



Atmosfär*Lite*

Fully automatic laboratory-accelerated atmospheric corrosion testing to;

- ISO 16701
- Ford CETP 00.00-L-467
- Volvo VCS 1027,149 (ACT-1)
- Volvo VCS 1027,1449 (ACT-2)
- Volvo STD 423-0014
- Volvo STD 1027,1375
- GMW14872
- CCT1 & CCT2
- VDA621-415
- Scania STD4319



Plus all standards achieved by Ascott standard CCT chambers.

The Atmosfär*Lite* test chamber has been specifically designed to facilitate fully automatic testing in accordance with highly demanding laboratory-accelerated corrosion tests, which have become increasingly popular, particularly in the automotive industry. These tests are cyclic in nature and comprise exposure to controlled and varying conditions of temperature and humidity, with intermittent spraying of a salt solution.

Such testing can be used to:

- (a) develop and qualify new corrosion resistant products,
- (b) develop new pre-treatments and finishing processes,
- (c) select materials and,
- (d) perform quality control of the finished product.

In addition, Atmosfär*Lite* chambers have been designed so that a wide variety of other corrosion tests can be conducted within them. For added flexibility, Atmosfär *Lite* chambers also retain the ability to perform conventional salt spray tests and Cyclic Corrosion Tests (CCT) in accordance with a wide range of international test standards.

The Atmosfär*Lite* is for corrosion test standards that do not require sub-zero temperatures, **for sub-zero requirements see the Ascott**

Atmosfär

ascott

Corrosion Test Chambers

Testing climate resistance **to the limit**

Innovative design, the oscillating spray bar and air delivery system are quickly and easily removed to enable the chamber to comply with other CCT test standards.



1 The air system collection tube is easily removed.



2 The combined air dispersal and oscillating spray bar unit simply lifts out.



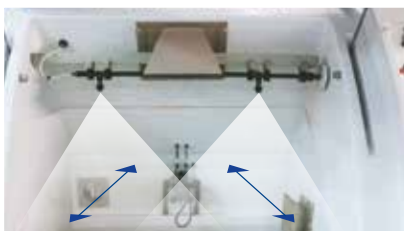
3 The AtmosfärLite chamber is now ready for other types of corrosion test.

AtmosfärLite key features

Swaying spray bar with magnetically coupled drive system

MAG-DRIVE®

- Set high up in the center of the chamber, above the test samples.
- Multiple spray nozzles deliver the salt solution spray directly and uniformly on to the test samples beneath.
- Spray bar nozzles oscillate backwards and forwards inside the chamber at a user defined speed to optimise pluviometry for specific test protocols.
- Spray bar with integral filter to remove impurities in the salt solution, reducing blockages and downtime.
- Fan-shaped spray pattern, in-line with the spray bar, with carefully controlled overlaps ensures test samples are 'swept' with a uniform spray of salt solution from above.
- All plastic, corrosion resistant construction, running in glass bearings.
- Driven by a magnetic coupling to maintain the integrity of the chamber.
- Easily removed to swiftly convert the chamber for compliance with other corrosion tests, including conventional salt spray, if required.

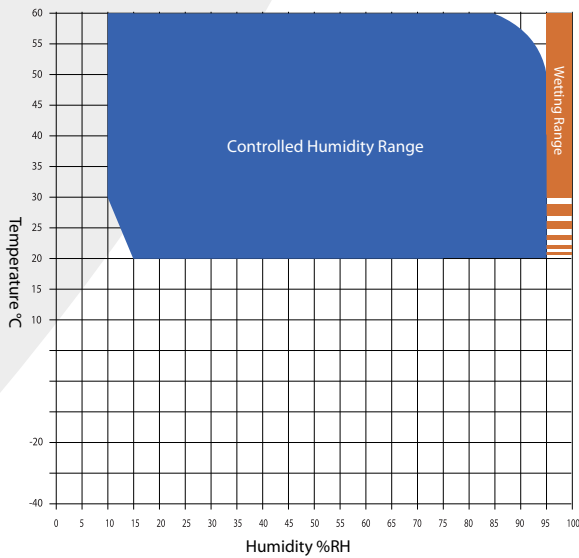


Spray bar filter



Separate air conditioning unit

- Combines refrigeration, dehumidification and post heating to extend the range of temperature and humidity control (down to ambient levels) under programmable control, to achieve demanding humidity and temperature combinations.
- Coupled to the chamber by durable rubber flexible hoses.
- The air conditioning unit can be located behind or to the left of the AtmosfärLite chamber, depending on available space.
- Ensures precisely controlled temperature and humidity conditioned air during the climate controlled phase of testing.
- Mechanical refrigeration enables rapid rates of change of temperature and humidity inside the chamber.

