



See More Than Before

ECLIPSE *Ti2*
Inverted Research Microscope



A New Vision for Microscopy

The Ti2 combines an unprecedented 25mm field of view with industry-leading optics, a Perfect auto-Focusing System, and a stratum structure that set the standard for expandability in imaging. Coupled with flexible illumination modules and Nikon's powerful software platform, NIS-Elements, the Ti2 delivers unparalleled flexibility in experimental design.

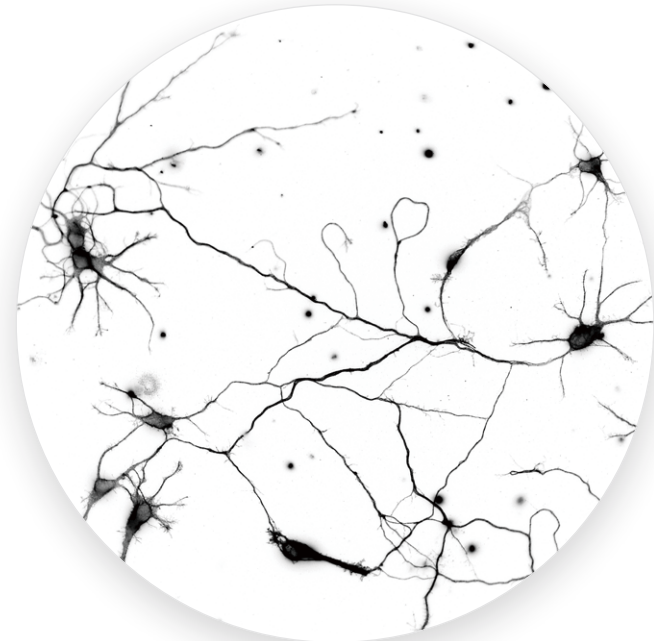
With its Assist Guide to aid microscope alignment and accessible TTL I/O signals for hardware triggering, the Ti2 is a Total Innovation in imaging from basic to advanced applications.

What will you do
with your next microscope?



See More Than Before with 25mm Imaging Ports

The Eclipse Ti2 offers an unprecedented 25mm field of view (FOV) capturing 2X more data in a single image compared to previous technology. The large FOV provides incredibly flat images from edge-to-edge, even with large format sCMOS cameras, enabling users to extract quantitative data from the entire image.

