

X-CLARITY™

Tissue Clearing System

User Manual



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 The X-CLARITY™ Tissue Clearing System is a set of laboratory electrical instruments for scientific research use only.
 It is not a medical, therapeutic, or in vitro diagnostics device.

	<p>The WEEE (Waste Electrical and Electronic Equipment) symbol indicates that users of this system have the responsibility of returning and disposing of WEEE in an environmentally friendly manner. Follow the waste ordinances of your region for proper disposal provisions.</p>
	<p>The CE mark indicates that this system conforms to all applicable European Community provisions for which this marking is required. Users must be aware of and follow the conditions described in this manual for operating the system. The protection provided by the system may be impaired if the system is used in a manner not specified by this manual.</p>
	<p>Protective earth (Ground)</p>

<p>FCC COMPLIANCE</p>	<p>This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user's own expense.</p>
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Table of Contents

Table of Contents	2
Safety Information	3
Environmental Conditions for Operation	3
1 Introduction	4
1.1 Product Overview	4
1.2 Product Contents	4
1.3 Product Specifications	5
1.3.1 X-CLARITY™ ETC Chamber	5
1.3.2 X-CLARITY™ ETC Controller	5
1.3.3 X-CLARITY™ Pump	5
1.3.4 X-CLARITY™ Reservoir	5
2 Product Description	6
2.1 X-CLARITY™ ETC Chamber	6
2.2 X-CLARITY™ ETC Controller	7
2.3 X-CLARITY™ Pump	8
2.4 X-CLARITY™ Reservoir	8
3 Installation	9
3.1 Multi-Cable: ETC Controller and the ETC Chamber	9
3.2 Temperature Probe Connector: Temperature Probe and the ETC Controller	9
3.3 Peristaltic Pump Tube: Reservoir Outlet and the ETC Chamber Inlet	9
3.4 Snap-Lock Connector Tube: ETC Chamber Outlet and the Reservoir Inlet	10
3.5 Power Cords	10
4 Running	11
4.1 Buffer Flow	11
4.2 Sample Insertion	11
4.3 Tissue Clearing	12
4.4 Chamber Opening	13
4.5 Buffer Replacement	13
5 Maintenance and Troubleshooting	14
5.1 ETC Chamber Cleaning	14
5.2 Snap-Lock Connector Cleaning	14
5.3 Troubleshooting	15
5.4 Error Codes	16
6 Ordering Information	17
7 Purchaser Notification	18

Safety Information

Before using this system, read this manual carefully to ensure that you know how to operate it safely and correctly. Keep this manual in an easily accessible location for future reference. Use the system only as specified.

1. Avoid electric shock while operating the instruments. Do not touch the components with wet hands.
2. Operate the instrument in the conditions described in the Environmental Conditions for Operation.
3. Wear proper personal protective equipment (PPE) when handling Electrophoretic Tissue Clearing Solution or X-CLARITY™ Mounting Solution to avoid exposure.
4. Use only components provided or authorized by Logos Biosystems.
5. Make sure that the input voltage is compatible with the X-CLARITY™ ETC Controller power supply before use.
6. Use the power cord and AC adapter provided. Ensure that the power cords are firmly plugged into the power source and the X-CLARITY™ ETC Controller.
7. Turn the X-CLARITY™ ETC Controller on only after connecting the power cord to it and the power source. Always turn the X-CLARITY™ ETC Controller off before disconnecting the power cord and/or moving the instrument.
8. Turn the power off before opening the X-CLARITY™ ETC Chamber.
9. Carefully monitor tube connections. Replace tubes if leakage occurs.
10. Always use the pump to fill or drain the X-CLARITY™ ETC Chamber. Do not pour liquids in or out directly.
11. Use the recommended volume of Electrophoretic Tissue Clearing Solution in the provided X-CLARITY™ Reservoir.
12. Do not use organic solvents other than the Electrophoretic Tissue Clearing Solution described in this manual. Different solvents may cause permanent and irreparable damage.
13. If components emit smoke, disconnect the power cord immediately from the power source² and contact a local distributor or Logos Biosystems.
14. Do not disassemble the components in any event. Disassembling the components invalidates the warranty. If a device malfunctions, contact a local distributor or Logos Biosystems.

Environmental Conditions for Operation

Operating Power	100 – 120 VAC, 2.2 A / 200 – 240 VAC, 1.1 A
Frequency	50/60 Hz
Installation Site	Indoor use only
Operating Temperature	10 – 30°C
Maximum Relative Humidity	20 – 70%
Altitude	≤ 2,000 m
Pollution Degree	2

1 Introduction

1.1 Product Overview

CLARITY is a method developed by scientists at Stanford University that produces structurally sound and transparent whole tissues ready for multiple rounds of antibody labeling and imaging. The method has opened up a world of possibilities, from tracing neural circuitry to exploring the relationship between structure and function with a global perspective.

With the CLARITY method, the biomolecules in intact tissues are covalently linked to a sturdy hydrogel network, preserving molecular information and structural integrity. Lipid bilayers are broken up through electrophoresis in the presence of ionic detergents, leaving behind a stable and transparent tissue-hydrogel hybrid that is chemically accessible for molecular phenotyping.

