


# C2/180/70/3

## Reach-In Climatic Test Chamber ClimeEvent

The ClimeEvent C2/180/70/3 is designed for demanding tasks. The mechanical and software integration is precisely tailored to your test setup, supported by modern interfaces such as SECS/GEM, OPC-UA and BUS systems, as well as our own S!MPATI software. Extensive standard equipment, a wide range of options, and custom modifications guarantee solutions for every test task. Excellent ergonomics, energy-saving functions such as Greenmode, and our innovative $CO_2$ refrigeration technology ensure sustainable operation. With a temperature range of -70 °C to +180 °C (optionally extendable) and a test chamber volume of 180 liters, the C2/180/70/3 is the ideal choice for your cold, heat and thermal cycling tests.

**Our highlights:**

¬ Also with new climate-friendly refrigerant R744

¬ Connectivity is key.

¬ Even more precise humidity values and simple management of the humidification water.

¬ Protect your valuable test material.

¬ Requirements from the defense sector

¬ End-of-line testing

**Applications:**

Your testing needs and safety are our focus. Together with you, we configure the ClimeEvent C2/180/70/3 climatic test chamber to meet your exact requirements for safe and reliable testing. Whether for demanding luxury materials, complex lithium-ion battery testing in e-mobility, or test specimens with flammable media from the automotive industry, we provide the right solution. Our chambers comply with key standards, including IEC 60068 and MIL-STD-810H, ensuring maximum safety and compliance.

# Technical Data.

| C2/180/70/3 | |
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| **TEMPERATURE TEST PERFORMANCE DATA** | |
| Temperature range [°C] | -70 ... 180 |
| Temperature Change Rate; Cooling (-70°C/ -50°C/ -40°C) [K/min] | 3.8 / - / - |
| Max. Heat Compensation | 2000 / - |
| **CLIMATE TEST PERFORMANCE DATA** | |
| Humidity range [% R.H.] | 10 ... 98 |
| Temperature range for climate testing [°C] | 10 ... 95 |
| Dew point temperature range [°C] | 4 ... 94 |
| Humidity deviation over time | 1 ... 3 |
| Temperature deviation in time [K] | 0.1 ... 0.3 |
| Temperature homogeneity, spatially [K] | 0.5 ... 1 |
| **CONSUMPTION AND CONNECTION DATA** | |
| Power Rating [kW] | 5.3 |
| Electrical Connection | CEE-Connector, 16 A |
| Connection cable length | 3,5m cable |
| Current Rating [A] | 15 |
| **TEST SPACE** | |
| Testspace volume [l] | 190 |
| Test Space Dimensions (H x W x D) [mm] | 750 x 580 x 450 |
| Test space lighting | LED |
| Material test space housing | Stainless steel, 1.4301, surface III D glossy |
| **EXTERNAL HOUSING** | |
| External Dimensions (HxWxD) [mm] | 1830 x 900 x 1575 |
| Side wall clearance [mm] | 700 |
| Rear wall clearance [mm] | 700 |

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| **Access port right** | 1 piece, approx. ø 125 mm stainless steel incl. closed silicone plug + slotted foam silicone plug |
| **Base** | Adjustable and vibration-absorbing levelling feet |
| **Finish of the external housing** | Powder coating Colour: RAL 7035, light grey; design elements in RAL 7016 anthracite gray; solvent-free |
| **Material external housing** | Galvanised sheet steel |
| **DIMENSIONS & WEIGHT** | |
| **Total Weight [kg]** | 575 |
| **Total load [kg]** | 130 |
| **Floor Loading [kg]** | 50 |
| **OPERATING AND AMBIENT CONDITIONS** | |
| **Sound Pressure Level [dB(A)]** | 57 |
| **CONTROL, OPERATION & INTERFACES** | |
| **Webpanel** | 10“ (25.4 cm) Webpanel |
| **Switching inputs** | 4 digital inputs for feedback from customer equipment. Load max. 24 V-DC and approx. 30 mA |
| **Switching outputs** | 4 digital outputs for control of customer-provided devices by means of potential-free contacts, max. load 24 V-DC, 0,5 A |
| **INTERNAL FITTINGS** | |
| **Total load per insert basket [kg]** | 30 |
| **Total load of the insert baskets [kg]** | 80 |
| **Maximum number of insert baskets [pcs]** | 5 |

