ILLUMINATING LIFE
LIKE NEVER BEFORE

Product Catalogue

lifecanvas
technologies

LifeCanvas Technologies is committed to providing sample-to-answer solutions in tissue processing to significantly improve and expedite research in deciphering complex biological systems.

The company is developing and commercializing breakthrough tools that enable three-dimensional investigation of a tissue's molecular and structural information through rapid clearing and staining while preserving key tissue architecture, subcellular details and long-range connections. Our mission is to fast-track advancements in life sciences and to improve human health.

LifeCanvas Technologies is founded by researchers and engineers at Massachusetts Institute of Technology.

Tissue Processing/Imaging Product Line-up

SmartClear II Pro

SmartLabel

SmartSPIM

EasyGel

EasyClear

SmartLabel (STM-SL1A)

The Ultimate Antibody Immunostaining Device

EVERYTHING YOU NEED

- Unprecedented speed

- Cost-efficient

- Unparalleled staining quality

- Multiple-round relabeling

- No tissue damage

- Easy to use

- Compatible with:
  - CLARITY (Chung, Nature, 2013)
  - SWITCH (Murray, Cell, 2015)
  - MAP (Ku, Nature Biotechnology, 2016)

Smart Clear II Pro (STM-SC2P)

The Active Clearing System You've been Waiting For

FAST, EASY, AND RELIABLE

Fast & Easy: Order of magnitude faster than passive clearing. Our ready-to-use technologies bring plug-and-play options to clearing.

Reliable: Minimal tissue damage with stochastic electrotransport technology (Kim, PNAS) developed by the Chung Lab at MIT. No tissue contamination, tissue browning, black gunk formation or tissue deformation.

FP Signals: Maximum preservation of fluorescent protein (FP) signals.

Smart Clear II Pro (STM-SC2P)

VARIOUS SAMPLE HOLDERS

SC-L2P10
11mm (W) x 18mm (D) x 40mm (H) x 5
Clears 5 whole mouse brains

SC-L2P11
(3mm apart)
Clears up to 10 1~2mm thick slices

SC-L2P12
19mm (W) x 28mm (D) x 40mm (H) x 2
Clears 2 whole rat brains

SC-L2P13
4mm (D) x 18 holes
Clears up to 18 circular disk-shape tissues

SC-L2P14
15mm (bottom diameter) x 19mm (top
diameter) x 40mm (H) x 2
Clears 2 whole rat brains.

Cost-Effective and Eco-Friendly Clearing

New-generation buffer sets last around 10 days
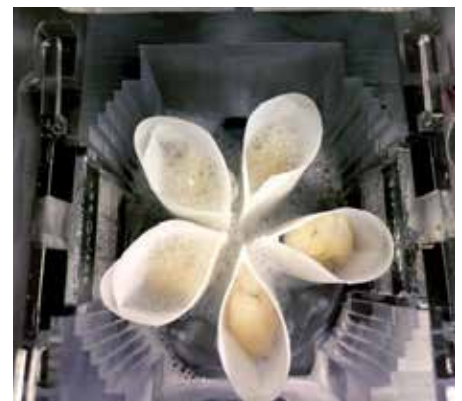without loss of its clearing ability.
Lower running costs for samples as the same
volume of buffer is used regardless of size and
number of samples.

Batch Processing and Customization

5 whole mouse brains or 2 rat brains can be
cleared simultaneously.
Larger clearing chamber enables clearing of
various sample types and sizes that can be
customized according to your needs.

LARGER CHAMBER

SPECIFICATIONS

SmartClear II Pro Module			
Physical Characteristics	Product Type		SmartClear Pro: Tissue Clearing System
	Product Dimensions		14.4" (W) x 14.8" (D) x 16.9" (H) 366mm (W) x 375mm (D) x 410mm (H)
	Weight		55 lbs (25 kg)
	Operating Power/Frequency		AC 100~120V / 50~60Hz AC 200~240V / 50~60Hz
	Electrical Input		100~120V (5A) or 200~240V (3A)
Clearing Part	Chamber	Dimension	1.8" (W) x 1.9" (D) x 1.7" (H) 46mm (W) x 46mm (D) x 42mm (H)
		Sample Rotation Speed	0rpm~10rpm
		Sample Protection Method	Specialized nanoporous membrane
		Control values	Current value Current upper limit Voltage value Voltage upper limit Electricity cycle Sample cup rotation speed/period Scheduling for sample cup rotation speed Polarity direction change (timer function) Electricity On/Off/Timer Buffer pump On/Off Temperature control
	Buffer Reservoir	Reservoir A	Buffer A for clearing tissue
		Reservoir B	Buffer B for cooling the electrode
		Reservoir Capacity	500mL each
	Cooling		Water circulation with hydraulic pump

