CTS™ Xenon™ Electroporation System

Pub. No. MAN0026329 Rev. A.0

This guide contains the information needed to prepare your site for installation of the CTS™ Xenon™ Electroporation System (Cat. No. A50301).

Site preparation workflow

IMPORTANT! Thermo Fisher Scientific services and repairs products in areas designated BioSafety Level 1 (BSL-1) or BioSafety Level 2 (BSL-2). Please let your Thermo Fisher Scientific representative know if BioSafety Level 3 (BSL-3) or BioSafety Level 4 (BSL-4) environments apply to your operation.

30 min

Review this site preparation guide

1 day

Complete the site preparation checklist (page 2)

Complete, date, and initial all items in the checklist before the scheduled installation date.

1 hr

Receive and inspect the shipment (page 8)

- Verify items ordered were shipped
- Inspect the shipping containers and report any damage
- Unpack installation kit and store as directed

1 day

Move the packaged shipment to the installation site

Prepare installation site and move packaged instrument to the site. A minimum of 3 people are recommended to lift the instrument (~150 lbs).

Installation time and training

The instrument is designed to be customer installed. After the shipment is unpacked, the installation takes approximately one hour. The delivery team can assist with lifting the instrument onto the bench if prepared for installation. For placement after the initial delivery, we recommend 3 people to lift the ~150 lbs (68 kg).

For additional training and reference information, see the user documents provided with the product. Smart Start training is offered with every instrument purchase and will be coordinated following the instrument delivery. Please watch for communication from your local service representative.

Site preparation checklist

IMPORTANT! Completion of the following checklist before the scheduled instrument delivery will optimize your installation experience. Because the Xenon instrument is customer installable, this form is provided to assist you with your preparation.

✔	Date	Initials	Site preparation requirement	See page
☐			Customer responsibilities have been reviewed.	3
☐			Personnel have been assigned tasks and responsibilities.	
☐			The installation site is identified and meets the following requirements:	—
			☐ Space and clearance	5
			☐ Environmental	6
			☐ Electrical	6
			☐ Network	7
			☐ Safety	7
☐			The shipment was received and inspected as follows:	8
			☐ The items shown on the shipping list are the items that were ordered at the time of purchase.	
			☐ Damage to shipping containers was reported to the shipping company that delivered the shipment and to your service representative.	
			☐ Damage or mishandling was recorded on the shipping documents.	
☐			The installation site is cleared and ready for the installation.	8
☐			All materials for installation, qualification, and operation are available.	

Customer responsibilities

Personnel	Responsibilities and tasks to perform before instrument installation
Site preparation/ installation coordinator	• Reviews the site preparation guide for site requirements. • Coordinates personnel and tasks. • Selects the installation site. • Reviews checklists with applicable personnel to verify that the site is properly prepared. • Receives and inspects the packaged shipment. • Unpacks and stores the reagents box (if provided) according to the specifications indicated in the product information sheets. • Oversees installation and informs personnel of the installation day. • Ensures that the site is clear of unnecessary material on the installation day.
Laboratory safety representative	• Reviews the safety requirements later in this guide. • Ensures that all customer-provided materials for installation are present at the site. • Ensures that primary users (responsible for training other users) are available for SmartStart training.
Laboratory personnel/ primary users	• Reviews the safety requirements later in this guide. • Ensures that all customer-provided materials for installation are present at the site. • Ensures that primary users (responsible for training other users) are available for SmartStart training.
Facilities personnel	• Ensures that the installation requirements are met for the installation site. – Space at the installation site – Building clearances – Humidity and temperature – Waste collection – Electrical supply – Computer (if included with product) – Safety and installation materials • Moves the packaged shipment to the site if instrument was not previously placed by movers at delivery. • If applicable, ensures that at least 3 people are available to move and position the instrument.
Network or IT specialist (if the product will be connected to a network)	• Ensures that active, tested local area network (LAN) connections are in place. • Ensure access to port #7443 is available for instrument communication. • Ensures that network hardware is compatible with an RJ45-type connector. • If necessary, supplies additional cables. ⚠ **CAUTION!** Firewall and security settings may affect instrument communication with networked connections. Verify instrument as a standalone unit before connecting to a network connection.