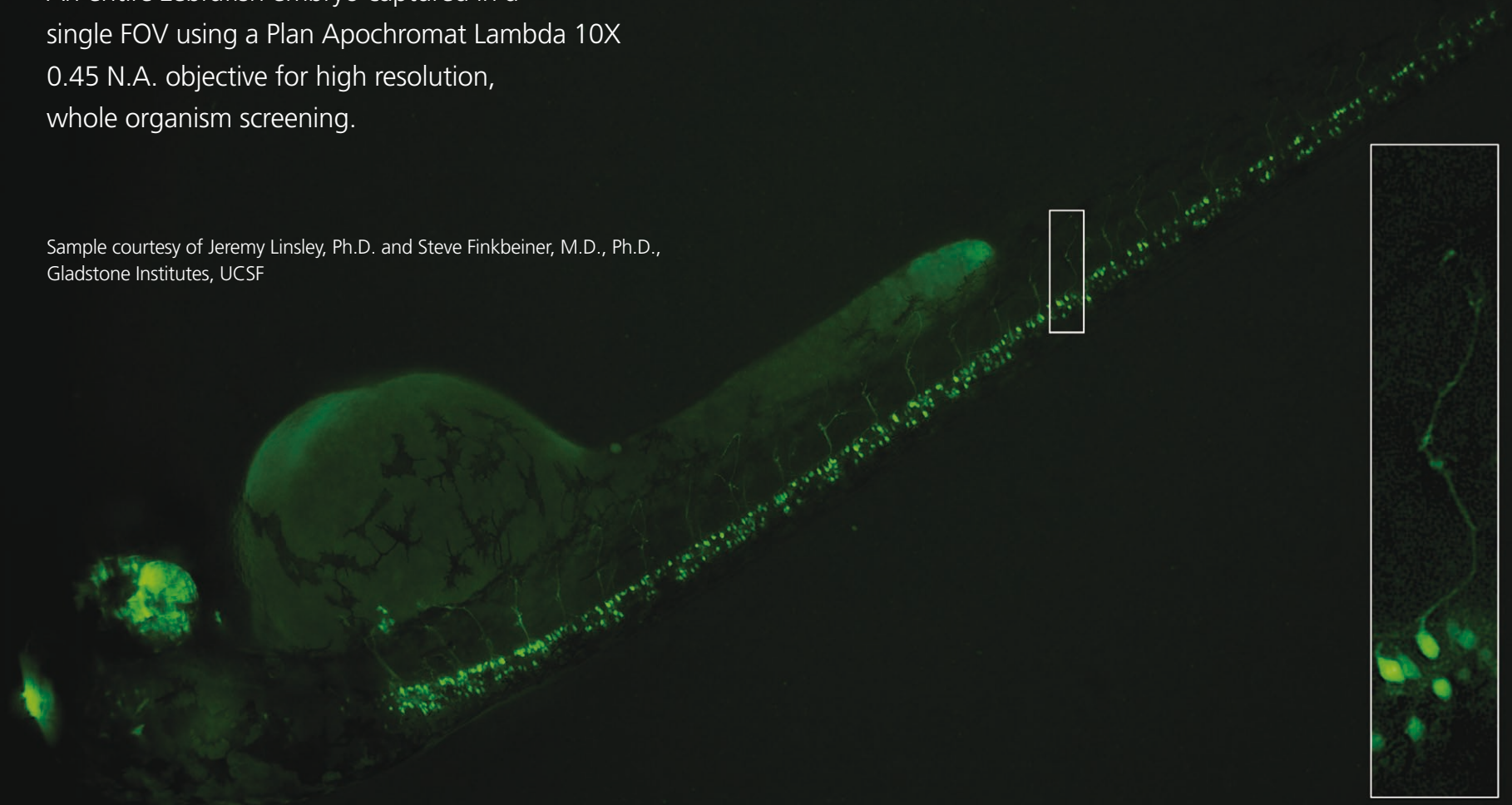


Cultured neurons stained for microtubules, captured with a Plan Achromat Lambda 60X Oil 1.4 N.A. objective. Standard 18mm FOV versus new 25mm FOV of Ti2. Image courtesy of Joshua Z. Rappoport, Ph.D., Northwestern University, Nikon Imaging Center

See More with Your Whole Organism Screens

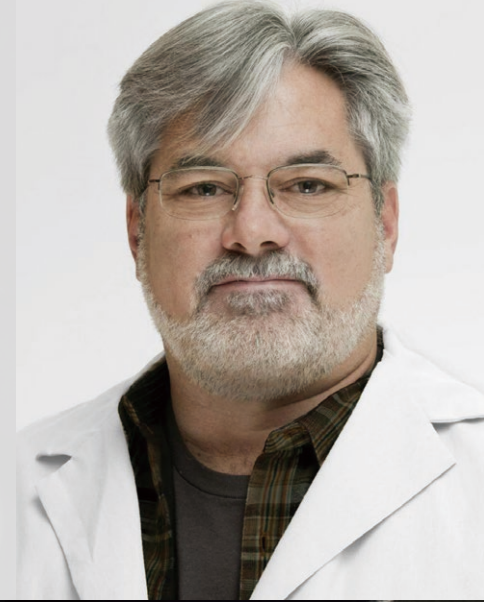
An entire zebrafish embryo captured in a single FOV using a Plan Apochromat Lambda 10X 0.45 N.A. objective for high resolution, whole organism screening.

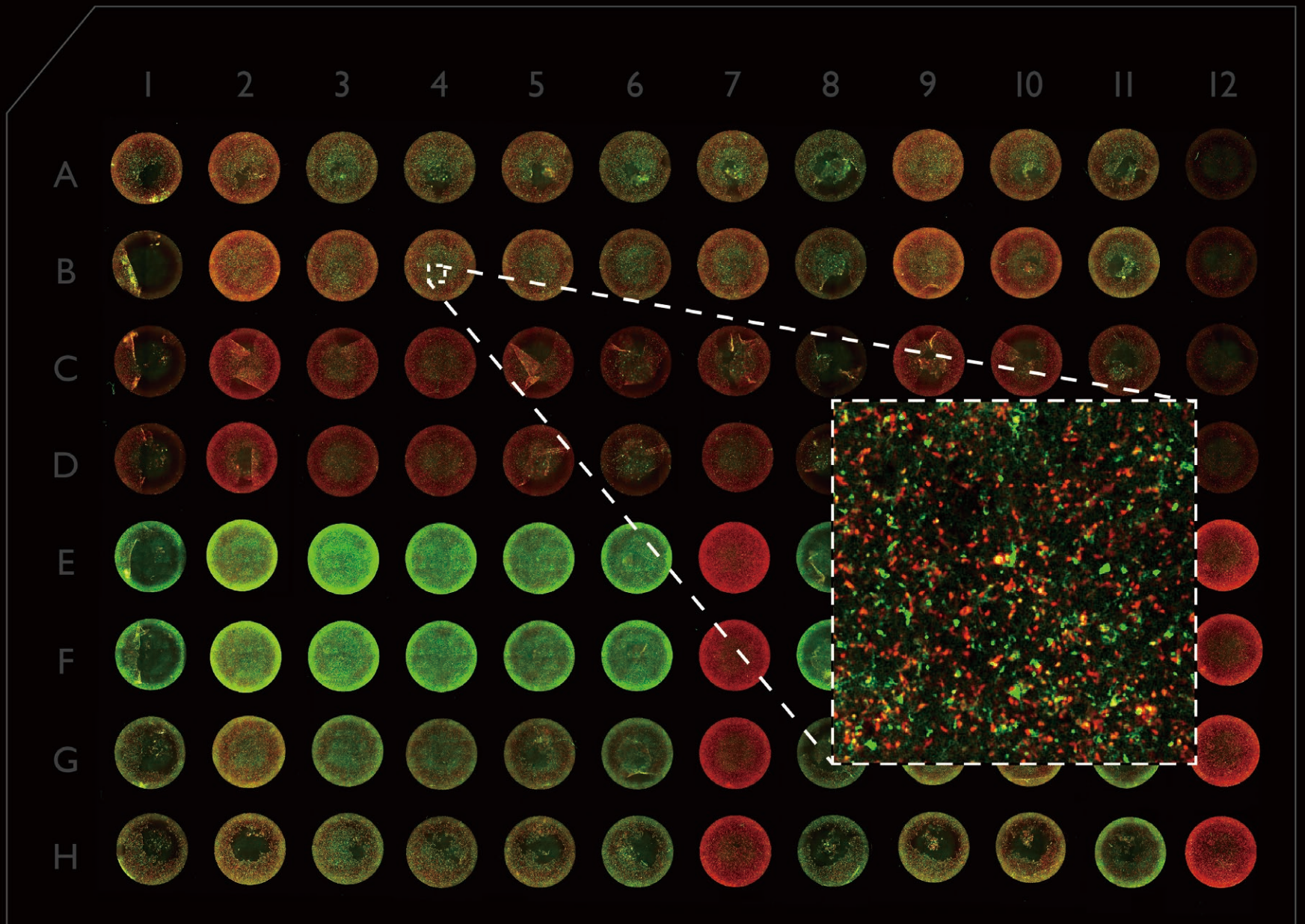
Sample courtesy of Jeremy Linsley, Ph.D. and Steve Finkbeiner, M.D., Ph.D., Gladstone Institutes, UCSF



