



Q-SUN Specimen Mounting Guidelines and Available Holders

Q-SUN® accelerated weathering testers can be used to test a variety of specimens. Flat or three-dimensional specimens can be placed directly on trays or mounted using specialty holders in the Q-SUN Xe-1 and Xe-3. The rotating rack of the Xe-2 is perfect for testing textiles. Coatings, plastics, and films are easily accommodated in any Q-SUN tester using standard flat specimen 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 G155 and other international standards.

Specimen Mounting Guidelines

Q-SUN chambers can accommodate a variety of sample types, but three principles should always be considered when mounting specimens:

- 1) The surface of the test sample should be in the standard sample plane, which is approximately the following distance from the lamp(s):

Xe-1	Xe-2	Xe-3
250 mm	125 mm	360 mm

This ensures that the specimens receive the correct level of irradiance.

- 2) The samples and their holders should not cover or shadow the black panel (BP) or insulated black panel/black standard (IBP). This prevents inaccurate temperature readings that can lead to unrealistic or excessive specimen temperatures.

- 3) When using an open back tray in an Xe-1 or Xe-3 (for SAE J2412 or J2527), or whenever using an Xe-2, all spaces not filled with test specimens must be filled. This allows optimal air flow through the test chamber.



Specimen Capacity

The Q-SUN tester’s sample mounting system is highly adaptable. Different sizes of specimens and holders can be accommodated at the same time. See table below for a list of the specimen capacity of the Q-SUN testers with and without using standard holders.



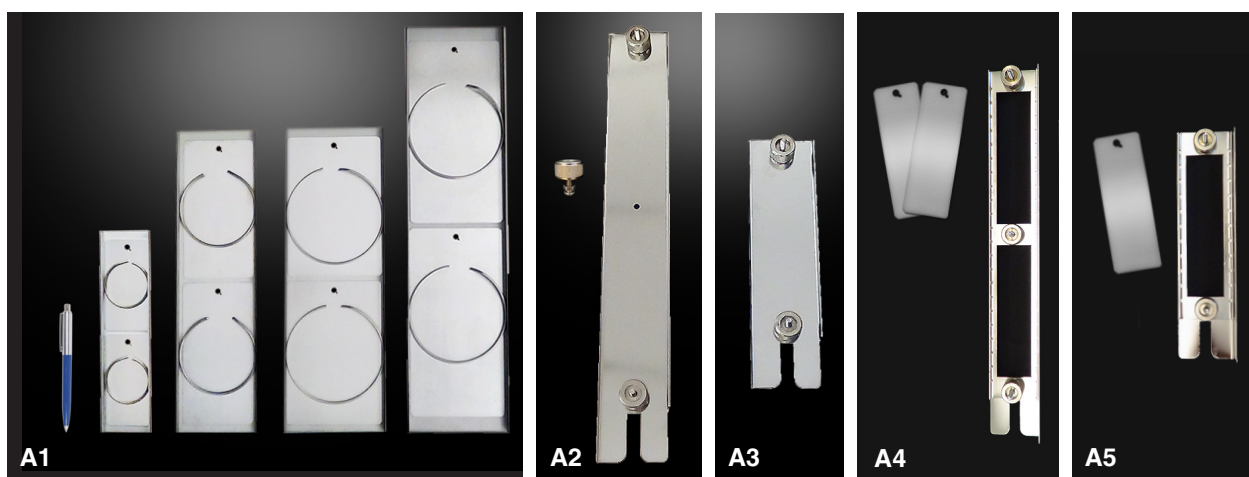
Specimen Size		Specimen Capacity					
inches	mm	Xe-1		Xe-2		Xe-3	
2 x 4	50 x 100	15	17	–	–	51	55
3 x 6	75 x 150	–	8	–	–	20	22
4 x 6	100 x 150	–	5	–	–	18	18
4 x 8	100 x 200	–	4	–	–	13	13
1.8 x 5.2	45 x 132	–	–	31	–	–	–

