

Data sheet

Climatic Test Chamber ClimeEvent



Abbildung, ähnlich (enthält Optionen)

STANDARDS

Low-temperature tests

IEC 60068-2-1, Test A

ISO 16750-4, Low temperature

ETSI EN 300019-2-4, Test Ab/Ad

MIL-STD-810 G, Meth. 502.5

JESD22-A119

High-temperature tests

IEC 60068-2-2, Test B

ISO 16750-4, High-temperature test

ETSI EN 300019-2-4, Test Bb/Bd

MIL-STD-202 G, Meth. 108A

MIL-STD-810 G, Meth. 501.5

MIL-STD-883 J, Meth. 1008.2

JESD22-A103D

Alternating temperature tests

IEC 60068-2-14, Test Nb

ISO 16750-4, Temp. steps

ISO 16750-4, Temp. cycling

ETSI EN 300019-2-4, Test Nb

MIL-STD-331 C, Test C6

JESD22-A105C

Constant climates

IEC 60068-2-67

IEC 60068-2-78

ISO 16750-4, Damp heat steady

ETSI EN 300019-2-4, Test Cab

MIL-STD-202 G, Meth. 103B

JESD22-A101C

Alternating climates

IEC 60068-2-30, Test Db, Var. 1

IEC 60068-2-30, Test Db, Var. 2

IEC 60068-2-38

ISO 16750-4, Damp heat cyclic

ISO 16750-4, Temp/Humid, cyclic

ETSI EN 300019-2-4, Test Db

VG 95210, Blatt 7, Meth. 106C

MIL-STD-202 G, Meth. 106D

MIL-STD-331 C, Test C1

MIL-STD-750-1, Change 3

MIL-STD-810 G, Meth. 507.5

MIL-STD-883 J, Meth. 1004.7

JESD22-A100D

OUR STANDARD FINDER

The right support for every test.

Various industry and factory standards are safely met. You can find a selection of test specifications and standards by using the specially developed standards finder on our website. The standards finder will help you find the right product to suit your needs.



[Click here to find the right support:](#)

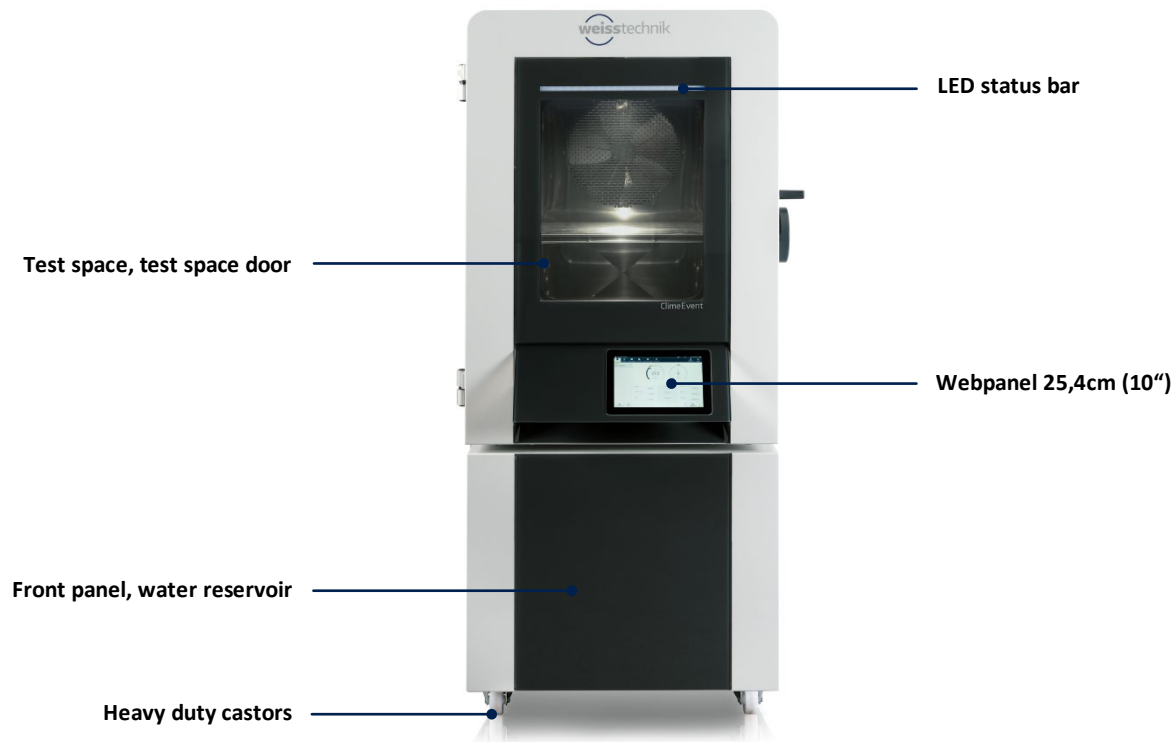
Add +

The temperature values specified in the standards (severity levels) are limited by the highest and lowest test space temperature. The choice of the appropriate test system depends on the temperature change rates during alternating tests. The requirements are met if the test system capacity is large enough to compensate for the influence of the specimen and its heat dissipation in the relevant capacity range. Please contact us to test the feasibility with your test specimen.

The reference point for test values and tolerance specifications is the middle of the test space. Verifying documentation for individual test values is optionally available at additional cost.

Do you not see your testing standard? Contact us!

