



QUICK SET UP GUIDE

LX-5090-QS

Q-SUN

Q-SUN Xe-1 Xenon Test Chamber



Revision Date
11 Apr 2022

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1. Specifications, Classifications, Symbols

1.1 Specifications, Classifications (Mar 2019)

- The recommended ambient operating temperature and relative humidity (RH) for the Q-SUN tester is 23 ± 5 °C and $50 \pm 25\%$ RH.
- The maximum ambient operating temperature and humidity is 40 °C and 80% relative humidity.
- Temperatures outside the recommended range may cause chamber temperature and/or humidity faults.
- Transportation and Storage Temperature: -40 °C to 80 °C.
- Installation Category: Category II for transient over-voltages.
- Pollution Control: Pollution Degree 2.
- Sound Pressure Level: Sound Pressure Level does not exceed 75 dBA.
- Altitude: 2000 meters or less.
- Operation: Continuous Rating.
- Supply Connection: Permanently connected or plug/socket connection (industrial type per IEC 6309 or twist lock type in North America).
- External Disconnect: Required for all connections.
- External Over-Current Protection: Must be rated for not more than 40 A (USA, Canada) or 64 A (Europe).

1.2 Symbols (Aug 2020)



Electrical Shock Hazard



Hot Surfaces Hazard



Attention



Finger/Hand Crushing Hazard



Local waste & recycling regulations per the WEEE Directive 2002/96/EC on Waste Electrical and Electronic Equipment

2. Safety Information (Feb 2022)

Overview

Q-Lab accepts no responsibility for the consequences if the user fails to comply with the instructions in this Technical Manual. Q-Lab will accept responsibility for defective parts or components only if the machinery was defective at the time that the tester was shipped.

- **Warning:** If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- This manual does not claim to address potential safety issues, if any, associated with the use of this product.
- It is the responsibility of the user of this manual to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment safety devices may be impaired.
- The Q-SUN meets the European Low Voltage Directive 2014/35/EU and complies with the requirements of EN 61010-1: 2010 (Third Edition), "Safety of Electrical Equipment for Measurement, Control and Laboratory Use".
- The Q-SUN meets the European Electromagnetic Directive 2014/30/EC and complies with the requirements of EN 55011:2007 Radiated and Conducted Emissions – class A.
- Use only parts that have been supplied or recommended by Q-Lab.

Heat and Electrical Shock Hazards

Warning Labels

- All Q-SUN Xe-1 models are equipped with a lamp access door interlock switch that turns off the xenon lamps when the lamp access door is opened (Figure 2a and Figure 2b).
- Warning labels (Figure 2c and Figure 2d) indicate heat and electric shock hazards inside the Q-SUN Xe-1 tester.
- Do not defeat the switch that turns off lamps when the lamp access door is open.

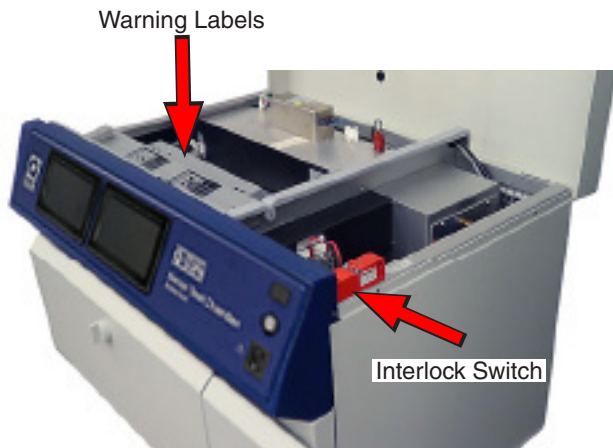


Figure 2a: "E" model testers warning label and interlock switch location (lamp access door open).

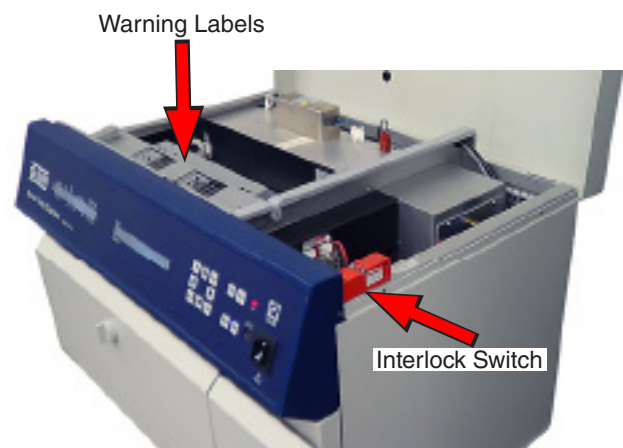


Figure 2b: Basic model tester warning label and interlock switch location (lamp access door open).

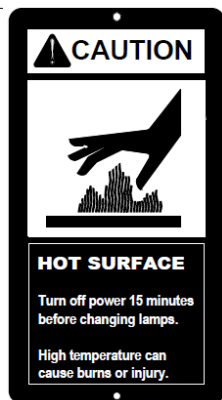


Figure 2c: Hot surface warning label.

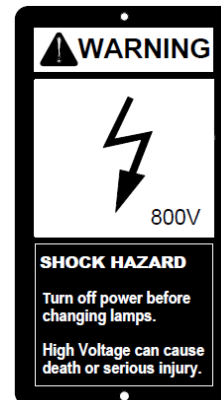


Figure 2d: Shock hazard warning label.

Ultraviolet and Infrared Hazards

Ultraviolet (UV) Light



- There is no Ultraviolet (UV) hazard from any Q-SUN tester in normal operation with the doors closed.
- The Q-SUN lamps produce UV light that can cause severe sunburn, eye inflammation, and damage to your vision.
- All Q-SUN Xe-1 models are equipped with a chamber door interlock switch that turns off the xenon lamps when the chamber door is opened (Figure 2e and Figure 2f).
- Do not defeat the switch that turns off lamps when the chamber door is open.



Figure 2e: "E" model testers chamber door interlock switch location (test chamber and plumbing access door open).



Figure 2f: Basic model tester chamber door interlock switch location (test chamber and plumbing access door open).

3. General Description (Feb 2022)

Overview

- This Quick Setup Guide is not a Technical Manual.
- This document is intended to explain only the basics of uncrating and setting up a Q-SUN Xenon Test Chamber.
- See the [LX-5090-TM Q-SUN Xe-1 Technical Manual](#) for complete information on the installation, operation, and maintenance of Q-SUN Xe-1-SE, Xe-1-BCE, Xe-1-SCE, and Xe-1-WE testers.
- See the [LX-5090B-TM Q-SUN Xe-1 Technical Manual](#) for complete information on the installation, operation, and maintenance of Q-SUN Xe-1-B testers.

Q-SUN Xe-1 Models Covered in This Guide:

| Model | Configuration | Installation | Control Interface |
|----------|--------------------|--------------|-------------------|
| Xe-1-B | B: Basic Tester | Tabletop | Keypad/LCD |
| Xe-1-SE | S: Water Spray | Tabletop | Dual Touchscreen |
| Xe-1-BCE | C: Chiller | Stand-Alone | Dual Touchscreen |
| Xe-1-SCE | Chiller + Spray | Stand-Alone | Dual Touchscreen |
| Xe-1-WE | W: Water Immersion | Tabletop | Dual Touchscreen |

NOTE: All Q-SUN “E” models have enhanced performance over the basic tester, including longer lamp life, or higher irradiance capability.

4. Operating Environment



The Tester Must Be Located in a Suitable Environment

- All Q-Lab test chambers are sophisticated scientific instruments.
- All tester models must be operated in a suitable controlled environment ([Section 4.1](#)).
- Operating the tester in an unsuitable environment ([Section 4.2](#)) will void the warranty.

4.1 Suitable Environments (May 2020)

Ambient Laboratory Temperature and Humidity

- The recommended ambient operating temperature and relative humidity (RH) for Q-SUN testers is 23 ± 5 °C and $50 \pm 25\%$ RH.
- Operating outside the recommended range (or in rare cases, even within it), certain standards or test cycle conditions may not be achievable.
- Operating outside the recommended range can result in the tester producing chamber temperature and/or humidity faults.
- Never operate your tester in lab temperatures >40 °C or $>80\%$ RH.
- Consult with Q-Lab for more specific information about achievable chamber temperature/humidity values based upon various ambient lab conditions.

Physical Environment

- A room that is dry, clean, and free of dust, particles, gases, or salt fog.
- A room with an HVAC (heating/ventilation/air-conditioning) system.
- A location away from windows or HVAC vents.
- A location that provides the necessary minimum clearances as specified in [Section 6.1](#).

**NOTE: Testers shown in this section are “E” models.
Required operating environment conditions are
exactly the same for the Xe-1-B model.**

4.2 Unsuitable Environments (May 2020)

Salt Fog or Other Airborne Contamination

- Operating a Q-SUN tester in an unsuitable environment will void the warranty.
- DO NOT install Q-SUN testers in a room with corrosion chambers (Figure 4.2a).
- DO NOT locate a Q-SUN tester in a room with machines or processes that generate dust, particles, vapors, gases, etc (Figure 4.2b).



Figure 4.2a: Do not install testers in a room with corrosion chambers.



Figure 4.2b: Do not locate testers in a room with airborne dust, particles, or gases.

Uncontrolled Temperature and Humidity

- Do not operate the tester in a room with uncontrolled temperature and humidity (Figure 4.2c).
- Do not locate tester near sources of cold or hot air (Figure 4.2d).