“The Ti2’s 25mm FOV is a game changer. It dramatically accelerates high-throughput data acquisition, and opens up new possibilities for screening.”

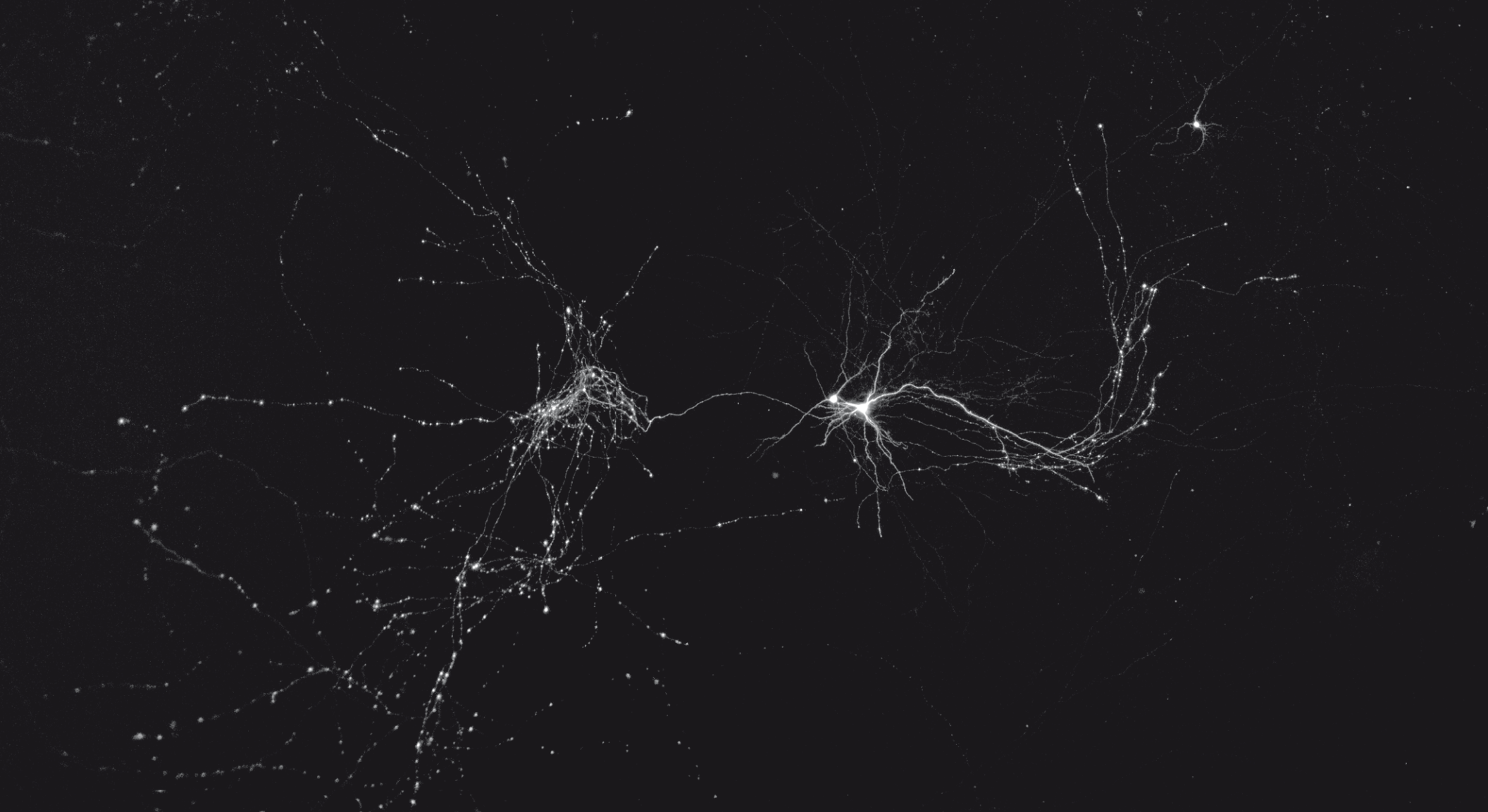
Steve Finkbeiner, M.D., Ph.D., Gladstone Institutes, UCSF





