

Data sheet

Temperature Shock Test Chamber ShockEvent D



STANDARDS | ShockEvent D

Shock operation
IEC 60068-2-14 Na
MIL-STD-883L-1, Method 1010.9 (A, B)
JASO D 014-4

3-zone shock test standards
EIAJ ED-2531B Na
MIL-STD-202G, Method 107G (A, B, C, F)

By selecting increased / reduced temperatures in the hot / cold chamber, the adjustment times can be shortened.

OUR STANDARD FINDER

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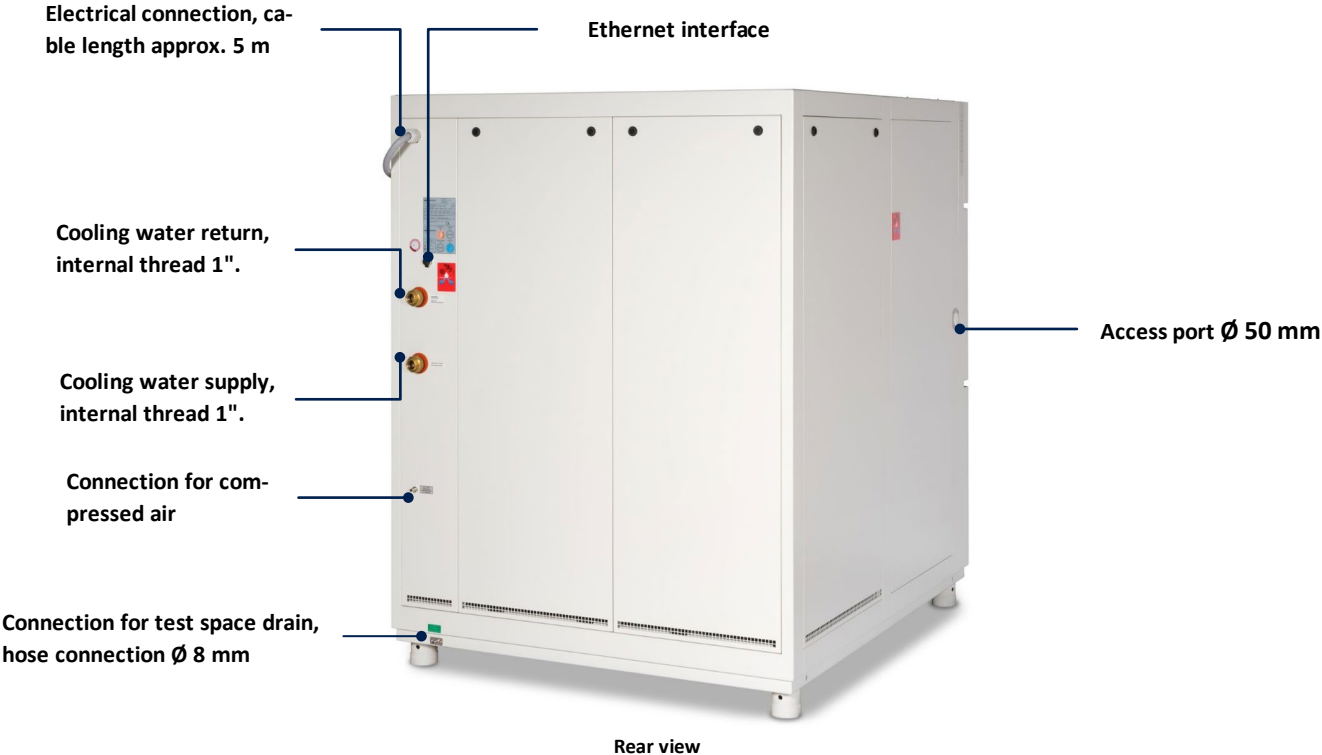
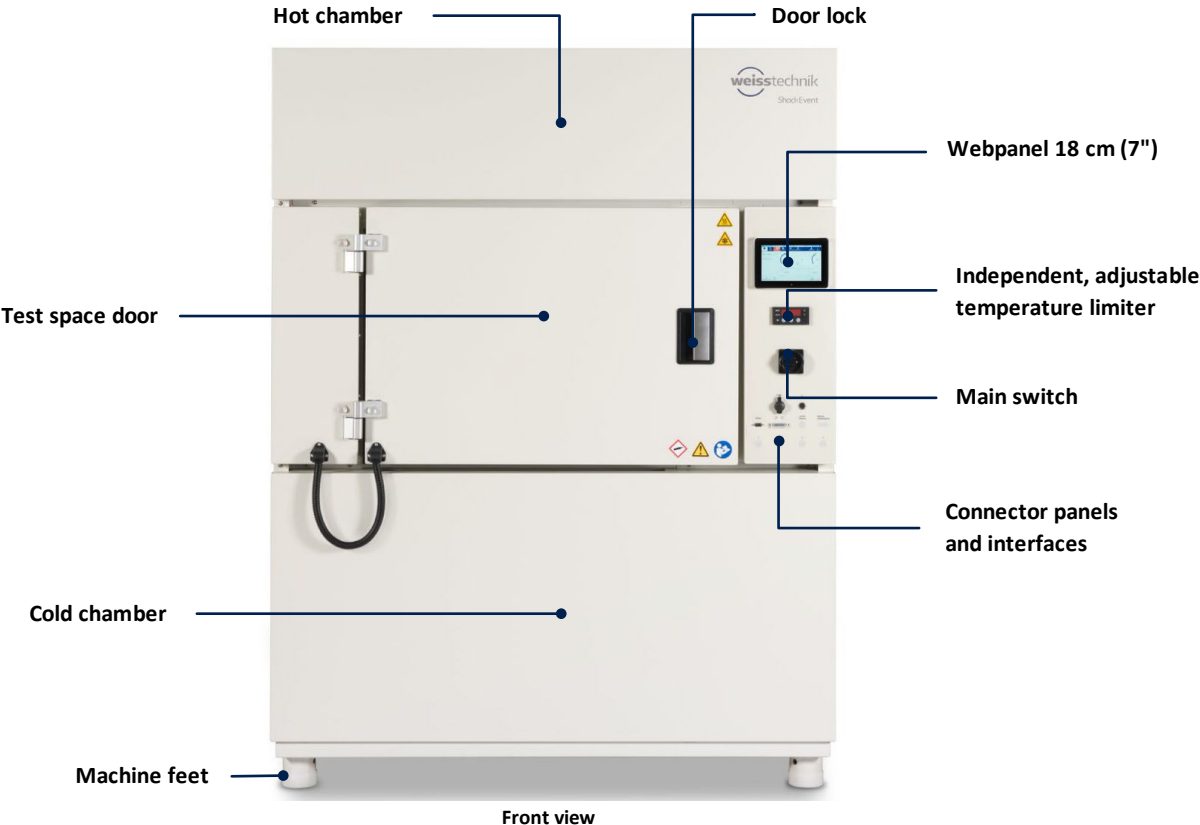
Select chamber type ▼

