

From Eye to Insight



# EXPERIENCE THE CUTTING EDGE OF AUTOMATION AND PRECISION

Ultramicrotome UC Enuity



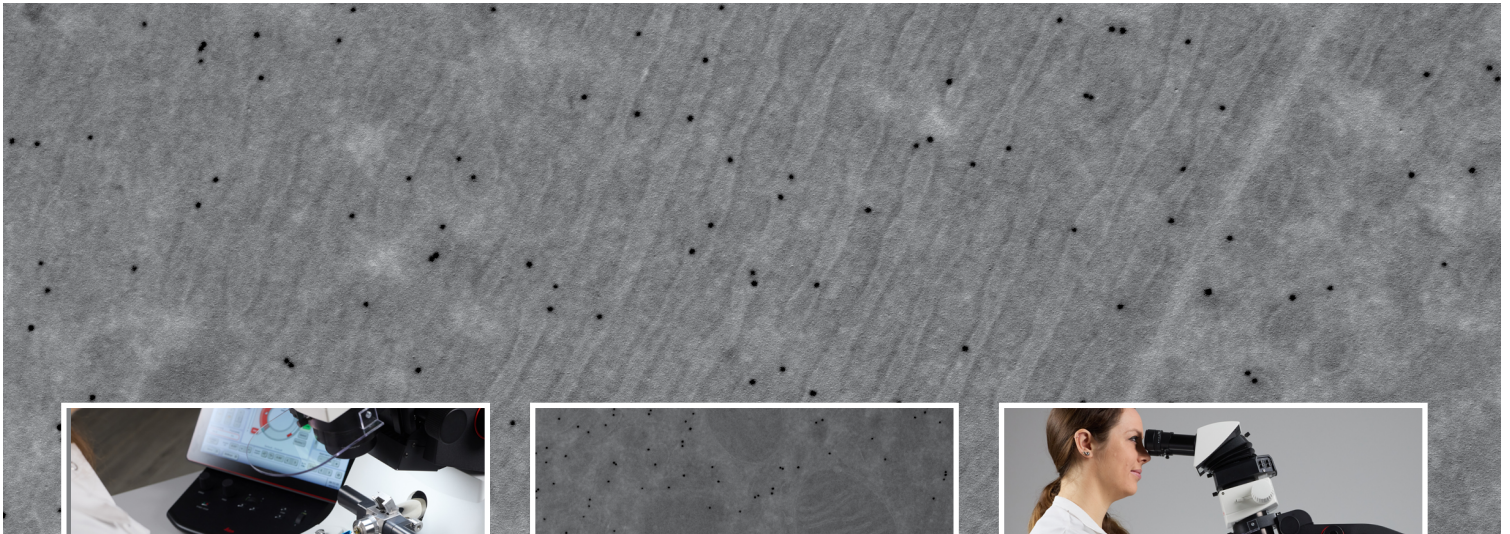
# UC Enuity

## AUTOMATED SETUP FUNCTIONS PROVIDING HIGH-QUALITY SECTIONS

Introducing UC Enuity, a new generation ultramicrotome from Leica Microsystems that saves you valuable time and resources through its automated setup functions and state-of-the-art sectioning quality.

Do you need to produce thin or ultra-thin sections for LM, TEM, SEM or AFM sample preparation?

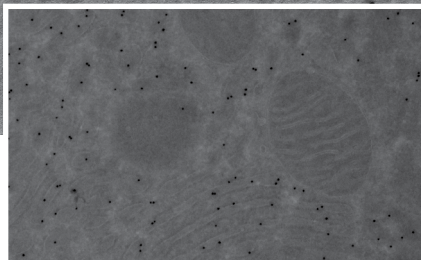
As a comprehensive solution for EM facilities, UC Enuity helps to make sample preparation more efficient, accessible, and precise for users with varying levels of expertise.



### WORK SMARTER WITH AUTOMATED TECHNOLOGY

Experience the future of ultramicrotomy with automation, fluorescence monitoring, and seamless serial sectioning, all in one advanced solution.