STRUCTURE | ClimeEvent

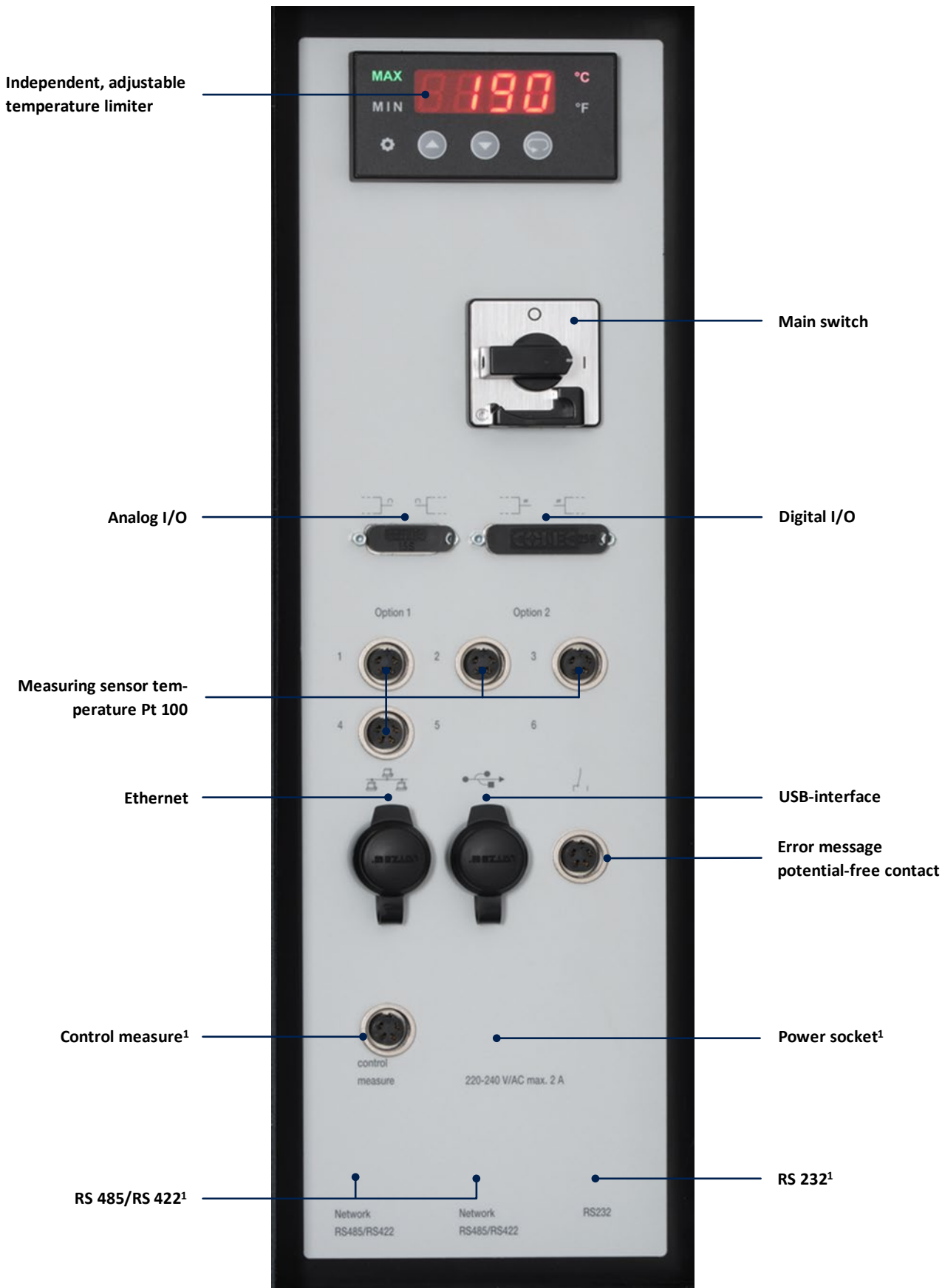


View from front



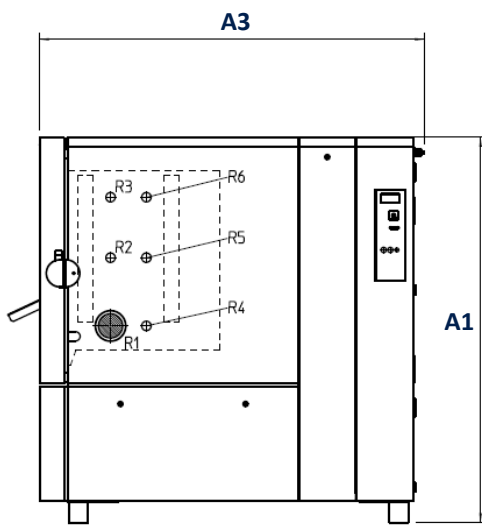
View from front/ lateral

STRUCTURE | Master switch panel

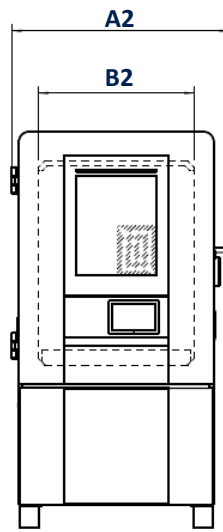


¹ Option/ Additional equipment

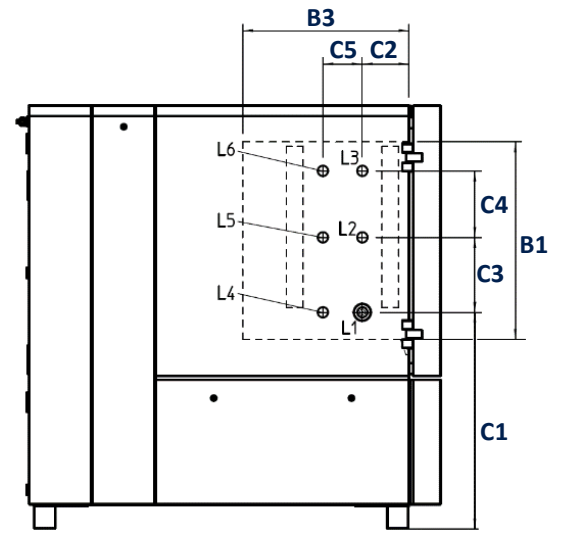
INSTALLATION DRAWINGS | ClimeEvent



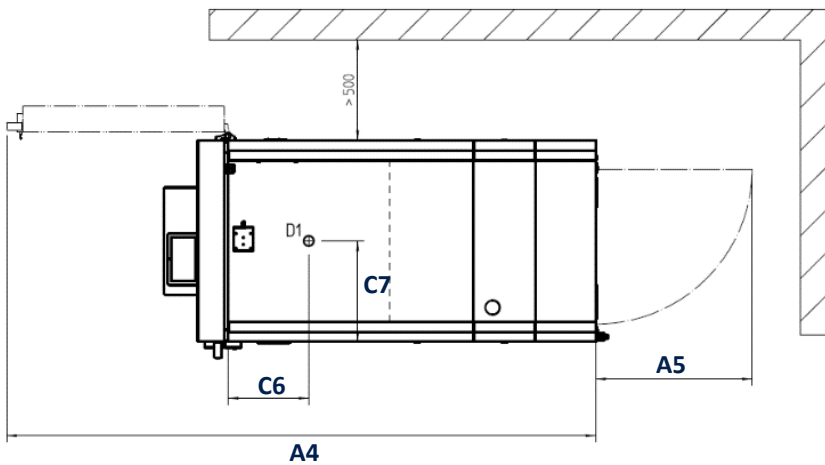
View from right



View from front



View from left



View from above

Standard access ports R & L

- R1** Installation position right \varnothing 125mm (standard)
- L1** Installation position left \varnothing 50mm (standard)
- R2-R12** Additional installation position right
- L2-L12** Additional installation position left

	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	C5	C6	C7
	Test chamber ¹					Test space			Standard access ports R & L ^{2,3}						
Test space	Dimensions in mm														
180 Litres	1830	900	1575	2369	560	750	580	450	1030	225	250	250	-	230	390
340 Litres	1830	900	1890	2677	560	750	580	765	1030	225	250	250	170	380	390
600 Litres	2040	1120	1925	2939	777	950	800	800	1040	225	360	320	190	400	500
1000 Litres	2040	1420	2075	3275	777	950	1100	950	1040	225	360	320	320	480	650
1500 Litres	2040	1420	2600	3780	777	950	1100	1475	1040	225	360	320	425	740	650
2000 Litres	2040	1420	3275	4455	777	950	1100	2150	1040	225	360	320	675	1415	650

¹ Overall external dimensions when erected

² Only the standard access ports R1-R3 and L1-L3 are available for the 180 liter versions

³ Additional feedthroughs are possible for the 1500 and 2000 litre variants.

