



# CORROSION Test Cabinets



Accelerating Your Expertise

# Lab Corrosion Testing Equipment

## Innovative Laboratory Corrosion Testing

Our line of lab corrosion testing equipment is designed to help our customers achieve their ultimate goals – a quality product, a competitive edge, a faster time to market.

Testing should replicate the “worst case” environmental conditions that cause corrosion, leading to the selection of materials with the best service life. Atlas offers three models of corrosion cabinets, one for each approach to corrosion testing:

- **Atlas SF** Traditional Salt Fog and Humidity Testing
- **Atlas BCX** Basic Cyclic Corrosion Testing
- **Atlas CCX** Advanced Cyclic Corrosion Testing

Atlas cabinets are “backward compatible.” That is, a CCX can also perform basic cyclic and traditional salt fog tests, and a BCX can also perform traditional salt fog tests.

## Atlas Products and Services

Atlas' mission is to help our customers worldwide provide the most reliable and durable product solutions through our combined experience and expertise in weathering instruments and testing, custom capabilities, consulting and global support. In addition, our accelerated and natural weathering capabilities allow testing of materials along every step of the product development cycle – from small samples of materials, to complete product components, to entire end products.

### Worldwide Technical Support

One of the benefits of working with the global leader in weathering is the availability of a highly trained, experienced technical service staff. Just about anywhere you are in the world, there is an Atlas technical service representative nearby.

### A2LA Accredited Lab

Atlas calibration services are accredited by A2LA to meet ISO 17025 requirements. This includes calibrations performed on-site using state-of-the-art temperature and relative humidity measuring equipment, as well as calibrations of equipment for both Atlas and competitors' corrosion cabinets by our experienced, factory trained technical service staff.

# CCX – Advanced Cyclic Corrosion Cabinet

The CCX is the most advanced, sophisticated and versatile laboratory corrosion testing cabinet. With installed options, it can replicate up to 15 environmental conditions, placing powerful capabilities in the hands of the user.

## Test conditions replicated in the CCX\*:

### Basic Cyclic Steps

- Salt (electrolyte) fog at saturated RH
- Water fog at saturated RH
- Dry-off
- Dwell
- Non-condensing humidity (i.e. "moist heat")
- Direct spray of salt (electrolyte solution)
- High temperature, up to 71° C
- SO<sub>2</sub> injection

### Advanced Cyclic Steps

- Salt and water fog, switched automatically
- Controllable humidity, ambient to saturated RH
- Automatic immersion
- Second electrolyte for fogging or direct spray
- Automatic ambient temperature and RH
- Very low temperature, to -30° C
- Very high temperature, to 90° C

\* Some test standards or testing capabilities may require installed options.



# CCX – Advanced Cyclic

## Features

### CCX – Fiberglas® Cabinets for Advanced Cyclic Corrosion Tests

Advanced cyclic tests are used to qualify a specific coating or material for a wide range of end uses, to quickly qualify a coating or material on a pass-fail basis, and to predict service life or determine the probability of corrosion of a specific material.

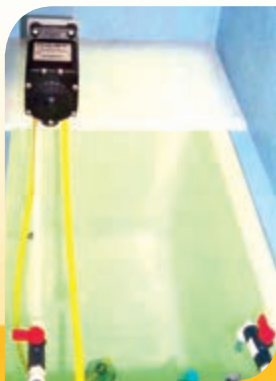
- Meets the following technical standards: SAE J2334, ASTM G85 A4, Nissan CCT III/V, VW1210, Ford BI 123-01, Ford CETP L-467, GMW 14872 as well as automotive CCT, immersion and variable humidity. The CCX will also perform all basic cyclic tests as well as all traditional salt fog (spray) and humidity tests
- Available in five standard sizes from 20 ft<sup>3</sup> to 110 ft<sup>3</sup> (565 L to 3115 L)
- Custom sizes and optional features are available for specialized test applications

### Clear Cover

- Allows viewing of test conditions without opening the cover
- The cover angle prevents dripping onto samples

