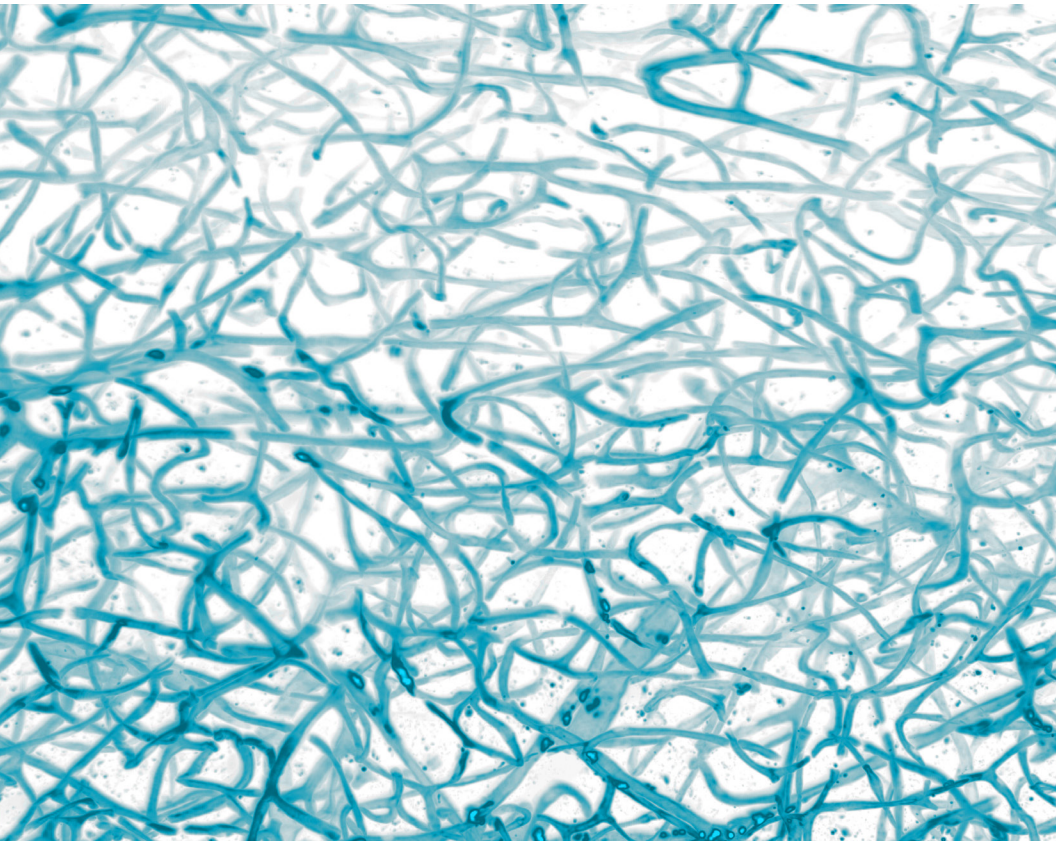
lifecanvas technologies

Product Catalog



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For additional information about any of our products, please contact us at info@lifecanvastech.com.

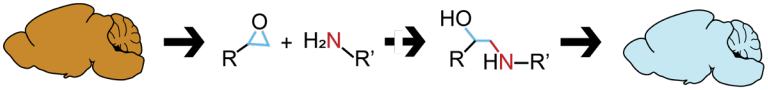
SHIELD Kit

Exceptional protection for PFA-fixed tissues

SAMPLE PREPARATION → LIGHT SHEET MICROSCOPY → 3D DATA ANALYSIS

SHIELD (AKA GE38) safeguards endogenous fluorescence, protein antigenicity, nucleic acids, and overall tissue architecture against physical and chemical stressors.

Compatible with all PFA-fixed tissues, SHIELD also protects tissue during fluorescent protein imaging and multi-round antibody labeling.