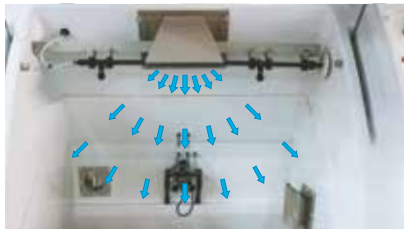


Operating range graph

Test chamber performance

Wetting mode	Temperature range Humidity range	Adjustable from ambient to +70°C/+158°F Fixed at 95% - 100% RH
Oscillating salt spray mode	Temperature range Salt spray fall-out rates	Adjustable from ambient to +50°C/+122°F Adjustable from 5 to 10 Ltrs/m ² per hr
Conventional salt spray mode	Temperature range Salt spray fall-out rates	Adjustable from ambient to +50°C/+122°F Adjustable from 0.5 to 2.5 ml per 80 cm ² per hr*
Drying mode	Temperature range Humidity range	Adjustable from ambient to +70°C/+158°F Uncontrolled
Controlled humidity mode	Temperature/ humidity range	See graph left

*Option ACC25 increases fallout rate from 2 to 4ml per 80cm² per hour.



High velocity vertical air-flow

- Pre-conditioned air by a separate air conditioning unit, is delivered to the chamber and passes vertically through the test samples, evenly, from top to bottom during the climate controlled testing phase.
- Air flow and uniform distribution, coupled with open form sample support racks, ensures homogeneous distribution of temperature and humidity controlled air throughout the chamber and test samples.

Air system collection tube



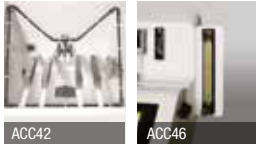
Psychrometric Humidity Measurement Module

- A mechanism unaffected by frequent cycles of extreme humidity, ensuring lifetime integrity of measurement.
- Provides a wider operating envelope, with improved performance at humidity levels around 95%RH.

Test Chamber Optional Accessories

Optional facilities required for some CCT test standards

Facility	Product code	Description	Notes
Additional Atomiser for VDA 233-102 tests	ACC25 <input type="checkbox"/> F	Additional salt spray atomiser(s) and associated pump(s) to generate the higher fall-out rates (2.0 to 4.0ml/80cm ² /hour) required during the salt spray phase of the VDA 233-102 test standard.	
For tests requiring water fog humidity	ACC32 <input type="checkbox"/> F ♦	Provides high humidity conditions (95 -100% RH) by spraying water as a fog. Includes an additional reservoir for the water to be sprayed, fog atomizer(s) and associated equipment	
Interface for ACC34	ACC34/INT <input type="checkbox"/> F	Pre-equips the chamber for connection to an ACC34 liquid immersion facility (available separately).	Not suitable for use with option ACC46 or ACC10/2.
For tests requiring liquid immersion	ACC34 <input type="checkbox"/> A ♦	For automatically immersing test samples held at low level inside the chamber with salt water heated to a user adjustable temperature up to +50°C/+122°F.	Requires the chamber to be preequipped with option: ACC34/INT.
For tests requiring wall wash	ACC42 <input type="checkbox"/> F	Comprises of a water spray rig to automatically wash the internal walls of the chamber with water. Both wash time and duration are user programmable.	
For testing to ASTM G85 annex A4	ACC46 <input type="checkbox"/> F	Designed to meet the requirements of ASTM G85 annex A4, this optional accessory comprises of a chamber-mounted dispersion tube, through which SO ₂ gas is introduced, at a user adjustable rate and for a programmable duration.	User must provide SO ₂ gas cylinder and connector. Not suitable for use with: ACC10,ACC20, ACC34/INT and ACC92.
For tests requiring different salt spray solutions	ACC86 <input type="checkbox"/> F ♦	Enables different salt spray climates to be created which can be individually programmed to occur within any test program.	Additional salt solution reservoirs, atomizers etc, are included.