Large image stitch of an entire 96-well plate containing GFP and RFP neurons using a Plan Apochromat Lambda 4X objective.

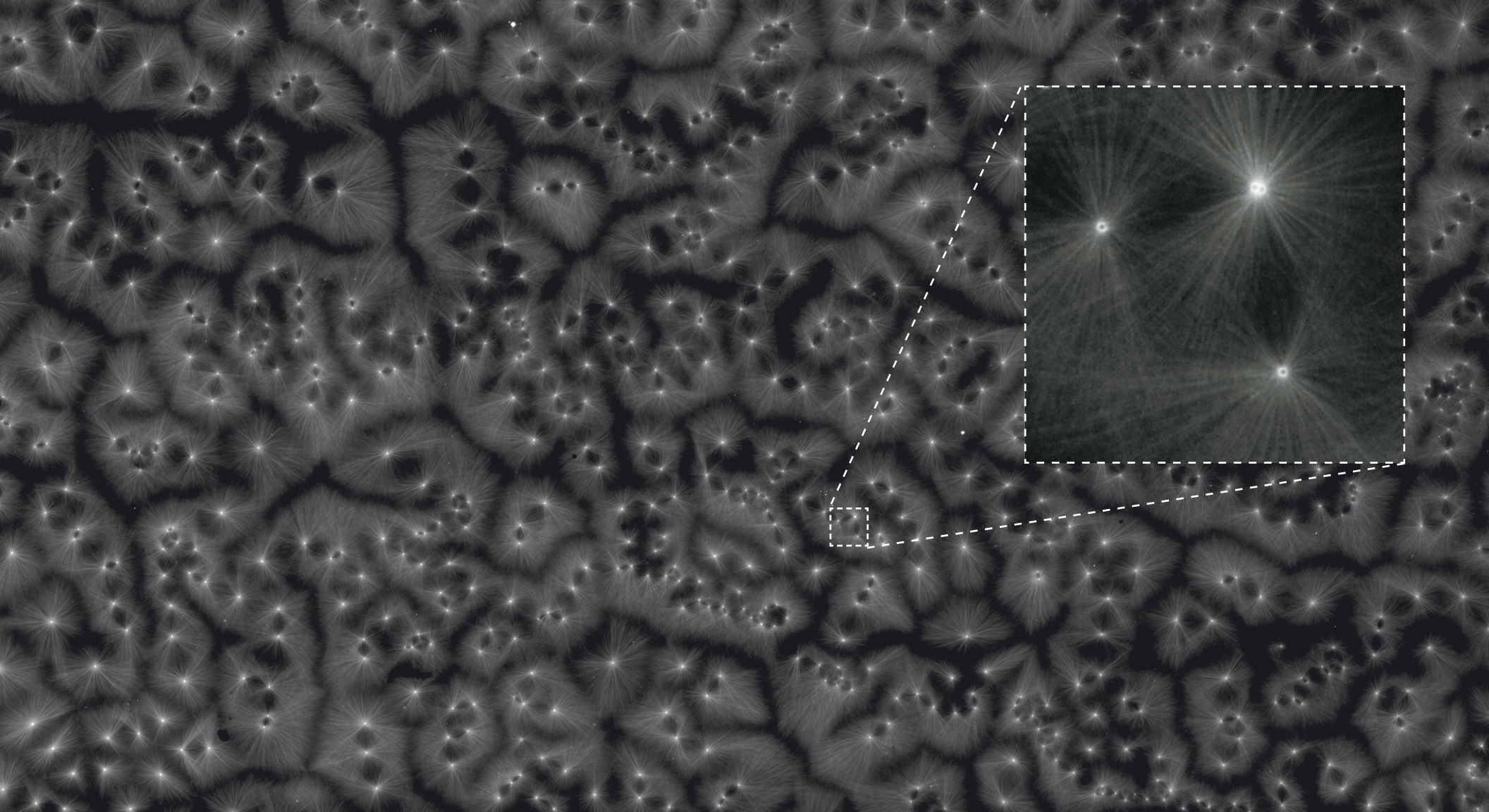
Sample courtesy of Jeanette Osterloh, Ph.D. and Steve Finkbeiner, M.D., Ph.D., Gladstone Institutes, UCSF



Accelerate Your High Content Screen

The large FOV of Ti2 not only accelerates throughput of high content screens but enables high resolution objectives to be utilized without compromising speed or throughput.