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# Selection of relevant options

| Label | Description |
|---|---|
| **Additional Access Ports** | Access port made of stainless steel, vailable in three standard sizes Ø 50, 80, 125 mm, including 1 silicone plug closed and 1 foam + silicone plug, slotted. |
| **Web panel below the door lock** | The operating/programming and monitoring unit with a 25.4 cm (10") web panel is mounted below the door lock. |
| **Webpanel installed at any location on side wall** | The operating/programming and monitoring unit with 25.4cm (10") web panel can be mounted anywhere on the side panel. *(The exact positioning must be specified when ordering)* |
| **Demineralization unit, 10 l, pressure-proof to 6 bar** | If no demineralized water is available from the customer, a demineralization unit can be connected upstream. (*Replacement cartridge available)* |
| **Activated carbon filter for demineralized water** | Fitting located behind the lifting gear. The standard access port (Ø 80 mm) remains installed. |
| **Access port in the ceiling** | Access port in the ceiling mate of stainless steel, vailable in three standard sizes Ø 50, 80, 125 mm. |
| **Lead-through pad, incl. replacement insert** | The installation is located behind the lifting gear. The standard feedthrough, Ø 80 mm, stays installed. |
| **Notched access port welded** | A welded notch bushing measuring approx. 50 mm x 50 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. |
| **Disconnection of fan via digital channel** | Disconnection of the fan is activated and deactivated via a digital channel on the control panel. If the digital channel “disconnection of fan” is activated, the fan and the temperature-conditioning unit are switched off immediately. |
| **Window in the door** | Multi-insulated, heated viewing window in the door. *(Format: 520 mm x 418 mm)* |
| **Switchable privacy screen for test specimens** | You want to protect your test specimen comfortably from prying eyes? The window pane of the test chamber can be made opaque by means of a digital switching channel via the light switch. *(Only in connection with the “window in the door” option)* |
| **Door hinged on the 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. |
| **Door seals can be replaced for tests with hydraulic oil** | Hydraulic oil places special demands on the seals. They have to be replaced more often. The seals are mounted on the door to make them easier to replace. |
| **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 or if the adapter plug has been plugged into the 25-pin D-Sub socket “Digital I/O”. |
| **Emergency-stop button on test space housing** | The emergency stop button is installed on the outside of the test chamber, at the height of the door lock. When actuated, a message is displayed on the control panel and the test is stopped. |
| **Signal lamp, two colours** | The two-colour signal lamp installed on top of the test chamber indicates the operating mode. |
| **Fault message to potential-free switching contact** | If a fault occurs at the test chamber, a potential-free switching contact is actuated. |

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| **Door contact switch for "Door open" notification on the control unit / S! MPATI®** | The components of the door contact switch are mounted on the test chamber and on the test chamber door. Monitoring of the test space door is activated when the test starts. When the test space door is opened, the message "Door open" appears on the control panel. |
| **Safety interlock switch, open at zero current** | The components of the electrical door interlock are mounted on the test chamber and on the test chamber door. The monitoring of the test chamber door is activated when the test is started. |
| **Safety interlock switch, closed at zero current** | The components of the electrical door lock are mounted on the test chamber and test chamber door. The control system for the test chamber door will be activated when starting the test. |
| **Extension of climate range with compress** | With the optional "capacitive humidity measuring system" (mat. no. 64624928) controlled operation with a dew point down to -20 °C is possible if compressed air is provided by the customer. |
| **Unregulated compressed air dryer for dew points down to -30 °C** | Dehumidification equipment for dew points down to -30 °C (unregulated operation) to prevent condensation on the test specimen during temperature tests. Activation and deactivation are controlled via a digital switching channel. For climate test chambers, regulated operation is possible up to a dew point of -12 °C. |
| **Compressed air dryer for dew points down to -20 °C controlled / down to -30 °C uncontrolled** | Dehumidification device for Climate Test Chambers including a capacitive humidity measuring system for dew points down to -20 °C (controlled operation). Controlled dehumidification is started by activating the dehumidification device via a digital switch channel. It can also be used as a dehumidification device for dew points down to -30 °C (uncontrolled operation) to avoid condensation formation on the test specimen during temperature tests. |
| **GN2 / Compressed air connection** | Connection with coupling plug DN 7.2 for operation with the customer's compressed air dryer or for the injection of an inert gas into the hot and cold chamber. The function can be enabled/ disabled on the control unit or via the S!MPATI® software. |
| **Additional humidity control with capacitive humidity measuring system** | In addition to the standard-issue psychrometric measuring device, a capacitive humidity measuring system is also installed. Humidity control is enabled either via this humidity sensor or the psychrometric measuring device. |
| **Independent humidity measuring sensor for reference measurement** | Capacitive sensor for humidity measurement and sensor for temperature measurement, located in the supply air next to the control sensor. This option is used for reference measurement, as the measured values are recorded independently of the unit control. |
| **Temperature measurement on the test specimen** | Many norms, such as the new version of IEC 60068-2-14 Nb, require close observation and recording of the temperature of the test specimen during the test phases. Our test chamber can be equipped with additional temperature sensors, the values from which are displayed and recorded on the display (via USB or with S!MPATI®). One of the sensors can also be used as a control sensor if required. |
| **Temperature measurement on test specimen (max. 1 sensor) switchable as control sensor** | The changeover is via a digital switch channel. The measured value is displayed on the control unit and can be called up via the interfaces. The sensor is inserted into the test space via the standard port. |
| **Temperature measurement on test specimen** | Movable temperature sensor Pt 100 with flexible cable for temperature measurement at any point in the test room or on the test object. The measured value is displayed in °C on the control panel and can be called up via the interfaces or the free analogue outputs of the measured value card. |