SHIELD postfixation | SHIELD epoxidation | Optical clearing and refractive index matching

SKU	Kit Size	Specifications
SH-250	250 mL	• Preserves 25 whole mouse brains or comparable samples • 250 mL SHIELD Epoxy (SH-Ex) • 125 mL SHIELD Buffer (SH-BS) • 500 mL SHIELD ON (SH-ON)
SH-500	500 mL	• Preserves 50 whole mouse brains or comparable samples • 500 mL SHIELD Epoxy (SH-Ex) • 250 mL SHIELD Buffer (SH-BS) • 1000 mL SHIELD ON (SH-ON)

SmartBatch+

High-throughput tissue processing device

SAMPLE PREPARATION → LIGHT SHEET MICROSCOPY → 3D DATA ANALYSIS

SmartBatch+ combines active tissue clearing and labeling into one turn-key device, enabling batch processing of up to 12 whole mouse brains, 4 whole rat brains, or comparable samples.

Leveraging our Clear+ system and eFLASH labeling technology, SmartBatch+ delipidates samples in as little as 1 day, and labels them in just 1-2 additional days.

SmartBatch+ Specifications	
Dimensions (L x W x H)	250mm x 450mm x 350mm
Weight	~40 lbs
Rated Voltage Range	100 - 240 VAC
Rated Frequency Range	50 - 60 Hz
Power Fuses	T 10A 250V
Maximum Sample Size	30mm x 30mm x 20mm
Sample Capacity	12 whole mouse brains 4 whole rat brains
Temperature Control	20 - 50C
Electrophoresis Voltage	0 - 90 VDC
Current Limit	0 - 1500 mA

Easy, streamlined workflow

With immunolabeling: ~1.5 weeks

Without immunolabeling* (*e.g.* endogenous fluorescence): ~1 week
*No Primary or Secondary Labeling steps

SmartBatch+ Accessories and Reagents		
SKU	**Item**	**Specifications**
SB-CK-60	Clear+ Kit	• Solution and membrane kit to delipidate 60 samples • 450 mL Delipidation Buffer • 500 mL Conduction Buffer
SB-SSSK5	Single Sample Staining Kit	• Reagent kit for 5 staining experiments on individual samples • 300 mL Primary Device Buffer (x5) • 300 mL Secondary Device Buffer (x5) • 500mL Secondary Sample Buffer
SB-BSK	Batch Staining Kit	• Reagent kit for one batch staining experiment on up to 12 samples • 300 mL Primary Device Buffer • 300 mL Secondary Device Buffer • 500 mL Primary Sample Buffer (x2) • 500 mL Secondary Sample Buffer (x2)
SB-CC	Clearing Cup Set	• 2 Clearing cups
SB-BC	Batch Staining Cup Set	• 2 Batch staining cups
SB-AK	Accessory Kit	• 2 Lock rings • 2 Sample rings • 4 Incubation jars • 2 Ring stands • 2 Large + 2 small sample bag sets

Validated targets for SmartBatch+ device

Please contact us at info@lifecanvastech.com for a full list of antibodies validated for use with SmartBatch+.

- Agouti-related protein (AgRP)
- Alpha Smooth Muscle Actin (aSMA)
- Alpha-synuclein (pS129)
- Anti-GFP
- Anti-RFP
- Beta-Amyloid
- Calbindin
- Calretinin
- Cannabinoid Receptor 1
- CD31
- CD45
- cFos
- ChAT
- CNP
- cTip2
- D1R (Dopamine receptor 1
- D2R (Dopamine receptor 2)
- Dopamine Beta Hydroxylase (DBH)
- Gad67
- GFAP
- Iba-1
- Ki-67
- NeuN
- Neuropeptide Y (NPY)
- NF-H
- nNos
- Norepinephrine Transporter (NET)
- Olfm4
- Olig2
- Parvalbumin (PV)
- PGP9.5
- Phospho-CREB (Ser133)
- Phospho-Tau (Ser202, Thr205, AT8)
- S100B
- SFTPC
- SNAP-tag
- Somatostatin (SST)
- TPH2
- TREM2
- Tyrosine Hydroxylase (TH)
- V5
- Vimentin
- VIP

Passive Clearing Kit

Easy tissue preservation and clearing

SAMPLE PREPARATION → LIGHT SHEET MICROSCOPY → 3D DATA ANALYSIS

Our non-toxic reagents preserve fluorescent proteins, reduce autofluorescence, and optimally prepare samples for 3D imaging and analysis. This kit contains everything you need to protect and clear samples without specialized equipment.

For accelerated, higher-throughput tissue processing and immunolabeling, check out SmartBatch+.

