



QUV Specimen Mounting Guidelines and Available Holders

The QUV® accelerated weathering tester can be used to test a variety of specimens. Coatings, plastics, and films are easily accommodated in the QUV tester using standard flat panel specimen holders. Other specimens can be mounted using specialty holders. Q-Lab also offers custom specimen holders for unique needs. All of Q-Lab’s panel holders are designed to meet the requirements of ASTM G154 and other international standards.

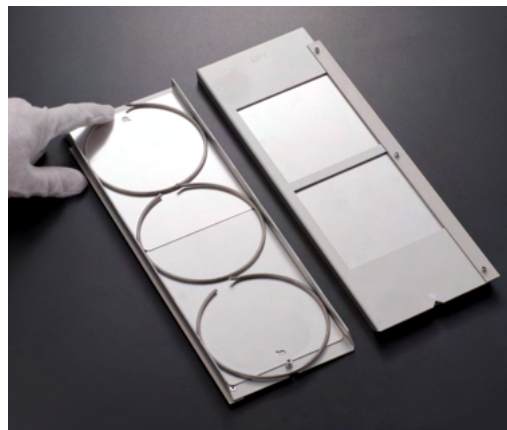
Specimen Mounting Guidelines

The QUV chamber can accommodate a variety of sample types, but three principles should be considered when mounting odd-shaped specimens:

- To ensure uniformity of UV exposure, the surface of the test sample should be in the standard sample plane, 50 mm from the lamps.
- The samples and their holders must seal off the side of the QUV tester to prevent vapor from escaping from the chamber.
- The samples are mounted at the wall of the chamber so that room air cooling causes condensation. Samples should have good thermal contact with any backer present. Highly insulating samples thicker than 6 mm may require special attention.



Standard sample holder is installed by resting it in a slot on the QUV frame. To seal in vapor, it is essential to operate with all holders in place and with blank panels in all unused spaces.



Flat panels up to 6 mm thick are fastened to the holders with convenient snap-rings. Simply push the ring down snug against the panel. There is no need for panels cut to precise widths.

Extra large flat samples can be mounted on the QUV frame in place of several standard sample holders. Also, small, odd-shaped parts can be mounted either by attaching them to a flat metal backer, or by enclosing them in an optional mounting box.

The QUV tester’s sample mounting system is highly adaptable. The standard QUV specimen holders are designed to hold two 75 x 150 mm (3 x 6 in) samples. See table below.

In addition, Q-Lab can provide 100 mm wide or 150 mm wide sample holders upon request. A wide variety of flat samples including metal, wood, plastic plaques, and thin films are easily accommodated in the standard holders.

QUV Specimen Holder Capacity			
mm	Inches	QUV/se Capacity	QUV/basic Capacity
75 x 150	3 x 6	48	50
100 x 150	4 x 6	32	36
150 x 150	6 x 6	24	26

This table shows the sample capacity for flat samples up to 20 mm (3/4 in) thick.

A) Flat Specimen Holders

Q-Lab offers flat specimen holders in three sizes. All sizes include an individual holder for 2 specimens, aluminum panels, and circular retaining rings. For thicker specimens, the use of thick panel retaining clips is recommended (right).



Panel holders are available in three sizes: standard, medium, and large.

Standard Flat Panel Holder

V-131.3-X Individual holder

V-131.3-K Complete set of 25 holders plus end seals

- Holds 75 x 150 mm (3 x 6 in) flat panels
- Exposure area of 95 x 63 mm (3.75 x 2.5 in)
- Standard holders included with a new QUV tester

Medium Flat Panel Holder

V-131.4-X Individual holder

V-131.4-K Complete set of 18 holders plus end seals

- Holds 100 x 150 mm (4 x 6 in) flat panels
- Exposure area of 95 x 88 mm (3.75 x 3.5 in)
- Can be substituted for the standard holders when ordering a new QUV tester

