



## **Xe-2 Xenon Test Chamber**



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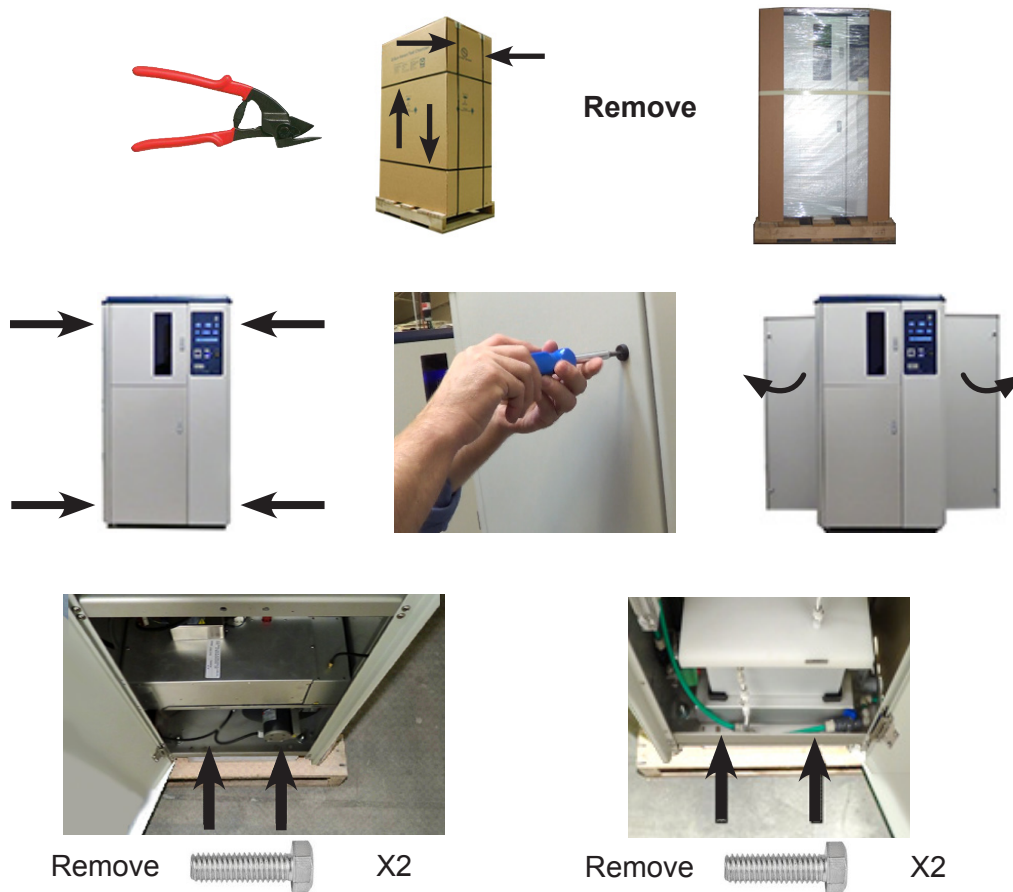
## 1. Purpose

This Quick Set-up Guide is not an Operating Manual. It is intended to explain only the basics of unpacking, installation, utility connections and environmental requirements of the Q-SUN® Xe-2.

See *LX-5085-TM, Q-SUN Xe-2 Technical Manual* for a complete understanding of how to operate the Q-SUN Xe-2.

## 2. Unpacking

Cut the straps and lift off the carton. Remove the inner packing material. Open the side doors and remove four bolts holding the machine to the pallet. Slide or lift the machine off the pallet. Remove all yellow shipping tape. The UV filter assembly, lamp, and lamp assembly are shipped in boxes in the bottom of the Q-SUN tester.



