

Technical description

TempEvent T2/180/70/3



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Notes

The performance data refers to +25 °C ambient temperature and +18 °C cooling water temperature, at given nominal voltage, without test specimen, without optional accessories and without heat compensation. These are average values of the basic equipment.

The test chamber is designed for installation inside dry and ventilated spaces with max. degree of contamination "2" according to EN 50178:1997. The permissible ambient temperature during operation is between +10 °C and +35 °C. The max. permissible humidity must not exceed 75% RH and the max. dew point must not exceed +20 °C.

Protect the system from sunlight and avoid proximity to heat sources.

Standards

Low-temperature tests

ISO 16750-4, Low temperature
ETSI EN 300019-2-4, Test Ab/Ad
MIL-STD-810 G, Meth. 502.5
IEC 60068-2-1, Test A (LV 124 K-03)
JESD22-A119

High-temperature tests

MIL-STD-810 G, Meth. 501.5
IEC 60068-2-2, Test B
ISO 16750-4, High temperature
MIL-STD-202 G, Meth. 108A
MIL-STD-883 J, Meth. 1008.2
JESD22-A103D
ETSI EN 300019-2-4, Test Bb/Bd

Alternating temperature tests

ETSI EN 300019-2-4, Test Nb
ISO 16750-4, Temp. cycling
ISO 16750-4, Temp. steps
IEC 60068-2-14, Test Nb (LV 124 L-03)
MIL-STD-331 C, Test C6

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 (without measurement uncertainty). Verifying documentation for individual test values is optionally available at additional cost.

Your standard is not listed? Contact us!

Highlights

→ Visual status bar

The operating status always in view: Boot process, ready for use, test progress and messages.

→ Homogeneous LED test space lighting

Optimal lighting conditions in the test space - even with the door open.

→ Smart privacy screen (optional)

To ensure that secrets remain secret, the opaque privacy screen becomes transparent at the touch of a button.

→ Flexible test space

Quick integration of test equipment with a rail system and mounting threads.

→ Integrated web panel

Foldable, 25.4 cm (10") touch display with **WEBSeason®** remote control software.

→ Ergonomic door handle

Easy operation with three intuitive positions: closed, open, ventilate.

→ Practical storage and accessories package (optional)

The multifunctional storage system simplifies organization and ensures a tidy testing environment.



Illustration is similar (contains additional equipment)

Into the age of connectivity – with **WEBSeason®**



You can use the innovative user interface **WEBSeason** to program, control and monitor your tests at any time and anywhere, even from your tablet or smartphone. Settings, language and units can be set and saved to suit the individual user. **WEBSeason** provides a new dimension of flexibility and efficiency.

The ideal solution for your testing processes - **SIMPATI®**



With a new design, practical menu navigation and high-performance evaluation, **weisstechnik** presents the new version of its proven control software. The new **SIMPATI®** not only offers operating efficiency and performance, but also enables reliable operation of your systems thanks to integrated monitoring routines. Full compatibility with Windows 11 and Windows Server 2022 makes **SIMPATI®** highly future-proof. In addition, **SIMPATI®** can now be tested free of charge for up to 6 months. **SIMPATI®** is suitable for all current **weisstechnik** devices and downwards compatible with almost all models up to 1987. In addition, third-party systems can be integrated and the OPC-UA communication standard is also supported, for example for Industry 4.0 applications.

Performance data

Temperature tests

Maximum temperature	+180 °C
Minimum temperature ¹	-70 °C
Rate of temperature change ² , cooling	3.8 K/min
Rate of temperature change ² , heating	3.5 K/min
Temperature deviation ³ , in time	±0.1 K to ±0.5 K
Temperature homogeneity ⁴ , in space	±0.5 K to ±1 K
Temperature gradient ⁵	≤2 K
Heat compensation ⁶ , max.	2000 W
Factory calibration values ⁷	+80 °C and -40 °C

¹ Temperatures >+5 °C are permitted in continuous operation; temperatures <+5 °C are permitted discontinuously or with the additional equipment “compressed air dryer”.

² According to IEC 60068-3-5; average, measured in the supply air.

³ In the middle of the test space when it is empty and at steady state, without specimen, without heat radiation and without additional equipment, depending on temperature.

