

Constant Climates ...

**Vötsch**  
Industrietechnik



with Climatic Test Chambers  
Series VC 0...

# Optimize and secure your product quality ...

Function and service life of systems or components are influenced by varying climatic conditions during transport, storage or use.

The resistance of material, even packing against environmental influences is becoming increasingly important. The behaviour of e.g. chemical substances under diverse climatic conditions and the simple question: Will the bonded joint hold? are vital issues.

If what you are looking for is quality, then the Vötsch climatic test cabinets will put you one step ahead. The series for constant climate has a timeless yet smart appearance.

The climate is created reliably and exactly to your requirements as often and as long as you wish. Long-term tests in climatic test cabinets are the shortest method of optimising and securing the quality of your products.

Optimised, tested basic modules, ensure that the required temperature and climatic test values are complied with even during long-term tests, e.g. thanks to the self-cleaning humidity measurement system. A true precision wonder which provides test results that leave no question of doubt.

Stability tests as per ICH guidelines, constant climate tests as per DIN 50014 & IEC 60 068-2-3, ...-56, ...-67 and ...-78 can be performed problem-free.

The climatic test cabinet VC 0... can also be used as a temperature test cabinet.

With this series, we ensure yet again the best possible degree of efficiency which in other words means extremely low energy consumption.

The well-equipped systems and striking features together with the possibility of further extensions, mean that the climatic test cabinets have a wide range of application.

The use of environmental friendly materials and production methods, e.g. solvent-free powder coating as well as recycling of old systems underlines our sense of responsibility towards the environment.

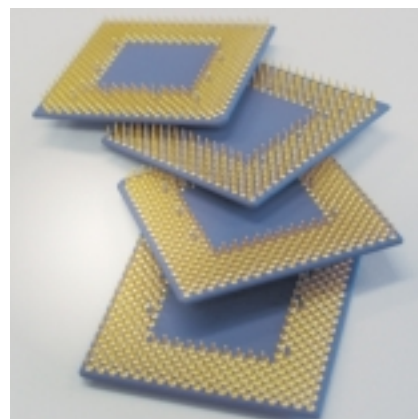
The high gloss polished, vapour-tight stainless steel container is fully adapted to its function. It is both corrosion resistant and easy-to-clean.

Even full in action, you can hardly hear the working test chamber.

The performance of the climatic test chamber is additionally confirmed with a factory calibration certificate.

## Special features

- Extremely low noise level
- 1-phase electrical connection
- Low energy consumption
- Safety of test specimens thanks to independent temperature measurement
- Easy to clean stainless steel test space
- Wide humidity range - extreme climate
- Calibrated test system



... with the climatic test chambers VC 0 ...



## Qualification-Documentation

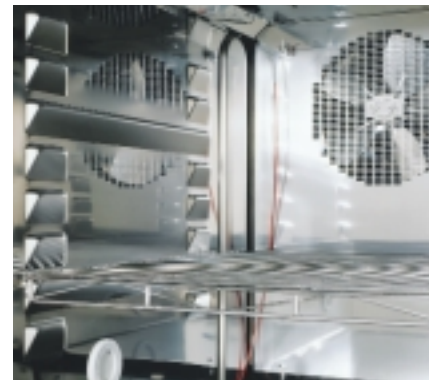
For the VC 0... series and the software **SIMPATI\***, we provide FDA conform qualification documentation.