Logos Biosystems licensed and independently developed the CLARITY technology to make significant improvements for tissue clearing efficiency and reproducibility. The X-CLARITY™ Tissue Clearing System is an all-in-one, easy-to-use solution for electrophoretic tissue clearing. Its unique design accelerates the removal of lipids from tissues in a highly efficient manner. Complicated wires are combined into a single cable for power supply and control. Improved electrodes generate a uniform electric field that eliminates uneven voltages and currents. A timer allows precise control over the clearing time by automatically turning off the current at the end of the allotted time. An active cooling system minimizes the probability of artifacts arising due to poor temperature control. Buffer circulation ensures consistent buffering capacity, temperature control, and elimination of electrophoretic byproducts. This advanced system ensures that tissue clearing occurs efficiently and rapidly.

1.2 Product Contents

The X-CLARITY™ Tissue Clearing System contains the following components:

Component	Quantity
X-CLARITY™ ETC Chamber	1 unit
X-CLARITY™ ETC Controller	1 unit
X-CLARITY™ Pump	1 unit
X-CLARITY™ Reservoir	1 unit
Multi-Cable	1 unit
Power Cord	2 units
Snap-Lock Connector Tube*	1 unit
Peristaltic Pump Tube	1 unit
Container Holder for 1 Tissue Container	1 unit
Tissue Container	5 units
Electrophoretic Tissue Clearing Solution	12 x 1 L

*Assembly required

Upon receiving the product package, inspect its contents to ensure that all parts have been included and that no damage has occurred during shipping. The warranty does not cover damage that may occur during shipping and handling. Any damage claims must be filed with the carrier.

1.3 Product Specifications

1.3.1 X-CLARITY™ ETC Chamber

Instrument Type	Electrophoretic chamber
External Dimensions (W x D x H)	176 mm x 128 mm x 154 mm
Internal Dimensions (W x D x H)	57 mm x 30 mm x 93 mm
Weight	2.8 kg

Note: Power to the X-CLARITY™ ETC Chamber is supplied by the X-CLARITY™ ETC Controller via the multi-cable.

1.3.2 X-CLARITY™ ETC Controller

Instrument Type	Power supply and control
Dimensions (W x D x H)	180 mm x 340 mm x 200 mm
Weight	5.1 kg
Applicable Power	AC 100-240 V, 50/60 Hz
Power Consumption	210 W (including the X-CLARITY™ ETC Chamber)

1.3.3 X-CLARITY™ Pump

Instrument Type	Peristaltic pump
Dimensions (W x D x H)	232 mm x 142 mm x 149 mm
Weight	2.4 kg
Speed	0.1-100.0 rpm
Speed Precision	0.1 rpm
Applicable Power	AC 100-240V, 50/60 Hz
Power Consumption	30 W

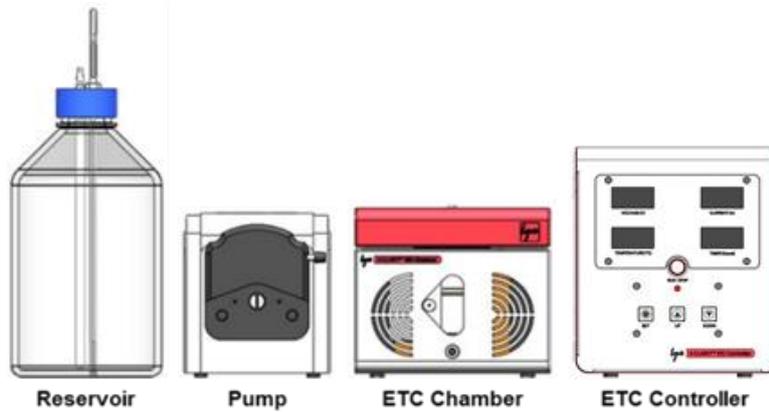
Note: Please see the separately supplied user manual for more information.