Smart Box: SmartClear II Pro Control Module		
Physical Characteristics	Product Dimensions	8.3" (W) x 14.8" (D) x 10.4" (H)
	Weight	12 lbs (5 kg)
	Electrical Input	100~120V (15A) or 200~240V (8A)
Interface	LCD Monitor/Touch	RGB256 Color, 800 x 480 Pixel Resistive Touch
	Software	Beginner mode/Expert mode Fluorescent/Non-fluorescent preset

EasyClear (EC-1001)

All-In-One Tissue Processing System

- Fast and cost-effective
- Wide temperature control (Ambient to 90° C)
- Shaking speed control (0–60rpm)
- Shaking angle control (0–22°)
- 10 sample tubes at once

IDEAL FOR:

- Lipid removal and optical tissue clearing steps in CLARITY (Nature, 2013), SWITCH (Cell, 2015), MAP (NBT, 2016).
- Tissue staining.
- Any buffer washing.

EasyGel (EG-1001)

Tissue Gel Hybridization System

- Fast and cost-effective
- Integrated temperature control (Ambient to 45° C)
- All-in-one system (house vacuum)
- 8 samples at once

IDEAL FOR:

- Tissue-gel-hybridization step in CLARITY (Nature, 2013) and MAP (NBT, 2016).

*MAP (Nature Biotechnology, 2016) requires N_2 purging.

SPECIFICATIONS

EasyClear			
Physical Characteristics	Product Dimensions		12" (W) × 19" (D) × 9.8" (H)
			306 mm (W) × 483 mm (D) x 250 mm (H)
	Weight		33 lbs (15 kg)
	Operating Power/Frequency		AC 100~120V / 50~60Hz
			AC 200~240V / 50~60Hz
	Electrical Input		100~120V(3.5A)
			200~240V(2A)
	Operating Temperature		0~45℃
			! Ambient temperature should be constant
	Operating Humidity		0~90% (non-condensing)
Feature Details	Tube slot	No. of tube slot	10ea x 50ml conical tube
		Tube slot size	30mm diameter x 105 mm
			!Recommend to use same size as 50mL Falcon tube
		Temperature control range	Ambient temperature~90℃ (0.1℃ Step)
		Individual slot temperature control	Enable
	Shaking part	Shaking frequency	0~60RPM , 0~1Hz
		Shaking distance	20mm (Peak to peak)
	Tilting hinge	Tilting range	0–22°
		Fixing method	2 knobs
Interface	LCD Monitor/Touch		3.5-inch QVGA Color Display /Resistive Touch
	Software		EasyClear UI

EasyGel			
Physical Characteristics	Product Dimensions		10.8" (W) × 16.7" (D) × 16.3" (H)
			275 mm (W) × 425 mm (D) x 415 mm (H)
	Weight		33 lbs (15 kg)
	Operating Power/Frequency		AC 100~120V / 50~60Hz
			AC 200~240V / 50~60Hz
	Electrical Input		100~120V(2.1A)
			200~240V(1.2A)
	Operating Temperature		0~45℃
	Operating Humidity		0~90% (non-condensing)
Feature Details	Tube slot	No. of tube slot	8ea x 50ml conical tube
		Tube slot size	30mm diameter x 65 mm
			!Recommend to use same size as 50mL Falcon tube
		Temperature control range	Ambient temperature~45℃ (0.1℃ Step)
		Individual slot temperature control	Enable
	Shaker	Shaking frequency	0~60RPM , 0~1Hz
		Shaking distance	20mm (Peak to peak)
	Vacuum	Vacuum pumping range	0~ -70kPa
		Conical Vacuum tube (Connected to each sample tube)	Inner diameter 4mm/outer diameter 5mm Silicon tube
		Vacuum tube (Connected vacuum value or pump)	Internal diameter 3mm/Outer diameter 4mm Urethane tube
Interface	LCD Monitor/Touch		3.5-inch QVGA Color Display /Resistive Touch
	Software		EasyGel UI

Clearing Reagents

Optimized for Tissue Clearing

2nd Generation Buffer A, B (SC-B2001)

For SmartClear II

Our eco-friendly 2nd-generation buffers allow you to process up to 5-10 samples (vs. 1 sample for the old buffer) over the course of 10 days (vs. 1-2 days for the old buffer) while preventing tissue browning, bubble formation, and tissue damage.

EasyIndex (EI-Z1001, EI-Z1011)
Premade RI-matching solution with the best clearing effect (RI=1.46)

IDEAL FOR:

• Optical clearing of biological samples processed with CLARITY-based methods (Nature, 2013) and SWITCH (Cell, 2015).