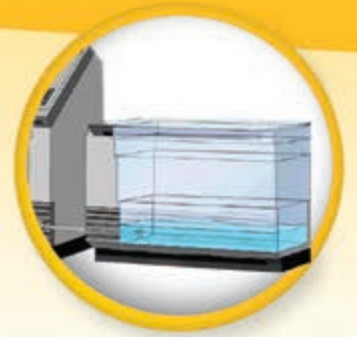
### 60 Gallon / 227 Liter Solution Reservoir

- The largest standard solution reservoir available for longer unattended testing
- Larger custom reservoirs available upon request



# Corrosion Cabinet

## Options



### For Extended Testing Capabilities

- **Automated Immersion System**

Immerses samples in place automatically

- **Adjustable, Controllable RH**

Setpoint-adjustable RH from lab ambient to saturated

- **Very High Temperature**

Up to 90° C

- **Very Low Temperature**

As low as -30° C

- **SO<sub>2</sub> Injection System**

Simulates industrial pollution

- **Solution Spray**

Direct impingement of samples with choice of electrolytes

- **Air-Actuated Cover Lifters**

Opens cover to automatically achieve lab ambient temperature and humidity

- **Pass-Through Mechanical and Electrical Ports**

Allows samples to be tested under load; outputs can be monitored and recorded

- **Widest Temperature Range**

Controls temperature in the exposure zone from ambient to 71° C and optional low/high temp kit extends range from -30° C to 90° C

- **Automatic Operating Cycles**

Pre-installed test standards for salt (electrolyte) fog, water fog, dry-off, dwell and optional cycles – any combination

- **Optional Computer Controls**

Optional computer-controlled cycles include immersion, controlled humidity, freezing/cooling, very high/very low temperature, spray

- **UL, CSA**

Conformance certificates\*

\*CE conformance option available



### CCX Applications:

Aerospace  
Automotive  
Research

Electronics  
Government  
Military

Paints/ Coatings  
Robotics  
Telecommunications



# BCX – Basic Cyclic

## Features

### BCX – Fiberglas® Cabinets for Basic Cyclic Corrosion Tests\*

Basic Cyclic Tests are used to qualify a coating or material for a specific end use on a pass-fail basis, or determine the probability of corrosion of a specific material.

- Meets the following technical standards: ASTM G85, ASTM D5894, ISO 11997-2, Prohesion®, SO<sub>2</sub> Injection, Solution Spray; will also perform traditional salt fog (spray) and humidity tests
- Available in five standard sizes from 20 ft<sup>3</sup> to 110 ft<sup>3</sup> (565 L to 3115 L)
- Custom sizes and optional features are available for specialized test applications

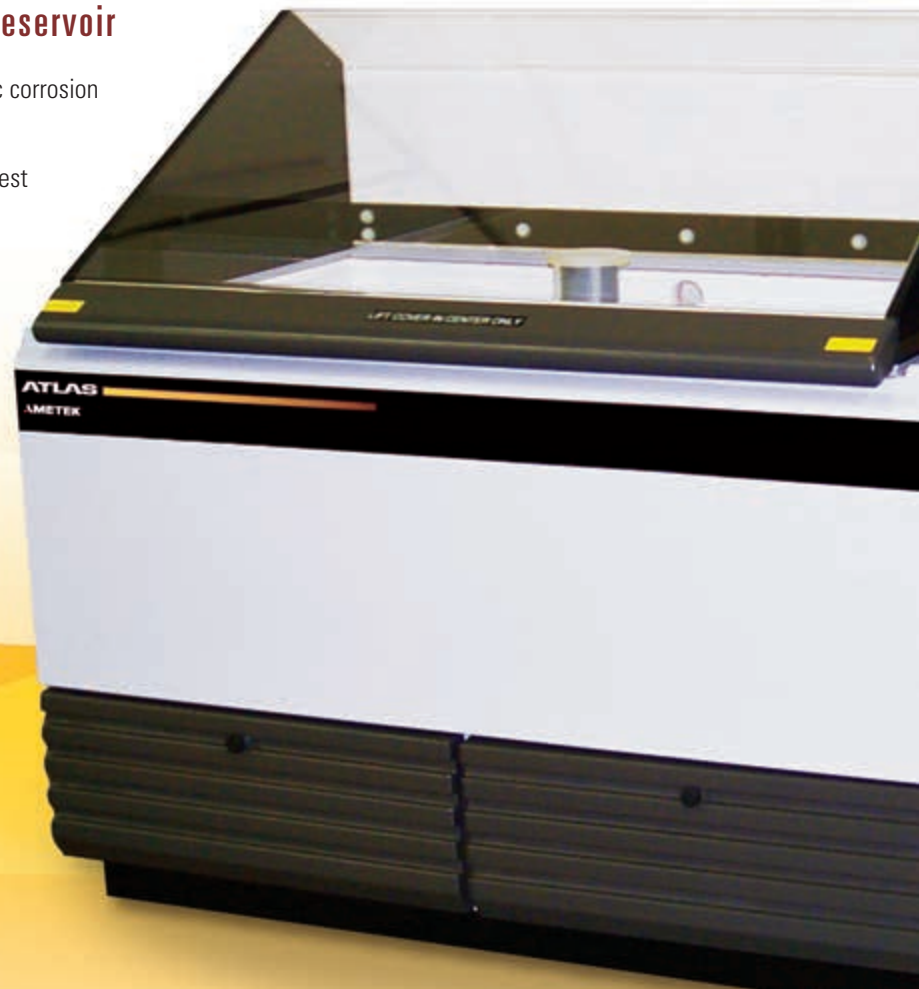
\* Some test standards or testing capabilities may require installed options.