TECHNICAL DATA | 180-600 Litres Temperature change rate: 3 K/min

		C2/180/40/3	C2/180/70/3	C2/340/40/3	C2/340/70/3	C2/600/40/3	C2/600/70/3
DIMENSIONS, LOAD, WEIGHT							
External dimensions ¹	Height	mm	1830			2040	
	Weight	mm	900			1120	
	Depth	mm	1575	1890		1925	
Test chamber dimensions	Height	mm	750			950	
	Weight	mm	580			800	
	Depth	mm	450	765		800	
Test space capacity	Litres	190	335		600		
Load, maximum	kg	130	140		160		
Load per grid	kg	30			40		
Maximum number of grid shelves	pieces	5			7		
Weight ²	kg	425	460	490	500	620	680
PERFORMANCE DATA FOR TEMPERATURE TESTS							
Maximum temperature	°C	+180					
Minimum temperature ³	°C	-42	-70	-42	-70	-42	-70
Temperature change rate ⁴ , Cooling	K/min	4,0	3,8	4,0	3,8	3,5	3,5
Temperature change rate ⁴ , Heating	K/min	4,0	3,5	3,2	3,0	4,0	4,0
Temperature deviation ⁵ over time	K	±0,1 ... ±0,5					
Temperature homogeneity ⁶ , spatial	K	±0,5 ... ±1,0					
Temperature gradient ⁷	K	≤2,0					
Heat compensation ⁸ max.	W	2300	2000	2300	2000	2500	3000
Factory calibration ⁹	°C	+80 and -25 (devices down to -42°C) +80 and -40 (devices down to -70°C)					
PERFORMANCE DATA FOR CLIMATE TESTING							
Temperature range	°C	+10 ... +95					
Dew point temperature range ¹⁰	°C	-3 ... +94					
Humidity range	°C	10 ... 98					
Humidity deviation ¹¹ , over time	% r. F	±1 ... ±3					
Temperature deviation over time	% r. F	±0,1 ... ±0,3					
Temperature homogeneity, spatial	K/min	±0,5 ... ±1,0					
Heat compensation max.	K	400			500		
Factory calibration	W	+23°C/50% r.F. to +55°C/93% r.F and +90°C/90% r.F.					
CONSUMPTION AND CONNECTION DATA							
Supply voltage ¹²	V	3/N/PE AC 400 V ±10% 50 Hz					
Nominal power	kW	4,4	5,3	4,4	5,3	6,8	9
Nominal current ¹³	A	13	15	13	15	16	20
Fuse protection provided by customer	A gG	16			32		
Sound pressure level ¹⁴	dB(A)	56	57	56	57	60	60
Heat dissipation to the installation room max. ¹⁵	kW	3,7	4,7	3,7	4,7	7,1	9

Subject to technical changes.

All stated performance data refer to +25 °C ambient temperature, 400 V/50 Hz nominal voltage, without additional equipment.

TECHNICAL DATA | 1000-2000 Litres Temperature change rate: 3 K/min

		C2/1000/40/3	C2/1000/70/3	C2/1500/40/3	C2/1500/70/3
DIMENSIONS, LOAD, WEIGHT					
External dimensions ¹	Height	mm	2040		
	Weight	mm	1420		
	Depth	mm	2075	2600	
Test chamber dimensions	Height	mm	950		
	Weight	mm	1100		
	Depth	mm	950	1475	
Test space capacity	Litres	990	1540		
Load, maximum	kg	250			
Load per grid	kg	50			
Maximum number of grid shelves	pieces	7			
Weight ²	kg	840	1010	1020	1070
PERFORMANCE DATA FOR TEMPERATURE TESTS					
Maximum temperature	°C	+180			
Minimum temperature ³	°C	-42	-70	-42	-70
Temperature change rate ⁴ , Cooling	K/min	3,0	2,8	2,5	2,7
Temperature change rate ⁴ , Heating	K/min	4,0	4,0	3,5	3,5
Temperature deviation ⁵ over time	K	±0,1 ... ±0,5			
Temperature homogeneity ⁶ , spatial	K	±0,5 ... ±1,0			
Temperature gradient ⁷	K	≤2,0			
Heat compensation ⁸ , max.	W	4500	5000	4200	5000
Factory calibration ⁹	°C	+80 and -25 (devices down to -42°C) +80 and -40 (devices down to -70°C)			
PERFORMANCE DATA FOR CLIMATE TESTING					
Temperature range	°C	+10 ... +95			
Dew point temperature range ¹⁰	°C	-3 ... +94			
Humidity range	°C	10 ... 98			
Humidity deviation ¹¹ over time	% r. F	±1 ... ±3			
Temperature deviation over time	% r. F	±0,1 ... ±0,3			
Temperature homogeneity, spatial	K/min	±0,5 ... ±1,0			
Heat compensation, max.	K	500			
Factory calibration	W	+23°C/50% r.F. to +55°C/93% r.F and +90°C/90% r.F.			
CONSUMPTION AND CONNECTION DATA					
Supply voltage ¹²	V	3/N/PE AC 400 V ±10% 50 Hz			
Nominal power	kW	9,9	12,2	9,9	12,2
Nominal current ¹³	A	18	22	18	22
Fuse protection provided by customer	A gG	32			
Sound pressure level ¹⁴	dB(A)	62	60	62	60
Heat dissipation to the installation room max. ¹⁵	kW	8,9	14,1	8,9	14,1

Subject to technical changes.

All stated performance data refer to +25 °C ambient temperature, 400 V/50 Hz nominal voltage, without additional equipment.

TECHNICAL DATA | 180-600 Litres Temperature change rate: 5 K/min

		C2/180/40/5	C2/180/70/5	C2/340/40/5	C2/340/70/5	C2/600/40/5	C2/600/70/5
DIMENSIONS, LOAD, WEIGHT							
External dimensions ¹	Height	mm	1830			2040	
	Weight	mm	900			1120	
	Depth	mm	1575	1890		1925	
Test chamber dimensions	Height	mm	750			950	
	Weight	mm	580			800	
	Depth	mm	450	765		800	
Test space capacity	Litres	195	332		608		
Load, maximum	kg	130	140		160		
Load per grid	kg	30			40		
Maximum number of grid shelves	pieces	5			7		
Weight ²	kg	425	460	490	500	620	680
PERFORMANCE DATA FOR TEMPERATURE TESTS							
Maximum temperature	°C	+180					
Minimum temperature ³	°C	-42	-70	-42	-70	-42	-70
Temperature change rate ⁴ , Cooling	K/min	8	7,5	6,8	6,7	6,5	6
Temperature change rate ⁴ , Heating	K/min	8	8	7	7	6	6
Temperature deviation ⁵ over time	K	±0,1 ... ±0,5					
Temperature homogeneity ⁶ , spatial	K	±0,5 ... ±1,0					
Temperature gradient ⁷	K	≤2,0					
Heat compensation ⁸ max.	W	4000	3000	4000	3000	5000	4000
Factory calibration ⁹	°C	+80 and -25 (devices down to -42°C) +80 and -40 (devices down to -70°C)					
PERFORMANCE DATA FOR CLIMATE TESTING							
Temperature range	°C	+10 ... +95					
Dew point temperature range ¹⁰	°C	-3 ... +94					
Humidity range	°C	10 ... 98					
Humidity deviation ¹¹ over time	% r. F	±1 ... ±3					
Temperature deviation over time	% r. F	±0,1 ... ±0,3					
Temperature homogeneity, spatial	K/min	±0,5 ... ±1,0					
Heat compensation max.	K	400				500	
Factory calibration	W	+23°C/50% r.F. to +55°C/93% r.F and +90°C/90% r.F.					
CONSUMPTION AND CONNECTION DATA							
Supply voltage ¹²	V	3/N/PE AC 400 V ±10% 50 Hz					
Nominal power	kW	7,7	8,6	7,7	8,6	9,9	13,0
Nominal current ¹³	A	18	21	18,0	21,0	18,0	23,0
Fuse protection provided by customer	A gG	32					
Sound pressure level ¹⁴	dB(A)	56	57	56	57	59	60
Heat dissipation to the installation room max.	kW	1,2	1,5	1,2	1,5	1,5	2

Subject to technical changes.

