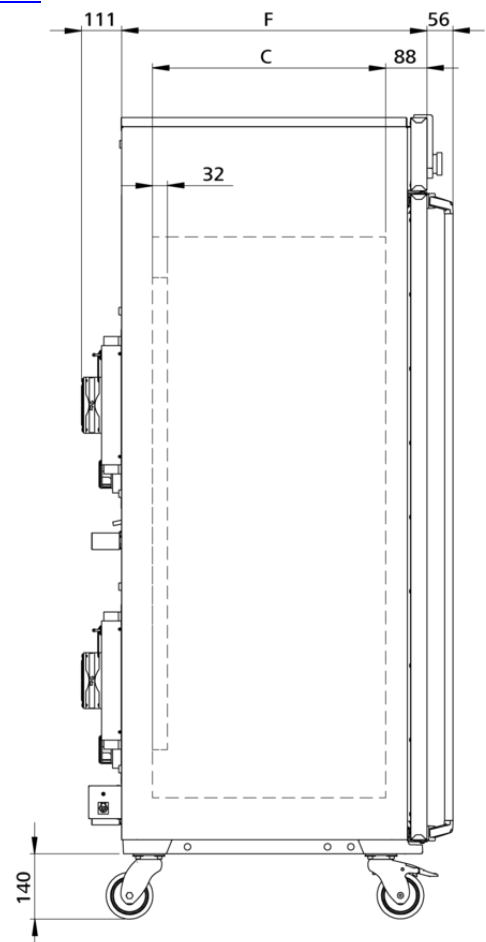
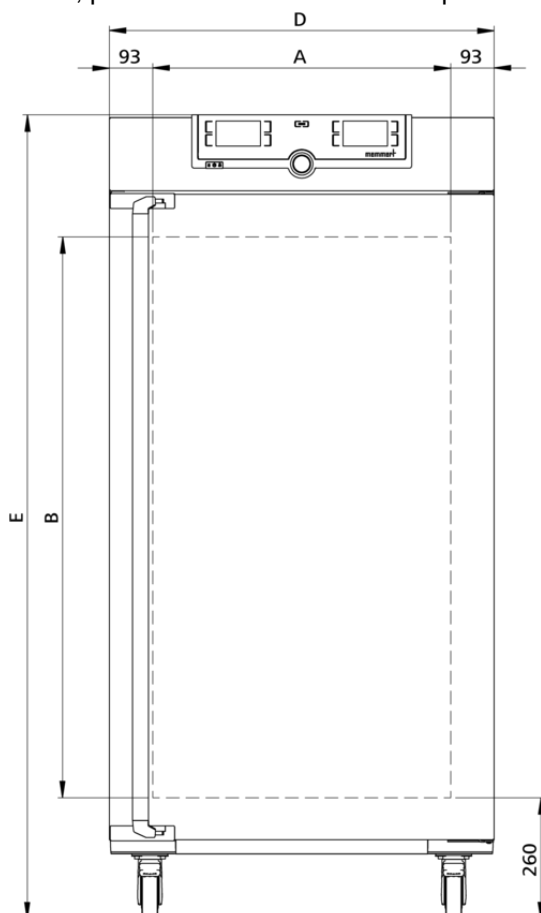


### HPP410eco

Maximum energy efficiency in continuous operation - tailor-made for stability studies according to ICH guidelines, stability tests for cosmetics and foods as well as environmental testing and material testing



On this page, you can find all the essential technical data on the Memmert stability chamber HPP. 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 [sales@memmert.com](mailto:sales@memmert.com).



## Temperature

<b>Setting temperature range</b>	without light, with humidity: +5 to +70 °C
<b>Setting temperature range</b>	with light, with humidity: +5 to +70 °C
<b>Setting temperature range</b>	with light, without humidity: 0 to +70 °C
<b>Setting temperature range</b>	without light, without humidity: 0 to +70 °C
<b>Working temperature range</b>	with light, without or with humidity: 15 to +40 °C
<b>Working temperature range</b>	without light, with humidity: +5 (at least 20 below ambient temperature) to +70 °C
<b>Working temperature range</b>	without light, without humidity: 0 (at least 20 below ambient temperature) to +70 °C
<b>Setting accuracy temperature</b>	0.1 °C
<b>Temperature sensor</b>	2 Pt100 sensors DIN Class A in 4-wire-circuit for mutual monitoring, taking over functions in case of an error

## Humidity

<b>Setting range humidity</b>	10 - 90 % rh
<b>Humidity</b>	humidity supply with distilled water from external tank by self-priming pump
<b>Humidification</b>	humidification by hot steam generator
<b>Dehumidification</b>	dehumidification by cold trap using the Peltier technology
<b>Setting accuracy humidity</b>	0.5 % rh