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!

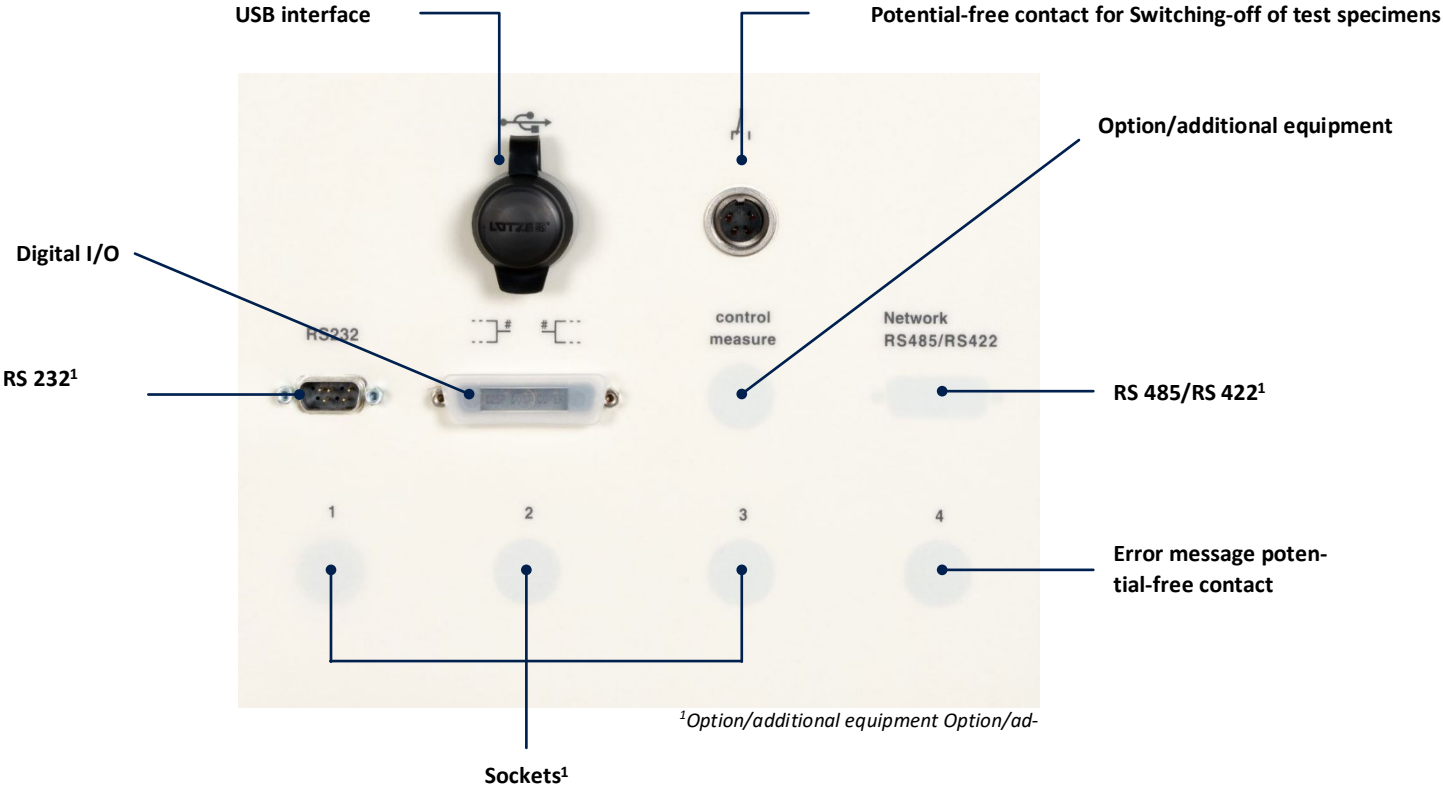
STRUCTURE | ShockEvent D



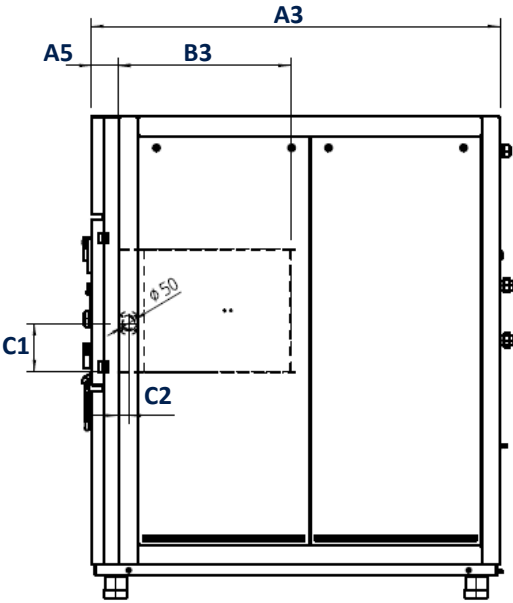
How it works:

The test sequence of a valve shock procedure vividly animated for you in a short video.

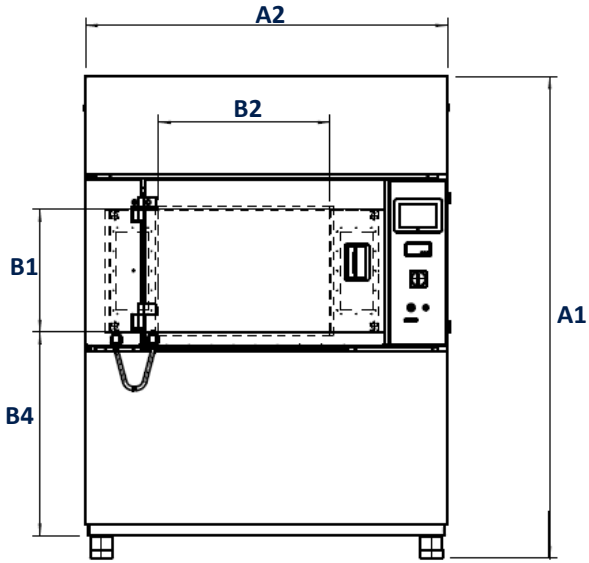
STRUCTURE | Connector panels and interfaces