### Unpacking the Q-SUN Xe-2

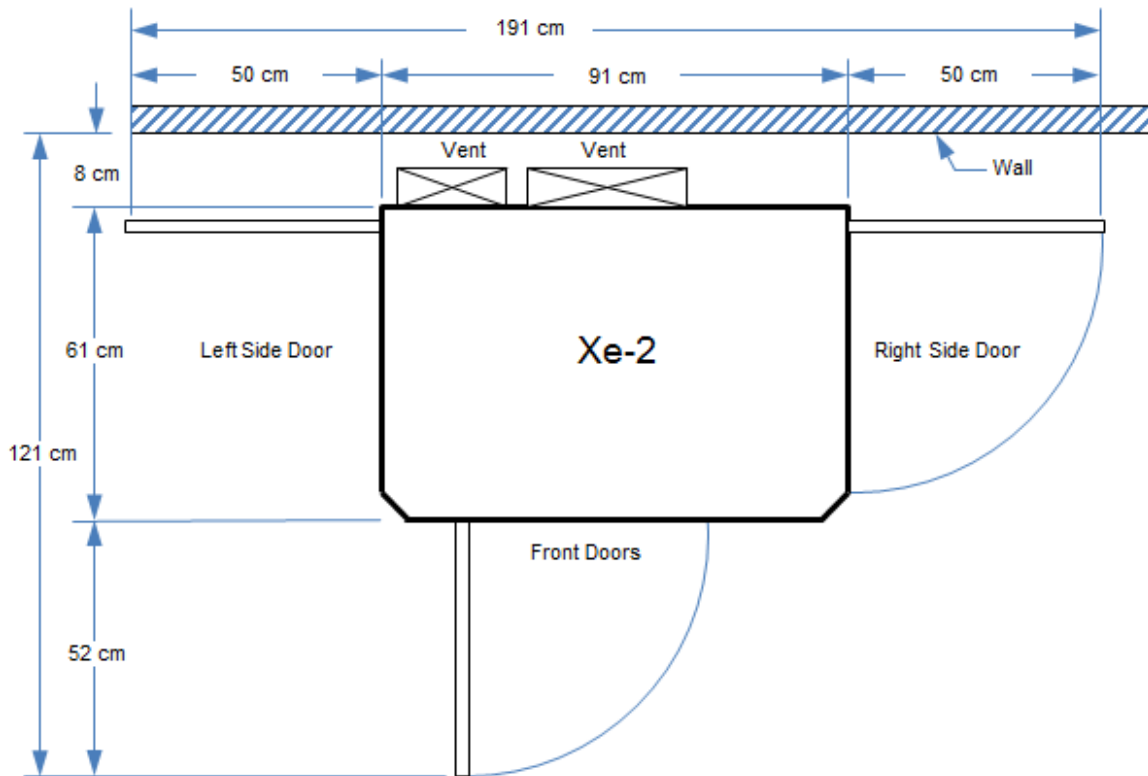
**Important:** At least two people are needed to remove the Xe-2 from the pallet. Begin by tilting the tester and removing the three foam strips under the bottom of the unit. Next walk or slide the unit off the pallet in the direction parallel to the boards. Slide the unit into place and adjust the leveling feet so the unit is level. Remove adhesive tape from various parts on the inside and outside of the unit.

## Section 3: Placement

### 3. Placement

The Xe-2 should be placed in a clean, dry, temperature controlled room. One in which there is not excessive dust, air borne powers, pigments, or particles. These will be drawn into the cooling system and may cause the electronics to fail.

The Xe-2 should be positioned as shown in the figure below. This will allow sufficient room to operate the unit, gain access to service areas and allow proper ventilation through the air intake and exhaust vents.



**Xe-2 Placement**

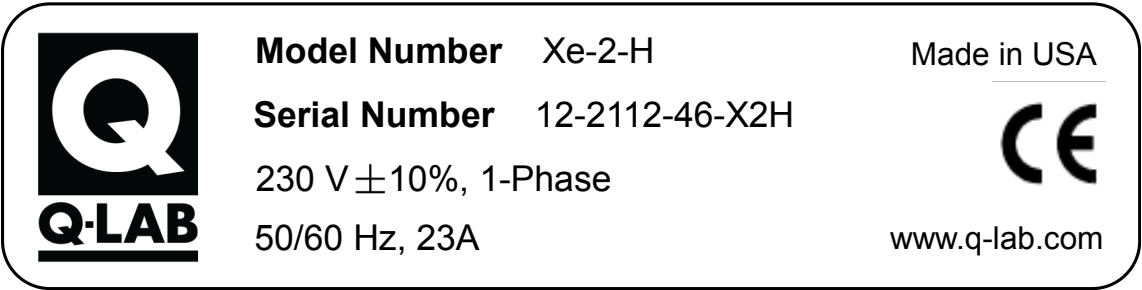
### 4. Ventilation

The Xe-2 operates best when temperature is maintained between 21°C and 30°C. Temperatures outside the recommended range will probably cause poor control of test parameters. The tester uses room air for cooling. It does not require its own vent hood or ducting. Do not attach to a powered vent. The unit exhausts about 1800W into the room.

