



## Vacuum oven

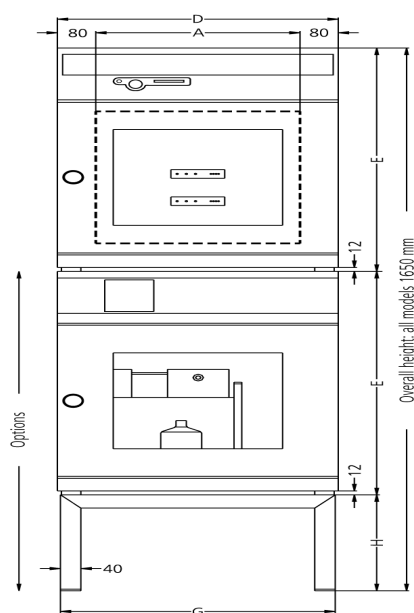
### VO400

Drying food, cosmetics, clocks, books, PCBs or injection moulds: Design your own VO vacuum oven according to your wishes!



The direct contact between the load and the heatable and removable thermoshelves in the chamber of the Memmert vacuum oven ensures rapid and uniform temperature control of food, cosmetics, watches, books, PCBs or injection moulds, without the loss of heat.

On this page, you can find all the essential technical data on our vacuum drying oven. Our customer relations team will be pleased to help if you want further information. If you should require a customised special solution, please contact our technical specialists at [myAtmoSAFE@memmert.com](mailto:myAtmoSAFE@memmert.com).



## Temperature

<b>Temperature</b>	temperature measured through 4-wire Pt100 sensor individually for each thermoshelf
<b>Working temperature range</b>	min. 5°C above ambient up to +200°C
<b>resolution of display for actual values</b>	0.1°C up to 99.9°C, 0.5°C from 100°C
<b>resolution of display for setpoint values</b>	0.1°C up to 99.9°C, 0.5°C from 100°C
<b>resolution of display/setting accuracy</b>	0.5°C up to 99.9°C, 1°C from 100°C

## Control of standard components

<b>Vacuum</b>	digital electronic pressure control through solenoid valves
<b>Vacuum</b>	setting accuracy 1 mbar
<b>Vacuum</b>	adjustment range from 5 mbar to 1100 mbar - digital (LED)
<b>Vacuum</b>	rapid air intake for door opening (door is blocked under vacuum ) - programme reactivation at stored values
<b>Vacuum</b>	vacuum drying process (vacuum cycles) is continued after power failure
<b>Vacuum</b>	one programmable, digitally controlled inlet for air
<b>Controller</b>	digital display of all set parameters, such as temperature, weekdays, time, pressure, programme status and set-up values
<b>Controller</b>	separate LED-symbol for each thermoshelf in operation
<b>Controller</b>	digital display of actual temperature for each thermoshelf individually
<b>Timer</b>	integrated timer for tempering and pressure (vacum) profiles of up to 40 ramps, parameters time, pressure and temperature (setpoint dependent) individually adjustable for each segment from 1 min. up to 99 hrs

## Control technology

<b>Calibration</b>	three freely selectable temperature and pressure values
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## Communication

<b>Interface</b>	USB-interface incl. Memmert software "Celsius" for programming and documentation of temperature and pressure
<b>Documentation</b>	integrated ring memory as data logger for GLP-conforming long-term documentation of all relevant parameters - 1024 kB
<b>Documentation</b>	programme stored in case of power failure
<b>Programming</b>	chip-card control incl. 1 MEMoryCard XL with 32 kB storage capacity (max. 40 ramps)
<b>Programming</b>	multifunctional programming via menu on 8-digit alphanumeric digital display (language to be chosen via set-up)

## Safety

<b>Temperature control</b>	additional digitally adjustable, electronic micro-processor overtemperature monitor TWW, protection class 3.1 - (max-value for overtemperature, min-value for undertemperature)
<b>Temperature control</b>	automatic overtemperature protection for each thermoshelf following the setpoint-value (MLOP - Multi-Level-Overtemperature-Protection) switching the heating of the shelf off at about 3°C above setpoint value
<b>Temperature control</b>	mechanical temperature limiter TB, protection class 1 according to DIN 12880 to switch off the heating approx. 20°C above nominal temperature
<b>AutoSAFETY</b>	additionally integrated over- and undertemperature protection "ASF", automatically following the setpoint value at a preset tolerance range, alarm in case of over- or undertemperature, heating of the individual shelf is switched off in case of overtemperature
<b>Autodiagnostic system</b>	for fault analysis

## Heating concept

<b>VO direct heating</b>	fuzzy-supported MLC (Multi-Level-Controlling) microprocessor controller adapting its performance to the volume (local temperature sensing) for each thermoshelf
<b>Thermo shelves</b>	2 connections for thermoshelves in the rear (1st and 3rd level)

## Standard equipment

<b>Scope of delivery</b>	works calibration certificate for +160°C at 20 mbar pressure for each supplied thermoshelf together with the vacuum oven
<b>Door</b>	full-sight glass door, inside spring-loaded, 15 mm thick glazed panel in safety glass, outside with anti-splitter screen
<b>Interior</b>	hermetically welded stainless steel interior of extremely corrosion-resistant stainless steel, material 1.4404
<b>Interior</b>	additional interior mountings of stainless steel, material 1.4404 (removable for cleaning), consisting of mounting at the sides with guide bars for thermoshelves and on top (diffusor) to avoid turbulences when aerating
<b>Interior</b>	all tubings made of stainless steel, material no. 1.4571
<b>Internals</b>	1 thermoshelf of aluminum, material 3.3547 (ASTM B209) with integrated large-area heating

## Stainless steel interior

<b>Volume</b>	49 l
<b>Dimensions W x H x D in mm</b>	$w_{(A)} \times h_{(B)} \times d_{(C)}$ : 385 x 385 x 330 mm
<b>Max. number of internals</b>	2
<b>Max. loading of chamber</b>	60 kg
<b>Max. loading per internal</b>	20 kg

### Textured stainless steel casing

**Dimensions**  $w_{(D)} \times h_{(E)} \times d_{(F)}$ : 550 x 680 x 480 mm

**Housing** rear zinc-plated steel

### Electrical data

**Voltage** 230 V, 50/60 Hz

**Electrical load** approx. 2000 W

### Ambient conditions

**Ambient temperature** +5 °C to +40 °C

**Set Up** The distance between the wall and the rear of the chamber must be at least 15 cm. The clearance from the ceiling must not be less than 20 cm and the side clearance from the wall must not be less than 8 cm.

**Humidity rh** max. 80 %, non-condensing

**Overvoltage category** II

**Pollution degree** 2

### Packing/shipping data

**Transport information** The appliances must be transported upright

**Customs tariff number** 8419 8998

**Country of origin** Federal Republic of Germany

**WEEE-Reg.-No.** DE 66812464

**Dimensions approx incl. carton** B x H x T: 670 x 890 x 630 mm

**Net weight** approx. 83 kg

**Gross weight carton** approx. 104 kg

Standard units are safety-approved and bear the test marks