A closeup from a high content screen utilizing a Plan Apochromat Lambda 10X 0.45 N.A. objective. The entire well from a 96-well plate was captured in a 3x3 image stitch with a 10x objective. Neuronal sample courtesy of Gaia Skibinski, Ph.D. and Steve Finkbeiner, M.D., Ph.D., Gladstone Institutes, UCSF

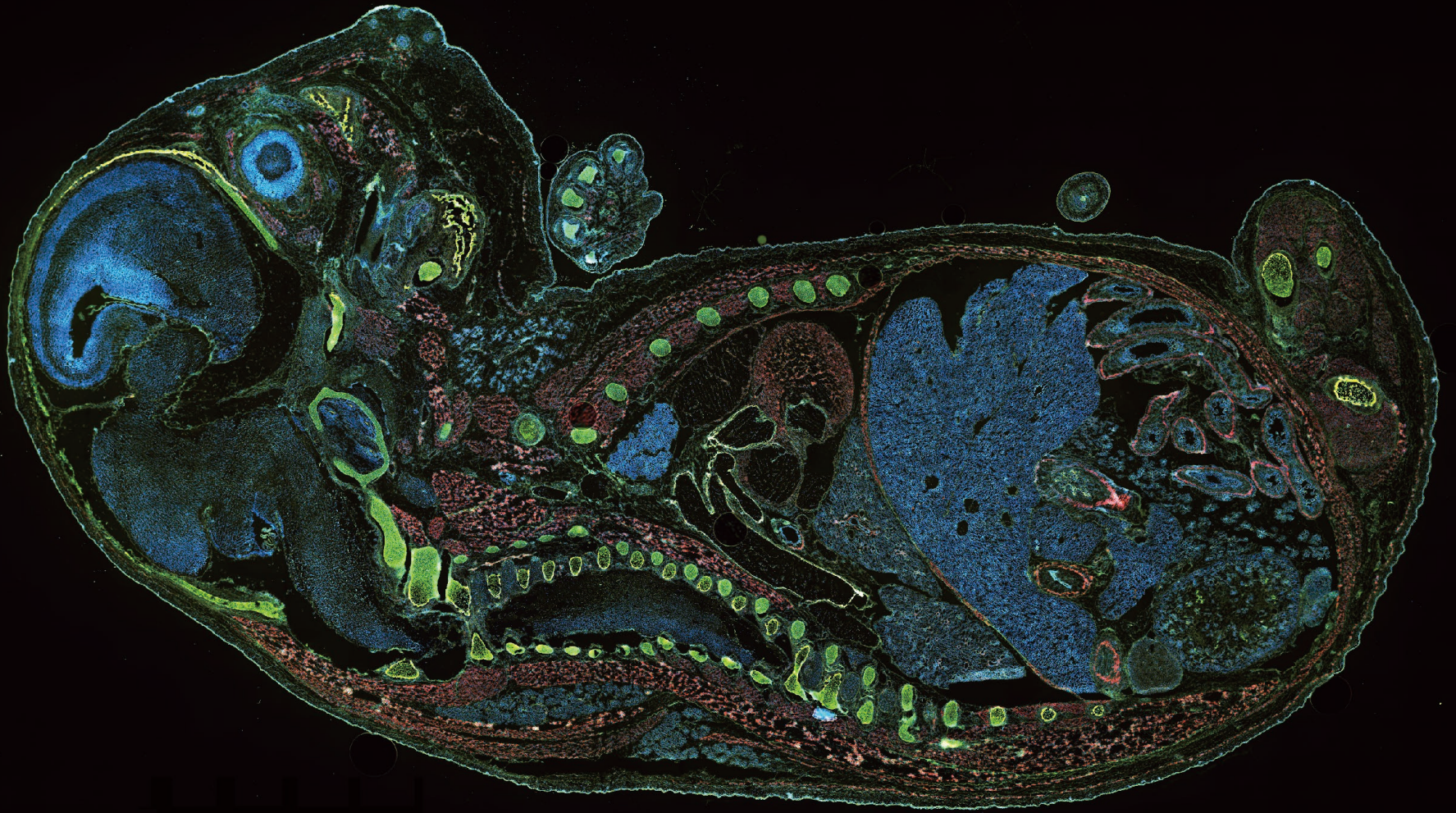


So Much Data in One Image

“The field of view to the camera is amazing – so much data in one image. The Ti has defined the state of the art for flexible microscopy platforms. Updating this stand is important news in research microscopy.”

Tim Mitchison, Ph.D., Marine Biological Laboratory

Large image stitch of microtubule asters formed *in vitro* (Plan Apochromat Lambda 20X 0.75 N.A. objective). Sample courtesy of James Pelletier and Tim Mitchison, Ph.D., Marine Biological Laboratory



Seamless Image Stitching with Incredibly Flat FOVs

The Ti2's large field of view provides incredibly flat images, resulting in significantly reduced acquisition and post-processing times for large image stitching applications.

See More Than Before with Nikon Optics

Nikon's world-class objective lenses are manufactured with precision technology and fine-tuned by master craftsmen who undergo years of dedicated training to produce lenses with unrivaled clarity and performance.

