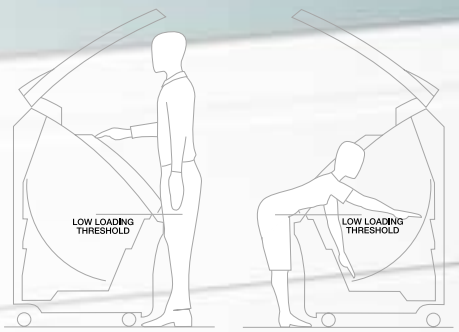
ascott

testing corrosion resistance to the limit

Cyclic corrosion test (CCT) chambers

Ascott, the leading innovative manufacturer of corrosion testing equipment

CC2000xp chamber



every chamber is built using advanced engineering principles to stringent international standards

ascott

testing corrosion resistance to the limit

Cyclic corrosion test (CCT) chambers

Ascott CCT chambers - probably the most sophisticated and versatile corrosion test systems available - with the design and quality that's right for today's laboratory environment.

Using the 'touch-screen' control panel, Ascott CCT cabinets can be programmed to link together a variety of environments; salt spray, condensation humidity, and controlled humidity air drying, to form a corrosion cycle. Other environments are available as optional accessories.

A great deal of effort has gone into not just the test performance but also into the chamber ergonomics. For example, push-button pneumatic canopy operation for effortless opening and closing, a very low threshold that enables loading and unloading with ease. There's also automatic purging to minimize the risk of corrosive salt fog escaping into the laboratory. We've even removed the old-fashioned water trap seal and replaced it with a dry gasket so you will not get wet clothes any more.

CC1000xp chamber

Practical features abound to make testing simpler and more efficient. Most of the features are standard, but we do offer an extensive range of options to meet you special needs, including additional testing facilities, such as refrigeration and liquid immersion, that are now required by some industry tests.

The stunning look of the range and a choice of canopy colors will enhance any modern laboratory. There are three model sizes; from CC450xp, the most popular chamber size, to the massive CC2000xp with space for the largest samples, thus avoiding the need to cut them into sections before testing.

Ascott chambers set new standards in corrosion testing and conform to all international testing standards, including ASTM, DIN, ISO, IEC, JASO and VDA, as well as automotive test standards for Ford, Honda, GM, VW, Toyota, Renault, Volvo and many more.

key features

All models feature:

'Touch-screen' control panel for ease of programming, with graphical display of temperature/humidity profiles.

Pneumatically operated canopy for opening and closing the chamber at the push of a button. Dry gasket seal to canopy prevents wetting of operator's clothes, etc.

Low loading threshold on all models for ease of loading/unloading especially at the back of the chamber.

Unique salt spray atomizer made from thermally stable, high performance polymer to guarantee uniform salt spray distribution. An integral filter unit minimizes blockages.

Catchpots® - salt spray remote fall-out facility allows salt spray to be continuously collected and measured without opening the chamber and interrupting the test.

Large capacity salt solution reservoir mounted on castors for mobility. Features graduated sight glass for ease of monitoring solution levels.

Additionally, all models feature:

- automatic air purge facility
- RS232 communication port
- calibration certificate
- canopy color choice (see optional accessories)
- sample racks
- transparent interior viewing window
- consumables spares kit