Operating an Xe-2 in an unsuitable environment will void the warranty. The Q-SUN Xe-2 is a sophisticated scientific instrument. All models must be operated in a controlled environment.

5. Electrical

The Q-SUN Xe-2-H and Xe-2-HS come in 208 single phase and 230 volt single phase versions. 208 or 230 volts is specified when the machine is ordered. The input voltage and current rating (24 or 23 amps) are shown on the nameplate attached to the rear of the unit. The voltage supplied to the machine must be within  $\pm 10\%$  of the voltage rating of the machine and the circuit must be capable of supplying the rated current.



Nameplate

A power cord without plug is supplied with the Q-SUN Xe-2. The unit may be permanently connected to the power supply or fitted with a plug/socket connection (industrial type per IEC 6309 or twist lock type in North America).

An external disconnect is required for all installations. External over-current protection must be rated for not more than 32 amps.

The user must provide the external electrical connections. A qualified electrician should make all electrical connections to the Xe-2.

6. Water Supply

Water must be supplied to all Q-SUN Xe-2-H and Xe-2-HS units. Water is used by the humidifier to produce humidity. Water is also used to spray on the test specimens in Xe-2-HS models.

**Purified water is required** for proper operation. The warranty is voided if this condition is not met. A test unit with water spray requires much higher water purity than one with a humidifier and no water spray.

Pressure

Xe-2-H: 3-80 psi (21-522 kpa)  
Xe-2-HS: 30-80 psi (207-522 kpa)

## Section 6: Water Supply

### Volume

Humidifier: The maximum flow rate is 1 liter/hour. The average volume per day is 24 liters.

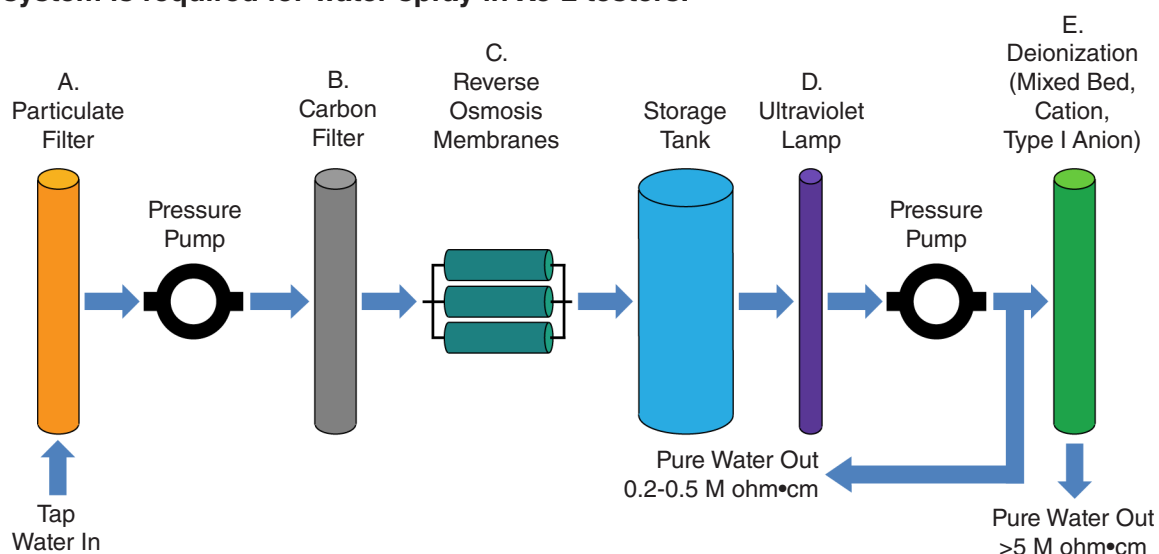
Spray: The maximum flow rate is 0.5 liter/minute. The average volume per day is 24 liters.