## Technical data for the series VC 0...

		Type	VC 0018	VC 0034	VC 0060	VC 0100	VC 0150
Test space volume	approx.	litres	190	335	600	990	1540
<b>Performance for temperature tests</b>							
Temperature range		°C	-10/+90	-10/+90	-5/+90	0/+90	0/+90
Temperature deviation in time		K	±0.1 to ±0.5				
Temperature deviation in space		K	±0.5 to ±1.0				
Temperature gradient <sup>1)</sup>		K	1 to 2				
Temperature rate of change <sup>1)</sup>	Heating	K/min	0.6	0.6	0.5	0.4	0.4
	Cooling	K/min	0.3	0.3	0.2	0.2	0.2
Heat compensation to +20 °C		W	200 (to +50 °C)				
Calibrated values			+4 °C and +90 °C				
<b>Performance for climatic tests</b>							
Temperature range		°C	+10 to +90				
Temperature deviation in time		K	±0.1 to ±0.3				
Temperature deviation in space		K	±0.5 to ±1.0				
Temperature gradient <sup>1)</sup>		K	1 to 2				
Humidity range		%	10 to 98				
Humidity deviation in time		%	±1.0 to ±3.0				
Calibrated values accord. to ICH guidelines			+25 °C / 60 % r. h. and +40 °C / 75 % r. h.				
Test space dimensions	Width	mm	580	580	800	1100	1100
	Depth	mm	450	765	800	950	1475
	Height	mm	750	750	950	950	950
External dimensions	Width	mm	870	870	1090	1390	1390
	Depth	mm	1150	1465	1655	1850	2375
	Height	mm	1775	1775	1995	1995	1995
Sound pressure level approx. <sup>2)</sup>		dB(A)	47	47	47	47	47
Rated power		kW	1.7	1.7	1.7	1.7	1.7
Electrical connection			1/N/PE AC 230 V ± 10 %, 50 Hz				

Performance values refer to +25 °C ambient temperature - <sup>1)</sup> In accordance with IEC 60068-3-5. <sup>2)</sup> free field, 1 m distance from the front, as per DIN 45635, part 1, accuracy class 2. **We reserve the right of changes in construction resulting from technical progress. Some of the illustrated systems contain optional extras.**



# Operation, configuration and options ...

## Control and operation

The 32 bit control and communication system for monitoring and controlling provides the highest level of operating convenience.

With the removable, menu-controlled colour touchpanel with graphics display, comprehensive test programmes can be easily and reliably created, stored and retrieved.

The communication link to the system includes the functions on/off, test specimen protection (min/max), serial and parallel interface and digital port. An analog port is also available (option).

With the control software **SIMPATI\*** (option) systems are easy to operate. The evaluation and logging of test cycles and the processing of measured data at the PC or in the network are without saying standard features.

## Standard equipment ...

- Colour touchpanel
- 32 bit control and monitoring system (**MINCON/32**)
- Adjustable software temperature limiter min./max.
- Independent, adjustable temperature limiter  $t_{min} / t_{max}$
- Humidity input and display in % r. h.
- Interface RS 232
- Potential-free contact for switching-off of test specimen
- Air-cooled refrigeration unit
- Psychrometric humidity measuring system (alternatively capacitive humidity measuring system)
- Water storage container with level indicator
- Automatic water replenishment
- Calibration of 2 temperature and 2 humidity values
- Entry ports NW 50 mm (left) and 125 mm (right)
- 1 stainless steel shelf

## Options ...

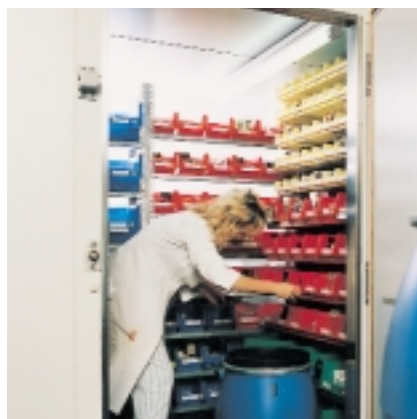
- Software **SIMPATI\***
- Analogue transducer card I/O
- Capacitive humidity measurement system
- Independent sensor for temperature and humidity measuring
- Interface IEEE 488
- Networking (RS 485 interface)
- Various printers
- Entry ports and notches
- Door with window
- Door with window and 2 handholes with gloves
- Demineralisation unit
- Mobile design
- Special voltage
- Qualification documentation

## Special designs ...

We plan and manufacture tailor-made solutions to meet all requirements.



Door lock and colour touchpanel



Special rooms for long-term tests in the chemical industry



Special rooms for performing stability tests on drugs as per ICH guidelines

# Vötsch

Industrietechnik

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