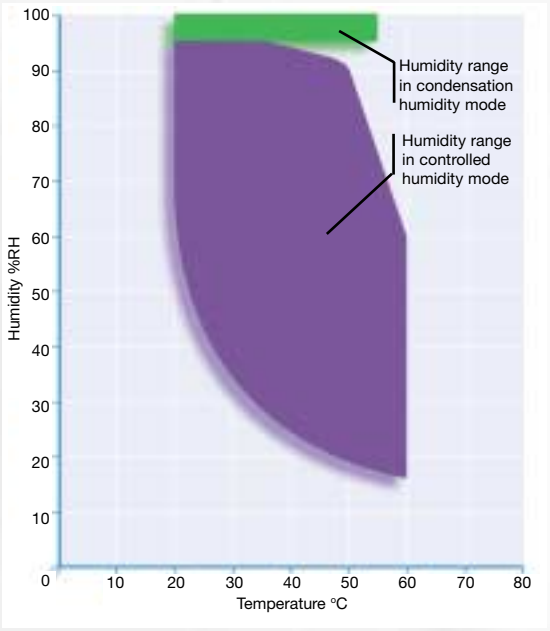
450 and 1000 Ltr chambers

Modes of operation

As standard, Ascott CCT chambers are capable of creating four separate and distinct environments: salt spray, condensation humidity (wetting), air drying and controlled humidity. Further environments are available as optional accessories. These environments can be created at any temperature within the chamber's operational range. Any combination of these operating modes may be programmed to occur sequentially in any order, to form a corrosion cycle which will then be performed automatically or repeated a pre-set number of times. Each environment can also be selected individually.

Ascott CCT chambers are fully programmable offering, ten 15-step main programs, five 5-step sub-programs, and five single setpoint programs. All program functions are assignable to all program steps and programs can be automatically repeated up to 99 times.

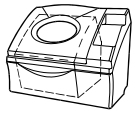
Ascott cyclic corrosion chambers are therefore very flexible and meet the widest possible range of humidity, salt spray and cyclic corrosion test standards.

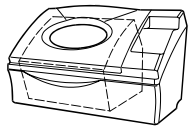


Many CCT standard tests require humidity to be controlled. The actual humidity levels that can be controlled depend upon the test temperature.

Note: for chambers without refrigeration (option ACC29) the minimum achievable temperature/humidity depends upon the ambient conditions in which the chamber is located.

technical specifications





Model reference		CC450xp	CC1000xp	CC2000xp
Chamber capacity		450 Ltrs./15.8 cu.ft	1000 Ltrs/35.3 cu.ft	2000 Ltrs/70.6 cu.ft
Mounting format		Floor standing	Floor standing	Floor standing
Loading threshold		800mm/31.5"	800mm/31.5"	800mm/31.5"
Chamber external dimensions, maximum	W	1660mm/65.4"	2025mm/80.0"	2885mm/113.6"
	D	840mm/33.1"	1205mm/47.5"	1205mm/47.5"
	H	1510mm/59.5"	1720mm/67.5"	1720mm/67.5"
Chamber internal dimensions, maximum	W	1010mm/39.5"	1350mm/51.0"	2160mm/85.0"
	D	640mm/25.0"	980mm/38.5"	980mm/38.5"
	H	1140mm/45.0"	1320mm/52.0"	1320mm/52.0"
Salt solution reservoir ext. dimensions	W	330mm/13.0"	330mm/13.0"	330mm/13.0"
	D	620mm/24.5"	620mm/24.5"	620mm/24.5"
	H	700mm/27.5"	700mm/27.5"	700mm/27.5"
Salt solution reservoir capacity		100 Ltrs/26 US gal	140 Ltrs/37 US gal	140 Ltrs/37 US gal
Removable slotted sample racks (see also optional accessories ACC17/ACC18)		6 racks each with 28 angled slots	8 racks each with 46 angled slots	16 racks each with 46 angled slots
Chamber construction		Glass reinforced plastic, Polypropylene & PVC parts		
Color		White & light gray with a striking turquoise canopy (alternative canopy colors available - see optional accessory ACC60)		

Modes of operation

Condensation humidity mode	Temperature range Humidity range	Adjustable from ambient to +55°C/+131°F Fixed at 95% - 100% RH
Salt spray mode	Temperature range Salt spray fall-out rates	Adjustable from ambient to +50°C/+122°F Adjustable from 0.5 to 3.0 ml per 80 cm^2 per hour
Air drying mode	Temperature range Humidity range	Adjustable from ambient to +60°C/+140°F Uncontrolled
Controlled humidity mode	Temperature/humidity range	See graph on opposite page