Note: shaded areas indicate capacity without specimen holders

A. Standard Specimen Holders

Description	Photo	Part Number	Specimen Size	Specimen Exposure Area	Set Of	Available For:		
						Xe-1	Xe-2	Xe-3
Standard Flat Panel Holder <ul style="list-style-type: none"> Each holder assembly holds 2 specimens and includes 2 panels and 2 retaining rings X-10113-K includes eight 2 x 4 in holder assemblies X-10114-K includes (26) 2 x 4 in holder assemblies 	A1	X-10113-K	50 x 100 mm 2 x 4 in	43 x 96 mm 1.7 x 3.8 in	8	●	—	—
		X-10114-K	50 x 100 mm 2 x 4 in	43 x 96 mm 1.7 x 3.8 in	26	—	—	●
Medium Flat Panel Holder <ul style="list-style-type: none"> Each holder assembly holds 2 specimens and includes 2 panels and 2 retaining rings X-10260-K includes ten 3 x 6 in holder assemblies and two 2 x 4 in holder assemblies 	A1	X-10260-K	75 x 150 mm 3 x 6 in	65 x 147 mm 2.6 x 5.8 in	10	—	—	●
			50 x 100 mm 2 x 4 in	43 x 96 mm 1.7 x 3.8 in	2	—	—	●
Large Flat Panel Holder <ul style="list-style-type: none"> Each holder assembly holds 2 specimens and includes 2 panels and 2 retaining rings X-10261-K includes eight 4 x 6 in holder assemblies and two 2 x 4 in holder assemblies 	A1	X-10261-K	100 x 150 mm 4 x 6 in	93 x 147 mm 3.7 x 5.8 in	8	—	—	●
			50 x 100 mm 2 x 4 in	43 x 96 mm 1.7 x 3.8 in	2	—	—	●
Extra Large Flat Panel Holder <ul style="list-style-type: none"> Each holder assembly holds 2 specimens and includes 2 panels and 2 retaining rings X-10262-K includes six 4 x 8 in holder assemblies and two 2 x 4 in holder assemblies 	A1	X-10262-K	100 x 200 mm 4 x 8 in	93 x 198 mm 3.7 x 7.8 in	6	—	—	●
			50 x 100 mm 2 x 4 in	43 x 96 mm 1.7 x 3.8 in	2	—	—	●
Solid Back Holders <ul style="list-style-type: none"> Full height holder holds 1 large or 2 small specimens with included conversion kit; half height holder holds 1 specimen XR-11008-K includes 15 full, 1 half height holder 	A2, A3	XR-11008-K	45 x 275 mm 1.8 x 10.8 in	45 x 275 mm 1.8 x 10.8 in	16	—	●	—
Standard Open Back Holders <ul style="list-style-type: none"> Each full height holder assembly holds 2 specimens and includes 2 panels; half height holder assembly holds 1 specimen and includes 1 panel XR-11448-K includes 15 full, 1 half height holder assemblies 	A4, A5	XR-11448-K	45 x 132 mm 1.8 x 5.2 in	31 x 127 mm 1.3 x 5 in	16	—	●	—

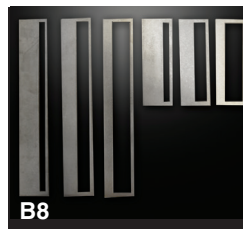
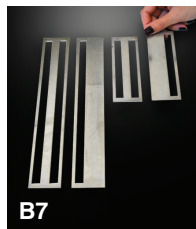
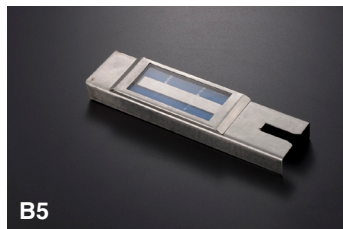
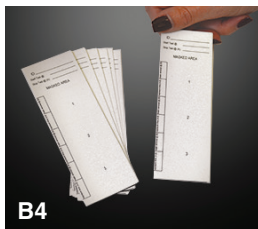
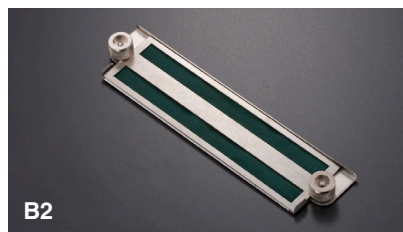
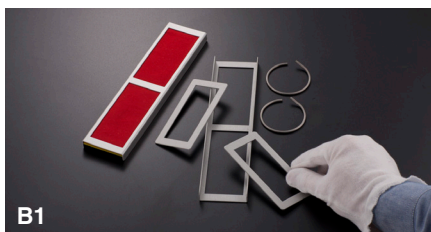
Note: Individual specimen holders are available for some configurations, with a minimum purchase of 5. Contact Q-Lab for more information.