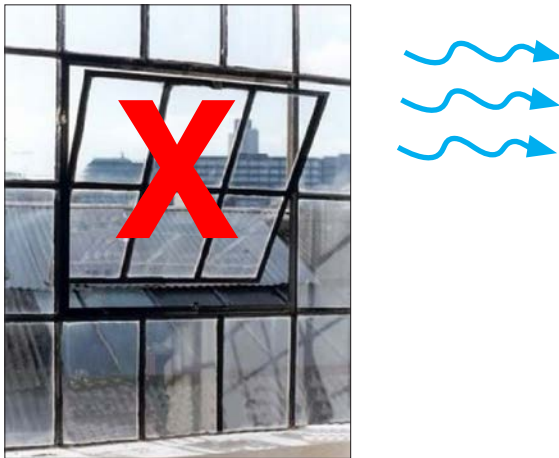


Figure 4.2c: Do not locate testers near open windows.

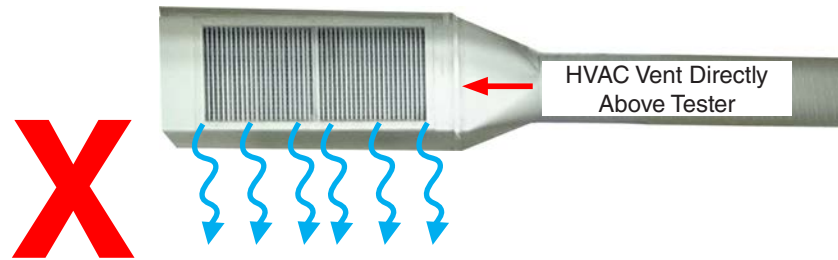


Figure 4.2d: Keep tester away from sources of hot or cold air.

Other Unsuitable Environments

- **Outdoors:** Rain and dust will corrode or short out electrical components.
- **Metal Dust / Metal Chips:** Do not locate the tester near metal cutting machines or metal grinding machines. Conductive metal dust or metal chips in the air will damage electronic components.
- **Carbon Fibers:** Do not operate the tester where carbon fibers or carbon reinforced plastic are being cut. The conductive carbon fibers will damage electronic components.
- **Conductive Pigments:** Do not operate the tester where carbon black or other conductive pigment dust is in the air. The conductive dust will damage electronic components.
- **Other Corrosive Gases:** Do not expose the tester to acid fog, SO₂ gas, or other corrosive gases.
- **Excessive Voltage:** The electrical supply to the tester must be no more than 10% higher than the voltage listed on the nameplate.
- **Low Voltage:** Recurring “brown-outs” or voltages less than 90% of the rated voltage will damage electrical components.
- **Water Leaks from Ceiling:** Water leaking onto the tester will damage electrical components.

For further detail on laboratory environment requirements, please contact Q-Lab Repair and Tester Support. See [Section 9](#) for contact information.

5. Uncrating

5.1 Overview (Feb 2022)



Carefully read these instructions before uncrating the tester. Follow all local, OSHA, EHS, and other applicable equipment operation and material handling safety requirements, recommendations, and practices.

| Shipping Weights (Approximate) | Xe-1-B, Xe-1-SE | Xe-1-WE | Xe-1-BCE, Xe-1-SCE |
|----------------------------------|------------------|------------------|--------------------|
| Tester On Skid With Wooden Frame | 134 kg (296 lbs) | 163 kg (359 lbs) | 227 kg (500 lbs) |
| Tester On Skid With Carton Only | 89 kg (195 lbs) | 131 kg (288 lbs) | 172 kg (380 lbs) |
| Tester Only* | 50 kg (110 lbs) | 89 kg (195 lbs) | 124 kg (272 lbs) |

* Tester weight varies based on installed options and includes chiller, where applicable.

Tools Required

| | | |
|--|----------------------------------|--|
| Phillips Screwdriver (Wooden Crate Only) | Flat Blade Screwdriver | Fork Lift* |
| Pry Bar (Wooden Crate Only) | Ratchet and 15 mm (9/16") Socket | Small Ladder or Step Stool |
| Band Cutter | Utility Knife | Stubby Screwdriver (Xe-1 chiller models) |

*A fork lift or other mechanical lifting device is recommended for use in moving the crated tester to the installation location, and to lift the frame in one piece from wooden frame crates.

5.2 Models Without Chiller (Feb 2022)

Xe-1-B, Xe-1-SE, Xe-1-WE

- Q-SUN Xe-1-B, Xe-1-SE, and Xe-1-WE testers are shipped in one of two types of packaging (Figure 5.2a and Figure 5.2b).
- Labels on the carton indicate the location of the instructions to be opened first (Figure 5.2c).
- Instructions for unpackaging and setting up the tester are located in the envelope shown in Figure 5.2d.

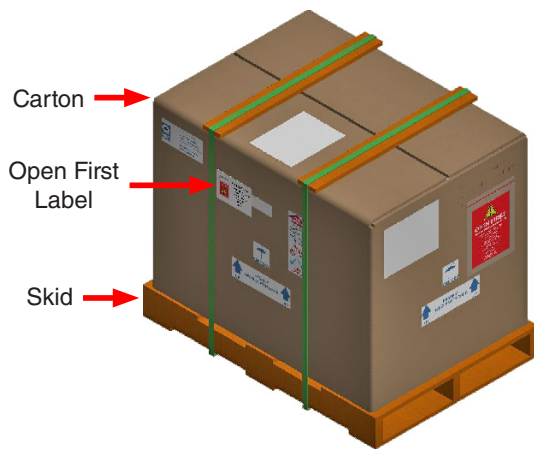


Figure 5.2a: This packaging has a carton banded to a wooden skid

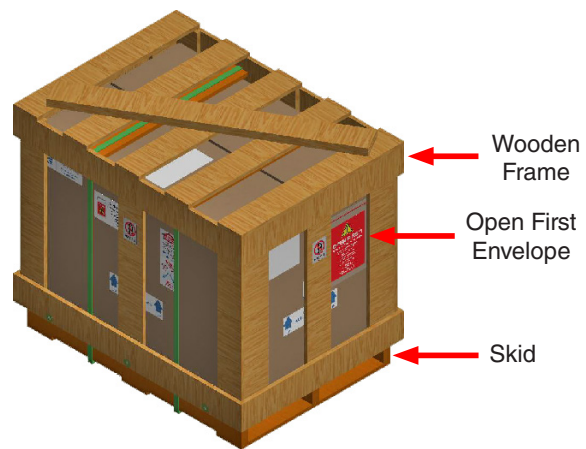


Figure 5.2b: This packaging has a carton surrounded by a wooden frame fastened to a wooden skid.



Figure 5.2c: Labels on the carton indicate the envelope to be opened first.



Figure 5.2d: Open this envelope for important uncrating instructions.



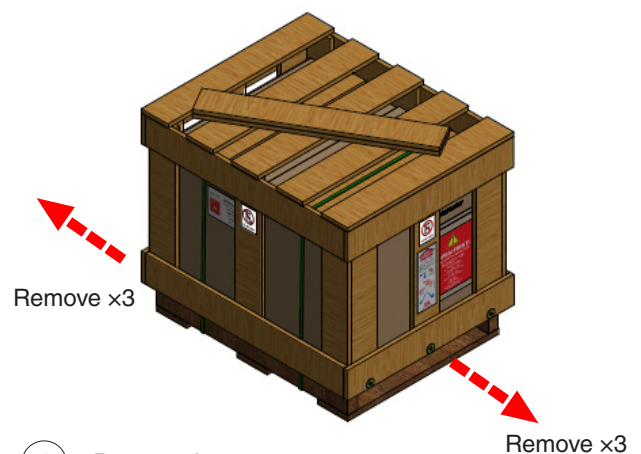
1. Uncrating instructions are located in this envelope. Remove and read the instructions.



2. Packaged with wooden frame continue with [Step 3](#). Packaged with carton only, go to [Step 7](#).



3. Locate the Phillips screws in the bottom front and back horizontal boards.



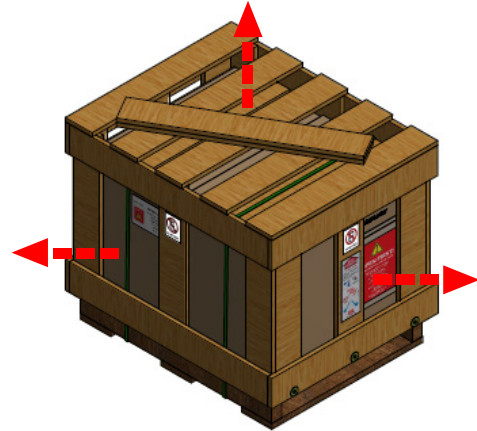
4. Remove the screws.

Section 5. Uncrating

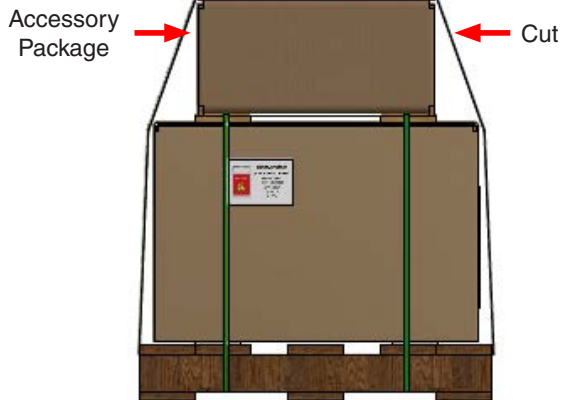
Use Fork Lift to Remove Crate in One Piece



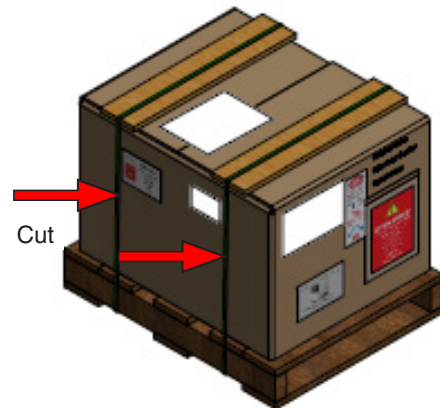
5. If a fork lift is available, use it to carefully lift the wooden frame up and off of the tester.



