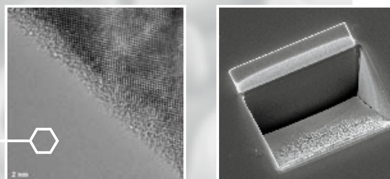
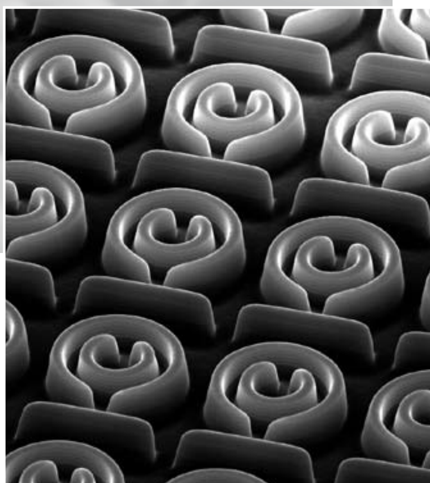
PRODUCT DATA

FEI COMPANY™
TOOLS FOR NANOTECH





Extended Performance Kit for DualBeam™

Stay on the leading edge of prototyping, characterization and automation standards with Nova™ NanoLab and Strata 400 (STEM) DualBeam™

To support the ongoing developments on 3D NanoCharacterization, 3D NanoPrototyping and *In situ* NanoProcesses FEI offers an upgrade kit for Nova NanoLab 200, 600, 600(i), Strata 400 and Strata 400 STEM DualBeam that will extend your instrument performance for:

Prototyping: A 16-bit digital patterning engine with up to 8 million dwell points per pattern allows for more precise milling or deposition of complex structures over small and large writing fields.

Process Monitoring: To let users better monitor the milling processes or perform end-pointing (e.g. on cross sectioning, TEM sample preparation, circuit editing, etc), the existing FEI simultaneous patterning and imaging SPI™ is complemented with iSPI™ for acquiring intermittent high resolution SEM images while patterning, and iRTM™ for simultaneous FIB milling and imaging of the exact same FIB-scanned area.

Sample preparation: The kit includes new preparation features, such as the fast multipass cross sectioning capability or, for Sidewinder FIB owners, the ability to explore very low kV FIB polishing for best FIB-amorphized layers removal.

Automation: The latest Windows XP SP2 based xT software platform is optimized for automation, supporting FEI's most recent suite of applications including AutoTEM G2, Auto*Slice & View* G2, $GDS_{TO}DB$ and 3D analysis.

Stay on the leading edge of prototyping, characterization and automation standards, and request an FEI representative to provide you with more detailed information about this extended performance kit. Check the Upgrades and Accessories catalog hosted on fei.com/owners to learn more about other options for your DualBeam.

Key benefits

- *Create more complex 3D shapes and structures on small and large writing fields using high resolution patterning*
- *Improve your process monitoring and end-pointing with the new high resolution Intermittent Simultaneous Patterning and Imaging (iSPI) and Integrated RealTime Monitor (iRTM)*
- *Up to 2.5 x faster milling using the multipass cross sectioning*
- *Expand your cross sectioning capabilities with the new fast Multipass strategy*
- *Benefit from Microsoft Windows XP SP2 based operation software and the latest DualBeam xT software platform*
- *Access very low kV FIB (1 kV and 500 V) polishing for best FIB-amorphized layers removal (only for DualBeams equipped with the SideWinder FIB)*

Content of the Extended Performance Kit

Every offer is customized. This overview gives you an indication of the most common content of the kit:

- 16-bit patterning hardware for Nova 200, 600, 600i, Strata 400 and Strata 400STEM with 12-bit patterning hardware
- Windows XP SP2 software and latest DualBeam xT software platform
- Microscope controller and support PC
- 6-Channel Detector Amplifier MKII
- CDEM pre-amplifier upgrade (for CDEM owners)
- Installation by FEI trained Engineer

Specifications comparison table for:

Nova NanoLab 200, 600 and 600(i) Strata 400 and Strata 400 STEM

Previous generation specifications	Extended Performance Kit specifications
DualBeam with FIB (Sidewinder)	**DualBeam with FIB (Sidewinder)**
• Minimum energy: 2 kV	• Minimum energy: 500 V (Nova™ NanoLab with a Magnum FIB can be upgraded to a Sidewinder FIB) upon request.
Patterning:	**Patterning:**
• High resolution, 12-bit patterning engine • Maximum pattern size: 1M pixels • Minimum Dwell Time: 50 ns/pixel • Maximum Dwell Time: 1 ms/pixel	• High resolution, 16-bit digital patterning engine • Maximum pattern size: 8M pixels • Minimum Dwell Time: 25 ns/pixel • Maximum Dwell Time: 25 ms/pixel • Maximum resolution: 64k x 64k • Multiple pattern shapes • Variable dwell time pattern to give 3D milling • Complex milling patterns through Bitmap import
Digital image Processor:	**Digital image Processor:**
• Dwell time: 0.1 to 4000 μs/pixel • Up to 3584 x 3094 pixels • File Type: TIFF (8,16 bit), BMP or JPEG	• Dwell time: 0.025 to 25000 μs/pixel • Up to 4096 x 3536 pixels • File Type: TIFF (8,16,24 bit), BMP or JPEG
System control:	**System control:**
• 32-bit graphical user interface GUI with Windows 2000	• 32-bit graphical user interface GUI with Windows XP SP2

Related Options

Upgrade Magnum FIB column to Sidewinder FIB Column

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TÜV Certification for design, manufacture, installation and support of focused ion- and electron-beam microscopes for the NanoElectronics, NanoBiology, NanoResearch and Industry markets.

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