

# Technical Description LabEvent T/500/50/3



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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.

The data in these technical descriptions are constantly being revised due to the short-term basis of the changes to the F-Gas regulation. Some of the values can only be simulated at the present time and are therefore based on assumptions and simulated values. We therefore specifically draw your attention to the reservation for technical changes. If you have any questions, please contact us and we will discuss your requirements with you.

# Standards

## Alternating temperature tests

IEC 60068-2-14, Test Nb (LV 124 L-03)

ISO 16750-4, Temp. cycling

ISO 16750-4, Temp. steps

## High-temperature tests

IEC 60068-2-2, Test B

ISO 16750-4, High temperature

MIL-STD-202 G, Meth. 108A

MIL-STD-810 G, Meth. 501.5

MIL-STD-883 J, Meth. 1008.2

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!**

# Performance data

## Temperature tests

Maximum temperature	+130 °C
Minimum temperature <sup>1</sup>	-50 °C
Rate of temperature change <sup>2,3</sup> , cooling in range of +130 °C to -50 °C	3 K/min
Rate of temperature change <sup>2,3</sup> , cooling in range of +130 °C to -40 °C	3.5 K/min
Rate of temperature change <sup>2,3</sup> , heating	4.5 K/min
Temperature deviation <sup>4</sup> , in time	±0.2 K to ±0.5 K
Temperature homogeneity <sup>5</sup> , in space	±0.5 K to ±1.5 K
Temperature gradient <sup>6</sup>	≤ 3 K
Heat compensation <sup>7</sup> , max.	2500 W
Factory calibration values <sup>8</sup>	+80 °C and -25 °C

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

<sup>2</sup> Simulated value; real value may deviate ±1 K/min.

<sup>3</sup> According to IEC 60068-3-5, average, measured in the supply air / According to IEC 60068-3-6, average, measured in the supply air at climate tests.

<sup>4</sup> 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.

<sup>5</sup> Relative to the selected set point in the temperature range from the minimum temperature up to +130 °C and/or at humidity >20 % RH (without measuring uncertainty).

<sup>6</sup> Up to +130 °C according to IEC 60068-3-5:2001 and/or JJF 1101-2003.

<sup>7</sup> At +20 °C for temperature tests.

<sup>8</sup> The factory calibration of the temperature and humidity 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.

# Technical data

## Dimensions

Test space volume	580 l
Test space dimensions (H x W x D)	1250 mm x 710 mm x 655 mm
Useable width	680 mm
Exterior housing dimensions (H x W x D)	2130 mm x 1025 mm x 1400 mm
Minimum exterior housing dimensions <sup>9</sup> (H x W x D)	2030 mm x 930 mm x 1255 mm
Load of the test space floor <sup>10</sup>	60 kg
Load per insertion shelf <sup>10</sup>	20 kg
Load per insertion shelf support, max.	100 kg
Loading, max.	160 kg
Total weight <sup>11</sup>	approx. 475 kg

## Electrical data

Voltage rating <sup>12, 13</sup>	3/N/PE AC 400 V $\pm$ 10 % 50 Hz
Power rating, max. <sup>14</sup>	4.8 kW
Current rating <sup>15</sup>	12 A
Power supply <sup>16</sup>	CEE-Connector, 16 A
Power supply cable	3.5 m
Fuse protection <sup>17</sup>	16 A gG
Protection class of switchgear cabinet and control unit <sup>18</sup>	IP 54
Sound pressure level <sup>19</sup>	$\leq$ 60 dB(A)

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<sup>9</sup> For transport and move-in. Parts can be removed at additional expenses.

<sup>10</sup> Max. load as surface load.

<sup>11</sup> Without loading and additional equipment.

<sup>12</sup> The test chamber can also be operated at 3/N/PE AC 380 V  $\pm$  10 % 50 Hz. In this case, the heating rate is reduced by approximately 10 %.

<sup>13</sup> If you wish to connect an RCD, please note that a connection to an RCD < 300 mA cannot be made.

<sup>14</sup> 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.

<sup>15</sup> Neutral conductor under load.

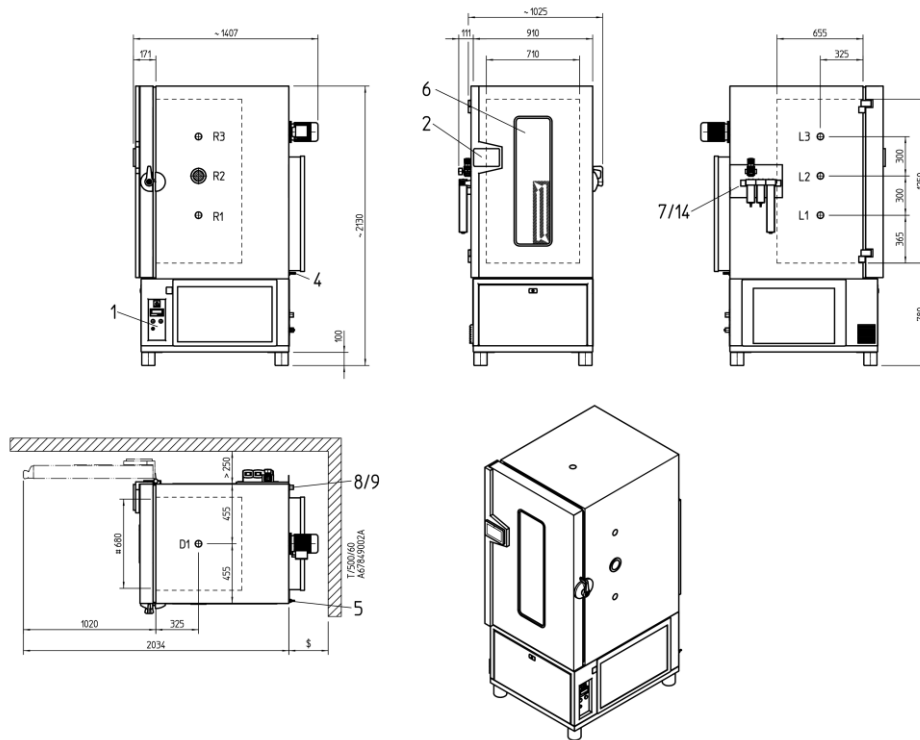
<sup>16</sup> For fixed connection, the connection must be made by qualified personnel on the side of the customer.