All stated performance data refer to +25 °C ambient temperature, 400 V/50 Hz nominal voltage, without additional equipment.

TECHNICAL DATA | 1000-2000 Litres Temperature change rate: 5 K/min

		C2/1000/40/5	C2/1000/70/5	C2/1500/40/5	C2/1500/70/5	C2/2000/40/5	C2/2000/70/5
DIMENSIONS, LOAD, WEIGHT							
External dimensions ¹	Height	mm	2040				
	Weight	mm	1420				
	Depth	mm	2075	2600		3275	
Test chamber dimensions	Height	mm	950				
	Weight	mm	1100				
	Depth	mm	950	1475		2150	
Test space capacity	Litres	990	1540		2250		
Load, maximum	kg	250					
Load per grid	kg	50					
Maximum number of grid shelves	pieces	7					
Weight ²	kg	840	1010	1020	1070	1260	1500
PERFORMANCE DATA FOR TEMPERATURE TESTS							
Maximum temperature	°C	+180					
Minimum temperature ³	°C	-42	-70	-42	-70	-42	-70
Temperature change rate ⁴ , Cooling	K/min	6,7	6,0	6,3	5,0	4,0	4,0
Temperature change rate ⁴ , Heating	K/min	8,0	8,0	7,0	7,0	6,0	6,0
Temperature deviation ⁵ over time	K	±0,1 ... ±0,5					
Temperature homogeneity ⁶ , spatial	K	±0,5 ... ±1,0					
Temperature gradient ⁷	K	≤2,0					
Heat compensation ⁸ max.	W	5000			3500	5000	
Factory calibration ⁹	°C	+80 and -25 (devices down to -42°C) +80 and -40 (devices down to -70°C)					
PERFORMANCE DATA FOR CLIMATE TESTING							
Temperature range	°C	+10 ... +95					
Dew point temperature range ¹⁰	°C	-3 ... +94					
Humidity range	°C	10 ... 98					
Humidity deviation ¹¹ over time	% r. F	±1 ... ±3					
Temperature deviation over time	% r. F	±0,1 ... ±0,3					
Temperature homogeneity, spatial	K/min	±0,5 ... ±1,0					
Heat compensation max.	K	500					
Factory calibration	W	+23°C/50% r.F. to +55°C/93% r.F and +90°C/90% r.F.					
CONSUMPTION AND CONNECTION DATA							
Supply voltage ¹²	V	3/N/PE AC 400 V ±10% 50 Hz					
Nominal power	kW	18,0	23,0	18,0	23,0	18,0	23,0
Nominal current ¹³	A	29,0	37,0	29,0	37,0	29,0	37,0
Fuse protection provided by customer	A gG	63					
Sound pressure level ¹⁴	dB(A)	61,0	62,0	61,0	62,0	62,0	62,0
Heat dissipation to the installation room max. ¹⁵	kW	25,0	31,0	25	31,0	25,0	31,0

Subject to technical changes.

All stated performance data refer to +25 °C ambient temperature, 400 V/50 Hz nominal voltage, without additional equipment.

TECHNICAL DATA | Explanation of Notes

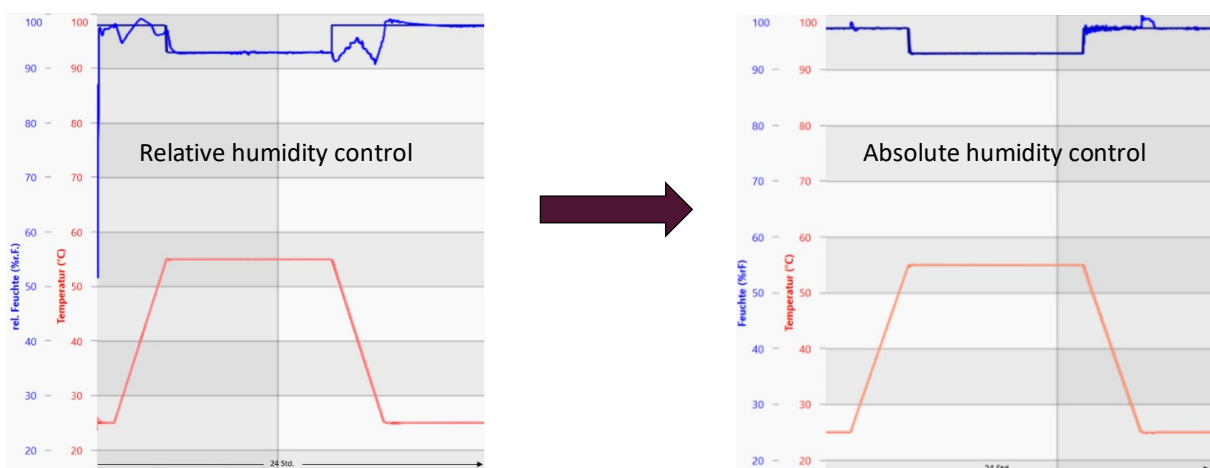
- ¹ Overall dimensions when installed. For size 300 l excluding machine unit. Deviating delivery dimensions; components for delivery can be dismantled (service performance).
- ² Basic device, excluding additional equipment
- ³ Temperatures $>+5\text{ °C}$ can be run in continuous operation, temperatures $<+5\text{ °C}$ can be run intermittently or with additional equipment in the form of a compressed air dryer.
- ⁴ According to IEC 60068-3-5
- ⁵ In the center of the test chamber in a steady condition, without test specimen, without irradiation and without additional equipment, depending on the temperature.
- ⁶ Related to the adjusted setpoint in the temperature range from minimum temperature to $+150\text{ °C}$ or at humidities $>20\%$ r.F.
- ⁷ Up to $+150\text{ °C}$ according to IEC 60068-3-5:2001 or JF 1101-2003.
- ⁸ At $+20\text{ °C}$ for temperature tests / In the range from $+25\text{ °C}$ to $+95\text{ °C}$ at a relative humidity of up to 90% RH for climatic tests.
- ⁹ The factory calibration of the temperature and humidity values is carried out with DAkkS-calibrated measuring equipment in the center of the test space and documented using a factory calibration certificate. Optionally, a DAkkS calibration as well as a spatial factory or DAkkS calibration can be performed.
- ¹⁰ Intermittent operation ($+4\text{ °C}$ to -3 °C).
- ¹¹ In the center of the utility room under steady-state conditions, depending on the climate value.
- ¹² Other voltages and frequencies optional
- ¹³ Neutral conductor burdened
- ¹⁴ Measured at 1.6 m height and 1 m away from front; free-field measurement in accordance with DIN EN ISO 11201.