6. If a fork lift is not available, use a pry bar to carefully remove the horizontal and vertical wooden pieces off of the tester.



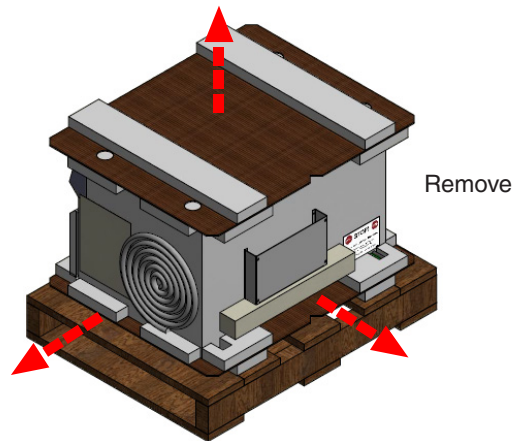
7. If there is an accessory package, cut the band and remove the plastic wrap. Set the package aside.



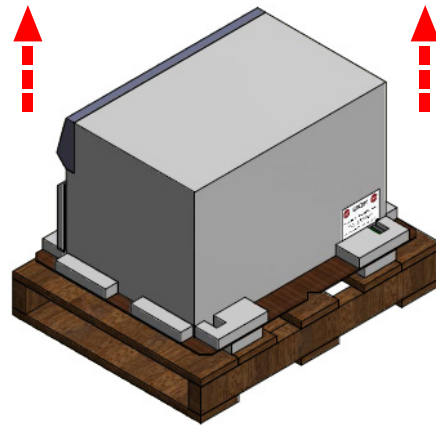
8. Cut the bands holding the carton to the skid. Remove the bands and boards.



9. Carefully lift the carton up and off of the tester.



10. Remove all packaging materials from inside and outside the tester. Remove any accessory boxes.



-
11. Q-Lab recommends that at least two people remove the Q-SUN from the skid.

12. Carefully lift the tester off of the skid
-



To complete tester installation see
[Section 6.1](#) through [Section 6.4](#).

13. Go to the sections listed above.
-

5.3 Models With Chiller (Feb 2022)

Xe-1-BCE, Xe-1-SCE

- Q-SUN Xe-1-BCE and Xe-1-SCE testers are shipped in one of two types of packaging (Figure 5.3a and Figure 5.3b).
- Labels on the carton indicate the location of the instructions to be opened first (Figure 5.3c).
- Instructions for uncrating and setting up the tester are located in the envelope shown in Figure 5.3d.

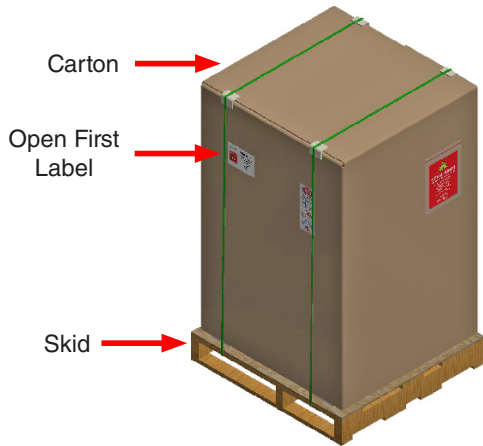


Figure 5.3a: This packaging has a carton banded to a wooden skid.



Figure 5.3b: This packaging has a carton surrounded by a wooden frame fastened to a wooden skid.



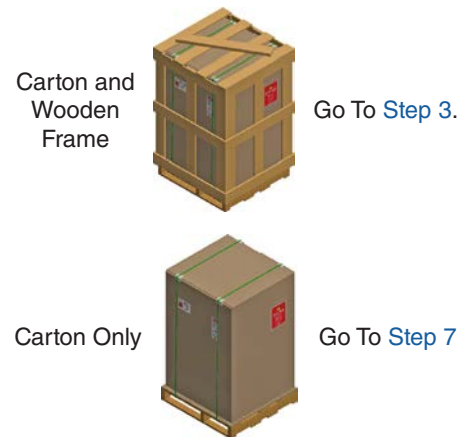
Figure 5.3c: Labels on the carton indicate the envelope to be opened first.



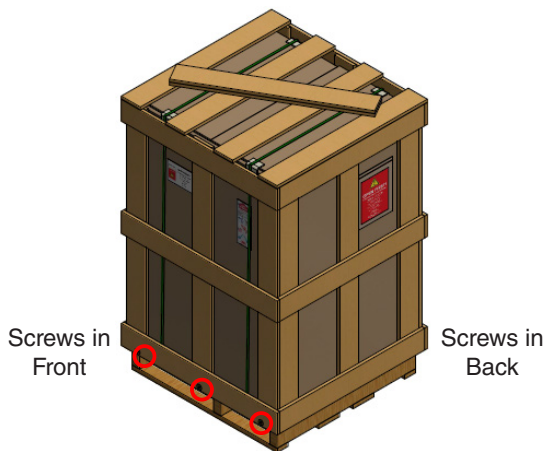
Figure 5.3d: Open this envelope for important uncrating instructions.



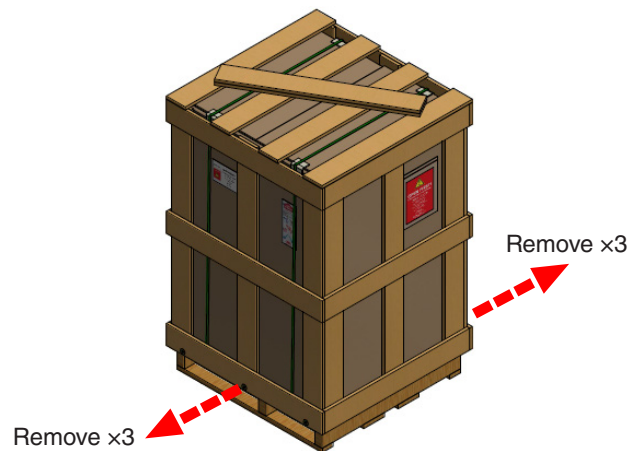
1. Uncrating instructions are located in this envelope. Remove and read the instructions.



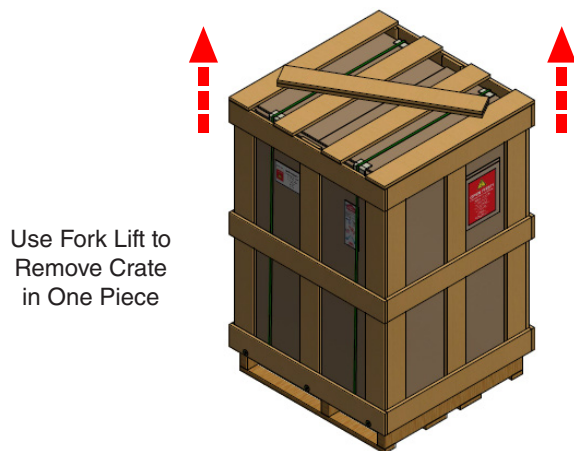
2. Packaged with wooden frame continue with [Step 3](#). Packaged with carton only, go to [Step 7](#).



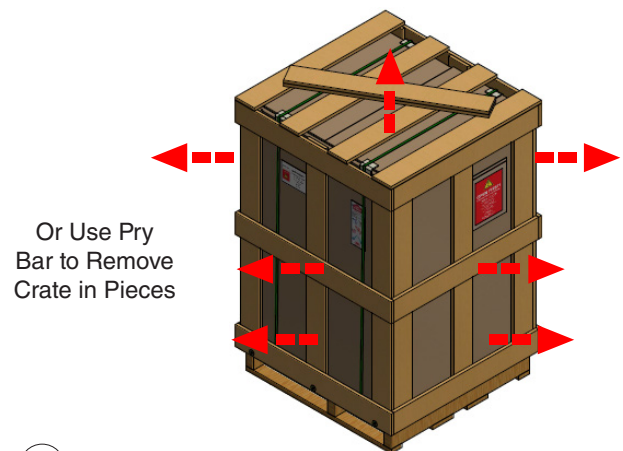
3. Locate the Phillips screws in the bottom front and back horizontal boards.



4. Remove the screws.

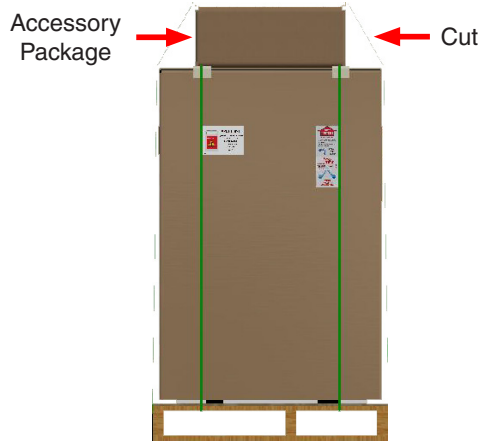


5. If a fork lift is available, use it to carefully lift the wooden frame up and off of the tester.

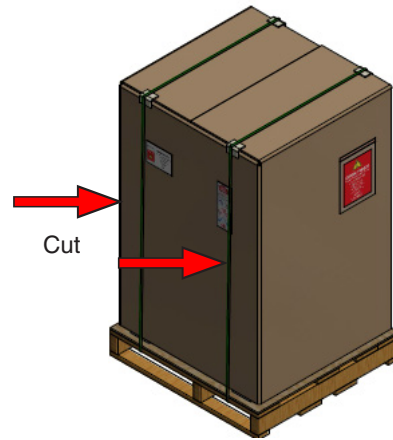


6. If a fork lift is not available, use a pry bar to carefully remove the horizontal and vertical wooden pieces off of the tester.