## Control technology

<b>ControlCOCKPIT</b>	TwinDISPLAY. Adaptive multifunctional digital PID-microprocessor controller with 2 high-definition TFT-colour displays.
<b>Language setting</b>	German, English, Spanish, French, Polish, Czech, Hungarian
<b>adjustable parameters</b>	temperature (Celsius or Fahrenheit), relative humidity, programme time, time zones, summertime/wintertime
<b>Timer</b>	Digital backwards counter with target time setting, adjustable from 1 minute to 99 days
<b>Function HeatBALANCE</b>	adapting the distribution of the heating performance of the upper and lower heating circuit from -50 % to +50 %
<b>Function SetpointWAIT</b>	the process time does not start until the set temperature is reached
<b>Calibration</b>	three freely selectable values each, temperature and humidity

## Communication

<b>Interface</b>	Ethernet LAN, USB
<b>Documentation</b>	programme stored in case of power failure
<b>Programming</b>	AtmoCONTROL software on a USB stick for programming, managing and transferring programmes via Ethernet interface or USB port

## Safety

<b>Temperature control</b>	over- and undertemperature monitor TWW, protection class 3.3 or adjustable temperature limiter TWB, protection class 2, selectable on display
<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 function is switched off in case of overtemperature, cooling function in case of undertemperature
<b>Autodiagnostic system</b>	integral fault diagnostics for temperature and humidity control
<b>Alarm</b>	visual and acoustic

## Heating concept

<b>Peltier</b>	energy-saving Peltier heating-/cooling system integrated in the rear (heat pump principle)
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## Standard equipment

<b>Standard works calibration certificate</b>	+25 °C / 60 % rh, +40 °C / 75 % rh
<b>Door</b>	fully insulated stainless steel door with 2-point locking (compression door lock)
<b>Door</b>	inner glass door
<b>Internals</b>	2 stainless steel grid(s), electropolished
<b>Standard accessories</b>	Water tank including connection hose

## Stainless steel interior

<b>Dimensions</b>	$w_{(A)} \times h_{(B)} \times d_{(C)}$ : 640 x 1200 x 500 mm (d less 32 mm for fan - Peltier)
<b>Volume</b>	384 l
<b>Max. number of internals</b>	14
<b>Max. loading of chamber</b>	200 kg
<b>Max. loading per internal</b>	20 kg

## Textured stainless steel casing

<b>Dimensions</b>	$w_{(D)} \times h_{(E)} \times d_{(F)}$ : 824 x 1720 x 655 mm (d +56mm door handle & +111mm Peltier element)
<b>Installation</b>	on lockable castors
<b>Housing</b>	rear zinc-plated steel

## Electrical data

<b>Voltage</b>	230 V, 50/60 Hz
<b>Electrical load</b>	approx. 700 W
<b>Voltage</b>	115 V, 50/60 Hz
<b>Electrical load</b>	approx. 700 W

## Ambient conditions

### Set Up

The distance between the wall and the rear of the appliance must be at least 15 cm. The clearance from the ceiling must not be less than 20 cm and the side clearance from walls or nearby appliances must not be less than 5 cm.

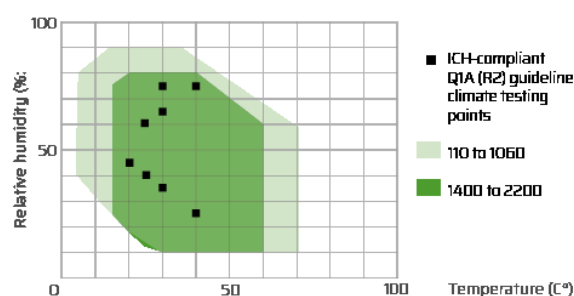
<b>Ambient temperature</b>	16 °C to 40 °C
<b>Humidity rh</b>	max. 70 %, non-condensing
<b>Altitude of installation</b>	max. 2,000 m above sea level
<b>Overvoltage category</b>	II
<b>Pollution degree</b>	2

## Packing/shipping data

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

<b>Customs tariff number</b>	8419 8998
<b>Country of origin</b>	Federal Republic of Germany
<b>WEEE-Reg.-No.</b>	DE 66812464
<b>Dimensions approx incl. carton</b>	w x h x d: 930 x 1930 x 930 mm
<b>Net weight</b>	approx. 142 kg
<b>Gross weight carton</b>	approx. 192 kg

The Peltier-cooled climate chamber HPPeco is specifically designed for stability studies according to ICH guidelines (Q1A) as well as stability tests for cosmetics and food. With the large working range ascending from the freezing point, the climate chamber is also ideal for working materials testing and environmental tests in industry.



**Standard units are safety-approved and bear the test marks**