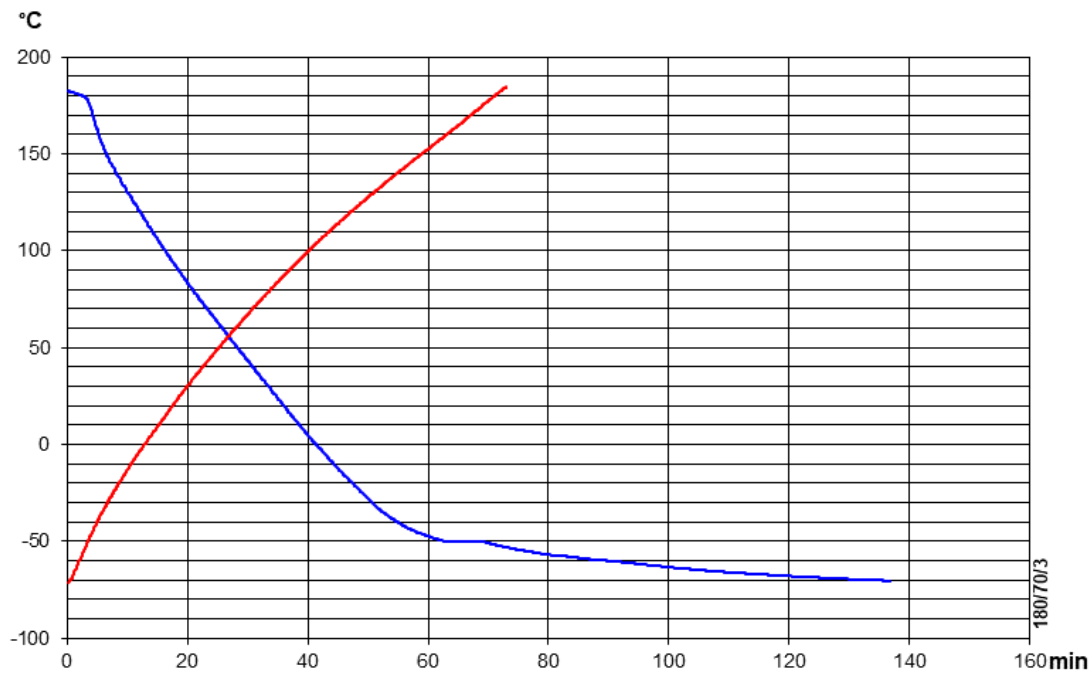
⁴ Relative to the selected set point in the temperature range from the minimum temperature up to +150 °C (without measuring tolerance).

⁵ Up to +150 °C according to IEC 60068-3-5:2001 and/or JJF 1101-2003.

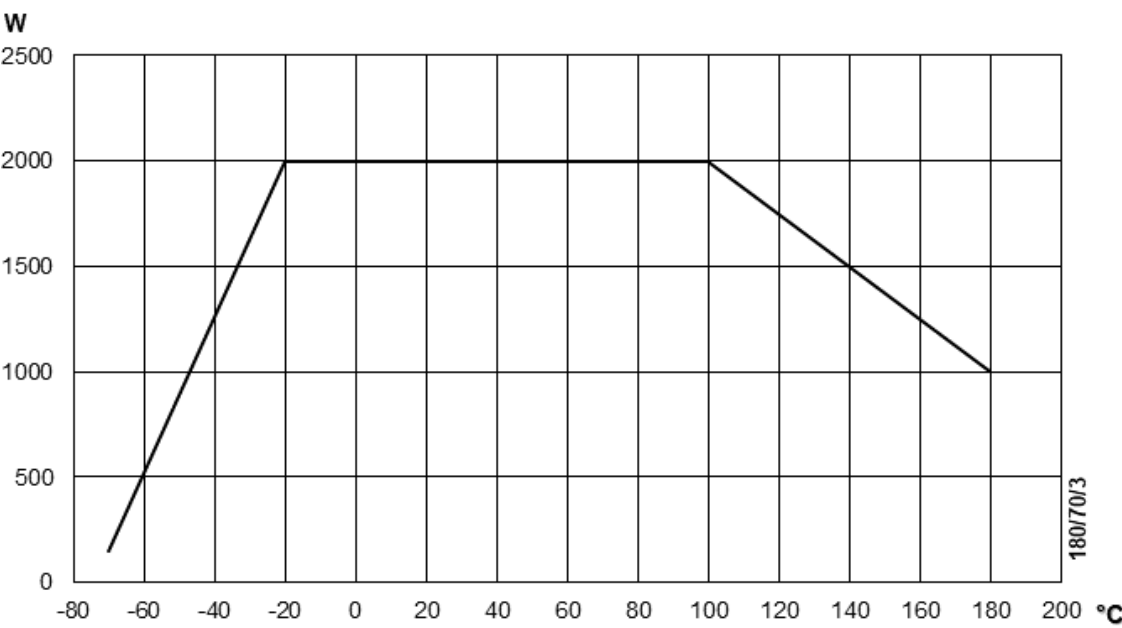
⁶ At +20 °C for temperature tests.