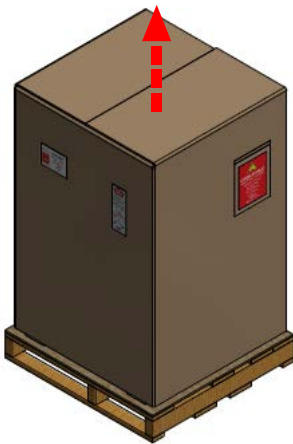
Section 5. Uncrating



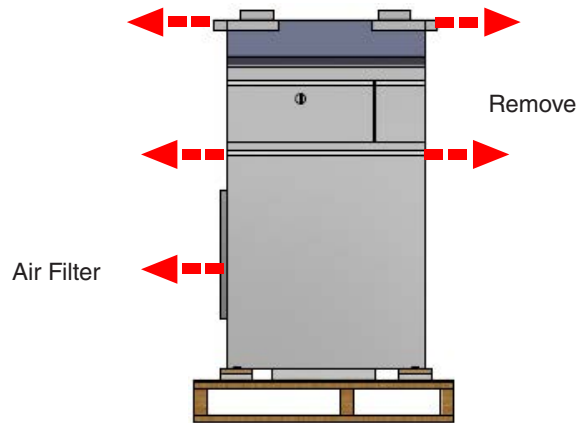
7. If there is an accessory package, cut the band and remove the plastic wrap. Set the package aside.



8. Cut the bands holding the carton to the skid. Remove the bands and boards.



9. Carefully lift the carton up and off of the tester.



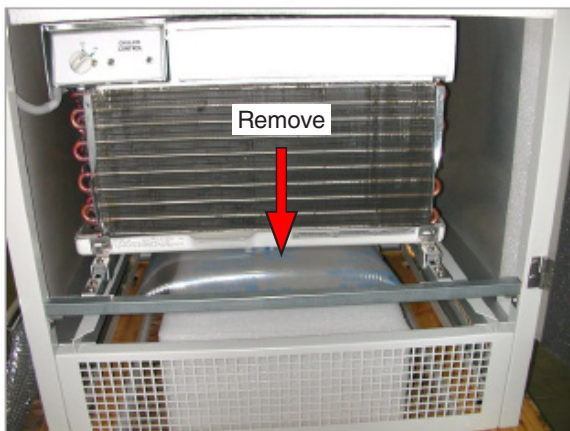
10. Remove all packaging materials from inside and outside the tester.



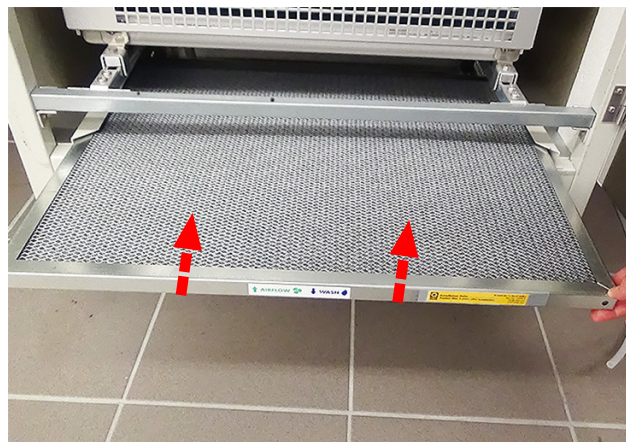
11. Remove the air filter packaged at the side of the unit. Set aside.



12. Open the chiller front access door.



13. Remove the air bag from inside the chiller.



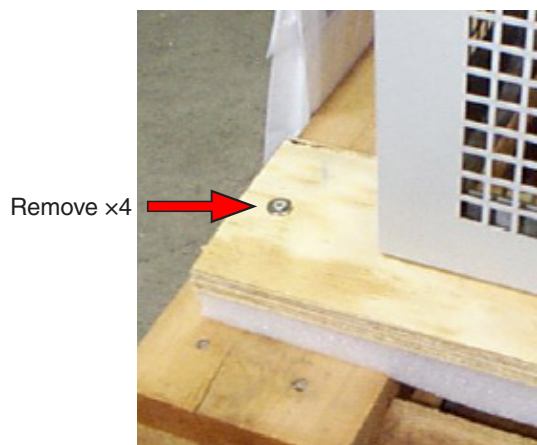
14. Install the air filter in the chiller.



15. Make sure the air flow arrow on the edge of the air filter frame points up. Close the door.



16. Screws (2 each side) attach runners to skid.



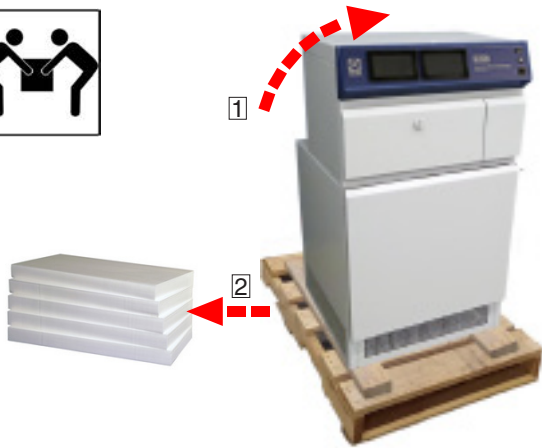
17. Remove the four (4) screws.



At least two people are needed to remove the Xe-1 with chiller from the skid.

18. Follow Step 19 through Step 26 to remove the Xe-1 with chiller from the skid.

Section 5. Uncrating



19. Two persons tilt the chiller. Pull the foam pieces out from under the bottom of the unit. Discard foam.



20. Partially slide the unit off the skid so that the runners overhang the skid by about 100 mm (4").



21. From the bottom of each runner, use a short screwdriver to remove the screw holding the runner to the unit.



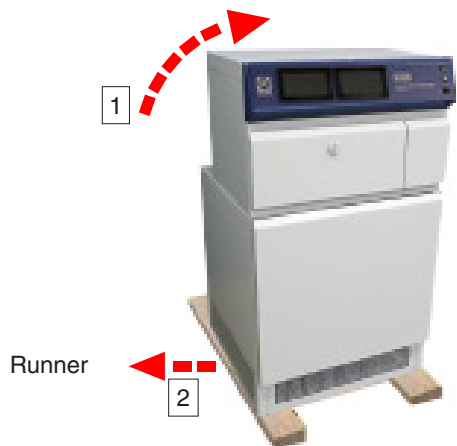
22. Slide the unit the opposite way, until it overhangs the skid about 100 mm (4").



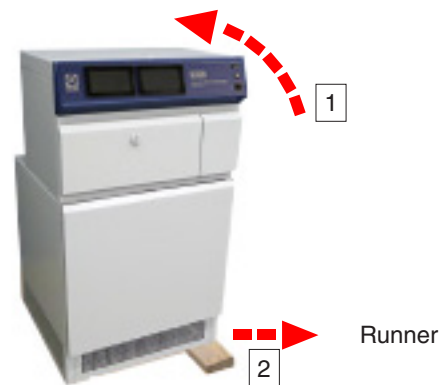
23. With a short screwdriver, remove the two (2) screws from the bottom of each wooden runner that secures the runner to the chiller.



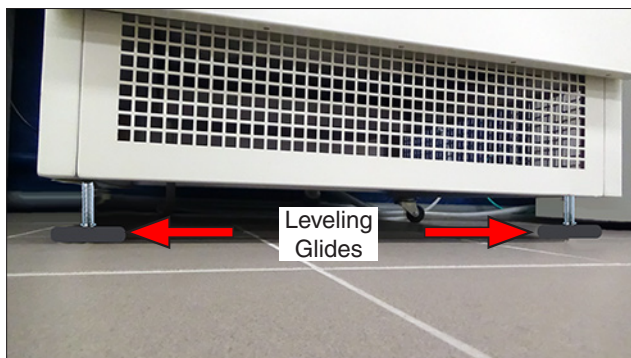
24. Slowly and carefully, slide the unit (and runners) off the skid onto the floor.



25. Tilt up one side of the chiller and remove the runner. Discard runner.



26. Tilt up the other side of the chiller and remove the other runner. Discard runner.



27. When moving a tester with leveling glides, do not hit floor drain, cracks, etc, as the glides may be damaged. If specified at the time of order, the chiller may be equipped with casters.



To complete tester installation see Section 6.1 through Section 6.4.

28. Go to the sections listed above.

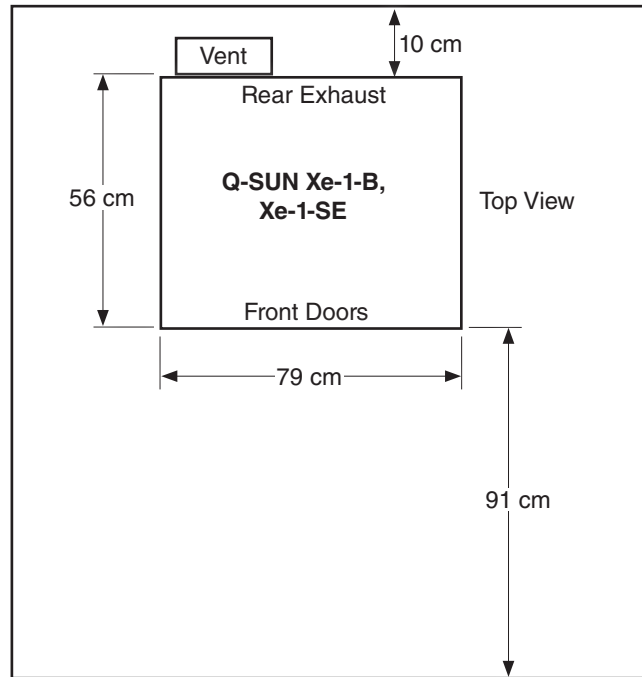
NOTE: Optional casters may be install on chiller models. The part number is X-10845-K. Contact [Q-Lab](#) for more information.