B. Textile Holders and Masks

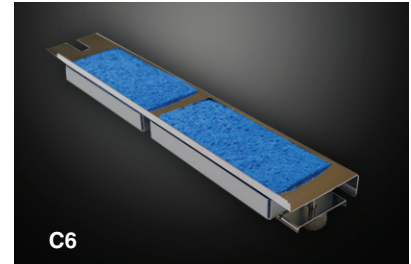
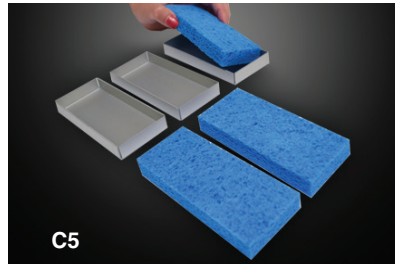
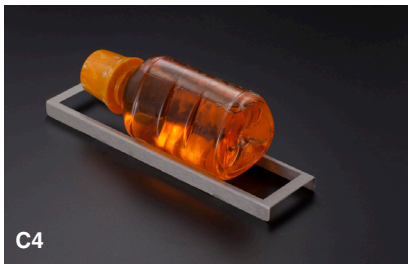
Description	Photo	Part Number	Specimen Size	Specimen Exposure Area	Set Of	Available For:		
						Xe-1	Xe-2	Xe-3
Textile/Thin Film Holder <ul style="list-style-type: none"> Each holder assembly holds 2 specimens and includes 2 panels and 2 retaining rings X-10259-K includes eight 2 x 4 in holder assemblies X-10263-K includes (26) 2 x 4 in holder assemblies 	B1	X-10259-K	50 x 100 mm 2 x 4 in	43 x 96 mm 1.7 x 3.8 in	8	●	—	—
		X-10263-K	50 x 100 mm 2 x 4 in	43 x 96 mm 1.7 x 3.8 in	26	—	—	●
Textile Holder with Masks <ul style="list-style-type: none"> Each holder assembly holds 1 specimen and includes one 1/3 and one 2/3 masks X-10609-K includes (25) 2 x 7.6 in holder assemblies X-10804-K includes (7) 2 x 7.6 in holder assemblies 	B2	X-10609-K	50 x 192 mm 2 x 7.6 in	14 x 180 mm 0.6 x 7.1 in	25	—	—	●
		X-10804-K	50 x 192 mm 2 x 7.6 in	14 x 180 mm 0.6 x 7.1 in	7	●	—	—
AATCC Method 16 Textile Masks <ul style="list-style-type: none"> Each perforated paper mask covers a specimen so sections of the specimen can be exposed for different times X-10264-K is used with X-10255-X, X-10259-K and X-10263-K XR-11229-K is used with XR-11315 	B3	X-10264-K	50 x 100 mm 2 x 4 in	Varies	100	●	—	●
	B4	XR-11229-K	45 x 132 mm 1.8 x 5.2 in	Varies	100	—	●	—
ISO 105 B04 Blue Wool Ref Holder <ul style="list-style-type: none"> Holds 1 specimen; includes one each 1/3 and 2/3 masks 	B5	XR-11368-K	45 x 93 mm 1.8 x 3.6 in	12 x 119 mm 0.5 x 4.7 in	1	—	●	—
Picture Frame Masks <ul style="list-style-type: none"> XR-11273-K includes 15 full height masks and 1 half height mask; used with XR-11008-K XR-11315-K includes 31 half height masks; used with XR-11008-K 	B6	XR-11273-K	45 x 275 mm 1.8 x 10.8 in	33 x 259 mm 1.3 x 10.2 in	16	—	●	—
		XR-11315-K	45 x 132 mm 1.8 x 5.2 in	33 x 119 mm 1.3 x 4.7 in	31	—	●	—
ISO 105 B02 Method 1 Masks <ul style="list-style-type: none"> XR-11168-K includes 15 each 1/3 and 2/3 full height masks and 1 each 1/3 and 2/3 half height masks; used with XR-11008-K XR-11316-K includes 31 each 1/3 and 2/3 half height masks; used with XR-11008-K 	B7	XR-11168-K	45 x 275 mm 1.8 x 10.8 in	12 X 259 mm 0.5 x 10.2 in	32	—	●	—
		XR-11316-K	45 x 132 mm 1.8 x 5.2 in	12 X 119 mm 0.5 x 4.7 in	62	—	●	—
ISO 105 B02 Method 2 Masks <ul style="list-style-type: none"> XR-11369-K includes 15 each 1/4, 1/2 and 3/4 full height masks and 1 each 1/4, 1/2 and 3/4 half height masks Used with XR-11008-K 	B8	XR-11369-K	45 x 275 mm 1.8 x 10.7 in	1/4: 27 x 159 mm 1.1 x 10.2 in 1/2: 18 x 159 mm 0.7 x 10.2 in 3/4: 9 x 159 mm 0.4 x 10.2 in	48	—	●	—
ISO 105 B02 Method 2 Masks <ul style="list-style-type: none"> XR-11376-K includes 31 each 1/4, 1/2 and 3/4 half height masks Used with XR-11008-K 	B8	XR-11376-K	45 x 132 mm 1.8 x 5.2 in	1/4: 27 x 119 mm 1.1 x 4.7 in 1/2: 18 x 119 mm 0.7 x 4.7 in 3/4: 9 x 119 mm 0.4 x 4.7 in	93	—	●	—