SKU	Kit Size	Specifications
C-PCK-250	250 mL	• Processes 8 whole mouse brains or comparable samples • 250 mL SHIELD Kit (SH-250) • 250 mL Delipidation Buffer • 250 mL EasyIndex with RI = 1.52
C-PCK-500	500 mL	• Preserves 16 whole mouse brains or comparable samples • 500 mL SHIELD Kit (SH-500) • 500 mL Delipidation Buffer • 500 mL EasyIndex with RI = 1.52

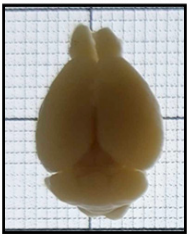
EasyIndex

Index matching for optical transparency

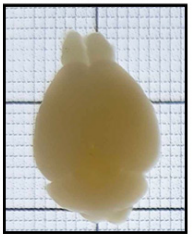
SAMPLE PREPARATION → LIGHT SHEET MICROSCOPY → 3D DATA ANALYSIS

After delipidation, refractive index (RI) matching renders samples optically transparent for optimal light penetration during image acquisition.

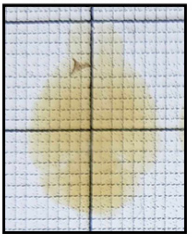
EasyIndex is compatible with a broad range of sample species and organs, as well as immunolabeled tissues, and tissues cleared with aqueous methods.



Before Delipidation



After Delipidation



After Delipidation & Index Matching

SKU	Size	Specifications
EI-100	100 mL	• RI-matches 2 whole mouse brains, ~40 1mm-thick tissue sections, or comparable samples • Refractive index = 1.52
EI-500	500 mL	• RI-matches 12 whole mouse brains, ~200 1mm-thick tissue sections, or comparable samples • Refractive index = 1.52

Megatome

Precision sectioning for diverse samples

SAMPLE PREPARATION → LIGHT SHEET MICROSCOPY → 3D DATA ANALYSIS

High-quality tissue sectioning depends on minimizing tissue damage while maximizing throughput and uniformity.

Megatome combines high blade vibrating frequency, an advanced vibration control mechanism, easy-to-use sample embedding tools, and more for a truly optimized sectioning workflow.

Megatome is the only instrument capable of automatically and accurately sectioning:

- Large samples like human or nonhuman primate organs
- Large volumes of smaller samples such as biopsies, organoids, or rodent organs

Megatome Specifications	
Maximum Sample Size (H x L x W)	Standard: 75 x 100 x 80 mm Premium: 200 x 150 x 100 mm
Blade Vibration Frequency / Amplitude	120 Hz / 0 - 2 mm
Operating Speed	Sectioning: 0 - 5 mm/s Return: 5 mm/s
Blade	General razor or microtome blades
Mode	Automatic or manual sectioning