Service utilities required

Electricity supply	3 phase, voltage (VAC) and frequency (Hz) dependant on country/region of installation
Water	Deionized/distilled for topping up air saturator and making salt solution. As standard, air saturator is topped up automatically and requires a continuous water connection 0.5–6.0 bar (7.3–87 psi). If air saturator is topped up manually, option ACC66 must be ordered
Air	Clean dry & oil free, 4.0 to 6.0 bar (58-87psi) with 75 Ltrs (2.6cu.ft) per minute flow
Exhaust	3m (10ft) exhaust pipe is provided which should be terminated outside building
Drain	3m (10ft) drain pipe provided which should be terminated into floor level drain
Operating environment conditions	+5 to +30°C (+41 to 86°F), 85% max RH (non-condensing) ambient

optional testing capabilities

In addition to the four standard operating modes mentioned above, the following factory-fitted optional testing capabilities are offered. The control system enables the user to program the sequence and duration of all climates for automatic execution by the chamber.


ACC29


ACC30


ACC34

Refrigeration	ACC29	Comprises of a separate freestanding air temperature conditioning unit (ATCU), capable of refrigerating its atmosphere from ambient to -20°C/-4°F (lower temperatures can be quoted on request). This atmosphere is circulated at high velocity between the ATCU and the CCT chamber, to create a refrigerated, homogeneous climate inside the CCT chamber.
Salt spray (vertically down)	ACC30	Comprises of a high level, multiple nozzle, salt spray rig, which sprays salt water directly down onto the samples under test. Spray time and duration are both user programmable. The salt water is held in a separate holding tank, at ambient temperature. Required for some automotive standards, such as: GM9540P, SAEJ2334, and Volvo STD 1027 - exposure type A.
Water fog humidity	ACC32	Some tests recommend high humidity conditions (95 -100% RH) are created by spraying water as a fog, rather than by evaporation from a heated water bath. This option provides a second 100 Ltr/26 US Gal water reservoir, additional chamber mounted fog atomizer(s) and associated pumping equipment, to enable a water fog humidity environment to be created.
Liquid immersion	ACC34	Comprises of a separate holding tank (usually containing salt water) which can be heated to a user adjustable temperature up to +50°C/+122°F. Test samples to be immersed are located near the chamber base. Under programmed control the liquid is automatically pumped from the holding tank into the chamber base, so immersing the test samples. At the end of the immersion period the liquid is automatically pumped back to the holding tank.
Wall wash	ACC42	Comprises of a water spray rig to automatically wash the internal walls of the CCT chamber with water. Wash time and duration are both user programmable. This test is required for some automotive standards such as Renault D17 2028 (ECC-1). This option requires the chamber to be connected to a continuous pressurized water supply of a quality and temperature suitable for washing the chamber walls.
Horizontal mistspray	ACC44	This optional accessory is required by some automotive component manufacturers. It comprises of special 'Mist spray' atomizers orientated horizontally inside the chamber. These atomizers spray salt solution horizontally, at high solution flow rates (adjustable up to 24ml/min) and high airflow rates (adjustable up to 7m/sec) directly at the test samples, usually located 300mm from the end of each atomizer. The number of atomizers supplied is chamber size dependent.
SO_2 Gas Dosing	ACC46	Designed to meet the requirements of ASTM G85 annex A4, this optional accessory provides a chamber mounted dispersion tube, through which SO_2 gas is introduced, at a rate determined by the user adjustable control valve, and monitored by an SO_2 gas flow meter. The gas flow can be switched on and off automatically, at user programmable times. Note: the provision of the SO_2 gas cylinder and connector are the user's responsibility and are not included in this option.
Multi-solution salt spray	ACC86	Enables users to create salt spray climates from up to three different salt solutions (chamber size dependent). These can be individually programmed by the user to occur as required, within any test program. Additional salt solution reservoirs, atomizers etc, are included.

optional accessories

All Ascott chambers are supplied comprehensively equipped and are ready to run, once connected to the necessary external service utilities. The following optional accessories may not therefore be necessary, but some may be considered desirable.