Note: Individual specimen holders are available for some configurations, with a minimum purchase of 5. Contact Q-Lab for more information.



C) 3D and Specialized Specimen Holders

Description	Photo	Part Number	Size 1	Size 2	Set Of	Available For:		
						Xe-1	Xe-2	Xe-3
3D Adjustable Height Part Holder <ul style="list-style-type: none"> For specimens up to 4.5" thick; includes perforated mounting plate and BP/IBP holder 	C1,C2	X-10476-K	Holder: 203 x 203 mm 8 x 8 in	—	5	—	—	●
Narrow Bottle Holder <ul style="list-style-type: none"> Holder is slotted to hold cylindrical specimens Minimum order of 5 	C3	X-10183	Holder: 54 x 222 mm 2.1 x 8.8 in	Slot size: 203 x 18 mm 8 x 0.69 in	1	●	—	●
Wide Bottle Holder <ul style="list-style-type: none"> Holder is slotted to hold cylindrical specimens Minimum order of 5 	C4	X-10184	Holder: 54 x 222 mm 2.1 x 8.8 in	Slot size: 203 x 44 mm 8 x 1.8 in	1	●	—	●
ASTM D7869 Water Spray Qualification Holder <ul style="list-style-type: none"> Holds one specimen X-10952-K includes 3 cups and 12 standard sponges XR-10953-K includes 2 cups, 12 standard sponges and a cup holder 	C5	X-10952-K	Specimen Size: 57 x 127 mm 2.2 x 5 in	Exposure Area: 57 x 127 mm 2.2 x 5 in	3	—	—	●
	C6	XR-10953-K	Specimen Size: 57 x 127 mm 2.2 x 5 in	Exposure Area: 51 x 127 mm 2 x 5 in	2	—	●	—



D) Custom Specimen Holders

For unique applications or for specimens that cannot fit in the standard holders, Q-Lab can design and build custom specimen holders for nearly any application. The photo to the right provides just one small example of a unique application. No matter what is being exposed, the specimen guidelines mentioned on Page 1 of this document should always be followed (i.e. distance from the lamps, shadowing of black panel, and proper airflow). Consult with Q-Lab for recommendations on custom holder designs.



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