Light Sheet Microscopes

Imaging solutions for a variety of applications

SAMPLE PREPARATION → **LIGHT SHEET MICROSCOPY** → 3D DATA ANALYSIS

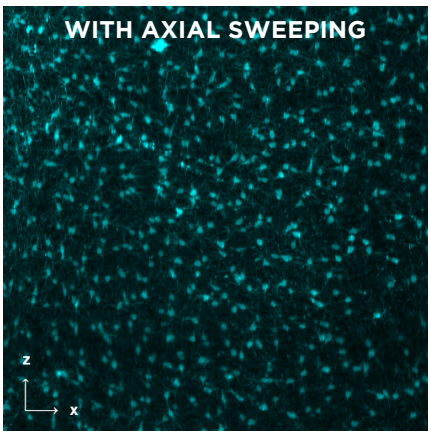
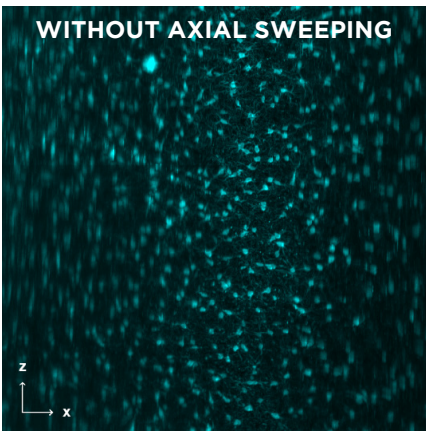
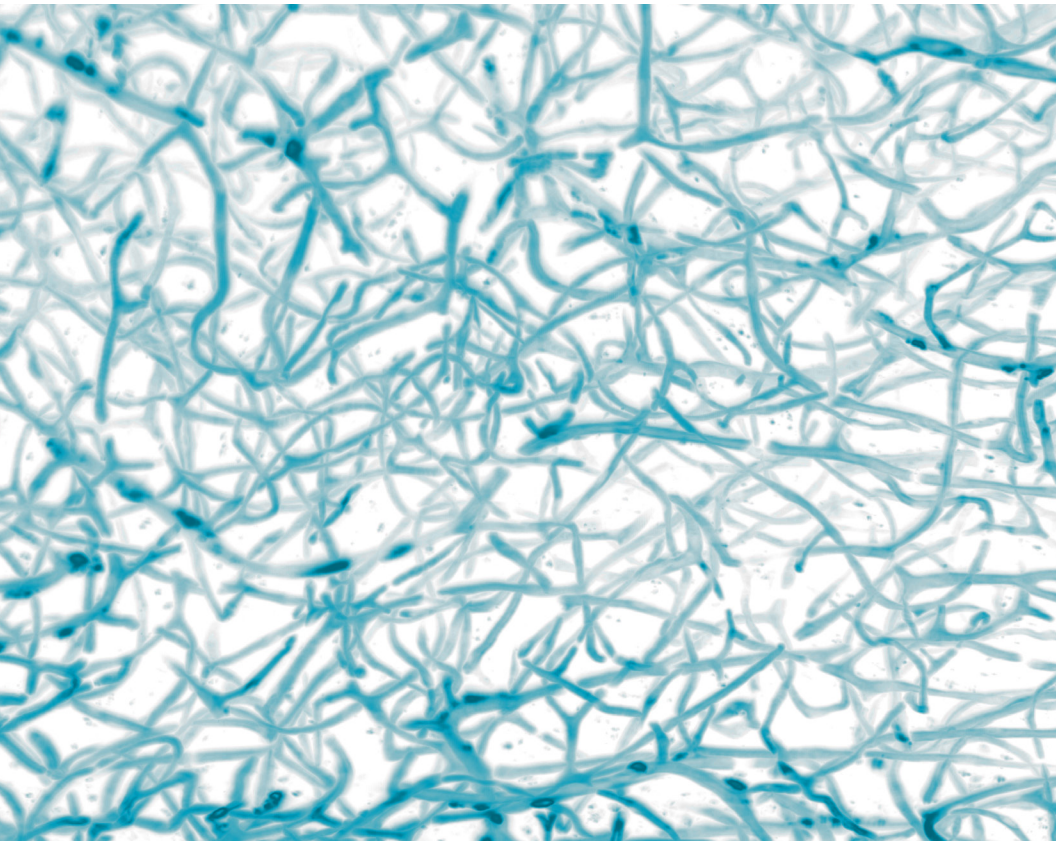
SmartSPIM

Our original light sheet imaging system can image an intact mouse brain hemisphere in 8 minutes at 1.63X magnification. SmartSPIM is ideal for imaging:

- Whole juvenile mice
- Small animal organs, individually or in sequence
- Marmoset hemispheres
- Small samples like tumors, biopsies, and organoids

MegaSPIM

Our new microscope can image a thick human brain section in 4 hours at 1.8X magnification. MegaSPIM is ideal for imaging:

- Thick sections of large samples such as human and other primate organs
- Arrays of organoids, biopsies, tumors, and small animal organs
- Thin sections

	SmartSPIM Specifications	MegaSPIM Specifications
Light Sheet Formation	Dynamic axial sweeping (Dean et al. 2015)	
Maximum Specimen Lateral Size	40 mm x 65 mm (extended)	200 mm x 200 mm
Illumination Optics	Custom-designed objectives, NA = 0.125, broadband chromatically corrected	
Detection Objectives	1.63X, 3.6X, 9X, 15X, 22X multi-immersion dipping objectives	
Camera	Hamamatsu ORCA-Fusion digital sCMOS camera (2304 x 2304 pixels) with lightsheet readout mode	
Laser Lines	Up to 7; selection of 405, 445, 488, 514, 561, 594, 639, 690, and 785 nm	
Multi-Sample Imaging	Sequential imaging	Array imaging
Acquisition Software	Intuitive software with quick alignment procedure	
Streamlined Post-Processing Software	Destriping and stitching	Destriping, deskewing, and stitching