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### ACHIEVE CRYOSECTIONING CONSISTENCY

Experience better quality cryo sections with superb precision and safety

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### ENJOY AN IMPROVED USER EXPERIENCE

Experience the benefits of improved comfort, stability and safety.

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# WORK SMARTER WITH AUTOMATED TECHNOLOGY

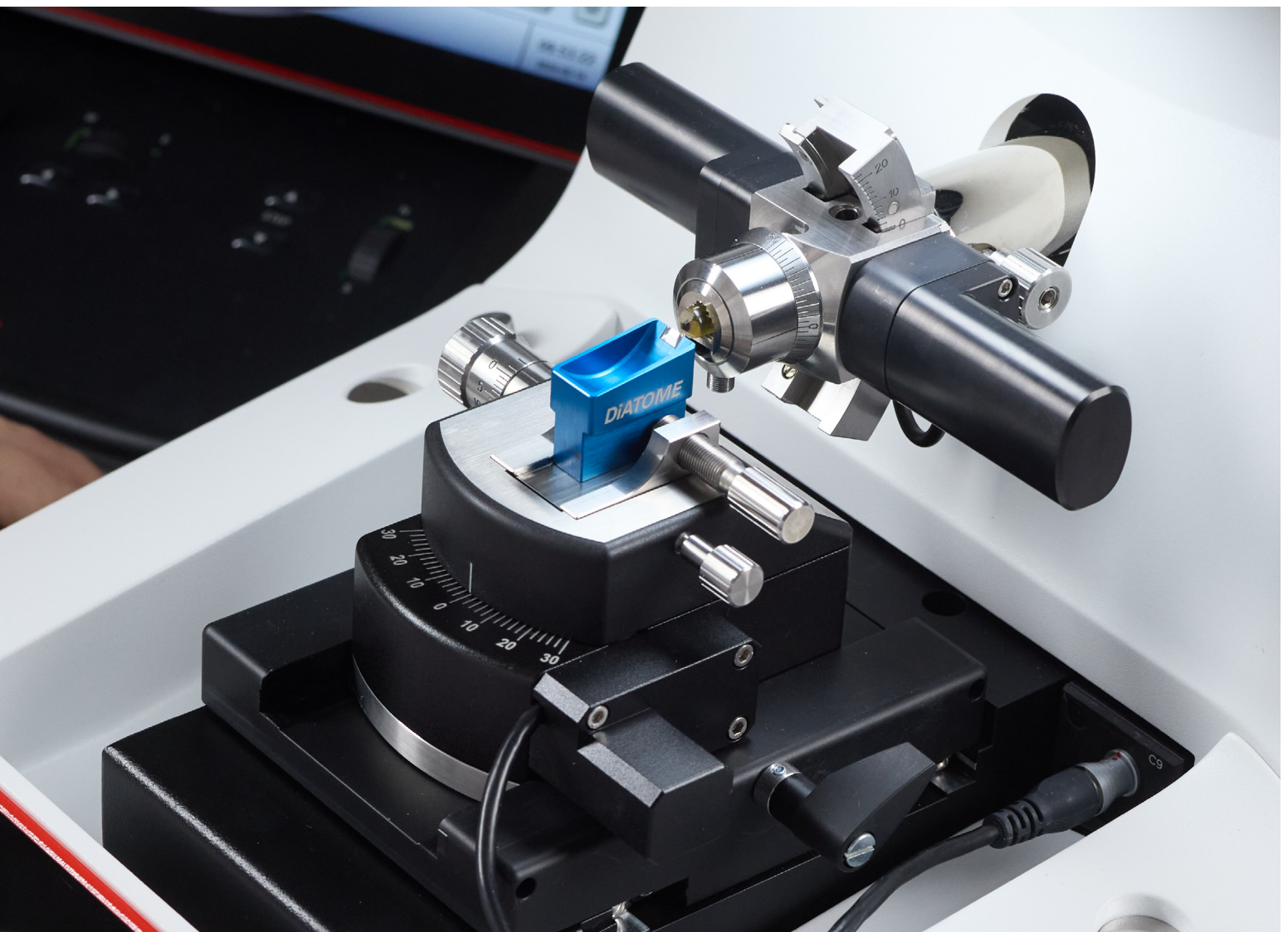
## EMPOWER YOUR TEAM THROUGH AUTOMATION

With its advanced automated functionality, UC Enuity enables all lab users to efficiently perform ultramicrotomy tasks, eliminating the need for complex manual setup steps.