1.3.4 X-CLARITY™ Reservoir

Material	Glass
Total Volume	2 L
Recommended Buffer Volume	1.2 L

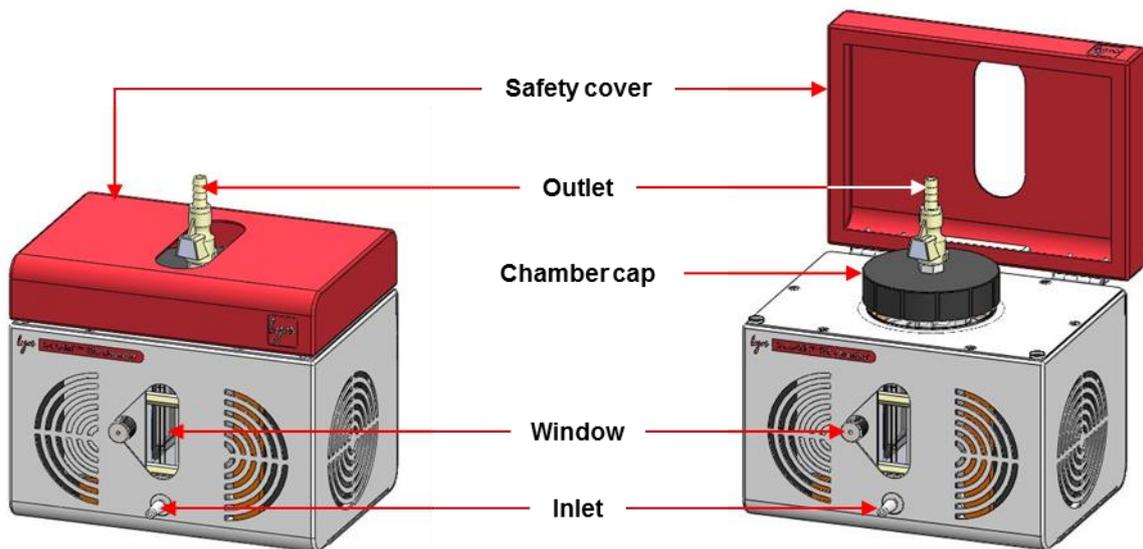
2 Product Description

The X-CLARITY™ Tissue Clearing System consists of the X-CLARITY™ ETC Chamber, X-CLARITY™ ETC Controller, X-CLARITY™ Pump, and X-CLARITY™ Reservoir.



2.1 X-CLARITY™ ETC Chamber

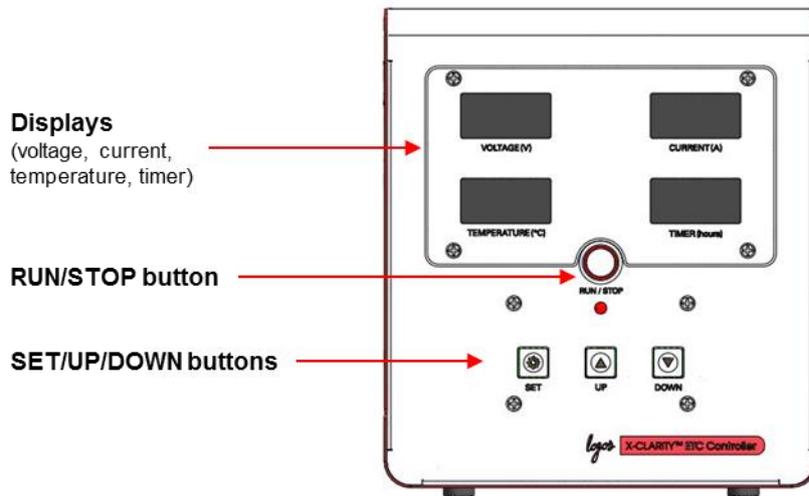
The X-CLARITY™ ETC Chamber is an electrophoretic device that applies an electric current to tissue samples placed in the chamber. Plated electrodes produce a uniform electric field for consistent clearing. The chamber inlet and outlet allow for buffer circulation, which eliminates the loss of buffering capacity, reduces the risk of overheating, and removes electrophoretic byproducts. An integrated cooling system dissipates the heat generated during electrophoresis. A magnetic safety switch detects the opening and closing of the safety cover. If the cover is open, the X-CLARITY™ ETC Controller cannot supply power to the ETC Chamber.



2.2 X-CLARITY™ ETC Controller

The X-CLARITY™ ETC Controller controls the power, temperature, and safety for the X-CLARITY™ ETC Chamber through one cable, eliminating the need for dangerous and messy wiring.

To adjust values for the current, temperature, or timer, push the SET button located on the front panel of the ETC Controller. The display will blink on in the following order when you continue to push the SET button: Current → Temperature → Timer. Use the UP and DOWN buttons to adjust to the desired values. Press and hold down the UP/DOWN button to speed up selection. Push the SET button again to apply the setting.



The ETC Controller ranges are:

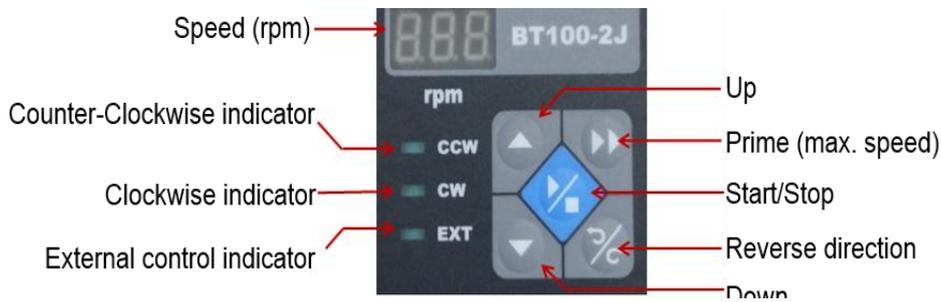
	Range	Increment
Voltage (V)	Not adjustable, max 60	N/A
Current (A)	0.2-1.5	0.1
Temperature (°C)	35-60	1
Timer (hours)	0.5-99.5, 100-999, CL	0.5, 1.0, CL

The timer increases in increments of 0.5 hours from 0-99.5 hours and then in 1 hour increments from 100-999 hours. The “---” setting is for continuous running of the system. The timer also includes a cleaning mode (CL), to use when cleaning the ETC Chamber (see Section 5.1: ETC Chamber Cleaning). The timer goes from 999 ↔ CL ↔ --- ↔ 0.5.