The Plan Apochromat Lambda series of objectives employ Nikon's exclusive Nano Crystal Coat technology to achieve ultra-high transmittance rates through the near-infrared range. Chromatic aberration correction is provided from ultraviolet light to near infrared. With their outstanding flatness of field, the Plan Apochromat Lambda series combine with the 25mm FOV of the Ti2 to redefine the boundaries of microscopy.



kiwami

: To master or pursue excellence





Built Around the User – Assist Guide

Realtime data from the Ti2's built-in sensors (including an internal camera that images the aperture planes) is integrated by a unique Assist Guide function to guide users through alignment procedures and microscope operation. Check Mode alerts users when microscope components are out of place, reducing troubleshooting time. These intelligent features can help standardize training and reduce instances of user error. The Assist Guide function is available through both PC and tablet interfaces.

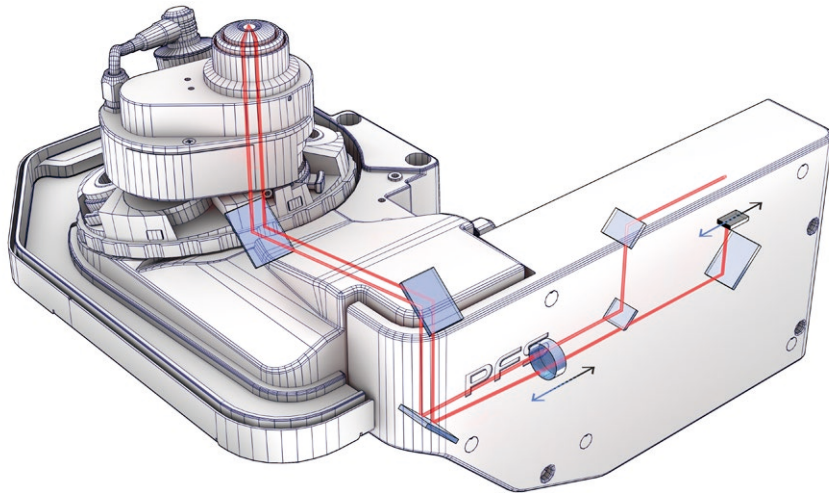
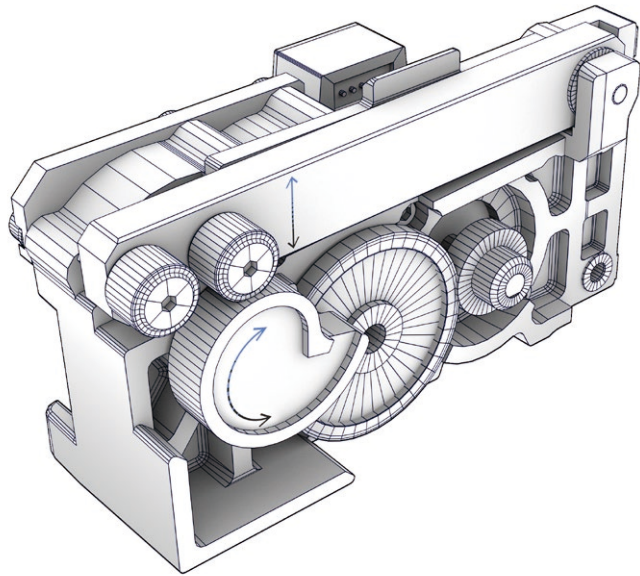


Diagnose User Issues Much More Efficiently

“The Assist Guide feature will be extremely useful for instructing the next generation of microscopists, as well as for verifying that everything is configured appropriately. Trouble shooting is something we spend a lot of time on in a core facility and this will really help us diagnose user issues much more efficiently.”

Joshua Z. Rappoport, Ph.D., Northwestern University, Nikon Imaging Center





The Best in Focus

The Ti2's Z-drive and Perfect Focus System (PFS) have been completely re-designed to provide unparalleled focus stability.

The new cam-based Z focusing mechanism minimizes XY drift to provide an ultra-stable platform for demanding applications. The Z-drive has also been detached from the main body of the microscope in order to maintain a close distance between the actuator and the objective lens even in expanded (staged-up) configurations.

Nikon's PFS has been an industry leader in autofocus systems. Utilizing a linear encoder and a high-speed feedback mechanism, PFS corrects focus drifts caused by temperature changes and mechanical vibrations. The re-designed 4th generation PFS achieves a new standard in focus stability. The detector portion has been separated from the nosepiece to reduce burden on the z-drive and heat output has been virtually eliminated to provide an incredibly stable imaging environment.