- F Factory fitted only.
- A Available separately.
- Available in a variety of sizes/ configurations – further details available on request.
- ♦ Accessories separate to the chamber, require their own space and require connection to the chamber and/or other external services. Details available upon request.

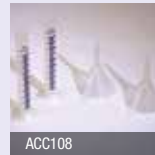
Optional accessories providing external services

Accessory	Product code	Description	Notes
Additional salt solution reservoir	ACC02/ see below A ♦ ACC02/1 ACC02/2 ACC02/3	Translucent with graduated scale for viewing contents, hinging lid for filling & cleaning, mounted on castors. For 80 Ltr/21 US gal capacity model For 115 Ltr/30 US gal capacity model For 160 Ltr/42 US gal capacity model	
Air compressor	ACC04 A ♦	Provides continuous supply of oil free compressed air to enable functioning without connection to a local compressed air supply.	
Deionizer	ACC06/ see below A ♦ ACC06/1 ACC06/2 ACC06/3	Provides high purity water for topping up chamber air saturator, humidity system and for making up salt solution. For small model For medium model For large model	Must be regenerated or replaced when exhausted.
Waste water trough	ACC20 F ♦	Where a local floor level drain is unavailable ACC20 provides a tank into which the chamber drain outlet is terminated. When full, waste water is automatically pumped to a remote drain located up to 10m/32ft horizontally and 3m/10ft vertically.	Not suitable for use with option ACC46.
Exhaust salt scrubber	ACC92/ see below A ♦ ACC92/1 ACC92/2 ACC92/3 ACC92/4	Removes the majority of highly corrosive salt fog from the chamber exhaust where it is not possible to vent this outside the building. <u>Non-recirculating</u> - total loss of water used to condense the salt fog - for salt spray chambers. <u>Non-recirculating</u> - total loss of water used to condense the salt fog - for CCT chambers. <u>Recirculating</u> - reuses some of the water used to condense the salt fog, to minimize waste - for salt spray chambers. <u>Recirculating</u> - reuses some of the water used to condense the salt fog, to minimize waste - for CCT chambers.	Not suitable for use with option ACC46.
Air agitation of salt solution	ACC96/ see below A ♦	Uses compressed air bubbles to aid dissolving salt within the salt solution reservoir to create a thoroughly mixed salt solution.	Can only be supplied fitted to ACC02.



Optional accessories providing data measurement and recording

Accessory	Ascott ref	Description	Notes
Hand held pH meter	ACC11 A	Digital pH meter, for measuring the pH of salt solution fallout over range 0-14 pH with a resolution of 0.01 pH.	
Hand held temperature and humidity probe	ACC28 A	A hand-held thermo-hygrometer for checking the chamber temperature and humidity. Range: -40 to +85°C & 0 to 100% RH.	Requires any size entry port (see ACC10).
Re-transmission of temperature and humidity signals	ACC36 F	Re-transmission of chamber temperature & humidity as 2 x 0-10VDC signals via external socket. For remote data logging.	
Paperless type chart recorder	ACC40/ see below F ACC40/1 ACC40/2	Paperless chart recorder, coupled to a temperature and humidity sensor, for recording the chamber conditions. Data can be stored on integral USB drive and/or downloaded to a computer running appropriate software (see option ACC41). For 2 pen type For 12 pen type	Chamber mounted.
Software for paperless chart recorder ACC40	ACC41 A	Software for paperless chart recorder (separate option ACC40). Enables monitoring and graphical storage of chamber temperature and humidity profiles.	Requires a suitable computer.
Temperature data logger	ACC50 F	A battery powered, chamber mounted temperature data logger. Continuously records chamber air temperature. Logs can be downloaded to a computer with appropriate software (provided).	
Temperature and humidity data logger	ACC52 A	A hand-held data logger for monitoring chamber temperature and humidity using a combined temperature/humidity sensor.	Requires any size entry port (see ACC10).
Salt solution reservoir low level alarm	ACC70 F	Operates if the salt solution level falls below requirement for approximately 18 hours testing at 1-2ml/hour fall-out rates. Sounds audible alarm and displays warning message.	
Hand-held salinity refractometer	ACC100 A	A drop of the salt solution is placed on the viewing window, and its salinity read against a scale, graduated in % sodium chloride, to give an accurate reading in the range 0 to 28%.	
Salt solution consumption sensor	ACC102 F	A liquid flow sensor to measure the flow of salt solution from the reservoir to the atomizer. Displays as instantaneous consumption in ml per min and total consumption in ml.	
Fallout measuring kit	ACC108 A	Comprises of 4 x 100ml measuring cylinders and 4 x 100mm funnels, for manually collecting and measuring salt spray fall-out inside the chamber, during salt spray testing.	