### Clear Cover

- Allows viewing of test conditions without opening cover
- Cover angle prevents dripping onto samples

### 35 Gallon / 132 Liter Solution Reservoir

- The largest standard reservoir for basic cyclic corrosion cabinets for longer unattended testing
- Larger custom reservoirs available upon request



# Corrosion Cabinet



## Options

### For Extended Testing Capabilities

- **Solution Spray**  
Direct impingement of samples
- **Air-Actuated Cover Lifters**  
Opens cover to automatically achieve lab ambient temperature and humidity
- **SO<sub>2</sub> Injection System**  
Simulates industrial pollution
- **Pass-Through Mechanical and Electrical Ports**  
Allows samples to be tested under load; outputs can be monitored and recorded
- **Highest Operating Temperature**  
Controls temperature in the exposure zone from ambient to 55° C; optional high temp kit extends range to 71° C

- **Automatic Operating Cycles**

Salt (electrolyte) fog, dry-off, purge, dwell and optional cycles – any combination, any length of time

- **Operator Touch Screen**

Easy to use controls with pre-installed test programs



- **CE, UL, CSA**

Conformance certificate

### BCX Applications:

Aerospace  
Appliances  
Automotive

Government  
Marine Craft  
Paints/Coatings

Research  
Telecommunications



# SF – Salt Fog Corrosion Cabinet



## SF – Steel Cabinets for Traditional Salt Fog (Spray) and Humidity Tests\*

SF Cabinets are used to quickly qualify a coating or material on a pass-fail basis, or determine the probability of corrosion of a specific material.

- ASTM B117, ASTM D1735, ISO 9227, ISO 11997-1, JIS Z 2371, GM 4465P, CASS, SWAAT, Acetic Acid Salt Spray, and many others
- Available in six standard sizes from 15 ft<sup>3</sup> to 130 ft<sup>3</sup> (425 L to 3680 L)
- Custom sizes for special testing needs available upon request

\* Some test standards or testing capabilities may require installed options.

## Options for Extended Testing Capabilities

### ■ Humidity Test Kit

For ASTM B380 and D2247, FLT M BQ4-2, Corrodokote, fungus and other tests requiring non-condensing humidity

### ■ SO<sub>2</sub> Injection System

Simulates industrial pollution

### ■ Precision Control Package

Allows basic cyclic test operation (fog/purge) according to ASTM G85, NADC, Prohesion<sup>®</sup>, ISO requirements

### ■ Pass-through Mechanical and Electrical Ports

Allows samples to be tested under load; outputs can be monitored and recorded

### ■ Dual Digital Temperature Controllers

Ensures precise temperature in exposure zone and bubble tower; each controller is independently alarmed



### ■ 55 Gallon / 208 Liter Solution Reservoir

The largest standard reservoir for salt fog (spray) and humidity cabinets for longer unattended testing; includes mixing system

