SPECIFICATION BULLETIN LF-8110

Q-FOG Cyclic Corrosion Tester

Q-FOG Overview

Q-FOG® cyclic corrosion chambers from Q-Lab can perform continuous salt spray, Prohesion, and nearly all cyclic automotive corrosion tests. Q-FOG chambers are available in two sizes to fulfill a wide range of testing requirements. Q-FOG cyclic corrosion testers are the simplest, most reliable, and easiest-to-use corrosion testers available.

Features

Q-FOG corrosion test chambers deliver the precise volume and uniformity of fog called for in major corrosion test standards. Variable relative humidity control is also available as an option, as is shower capability. Q-FOG testers can be configured with optional features like the Rapid Ramp Heater, Top-Mounted Swaying Shower Bar, and Wall Wash, to meet almost any testing need. Q-FOG internal chambers are constructed of reinforced fiberglass to avoid corrosion. Dual, full-color touchscreen displays allow for easy user programming and operation, available in 17 languages. The Q-FOG Gen 4 system includes complete self-diagnostics, including warning messages, routine service reminders, and safety shut down.

	SSP	CCT	CRH
Two sizes available (600 and 1100 liter)	●	●	●
Dual full-color touch-screen displays	●	●	●
Internal 120 liter salt solution reservoir	●	●	●
Monitoring window & internal viewing light	●	●	●
Internal chamber heaters for fast temperature cycling	●	●	●
Salt Fog Function (atomizing mist)	●	●	●
Dry Function (< 30% relative humidity)	●	●	●
Humid Function (95-100% relative humidity)	—	●	●
RH Function (relative humidity control via Air Preconditioner)	—	—	●
Wall Wash Kit (for compliance with Renault ECC1)	—	—	◑
Stationary Shower Module (with self-cleaning spray nozzles)	—	—	◑[1]
Top-Mounted Swaying Shower (with self-cleaning spray nozzles)	—	—	◑[2]
Rapid Ramp Heaters (for fast temperature/RH transitions)	—	—	◑[3]
Access Port (100 mm diameter for wiring access in chamber)	◑	◑	◑
External Fog Collection Cylinders	◑	◑	◑

● Standard Feature ◑ Optional Feature 1: -S models only 2: -T models only 3: -R models only

Model SSP for Prohesion or Conventional Salt Spray Tests

The Q-FOG SSP corrosion tester can perform numerous accelerated corrosion tests, including continuous salt spray (ASTM B117 and ISO 9227) and Prohesion (ASTM G85 Annex 5). The Prohesion test uses fast cycling, rapid temperature changes, a low humidity dry-off cycle, and a different corrosive solution to provide a realistic test.

Model CCT for Corrosion Research and Cyclic Automotive Tests

The Q-FOG model CCT has all the advantages of the model SSP, but adds the flexibility of including a 95-100% Humid Function. The Q-FOG CCT model can meet many automotive corrosion test methods that require exposing specimens to a repetitive cycle of salt spray, high humidity, low humidity dry-off, and ambient conditions. Additionally, the CCT model is able to run Copper-Accelerated Acetic-Acid Salt Spray (CASS) tests such as ASTM B368 or ISO 9227 CASS.

Model CRH for Cyclic Automotive Tests with Variable Relative Humidity (RH) Control

The Q-FOG model CRH meets most major modern automotive corrosion test standards, such as GMW 14872, Ford L-467, SAE J2334, Renault ECC1, and others from ISO, VW, Volvo, Chrysler, and others. It allows for full variable relative humidity control through the use of an innovative Air Preconditioner. In addition to salt fog, CRH models feature fully-programmable stationary or top-mounted swaying shower features that can quickly apply salt solution. The Rapid Ramp Heater option allows for fast transitions between different chamber conditions to comply with difficult-to-meet test methods like JASO M609, even with a fully-loaded chamber.

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Operating Specifications:

Models[1]	SSP600, CCT600	CRH600 (-HSC, -HTC)	CRH600 (-HSCR, -HTCR)	SSP1100, CCT1100	CRH1100 (-HSC, -HTC)	CRH1100 (-HSCR, -HTCR)
Chamber Size[2] Volume (including lid) Volume (excluding lid) Built-in salt solution reservoir	~600 liters (21 ft³) ~500 liters (18 ft³) ~120 liters (32 gal)			~1100 liters (39 ft³) ~900 liters (32 ft³) ~120 liters (32 gal)		
Chamber Temp Range[3] Fog or Dwell[4] Dry-Off[4] Humid/RH[4] Shower	20-60 °C 20-70 °C 25-60 °C -	20-60 °C 20-70 °C 20-60 °C 20-50 °C		20-60 °C 20-70 °C 25-60 °C -	20-60 °C 20-70 °C 20-60 °C 20-50 °C	
Specimen Panel Capacity[5] 100 × 300 mm (4 × 12 in) 75 × 150 mm (3 × 6 in)	120 (96 for -T models) @ 8 racks 170 (160 for -T models) @ 10 racks			190 (160 for -T models) @ 10 racks 252 (240 for -T models) @ 12 racks		
Specimen Load Capacity Each panel rack Each hanging rod Each mounting grate Total chamber (distributed)	113 kg (250 lbs) max 45 kg (100 lbs) max 272 kg (600 lbs) max 544 kg (1200 lbs) max					
Inlet Water Purity[6]	>200 kΩ·cm; <5 µS/cm <2.5 ppm TDS	>1 MΩ·cm; <1.0 µS/cm <0.5 ppm TDS		>200 kΩ·cm; <5 µS/cm <2.5 ppm TDS	>1 MΩ·cm; <1.0 µS/cm <0.5 ppm TDS	
Inlet Water Pressure[6,7]	0.2-3.8 bar (3-56 psi)	0.6-3.8 bar (9-56 psi)		0.2-3.8 bar (3-56 psi)	0.6-3.8 bar (9-56 psi)	
Water Consumption[8]	2 L/h max	5 L/h max		2 L/h max	5 L/h max	
Drain[9]	32 mm (1-¼ in) tubing with trap					
Air Vent[9]	102 mm (4 in) inner diameter min					
Compressed Air Maximum volume Pressure	1.7 L/s (3.5 cfm) 3-10 bar (40-150 psi)	1.7 L/s (3.5 cfm) 4-10 bar (60-150 psi)		1.7 L/s (3.5 cfm) 3-10 bar (40-150 psi)	1.7 L/s (3.5 cfm) 4-10 bar (60-150 psi)	
Chamber Internal Dims[2] w × d × h (max, excluding lid) w × d × h (min, excluding lid)	110 × 71 × 73 cm (43 × 28 × 29 in) 108 × 61 × 73 cm (43 × 24 × 29 in)			147 × 87 × 72 cm (58 × 34 × 28 in) 144 × 77 × 72 cm (57 × 30 × 28 in)		
External Dimensions[10] w × d × h (lid closed)	189 × 113 × 122 cm (74 × 44 × 48 in)	328 × 107 × 126 cm (129 × 42 × 50 in)		225 × 129 × 127 cm (88 × 51 × 50 in)	365 × 125 × 131 cm (144 × 50 × 52 in)	
Weight	224 kg (494 lbs)	333 kg (734 lbs)		269 kg (594 lbs)	378 kg (834 lbs)	
Electrical[11] Requirements 208 V	1-Φ @ 16 A	1-Φ @ 32 A	3-Φ @ 28 A	1-Φ @ 20 A	1-Φ @ 38 A	3-Φ @ 44 A
230 V	1-Φ @ 14 A	1-Φ @ 32 A	3-Φ @ 25 A	1-Φ @ 18 A	1-Φ @ 38 A	3-Φ @ 39 A
400 V	—	—	3-Φ @ 15 A	—	—	3-Φ @ 24 A
Lab Recommendations[12] Temperature (°C) Relative Humidity (%)	23 ± 5 °C 50 ± 25%					

1) Nomenclature designations for CRH chambers: relative humidity control (H), stationary shower (S), top-mounted swaying shower bar (T), Air Preconditioner (C), rapid ramp heaters (R).
2) Chamber dimensions are approximate, since the chamber is a complex shape that is tapered vertically.
3) Achievable test conditions, including maximum and minimum setpoints and transitions between steps, are influenced by laboratory ambient conditions and interdependencies between test parameters.
4) In CRH models, relative humidity (RH) control feature replaces the Dwell, Humid, and Dry-Off functions. Model CCT features a 95-100% RH function; model SSP does not have high RH capability. See technical manual for more detailed information, including RH performance versus lab conditions.
5) Standard kits include 8 (600 L) or 10 (1100 L) panel holder racks. In order to maximize panel capacity, additional individual panel holders may be purchased.
6) Water purity requirements can be met by most reverse osmosis, deionization, or distillation systems. Ensure pH is 6-8. Model CRH requires higher-purity water because of the wet bulb wick (for RH measurement/control). Lower-purity water may be used, but will require more frequent wick changes and the potential for erroneous RH readings.
7) CRH requires slightly higher minimum water pressure to accommodate self-cleaning spray nozzle feature.
8) Max consumption values are during Humid/RH function in CCT and CRH models; typical consumption will be much lower. Additionally, water system must be sized to accommodate maximum peak demand during short duration bubble tower refill step at 0.4 L/min.
9) See Technical Manual for important information regarding proper drain and vent setup requirements; failure to follow will impact tester performance.
10) Width calculated with CRH air pre-conditioner situated on right-hand side of CRH tester with a gap of at least 5 cm (2 in). The air pre-conditioner may alternatively be positioned behind the CRH tester or elsewhere with an optional kit. Air Preconditioner dimensions (w × d × h) are 82 × 93 × 101 cm (32 × 37 × 39 in) ; weight is 91 kg (200 lb).
11) Voltages shown are +/-10% and 50/60 Hz.
12) Operating outside these conditions can result in temperature, humidity, or other faults. Never operate in laboratory ambient conditions >36 °C or >80% RH.

Warranty

For important warranty information, visit Q-Lab.com/Warranty.

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

Q-Lab.com/support

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