## ADVANCED FEATURES

- > Intuitive user interface and automated functions ensure consistent, high-quality results over time
- > Critical steps in sample preparation can now be automated, including high-quality, ultra-thin sectioning

Reduce the need for user training thanks to autoalignment - an auto approach mode which brings block face and knife together, automatically.



UC Enuity automatically aligns block face and knife to reduce loss of precious material

## ... WORK SMARTER WITH AUTOMATED TECHNOLOGY

### ■ Trim your target with the help of fluorescence or $\mu$ CT

UC Enuity allows you to target regions of interest whether you are sectioning at room temperature or in cryo conditions. Utilizing fluorescent signals you can quickly identify your region of interest. You can also save time and increase efficiency by monitoring your sample's fluorescence signal during sectioning.

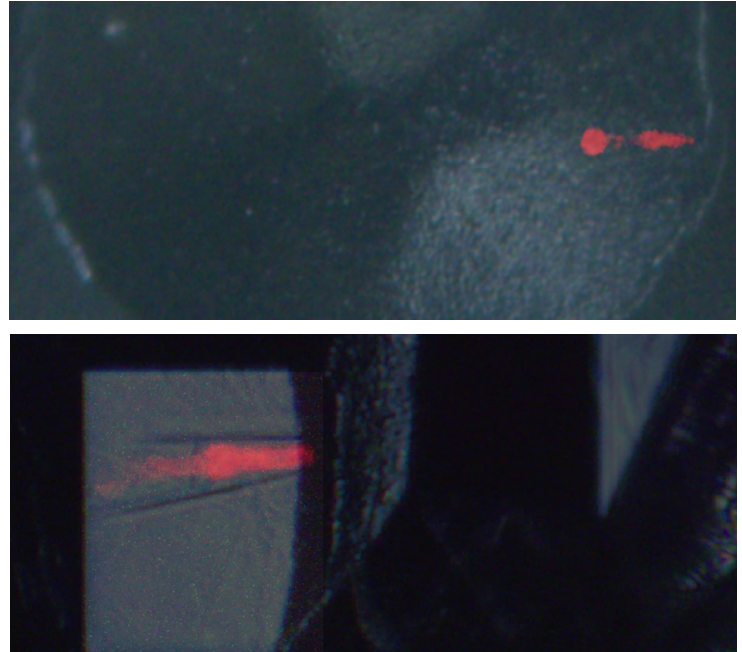
Distinct sample features buried deep in the resin block can easily be targeted by loading your samples  $\mu$ CT scan on your UC Enuity. Select the desired cutting plane for your sample and start the fully automated 3D trim process. You will get to your buried target fast and with precision.

### ■ Make every section count for Volume EM experiments

Speed up your volume EM research with UC Enuity. Prepare uniform, ultra-thin and thin ribbons for your array tomography experiments, at reduced risk of losing precious sections.

You can collect uniformly aligned ultra-thin sections straight on the wafer for fast and reliable transfer into the electron microscope.

