

Product Data Sheet



SAL 400-FL (+55°C)

Relevant Test Standards:

Salt Spray Test:

- DIN EN ISO 9227 NSS, ESS, CASS
- DIN 50942, DIN 53167
- ASTM B 117-73, ASTM B 287-74
- ASTM B 368-68
- ISO 7253 ISO 3678
- BS 1224, BS 2011, BS3900 F4
- BS 3900 F12
- BS 5466 Part I, BS 5466 Parts 2 + 3
- NFX 41002,
- AS 21331 Section 3.1
- SIS 1841190
- JIS Z 2371
- IEC 60028-2-1 KA



Option: High Humidity
ISO 6270-2 CH



Order Information

Basic model: SAL 400-FL
Article no.: V.711.062.020

Accessories included:

- + 6 rods for supporting test specimens
- + 2 m exhaust hose Ø 50 mm
- + 2 m drain water hose Ø 18 mm
- + 1 female connector for

Sales & Support:

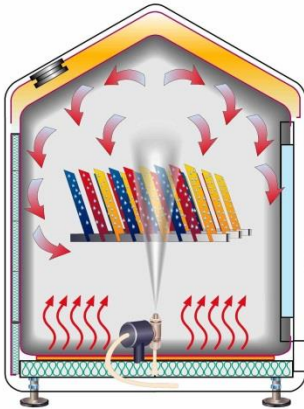
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Monday to Friday
8:00 am – 17:00 pm

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Specification subject to changes
Pictures might differ from original

Technical Specifications

Capacity	ca. 400 L
Inner test chamber dimensions W/D/H1/H2	ca. 800 x 605 x 920 / 733 mm
Outer dimensions of the casing (overall) W/D/H	ca. 1210 x 752 x 1983 mm cabinet can be divided into bench and testing cabinet
Maximum load	100 kg
Total Weight	256 kg
Required power supply	230 V, 50/60 Hz, 1800 W
Materials used	Bottom, back wall, roof are made of stainless steel, coated with ECTFE. Side walls of the chamber are made of Polypropylene with milled openings for supporting rods
Heating	Flat Micanite heaters under the bottom of the chamber for fast and uniform heat transfer
Working temp. range	5°C > ambient up to 55°C
Temperature regulating	Microprocessor control (PID) JUMO dTRON 304 with timer function, LED Display
Temp. Sensor	1x Pt 100, corrosion protected
Temperature stability	±0,2 C°
Communication	RS 232 interface (optional)
Interior lighting	Long life lamp, corrosion protected
Test solution capacity	100 l PE-reservoir on castors
Other specification	
Demineralized water / pressure / fitting	< 20µS/cm ¾" outer diameter, 2-4 bar Automatic water refill of the humidifier
Tap water (connect.type)	Always via Ion-exchanging cartridge (¾" outer diameter)
Compressed Air	6-8 bar (connection nipple size 5)
Waste water, drain	Pipe fittings (spiral hose ID 19mm)
Exhaust pipe	Pipe fitting (50 mm external diameter)
Number of supporting rods / max load	6 stainless steel rods coated with plastic / 30 kg each



Product Description

This compact and easy to operate front loading cabinet is designed for conducting salt spray tests pursuant to the most common international corrosion tests such as DIN EN ISO 9227 and ASTM B117. **It can be used for neutral as well as for CASS-Tests for it can be thoroughly cleaned.**

The test solution – commonly 5 % sodium chloride (NaCl) – is sucked by a diaphragm pump out of the free movable reservoir and pumped to the spray nozzle. A fine moist fog is created in the nozzle by mixing the solution with clean compressed air (0,8 - 1,0 bar) which has been saturated with humidity by passing through the humidifier at 50 °C before entering the nozzle. The fog condensates on the specimens continuously (1,0 – 2,0 ml/hour), while the test chamber is heated at a constant working temperature of 35°C.

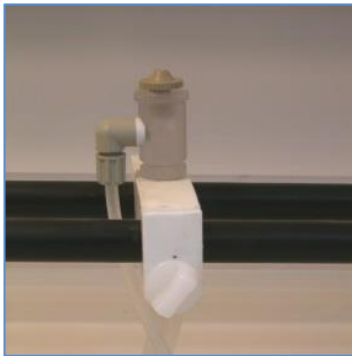


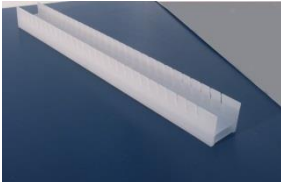
Technical requirements

- ✚ Deionised water (< 20 µS/cm) at 2 – 4 bar for refilling the humidifier and preparing the test solution
- ✚ Purified particle and oil free compressed air (4-8 bar)
- ✚ Exhaust pipe leading to outdoor .
- ✚ Drain connection to a siphon
- ✚ Power supply 230 V, 50/60 Hz, 1800 W

Customer Benefits

- ✚ Cost effective solution for conducting most reliable salt spray tests (SAL)
- ✚ Compact front loading cabinet design on separate bench saves space in the lab,
- ✚ Easy to operate, convenient access to the testing chamber,
- ✚ Usable for neutral as well as for CASS-Tests due to totally cleaning of the whole SAL-working system
- ✚ Most service and maintenance friendly design
- ✚ Rapidly heating up and accurate temperature regulating by Jumo microprocessor PID controller optionally furnished with RS 232 interface for data monitoring (VisiCORR® data transfer software required)
- ✚ Sustainable design for long life span, used materials recycling friendly
- ✚ Adjustable to the requirements of high humidity tests with aeration or automatic cyclic corrosion tests by upgrading with further working systems and programmable logical controls.
- ✚ Convenient time saving purchasing of all accessories, consumables, sample preparation tools, evaluation equipment or spare parts from one source.
- ✚ Competent technical advice and after-sales-support.