Site requirements

Dimensions and weights

To prepare for installation, provide space for receipt and configuration of the components listed in this section. This section provides dimensions and weights for the packages you will receive, and it describes the dimensions of the components after installation and configuration.

Components (packaged)

IMPORTANT! Ensure that the building clearances allow for transport of the packaged components.

Package	Height	Length (depth)	Width	Weight
Shipping crate	101.5 cm (40.0 in)	72.5 cm (28.5 in)	83.0 cm (32.7 in)	85 kg (187 lbs)

CAUTION! PHYSICAL INJURY HAZARD. Do not attempt to lift or move the instrument without the assistance of others, the use of appropriate moving equipment, and proper lifting techniques. Improper lifting can cause painful and permanent back injury. Depending on the weight, moving or lifting an instrument may require two or more people.

Components (unpackaged)

IMPORTANT! Refer to the installation guide (Pub. No. 100107077) for detailed instructions on unpacking the instrument. Refer to the instrument user guide (Pub. No. MAN0025488) for set up instructions.

Ensure that the installation site can accommodate the dimensions and support the weights of the components.

Note: A minimum 15.2-cm (6-inch) border around the instrument is recommended for ease of service access and proper instrument ventilation. This border is not included in the instrument dimensions below.

Component	Height	Length (depth)	Width	Weight
CTS™ Xenon™ Electroporation System	69.6 cm (27.4 in) (Front door closed) 109.5 cm (43.1 in) (Front door open)	54.0 cm (21.2 in)	67.0 cm (26.5 in)	70 kg (154.3 lbs)

CAUTION! PHYSICAL INJURY HAZARD. Do not attempt to lift or move the instrument without the assistance of others, the use of appropriate moving equipment, and proper lifting techniques. Improper lifting can cause painful and permanent back injury. Depending on the weight, moving or lifting an instrument may require two or more people.

Typical system layout and dimensions

The following images show the system layout and dimensions.