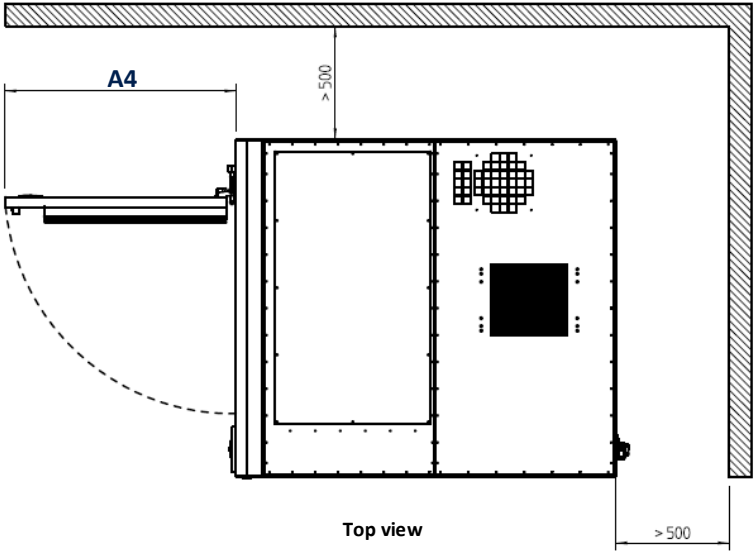
INSTALLATION DRAWINGS | ShockEvent D



Right View



Front view



Top view

	A1	A2	A3	A4	A5	B1	B2	B3	B4	C1	C2
	Test chamber ¹⁾					Test space				Access ports	
	Dimensions in mm										
D/210/a/V1 D/210/e/V1	1970	1485	1765	1015	109	500	700	600	831,5	200	43,5

1) Overall external dimensions when installed.

TECHNICAL DATA | ShockEvent D

		D/210/a/V1	D/210/e/V1
DIMENSIONS, LOAD, WEIGHT			
External dimensions ¹	Height	mm	1970
	Width	mm	1485
	Depth	mm	1765
Test space dimensions	Height	mm	500
	Width	mm	700
	Depth	mm	600
Test space capacity		liters	210
Maximum load per insert basket		kg	7.5
Total load insert baskets		kg	50
Maximum number of insert basket		pieces	7
Rear wall distance ²		mm	500
Wall distance lateral ³		mm	500
Weight ⁴		kg	1350
PERFORMANCE DATA, TEMPERATURE IN THE TEST CHAMBER			
Maximum temperature		°C	+200
Minimum temperature		°C	-65 -70
Temperature change rate ⁸ , Heating		K/min	18
Temperature change rate ⁸ , Cooling		K/min	2
Temperature deviation, in time ⁵		K	±0,3 to ±0,5
Temperature homogeneity ⁶		K	±0,5 K to ±1,5
Temperature calibration value ⁷		K	-40 and +125
PERFORMANCE DATA, HOT CHAMBER			
Maximum temperature		°C	+225
Minimum temperature		°C	+50
PERFORMANCE DATA, COLD CHAMBER			
Maximum temperature		°C	0
Minimum temperature ⁹		°C	-70 -80
Heat compensation max. ¹⁰		kW	4
CONSUMPTION AND CONNECTION DATA			
Nominal voltage		V	3N/PE AC 400 V ±10% 50 Hz
Nominal power		kW	31.9
Nominal current ¹¹		A	57
Fuse protection provided by customer		A gG	63 A
Protection class	Electrical component		IP23
	control unit		IP23

			D/210/a/V1	D/210/e/V1
Sound pressure level ¹²		dB(A)	63	
Heat dissipation to the installation room max.		kW	1	
Heat dissipation to the cooling water max.		kW	33.7	
Cooling water supply rate ¹³		m ³ /h	2.9	
Cooling water connection (supply and return) ¹³			R 1" internal thread	
Refrigerant filling quantity	R449A	kg	3,5	3,5
	R469A	kg	2,5	-
	R23	kg	-	1,5
Refrigerant CO ₂ -equivalent	R449A	t	4,9	4,9
	R469A	t	3,4	-
	R23	t	-	22,2

¹ Overall dimensions when installed. For size 300 l excluding machine unit. Deviating delivery dimensions; components can be dismantled for delivery (service performance).

² for Service

³ For test space door

⁴ Basic device excluding additional equipment.