⁷ The factory calibration of the temperature values is carried out with DAkkS-calibrated measuring equipment in the middle of the test space and documented with a certificate. A DAkkS calibration, as well as a spatial factory or a spatial DAkkS calibration, can be provided on request.

Rate of temperature change for cooling and heating⁸



Heat compensation⁹



⁸ Without test specimen, without heat radiation, measured at the control sensor in the supply air.

⁹ Temperature measured at the control sensor in the supply air at steady state.

Technical data

Dimensions

Test space volume	190 l
Test space dimensions (H x W x D)	750 mm x 580 mm x 450 mm
Useable width	540 mm
Exterior housing dimensions (H x W x D)	1830 mm x 900 mm x 1575 mm
Minimum exterior housing dimensions ¹⁰ (H x W x D)	1730 mm x 800 mm x 1400 mm
Loading, max.	130 kg
Load of the test space floor ¹¹	50 kg
Load per insertion shelf ¹¹	30 kg
Load per insertion shelf support, max.	80 kg
Total weight ¹²	575 kg

Electrical data

Voltage rating ¹³	3/N/PE AC 400 V ± 10 % 50 Hz
Power rating, max. ¹⁴	5.3 kW
Current rating ¹⁵	15 A
Power supply ¹⁶	CEE-Connector, 16 A
Power supply cable	3.5 m
Fuse protection ¹⁷	16 A gG
Protection class of switchgear cabinet and control unit ¹⁸	IP 54
Sound pressure level ¹⁹	57 dB(A)

¹⁰ For transport and move-in. Parts can be removed at additional expenses.

¹¹ Max. load as surface load.

¹² Without loading and additional equipment

¹³ The test chamber can also be operated at 3/N/PE AC 380 V ± 10 % 50 Hz. In this case, the heating rate is reduced by approximately 10%.

¹⁴ The power rating quoted describes the maximum power consumption during operation at full load, thus no conclusions can be drawn about the average energy consumption.

¹⁵ Neutral conductor under load.

¹⁶ For fixed connection, the connection must be made by qualified personnel on the side of the customer.

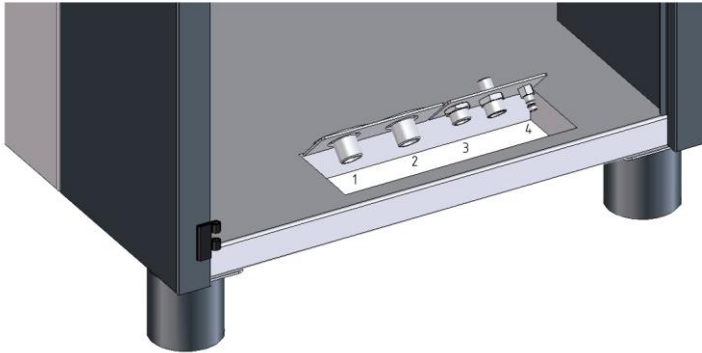
¹⁷ Provided by the customer.

¹⁸ EMC tests and information about emitted interference according to EN 61000-6-3 / EN 61000-6-4. Interference immunity is in accordance with EN 61000-6-2.

¹⁹ Measured at a distance of 1 m from the front of the test chamber and a height of 1.6 m in free-field measurement according to EN ISO 11201.

Connections

The Test Chamber is delivered ready for connection. The exterior housing is self-supporting. The supply and disposal connections are located on the rear side at the bottom.