• Optical clearing of immunolabeled samples

Ordering Information

SmartClear II Pro

Cat. #	Product	Qty
STM-SC2P	SmartClear II Pro System*	1 System
SC-2P01	SmartClear II Pro Module Membrane Window Buffer Set (A,B) 2nd gen. Window Spacer Type-P Sample Holder Set Type-P	1 Each 1 Pair 1 Set 1 Set (2 ea) 1 Set (5 ea)
SB-2001	SmartBox Module	1 Ea

Accessories and Consumables

Cat. #	Product	Qty
SC-L2P10	Sample Holder Set Type-P (5 whole mouse brains)	1 Set (5 ea)
SC-L2P11	Multi-Slice Sample Holder Type-P (3mm)	1 Ea
SC-L2P12	Sample Holder Type-Rat A (2 whole rat brains)	1 Ea
SC-L2P13	Multi-Punch Holder (18 holes)	1 Ea
SC-L2P14	Sample Holder Type-Rat B (2 whole rat brains)	1 Ea
SC-L2P15	Sample Holder Bundle (SC-L2P11, SC-L2P12, SC-L2P13, SC-L2P14)	1 Set (4 ea)
SC-L2P20	Window Spacer Type-P	1 Ea

SmartClear II

Cat. #	Product	Qty
STM-SC2A	SmartClear II System*	1 System
SC-2001	SmartClear II Module Membrane Window Buffer Set (A,B) 2nd gen. Window Spacer Type-A Sample Holder Set Type-A	1 Each 1 Pair 1 Set 1 Set (2 ea) 1 Set (4 ea)
SB-2001	SmartBox Module	1 Ea

Accessories and Consumables

Cat. #	Product	Qty
SC-BK022	Buffer Twin Kit Buffer Set (A,B) 2nd gen. Membrane window	 2 Sets 2 Pairs
SC-BK023	Buffer Triple Kit Buffer Set (A,B) 2nd gen. Membrane window	 3 Sets 3 Pairs
SC-L2012	Sample Holder Set Type-A	1 Set (4 ea)
SC-L2022	Multi-Slice Sample Holder Type-A	1 Ea
SC-L2013	Window Spacer Type-A	1 Set

EasyGel

Cat. #	Product	Qty
EG-1001	EasyGel EasyGel Module Silicon Tubing	1 Set 1 Ea 1 Ea

EasyClear

Cat. #	Product	Qty
EC-1001	EasyClear	1 Ea

EasyIndex

Cat. #	Product	Qty
EI-Z1001	EasyIndex (1 bottle, 500 mL)	1 Ea
EI-Z1011	EasyIndex (1 bottle, 100 mL)	1 Ea

SmartSPIM

Light sheet imaging system optimized for resolution, speed, and flexibility for large samples

- Capable of imaging a wide range of sample sizes
- High axial resolution obtained with a variety of different custom and commercial objectives
- Uniform axial resolution across the entire sample
- High speed volumetric imaging
- Ability to use custom and commercially available objectives
- Custom illumination and detection optics optimized for all current large format objectives and camera
- Automated focus compensation for RI mismatches and chromatic focal shifts
- Compatible with both aqueous and organic clearing methods

SPECIFICATIONS

SmartSPIM	
Light Sheet Formation	Dynamically axially swept light sheet
Illumination Optics	NA = 0.25 broadband chromatically corrected
Specimen Size (Max)	2 cm x 3 cm x 1.2 cm
Detection Optics	Infinity corrected (180 mm EFL tube lens)
Lateral Sampling	3.6x = 1.8 μm/pix; 10x = 0.64 μm/pix
Axial Resolution	3.6x, NA 0.2, PSFz < 4.5μm ; 10x*, NA 0.6, PSFz <2.5 μm
Field Of View (FOV)	3.6x = 3700 μm ; 10x* = 1300 μm
Imaging Speed	20 FPS during z-stack acquisition
Camera	2048 x 2048 sCMOS with rolling shutter - synchronized to light sheet for confocal detection
Laser Lines	Up to 6 in a single combiner. Wavelengths from 488 – 785 nm

* Olympus 10x objective (XLPLN10XSVMP)

Our Technology Adopters

The LifeCanvas Advantage

Novel Tissue Transformation
Our proprietary technologies allow you to transform biological tissues into an optically transparent hydrogel-tissue hybrid while preserving the information you need.

Explore Life in 3 Dimensions
Our revolutionary tissue processing solutions enable scientists to study biological tissues in much greater depth and quality.

For Scientists, By Scientists
Our novel technologies are invented and used by researchers who understand your needs and goals.

Full Line-Up for Tissue Clearing, Staining and Imaging

lifecanvas
technologies

Illuminating life like never before

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WWW.LIFECANVASTECH.COM

OR PLEASE CONTACT US AT
INFO@LIFECANVASTECH.COM