ABSOLUTE HUMIDITY CONTROL

The aim is to adapt the humidity control for the climate test chambers from **weisstechnik** in such a way that a qualitative improvement in humidity accuracy and transient response is achieved. Theoretically, both temperature and relative humidity can be used as control variables.

The idea: Control via the absolute water content in the test chamber.

The figure below shows a direct comparison of the two types of control. With absolute humidity control, the control accuracy is significantly increased and the transient amplitudes are almost completely eliminated. In the future, this innovation will ensure even more accurate and reproducible test results with the climate test chambers from **weisstechnik**.








Comparison between relative humidity control and absolute humidity control

Further technical information on absolute humidity control can be found here:



BASIC EQUIPMENT

EXTERIOR			
	External housing	Material	Galvanized steel sheet
		Paint	Light gray (RAL 7035) & anthracite gray (RAL 7016); solvent-free; powder-coated.
	Door		Single-hand operation, lockable, door hinge left, with LED status bar
	Adjustable feet		Adjustable, vibration absorbing
	Climate system	Humidification water	Water reservoir (approx. 25 l), pre-installed device for automatic water replenishment, warning message in the event of a low water level, display of water consumption
	Purge device		The high quality of the humidification water is guaranteed by periodic water exchange
INTERIOR			
	Test space¹	Material	Walls: stainless steel 1.4301, surface III D glossy Floor: stainless steel 1.4404, surface II B matt
	Insertion system		Stainless steel rail system for easy change of grid positions incl. M5 female thread for mounting of test setups
	Access ports		1 piece right, stainless steel, inner dimension ² : 125 mm Ø 1 piece left, stainless steel, inner dimension ² : 50 mm Ø
	Silicone plug	closed	1 piece per stainless steel access port (Ø 125 mm and 50 mm)
	Foam silicone plug	slotted	1 piece per stainless steel access port (Ø 125 mm and 50 mm)
	Measuring sensor	Temperature Climate	Platinum temperature sensor Pt 100S Psychrometric humidity measurement with force-wetted self-cleaning wet bulb sensor
	GreenMode³	Consumption	Automated energy saving function for constant operation, without air conditioning mode due to shutdown of the refrigeration machine. The energy saving can be up to 30% depending on the test cycle, type and quantity of the test specimen.
REGULATION & CONTROL			
	SIMPAC[®]		Digital measuring and control system with I/O unit and WEBSeason[®] control software, can be controlled remotely through integration into a network. Operating/programming and monitoring unit with 25.4 cm (10") web panel integrated in the door, can be folded forward up to 60°.
COMMUNICATION			
	Interfaces		Ethernet interface 10/100/1000 megabit USB interface ³ for direct documentation of measurement data on USB stick
	Switch outputs		4 potential-free outputs for activation of the customer's own equipment Max. load 24 V-DC; 0.5 A.
	Switch inputs		4 digital inputs for responses from the customer's own equipment. Max. load 24 V-DC; approx. 30 mA
SAFETY			
	Test specimen safety		Independent, adjustable temperature limiter t_{min}/t_{max} , sensor installed in test space, individually adjustable fixed value Software temperature limiter t_{min}/t_{max} , individually adjustable fixed value
	Test chamber fuse		Safety temperature limiter STL for protection against excessive temperature in the test chamber
	Test specimen shutdown		Potential-free contact specifically for heat-emitting test specimen, connected to socket, max. load 24 V, 0.5 A

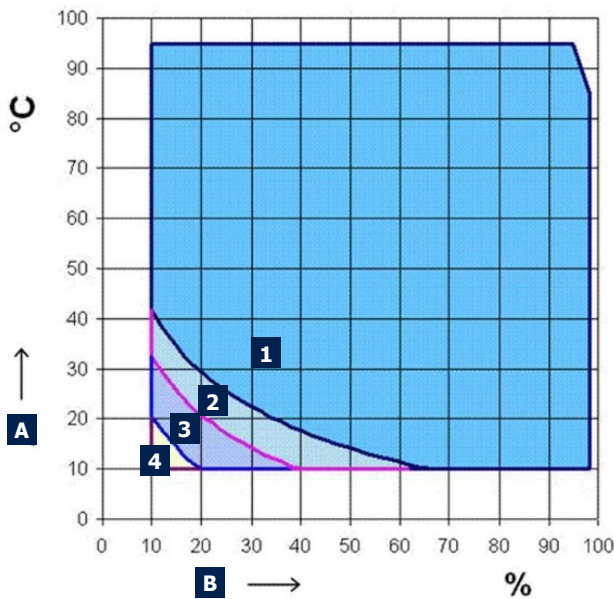
¹ Due to the use of annealed silicone parts, the test space is low in emissions. If the test space is to be emission-free, this will require technical clarification which can be offered on request.

² Production-related tolerances of up to ± 3 mm are possible.

³ Only possible for devices with a temperature range of -70°C to 180°C.

Subject to technical changes!

HUMIDITY CHART

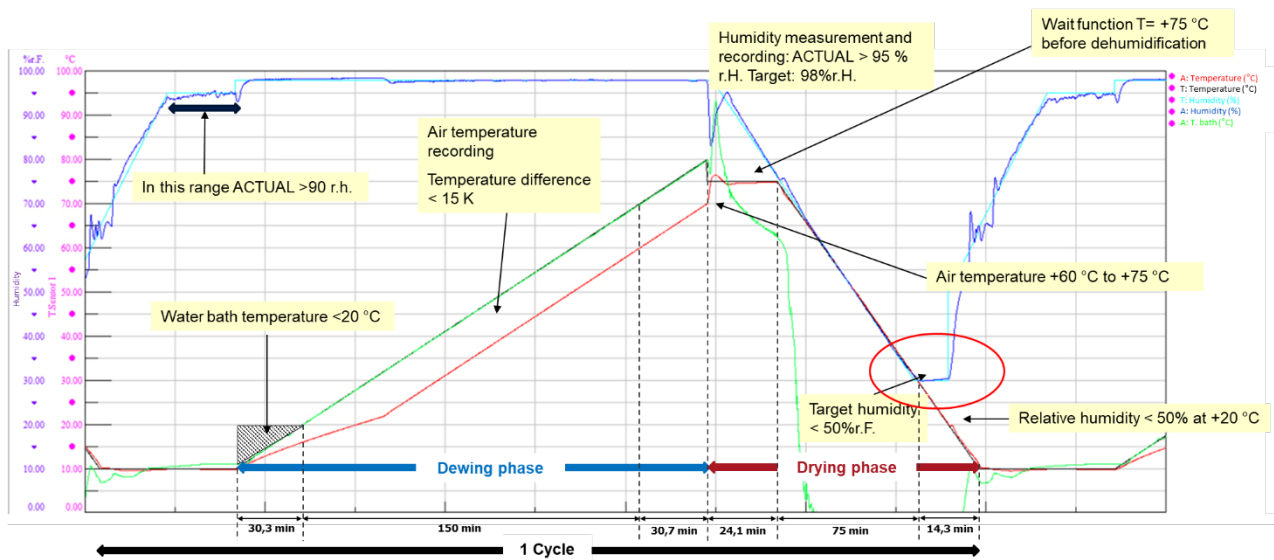


- A** Test space temperature
- B** Relative humidity
- 1** Standard humidity range for continuous operation
- 2** Standard humidity range with intermittent operation, dew point 3 °C to +4 °C
- 3** Extended humidity range with compressed air dryer (optional), dew point regulated down to -12 °C
- 4** Extended humidity range with compressed air dryer (optional) and capacitive humidity measurement system (optional), dew point regulated down to -20 °C

DEWING TEST ACCORDING TO GS 95011-4 (K-15 OF LV 124)

The dewing test according to standard **GS 95011-4** (also known as K-15 of LV 124) describes the sequence for a dewing procedure used to test electronic assemblies in the automotive sector.