The X-CLARITY™ Tissue Clearing System only works in constant current mode. We found that constant current mode leads to more consistent tissue clearing. The recommended constant current value is 1.5 A. Changing the current value may affect the time and/or efficiency of clearing and may require further optimization.

2.3 X-CLARITY™ Pump

The peristaltic pump circulates the buffer to maintain consistent buffering capacity and temperature. Always use the pump to fill or drain the ETC Chamber. Do not pour liquids in directly.

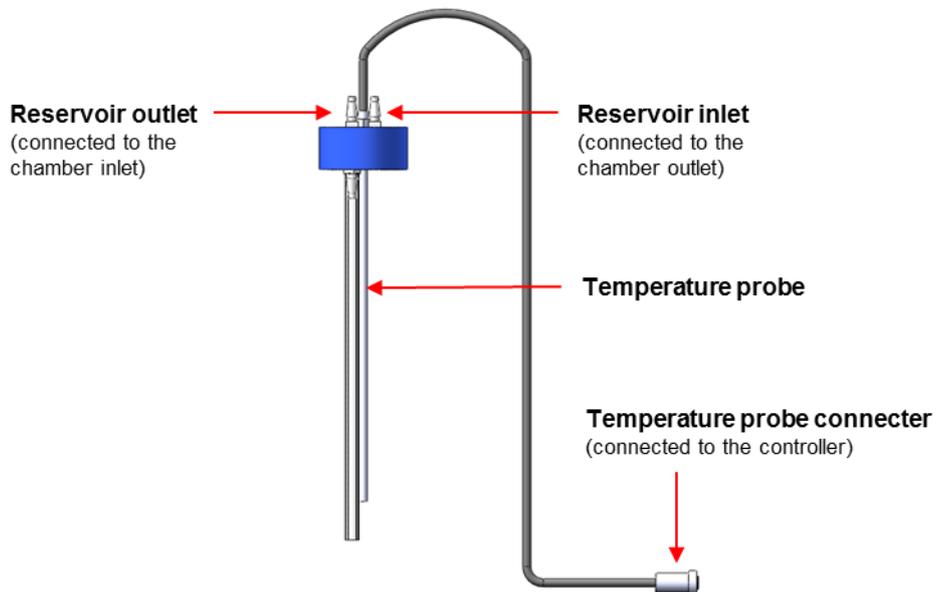


Depending on how the pump has been oriented in relation to the ETC Chamber, run the pump in a clockwise (CW) or counterclockwise (CCW) direction to either supply or drain the chamber. The Prime (▶▶) button runs the pump at maximum speed. At 30 rpm, the pump moves approximately 50 mL per minute.

See the separately supplied pump manual for more information.

2.4 X-CLARITY™ Reservoir

It is important to circulate Electrophoretic Tissue Clearing Solution during tissue clearing to maintain buffering capacity, control buffer temperature, and remove electrophoretic byproducts from the ETC Chamber. The temperature probe attached to the reservoir cap is connected to ETC Controller and monitors the temperature of the clearing solution.

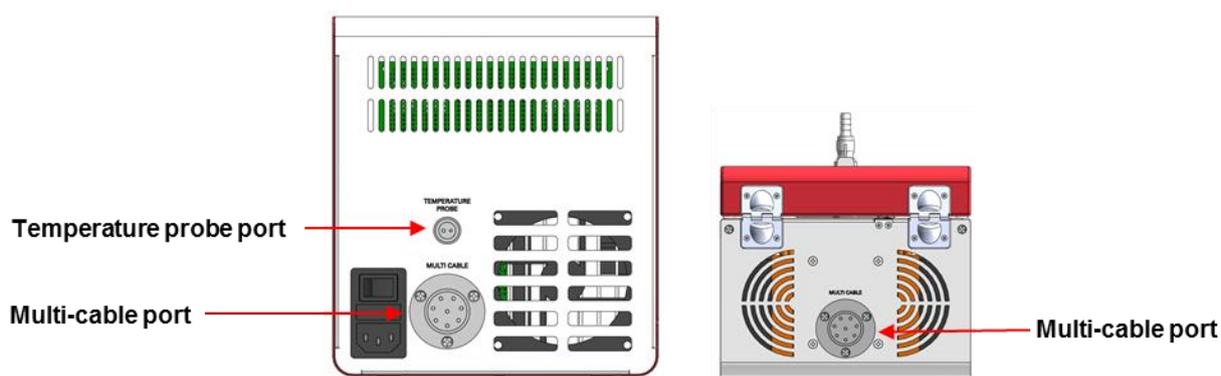


3 Installation

Place the components of the X-CLARITY™ Tissue Clearing System on a clean and flat surface devoid of vibration. Leave sufficient space around the ETC Chamber for the cooling fan to work properly.

3.1 Multi-Cable: ETC Controller and the ETC Chamber

Connect the ends of the multi-cable to the ports on the rear panels of the ETC Controller and Chamber. Check the homing grooves and the orientation of the pins on the ends of the multi-cable for proper orientation. Fasten the nuts tightly to ensure a tight connection.