6. Set Up

6.1 Dimensions and Space Requirements (Mar 2022)

| Model | Xe-1-B, Xe-1-SE | Xe-1-BCE, Xe-1-SCE | Xe-1-WE |
|--|--|---|---|
| External Dimensions With Leveling Pads (W x H x D) | 78 cm x 52 cm x 65 cm 30.5" x 20.5" x 25.5" | 78 cm x 138 cm x 79 cm 30.5" x 54.5" x 31.0" | 99 cm x 72 cm x 65 cm 39.0" x 28.25" x 26" |
| External Dimensions With Casters (W x H x D) | No Casters | 78 cm x 143 cm x 79 cm 30.5" x 56.1" x 31.0" | No Casters |

- The Q-SUN Xe-1-B and Xe-1-SE are designed for tabletop or benchtop installation.
- [Figure 6.1a](#) shows external dimensions and space requirements.



Drawing not to scale.

Figure 6.1a: Q-SUN Xe-1-B and Xe-1-SE minimum clearance and counter space requirement.

- Q-SUN Xe-1-BCE and Xe-1-SCE models are designed for stand-alone installation.
- [Figure 6.1b](#) shows external dimensions and space requirements

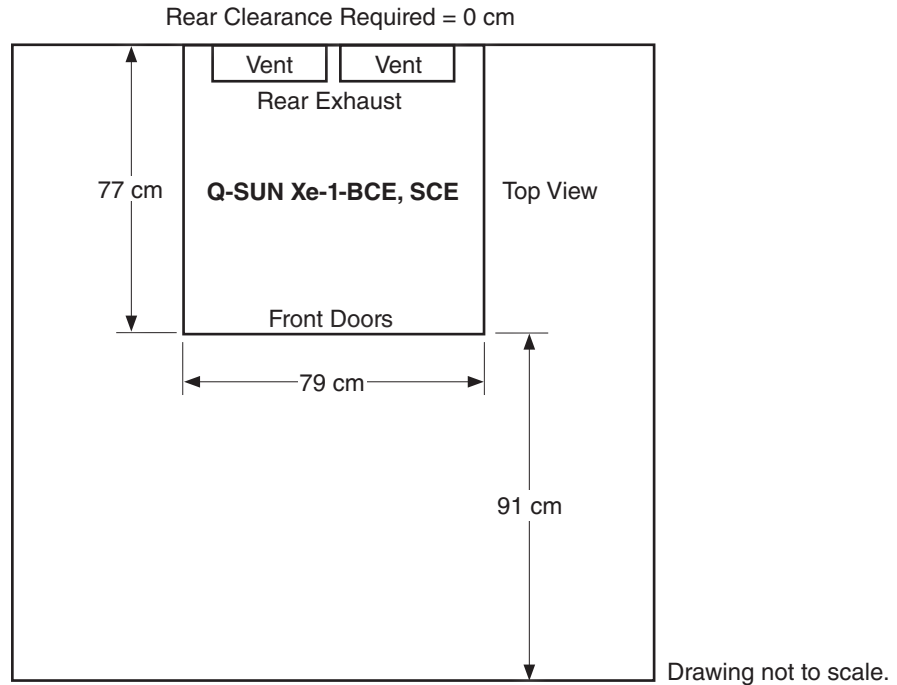


Figure 6.1b: Q-SUN Xe-1-BCE, Xe-1-SCE minimum clearance and space requirement.

- Q-SUN Xe-1-WE is designed for tabletop or benchtop installation.
- [Figure 6.1c](#) shows external dimensions and space requirements

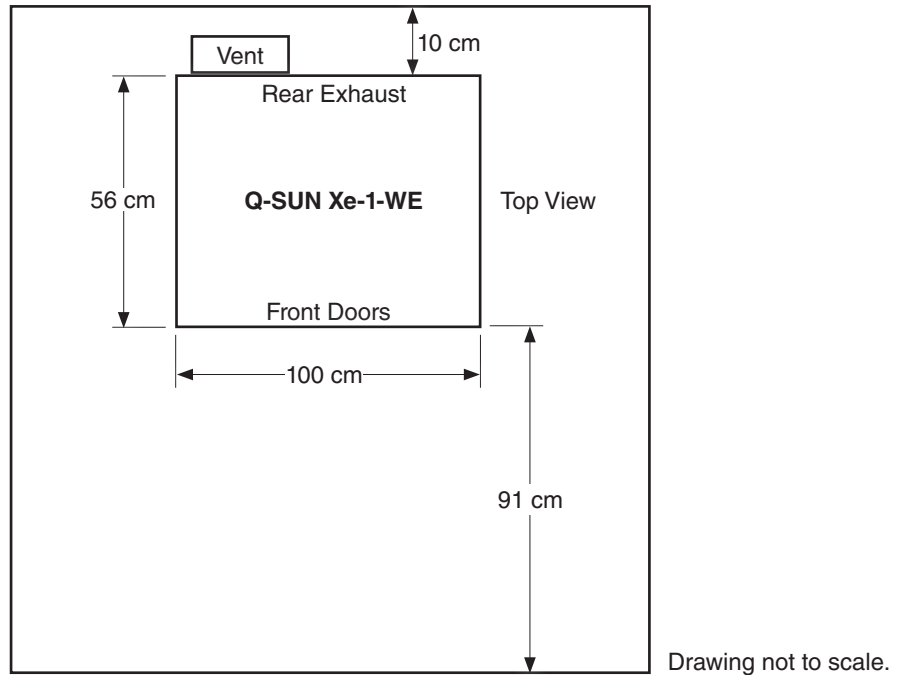


Figure 6.1c: Q-SUN Xe-1-WE minimum clearance and counter space requirement.

6.2 Electrical (Apr 2022)

Specifications

| | | |
|---------------------|---|---|
| Voltage | All Models | 208 V or 230 V \pm 10% - single phase |
| Current | Xe-1-B, Xe-1-SE | 12 A @ 208 V, 11 A @ 230 V |
| | Xe-1-BCE, Xe-1-SCE | 19 A @ 208 V, 16 A @ 230 V |
| | Xe-1-WE | 13 A @ 208 V, 12 A @ 230 V |
| Frequency | All Models | 50 or 60 Hz |
| Installation | Rated as Installation (Over voltage) Category II for transient over voltages. | |

Figure 6.2a: Electrical specifications.

Voltage

- Q-SUN Xe-1 models come in 208 V single phase and 230 V single phase versions (Figure 6.2a).
- 208 V or 230 V is specified when the machine is ordered.
- The input voltage and current rating are shown on the nameplate attached to the rear of the unit (Figure 6.2b).
- The voltage supplied to the tester must be within $\pm 10\%$ of the voltage rating of the tester and the circuit must be capable of supplying the rated current.

Connections



A power plug IS NOT SUPPLIED with Q-SUN Xe-1 testers. The user must supply and attach a properly-sized plug to connect the Xe-1 to the Main Power Supply.

- Q-SUN Xe-1 testers are provided with a 3 conductor, 14 AWG, \approx 4.9 m (16') long power cord without plug.
- A qualified electrician should make all electrical connections to the tester.

Rear View

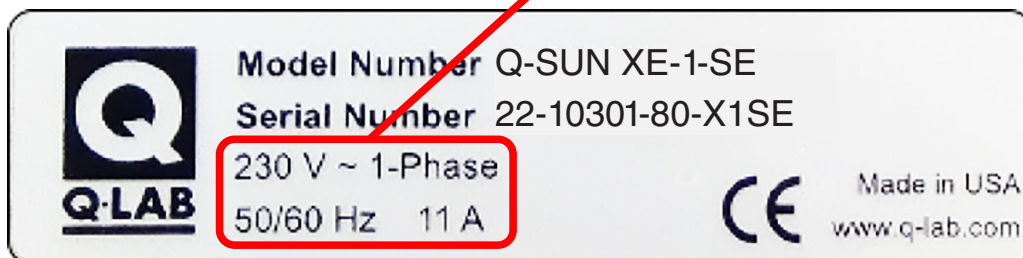



Figure 6.2b: Tester voltage and current shown on nameplate.

6.3 Water (May 2020)

Supply

| | |
|----------------------------|--|
| Xe-1-SE, Xe-1-SCE, Xe-1-WE |  Purified water is required for proper operation. The Q-SUN tester warranty is voided if this condition is not met. |
| Xe-1-B, Xe-1-BCE | No water is required. |

| System | Pressure | Flow Rate | Average Daily Volume | Resistivity | Conductivity | Silica | Total Dissolved Solids | pH |
|-----------------|-------------------------|-----------|---------------------------|-------------|--------------|----------|------------------------|-----|
| Spray* | 207-620 kPa (30-90 PSI) | 1.4 L/min | 0.12 L/min × spray time** | >5M Ω•cm | <0.2 μS/cm | <0.1 ppm | <0.1 ppm | 6-8 |
| Water Immersion | 69-620 kPa (10-90 PSI) | 0.04 L/hr | 1.0 L/day | | | | | |

* A minimum of 30 PSI is needed continuously during spray steps to ensure all specimens are exposed to water spray uniformly. Failure to maintain adequate pressure for the duration of a spray step will cause the tester to produce a fault and interrupt the test. Q-Lab offers a water inlet pump for installations that do not have sufficient water pressure. See [LX-5090-TM Q-SUN Xe-1 Technical Manual](#) for more information.