### Purity

**Purified water is required for proper operation. The Xe-2 tester warranty is voided if this condition is not met.**

Model Xe-2-H: The water must be purified to prevent mineral build up in the humidifier. The resistivity of the water should be greater than 200k ohm-cm.

Model Xe-2-HS: The reverse osmosis / deionized (RO/DI) water system described on the next page produces water pure enough for spray systems. **This type of RO/DI system is required for water spray in Xe-2 testers.**

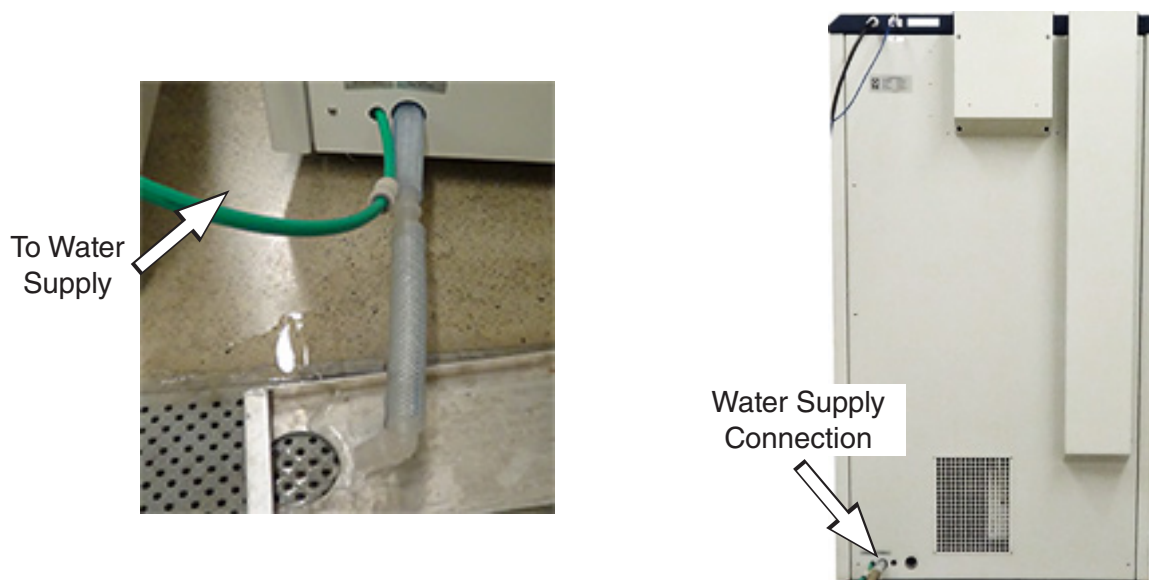


An Effective **Reverse Osmosis / Deionized Water** System with Anion Type I Resin for Spray Water Silica Removal. Supplier: EMD Millipore, +1 800-645-5476, [www.emdmillipore.com](http://www.emdmillipore.com).

**Important:** Use Type I, not Type II anion in the mixed bed tanks of the 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.

| 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 ohm•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 ohm•cm     | Final polished water purity    |

The water supply connection is made at the lower rear of the unit. The Xe-2 comes with 25 feet (7.6m) of 3/8" (9.5mm) outside diameter water supply tubing and 3/8" (9.5mm) water supply fittings. The connections can be made as shown below.