3.2 Temperature Probe Connector: Temperature Probe and the ETC Controller

Screw the cap onto the reservoir. Make sure the temperature probe and reservoir outlet tube are both inside the reservoir.

Plug the temperature probe connector into the temperature probe port on the rear panel of the ETC Controller. Check the homing groove on the end of the connector and the thickness of the pins in the port for proper orientation.

3.3 Peristaltic Pump Tube: Reservoir Outlet and the ETC Chamber Inlet

Attach one end of the peristaltic pump tube to the ETC Chamber inlet located on the front panel of the ETC Chamber. Attach the other end to the reservoir outlet (the reservoir outlet is connected to tubing that extends into the reservoir). Make sure there is a tight seal at each connection to prevent buffer leakage.

Pull the pump head lever to the left to open the compression block. Lift the clamps on both sides of the pump head. Load the middle of the peristaltic pump tube into the pump head. Make sure the tube is between the rollers and the compression block. Release the clamps. Pull the pump head lever to the right to close the compression block.

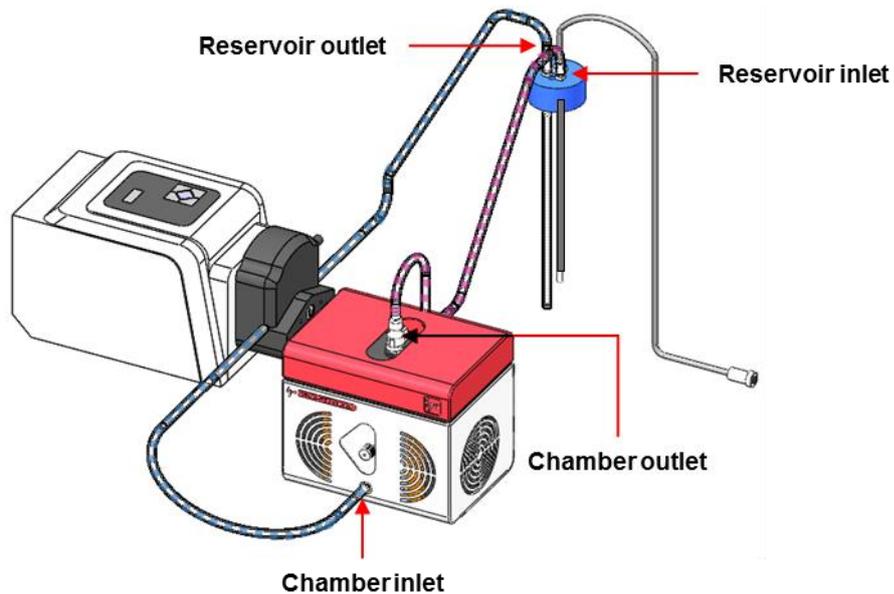
The provided peristaltic pump tube has a tubing life of 3,000 hours. Only use tubes provided or approved by Logos Biosystems.

3.4 Snap-Lock Connector Tube: ETC Chamber Outlet and the Reservoir Inlet

Screw the chamber cap onto the ETC Chamber. Close the safety cover.

Attach the plastic head of the snap-lock connector tube to the chamber outlet protruding from the chamber cap. You will feel and hear a click when it has attached properly. Attach the other end of the snap-lock connector tube to the reservoir inlet. Make sure there is a tight seal to prevent buffer leakage.

Do not open or close the ETC Chamber safety cover when the snap-lock connector tube is attached to the ETC Chamber outlet. Make the connections as tight as possible to prevent buffer leakage and make sure the tubes do not vent.



3.5 Power Cords

Plug in the power cords to the pump and ETC Controller. Connect both to power sources.

4 Running

4.1 Buffer Flow

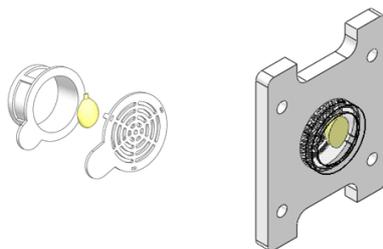
Fill the reservoir with 1.2 L Electrophoretic Tissue Clearing Solution. Use fresh Electrophoretic Tissue Clearing Solution with each run. Reused clearing solution may have lowered buffering capacity, which reduces clearing efficiency. Prolonged use of Electrophoretic Tissue Clearing Solution may cause electrolysis of the extracted lipids, turning the tissue yellow. Screw on the reservoir cap. Make sure all tubes are connected securely and properly.

Turn on the pump. Set the pump speed to 30-50 rpm and direction to pump the Electrophoretic Tissue Clearing Solution from the reservoir to the ETC Chamber. Make sure the buffer is flowing in the right direction: reservoir → reservoir outlet → chamber inlet → ETC Chamber. Stop the pump when the ETC Chamber is half full. Do not fill the ETC Chamber to the brim prior to sample insertion. Always use the pump to fill or drain the ETC Chamber. Do not pour the solution in directly.