Operating system salt spray test (SAL) according to ISO 9227

- ✦ Electronically controlled diaphragm pump, calibrated flow rate
- ✦ Stand-alone test solution reservoir, 100 l capacity,
- ✦ High performance nozzle made of polycarbonate with adjustable air cap made of PEEK
- ✦ Transparent humidifier of shock resistant borosilicate glass with easily replaceable PE-sintered filters for fine distribution of compressed air and full saturation with moisture.
- ✦ Automatic cut off of the SAL working system in case of low water level or overfilling of the humidifier
- ✦ Two manometers to measure and indicate the air pressure before the humidifier and at the nozzle which allows interchanging the filter in the humidifier when the pressure difference exceeds 0,6 bar.
- ✦ Automatic water refill
- ✦ Monitoring of the compressed air supply, indicated by a green pilot lamp on the operating panel
- ✦ Automatic cut off of the SAL working system in case the chamber door is not closed properly,
- ✦ Manually controlled air purge in order to blow out the salt mist from the test chamber with maximum air pressure in short time before opening the door.

Process control

- ✦ User friendly, microprocessor based PID controller JUMO dTRON 304
- ✦ Programmable timer function
- ✦ Option: VisiCORR® software for visualisation of test trends, only in combination with RS 232 (option)
- ✦ Automatic in- and decrease of the humidifier temperature when the chamber temperature change. The humidifier temperature is usually set 15 °C higher than the chamber temperature, in order to enter the testing chamber at ca. 25°C after compression when leaving the nozzle

Accessories: Specimen holders

- ✦ Specimens holders 21 slits, different widths 3,4,6,9 mm
- ✦ Straight or 90° twisted plastic hooks
- ✦ Further special tailor made specimen holders upon request

Accessories: Test solution preparation and testing

- ✦ SaliCORR® sodium chloride in bags with accurate weight of the content or bulk
- ✦ Circulating pump for efficient dissolving of the sodium chloride and adjusting of the pH-value
- ✦ pH Meter, standard buffer solutions for calibrating the device
- ✦ Sodium hydroxide solution, hydrochloric acid, 10 %, and acetic acid 100 % analytical grade to adjust the pH value
- ✦ Copper (II) chloride and acetic acid for CASS Tests
- ✦ Refractometer to measure the NaCl content

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Accessories: Deionised Water Supply

Complete water purification plant consists of

- 1 Ion-exchanger cartridge DI 2800 with quick connection nipples
- 1 Spare cartridge DI 2800 with quick connection nipples
- 1 conductivity meter (analog, alternatively digital) with female quick connectors
- 1 water distribution unit
- 1 plastic stop cock
- 3 x 1,5 m hoses with $\frac{3}{4}$ " inner thread screws
- 1 safety valve with conductivity floor sensor and acoustic alarm in case of leakage, compulsory if no floor drain available.



Accessories: Compressed Air Supply

Oil free compressor type 2 2V/110

- Nominal voltage: 230 V, 50 (60) Hz
- Power: 2 x 1,1 kW
- Displacement: 400 l/min
- FAD at 5 bar: 280 l/min
- Air tank capacity: 110 l
- Working pressure 6-8 bar



Purification unit, compulsory in order to prevent inner valves from blocking

Accessories: Determination of the corrosivity

Complete set for the determination of the corrosivity according to ISO 9227 or individual components:

- Test panels, made from steel CR4 , L/W 150 x 70 mm, Thickness $1 \pm 0,2$ mm, corrosion protected, individually packed in VOC foilement.
- Analytical balance (1 mg)
- Drying cabinet
- Beakers
- Chemical protection gloves
- Safety goggles
- Brushes
- Adhesive plastic tape, width 75 mm for covering the back side
- Petrolether 80-110°C,
- Ethanol 99%, denaturated with MEK
- Hydrochloric acid 20 % with hexamethylenetetramine

The delivery of chemicals is subjected to the regulations of the transportation of hazardous goods as well as further restrictions



Accessories: Sample preparation / evaluation /after test treatment

- Stylus according to Sikkens 1mm/0,5 mm
- Scratching tool according to van Laar
- Cross-cut tester, 6 edges, 2mm, DIN / EN / ISO 2409, set
- Swedish rust scale
- Thickness gauges
- Glossmeter



For more information please visit our web-portal:

www.vlm-labtec.com