F = factory fitted only
A = available separately

External service utilities


ACC06


ACC90


ACC92

Data measurement & recording


ACC40/2


ACC28

Remote communications

External service utilities	Additional 100 Ltrs salt solution reservoir	ACC02/100	100 Ltrs/26 US gal capacity; transparent front with graduated scale for viewing contents, hinging lid for filling and cleaning, mounted on castors.	A
	Additional 200 Ltrs salt solution reservoir	ACC02/200	200 Ltrs/52 US gal capacity; transparent front with graduated scale for viewing contents, hinging lid for filling and cleaning, mounted on castors.	A
	Air agitation of salt solution reservoir	ACC96	Designed to assist dissolving salt within an Ascott salt solution reservoir to create a thoroughly mixed salt solution. Uses adjustable regulated compressed air supply a bubbling device that rests in the bottom of the reservoir. Note: requires connection to own compressed air supply.	F
	Waste water trough & pump	ACC20	Where a floor level drain connection is unavailable this option provides a holding tank into which the chamber drain outlet is terminated. When full, waste water is automatically pumped to an existing remote drain/effluent tank, up to 10m/32ft horizontally & 3m/10ft vertically from the chamber.	F
	Regenerable cylinder water deionizer system	ACC06	Provides water of suitable purity for topping up a salt spray chamber air saturator, and for making up salt solution. Requires a continuous mains water supply (max 6 bar/90 psi) Supplied with conductivity indicator. Must be regenerated or replaced when exhausted.	A
	Air compressor	ACC04/CCT	Provides continuous oil-free compressed air to enable chamber to function without local compressed air supply. Can be used to back-up a main compressed air supply if fitted with a pressure switch (separate option ACC21/CCT).	A
	Air compressor pressure switch	ACC21/CCT	Pressure switch and components to enable air compressor (separate option ref; ACC04/CCT) to operate as a back-up to a local main compressed air supply.	A
	Air chiller / dehumidifier	ACC90	Provides a free standing ambient air chiller/dehumidifier unit for use with option ACC80. The unit chills and dehumidifies ambient air, and delivers it to the chamber air inlet, via an insulated flexible hose. This reduces the minimum operating temperature and humidity range that can be achieved inside the chamber, which would otherwise be the same as the temperature and humidity of the room in which the chamber is located.	F
	Exhaust salt scrubber	ACC92 †	Removes highly corrosive salt fog from the chamber exhaust where it is not convenient or possible to vent to the outside of the building. Removes salt through condensation and by spraying with mains water. Mains water consumption is typically 30 - 60 Ltrs (8 - 16 US gal) per hour. † Specify as: ACC92/450, ACC92/1000 & ACC92/2000 for 450, 1000 and 2000 Ltrs models respectively.	A
Data measurement & recording	1 pen chart recorder paper type	ACC08/1	1 pen, 100 mm/4" wide, paper strip chart recorder, coupled to a temperature sensor, for continuously recording the chamber air temperature (°C).	F
	2 pen chart recorder paper type	ACC08/2	2 pen, 100 mm/4" wide, paper strip chart recorder, coupled to temperature and humidity sensors, for continuously recording the chamber air temperature (°C) and relative humidity (%RH).	F
	2 pen chart recorder-paperless type	ACC40/2	2 pen paperless chart recorder, coupled to temperature and humidity sensors, for continuously recording the chamber air temperature (°C) and relative humidity (%RH). Records values electronically on a 'virtual' chart. Data can be stored on integral floppy disk drive and/or downloaded to a network computer running appropriate software (see option ACC41) via ethernet connector.	F
	Software for paperless chart recorder	ACC41	Software for paperless chart recorder (separate option ACC40). When loaded on a network computer enables monitoring and graphical storage of actual chamber temperature and humidity profiles.	A