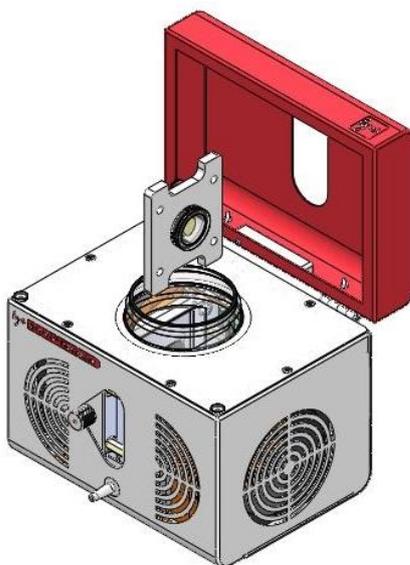
4.2 Sample Insertion

Press the stainless steel button on the side of the snap-lock connector to release the tube from the ETC Chamber. Open the safety cover and unscrew the chamber cap.

Place the hydrogel-embedded tissue sample into the tissue container and put the top on. Insert the tissue container into the container holder.



Insert the tissue container holder into the chamber (upright).



Screw on the chamber cap tightly. If the chamber cap has been fastened correctly, the silicone ring inside the cap will create a tight seal, preventing leaks. In case of leakage, please check the silicone ring inside the chamber cap.

Close the safety cover. If the cover is open, the system will not run even if you push the RUN/STOP button.

Attach the plastic head of the snap-lock connector tube to the chamber outlet protruding from the cap. You will feel and hear a click when it has attached properly. NEVER open or close the ETC Chamber safety cover when the tube is still attached to the chamber outlet. Disconnect the tube from the chamber outlet prior to opening or closing the safety cover by pressing the stainless steel button on the side of the snap-lock connector.

Ensure all tubes are connected securely and properly.

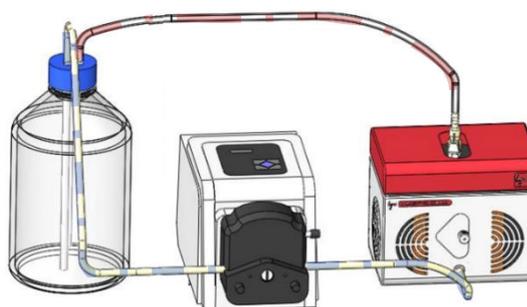
4.3 Tissue Clearing

Turn on the ETC Controller. Red numbers will appear on the LED displays and the cooling fan within the ETC Chamber will begin to run. If not, check the power connection.

Use the following settings:

	Recommended
Current	1.5 A
Temperature	37°C
Timer	Sample-dependent
Pump speed	30 rpm

Start the pump. Make sure the buffer is flowing in the right direction.



Reservoir → reservoir outlet → chamber inlet → ETC Chamber → chamber outlet → reservoir inlet → Reservoir

Push the RUN/STOP button on the ETC Controller to start clearing. A red halo will appear around the button when the instrument is running.

In some cases, the current may not initially reach, despite being set at, 1.5 A. However, the current will stabilize to 1.5 A after a few hours. The current and voltage are dependent on the resistance of the buffer. Depending on the condition of the Electrophoretic Tissue Clearing Solution, the initial current value may be lower than 1.5 A due to the voltage limit (60 V). If the system does not reach 1.5 A after a few hours, check the Electrophoretic Tissue Clearing Solution. The tissue container holder design can also affect the resistance, so use the container holder provided by Logos Biosystems.

As the system runs, you will see bubbles formed by water electrolysis coming from the outlet. A significant amount of heat will be generated in the ETC Chamber during the tissue clearing process. To eliminate this heat, a cooler has been integrated into the ETC Chamber. However, temperature control may not be efficient at high external temperatures. Cooling the reservoir with an additional cooling system is helpful in such cases. Efficient clearing generally occurs at temperatures of 37-60°C.

4.4 Chamber Opening

Push the RUN/STOP button on the ETC Controller to stop clearing. Turn the ETC Controller off.

Reverse the direction of the pump (CW to CCW or CCW to CW) to drain the ETC Chamber and the snap-lock connector tube. The snap-lock connector tube will empty into the ETC Chamber. Make sure the tube is completely empty before disconnecting it from the ETC Chamber. The buffer will flow out of the chamber inlet back into the reservoir. You can watch the buffer level drop through the window of the ETC Chamber. When the ETC Chamber is sufficiently drained, turn off the pump.

Press the stainless steel button on the side of the snap-lock connector to release the tube from the ETC Chamber. Gently detach the snap-lock connector from the chamber outlet. Do not pull the snap-lock connector tube. Open the safety cover and unscrew the chamber cap.

Check your sample.

4.5 Buffer Replacement

Replace the Electrophoretic Tissue Clearing Solution after every 24 hours.

Push the RUN/STOP button on the ETC Controller to stop clearing. Turn the ETC Controller off.

Reverse the direction of the pump. Turn off the pump when the ETC Chamber and all tubes are empty. Empty the reservoir.

Fill the reservoir with fresh Electrophoretic Tissue Clearing Solution. Screw on the reservoir cap. Make sure all tubes are connected securely and properly. Reverse the direction of the pump again. Start the pump. Make sure the buffer is flowing in the right direction.