### ■ Highest Operating Temperature

Controls temperature in the exposure zone from ambient to 50° C; optional high temp kit extends range to 65° C

## SF Applications:

Architectural	Government	Laminated/Coated Plastics
Chrome Plating	Military	Steel Structures
Fasteners	Paints/Coatings	





# Walk-In Corrosion Testing Chambers

Testing of assembled components provides an advantage for evaluating the combination of potentially incompatible materials. An Atlas Walk-In testing chamber allows testing of oversized samples and assembled components, such as motorcycles, electrical panels for outdoor use, household appliances, vehicle seats, pressurized cylinders, bicycles, military items, ranch and farm machinery, snowmobiles, window/door assemblies, etc.

The Atlas Walk-In chamber will perform all traditional salt fog and humidity tests: ASTM B117 and D1735, CASS, ISO 9227, SWAAT, JIS Z 2371, etc.

When equipped with optional microprocessor-based cycling controls, the Walk-In chamber becomes a large scale "basic cyclic" (BCX) cabinet, and can perform Prohesion<sup>®</sup> (ASTM G85 Annex 5), and other wet:dry (purge) tests.

When equipped with computer controls, the Walk-In chamber becomes a large scale "advanced cyclic" (CCX) chamber, capable of performing SAE J2334 , GMW 14872, and many other cyclic tests.



Walk-In chamber with installed options

## ■ Plexiglas<sup>®</sup> Window

Allows viewing of test conditions without opening door

## ■ Raised Floor

For improved drainage

## ■ Sloped Ceiling

Prevents dripping of condensation onto samples

## Other SF Options

- Shutdown Timer
- External Condensate Collection Kit
- Low or High Profile Design for Specific Testing Applications
- Heavy Duty Support Shelves



Bird's-eye view of SF cabinet interior

# Corrosion Test Cabinet Features

	SF	BCX	CCX (Std Controls)	CCX (Computer Controls)
Durable steel cabinet, exposure zone lined with uniform PVC sheets	●	N/A	N/A	N/A
Reinforced Fiberglas <sup>®</sup> cabinet, exposure zone lined with gel coat	N/A	●	●	●
Solution reservoir	208L (55 gal)	132L (35 gal)	227L (60 gal)	227L (60 gal)
Solution mixing system	●	optional	optional	optional
Exposure zone heated by water jacket	●	N/A	N/A	N/A
Exposure zone heated by titanium rod heater	N/A	●	●	●
Clear cover with water seal	●	N/A	N/A	N/A
Clear cover with glass front and dual magnetic Santoprene <sup>®</sup> gaskets	N/A	●*	●*	●*
Peaked cover prevents dripping onto samples	●	●	●	●
Heated humidifying (bubble) tower with air relief valve	●	●	●	●
Exposure zone temperature with high temperature option	50° C 65° C	55° C 71° C	71° C N/A	71° C 90° C
SO <sub>2</sub> injection	■	■	■	■
High voltage kit	■	■	■	■
High capacity oil:water separator	■	■	■	■
External condensate collection system	■	■	■	■
Exhaust recirculation system	■	■	■	■
Air-actuated cover, automatic ambient	■	■	■	■
Solution spray (direct impingement)	N/A	■	■	■
Power exhaust kit	■	■	■	■
Water fog, manual changeover	■	■	N/A	N/A
Water fog, automatic	N/A	N/A	■	■
Controlled RH	N/A	N/A	■	■
Automatic retractable housing for RH sensor	N/A	N/A	■	■
Immersion	N/A	N/A	N/A	■
LN2 freezing/cooling to -30° C	N/A	N/A	N/A	■
Mechanical refrigeration to -30° C and controlled RH	N/A	N/A	N/A	■