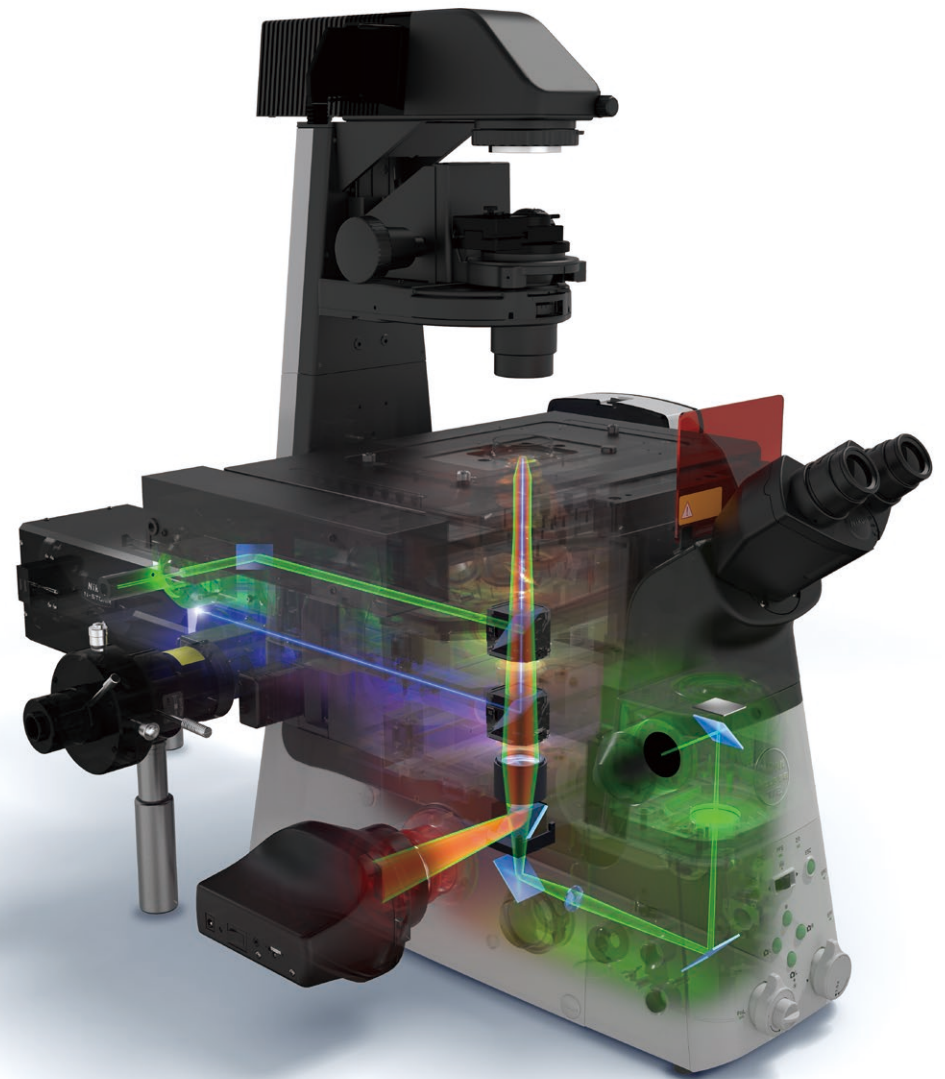
*Mr. Aoyama, Chief Researcher,
Mechanical Design Unit at Nikon*



Flexible and Future-Proof

In its standard configuration, the Ti2 can accommodate up to three different illumination devices, enabling you to easily incorporate FRAP or photo-stimulation with a variety of imaging applications such as confocal or TIRF. By taking advantage of infinity optics, the Ti2 can be expanded (staged-up) to accommodate two optical layers and up to five different illumination devices for unsurpassed flexibility in experiment design. This flexibility also ensures the system can be easily modified to accommodate future needs.

The newly designed Z-drive and PFS4 enhance the stability and performance of the Ti2 even in its expanded form. Combined with the incredible FOV, the Ti2 provides the ultimate platform to meet all your current and future imaging needs.

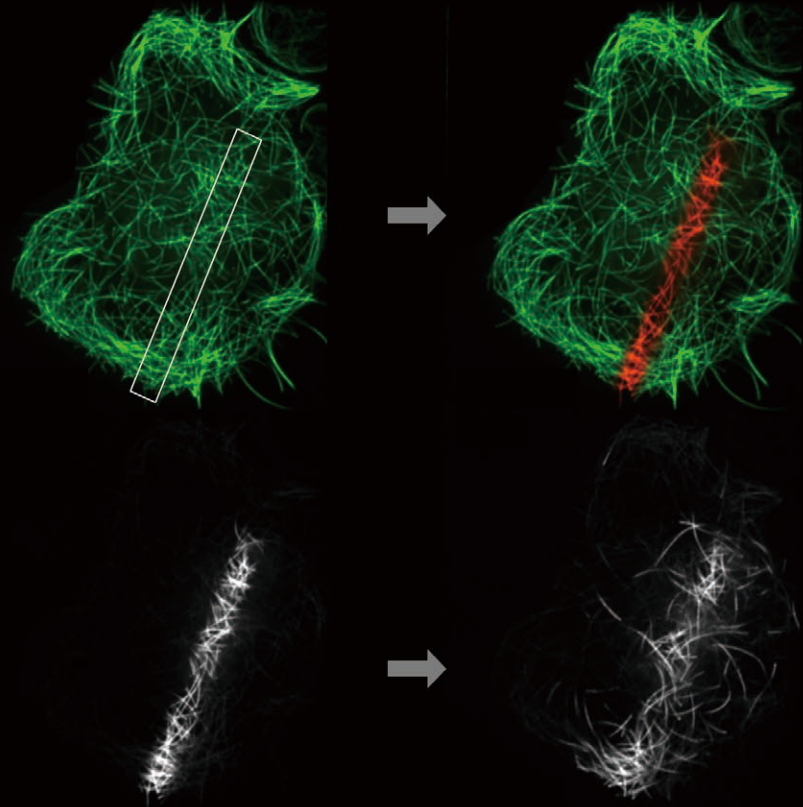


Customize Freely

The Ti2-LAPP system includes a variety of modular illumination devices which can be custom combined to meet even the most challenging experimental needs.