	Hand held pH meter	ACC11	Digital pH meter, for measuring the pH of salt solution fallout over range 0-14 pH with a resolution of 0.01 pH. Supplied complete with buffers.	A
	Hand held temperature & humidity probe	ACC28	Precision hand-held thermo-hygrometer for independently checking the chamber temperature and humidity. Special salt resistant measuring probe with 5m/196" cable. Range; -40 to +85°C & 0 to 100%RH. Requires any size entry port (see option ACC10) to access chamber interior.	A
	Re-transmission of temperature & humidity signals	ACC36	Re-transmission of the chamber temp & humidity as 2 x 0-10VDC signals via externally mounted socket. For remote data logging.	F
	Temperature data logger	ACC50	A battery powered mini data logger and temperature sensor. Continuously records the chamber air temperature (°C). Logs can be downloaded to a computer running appropriate software (provided).	F
	Temperature & humidity data logger	ACC52	As ACC50, but also records humidity levels (%RH) using a combined temperature and humidity sensor. Requires any size entry port (see option ACC10) to access chamber interior.	F
Remote communications	Computer communications	ACC13/L/1	This software enables the set and actual values for the chamber temperature, chamber relative humidity and air saturator temperature to be logged continuously. The variables are logged at user adjustable intervals and can be displayed graphically. Data can be exported as a CSV file that can be opened in a spreadsheet such as Microsoft® Excel. This software is supplied on CD, recommended operating systems are Windows 98, NT, 2000 and XP with RS232 communications. The software is only suitable for logging from one CCT chamber at a time.	A
	Computer communications	ACC13/L/2	This software is as ACC13/L/1 above but is suitable for logging from up to two CCT chambers at a time, providing the PC has two RS232 ports.	A
	Salt solution reservoir low level alarm	ACC70	Operates if the salt solution level falls below requirement for approximately18 hours testing at 1-2ml/hour fall-out rates. Sounds audible alarm and displays warning message. If reservoir not refilled within 18 hours the running chamber program will automatically pause/stop.	F
	Remote start/stop	ACC72	Enables connection of remote equipment to start and stop a chamber program. A chamber-mounted 3-pin socket enables the user to wire to their own voltage free change over contact (3A rated at 30VDC/250VAC).	F
	Remote pause/unpause	ACC73	Enables connection of remote equipment to pause and unpause a chamber program. A chamber-mounted 3-pin socket is provided to enable the user to wire to their own voltage free change over contact (3A rated at 30VDC/250VAC).	F
	Remote alarm output signal	ACC74	Enables connection of remote equipment for detecting a chamber alarm condition. The output is provided via a voltage free change over contact (3A rated at 30VDC/250VAC) which changes state when an alarm condition arises.	F
	Remote program running output signal	ACC76	Enables connection of remote equipment for detecting a program in a running condition. The output is provided via a voltage free changeover contact (3A rated at 30VDC/250VAC) which changes state when any chamber program is running, ie; not stopped or paused.	F
	User programmable digital output	ACC78	Enables remote electrical equipment to be switched on/off at user programmable times, during a running test program. The output is provided via a voltage free change over contact (3A rated at 30VDC/250VAC).	F
	Output signal to a remote air cooling/dehumidification	ACC80	Enables a remote air cooling/dehumidification unit (such as ACC90 above) to be switched on/off automatically during a test program. The output is only active during the controlled humidity mode of operation.	F