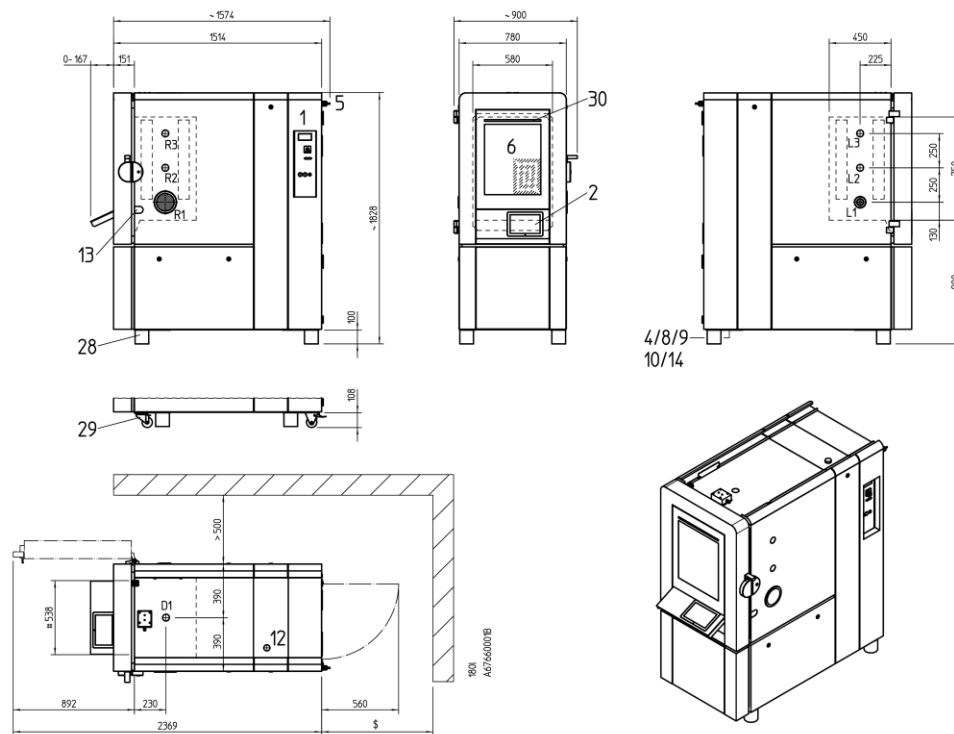


These are the following connections:

- 1 Cooling water inlet²⁰, female thread Rp 3/4"
- 2 Cooling water outlet²⁰, female thread Rp 3/4"
- 3 Overflow/condensate drain backpressure-free, G 3/4" male thread resp. hose connection Ø 12 mm
- 4 GN₂/Compressed air, DN 7.2, max. 10 bar (optional)

²⁰ Optional for test chambers with a performance of 3 K/min

Installation drawing



Access ports

R1	Installation position right $\varnothing$ 125 mm
L1	Installation position left $\varnothing$ 50 mm
R2-R3	Additional installation positions right (optional)
L2-L3	Additional installation positions left (optional)
D1	Additional installation position ceiling (optional)

Equipment

1	Main switch
2	Webpanel
4	Connection for overflow and condensate drain
5	Electrical connection
6	Test space door (with optional window)
8	Cooling water inlet ²³
9	Cooling water outlet ²³

Additional information

~	Transport dimensions
#	Useable width
\$	Escape route ²¹

12	Pressure compensation opening
13	Notch port or flat notch port (optional)
14	Compressed-air connection/GN ₂ (optional)
28	Adjustable feet, vibration-absorbing
29	Mobile design (optional) ²²
30	LED status bar

²¹ According to IEC 60364-7-729 (VDE 100 part 729), min. 200 mm, a wall clearance of at least 700 mm is required for service work

²² The test chamber height increases. The exact values are stated in the option description or in the installation drawing.

²³ Optional for test chambers with a performance of 3 K/min

Refrigeration unit²⁴

Standard design	air-cooled				
Refrigerant ²⁵	Stage	Refrigerant	GWP	Fill quantity	CO ₂ -equivalent
	Main cooling	R449A	1397	2.5 kg	3.5 t
	Deep-cooling ²⁶	R469A	1357	0.6 kg	0.8 t
	Deep-cooling (optional)	R23	14800	0.75 kg	11.1 t

Water cooled design²⁷

Connection data	water pressure 2.5 to 6 bar, differential pressure ≥ 2 bar, water temperature +12 °C to +28 °C
Cooling water consumption, max.	0.39 m ³ /h at Δt 10 K at $T_{in} + 18^\circ\text{C}$; 0.65 m ³ /h at Δt 5 K at $T_{in} + 28^\circ\text{C}$
Cooling water quality ²⁸	no pollutants (max. particle size <100 μm , ph value 7.5 to 9)
Heat dissipation to the installation room, max.	1 kW
Heat dissipation to cooling water, max.	8.5 kW

Air-cooled design²⁹

Heat dissipation to the installation room, max.	9.5 kW
Heat dissipation to air-cooled condenser, max.	-

²⁴ The product contains fluorinated greenhouse gases.