The climate test chambers of **weisstechnik** are prepared as standard for carrying out the dewing test. With the ClimeEvent, even the area marked in red, that is critical in the drying phase, is not a problem, since the appropriate dehumidification capacity is installed, for humidity values <50% RH.



Further technical information on the dewing test can be found here:

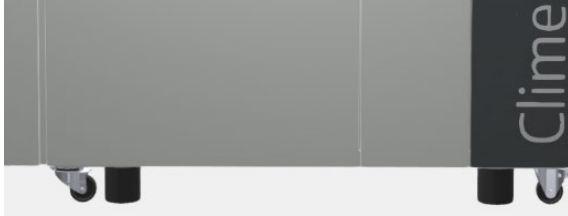


OPTIONS

INSTALLATION

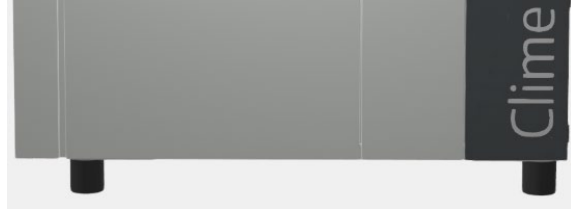
Mobile version

Mobile base with swivel castors and lockable fixed castors.



Vibration damping feet

Reducing the transmission of vibrations to the floor.



STORAGE PACKAGE

Storage package, small

Two hooks and a magnetic holding rail to store and stow the grid shelves and small test equipment.



Storage package, large

Two hooks and a magnetic holding rail. Additional alternative side panel for the outer housing including a document tray, a tray table and a support rail.



WEBPANEL

Web panel under the door latch

The operating/programming and monitoring unit with 25.4cm (10") web panel is mounted under the door latch.



Web panel in any position on the side

The operating/programming and monitoring unit with 25.4cm (10") web panel can be mounted anywhere on the side panel.

Note: The exact positioning must be specified when ordering.

ACCESS PORTS

Stainless steel access port with silicone plug

Standard (see installation drawing):

- Ø 125 mm at position R1
- Ø 50 mm at position L1

Additional access ports:

- Ø 50 mm
- Ø 80 mm
- Ø 125 mm



Notched access port welded

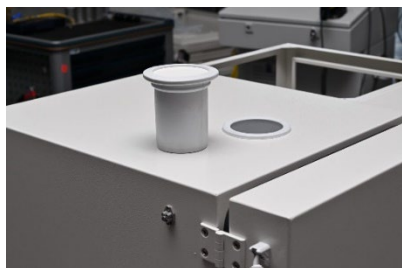
There is a notched port of about 50 mm x 50 mm in the housing panel on the right for inserting cables.



Access port in the ceiling

Possible access ports:

- Ø 50 mm
- Ø 80 mm
- Ø 125 mm



Similar to image

Flat notched port

To feed through individual cables, an insertion piece is inserted into the housing cover, which can be used to feed several cables into the test chamber.



DOOR

Window in the door

Multi-insulated, heated viewing window in the door.

Format: 520 mm x 418 mm.



Door stop right

Version of the device door with door hinge on the right side. The notched port option is not possible. The flat notch port option is possible at the top left.



Test specimen privacy screen

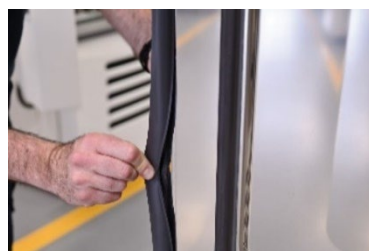
The window pane of the test chamber can be made opaque through a digital switching channel via the light switch.

Note: Only in conjunction with "window in Door" option.



Door seals replaceable for tests with hydraulic oil

If a medium-resistant version for hydraulic oils is required.



DEMINERALIZATION

Demineralization unit

To replenish water for the humidification device. Pressure resistant up to 6 bar overpressure.

Replacement cartridge for activated carbon filter

Replacement cartridge for activated carbon filter cartridge for the reduction of chlorine content in demineralized water.

Aqua Top pack of 6

Prevents algae growth

Activated carbon filter for demineralized water

Filter housing with activated carbon insert for reduction of chlorine content in fully demineralized water.



TEST SPECIMEN SUPPORT

Drawer on telescopic rails (stainless steel)

Drawer on telescopic rails, can be extended by about 80%. A total of 5 drawers are possible.

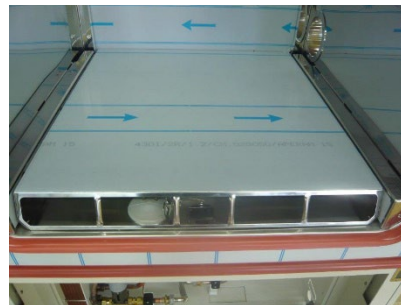
Maximum load per drawer: 30 kg



Heavy duty rails

The mass of the test specimen is transferred from the test chamber to the instrument frame via special heavy-duty rails.

Permissible floor load up to 500 kg as surface load



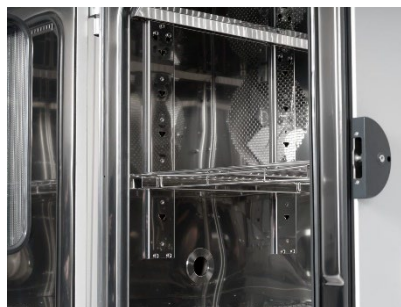
Heavy duty grid shelf

A stainless steel grid placed on the heavy duty rails. *Permissible test space load up to 500 kg as surface load*



Additional grid shelf

Additional insert grid including support rail for placing test specimens. A grid shelf is included as standard.



Reinforced shelf

Reinforced shelf, loadable up to 200 kg surface load. The load on the test space as a whole is limited to 280 kg.



DEHUMIDIFICATION

Compressed air dryer regulated for dew points down to -12 °C and -20 °C

For climatic test cabinets, regulated operation down to a dew point of -12 °C is possible. Dehumidification device for climatic test chambers incl. capacitive humidity measuring system for condensation points down to -20 °C with regulated operation.



GN² / Compressed air connection

For operation with a customer-supplied compressed air dryer or for feeding an inert gas into the test space.



Air conditioning extension with on-site compressed air

Dehumidification device to prevent condensation on the test material in regulated operation for dew points down to -12 °C. In combination with a capacitive humidity measurement system, regulated operation down to -20 °C is possible.

