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DATASHEET

EasyLift Nanomanipulator for TEM sample lift-out

For consistent, high quality, ultra-thin TEM lamellae

DualBeam systems, known for fast creation of precise and consistent TEM lamellae, can now be equipped with the new EasyLift Nanomanipulator for *in situ* sample lift-out.

The Thermo Scientific™ EasyLift™ Nanomanipulator™ allows operators to extract the lamella and attach it to a TEM grid, all within the DualBeam chamber. In the DualBeam, the iFAST™ software guides the process of easy, repeatable creation of ultra-thin TEM lamellae, allowing even novice operators to create high-quality TEM samples with tremendous confidence.

EasyLift's low-drift, high-precision movements allow you to easily create traditional TEM lamella or ultra-thin lamella using the backside thinning technique. All EasyLift models are integrated with the microscope's xT software to provide a simple, intuitive method for lift-out and transfer of TEM samples to a grid, all within the DualBeam chamber. With its highly accurate and fast motorized rotation, the EasyLift EX model is ideally suited for high speed inverted or plan view sample preparation.

The established leader in TEM sample preparation technology, Thermo Fisher Scientific solutions like EasyLift are designed to give you the confidence that you will achieve the results you need today while providing a roadmap to meet your future needs. And with this strong foundation, you can be confident you'll achieve solid results to meet your industry's growing demands.

Key benefits

Enables precise, site-specific preparation of ultra-thin TEM lamellae

Promotes operator confidence for *in situ* TEM sample lift-outs—critical for one-of-a-kind samples

Pairs with iFAST software for consistent, repeatable preparation and lift-out of ultra-thin TEM samples

Allows simple "click and drag" movement due to EasyLift's full integration with Dualbeam xT UI

Supported by the Thermo Fisher Scientific expert applications knowledge in TEM lamella prep solutions

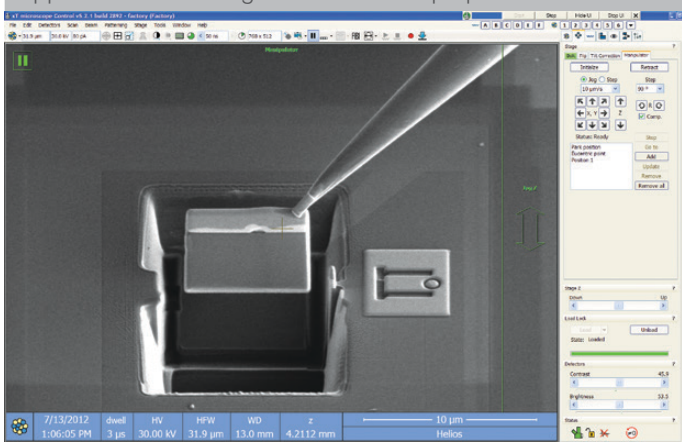

Figure 1. Control of the EasyLift is integrated into the DualBeam UI. Movement of the probe can be done on screen with the mouse.

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Figure 2. Thermo Scientific EasyLift Nanomanipulator

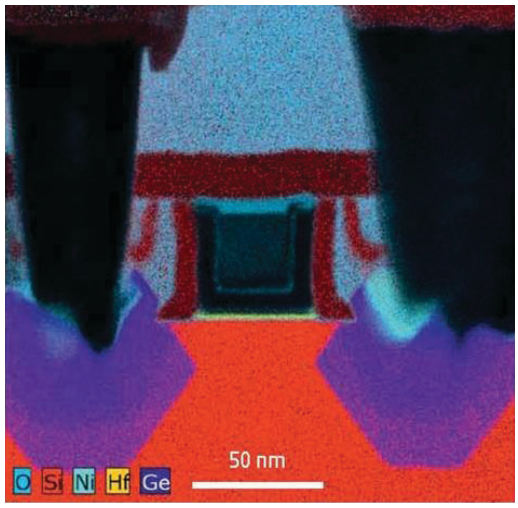

Figure 3. EDS Map of High k metal gate transistor taken on the Thermo Scientific Tecnai Osiris™

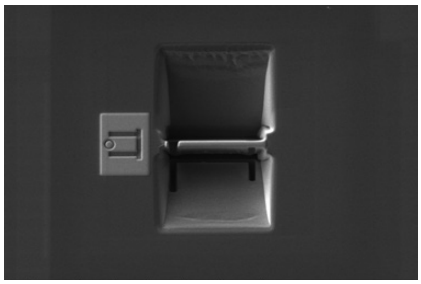

Figure 4. Sample transferred to the TEM Grid with fine precision movement

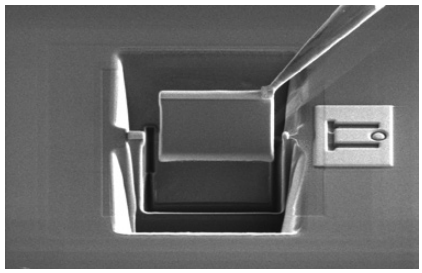

Figure 5. Sample cut free and lifted out using the EasyLift

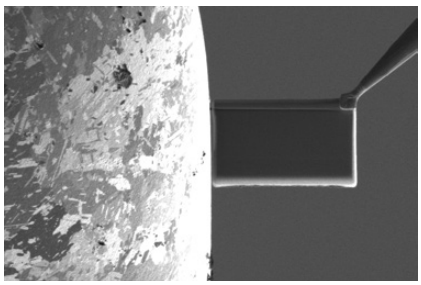

Figure 6. Bulk milling done using the iFAST TEM prep recipe

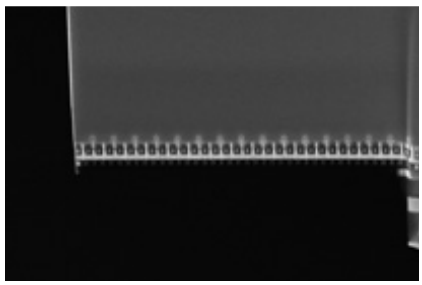

Figure 7. Final thinning to create an ultra-thin sample

EasyLift comes in three varieties to meet different applications needs.

	EasyLift LT	EasyLift	EasyLift EX
Drift	<50 nm / min	<50 nm / min	<50 nm / min
Smallest step size	400 nm	50 nm	50 nm
True 'z' movement over 5 um move	<1 µm	<500 nm	<500 nm
Vibration	<15 nm	<15 nm	<15 nm
Omnidirectional repeatability	<+/- 500 nm	<+/-150 nm	<+/-150 nm
Rotation	Manual	Manual	Motorized

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