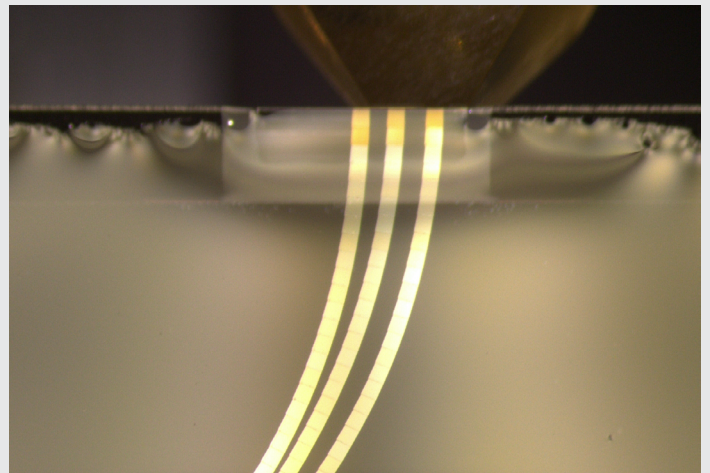
In contrast to FIB, this approach offers large x-y area of imaging, less surface damage and the possibility to re-image your sections.



Automatic 2D trimming of fluorescent targets. Top: Topview of an embedded worm (red fluorescence) after freeze substitution. The round shape is the mold of the flow-through chamber. Bottom: Topview of the block face created by automatic trimming under fluorescence. Sample: *Caenorhabditis elegans*, nematode worm. Pharynx labeled red (mCherry). Sample kindly prepared for sectioning by Dr. Felix Gaedke, CECAD, Cologne, Germany. Worms kindly provided by Prof. Thorsten Hoppe, Inst. for Genetics, Cologne, Germany.

### ■ Advanced features

- > UC Enuity's software guides you through critical steps of the dedicated SEM workflows
- > Collection of uniformly aligned ultra-thin sections directly onto the wafer, for fast and reliable transfer to the SEM



Three consecutive ribbons for Array Tomography, 30 sections each, 70 nm feed. The ribbons were prepared with UC Enuity Volume EM module.



## EXPAND CAPABILITIES AND MAXIMIZE SCIENTIFIC POTENTIAL

### ■ Unlock the full potential of ultramicrotomy with additional modules

Elevate your research journey with an easily upgradable ultramicrotome, empowering you to expand capabilities and maximize scientific potential. You can start with the basic UC Enuity instrument and seamlessly upgrade later with add-on modules to a full-featured system equipped for your specific needs.

- > Upgradable software packages allow the ultramicrotome to evolve with your application needs
- > Both the entry-level brightfield and advanced fluorescence instruments can be upgraded
- > Optimal workflow integration of cryo chamber allows for the workflow connectivity by utilizing cryo transfer systems such as our Vacuum Cryo Transfer System (EM VCT500), Cryo-CLEM shuttle or a Cryo-TEM holder

### ■ Seamlessly upgrade your UC Enuity



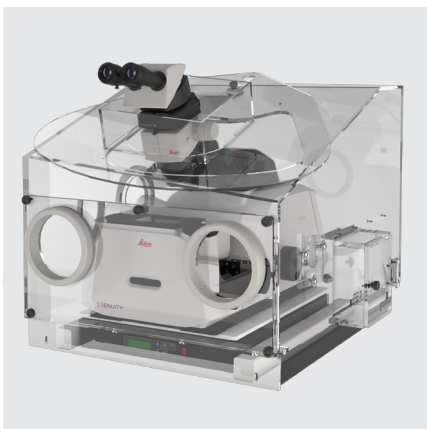
Basic - manual UC for sample sectioning in life and material sciences



Standard - motorized UC for precise sample alignment



Advanced - motorized UC with additional camera and automation for sample trimming and alignment



Cryo - UC fully equipped with cryo chamber and cryo sphere for Tokuyasu, CEMOVIS or polymer science



Fluorescence - UC equipped with stereozoom microscope for fluorescent targeting at room temperature



Cryo Fluorescence - UC equipped with cryo chamber and stereozoom microscope for fluorescence targeting under cryo conditions

# ACHIEVE CRYOSECTIONING CONSISTENCY

## ■ Reduce contamination and increase section quality

With UC Enuity's precise temperature control and an integrated cryo chamber including micromanipulators and cryosphere, ice contamination is minimized. During sample manipulation, micromanipulators and the EM CRION offer stability and flexibility.

Rely on UC Enuity's precise temperature control to maintain optimal cooling conditions for every sample, even in humid conditions.