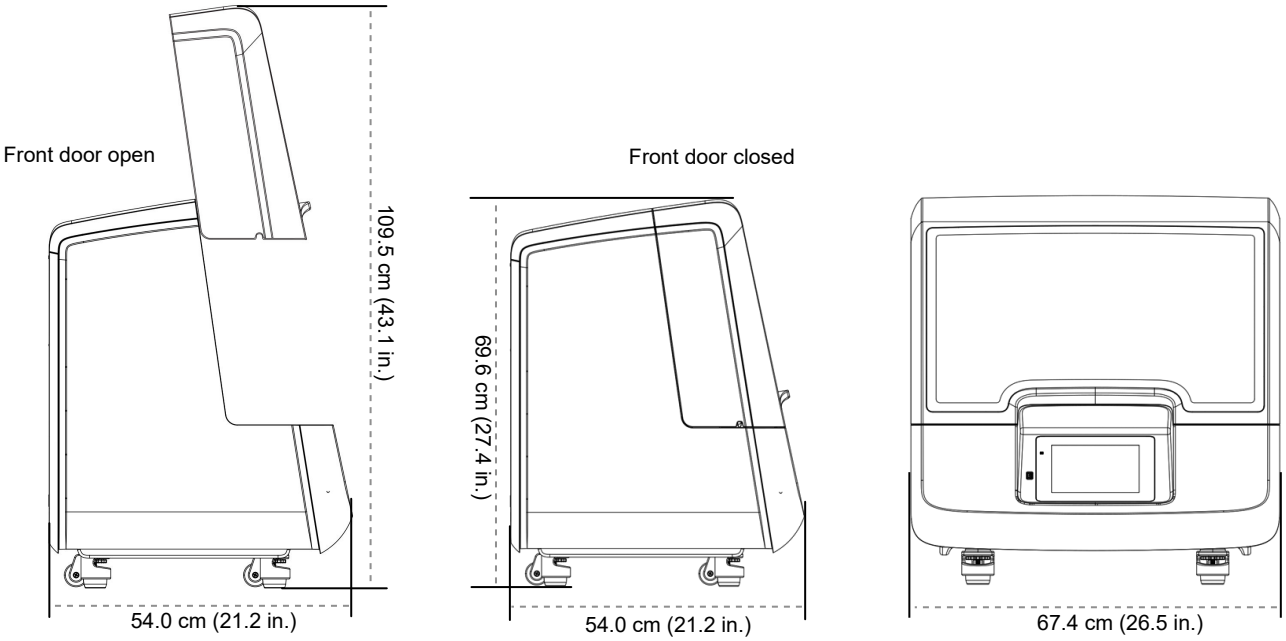

Figure 1 Instrument dimensions

Component clearances required for installation and maintenance

During installation and maintenance, it is necessary to access the back and sides of the instrument. If the back of the instrument faces a wall, ensure that there is sufficient clearance around the instrument to rotate it.

Note: A minimum 15.2-cm (6-inch) border around the instrument is recommended for ease of service access and proper instrument ventilation. This border is not included in the instrument dimensions below.

IMPORTANT! For safety reasons, the power outlet for the product must be accessible at all times.

Component	Height	Length (depth)	Width
CTS™ Xenon™ Electroporation System	124.7 cm (49.1 in)	79.2 cm (31.2 in)	82.6 cm (32.5 in)

IMPORTANT! The surface on which the instrument is installed must be level and stable.

Environmental requirements

Condition	Acceptable range
Installation site	Indoor use only
Electromagnetic interference	Do not use this device in close proximity to sources of strong electromagnetic radiation (for example, unshielded intentional RF sources). Strong electromagnetic radiation may interfere with the proper operation of the device.
Altitude	Located between sea level and 1,800 m (6,000 ft) above sea level
Air pressure	80–160 kPa
Humidity	15% to 80% (non-condensing)
Temperature (instrument and computer)	15°C to 30°C (59°F to 86°F)
Vibration	The instrument is not adjacent to strong vibration sources, such as a centrifuge, pump, or compressor. Excessive vibration will affect instrument performance.
Pollution degree	II Install the instrument in an environment that has nonconductive pollutants such as dust particles or wood chips. Typical environments with a Pollution Degree II rating are laboratories and sales and commercial areas.
Liquid waste collection	Dispose of buffer, reagents, and any liquid waste as hazardous waste in compliance with local and national regulations.
Other conditions	Ensure the room is away from any vents that could expel particulate material on the components. Avoid placing the instrument and computer adjacent to heaters, cooling ducts, or in direct sunlight.

Electrical requirements

WARNING! For safety, the power outlet for the instrument must be accessible at all times. See "Component clearances required for installation and maintenance" on page 5 for information about the space needed between the wall and the instrument. In case of emergency, you must be able to immediately disconnect the main power supply to all the equipment. Allow adequate space between the wall and the equipment so that the power cords can be disconnected in case of emergency.

Component	Rated Voltage	Rated Frequency	Rated Current	Rated Power
CTS™ Xenon™ Electroporation System	100–240 ±10% VAC	50 or 60 Hz	12 A	1,200 VA

Electrical protective devices

We recommend several protective devices in environments with large voltage and power fluctuations.

Recommended devices
Power line regulator
• 1.5-kVA power line regulator • Use in areas where the supplied power fluctuates in excess of ±10% of the normal voltage. • Power fluctuations can adversely affect the function of the instrument and computer. **Note:** A power line regulator monitors the input current and adjusts the power supplied to the instrument or computer. It does not protect against a power surge or failure.
Surge protector
• 10-kVA surge protector (line conditioner) • Use in areas with frequent electrical storms or near devices that are electrically noisy, such as refrigerators, air conditioners, or centrifuges. • Short-duration, high-voltage power fluctuations can abruptly terminate the function of, and thereby damage the components of, the computer and the instrument. **Note:** A dedicated line and ground between the instrument, computer, and the building's main electrical service can also prevent problems caused by power fluctuations.

