ EBL software module which features a user interface that is consistent with the TESCAN Essence™ GUI, making it familiar and easy to learn

Use your designs without any restrictions on TESCAN microscopes or any other lithographical machine by benefiting from GDSII format without any restrictions

Speed up your expositions and save precious machine time thanks to ultra-fast pattern generator with the lowest dwell time of 20 ns in its class

Expose high quality objects through the whole write field utilizing variable dwell time pattern generator combined with proximity error correction, enabling fracture free expositions of objects

Achieve high pattern fidelity by combining the high depth of focus of the BrightBeam™ column and the sample tilt compensation technology using the Z-levelling function and beam refocusing

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Avoid field stitching errors and exposure defects by tailoring your EBL exposure strategy (write field positioning) during multi-field exposures through the use of TESCAN technological layers

Fabricate complex and highly precise multilayered structures taking advantage of an automatic overlay exposition functionality optimizable for all sample types

Create high quality circular objects using TESCAN's circular exposure strategy for circular objects, annually and pies

Find the best exposure conditions for you by taking advantage of TESCAN's in-flight beam tracing functionality