²⁵ EU directive no. 517/2014 specifies an obligation for stationary refrigeration and air conditioning units with a CO₂- equivalent of 5 to 50 t to be checked for leaks at least annually and an equipment logbook to be kept; by installing an automatic leak detection system, the interval for the leak test can be doubled. We can carry out these tasks for you in our capacity as an expert partner. We would be glad to advise you on installing a leak detection system.

²⁶ Not available for test chambers with a minimum temperature of -40 °C

²⁷ Optional for test chambers with a performance of 3 K/min

²⁸ For operation with well, pond or river water special measures must be taken.

²⁹ Optional for test chambers with a performance of 5 K/min

Our basic equipment

Exterior housing

Material	Galvanized steel sheet
Finish	RAL 7035 light grey, design elements in RAL 7016 anthracite, solvent-free, powder coated
Door	Hinged on the left side, lockable, one-handed operation with LED status bar
Base	Adjustable feet, vibration-absorbing

Test space³⁰

Material floor	Stainless steel 1.4404, surface II B matt
Material wall	Stainless steel 1.4301, surface III D polished
Test space illumination	The LED lighting (12 W) integrated into the test space illuminates the chamber evenly from above and facilitates to bring in and prepare the test specimen setup. The lighting can be switched on and off via the WEBSeason® control software
Insertion system	Rail system allowing shelf positions to be easily changed with 10 possible positions.
Insertion shelf	1 pc., stainless steel, max. number of insertion shelves: 5
Equipment access port right side ³¹	1 pc., approx. 125 mm Ø stainless steel, incl. closed silicone plug and slotted silicone plug
Equipment access port left side ³¹	1 pc., approx. 50 mm Ø stainless steel, incl. closed silicone plug and slotted silicone plug

Measurement sensors

Temperature	Pt 100 platinum temperature sensor
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³⁰ The use of tempered silicone parts means that the test space produces only low emissions. If the test space has to be emissions-free, this requires technical clarification; please contact us to request an offer.

³¹ Production-related tolerances of up to ±3 mm are possible.

Regulation and control

SIMPAC® 2.0

Digital measuring and control system with I/O unit and **WEBSeason®**-Software, remote controllable through integration into network.

Operating/programming and monitoring unit with 25.4 cm (10 ") webpanel, integrated in the door, which can be folded forward by up to 60°.

This test chamber is equipped with our new, future-oriented **SIMPAC® 2.0** control system. To meet the future IT security requirements of our customers, a new Linux-based controller is installed. To be able to connect this to **SIMPATI®**, **SIMPATI®** version 4.80.2 or higher must be used. Please contact us for an update. Please also note that port 62542 must be released by your IT department for **SIMPATI® 4.80.2**.

In the past, port 2049 was used for networking via ASCII I and II. With **SIMPAC® 2.0**, the following changes were necessary from a technical point of view:

ASCII I new: 2050/tcp

ASCII II new: 2051/tcp

There are no changes for users of our SimServ protocol. This continues to work via port 2049.

Please note these changes prior to delivery of the systems.

You can find our FAQ on the new control system at



<https://www.weiss-technik.com/environmental-simulation/de/detailpages/software/simpac-2.0>

Communication

Digital inputs/outputs

4 digital outputs for control of customer-provided devices by means of potential-free contacts, max. load 24 V DC, 0.5 A

4 digital inputs for feedback of customer provided devices, max. load 24 V DC, 30 mA

Network

1 Ethernet interface (100/1000 megabits) for integration in a network

USB

1 USB interface for recording of measuring data on a flash drive³²

Customer protocols

SimServ text protocol for data recording and control of the test chamber via Ethernet interface using external applications

OPC-UA, Profi Bus, Profi NET or EtherCAT on request.

Safety

Test specimen protection

Independent adjustable temperature limiter t_{min}/t_{max} , separate sensor installed in the test space.

Software temperature limiter t_{min}/t_{max} , individually adjustable fixed value

Test chamber protection

Temperature limiter for protection against overtemperature in the test chamber

Specimen switch-off

Potential-free contact specifically for test specimens that emit heat, on female connector, max. load 24 V, 0.5 A

³² Flash drive is not included in the scope of delivery.

Additional options