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Technical Brochure

Laboratory Test Chamber
LabEvent

Image similar (contains options)

weiss-technik.com

OVERVIEW| The LabEvent portfolio

Bench-top or mobile version?

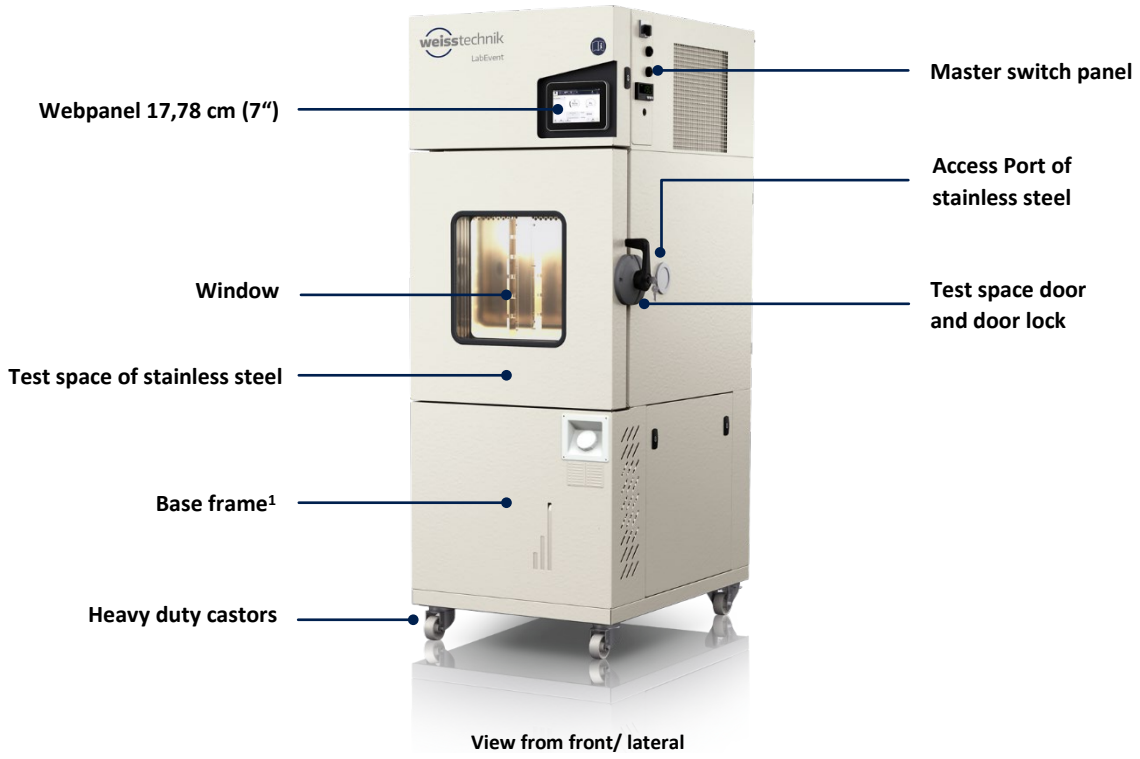
The 16, 34, 64, 100 and 150 liters variants are designed as bench top units as standard, but can also be configured optionally as mobile units for easy transport. As bench-top sized, 2 devices can be placed on top of each other with our optional stacking frame. The 110 and 210 liters variants of the LabEvent are developed as mobile versions in their standard configuration.

Addressing a large variety of needs

The LabEvent portfolio offers a broad range of configurations to address a large variety of customer needs. For example, the machinery of most 34, 64, 100 and 150 liters variants is placed on top of the chamber. This allows to include an access port in the floor. On the contrary, the machinery of the 110 and 210 liters variants is placed on bottom part of the chamber. This allows to include an access port in the ceiling. For stress screening tests, the 100 and 150 liters variants are available in a -70°C - 10K/min version and the 110 and 210 liters variants are available in a -70°C - 5K/min version.