** Average daily volume during a spray step is based on a spray on time of 5 seconds and a spray off time of 55 seconds. Adjusting the spray on/off time will change the average daily volume.

The reverse osmosis / deionized (RO/DI) water system shown in [Figure 6.3a](#) produces water pure enough for spray systems. **This type of RO/DI system is required for Xe-1-SE, Xe-1-SCE and Xe-1-WE testers.**



Important: Use Type I, not Type II anion in the mixed bed tanks of the RO/DI system.

The Strong Base **Type I** Anion resin in the mixed bed tanks is the most important part of these systems to prevent water spotting. This is because strong base Type I anion resin is the only resin that can effectively remove suspended silica. **Suspended silica is the major cause of specimen spotting.** Type I anion is much better at removing suspended silica than Type II.

Unfortunately, Type II is the most common anion. So be sure to insist that your water purification supplier installs Type I, not Type II. The cost for Type I anion is about the same as Type II. Note that Type I anion is only necessary in the mixed bed “polishing” stages of the deionization, not in the initial “rough” purification stages.

Reverse Osmosis / Deionization System

- [Figure 6.3a](#) below shows an effective Reverse Osmosis / Deionized Water System with Anion Type I Resin for spray water silica removal.
- For information on water purification systems, contact the Life Science business of Merck KGaA, Darmstadt, Germany. The Life Science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the USA and Canada.

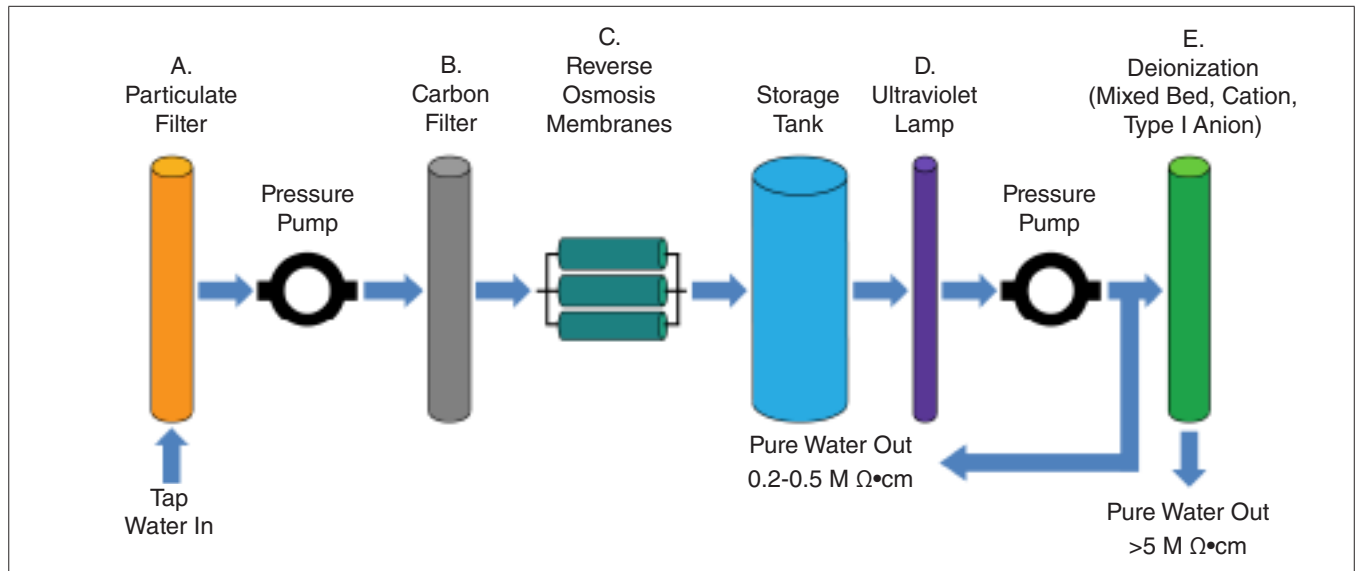


Figure 6.3a: Reverse osmosis / deionized water system.

- Additional RO/DI system information is shown below.

| Stage | Purpose | Outgoing Purity | Notes |
|-----------------------|--|-----------------|--------------------------------|
| A. Particulate Filter | Remove small particles | | Replace once per year |
| B. Carbon Filter | Remove chlorine | | Replace once or twice per year |
| C. R/O Membranes | Remove dissolved solids, colloidal silica, organic and biological contaminants | 0.2-0.5 M Ω•cm | Rough purification stage |
| D. Ultraviolet Lamp | Disinfect water | | Rough purification stage |
| E. Mixed Bed Tank | Final polishing to remove positively and negatively charged ions | > 5 M Ω•cm | Final polished water purity |

Water Repurification System

- Q-Lab offers an optional water repurification system for the Q-SUN to conserve purified water.
- The system re-circulates and re-purifies the spray water instead of letting it go down the drain and can save over 50 liters of purified water per day.
- See [Specification Bulletin LW-6048 Water Repurification System](#) for more information.

Connections

- Water supply and drain connection requirements for Xe-1 models are listed in [Figure 6.3b](#) below:

| Connections | Xe-1-B | Xe-1-BCE | Xe-1-SE | Xe-1-SCE | Xe-1-WE |
|-----------------------|--------|----------|---------|----------|---------|
| Water Supply Required | No | No | Yes | Yes | Yes |
| Drain Required | No | Yes | | | |

Figure 6.3b: Xe-1 water connection requirements.

For Xe-1 Models Requiring Connections

- Water supply and drain connections are made at the lower rear of the tester ([Figure 6.3c](#)).
- Water inlet and drain fittings to meet various connection configurations are supplied ([Figure 6.3e](#) to [Figure 6.3h](#)).
- A 10 mm water fitting adapter (U-40817-X) for connecting the tester to a 10 mm inlet water supply is also supplied ([Figure 6.3d](#)).
- The water inlet tube is not supplied with the tester. Drain hose is supplied with the tester.
- Refer to the diagrams included with the tester or visit [Q-Portal](#) for detailed plumbing information.

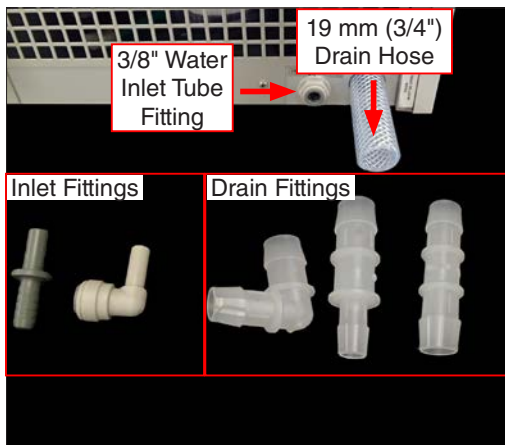


Figure 6.3c: Hose barsbs and elbows supplied with models requiring supply and drain connections.

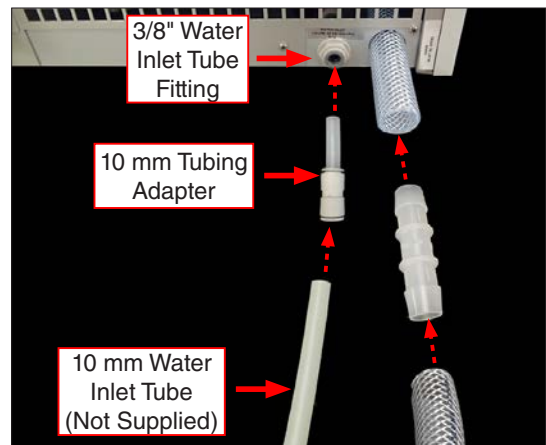


Figure 6.3d: Connect to 10 mm water inlet supply tubing.

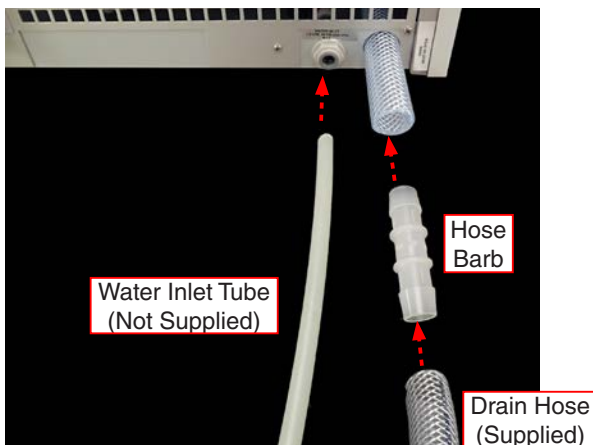


Figure 6.3e: Water connections - Configuration 1.

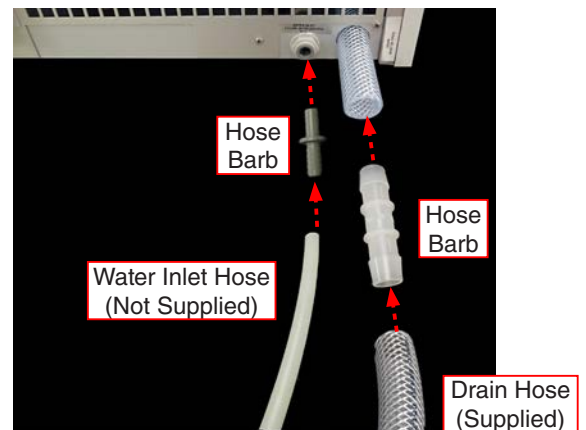


Figure 6.3f: Water connections - Configuration 2.