Recommended devices
Uninterruptible power supply (UPS)
• 1.5-kVA uninterruptible power supply (UPS) • Use in areas prone to power failure. • Power failures and other events that abruptly terminate the function of the instrument and computer can corrupt data and possibly damage the system. **CAUTION! PHYSICAL INJURY HAZARD.** Do not attempt to lift or move the UPS unit without the assistance of at least two people. Improper lifting can cause painful and permanent back injury. See the UPS manufacturer user guide for more information. **IMPORTANT!** A UPS provides power for a limited time. It is meant to delay the effects of a power outage, not to serve as a replacement power source. In the event of a power loss, power off the instrument and computer unless you expect to regain power within the battery life of the UPS.

Network requirements

The instrument is factory-configured for IPv4 TCP/IP communication and uses an Ethernet adapter (100/1,000 Mbps) with an RJ45-type connector for local area network (LAN) connection. The network connection is needed to export results files to a network location, to send system notifications to users, and for support access.

The customer site is responsible for the following:

- An active, tested network port with an available jack within 6 m (20 ft.) must be in place before the scheduled installation date.
- The assigned IT or network specialist from your organization will:
  - Help connect the instrument to your network.
  - Provide description of the subnet and subnet mask used for the Ethernet port.
  - Provide email account (user name, password) and email server (IP address or URL) location and type for error notifications.

Safety requirements

Safety practices

A safety representative from your facility must ensure that:

- Personnel establish and follow all applicable safety practices and policies to protect laboratory personnel from potential hazards.
- All applicable safety devices and equipment are available at all times.

Required safety equipment

Your laboratory has specific safety practices and policies designed to protect laboratory personnel from potential hazards that are present. Follow all applicable safety-related procedures at all times.

The following safety equipment and protection from hazards must be available at the installation site:

- Protection from any sources of hazardous chemicals, radiation (for example, lasers, radioisotopes, radioactive wastes, and contaminated equipment), and potentially infectious biological material that may be present in the area where the service representative will work.
- Appropriate fire extinguisher:
  - You are responsible for providing an appropriate fire extinguisher for use on or near the equipment.
  - The types and sizes of fire extinguishers shall be suitable for use on electrical and chemical fires as specified in current codes, regulations, and/or standards, and with approval of the Fire Marshall or other authority having jurisdiction.
  - The installation of appropriate fire extinguishers shall be in addition to other fire-protection systems and not as a substitute or alternative to them.
- Eyewash
- Safety shower
- Eye and hand protection
- Adequate ventilation, including vent line/fume hood, if applicable
- Biohazard waste container, if applicable
- First-aid equipment
- Spill cleanup equipment

- Applicable Safety Data Sheets (SDSs)

Materials for installation and operation

Installation materials

Ensure that the following materials are available before installation of the product:

- Safety glasses, lab coats, and chemical-resistant, disposable gloves (powder-free)
- Mobile bench to allow access to the instrument for maintenance and service
- Easily accessible specified power outlet
- *(Optional)* Electrical protective devices (universal power supply unit, surge protector, and/or power line regulator)
- *(Optional)* External network connection

Operation materials

Additional supplies and consumables are necessary for routine operation. Contact a sales representative to order these additional supplies. Use only supplies as specified by Thermo Fisher Scientific.

Receive and inspect the shipment

1. Verify that the items shown on the shipping list are the items that were ordered at the time of purchase.
2. Carefully inspect the shipping containers. Report any damage to the shipping company and to your service representative. Record any damage or mishandling on the shipping documents.

Related documentation

Document	Publication number
CTS™ Xenon™ Electroporation System User Guide (thermofisher.com/MAN0025488_CTS_XenonElectroporationSystem_UG.pdf)	MAN0025488

Customer and technical support

Visit **thermofisher.com/support** for the latest service and support information.

- Worldwide contact telephone numbers
- Product support information
  - Product FAQs
  - Software, patches, and updates
  - Training for many applications and instruments
- Order and web support
- Product documentation
  - User guides, manuals, and protocols
  - Certificates of Analysis
  - Safety Data Sheets (SDSs; also known as MSDSs)

    Note: For SDSs for reagents and chemicals from other manufacturers, contact the manufacturer.

Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale at **www.thermofisher.com/us/en/home/global/terms-and-conditions.html**. If you have any questions, please contact Life Technologies at **www.thermofisher.com/support**.

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For descriptions of symbols on product labels or product documents, go to thermofisher.com/symbols-definition.

The information in this guide is subject to change without notice.