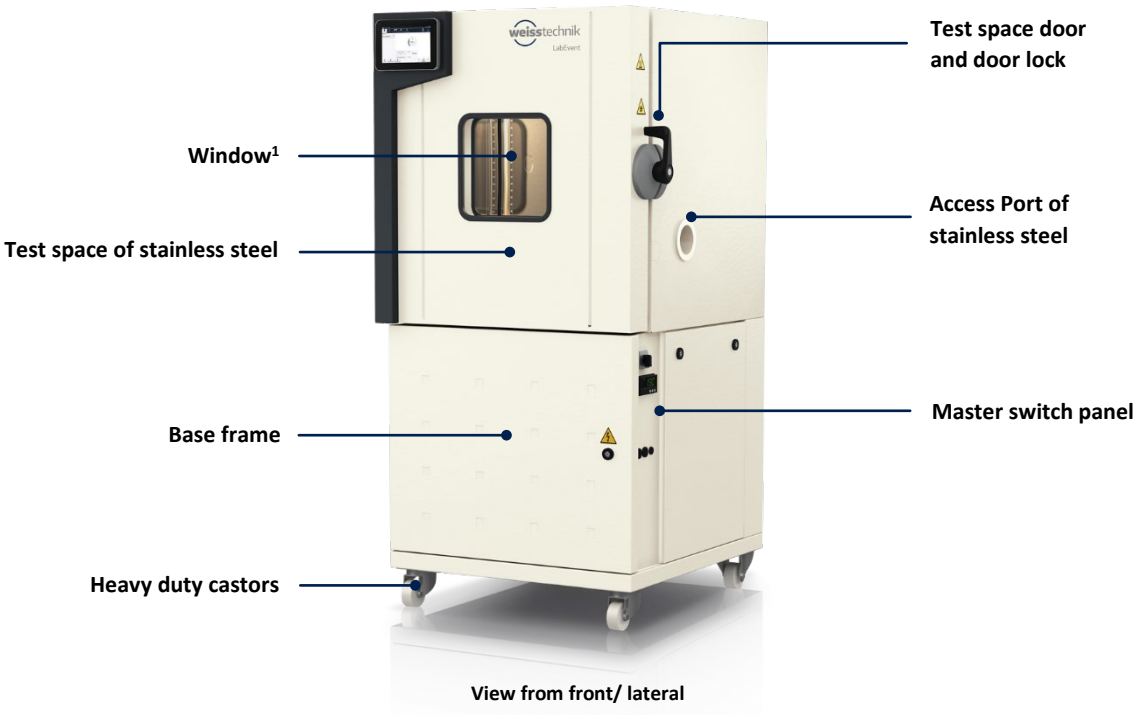
	Test space volume (l)	Bench top / mobile	Temperature / Climate	Temperature Variant (°C)	Special Applications
	16	Bench top chamber / optional trolley	Temperature	available soon (CO_2)	EMC, ESD
	34 or 64	Bench top chamber / optional baseframe	Temperature and climate variants	+10 -40 -70	ESD Li-Ion HL 3, HL 4
	100 or 150	Bench top chamber / optional baseframe	Temperature and climate variants	+10 -50 -70 -70 (10 K/min)	ESD Li-Ion HL 3, HL 4
	110 or 210	Standard chamber on baseframe	Temperature Climate as an option	-50 -70 -70 (5 K/min)	EMC, ESD Li-Ion HL 3, HL 4

STRUCTURE | LabEvent L



View from front/ lateral

STRUCTURE | LabEvent T



View from front/ lateral

[1] *Option/ Additional equipment*

STRUCTURE | Master switch panel

The arrangement of the master switch panel may vary depending on the LabEvent variant and is determined by the specific requirements and features of the respective version.

Independent, adjustable temperature limiter

Main switch

Analog I/O[1]

Digital I/O[1]

Measuring sensor temperature Pt 100[1]

Ethernet

USB-interface

Error message potential-free contact

Control measure[1]

Power socket[1]

RS 485/RS 422[1]

RS 232[1]

[1] Option/ Additional equipment

TECHNICAL DATA | 16 liters test space volume

		LT /20/30/5
Refrigerant		R744
DIMENSIONS, LOAD, WEIGHT		
External dimensions(H x W x D)[1] table version	mm	625 x 470 x 570
Test space dimensions (H x W x D)	mm	205 x 310 x 230
Total Load	kg	10
Weight[2] table version	kg	60
PERFORMANCE DATA FOR TEMPERATURE TESTING		
Maximum temperature [9]	°C	130
Minimum temperature [3, 9]	°C	-30
Temperature change rate[4], cooling	K/min	6
Temperature change rate[4], heating	K/min	5
Temperature deviation[5], in time	K	±0,3 to ±1
Temperature homogeneity[6], spatial	K	±0,5 to ±2
Heat compensation[8] max.	W	350
CONSUMPTION AND CONNECTION DATA		
Supply voltage[11]		1/N/PE AC 230 V ±10 % 50/60 Hz
Nominal power	kW	TBD
Nominal current[12]	A	TBD
Sound pressure level[13]	dB(A)	52
Cooling		Air-cooled
Permissible ambient temperature	°C	+10 to +35

TECHNICAL DATA | 34 liter test space volume

		L C/34/+10/8	L T/34/40/6 L C/34/40/6	L T/34/70/5 L C/34/70/5
Refrigerant		R744	R744	R449A / R23
DIMENSIONS, LOAD, WEIGHT				
External dimensions(H x W x D)[1] mobile version	mm	1684 x 661x791	1684x661x791	1684x661x791
External dimensions(HxWxD)[1] table version LT	mm	N/A	1000 x 661 x 791	N/A
External dimensions(HxWxD)[1] table version LC	mm	1000 x 661x926	1000 x 661 x 926	N/A
Test space dimensions (H x W x D)	mm	310 x 350 x 290	310 x 350 x 290	310 x 350 x 290
Total Load	kg	75	75	75
Load per insert shelf	kg	10	10	10
Maximum number of insert shelfs	pieces	5	5	5
Weight mobile version[2]	kg	196	196	218
Weight table version[2]	kg	160	160	N/A
PERFORMANCE DATA FOR TEMPERATURE TESTING				
Maximum temperature [9]	°C	180	180	180
Minimum temperature[3, 9]	°C	+10	-40	-70
Temperature change rate[4], cooling	K/min	8	6	5
Temperature change rate[4], heating	K/min	4	4	4
Temperature deviation[5], in time	K	±0,3 to ±1	±0,3 to ±1	±0,3 to ±1
Temperature homogeneity[6], spatial	K	±0,5 to ±2	±0,5 to ±2	±0,5 to ±2
Temperature gradient[7]	K	≤ 4,0	≤ 4,0	≤ 4,0
Heat compensation[8] max.	W	400	400	350
PERFORMANCE DATA FOR CLIMATE TESTING ("LabEvent L C" Climate variants)				
Maximum temperature [9]	°C	+95	+95	+95
Minimum temperature[3, 9]	°C	+10	+10	+10
Dew point temperature range	°C	4,8 to +93,6	4,8 to +93,6	4,8 to +93,6
Humidity range[9]	% RH	10 % to 95	10 % to 95	10 % to 95
Humidity deviation[10], in time	% RH	1 % to 3	1 % to 3	1 % to 3
Temperature deviation, in time	K	±0,3 to ±0,5	±0,3 to ±0,5	±0,3 to ±0,5
Temperature homogeneity, spatial	K	±0,5 to ±1,5	±0,5 to ±1,5	±0,5 to ±1,5
Heat compensation[8] max.	W	50	50	50
CONSUMPTION AND CONNECTION DATA				
Supply voltage[11]		1/N/PE AC 230 V ±10 % 50/60 Hz		1/N/PE AC 230 V ±10 % 50 Hz
Nominal power	kW	1,9	1,9	2,5
Nominal current[12]	A	9	9	11
Sound pressure level[13]	dB(A)	56	56	59
Cooling		Air-cooled	Air-cooled Water-cooled option	Air-cooled Water-cooled option
Permissible ambient temperature	°C	+10 to +27	+10 to +27	+10 to +27
Permissible cooling water temperature (only water-cooled systems)	°C	N/A	N/A	+12 to +28