Continue tissue clearing.

5 Maintenance and Troubleshooting

5.1 ETC Chamber Cleaning

Wash the ETC Chamber interior with fresh Electrophoretic Tissue Clearing Solution followed by deionized water after each run.

Using the pump, fill the ETC Chamber with 500 mL fresh Electrophoretic Tissue Clearing Solution.

Use the following settings:

	Recommended
Current	1.5 A
Temperature	37°C
Timer	CL
Pump speed	30 rpm

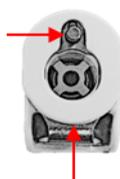
To activate cleaning (CL) mode, set the timer to “CL” (when the timer display reads “---”, press the DOWN button once). Run for 1-2 hours. Turn the ETC Controller off before proceeding to the next step.

Reverse the direction of the pump. Turn off the pump when the ETC Chamber and all tubes are empty. Empty the reservoir. Fill the reservoir with 1 L deionized water. Screw on the reservoir cap. Make sure all tubes are connected securely and properly. Reverse the direction of the pump again. Start the pump. Make sure the buffer is flowing in the right direction. Press the prime button to accelerate washing.

The tissue clearing process produces byproducts such as tissue debris and carbonized particles. These dark particles are carbon aggregates that are generated by the electrolysis of organic materials. Prolonged absorption of these particles may cause irreversible damage to the electrodes. Use lint-free wipes to remove any residual particles after washing. Put some deionized water or 70% ethanol on the wipes and gently wipe the interior and surfaces of the ETC Chamber. Do not use excessive amounts of liquid. Do not allow liquid to enter the device as this may cause electric damage. Dry the ETC Chamber thoroughly.

5.2 Snap-Lock Connector Cleaning

Clean the snap-lock connector after each run. The Electrophoretic Tissue Clearing Solution will crystallize in the crevices, which may lead to the chamber outlet and the snap-lock connector not connecting properly. Press and release the stainless steel button on the side of the snap-lock connector repeatedly to shake off any crystals that may have formed. Use lint-free wipes dampened with water to wipe the snap-lock connector head. Take special care to clean the parts indicated below. Dry the snap-lock connector thoroughly.



5.3 Troubleshooting

Symptom	Possible Cause	Solution
Tissue is not clear	Inappropriate voltage and/or current applied	Check the voltage and current settings.
	Low temperature	Set the temperature to 37-50°C.
	Short clearing time	Run the system for longer.
	Inappropriate clearing solution	Use fresh Electrophoretic Tissue Clearing Solution.
	Incorrect pH	Use fresh Electrophoretic Tissue Clearing Solution (do not adjust the pH).
Dark spots on the tissue	Insufficient polymerization of hydrogel	Check if the ingredients of the hydrogel solution were fresh. Perform hydrogel polymerization in an oxygen-free environment.
	Dirty ETC Chamber	Clean the ETC Chamber thoroughly prior to use. See Section 5.1: Cleaning the ETC Chamber.
Tissue is yellow	Presence of items such as staples, tape, etc.	Only place tissues and authorized containers and container holders in the ETC Chamber.
	Reused clearing solution	Change the Electrophoretic Tissue Clearing Solution with a cycle of 1.2 L/day for a whole adult mouse brain.
	More than one adult mouse brain per chamber	
Tissue is deformed	Reused tissue container	Use a new tissue container.
Over-clearing	Reduce the time or current for the ETC process.	
Displayed and set temperature are different	It is not unusual for the displayed temperature to go above the set value.	Contact your local distributor or Logos Biosystems when the difference is $\geq 10^{\circ}\text{C}$.
High temperatures in the tube attached to the chamber outlet	Convection	Convection is a normal phenomenon. The temperature of the clearing solution in the tube will be $\sim 5^{\circ}\text{C}$ higher than indicated on the display.
Leaking from the chamber cap	Improperly or loosely screwed on chamber cap	Screw on the chamber cap tightly.
	Aging of or damage to the silicone ring	Replace the chamber cap. Contact your local distributor or Logos Biosystems.
Voltage and current values are 0 despite the settings	Opened ETC chamber safety cover	Close the safety cover.
	RUN/STOP button not pushed	Push the RUN/STOP button. A red halo around the button means the device is on.
	The ETC Controller may be malfunctioning.	Contact your local distributor or Logos Biosystems.

5.4 Error Codes

Error code	Possible Cause	Solution
E01	Malfunctioning part	Reboot your system. If the error code persists, contact your local distributor or Logos Biosystems.
E02	Overheating due to high environmental temperature, a malfunctioning controller, or a malfunctioning cooling system	Set up your system in a cooler environmental temperature (less than 35°C). If the error code persists, contact your local distributor or Logos Biosystems.

6 Ordering Information

The following products can be ordered through your local distributor or by contacting sales@logosbio.com.

