EasyLift™ NanoManipulator system for TEM sample lift-out

For consistent, high quality, ultra-thin TEM lamellae

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

The EasyLift system allows operators to extract the lamella and attach it to a TEM grid, all within the DualBeam chamber. In the DualBeam, FEI’s 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.

The established leader in TEM sample preparation technology, FEI 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 “point and click” movement due to EasyLift’s integration with DualBeam software
• Supported by FEI’s expert applications knowledge in TEM lamella prep solutions
Control of the EasyLift is integrated into the DualBeam UI. Movement of the probe can be done on screen with the mouse.

TEM preparation workflow

- Bulk milling done using the iFAST TEM prep recipe
- Sample cut free and lifted out using the EasyLift
- Sample transferred to the TEM Grid with fine precision movement
- Final thinning to create an ultra-thin sample

EasyLift comes in three varieties to meet different applications needs.

<table>
<thead>
<tr>
<th>Feature</th>
<th>EasyLift LT</th>
<th>EasyLift</th>
<th>EasyLift EX</th>
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</thead>
<tbody>
<tr>
<td>Drift</td>
<td>&lt;50 nm / min</td>
<td>&lt;50 nm / min</td>
<td>&lt;50 nm / min</td>
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<tr>
<td>Smallest step size</td>
<td>400 nm</td>
<td>100 nm</td>
<td>100 nm</td>
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<td>True ‘z’ movement over 5 um move</td>
<td>&lt;1 um</td>
<td>&lt;500 nm</td>
<td>&lt;500 nm</td>
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<tr>
<td>Vibration</td>
<td>&lt;15 nm</td>
<td>&lt;15 nm</td>
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<td>Omnidirectional repeatability</td>
<td>&lt;+/- 500 nm</td>
<td>&lt;+/- 500 nm</td>
<td>&lt;+/- 500 nm</td>
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<tr>
<td>Rotation</td>
<td>Manual</td>
<td>Manual</td>
<td>Motorized</td>
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