CALIBRATION / STANDARDS

Additional factory calibration

Calibration according to specific temperature and climate values.

VW 2005 / VW PV 1200 / BMW PR 308.2

Compressed air connection is set up, compressed air dryer with adsorption dryer included. The humidity measurement system is capacitive. Test programs are stored on the control unit. Functional test in accordance with the factory standard.

Note: BMW PR 303.5 is fulfilled by the standard unit without additional equipment.

Automotive standards

- VW 80000 LV 124 K15
- BMW-GS 95011-4 (2010-06)
- Daimler-MBN LV 124-2 K15

Scope of Services:

- The unit's climate system is extended for the above test specification
- Test programs stored in the control system.

Standards on request

Various versions are available to meet specific standards.

DAkkS calibration

Calibration according to DAkkS requirements for specific temperature and climate values.

Pharma package

- Qualification documentation (IQ/OQ)
- Door contact switch for registration of door openings
- Tolerance band monitoring for stability tests according to ICH-Q1A
- Alarm system according to GAMP

AUDI regulations

Marking in accordance with the operating equipment regulations, proof of tightness of the refrigeration circuit, test certificate in accordance with BGV A3, control cabinet with E1 lock, a heating of the test space for 72 hours at 180 C, a program CD with control data backup, 2x documentation on CD and single documentation in paper form.

Modification for Bosch

The adaptation includes the use of the main switch as EMERGENCY OFF, the installation of various information signs, installation of a protective cover, as well as 1 program CD.



Similar to image

TEST SPACE INSTALLATIONS

Stainless steel test space reservoir 1.4404 with stainless steel aluminum evaporator

For increased corrosion protection, the complete test space reservoir is made of high-alloy stainless steel 1.4404 matt.

Note:

This design results in a power loss of approx. 10 % - 15 %.

Sprinkler system

Spray nozzles are installed in the test space through which mineralized water is sprayed into the test space. The equipment can be operated from +5 to +80 °C (without defined humidity) in temperature mode.



IR irradiation equipment

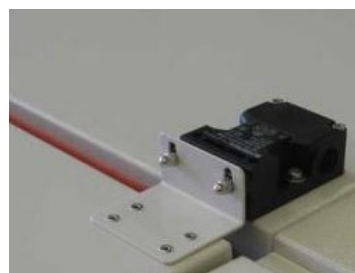
For drying and heating the test specimen by infrared irradiation. Can only be used in a temperature range of +10 to +50 °C and a relative humidity of greater than/equal to 75 %.

Test space low in silicone

For specific tests to reduce the amount of silicone in the test space. Furthermore, the inner door seal is replaced by a Viton seal.

Fan shutdown via digital switching channel

If the digital switching channel is activated, the fan and the temperature control are switched off immediately.



Irradiation equipment for drying tests

For irradiation testing especially in the UV range. Can only be used in a temperature range of +10 to +50 °C and a relative humidity of greater than/equal to 75 %.

Fan switch-off via door contact switch

If the door is opened, the fan and the temperature control are switched off immediately.

RECIRCULATING AIR

Recirculating air volume adjustable

To reduce the amount of recirculated air, the speed of the recirculation fan can be adjusted from 30% to 100%.



SENSOR

Temperature measurement on the test specimen

Movable temperature sensor Pt 100 with flexible cable for temperature measurement at any point in the test space or on the test specimen.



Humidity control with capacitive sensor

A capacitive moisture measuring system is installed instead of or in addition to the psychrometric measuring device included with the basic equipment.



Temperature measurement on the test specimen can be switched over to a control sensor

Switching is performed via a digital switching channel. The measured value can be retrieved via the interfaces or displayed on the control panel.



CONTROL SYSTEM

Additional 4 Digital I/O

Four additional digital inputs and outputs each for controlling additional functions. Four are already available as standard.



Analog value measurement card I/O

For processing and output of analog measuring signals, 5 outputs from 0 to 10 V and 4 inputs for Pt 100 are available.



Temperature range extension up to +200 °C

The test chamber can be extended for a temperature range up to +200°C.

Flexible operation when the program is paused

Function for flexible operation of the test chamber when interrupting the program.

- Digital switching channels can be switched off or on.
- Setpoints can be changed.

Energy meter

Professional energy analysis with a calibrated energy meter. Also in connection with data acquisition via the optional S!MPATI® software. For all units with > 63 A.



SAFETY EQUIPMENT

Safety package for Hazard Level 3 - 5

Safety of the test system during tests of lithium-ion energy storage devices by matching EUCAR hazard levels 3 - 5.



ESD-Protection

Potential differences and associated electrostatic discharges onto the test specimen are avoided by means of a common ground. ESD protection can be configured by the customer through various options.



Test chamber release via digital input

The test can only be started if the digital input has a voltage signal or if the adapter plug is plugged into the D-Sub socket Digital I/O.

Door contact switch to indicate that the door is open on the control panel / SIMPATI®

The components of the door contact switch are mounted on the test chamber and on the test chamber door.

When the test chamber door is opened, the message "Door open" appears on the control panel.

2-color signal lamp

The two-color signal light on the test chamber indicates the operating status.

Function indicator:

- green = operating
- red = fault

Electric door tumbler, normally open

The components of the electric door locking device are mounted on the test chamber and the test chamber door. When the test chamber door is opened, the message "Door open" appears on the control panel. The test space door is unlocked at the end of a test, when a test is stopped, in the event of a power failure and when the main switch is turned off.



Electric door tumbler, normally closed

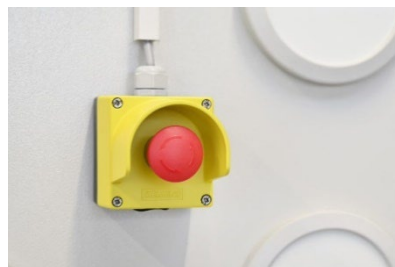
The components of the electric door locking device are mounted on the test chamber and the test chamber door. The test space door cannot be opened during a test, during a power failure and when the main switch is turned off.

Fault signal on potential-free switching contact

If a fault occurs in the test chamber, a potential-free switching contact is actuated.

Emergency stop switch on the test space housing

The emergency stop switch is located on the outside of the test chamber. When pressed, the test is stopped.



COOLING

Water cooling

A water-cooled unit is installed instead of the air-cooled refrigeration unit. A cooling water regulator ensures the lowest water consumption.

Special measures are required for operation with well or pond water, please inquire



Pump system in the absence of a floor drain

The integrated pumping system pumps the water in the system (condensate, humidification water, cleaning water) against the gradient into a drain provided by the customer



Hose set for cooling water network

Two flexible hoses are supplied for connection to a cooling water network.



Insulation of the water inlet pipe

Pipes carrying cooling water in the test chamber are also insulated in order to maintain the water supply temperature.



Deep freeze stage with refrigerant R23

Refrigerant R23 is used instead of refrigerant R469A for the deep-freeze stage down to -70 °C.

Electronic cooling water controller

By using an electronically controlled valve, the adjustment to different flow temperatures and pressure differences can be made within certain limits.

