

Meander Fusion Chamber

INSTRUCTIONS MODEL 454



The BTX Meander Fusion Chamber is a microslide with a novel design specifically used for electro cell fusion of plant or mammalian cells. The chamber is constructed of a conductive metal alloy which has been deposited in a finger-like projection array on a glass microscope slide. This method of manufacturing creates a highly precise working area. The configuration is designed to give direct viewing of a surface area. This can be used for viewing dimer formation during alignment while under a microscope. The gap size is set at 0.2mm.

IMPORTANT: Read all Instructions, Warnings and Precautions prior to use. FOR RESEARCH PURPOSES ONLY

ELECTRICAL & TECHNICAL SPECIFICATIONS

Standard Capabilities *Depending on buffer composition and generator capability

Voltage Range:	0 - 480 Vdc 0 - 16 Vac
Frequency:	1 MHz
Pulse Length/Time Constants Range:	1 μ sec - 99 msec
Pulse Number Range:	1-99 (depending on voltage)
Operating Temperature:	5° - 40° C
Intended Use:	Indoor Use
Relative Humidity:	20-80%
Maximum Altitude:	2000m (6562 ft)
Pollution Degree:	II
Insulation Category:	CAT I

Physical Characteristics

Gap size:	0.2 mm
Electrode Material:	Silver
Field Type:	Inhomogeneous

Compatibility

Generators:	ECM® 630, 830, 2001, 200, 600, & T820.
Monitoring:	Enhancer 400 recommended

DEFINITION OF SYMBOLS



Warning – Refer to instructions for use in order to find the nature of any potential hazard and any actions which have to be taken.



Caution – Risk of electric shock. Dangerous voltage that could result in injury or loss of life.



SAFETY GUIDELINES

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. To avoid potential hazard, use this product only as specified. Only qualified BTX personnel should perform service procedures.



Arcing can occur at high voltages. An unfavorable combination of parameters such as high voltage settings and a small sample volume with a highly conductive medium might lead to flashover between the electrodes (ARC) and/or explosive evaporation of the medium. Reduce voltage or pulse length to avoid repeating this condition.

Do not operate with suspected failures. If you suspect there is damage to the product, have it inspected by qualified BTX service personnel.

Do not contact electrodes. To avoid fire or shock hazard, observe all ratings and markings on the product or in the manual before using the device.

Avoid exposure to contact. Do not insert fingers or try to remove electrode or sample during pulsing sequence.

Wear proper eye protection during electroporation.

Do not operate in an explosive environment.

Do not operate in wet/damp conditions.

SAMPLE PREPARATION

Refer to the BTX Applications and ECM 2001 Instrument Operating Manual for further information. The medium used for electrofusion represents a certain electrical resistance to the power supply. The chamber resistance is determined by the chamber geometry and the specific conductivity of the medium (or specific resistivity, which is the inverse). Non-ionic media such as 0.3 M mannitol, 0.3 M sucrose or 1.1 M sorbitol is recommended. Highly ionic media such as PBS is NOT recommended.

INSTRUCTIONS FOR USE



WARNING HIGH VOLTAGE. Make sure the BTX Pulse Generator is switched off before continuing.

1. Attach the BTX Coaxial-Banana Connection Cable 5343 to the output of the generator.
2. Connect the coaxial end of Cable 465 to Cable 5343.
3. Push the square-post connectors of Cable 465 onto the terminal pins of the Meander Chamber slide. Polarity is not important. Tape the square-post cable to the microscope stage to act as a strain relief and to avoid movement of the slide and its wires.
4. Pipette one drop of cell suspension and reagents to the Meander Chamber field. Alternatively, the entire working area (corresponding to a single gap size) may be filled. The recommended volume of cells and reagents is 5 to 20 μ l. Top with a cover slip.

5. Switch on the Pulse Generator. Check that all instrument settings are correct. Deliver the alignment or electroporation pulses by pressing the appropriate START or PULSE button depending on the ECM Pulse Generator being used.
6. After each experiment clean the chamber with warm distilled water or 70% ethanol and let air dry. The chamber may occasionally be wiped with a soft tissue to remove dirt.

TROUBLESHOOTING

Please contact BTX Technical Service at any of the numbers listed on the following page in the event of any failure.

WARRANTY

The BTX Instrument Division of Genetronics, Inc. (Genetronics) warrants that Meander Fusion Chamber is free of defects at time of delivery to the user. If a defect is found, product may be returned for exchange only within a period of 90 days from time of delivery from BTX or an authorized Genetronics Distributor. If any defects covered by this warranty appear within the above period, Genetronics shall have the option of repairing or replacing the product at its expense. Such repair or replacement shall be the customer's exclusive remedy for breach of warranty or for negligence. This warranty does not extend to any product which has been (a) subjected to misuse, neglect, accident or abuse, (b) repaired or altered by anyone other than Genetronics without Genetronics' express and prior approval, (c) used in violation of instructions furnished by the BTX Instrument Division of Genetronics, Inc. Manufacturer shall not be liable for any special or consequential damages or for loss, damage or expense (whether or not caused by or resulting from Manufacturer's negligence) directly or indirectly arising from use of the product sold here under either separately or in combination with any other product or from any other cause.

The above warranty shall be in lieu of and excludes all other expressed or implied warranties of merchantability, or fitness for any purpose, or otherwise. Without limiting the generality of the foregoing, Manufacturer shall not be liable for any claims of any kind whatsoever, as to the product delivered or for non-delivery of equipment, and whether or not based on negligence.

Manufacturer will correct any malfunction not caused by operator abuse at no charge for parts and labor. All service under the warranty will be made at the Genetronics, Inc. San Diego, California, USA facilities or at another location approved by Genetronics, Inc. Owner will ship product prepaid to San Diego, California. Manufacturer will return the product, after servicing, freight prepaid to owner's address.

Warranty is VOID if the product is changed in any way from its original factory design or if repairs are attempted without written authorization by Manufacturer.

Warranty is VOID if parts or connections not manufactured by Manufacturer are used with a BTX product.

TECHNICAL & CUSTOMER SERVICE

BTX® is the ultimate resource for technical information on the use of high voltage electric fields for performing high efficiency cell fusion, embryo manipulation, gene transfer, bacterial transformation and general electroporation of molecules and drugs into cells. We constantly track and monitor all scientific publications in this area. Our Technical Service group extracts and enters pertinent information, such as results and parameters from these papers into a Database Management System. The resultant database can be accessed and searched on any combination of the field identifiers.

For technical assistance or information, contact the BTX Instrument Division of Genetronics, Inc. Technical Service group:

Phone: 1-800-597-0580 1-858-597-6006

Fax: 1-858-597-9594

E-mail: tech@genetronics.com

If outside the United States and Canada: call 858-597-6006 or contact your nearest BTX Distributor.

BTX®

**A Division of Genetronics, Inc.
11199 Sorrento Valley Road
San Diego, CA 92121-1334 U.S.A.**

For any inquiry or request for repair service, contact the BTX Instrument Division of Genetronics, Inc. Customer Service group in writing or by the following:

Phone: 1-800-289-2465 1-858-597-6006

Fax: 1-858-597-9594

E-mail: cust@genetronics.com

If outside the United States and Canada, call 1-858-597-6006 or contact your nearest BTX Distributor.

ORDERING INFORMATION

Model	Description	Part Number
454	Meander Fusion Chamber, pkg. of 4	01-000098-01
465	Square-post Micrograbber Cable	06-700044-01
5343	Coaxial-Banana Connection Cable	06-700042-01
4001	Enhancer 400 w/ Computer & Printer	01-001483-01