

Equipment
for Laboratories ...

Vötsch
Industrietechnik



VTL & VCL
for Temperature and Climatic Tests

Temperature and Climatic Test Chambers ...



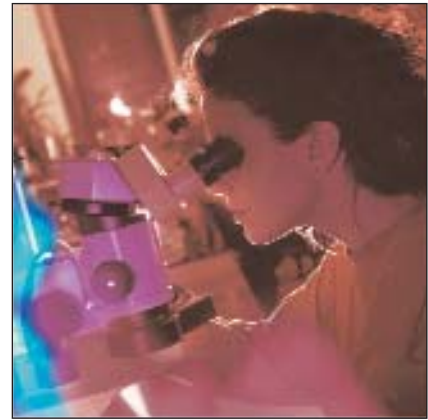
Compact, quiet, yet powerful units are required to tackle special laboratory conditions that include limited space, even smaller specimens and the need to conduct tests directly at the workplace.

Temperature and climatic testing aims to prove the resistance capability of test specimens to the environmental influences of temperature and humidity (climatic testing).



As tests concentrate on the durability of materials and substances under extreme conditions, as well as malfunctions of components. The VTL & VCL series of temperature and climatic test chambers are ideally suited to such applications. Reductions in the effectiveness of substances can be detected at an early stage and thus already eliminated in the development phase.

These systems have a volume of 34 l, 64 l and 100 l respectively and provide an optimum solution where space is limited. Please refer to the "Technical Data" for the most important technical details.



Main Features

- Visually attractive with large windows
- Compact, with optimised test chamber volumes
- Powerful and quiet, suitable for a broad range of applications involving temperature and relative humidity
- Easy handling and a variety of options
- Equipped with the powerful **SIMPAC***, a 32 Bit control and communication system
- Via touchpanel the chamber can be programmed and all parameters and conditions are indicated.



... especially developed for laboratories



Technical Data

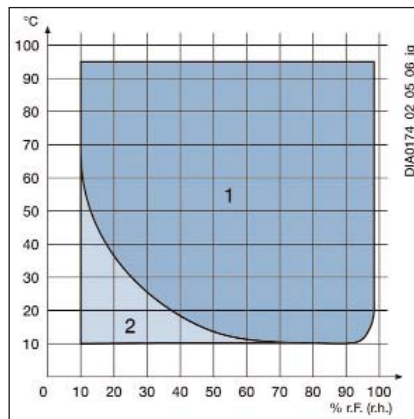
Type	VTL Temperature	VCL Climatic	--- VCL 0003	VTL VCL 4003	VTL VCL 7003	--- VCL 0006	VTL VCL 4006	VTL VCL 7006	--- VCL 0010	VTL VCL 4010	VTL VCL 7010
Test space volume approx.		l	34	34	34	64	64	64	100	100	100
Performance for temperature tests											
Temperature range		°C	+10 to +180	-40 to +180	-70 to +180	+10 to +180	-40 to +180	-70 to +180	+10 to +180	-40 to +180	-70 to +180
Temperature deviation in time ¹⁾		K	±0.3 to ±1.0								
Temperature homogeneity in space ⁹⁾		K	±0.5 to ±2.0								
Temperature rate of change ²⁾											
Heating		K/min	2.0	4.0	4.0	2.0	3.5	3.5	2.0	3.5	3.5
Cooling		K/min	3.0	6.0	3.0	3.0	5.0	2.5	3.0	5.0	3.5
Heat compensation max.		W	--	800	550	--	800	550	--	1100	700
Temperature calibration values			+23 °C and +80 °C								
Performance for climatic tests - only VCL											
Temperature range		°C	+10 to +95								
Humidity range		%	10 to 98								
Dew point temperature range		°C	see humidity diagram (page 4)								
Humidity deviation in time		%	±1 to ±3								
Temperature deviation in time ¹⁾		K	±0.3 to ±0.5								
Temperature homogeneity in space ⁹⁾		K	±0.5 to ±1.5								
Climatic calibration values			+23 °C / 50 % RH and +95 °C / 50 % RH								
Test space dimensions	Width	mm	350	350	350	470	470	470	490	490	490
	Depth	mm	300	300	300	345	345	345	400	400	400
	Height	mm	310	310	310	400	400	400	500	500	500
External dimensions	Width	mm	640	640	640	760	760	760	780	780	780
	Depth VTL	mm	--	750	750	--	800	800	--	930	930
	Depth VCL	mm	930 ³⁾	930 ³⁾	750 ⁶⁾	980 ⁴⁾	980 ⁴⁾	800 ⁸⁾	1105 ⁵⁾	1105 ⁵⁾	1105 ⁵⁾
	Height	mm	980	980	1730	1070	1070	1780	1190	1190	1190
With optional base frame	Height	mm	1730	1730	Standard	1780	1780	Standard	1880	1880	1880
With optional base frame	Depth	mm	750	750	Standard	800	800	Standard	930	930	930
Sound pressure level ⁷⁾		dB(A)	56	56	59	56	56	59	56	56	59
Weight		kg	110	110	130	120	120	140	170	190	210
Rated power, max.		kW	1.8	1.8	2.5	1.8	1.8	2.5	2.7	3.0	3.5
Electrical connection			1/N/PE AC 230 V ±10 %, 50 Hz, 16 A								

The performance values refer to +25 °C ambient temperature - ¹⁾ in centre of test space, ²⁾ in accordance with IEC 60068-3-5, ³⁾ with optional base frame the depth will be reduced to 750 mm, ⁴⁾ with optional base frame the depth will be reduced to 800 mm, ⁵⁾ with optional base frame the depth will be reduced to 930 mm, ⁶⁾ depth with serial base frame, ⁷⁾ measured in 1 m distance from the front and in 1.6 m height at free field measurement, ⁸⁾ relative to the set value in temperature range from t_{min} to +150 °C

Standard equipment and options ...



Touchpanel and independent adjustable temperature limiter



Humidity diagram
 1 Standard
 2 Extended humidity range with external dryer

Standard equipment

- **SIMPAC*** with touchpanel
- Potential-free contact for switching-off of test specimens
- Independent adjustable temperature limiter t_{min}/t_{max}
- Psychrometric humidity measuring sensor (only VCL)
- Interface TCP/IP
- Large observation window
- Test space illumination
- 1 Entry port 50 mm Ø
- 1 Shelf
- Air-cooled refrigeration unit
- Humidifier bath (only VCL)
- Calibration of 2 temperature and 2 humidity values (only VCL) with Certificate

Options

- Software **SIMPATI***
- Temperature measuring on test specimen
- Capacitive humidity sensor
- Interface IEEE 488
- Networking (RS 485 interface)
- Compressed air dryer
- Additional entry ports
- Additional shelves
- Base frame with wheel
- Automatic water supply
- Demineralization unit (only VCL)
- Test with continuously high humidity (only VCL)
- Special voltage

We reserve the right of technical changes resulting from design progress. Some of the illustrated systems contain optional extras.

Special design ...

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

Other brochures for laboratory applications ...

Stability Tests acc. to GMP & FDA ... **Vötsch**



Laboratory Scope ... **Vötsch**



Minis ... **Vötsch**



... VT & VTM Temperature Test Chambers