TECHNICAL DATA | 64 liter test space volume

		L C/64/+10/6	L T/64/40/4 L C/64/40/4	L T/64/70/3 L C/64/70/3
Refrigerant		R744	R744	R449A / R23
DIMENSIONS, LOAD, WEIGHT				
External dimensions(HxWxD)[1] mobile version	mm	1774 x 781 x 843	1774 x 781x843	1774 x 781x843
External dimensions(HxWxD)[1] table version LT	mm	N/A	1090 x 781 x 843	1090 x 781 x 843
External dimensions(HxWxD)[1] table version LC	mm	1090 x 781x978	1090 x 781 x 978	1090 x 781 x 978
Test space dimensions (H x W x D)	mm	400 x 470 x 340	400 x 470 x 340	400 x 470 x 340
Total Load	kg	75	75	75
Load per insert shelf	kg	10	10	10
Maximum number of insert shelfs	pieces	7	7	7
Weight mobile version[2]	kg	233	233	260
Weight table version[2]	kg	184	184	212
PERFORMANCE DATA FOR TEMPERATURE TESTING				
Maximum temperature [9]	°C	180	180	180
Minimum temperature[3, 9]	°C	+10	-40	-70
Temperature change rate[4], cooling	K/min	6	4	4
Temperature change rate[4], heating	K/min	4	4	4
Temperature deviation[5], in time	K	±0,3 to ±1	±0,3 to ±1	±0,3 to ±1
Temperature homogeneity[6], spatial	K	±0,5 to ±2	±0,5 to ±2	±0,5 to ±2
Temperature gradient[7]	K	≤ 4,0	≤ 4,0	≤ 4,0
Heat compensation[8] max.	W	750	750	480
PERFORMANCE DATA FOR CLIMATE TESTING ("LabEvent L C" Climate variants)				
Maximum temperature [9]	°C	+95	+95	+95
Minimum temperature[3, 9]	°C	+10	+10	+10
Dew point temperature range	°C	4,8 to +93,6	4,8 to +93,6	4,8 to +93,6
Humidity range[9]	% RH	10 to 95	10 to 95	10 to 95
Humidity deviation[10], in time	% RH	1 % to 3	1 % to 3	1 % to 3
Temperature deviation in time	K	±0,3 to ±0,5	±0,3 to ±0,5	±0,3 to ±0,5
Temperature homogeneity, spatial	K	±0,5 to ±1,5	±0,5 to ±1,5	±0,5 to ±1,5
Heat compensation[8] max.	W	50	50	50
CONSUMPTION AND CONNECTION DATA				
Supply voltage[11]		1/N/PE AC 230 V ±10 % 50/60 Hz		1/N/PE AC 230 V ±10 % 50 Hz
Nominal power	kW	2,1	2,1	2,1
Nominal current[12]	A	10	10	11
Sound pressure level[13]	dB(A)	56	56	59
Cooling		Air-cooled	Air-cooled Water-cooled option	Air-cooled Water-cooled option
Permissible ambient temperature	°C	+10 to +27	+10 to +27	+10 to +27
Permissible cooling water temperature (only water-cooled systems)	°C	N/A	N/A	+12 to +28