optional accessories continued

F = factory fitted only
A = available separately

Additional & alternative chamber fittings


ACC10

Entry ports

ACC10/35	35mm/1.37" diameter	F
ACC10/70	70mm/2.75" diameter	F
ACC10/110	110mm/4.33" diameter	F

Sealable chamber entry port through the chamber's left hand wall (other locations available on request) to enable the connection of external monitoring/driving equipment.


ACC16

Slotted type sample racks — ACC16 * — A

Removable slotted type sample rack for testing panels/coupons. Each slot is 3mm/1/8" wide and angled at 15 degrees from vertical. Such racks are supplied as standard, unless otherwise specified. Wider slots and/or different angles are available on request.
* Specify as: ACC16/450 (28 slots), & ACC16/1000/2000 (46 slots) for 450 & 1000/2000 Ltrs models respectively.


ACC17

Rod type sample racks — ACC17 ** — A

Removable rod type sample rack for suspending small test samples hung beneath, or for supporting larger test samples placed on top of these racks.
** Specify as: ACC17/450, & ACC17/1000/2000 for 450 & 1000/2000 Ltrs models respectively.


ACC18

Spiked type sample racks — ACC18 *** — A

Removable spiked type sample rack for suspending test samples from the 10mm/0.4" diameter x 55mm/2" long spikes, equally spaced, and protruding from opposite sides.
*** Specify as: ACC18/450 (12 spikes), & ACC18/1000/2000 (18 spikes) for 450 & 1000/2000 Ltrs models respectively.


ACC84

Racks for radiators — ACC84 — A

Support racking for different sizes of vehicle radiator. Attachment points allow radiator to be positioned at varoius angles. Several radiators may be accommodated if the inclination angle is shallow. 2000 Ltrs chamber can hold two racks.


ACC88

Racks for brake disks — ACC88 — A

Specifically designed to support vehicle brake disks at an angle of 15 degrees from vertical. Each rack support two disks. The rack locates over two adjacent sample racks as supplied with each new Ascott chamber.


ACC19

Reinforced false floor — ACC19 †† — A

Removable reinforced false floor, providing a horizontal platform over the chamber base for supporting large/heavy test samples.
†† Specify as:
ACC19/450, ACC19/1000 & ACC19/2000 for 450, 1000 & 2000 Ltrs models respectively.


ACC26

Interior illumination — ACC26 — F

Illuminates the chamber interior when a control panel push-button is pressed.


ACC82

Window insulated cover — ACC82 ††† — A

Comprises of a removable insulated cover, which is specially shaped to match the window aperture. This will reduce the amount of condensation that can form on the inside of the window during testing and will also improve thermal efficiency.
††† Specify as : ACC82/450, ACC82/1000 & ACC82/2000 for 450, 1000 & 2000 Ltrs models respectively.


ACC66

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. Adds 75mm/3" to external chamber width.

Canopy color change — ACC60 — F

As standard, and unless otherwise specified, chambers are fitted with a turquoise colored canopy as pictured in this brochure. By specifying this 'no cost' option, the canopy color can be changed to: (specify color required)

RAL 5005 RAL 7035 RAL 4005 RAL 3003 RAL 1028 RAL 6027

Colors are a representation only

Service & spares kits

details of kit contents available on request

1 year consumables spares kit	ACC12/C	A kit of consumables sufficient for up to 1 year. Note: 1 consumables spares kit is supplied as standard with every new chamber.	
1 year service & spares kit for ACC04/CCT	ACC12/AIR/CCT	A kit of spare parts for servicing and maintaining the chamber air compressor optional accessory for up to 1 year.	A
1 year service & spares kit for ACC08/1	ACC12/REC/1	A kit of spare parts for servicing and maintaining the 1 pen paper chart recorder optional accessory for up to 1 year.	A
1 year service & spares kit for ACC08/2	ACC12/REC/2	A kit of spare parts for servicing and maintaining the 2 pen paper chart recorder optional accessory for up to 1 year.	A
3 year chamber service & spares kit	ACC12/CCT/3	An initial kit of spare parts for servicing and maintaining a chamber for up to 3 years from it's first use.	A
6 year chamber service & spares kit	ACC12/CCT/6	A comprehensive kit for servicing and maintaining a chamber for up to 6 years from its first use, or from its last service.	A

setting new standards in corrosion testing,
conforming to all international testing standards,
including ASTM, DIN, ISO, IEC, JASO, SAE and VDA

Other Ascott corrosion test chambers

In addition to cyclic corrosion test chambers Ascott also manufactures salt spray test chambers. Four chamber sizes are available from a 120 Ltr bench top model for testing smaller items right through to a massive 2000 Ltr model for the largest of test pieces. As with all Ascott products quality and performance are second-to-none as you would expect from the leading innovative manufacturer of corrosion test equipment. For further information on salt spray test chambers contact Ascott.

ISO 9001:2000

accredited quality management system

All Ascott chambers are CE marked.

Issue D

Local representative/supplier

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