Rat Exocrine Pancreas, Protein-A-Gold 10nm labelling of anti KDEL10C3; Stained with Uranyl oxalate. Images and samples courtesy Viola Oorshot, (EMCF and the Schwab team, CBB Unit EMBL Heidelberg, Germany).



UC Enuity with cryo chamber.

## ■ Stable, flexible and reliable

- > UC Enuity's micromanipulators offer stability and flexibility during sample manipulation.
- > Micromanipulators ensure reliable and precise sample collection, minimizing the risk of section loss or displacement.
- > Cryo chamber allows a high gas flow mode with increased GN<sub>2</sub> gas flow, reducing ice contamination below -140 °C.
- > EM CRION minimizes the risk of section loss or displacement through electrostatic charge dissipation.





UC Enuity provides flexible and individual ergonomic working position by adjusting the ErgoWedge and the elbow rests on the table.

## ENJOY AN IMPROVED USER EXPERIENCE

### ■ Reduce fatigue with adaptable ergonomics

UC Enuity prioritizes your comfort by offering adaptable ergonomics for users. You will be able to sit comfortably at UC Enuity, even for time-consuming cryosectioning tasks. The stereo microscope with ErgoWedge adapts the height and angle of the optical head to adjust perfectly to the user's body height and position. Armrests are attached to the instrument table. These features, in conjunction with the ergonomically arranged control elements, enhance user comfort, even after hours of instrument use.

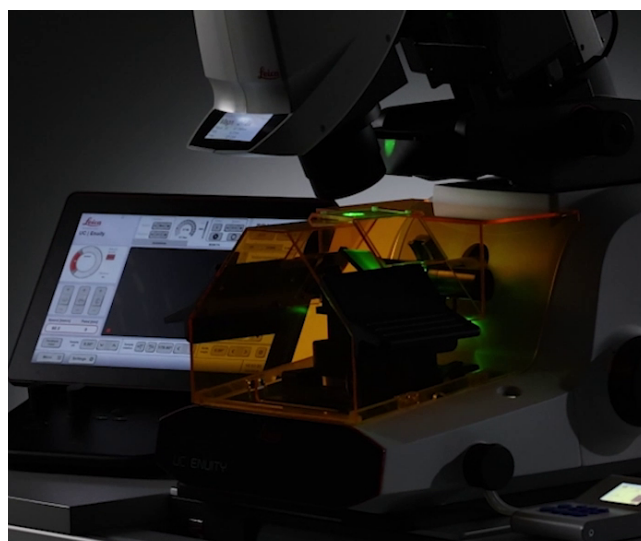
### ■ How UC Enuity adapts to you

- > Easily adapt the system's geometry to accommodate your ergonomic needs.
- > Adapt the height and angle of the stereo microscope to align with your height and position.
- > Rest your arms comfortably on cushioned supports for a more ergonomic and user-friendly experience.

### ■ Protect yourself, your samples, and your equipment

Safety comes first with UC Enuity. You can access fluorescence information safely with UV-blocking shields for both room temperature and cryo setups.

With UC Enuity's enclosed design you will have confidence in safe liquid nitrogen handling that prevents the user from direct exposure.



Access fluorescence information safely with UV-blocking shields

# LEICA SERVICE FOR UC ENUITY

## Enabling your success with complete workflow support

Keep your operations running around the globe with best-in-class services entirely dedicated to microscopy and over 170 years of history.

### Key features

- > Leica Team: 500+ Service & Application experts
- > Leica Training: 4-level factory certification program
- > Leica Logistics: 5 regional hubs for genuine parts
- > Leica OneCall: PhD-level hotline assistance



### ■ Maximize uptime with Remote Care

Now you can enhance your system's performance with Remote Care to keep your system running smoothly. Detect anomalies proactively with UC Enuity, receiving instant notifications for 20+ error codes.

You can also access 30+ critical parameters in real-time for swift issue resolution. Ensure constant monitoring for proactive system maintenance, maximizing your UC Enuity's uptime and streamlining troubleshooting.

CONNECT  
WITH US!



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