TECHNICAL DATA | 100 liter test space volume

		L C/100/+10/5	L T/100/50/4 L C/100/50/4	L T/100/70/3 L C/100/70/3	L T/100/70/10 L C/100/70/10
Refrigerant		R744	R744	R449A / R23	R449A / R23
DIMENSIONS, LOAD, WEIGHT					
External dimensions(H x W x D)[1] mobile version	mm	1872 x 801 x 995	1872 x 801 x 995	1872 x 801 x 995	1872 x 801 x 1200
External dimensions(HxWxD)[1] table version LT	mm	N/A	1191 x 801 x 995	1191 x 801 x 995	N/A
External dimensions(HxWxD)[1] table version LC	mm	1191 x 801 x 1130	1191 x 801 x 1130	1191 x 801 x 1130	N/A
Test space dimensions (H x W x D)	mm	500 x 490 x 405	500 x 490 x 405	500 x 490 x 405	500 x 490 x 405
Total Load	kg	75	75	75	75
Load per insert shelf	kg	10	10	10	10
Maximum number of insert shelfs	pieces	6	6	6	6
Weight mobile version[2]	kg	277	277	290	370
Weight table version[2]	kg	217	217	245	N/A
PERFORMANCE DATA FOR TEMPERATURE TESTING					
Maximum temperature [9]	°C	180	180	180	180
Minimum temperature[3, 9]	°C	+10	-50	-70	-70
Temperature change rate[4], cooling	K/min	5	4	4	10
Temperature change rate[4], heating	K/min	3	3	3	10
Temperature deviation[5], in time	K	±0,3 to ±1	±0,3 to ±1	±0,3 to ±1	±0,3 to ±1
Temperature homogeneity[6], spatial	K	±0,5 to ±2	±0,5 to ±2	±0,5 to ±2	±0,5 to ±2
Temperature gradient[7]	K	≤ 4,0	≤ 4,0	≤ 4,0	≤ 4,0
Heat compensation[8] max.	W	1500	1500	1200	3000
PERFORMANCE DATA FOR CLIMATE TESTING ("LabEvent L C" Climate variants)					
Maximum temperature [9]	°C	+95	+95	+95	+95
Minimum temperature[3, 9]	°C	+10	+10	+10	+10
Dew point temperature range	°C	4,8 to +93,6	4,8 to +93,6	4,8 to +93,6	4,8 to +93,6
Humidity range[9]	% RH	10 to 95	10 to 95	10 to 95	10 to 95
Humidity deviation[10], in time	% RH	1 to 3	1 to 3	1 to 3	1 to 3
Temperature deviation, in time	K	±0,3 to ±0,5	±0,3 to ±0,5	±0,3 to ±0,5	±0,3 to ±0,5
Temperature homogeneity, spatial	K	±0,5 to ±1,5	±0,5 to ±1,5	±0,5 to ±1,5	±0,5 to ±1,5
Heat compensation[8] max.	W	600	600	700	TBD
CONSUMPTION AND CONNECTION DATA					
Supply voltage[11]		1/N/PE AC 230 V ±10 % 50/60 Hz		1/N/PE AC 230V ±10 % 50 Hz	3/N/PE AC 400V ±10 % 50 Hz
Nominal power	kW	2,4	2,4	3	5
Nominal current[12]	A	11,5	11,5	13,5	15
Sound pressure level[13]	dB(A)	56	56	59	68
Cooling		Air-cooled	Air-cooled	Air-cooled Water-cooled option	Air-cooled Water-cooled option
Permissible ambient temperature	°C	+10 to +27	+10 to +27	+10 to +27	+10 to +27
Permissible cooling water temperature (only water-cooled systems)	°C	N/A	N/A	+12 to +28	+12 to +28

TECHNICAL DATA | 150 liter test space volume

		L C/150/+10/4	L T/150/50/3 L C/150/50/3	L T/150/70/3 L C/150/70/3	L T/150/70/10 L C/150/70/10
Refrigerant		R744	R744	R449A / R23	R449A / R23
DIMENSIONS, LOAD, WEIGHT					
External dimensions(H x W x D)[1] mobile version	mm	1872 x 801 x 1200	1872 x 801 x 1200	1872 x 801 x 1200	1872 x 801 x 1200
External dimensions(HxWxD)[1] table version LT	mm	1191 x 801 x 1200	1191 x 801 x 1200	1191 x 801 x 1200	N/A
External dimensions(HxWxD)[1] table version LC	mm	1191 x 801 x 1335	1191 x 801 x 1335	1191 x 801 x 1335	N/A
Test space dimensions (H x W x D)	mm	500 x 490 x 610	500 x 490 x 610	500 x 490 x 610	500 x 490 x 610
Total Load	kg	75	75	75	75
Load per insert shelf	kg	10	10	10	10
Maximum number of insert shelfs	pieces	6	6	6	6
Weight mobile version[2]	kg	322	322	330	375
Weight table version[2]	kg	290	290	300	N/A
PERFORMANCE DATA FOR TEMPERATURE TESTING					
Maximum temperature [9]	°C	180	180	180	180
Minimum temperature[3, 9]	°C	+10	-50	-70	-70
Temperature change rate[4], cooling	K/min	4	3	4	9
Temperature change rate[4], heating	K/min	3	3	3	9
Temperature deviation[5], in time	K	±0,3 to ±1	±0,3 to ±1	±0,3 to ±1	±0,3 to ±1
Temperature homogeneity[6], spatial	K	±0,5 to ±2	±0,5 to ±2	±0,5 to ±2	±0,5 to ±2
Temperature gradient[7]	K	≤ 4,0	≤ 4,0	≤ 4,0	≤ 4,0
Heat compensation[8] max.	W	1000	1000	1000	3000
PERFORMANCE DATA FOR CLIMATE TESTING ("LabEvent L C" Climate variants)					
Maximum temperature [9]	°C	+95	+95	+95	+95
Minimum temperature[3, 9]	°C	+10	+10	+10	+10
Dew point temperature range	°C	4,8 to +93,6	4,8 to +93,6	4,8 to +93,6	4,8 to +93,6
Humidity range[9]	% RH	10 to 95	10 to 95	10 to 95	10 to 95
Humidity deviation[10], in time	% RH	1 to 3	1 to 3	1 to 3	1 to 3
Temperature deviation, in time	K	±0,3 to ±0,5	±0,3 to ±0,5	±0,3 to ±0,5	±0,3 to ±0,5
Temperature homogeneity, spatial	K	±0,5 to ±1,5	±0,5 to ±1,5	±0,5 to ±1,5	±0,5 to ±1,5
Heat compensation[8] max.	W	500	500	560	TBD
CONSUMPTION AND CONNECTION DATA					
Supply voltage[11]		1/N/PE AC 230 V ±10 % 50Hz		1/N/PE AC 230 V ±10 % 50 Hz	3/N/PE AC 400 V ±10 % 50 Hz
Nominal power	kW	2,6	2,6	3,1	5
Nominal current[12]	A	12,5	12,5	14,5	15
Sound pressure level[13]	dB(A)	56	56	59	68
Cooling		Air-cooled	Air-cooled	Air-cooled Water-cooled option	Air-cooled Water-cooled option
Permissible ambient temperature	°C	+10 to +27	+10 to +27	+10 to +27	+10 to +27
Permissible cooling water temperature (only water-cooled systems)	°C	N/A	N/A	+12 to +28	+12 to +28