Category	Cat #	Product	Unit
Starter Kit	C10001	X-CLARITY™ Tissue Clearing System	1 unit
Main Components	C10101	X-CLARITY™ ETC Chamber	1 unit
	C10201	X-CLARITY™ ETC Controller	1 unit
	C10301	X-CLARITY™ Pump	1 unit
	C10401	X-CLARITY™ Reservoir	1 unit
Containers & Holders	C12001	Tissue Container (20 units)	1 box
	C12002	Container Holder for 1 Tissue Container	1 unit
	C12004	Mouse Brain Slice Holder (Chamber Height: 4 mm)	1 unit
	C12007	Whole Rat Brain Holder	1 unit
Replacements	C12101	Multi-Cable	1 unit
	C12102	X-CLARITY™ Reservoir Cap with Temperature Probe	1 unit
	C12103	Snap-Lock Connector Tube	1 unit
	C12104	Peristaltic Pump Tube	1 unit
	C12201	Power Cord	1 unit
Reagents	C13001	Electrophoretic Tissue Clearing Solution	12 x 1 L
	C13101	X-CLARITY™ Mounting Solution	1 x 25 mL
	C13102	X-CLARITY™ Mounting Solution Value Pack	10 x 25 mL

7 Purchaser Notification

Limited Use Label License: Research Use Only

The purchaser of this product should use this product only for research for the sole benefit of the purchaser. By use of this product, the purchaser agrees to be bound by the terms of this limited use statement whether the purchaser is a for-profit or a not-for-profit entity. If the purchaser is not willing to accept the conditions of this limited use statement and this product is unused, the Company will accept return of the product with a full refund. The purchaser cannot re-sell or otherwise transfer (a) this product, (b) its components, or (c) materials made using this product or its components to a third party for Commercial Purposes. Commercial Purposes mean any and all uses of this product and its components by a party for monetary or other consideration, including but not limited to, (a) product manufacture, (b) providing a service, information, or data, (c) therapeutic, diagnostic, or prophylactic purposes, or (d) resale of this product or its components whether or not such product and its components are resold for use in research.

Logos Biosystems, Inc. ("Company") will not claim any consideration against the purchaser of infringement of patents owned or controlled by the Company that cover the product based on the manufacture, use, or sale of a therapeutic, clinical diagnostic, vaccine, or prophylactic product developed in research by the purchaser in which this product or its components were employed, provided that neither this product nor any of its components were used in the manufacture of such product.

For any use other than this limited use label license of research use only, please contact the Company.

CLARITY™ is the registered trademark of Stanford University. X-CLARITY™ is the registered trademark of Logos Biosystems, Inc.

Warranty

Logos Biosystems, Inc. ("Company") warrants to the original purchaser ("Purchaser") that the system ("System"), if properly used and installed, will be free from defects in materials and workmanship and will conform to the product specifications for a period of one (1) year ("Warranty Period") from the date of purchase. Actual warranty periods may vary depending on customer location. If the System under this limited warranty fails during the Warranty Period, the Company, at its sole responsibility, will:

- 1) within and up to 30 calendar days of purchase, refund the purchase price of the System to the Purchaser if the System is in original conditions; or,
- 2) after 30 calendar days of purchase, only replace or repair the System for up to the Warranty Period without issuing a credit.

In no event shall the Company accept any returned System (including its components) that might have been used or contaminated in some labs, including but not limited to, HIV or other infectious disease or blood-handling labs. This limited warranty does not cover refund, replacement, and repair incurred by accident, abuse, misuse, neglect, unauthorized repair, or modification of the System. This limited warranty will be invalid if the System is disassembled or repaired by the Purchaser.

In case that the Company decides to repair the System, not to replace, this limited warranty includes replacement parts and labor for the System. This limited warranty does not include shipment of the System to and from service location or travel cost of service engineer, the costs of which shall be borne by the Purchaser. Every effort has been made to ensure that all the information contained in this document is correct at its publication. However, the Company makes no warranty of any kind regarding the contents of any publications or documentation as unintended or unexpected errors including occasional typographies or other kinds are inevitable. In addition, the Company reserves the right to make any changes necessary without notice as part of ongoing product development. If you discover an error in any of our publications, please report it to your local supplier or the Company. The Company shall have no responsibility or liability for any special, incidental, indirect or consequential loss or damage resulting from the use or malfunction of the System.

This limited warranty is sole and exclusive. The Company makes no other representations or warranties of any kind, either express or implied, including for merchantability or fitness for a particular purpose with regards to this System. To obtain service during the Warranty Period, contact your local distributor or the Company.

Out of Warranty Service

Please contact your local supplier or the Company's technical support team in order to obtain out-of-warranty service. If necessary, repair service will be charged for replacement parts and labor hours incurred to repair the System. In addition, the Purchaser is responsible for the cost of shipping the System to and from the service facility and, if necessary, the travel cost of a service engineer.



Logos Biosystems

Headquarters

Doosan Venturedigm Suite 514
415 Heungan-daero, Dongan-gu
Anyang-si, Gyeonggi-do 14059
SOUTH KOREA

Tel: +82 31 478 4185
Fax: +82 31 478 4184

USA

7700 Little River Turnpike Suite 207
Annandale, VA 22003
USA

Tel: +1 703 622 4660
Tel: +1 703 942 8867
Fax: +1 517 266 3925

sales@logosbio.com
www.logosbio.com