Optional accessories providing automation

Accessory	Product code	Description	Notes
SIM card connectivity	ACC114 F	A SIM card reader, integrated into the chamber. Can be configured to send SMS messages to user nominated cellular phones, when specified alarm conditions arise.	Excludes SIM card which user must procure and fit locally.
Electronic Catchpots®	ACC116 A	Electronic Catchpots to collect and measure fall-out when salt spray testing. Can be displayed as a passive fall-out rate (ml/hour) or configured to control the salt spray delivery system automatically. Maximum per chamber: two for 1300L chambers and four for 2600L chambers.	To be ordered singularly.
Logging software	ACC120 A	When loaded on a suitable 'Class C' network connected computer, this allows logging of chamber variables, such as temperature and humidity, and editing of chamber programs.	Must be installed on a suitable computer (not supplied).



Optional accessories that are additional chamber fittings

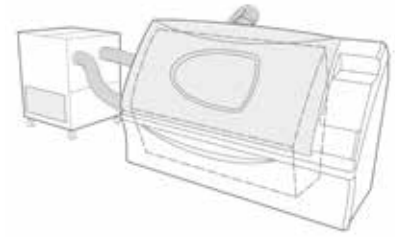
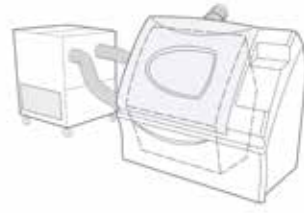
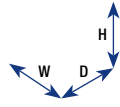
Accessory	Product code	Description	Notes
Entry ports	ACC10/ see below F ACC10/1 ACC10/2	Sealable entry port through the chamber's left hand wall to enable the connection of external equipment. 35mm/1.37" diameter 110mm/4.33" diameter	Not suitable for use with option ACC46.
Variable angle slotted sample racks	ACC14 □ A	Accommodates variable thickness test panels up to 6mm/0.25" thick. Adjustable angles from vertical to 20° from vertical dependant on panel thickness).	
Mesh type racking	ACC15 □ A	Removable mesh type racking for testing small components. Locates on the shelf supports inside the chamber.	
Fixed angle slotted sample racks	ACC16 □ A	Each slot is 3mm/1/8" wide and a fixed angle of 15 degrees from vertical. Typically used for testing standard panels/coupons.	
General Motors Test Plate Kit	ACC16/6 □ A	10 specially designed Polycarbonate test plate holders and nylon fixings, for mounting General Motors test plates in accordance with the requirements of GMW14872 - in an existing Ascott slotted sample rack, ref ACC16.	The slotted sample rack is not included.
Rod type sample racks	ACC17 □ A	For suspending small test samples hung beneath, or supporting larger test samples placed on top.	
Spiked type sample racks	ACC18 □ A	For suspending test samples from the 10mm/0.4" dia x 55mm/2" long spikes, equally spaced on both sides of the rack.	
Adjustable sample racks	ACC14 □ A	Accommodates variable thickness test panels up to 6mm/0.25" thick. Angle adjustment from vertical to up to 20° from vertical depending on test panel thickness. Design minimizes standing moisture accumulation.	
Reinforced false floor	ACC19 □ A	Removable reinforced false floor, providing a horizontal platform over the chamber base for supporting large/heavy test samples.	Note: only fits AtmosfärLite chambers if air collection duct is removed.
Interior illumination	ACC26 □ F	Illuminates the chamber interior when a control panel push-button is pressed.	
Manual filling air saturator	ACC66 F	Enables air saturator to be manually filled and periodically topped up with water by hand as an alternative to the automatic fill and top up provided as standard.	Note: adds 75mm/3" to chamber external width.
Insulated window cover	ACC82 □ A	Removable insulated cover shaped to match the window aperture. Reduces condensation on the inside of the window during testing and improves thermal efficiency.	
Compressed air coupling	ACC94 F	A control panel mounted, quick release coupling for connection of an air pressure gauge (not supplied) for checking/calibrating the chamber's air pressure gauge.	
Atomizer airflow optimizer	ACC106 A	An airflow anemometer with adaptor, to enable the chamber atomizer airflow to be checked and optimized.	
Vertically operating canopy	ACC110 □ F	Special design of canopy opens to a vertical position enabling access from above (e.g. by hoist) for large and/or heavy test samples.	