TECHNICAL DATA | 110 liter test space volume

		T/110/50/4	T/110/70/3	T/110/70/5
Refrigerant		R744	R449A / R23	R449A / R23
DIMENSIONS, LOAD, WEIGHT				
External dimensions(H x W x D)[1]	mm	1640 x 875 x 1080	1640 x 875 x 1080	1640 x 875 x 1140
External dimensions(H x W x D)[1] with Climate extension	mm	N/A	1640 x 1010 x 1080	1640 x 1010 x 1140
Test space dimensions (H x W x D)	mm	630 x 560 x 350	630 x 560 x 350	630 x 560 x 350
Total Load	kg	110	110	110
Load per insert shelf	kg	20	20	20
Maximum number of insert shelfs	pieces	9	9	9
Weight	kg	290	327	382
PERFORMANCE DATA FOR TEMPERATURE TESTING				
Maximum temperature [9]	°C	180	180	180
Minimum temperature [3, 9]	°C	-50	-70	-70
Temperature change rate[4], cooling	K/min	4,0	3,2	6
Temperature change rate[4], heating	K/min	3,5	3,5	10
Temperature deviation[5], in time	K	±0,2 K to ±0,5	±0,2 K to ±0,5	±0,3 K to ±1
Temperature homogeneity[6], spatial	K	±0,5 to ±1.5	±0,5 to ±1.5	±0,5 to ±2
Temperature gradient[7]	K	≤ 4,0	≤ 4,0	≤ 4,0
Heat compensation[8] max.	W	1450	800	1600
PERFORMANCE DATA FOR CLIMATE TESTING (OPTIONAL CLIMATE EXTENSION)				
Maximum temperature [9]	°C	Climate extension option not available	+90	+90
Minimum temperature[3, 9]	°C		+20	+20
Dew point temperature range	°C		+6 to +86	+6 to +86
Humidity range[9]	% RH		10 to 98	10 to 98
Humidity deviation[10], in time	% RH		1 to 4	1 to 4
Temperature deviation, in time	K		±0,3 to ±0,5	±0,3 to ±0,5
Temperature homogeneity, spatial	K		±0,5 to ±1,5	±0,5 to ±1,5
Heat compensation[8] max.	W		TBD	TBD
CONSUMPTION AND CONNECTION DATA				
Supply voltage[11]		1/N/PE AC 230 V ±10 % 50/60 Hz	1/N/PE AC 230 V ±10 % 50 Hz	3/N/PE AC 400 V ±10 % 50 Hz
Nominal power	kW	1.8	1,8	4,7
Nominal current[12]	A	12	12	13
Sound pressure level[13]	dB(A)	56	56	65
Cooling		Air- cooled	Air-cooled Water-cooled option	Air-cooled Water-cooled option
Permissible ambient temperature	°C	+10 to +35	+10 to +35	+10 to +35
Permissible cooling water temperature (only water-cooled systems)	°C	N/A	+12 to +28	+12 to +28