The large FOV epi-fluorescence illuminator with its built-in fly-eye lens technology provides incredible flatness of field across the large 25mm FOV.

Multiple TIRF illuminators including manual and fully motorized versions can be combined to provide simultaneous, multi-angle TIRF imaging. The powerful yet easy-to-use LAPP TIRF illuminators with unique accessories such as gradation ND filters and $1/4 \lambda$ plates are ideal for single molecule imaging and localization-based super-resolution.



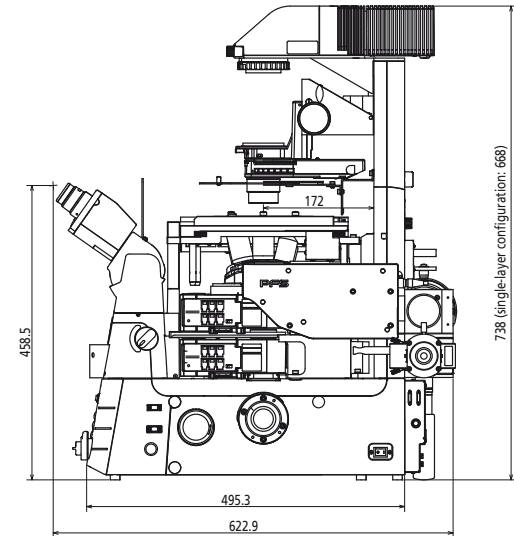
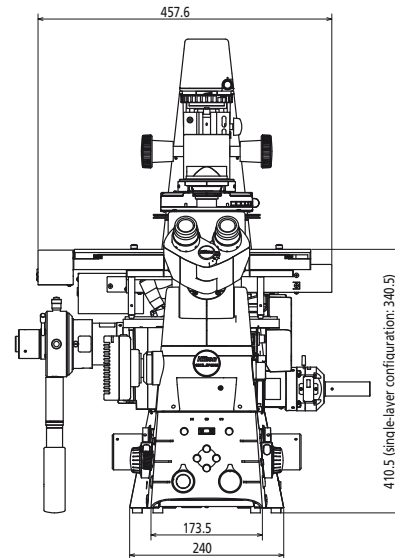
The digital micromirror device (DMD) provides simultaneous photo-stimulation of multiple, custom ROIs, while the FRAP device delivers powerful laser illumination for photo-bleaching. The LAPP-DMD and FRAP modules enable seamless integration of photo-activation/conversion, optogenetics, and FRAP into your TIRF, confocal and Epi-FL imaging experiments.

Sample above courtesy of Vladimir Gelfand, Ph.D. and Urko del Castillo Rojo, Ph.D., Northwestern University

Dimensional Diagrams

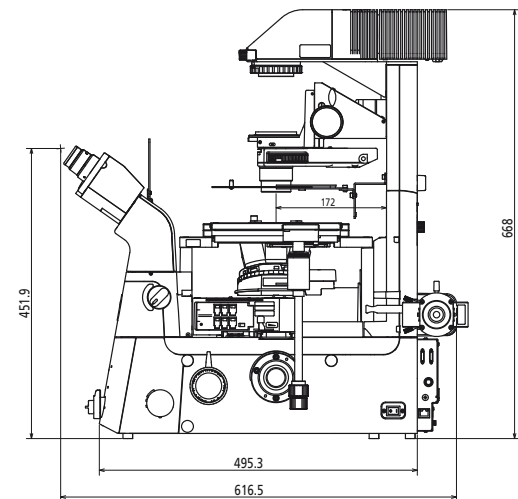
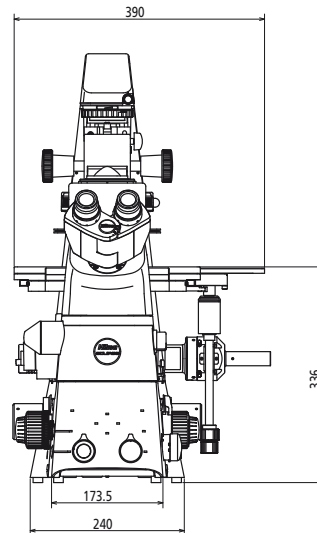
Ti2-E

Double layer configuration with an Epi-FL module and a FRAP module.



Ti2-A/U

Single layer configuration with an Epi-FL module.
Illustration is of Ti2-A.



Unit: mm

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Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. September 2017
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