

Image cleared tissue specimens - any size with unparalleled resolution

ClearScope is a revolutionary light sheet microscope system designed to work with a wide range of cleared specimens. Its patented technology has been developed through a collaboration between scientists at Columbia University and MBF Bioscience. ClearScope is designed to meet the unique challenges inherent to imaging cleared organs and brain specimens with high-resolution optics capable of distinguishing subcellular structures, including dendritic spines.

ClearScope utilizes a patented approach called Light Sheet Theta Microscopy that provides ClearScope with important advantages over all other light sheet microscopy methods, including:

- Image large specimens, including tissue slabs from humans and other primates
- Image smaller specimens, such as whole mouse and rat brains
- Capture the details of the entire specimen with high optical resolution over an exceptionally large lateral area
- High-speed image acquisition
- Easy to use
- Efficient data compression to minimize data storage requirements and maximize speed
- Works with our acclaimed analysis software to map and trace neural structures and microvessels
- Compatible with all cleared tissue methods via intelligent refractive index compensation (IRIC)
- Two independent illumination pathways eliminate shadow effects and uneven illumination

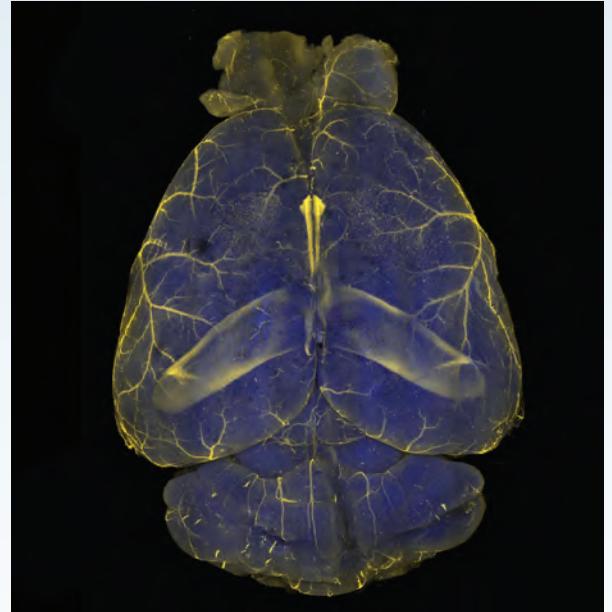
Customizability

ClearScope is designed to be customizable to address the specific needs of researchers in a variety of fields. To maximize effectiveness and accommodate a wide range of budgets, researchers can select the number and wavelengths of illumination lasers, number of illumination arms (1 or 2), objective lenses, and more. System components can even be upgraded and expanded at a later time; for example, adding more laser wavelengths as needed. This makes ClearScope the most adaptable light sheet microscope system to fulfill all the needs of multiple research labs or core facilities.



Specifications

- Maximum Imaging Depth = 12mm (working distance depends on choice of objective lens)
- Maximum Specimen Size = 114mm x 75mm x 12mm with standard stage, virtually unlimited lateral dimensions with larger stages
- Refractive index range = 1.33 – 1.56
- Objective Lens Magnifications = 4x, 10x, 17x, 20x, and 24x
- Numerical Aperture = 0.4 – 1.0NA (depends on objective lens)
- Horizontal (XY) optical resolution = 0.325 μ m (20x objective lens)
- Laser wavelengths = 405 / 488 / 561 / 640 nm (customizable)
- Specimen chambers: for whole mouse or rat brains, tissue slabs from primates, plus custom chambers available
- Single field-of-view pixel resolution = 2048 x 2048 pixels
- Image digitization = 16 bit
- Light sheet thickness = 2 - 6 μ m depending on optics



Learn more at: mbfbioscience.com/clearscope



About MBF Bioscience

A rich history of creating the future of neuroscience.

MBF Bioscience develops advanced tools for collecting and analyzing accurate, reproducible data from histological specimens, 2D and 3D microscope images, and freely moving *C. elegans* so that scientists can better understand brain diseases and processes at a cellular level.

Our products have helped researchers publish over 15,000 peer reviewed papers.

What our customers say

“ MBF Bioscience is extremely responsive to the needs of scientists and is genuinely interested in helping all of us in science do the best job we can.

Sigrid Veasey, M.D.
University of Pennsylvania

“ We’ve been very happy for many years with MBF products and the course of upgrades and improvements. Your service department is outstanding.

William E. Armstrong, Ph.D.
University of Tennessee