⁵ In the middle of the usable space in a steady state.

⁶ Relating to the preset target value; in the temperature range +50 °C to +200 °C.

⁷ Factory calibration.

⁸ In accordance with IEC 60068-3-5. The temperature change rate can be increased through selection of increased/decreased temperatures in the hot/cold chamber.

⁹ Intermittently

¹⁰ At -40 °C [kW]

¹¹ Neutral conductor burdened

¹² Measured at 1.6 m height and 1 m away from front; free-field measurement in accordance with DIN EN ISO 11201

¹³ At 18°C water inflow temperature and a temperature difference of 10 K


¹⁴ Supply and return

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


Subject to technical changes.

BASIC EQUIPMENT


EXTERIOR

	Casing	Material	Rolled sheet steel
		Paint	Powder coating color: RAL 9002, gray-white
	Test space door		Single-hand operation, lockable, door hinge left
	Installation		Fixed; on feet
	Refrigeration unit		Low-noise refrigerating unit with gradual power adjustment through S!MPAC®
	Cooling		Water cooling
	Refrigerant		R449a (pre-cool stage) R469A (deep-cool stage) (only for D/210/e/V1)


INTERIOR

	Test space¹	Material	Stainless steel 1.4301
	Access ports		1 unit on the left; Inner dimension ² : Ø 50 mm
	Test object support		Stainless steel insert basket, 7 units possible Stamped in guides for the insertion of additional insert baskets
	Ventilation equipment		Via sealable flaps Air inflow via air circulation walls to the sides
	Air circulation conditioning		Reconditioning in the test chamber (middle) by means of the hot chamber (above) and the cold chamber (below). With a radial fan

COMMUNICATION

	Interfaces	Ethernet interface 100/1000 megabit USB interface ³
	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

REGULATION & CONTROL

	S!MPAC®	Digital measuring and control system with an I/O unit and WEBSseason® control software, can be remote controlled through integration in a network. Operation/programming and monitoring unit with an 18cm (7") touch panel.	
		Pre-conditioning of the hot and cold chamber to a higher or colder target value. This ensures a shock-like re-conditioning of the test object.	
	Shock operation mode	Normal mode:	The chamber not being used can be pre-heated/cooled to a higher or lower target value. Temperature equalization can be sped up by opening the flap.
		Energy-saving mode:	Temporary switch-off of cold or hot chamber in programs with long down-times.
	Temperature sensor		Platinum temperature sensor Pt 100

SAFETY

**Test specimen****protection t_{min}/t_{max}**

Independent temperature limiter t_{min}/t_{max}

- Thermal safety class 2 in accordance with EN 60519-2, 2006
- Individually adjustable fixed values
- With separate temperature sensors in the test chamber
- Shutdown of the test chamber in the event of temperatures that are too high or too low and an error signal

Test object shutdown

Potential-free contact specifically for heat-emitting test objects, 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 USB stick not included in delivery. Please ensure that the USB storage medium is working before recording data.

Subject to technical modifications!

OPTIONS

ACCESS PORTS

Rectangular access port 160 x 50 mm (H x B), left

The rectangular access port is built into the left side wall. A sealing element made of foam silicone is included in the delivery.

Note:

The rectangular access port may mean a reduction in performance of approx. 5% in terms of cool-down speed, heat compensation and achieving the system end value.

TEST OBJECT SUPPORT

Insert basket max. 7.5 kg

Additional baskets can be used for holding the test object. Max. load per basket, 7.5 kg. A maximum of 7 baskets altogether is possible, whereby the total load may not exceed 50 kg.



SENSOR

Temperature measurement on the test object

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



Temperature measurement on the test object 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

Analog measuring value chart 4 Pt100 inputs and 5 outputs (target and actual values)

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

Note:

- 5 analog outputs for actual temperature values, free temperature sensor 1-4.
- Temperature sensor not included



SAFETY EQUIPMENT

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 space 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.

COOLING

Hose set for cooling water network

Two flexible hoses are supplied for connection to a cooling water network with a G 1" connection and a length of 2.5 m or 5 m.



Insulation of the water inlet pipe for water flow temperature < +12 °C

Pipes carrying cooling water in the test chamber are also insulated.



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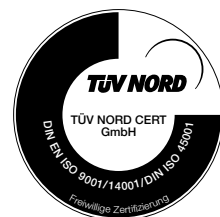
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