\*Opaque cover used on the BCX/CCX9000

● Standard ■ Optional

## SF Specifications/Dimensions



	Testing Volume <sup>1</sup>	Exposure Zone Dimensions L x W x H	External Dimensions L x W x H
SF260	420 L (15 ft <sup>3</sup> )	76cm x 56cm x 99cm (30" x 22" x 39")	1.07m x 0.97m x 1.52m (42" x 38" x 60")
SF500	555 L (20 ft <sup>3</sup> )	76cm x 74cm x 99cm (30" x 29" x 39")	1.22m x 1.07m x 1.52m (48" x 42" x 60")
SF850	860 L (30 ft <sup>3</sup> )	114cm x 76cm x 99cm (45" x 30" x 39")	1.57m x 1.07m x 1.52m (62" x 42" x 60")
SF2000	1,930 L (68 ft <sup>3</sup> )	1.83m x 1.07m x 0.99m (72" x 42" x 39")	2.44m x 1.37m x 1.60m (96" x 54" x 63")
SF3600	2,850 L (100 ft <sup>3</sup> )	2.36m x 1.22m x 0.99m (93" x 48" x 39")	3.00m x 1.52m x 1.60m (118" x 60" x 63")
SF4200	3,680 L (130 ft <sup>3</sup> )	3.05m x 1.22m x 0.99m (120" x 48" x 39")	3.81m x 1.52m x 1.60m (150" x 60" x 63")

## BCX Specifications/Dimensions



	Testing Volume <sup>1</sup>	Exposure Zone Dimensions L x W x H	External Dimensions L x W x H
BCX2000	565 L (20 ft <sup>3</sup> )	1.27m x 0.74m x 0.63m (50" x 29" x 25")	1.93m x 0.9m x 1.4m (76" x 35" x 56")
BCX3000	850 L (30 ft <sup>3</sup> )	1.91m x 0.74m x 0.63m (75" x 29" x 25")	2.46m x 0.9m x 1.4m (97" x 35" x 56")
BCX4000	1,130 L (40 ft <sup>3</sup> )	1.91m x 0.94m x 0.63m (75" x 37" x 25")	2.46m x 1.1m x 1.4m (97" x 43" x 56")
BCX9000	2,550 L (90 ft <sup>3</sup> )	1.93m x 1.14m x 1.16m (76" x 45" x 45.5")	2.69m x 1.32m x 2.16m (106" x 52" x 85")
BCX11000	3,115 L (110 ft <sup>3</sup> )	2.27m x 1.86m x 0.76m (89.25" x 73.25" x 30")	2.82m x 2.29m x 1.83m (111" x 90" x 72")

## CCX Specifications/Dimensions



	Testing Volume <sup>1</sup>	Exposure Zone Dimensions L x W x H	External Dimensions L x W x H
CCX2000	565 L (20 ft <sup>3</sup> )	1.27m x 0.74m x 0.63m (50" x 29" x 25")	2.4m x 0.9m x 1.4m (94" x 35" x 56")
CCX3000	850 L (30 ft <sup>3</sup> )	1.91m x 0.74m x 0.63m (75" x 29" x 25")	3m x 0.9m x 1.4m (119" x 35" x 56")
CCX4000	1,130 L (40 ft <sup>3</sup> )	1.91m x 0.94m x 0.63m (75" x 37" x 25")	3m x 1.1m x 1.4m (119" x 44" x 56")
CCX9000	2,550 L (90 ft <sup>3</sup> )	1.93m x 1.14m x 1.16m (76" x 45" x 45.5")	3.05m x 1.3m x 2.16m (124" x 52" x 85")
CCX11000	3,115 L (110 ft <sup>3</sup> )	2.27m x 1.86m x 0.76m (89.25" x 73.25" x 30")	3.12m x 2.59m x 2.13m (123" x 102" x 84")

<sup>1</sup>Testing volumes shown are actual, usable testing space; neither the space below the heavy-duty bottom supports, nor the space within the angled cover are included in the stated figures.

## Walk-In Specifications/Dimensions



	Testing Volume	Exposure Zone Dimensions L x W x H	External Dimensions L x W x H
Atlas 7000	7,136 L (252 ft <sup>3</sup> )	1.83m x 1.83m x 2.13m (6' x 6' x 7')	2.13m x 2.13m x 2.74m (7' x 7' x 9')
Atlas 9500	9,514 L (336 ft <sup>3</sup> )	2.44m x 1.83m x 2.13m (8' x 6' x 7')	2.74m x 2.13m x 2.74m (9' x 7' x 9')
Atlas 12000	11,893 L (420 ft <sup>3</sup> )	3.05m x 1.83m x 2.13m (10' x 6' x 7')	3.35m x 2.13m x 2.74m (11' x 7' x 9')



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