TECHNICAL DATA | 210 liters test space volume

		T/210/50/4	T/210/70/3	T/210/70/5
Refrigerant		R744	R449A / R23	R449A / R23
DIMENSIONS, LOAD, WEIGHT				
External dimensions(H x W x D)[1]	mm	1640 x 875 x 1300	1640 x 875 x 1300	1640 x 875 x 1300
External dimensions(H x W x D)[1] with Climate extension	mm	N/A	1640 x 1010 x 1300	1640 x 1010 x 1300
Test space dimensions (H x W x D)	mm	630 x 560 x 570	630 x 560 x 570	630 x 560 x 570
Total Load	kg	125	125	125
Load per insert shelf	kg	28	28	28
Maximum number of insert shelfs	pieces	9	9	9
Weight	kg	325	357	382
PERFORMANCE DATA FOR TEMPERATURE TESTING				
Maximum temperature [9]	°C	180	180	180
Minimum temperature[3, 9]	°C	-50	-70	-70
Temperature change rate[4], cooling	K/min	4,0	2,5	8
Temperature change rate[4], heating	K/min	2,5	2,5	8
Temperature deviation[5], in time	K	±0,2 K to ±0,5	±0,2 K to ±0,5	±0,3 to ±1
Temperature homogeneity[6], spatial	K	±0,5 to ±1.5	±0,5 to ±1.5	±0,5 to ±2
Temperature gradient[7]	K	≤ 4,0	≤ 4,0	≤ 4,0
Heat compensation[8] max.	W	1450	800	1600
PERFORMANCE DATA FOR CLIMATE TESTING (OPTIONAL CLIMATE EXTENSION)				
Maximum temperature [9]	°C	Climate extension option not available	+90	+90
Minimum temperature[3, 9]	°C		+20	+20
Dew point temperature range	°C		+6 to +86	+6 to +86
Humidity range[9]	% RH		10 to 98	10 to 98
Humidity deviation[10], in time	% RH		1 to 4	1 to 4
Temperature deviation, in time	K		±0,3 to ±0,5	±0,3 to ±0,5
Temperature homogeneity, spatial	K		±0,5 to ±1,5	±0,5 to ±1,5
Heat compensation[8] max.	W		TBD	TBD
CONSUMPTION AND CONNECTION DATA				
Supply voltage[11]		1/N/PE AC 230 V ±10 % 50/60 Hz	1/N/PE AC 230 V ±10 % 50 Hz	3/N/PE AC 400 V ±10 % 50 Hz
Nominal power	kW	1.8	1,8	4,7
Nominal current[12]	A	12	12	13
Sound pressure level[13]	dB(A)	56	56	65
Cooling		Air- cooled	Air-cooled Water-cooled (option)	Air-cooled Water-cooled (option)
Permissible ambient temperature	°C	+10 to +35	+10 to +35	+10 to +35
Permissible cooling water temperature (only water-cooled systems)	°C	N/A	+12 to +28	+12 to +28

BASIC EQUIPMENT

EXTERIOR 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.
Adjustable feet	Adjustable, vibration absorbing (optional mobile version available).

AIR CONDITIONING SYSTEM (for climate chamber)

Humidifying water	Water storage tank (approx. 13 l), pre-installed device for automatic water replenishment (standard), low water warning, water consumption display.
Humidifying water quality	pH value 6-7, demineralized, conductivity 5 to 20 µs/cm.

TEST CHAMBER CONTAINER

Material Test space	Stainless steel 1.4301, surface III D polished.
Drain for condensate and cleaning water	Back pressure-free, G 3/4” external thread or 12 mm hose connection.
Shelves	Adjustable in height, one shelf included.
Access ports	1 piece on the right, made of stainless steel, position R1.
Access port plug	1 silicone plug and one foam silicone plug per access port.

MEASURING SENSORS

Temperature	Platinum temperature sensor Pt 100.
Climate	Psychrometric humidity measurement with force-wetted self-cleaning wet temperature sensor for sizes 34, 64, 100, 150 liters (optional capacitive measuring system also available). Capacitive measuring system for sizes 110, 210 liters.

COMMUNICATION

Interfaces	Ethernet interface 10/100/1000 megabit. USB interface.

REGULATION & CONTROL

S!MPAC®	Digital measuring and control system with I/O unit and **WEB**Season® control software, can be controlled remotely through integration into a network. Operating/programming and monitoring unit with 17,78 cm (7") web panel integrated in the door.
Connectivity	Remote Control via browser (**WEB**Season®). Control and data recording possible using our **S!M**PATI® software. SimServ communication protocol to allow customer’s automation tool.

SAFETY

Test specimen safety	Independent, adjustable temperature limiter t_{min} / $t_{max,}$ sensor installed in test space, individually adjustable fixed value.
Software specimen protection	Setting alarm and warning limits for the maximum and minimum permissible temperature and humidity values for climate chambers.
Test chamber fuse	Safety temperature limiter STB for protection against excessive temperature in the test chamber.
Test specimen deactivation	Potential-free contact specifically for heat-emitting test specimen, max. load 24 V, 0.5 A.

Subject to technical changes!

TECHNICAL DATA | Explanation of Notes

[1] Overall dimensions when installed. Deviating delivery dimensions; components for delivery can be dismantled (service performance).

[2] Basic device, excluding additional equipment

[3] Temperatures >+5 °C can be run in continuous operation, temperatures <+5 °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 °C or at humidities >20 % RH.

[7] Up to +150 °C according to IEC 60068-3-5:2001 or JJF 1101-2003.

[8] At +20 °C for temperature tests / In the range from +25 °C to +95 °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 room and documented with a factory calibration certificate. Optionally, a DAkkS calibration and a spatial factory or DAkkS calibration can be carried out.

[10] In the center of the utility room under steady-state conditions, depending on the climate value, without specimen, without heat radiation and without additional equipment.

[11] Other voltages and frequencies optional

[12] Neutral conductor burdened

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

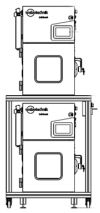
OPTIONS

BASE

Mobile version (with base frame)

Base frame to convert a table top unit into a mobile standalone unit with a table top working level. It comes with four castors, two of which equipped with arresting device.

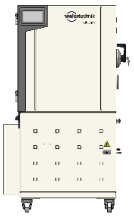
Note: Included in the basic equipment for the 110 l & 210 l sizes, option only available for sizes 34, 64, 100, 150 liters.