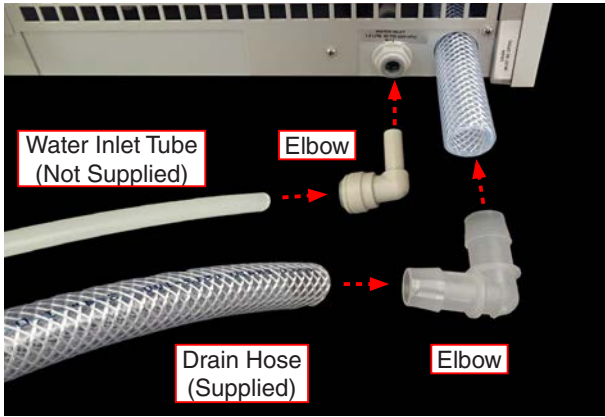


Figure 6.3g: Water connections - Configuration 3.

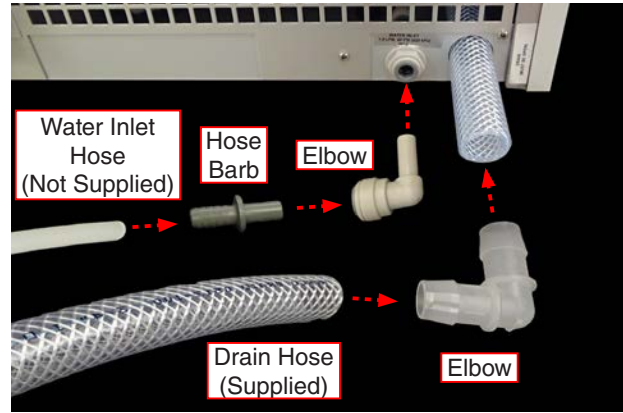


Figure 6.3h: Water connections - Configuration 4.

Note: To disconnect inlet hose barb or elbow, push in on the dark gray gripper ring on the inlet connector.

For Xe-1 Chiller Models (Xe-1-BCE, Xe-1-SCE)

- The air chiller condenses water on its evaporator coil. This water must then be drained away.
- The chiller has a short piece of 1.3 cm (1/2") drain hose exiting below the rear panel. (Figure 6.3i).
- A reducer (Figure 6.3j) is supplied to connect the chiller drain hose to the 2 cm (3/4") supplied drain hose.



Figure 6.3i: Chiller drain hose.

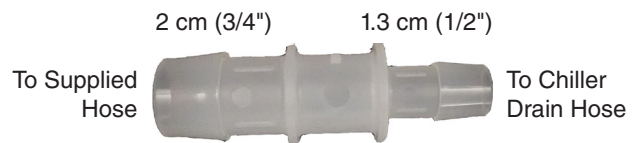


Figure 6.3j: Chiller drain hose reducer.

For Raised Drain Installations

- If a drain hose must rise more than 100 mm (4.0") above the tester drain outlet at any point before reaching a drain, a pump is needed, or the tester must be elevated.
- An optional drain pump kit is available to pump drain water over obstacles or to an elevated drain (Figure 6.3k).
- Alternatively, for chiller models an optional lift kit is available to raise the entire tester up off of the floor (Figure 6.3k).
- See Section 15 for information on drain pumps and lift kits.
- Do not use concrete blocks, pallets, bricks, or other means to raise the tester to achieve proper drainage.

| Raised Drain Options | Xe-1-B | Xe-1-BCE | Xe-1-SE | Xe-1-SCE | Xe-1-WE |
|----------------------|--------------|-----------|---------------|-----------|---------------|
| Drain Pump | Not Required | Available | Available | Available | Available |
| Lift Kit | Not Required | Available | Not Available | Available | Not Available |

Figure 6.3k: Raised drain options.

6.4 Venting (May 2020)

- Xe-1 models are designed to release warm exhaust air directly into the room (See [Figure 6.4b,c,d](#)).
- Xe-1 testers do not require a vent hood or ducting.
- Do not attach to a powered vent.

| Model | Heat Load Dissipation |
|--------------------------|----------------------------|
| Q-SUN Xe-1-B, Xe-1-SE | 1,200 watts (4,100 BTU/Hr) |
| Q-SUN Xe-1-BCE, Xe-1-SCE | 2,400 watts (8,200 BTU/Hr) |
| Q-SUN Xe-1-WE | 1,400 watts (4,800 BTU/Hr) |

Figure 6.4a: Heat load dissipation by model.



IMPORTANT: Air intakes and exhausts must not be obstructed. Keep filters clean. See [Section 16.5](#) for more information on filter cleaning.

Q-SUN Xe-1-B, Xe-1-SE

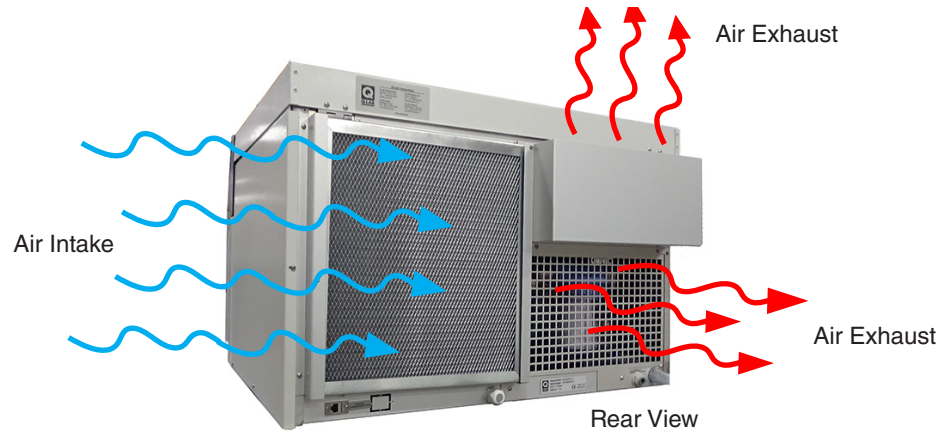


Figure 6.4b: Q-SUN Xe-1-SE air intake and exhaust areas.

Q-SUN Xe-1-BCE, Xe-1-SCE



Figure 6.4c: Q-SUN Xe-1-BCE and Xe-1-SCE chiller cooling air intake areas.

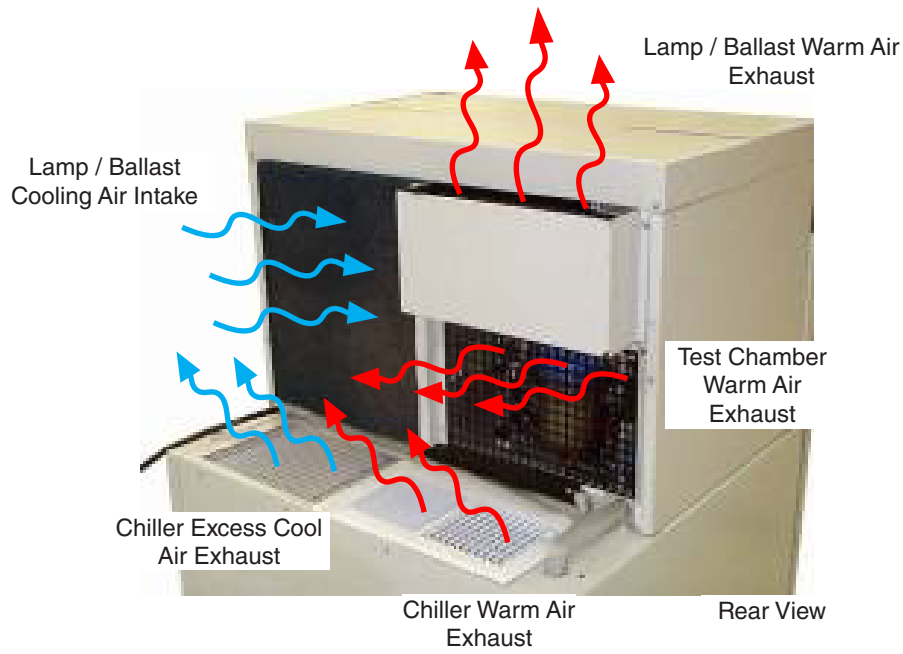


Figure 6.4d: Q-SUN Xe-1-BCE and Xe-1-SCE lamp / ballast air intake and air exhaust areas.

Q-SUN Xe-1-WE

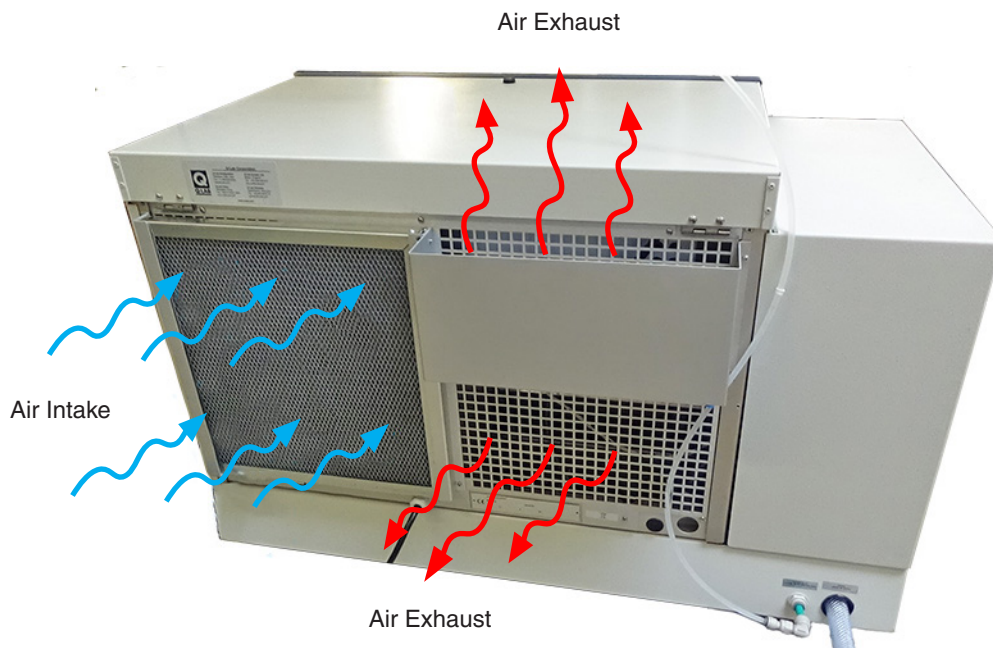


Figure 6.4e: Q-SUN Xe-1-WE air intake and exhaust areas.