Air cooled condenser

Cable length about 1.5 m, extendable up to a maximum of 5 m. Waste heat routed to external condenser. The condenser is on the same level behind the test chamber, horizontal block position with vertical air flow.



SPECIAL VOLTAGE

Special voltage on request

Various special voltages are available



WEBSeason & S!MPATI | Simple control and monitoring

Whether you're using the S!MPATI PC software or the WEBseason system-integrated operating software, you can program, control, and monitor your tests from anywhere, at any time – even using your tablet or smartphone. Both are unified software and hardware solutions for all weisstechnik brand systems.

S!MPATI is the PC software for controlling, recording and analysing up to 99 weisstechnik systems within your network environment. The functionality can be expanded with add-ons such as S!MPATI TimeLabs® for camera recording.

WEBseason is the integrated operating software for the Event series. WEBseason's innovative web-based interface allows you to programme, control and monitor your system's tests anytime, anywhere - even from a tablet or smartphone.



Interfaces from WEBSeason & S!MPATI



SIMPATI | The benchmark in communication

SIMPATI® features an optimised menu navigation and practical evaluation options. This was developed to program, monitor and network climatic test chambers and sets new standards in operating efficiency and performance.

Visualisation with greater clarity

SIMPATI controls, archives and evaluates tests. The software offers a range of new features to make work even faster, easier and clearer. For example, through the Zoom and measurement functions of the new evaluation, as well as the option to integrate or export images from the test cabinet using SIMPATI TimeLabs® (optional). The menu navigation is optimised for the needs of the laboratory.

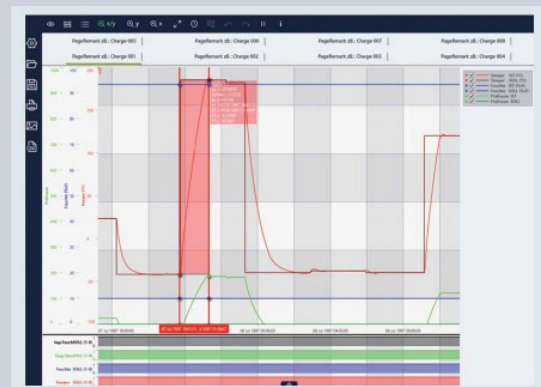
Warnings and information are easily accessible and can also be delivered by mail. If required, the laboratory floor plan can be uploaded to provide a realistic view of the test facility layout. The system overview makes it easy to control, programme and evaluate all test chambers centrally from one computer.

SIMPATI® is suitable for all current **weisstechnik** devices and downward compatible to almost all models going back to 1987. Third-party systems can also be integrated and the OPC-UA communication standard is supported, for example for Industry 4.0 applications.

The SIMPATI TimeLabs software module is used to retrieve and record images from a camera. SIMPATI measurement data and images are recorded simultaneously and displayed in correlation with the evaluation software included in SIMPATI. The recording rate can be adjusted. Up to 1500 images are stored in a Windows directory.



A clear overview of your systems



Evaluation is easier than ever before



Our highlights:

- Up to 99 systems can be networked together
- to ensure optimum use of your test equipment
- Almost identical operation of different test facilities
- Email alerts in the event of faults
- provides various communication interfaces to other systems
- OPC-UA support for Industry 4.0 applications
- Free of charge for 6 months



Easily configure alerts by mail



Find out more:

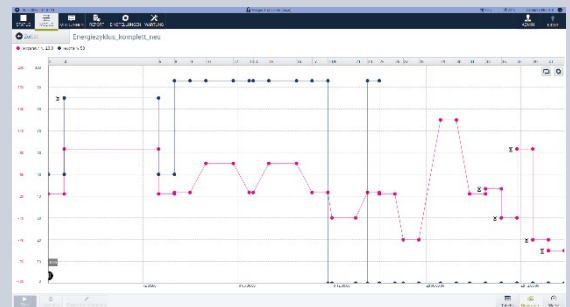
WEBSeason | The device controller by and for end users

WEBSeason - the end user designed controller that uses the latest web technology to exceed the requirements of today's industry standards. The appearance is comparable to that of a mobile device - with swiping, 2-finger zoom and quick response, making it easier to use.

Up to six users can simultaneously connect to the control unit via any web-based device (e.g. smartphones, tablets or laptops), in their own language and with their chosen units of measurement. Multiple users can simultaneously create a test programme, view tests in progress, change setpoints and more. Each user also has remote access to information such as remaining test time, number of cycles, current steps and actual values, and warning and alarm messages.



An overview can be found on the **Webseason** main page



Real-time profiling - always up to date.

Evaluations | Inquire today - start testing next week

- Program memory for a maximum of 100 programs
- Program cycles/loops - maximum 9999/ (250 nested)
- Diagnostic system - for operating times and malfunctions

Access | No matter when, no matter where, no matter how! Access at any time via your **WebSeason**

- **WebSeason** provides a real-time interface
- Connect from any web-based device
- Access from anywhere in the world

Security | It's not just your tests that are secure with **WebSeason**.

- 3-level password protection
- Multi-User
- Diagnostic system - for operating times and malfunctions

THE PRODUCT CONFIGURATOR | Your digital advisor

Configure your desired model to fit your application.



Simply test it:

Would you like to customize your new chamber? This can be done quickly and easily with our product configurator. The online tool guides you through the configuration in just a few steps. Select and combine the options to suit your requirements. Please contact us for more information without obligation or send us your configuration for a quotation.



DEVICES AVAILABLE AT SHORT NOTICE | Request today - test next week

Extensive pool of stock and rental equipment



Click here for the devices:

These include temperature and climatic test chambers as well as stability test chambers, corrosion test chambers and thermal shock test chambers. Take a look around - the right device for you is just a few clicks away.



SERVICE | Sustainable solutions for long-term safe plant operation

Our approach is to think and act as partners.



More information:

We set high standards. Thanks to our service departments, we offer sustainable solutions for long-term reliable plant operation:

- Expert advice with 24/7 helpline
- Maintenance and spare parts management
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We work in partnership to support companies in research, development, production and quality assurance. With 22 companies in 15 countries at 40 locations.

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For a safe future.



Environmental Simulation

The first choice for engineers and researchers for innovative, safe environmental simulation facilities. In fast motion, our test systems can simulate all the influences in the world as well as for instance in space. In temperature, climate, corrosion, dust or combined stress tests. With a very high degree of reproducibility and precision.



Air Solutions

As the leading provider of clean rooms, climate technology and air dehumidification, we consistently ensure optimal climatic conditions for people and machines. For industrial production processes, in hospitals, mobile operation tents or in the field of information and telecommunications technology. From project planning to implementation.



Heat Technology

Experienced engineers and designers develop, plan and produce high-quality, reliable heat technology systems for a broad range of applications from heating and drying cabinets to microwave systems and industrial furnaces.



Pharmaceutical Technology

With decades of experience and know-how, we guarantee the most sophisticated clean air and containment solutions. Our comprehensive and innovative range of products includes barrier systems, laminar flow systems, safety workbenches, isolators, airlocks and stability test systems.

Weiss Technik GmbH

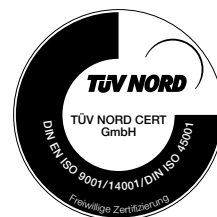
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