Large Flat Panel Holder

V-131.6-X Individual holder

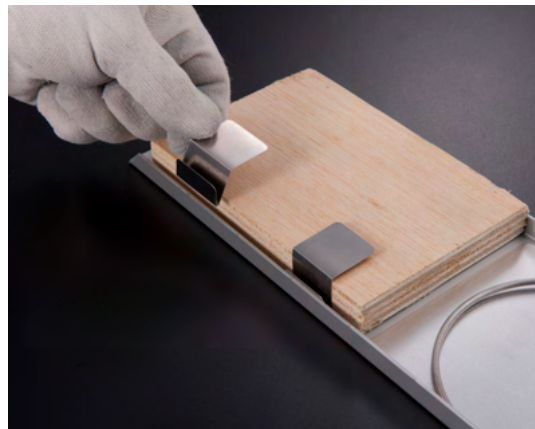
V-131.6-K Complete set of 13 holders plus end seals

- Holds 150 x 150 mm (6 x 6 in) flat panels
- Exposure area of 95 x 132 mm (3.75 x 5.2 in)
- Can be substituted for the standard holders when ordering a new QUV tester

Thick Panel Retaining Clips

V-133-K Each order contains a set of 50 clips

Each clip is designed to hold one specimen of approximately 6 to 19 mm (1/4 to 3/4 in) in a flat panel holder.



Thick panel retaining clips hold larger samples in place on a flat specimen holder.

B) Specialty Specimen Holders

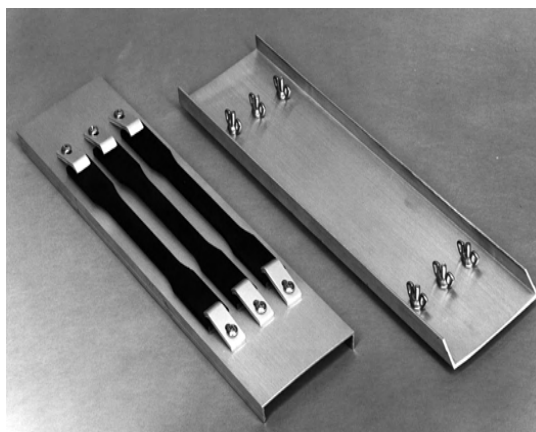
All Q-Lab specialty specimen holders are designed to test a variety of materials while retaining chamber heat and moisture for proper temperature control. For custom specimen holders, see page 4.

Tensile Bar Holder

V-131.3T-X Individual holder

- Holds 2 or 3 tensile bars, depending on the width
- Please specify tensile bar length when ordering; maximum 200 mm (8 in)

Similar to a flat panel holder, this holder includes multiple clips for exposing “dog bone” shaped polymer specimens prior to tensile strength testing.



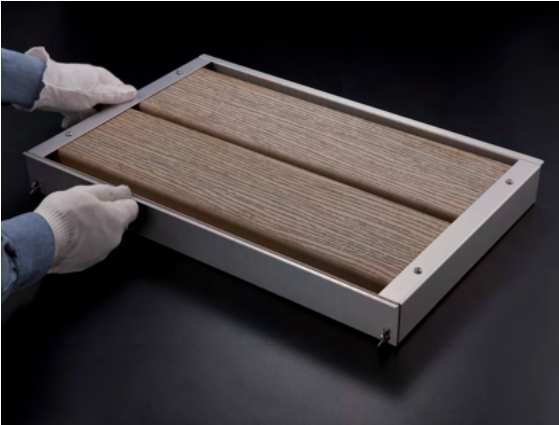
Use one, two, or all three clips to test your materials.

Natural and Artificial Wood Holder

V-4962-K Single holder

- Expose parts up to 495 x 38 x 324 mm (19.5 x 1.5 x 12.75 in)
- Can hold two pieces of common wood and artificial wood specimens, up to 324 mm long

Note: Order 4 to fill a QUV tester. The QUV chamber doors should be removed when using this holder.