<sup>17</sup> Provided by the customer.

<sup>18</sup> 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.

<sup>19</sup> 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.

# Installation drawing



## Access ports

- R2 Installation position right  $\varnothing$  80 mm
- R1, R3 Additional installation positions right (optional)
- L1-L3 Additional installation positions left (optional)
- D1 Installation position ceiling (optional)

## Equipment

- 1 Main switch
- 2 Webpanel
- 4 Overflow/condensate drain backpressure-free, G 3/4" male thread resp. hose connection  $\varnothing$  12 mm
- 5 Electrical connection
- 6 Test space door (with optional window)

## Additional information

- ~ Transport dimensions
- # Useable width
- \$ Escape route<sup>20</sup>
- 7 Compressed air dryer (optional)
- 14 Compressed air connection/GN<sub>2</sub> (optional)

<sup>20</sup> 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.

## Refrigeration unit

Standard design	air-cooled				
Refrigerant <sup>21</sup>	Stage	Refrigerant	GWP	Fill quantity	CO <sub>2</sub> -equivalent
Air-cooled	Main cooling	R744	1	1.7 kg	0.0 t

## Air-cooled design

Heat dissipation to the installation room, max. <sup>22</sup>	6.7 kW
Heat dissipation to air-cooled condenser, max. <sup>22</sup>	-

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<sup>21</sup> In accordance with DIN EB 378-4, stationary refrigeration and air-conditioning units with a filling capacity of between 3 and 30 kg must be checked for leaks at least once a year; there is no obligation to check systems with a filling quantity of less than 3 kg, but we recommend checking them as a part of maintenance.

<sup>22</sup> Based on calculated values; may deviate from actual requirements.

# Our basic equipment

## Exterior housing

Material	Galvanized steel sheet
Finish	RAL 9002, grey-white, solvent free, powder coated
Door	One-hand operation, lockable, hinged on the left side
Base	Adjustable feet, vibration-absorbing

## Test space<sup>23</sup>

Material floor	Stainless steel 1.4301, surface III D polished
Material wall	Stainless steel 1.4301, surface III D polished <sup>24</sup>
Insertion shelf	1 pc., stainless steel, max. number of insertion shelves possible: 9
Equipment access port right side <sup>25</sup>	1 pc., approx. 80 mm Ø stainless steel, incl. 2 slotted foam silicone plugs
Air circulation conditioning	at rear wall with axial flow fan

## Measurement sensor

Temperature	Pt 100 platinum temperature sensor
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## Regulation and control

<b>SIMPAC® 2.0</b>	<p>Digital measuring and control system with I/O unit and <b>WEBSeason®</b>-Software, remote controllable through integration into network.</p> <p>Operating/programming and monitoring unit with 17.8 cm (7 ") webpanel, integrated in the door, which can be folded forward by up to 60°.</p> <p>This test chamber is equipped with our new, future-oriented <b>SIMPAC® 2.0</b> 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 <b>SIMPATI®</b>, <b>SIMPATI®</b> 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 <b>SIMPATI® 4.80.2</b>.</p> <p>In the past, port 2049 was used for networking via ASCII I and II. With <b>SIMPAC® 2.0</b>, the following changes were necessary from a technical point of view:</p> <p>ASCII I new: 2050/tcp, ASCII II new: 2051/tcp</p> <p>There are no changes for users of our SimServ protocol. This continues to work via port 2049.</p> <p>Please note these changes prior to delivery of the systems.</p> <p>You can find our FAQ on the new control system at</p>
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<https://www.weiss-technik.com/environmental-simulation/de/detailpages/software/simpac-2.0>

<sup>23</sup> 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.

<sup>24</sup> For test setups a wall distance of at least 20 mm must be maintained.

<sup>25</sup> Production-related tolerances of up to ±3 mm are possible.

## Communication

Network	1 Ethernet interface (100/1000 megabits) for integration in a network
USB	1 USB interface for recording of measuring data on a flash drive <sup>26</sup>
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 $t_{\min}/t_{\max}$ , individually adjustable fixed value Software temperature limiter $t_{\min}/t_{\max}$ , individually adjustable fixed value
Test chamber protection	Safety 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

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<sup>26</sup> Flash drive is not included in the scope of delivery.

# Additional options