7. Start Up

Overview



See [LX-5090-TM Q-SUN Xe-1 Technical Manual](#) or [LX-5090B-TM Q-SUN Xe-1 basic Technical Manual](#) for a complete guide to the programming and operation of the Q-SUN Xe-1 Xenon Test Chamber.

7.1. Specimen Mounting (May 2020)

- Specimens are placed on the tray in the test chamber ([Figure 7.1](#)).
- See [Specification Bulletin LX-5047](#) for specimen mounting guidelines and available holders.



Figure 7.1: Xe-1 Specimen tray pulled out and specimens placed on tray.

7.2. Q-SUN Xe-1 All “E” Models Control Panel (May 2020)

- The power switch is located on the tester control panel ([Figure 7.2a](#)).
- Two touch screen displays provide for control and monitoring of tester operation ([Figure 7.2b](#)).
- The Menu Screen provides functions for setting up and running test cycles, calibration of sensors, viewing diagnostic information, and display of error messages. ([Figure 7.2c](#)).
- The Status Screen display shows test setup parameters and provides real-time data on actual test conditions ([Figure 7.2d](#)).



Figure 7.2a: Power switch on Xe-1-SE, Xe-1-BCE, Xe-1-SCE, and Xe-1-WE control panel.

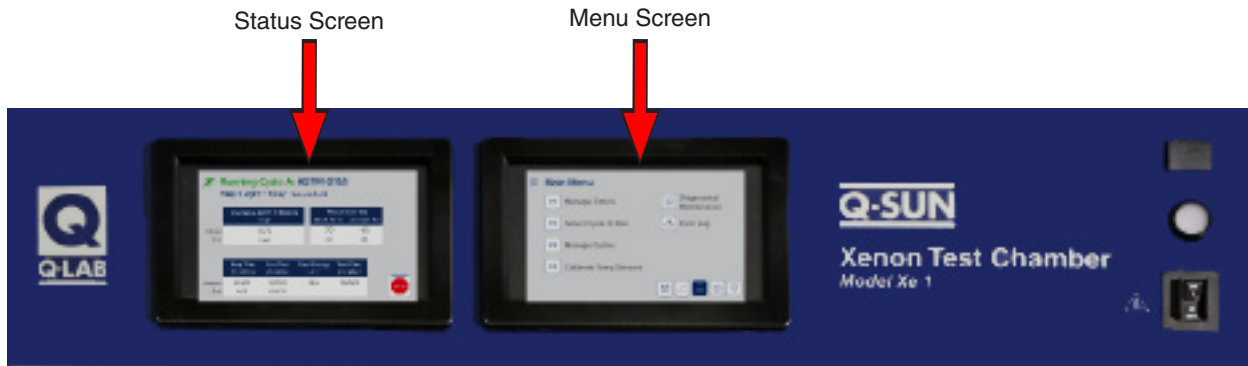


Figure 7.2b: Control interface and test status display.

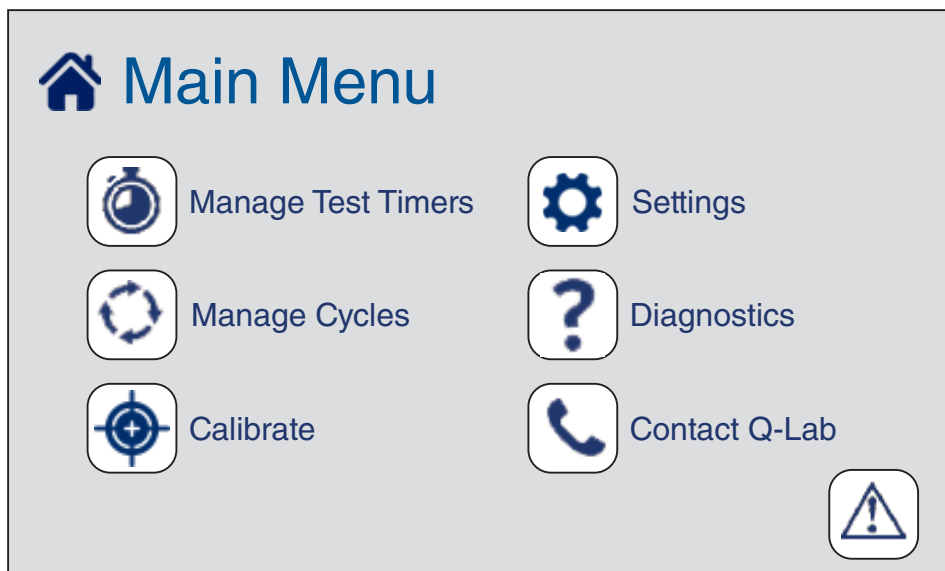


Figure 7.2c: Menu screen.

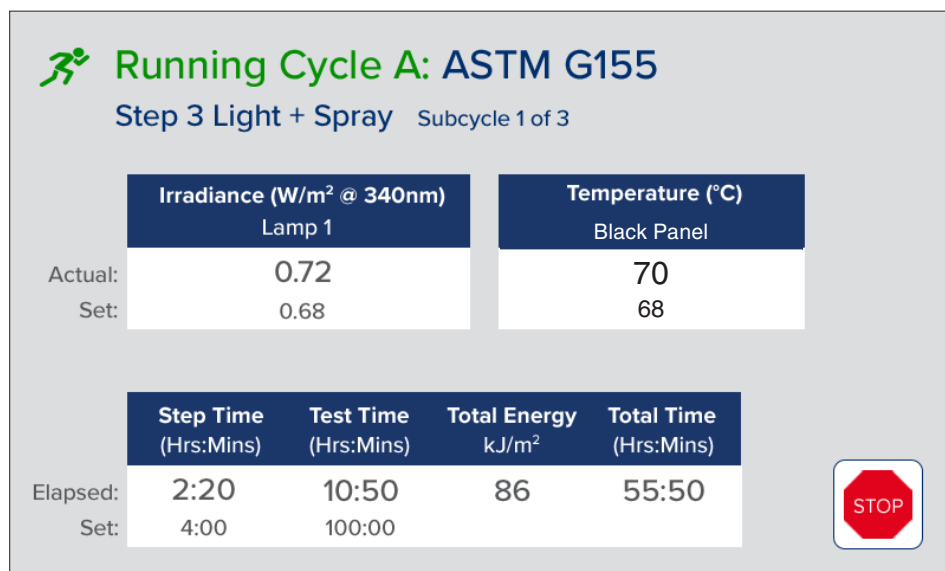


Figure 7.2d: Status screen.

7.3. Q-SUN Xe-1-B Control Panel (May 2020)

- The power switch is located on the tester control panel (Figure 7.3a).
- The keypad is used to enter all input required for tester operation (Figure 7.3b).
- The status and message display shows keypad input as well as diagnostic information and messages. (Figure 7.3c).
- The test monitor display shows test setup parameters and provides real-time data on actual test conditions (Figure 7.3d).



Figure 7.3a: Power switch on Xe-1-B control panel.



Figure 7.3b: Xe-1-B keypad.



Figure 7.3c: Xe-1-B status and message display.

| | Irradiance | °C | Step Time | Test Time | Total Time |
|---------|-----------------------|----|------------|------------|---------------------------|
| | | | | | Hours Elapsed |
| Actual: | | | | | |
| Set: | | | | | |
| | W/m ² @ nm | | Hours: Min | Hours: Min | kJ/m ² Elapsed |

Figure 7.3d: Xe-1-B test monitor display.

8. Warranty (Oct 2020)

- All Q-SUN Xe-1 Xenon Test Chambers and components are guaranteed against defects in workmanship or materials for one year.
- Liability is limited to replacing or repairing any part or parts that are defective in materials or workmanship.
- Liability in all events is limited to the purchase price paid.
- Damage due to accident or abuse is not covered.
- Labor and travel costs are not covered.
- Q-Lab Corporation makes no other warranties, including implied warranties of merchantability or fitness for a particular purpose, except as may be expressly provided by the Q-Lab Corporation in writing.
- Q-Lab Corporation shall not be liable for any incidental, consequential, special or contingent damages arising out of the sale or use of any product.
- Q-SUN test chambers are made in the USA.

9. Repair and Tester Support (Mar 2019)

Contact

- Q-Lab Repair and Tester Support is available Monday through Friday from 8:30 AM to 5 PM (international office time).
- Please contact the nearest Q-Lab international office by phone or email (see contact information below).
- You can also visit our website at www.q-lab.com to register your tester to access additional useful troubleshooting guides, operating manuals, and technical information.



For sales, technical, or repair support, please visit:

Q-Lab.com/support

Westlake, Ohio USA • Homestead, Florida USA • Buckeye, Arizona USA
Bolton, England • Saarbrücken, Germany • Shanghai, China

Additional Information

- Visit Q-Lab.com for additional information.