This box is made for exposing wood specimens and artificial wood substitutes typically used in decking and fencing applications.

Large 3-Dimensional Part Holder

V-4961-X Single holder. Minimum order of 2.

- Exposes parts and odd-shaped specimens up to 495 x 25 x 324 mm (19.5 x 1 x 12.75 in) - (w x d x h)
- Mounting hardware is not included - Customers can provide their own hardware or order a custom specimen holder

These holders are made for exposing large 3-D parts and odd-shaped specimens.



Three-dimensional specimens can be easily fastened to the part holder using zip ties, for example.

Small 3-Dimensional Part Holder

V-4960-X Single holder. Minimum order of 6.

- Exposes parts and odd-shaped specimens up to 75 x 25 x 324 mm (3 x 1 x 12.75 in) - (w x d x h)
- Mounting hardware is not included - Customers can provide their own hardware or order a custom specimen holder

These holders are made for exposing small 3-D parts and odd-shaped specimens.



This small 3-dimensional part holder is provided without mounting hardware. Customers can use screws, zip ties, and wire or work with Q-Lab to design custom attachment hardware (see page 4).

Small Adjustable 3-D Part Holder

V-4019-X Single holder. Minimum order of 5.

- Exposes parts up to 17 mm (0.7 in) thick and up to 75 mm (3 in) wide
- Height of the specimens can range from 58 mm (2.3 in) to 85 mm (3.37 in)
- Clamps are lined with silicone foam rubber

This holder was originally designed for lenses, but its adjustable clamping mechanism accommodates items such as cosmetics, toys, artificial turf, reflectors, and other three-dimensional parts.



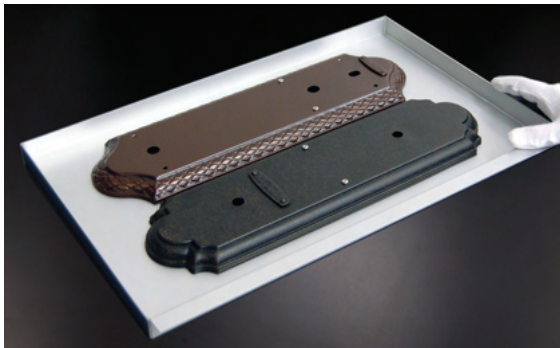
Originally designed to hold ophthalmic lenses, these can also hold various odd-shaped specimens.

C) Custom Specimen Holders

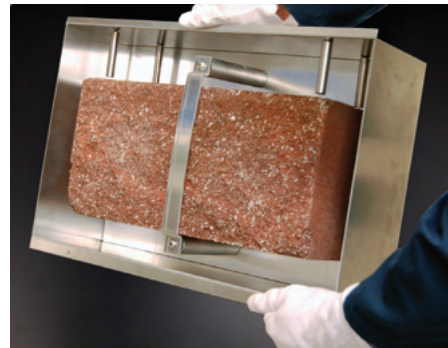
For unique applications or for specimens that cannot fit in the standard or specialty holders, Q-Lab can make custom specimen holders for nearly any application. The photos shown below provide just a few examples of what is possible.

No matter what is being exposed, it is critical that the front surface of the specimen is at the same distance from the lamps as the flat panel holder. This should be taken into consideration when modifying a sample holder or creating a new specimen holder design. Specimens may need to be modified in order to fit properly into the QUV tester.

To receive a price quotation on custom specimen holders, contact your local Q-Lab office or distributor. Providing Q-Lab with sample test specimens will simplify the process.



Many items can be mounted simply by attaching them to an appropriately sized specimen box.



Adding brackets and other modifications allow further versatility to hold even very heavy samples, such as concrete blocks.



3-D holders can be made in various sizes. Examples of items mounted in similar holders include fuel tanks, beverages, shoes, and hardware.



This small 3-dimensional part holder illustrates an example of possible custom attachment hardware.

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