Stacking frame

This frame allows to stack two tabletop devices placed on top of each other. The construction is designed to support the weight of the two devices and provides enough space for the fan inlets and outlets. The frame is mobile and equipped with four lockable swivel castors and four height-adjustable feet.

Note: Only available for sizes 34, 64, 100, 150 liters.



Sound reduction by approx. 2 dB(A)

Sound insulating elements mounted at the side and the top of the chamber. This reduces the sound level of approx. 2 dB(A).

Note: Available for all sizes and variants with an extension of housing.

DOOR

Door hinged on the right side

Test space door hinged to right-hand side of the test cabinet. Door handle will be positioned on the left hand side.

Window in the door and 2 hand holes

The test space door is equipped with hand-hole ports (125 mm), which are sealed by plugs with protective gloves that allow access to the specimen in the test chamber while the door is closed and during tests.

Note: Only available for the sizes 100, 110, 150 and 210 liters.

Door without window

Test space door without observation window. No loss of power through heated window.

Note: Included in the basic equipment for the sizes 110 & 210 liters, option available for sizes 34, 64, 100, 150 liters.

Door window

Visible area 260 x 260 mm, multi-layer insulation, incl. test space lighting.

Note: Included in the basic equipment for the sizes 34, 64, 100, 150 liters, option available for sizes 110 & 210 liters.

TEST MATERIAL REQUIREMENTS

Additional shelf

For placing the test specimens, shelves made of stainless steel can be used.
A grid shelf is included as standard.

Drawer on telescopic rails stainless steel, up to 30 kg (LabEvent 110l, 210l)

The drawer on telescopic rails can be positioned at different heights in the side-mounted adjustment rails.

Note: Only available for sizes 110 l & 210 liters.

ACCESS PORTS

Access port in the floor

The port is located in the base of the unit, incl. 1 silicone plug, closed and 1 foam silicone plug, slotted.

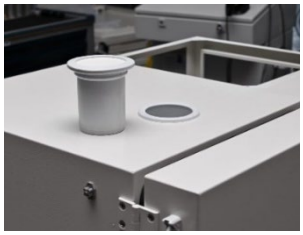
Possible diameters: Ø 50 mm, Ø 80 mm, Ø 125 mm (*only 34 l, 64 l, 100 l and 150 l*)
Ø 200 mm (*only 64 l, 100 l and 150 l*); Ø 250 mm (*only 100 l and 150 l*)
Ø 300 mm (*only 150 l*)

Note : not available for chambers with baseframe.

Access port with silicone plug

The access ports are mounted according to the installation drawing, incl. 1 silicone plug, closed and 1 foam silicone plug, slotted.

Possible *sizes:* Ø 50 mm; Ø 80 mm; Ø 125 mm.



Access port in ceiling

Access port made of stainless steel in the ceiling, , including 1 silicone plug, closed and 1 foam silicone plug, slotted.

Possible *sizes:* Ø 50 mm; Ø 80 mm; Ø 125 mm.

Note: Only available for sizes 110/210 liters.

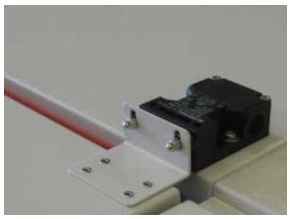
Notched access port welded

A welded notch bushing measuring approx. 47 mm x 70 mm is fitted in the housing cover on the right for inserting cables. This allows test material to be inserted without having to remove cables and lines.

Flat notch port

An insert is provided in the housing cover for insertion of single cables. This allows up to 5 cables of max. Ø 8 mm each to be inserted into the test space.

TEST SPACE EQUIPMENT



Door contact switch to indicate "door open" on control panel/SIMPATI

The door switch is installed on the test chamber.
If the test space door is opened during a test run, the chamber will not be switched off but only “door open“ will be displayed.

Disconnection of fan via door contact switch

If the door is opened, the fan and the tempering will be disconnected immediately. The compressor will be disconnected with a time delay.
If the door is closed, the disconnection of fan will be inactivated, i.e. the cabinet will continue with the test run.

Disconnection of fan via digital channel (digital input)

If the digital channel “disconnection of fan“ is activated, the fan and the tempering will be disconnected immediately. The compressor will be disconnected with a time delay. If the digital channel “disconnection of fan“ is deactivated, the cabinet will continue with the test run.

Stainless steel evaporator

Evaporator made out of stainless steel instead of copper-aluminum. Performance will be decreasing approx. 10 – 20 %. It is useful e.g. for electronic or leather application as well as for very pure water below 5 µS/cm used for water bath.
Note: Only available for -70°C variant chambers.

Variable circulating air volume

To reduce the circulating air quantity the speed of the air blower can be adjusted from 50 % to 100 % (*for sizes 100 l & 150 liters*) or from 30 % to 100 % (*for sizes 110 l & 210 liters*).

SENSORS

Temperature measurement on test specimen

Mobile temperature sensor Pt 100 with cable and measuring transducer for measurement at any point of the test space or on the test specimen. The measured value can be called via the interfaces or via the control unit. The sensor is placed into the test space through the access port which is included.

Temperature measurement on test specimen switchable as control sensor

Movable temperature sensor Pt 100 with flexible cable for temperature measurement at any point in the test space or on the test specimen. The measured value is displayed in °C in the operating unit and can be called up via the interfaces or the free analog outputs of the measured value card. The sensor is inserted into the test space through the standard port.