Optional service and spares kit

Accessory	Product code	Description	Notes
1 year consumables spares kit	ACC12/1 A	A kit of consumables sufficient for up to 1 year.	
3 year chamber service and spares kit	ACC12/2 A	Initial kit of spare parts for servicing and maintaining the chamber for up to 3 years from its first use, or its last service.	
6 year chamber service and spares kit	ACC12/3 A	A comprehensive kit for servicing and maintaining the chamber for up to 6 years from its first use, or its last service.	





Atmosfär <i>Lite</i> Test Chambers		AT1300iP/Lite	AT2600iP/Lite
Minimum controlled temperature		20°C/68°F	20°C/68°F
Chamber capacity		1300 Ltrs/45.9 cu.ft	2600 Ltrs/91.8 cu.ft
Chamber weight		340 kg	440 kg
Mounting format		Floor standing	Floor standing
Loading threshold		800mm/31.5"	800mm/31.5"
Chamber external dimensions, max	W	2025mm/80.0"	2885mm/113.6"
	D	1316mm/51.8"	1316mm/51.8"
	H	1965mm/77.4"	1965mm/77.4"
Chamber internal dimensions, max	W	1300mm/51.2"	2160mm/85.0"
	D	980mm/38.5"	980mm/38.5"
	H	1500mm/59.0"	1500mm/59.0"
Refrigeration unit	W	650mm/25.6"	650mm/25.6"
Separate unit, one supplied to be located to the rear or left hand side of the Atmosfär <i>Lite</i> chamber	D	870mm/34.3"	870mm/34.3"
	H	1100mm/43.3"	1100mm/43.3"
Salt solution reservoir	W	560mm/22.0"	560mm/22.0"
115 Ltrs/30.4 US gal	D	620mm/24.5"	620mm/24.5"
	H	675mm/26.6"	675mm/26.6"
Separate unit, one supplied to deliver salt water to the conventional salt spray atomiser			
Salt solution reservoir	W	840mm/34.0"	840mm/34.0"
160 Ltrs/42.2 US gal	D	500mm/19.7"	500mm/19.7"
	H	790mm/31.1"	790mm/31.1"
Separate unit, one supplied to deliver salt water to the spray bar			
Removeable slotted sample racks to suit lower rack mounting position		1 set of 8 racks each with 24 slots Each with variable width slots (up to 6mm/0.25") and variable angle (up to 20° from vertical) and carrying handle.	1 set of 16 racks each with 24 slots
Chamber construction		Glass reinforced plastic, Polypropylene and PVC parts.	
Colour		9 standard colours to choose from.	
Electricity supply		A 32Amp three phase supply is required. The voltage (VAC) and frequency (Hz) are dependent on country/region of installation (to be confirmed at the time of ordering).	
Water		The air saturator, humidity generator and pschometric module all require separate connections to a continuous, pressurized/distilled water supply of 0.5-5.0 bar (7.3-73 psi).	
Air		Clean dry and oil free compressed air, 4.0 to 6.0 bar (58-87 psi) with 240 Ltrs (8.5 cu.ft) per minute flow. Two separate supplies are required, one for the chamber and one for the separate air conditioning unit.	
Exhaust		3m (10ft) exhaust pipe is provided which should be terminated outside building.	
Drain		3m (10ft) drain pipe is provided which should be terminated into floor level drain.	
Operating environmental conditions		Indoors, with ambient maintained at +18 to 23°C (+64 to 73°F). 85% max RH (non-condensing).	



Ascott Worldwide

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