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| **Temperature measurement on the test specimen using the NiCrNi sheath thermocouple** | Movable temperature sensor as Ni-Cr-Ni thermocouple with flexible cable for temperature measurement anywhere in the test space or on the test specimen. The flexible cable length is approx. 5m and the sensor is 3m in length. |
| **Temperature measurement on the test specimen via NiCrNi thermocouple wire** | Movable temperature sensor as Ni-Cr-Ni thermocouple wire, welded measuring tips, with a flexible cable for temperature measurement anywhere in the test space or on the test specimen. The flexible cable length is approx. 5 m. |
| **Temperature measurement at the test specimen by means of thermocouple Ni-Cr-Ni, switchable as control sensor** | The switchover is via digital switch channel. The measured value is displayed on the control unit and can be called up via the interfaces. |
| **Temperature measurement on the test specimen via transmitter using a NiCrNi thermocouple** | Movable temperature sensor as Ni-Cr-Ni thermocouple with flexible cable for temperature measurement anywhere in the test space or on the test specimen. |
| **Additional 4 Digital I/O** | 4 digital outputs for controlling the additional functions via the potential-free contacts, load max. 24 V-DC, 0.5 A, 4 digital inputs can be queried via interface, load max. 24 V-DC, approx. 30 mA |
| **Analogue measuring card** | 5 - 6 outputs 0 to 10 V and 4 inputs for Pt 100 are available for processing and output of analog measuring signals. |
| **Analogue measured value card: 4 thermocouples, NiCrNi inputs and 5 outputs** | 5 - 6 outputs 0 to 10 V and 4 inputs for Ni-Cr-Ni thermocouple type K are available for the processing and output of analogue measurement signals. |
| **Energy meter** | Professional energy analysis with an energy meter |
| **Air- or water-cooled** | Many test chambers are available as air- or water-cooled and can be supplied according to your infrastructure. Water cooling is available for all systems and, for more powerful test chambers, it often makes more sense to dissipate the waste heat via a cooling water connection. Air-cooled versions are to be discussed on an individual basis on request. |
| **Supply connections installed at the top** | The following supply connections are mounted on the top:<br>▪ Cooling water connection including optional insulation of water supply<br>▪ Supply of demineralized water (Climate Test Chambers only)<br>▪ Compressed air supply (available as additional equipment) |
| **Hose kit for cooling water network 3/4", 2x2.5m, flexible** | For connection to a cooling water network, two flexible hoses with a connection of G ¾" and a length of 2.5 m are provided. |
| **Hose kit for cooling water network 3/4", 2x5m, flexible** | For connection to a cooling water network, two flexible hoses with a connection of G ¾" and a length of 5 m are provided. |
| **Hose set for cooling water network 1", 2x2, 5m, flexible** | For connection to a cooling water network, two flexible hoses with a G 1" connection and a length of 2.5 m are supplied. |
| **Hose set for cooling water network 1", 2x5m, flexible** | For connection to a cooling water network, two flexible hoses with a G 1" connection and a length of 5 m are supplied. |

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| **Insulation of water inlet at a water flow of <+12 °C** | Cooling water hoses in the test chamber are additionally insulated. |
| **Pump system for floors without drain** | The integrated pump-down system pumps the water in the system (condensate, humidification water, cleaning water) against the gradient into a drain on the customer side |
| **Special voltage on request** | Special voltage on request |
| **Water Cooling CO2** | The following supply connections are mounted on the top:<br>▪ Cooling water connection including optional insulation of water supply<br>▪ Supply of demineralized water (Climate Test Chambers only)<br>▪ Compressed air supply (available as additional equipment) |

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