Capacitive humidity sensor instead of psychrometer

A capacitive humidity measuring system will be installed instead of the psychrometric measuring system. This allows low humidity values (5 – 85 %) to be measured and controlled more precisely.

DEHUMIDIFICATION

GN2 / Compressed air connection

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

Compressed air dryer for dew point to -30 °C (temperature) uncontrolled

Dehumidification unit for dew points down to -30 °C (uncontrolled operation) used **to avoid the formation of condensation on the test specimen** during temperature tests.

Compressed air dryer for dew point to -18 °C controlled

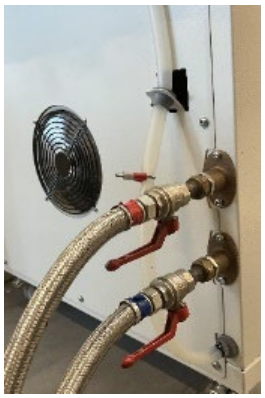
Dehumidification unit for test chambers including a capacitive humidity measuring system *for dew points down to -18 °C - controlled operation*. Low humidity values can therefore be more precisely controlled than with psychrometer.
2 possible options exist: capacitive humidity sensor instead of the psychrometer or capacitive humidity sensor in addition to the psychrometer.
Note: Only available for sizes 34, 64, 100, 150 liters

Dehumidification during heating-up phase

To avoid condensation on test specimen, an additional cooler can be switched on. During heating cycles, the cooler is automatically in operation. Dehumidification is only efficient at temperatures to +60 °C.

Note: Included in the basic equipment for the sizes 34 l, 64 l, 100 l, 150 l, option only available for sizes 110 l & 210 liters.

COOLING



Water-cooled refrigeration unit

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

Note: Only available for -70°C variant chambers.

Electronic cooling water controller

Automatic adaptation to different inlet temperatures and pressure differences is achieved within certain limits by means of an electronically operated and continuously controlled valve. The cooling water supply is reliably closed during a standstill of the refrigeration unit. The pressure loss compared to the mechanical cooling water controller is minimal.

Note: Only available for -70°C variant of 110 l & 210 liters chambers.

DEMINERALIZATION

Demineralization unit, 10 l, pressure-proof to 8 bar

For water supply of the climate chambers.
Unit with compact cartridge made of synthetic nylon, pressure-resistant up to 6 bar pressure, with connecting hoses and electrical conductivity meter.

SPECIAL VOLTAGE

Special voltage on request

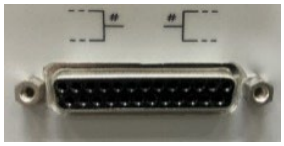
Various special voltages are available.
Option for 60Hz.

CONTROL SYSTEM

Extension of temperature range to +200 °C

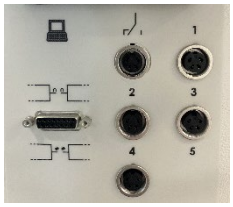
The test system can be modified to enable temperatures up to +200 °C.

Note: Only available for -70°C variant chambers.



Digital I/O

25-pin D-Sub connector with digital outputs and inputs.



Analog measuring data card 4 PT100 inputs and 5 outputs

For processing an output of analogue measuring signals 5 outputs 0 to 10 V and a maximum of 4 inputs for Pt 100 are available. Outputs are accessible via D-sub miniature-sockets, inputs via plugs/sockets.

SAFETY EQUIPMENT

Emergency stop button on test space housing

The emergency stop button is fitted on the outside of the test chamber. When pressing the button a message is displayed on the control panel and the test is stopped. The mushroom pushbutton needs to be turned to be released.

Test chamber activation via digital input

The test can only be started if a voltage signal of +24 V DC max. 30 mA is present at the digital input.
If the voltage signal is no longer present, the test is stopped, and a message is displayed on the control unit.

Safety interlock switch, open at zero current

The door cannot be opened during a test. 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 off.

Safety interlock switch, closed at zero current

The door cannot be opened during a test, in case of a power failure the main switch is off. The test space door is unlocked at the end of a test and when a test is stopped.

Electric door lock in a defined temperature range

The electric locking door components are mounted on the test cabinet and on the door. The door opening is dependent on the set door locking values.
The lock opening is regulated by the ambient temperature of the chamber from the interface **Web**Season via a setting of two set values.

SPECIAL APPLICATIONS | Customized equipment for every test.

BATTERY TESTS UP TO HAZARD LEVEL 4 | Always test safely

Batteries are installed in many products. Testing batteries is not without risk. To ensure that nothing happens, our chambers for such tests can be supplied with safety equipment depending on the individual risk. We are guided by the Eucar Hazard Level. Benefit from our experience in countless projects in this area and from the expertise of our specialists. We will be happy to support you.

FURTHER SPECIAL APPLICATIONS | The right solution for every application

ESD: Some test items are very sensitive to electrostatic charging. In order to prevent this from happening in the test chamber, for example through air movement, the test chambers can be equipped accordingly. From the earthing point to the shielding of all installed components.

EMC: The test chambers must be specially shielded to ensure that no signals are emitted from the test object into the environment or affect your test object. We have many years of experience in the design of test chambers for EMC tests.

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Weiss Technik GmbH

Greizer Straße 41–49
35447 Reiskirchen/Germany
T +49 6408 84-0

Beethovenstraße 34
72336 Balingen/Germany
T +49 7433 303-0

info@weiss-technik.com
weiss-technik.com

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