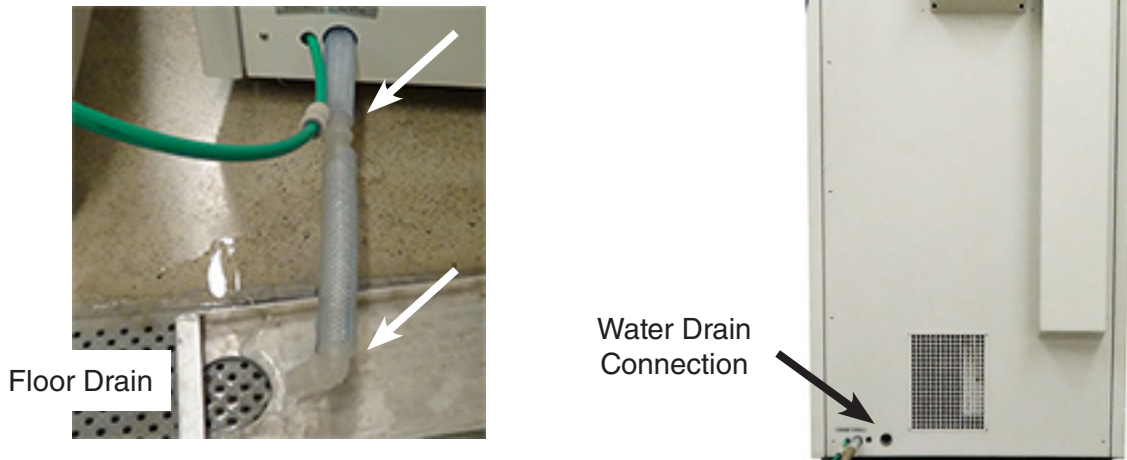
**Xe-2 Water Supply Connection**

## Section 7: Water Drain

### 7. Water Drain

A water drain connection must be made on all Xe-2-H and Xe-2-HS units. The drain connections are made at the lower rear of the unit. The tester comes with 3/4" (19mm) elbow and connector fittings, and 16 feet (5m) of 3/4" (19mm) drain hose.

The water drain connection can be made as shown.

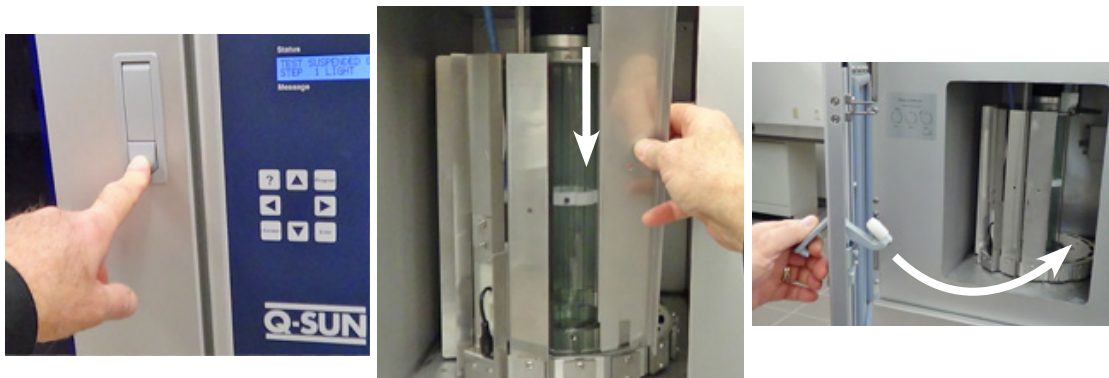


**Xe-2 Water Drain Connection**

### 8. Start-up

See the Q-SUN Xe-2 Technical Manual, LX-5085-TM for a complete understanding of how to start-up and operate the tester.

Open the chamber door and place the test specimens on the specimen tray. Close the chamber door. Make sure the water is turned on (so the humidifier can fill) **at least 20 minutes before proceeding.**



**Place Specimens in Test Chamber**



Turn on the power switch. The pre-set test program can be viewed by pressing the PROGRAM key. "Program 1" will be displayed. This allows you to set the duration of the exposure test in hours or kJ/m<sup>2</sup>. Use the arrow keys to make any necessary changes.

Use the left or right arrow key to return to "Program 1." Press the up arrow key and "Program 2" will be displayed. Program 2 allows you to view the test cycle. Use the arrow keys to make any necessary changes.

When the program steps are set, press ENTER twice to accept the changes. Press RUN to begin the test. Complete programming instructions can be found in Section 10 of the operating manual.



**Xe-2 Control Panel**

Repair and Tester Support is available over the telephone Monday through Friday from 8:30 AM to 5 PM. Please contact the nearest international branch office by phone or email for technical support. You can also visit our web-site at [www.q-lab.com](http://www.q-lab.com) to register your tester to access additional useful troubleshooting guides, operating manuals, and technical information.

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