

V Ö T S C H - Climatic Test Cabinet /德国富奇公司-气候试验箱

Type 型号	VC 4018
Ordering code 订货号	67609143
Test space volume 试验空间容积	approx. 190 litres

TECHNICAL DATA/技术参数**Characteristic values for temperature tests/温度试验参数**

Temperature differences

after stabilisation, according

to IEC 60068-3-5

按照 IEC 60068-3-5，稳定状态后，

温度变化

Temperature range 温度范围	-45 °C to +180 °C
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Temperature fluctuation temporal, in centre of working space	±0.1 K to ±0.5 K
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试验空间中心，温度波动度

Temperature deviation, spatial 温度均匀度	±0.5 K to ±2.0 K
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Rate of temperature change

according to IEC 60068-3-5

按照 IEC 60068-3-5，

温度变化率

heating/升温: 4.0 K/min.

cooling/降温: 3.5 K/min.

Heat compensation in the range of +20°C to +50°C +20°C 至 +50°C 热补偿	max. approx. 2800 W
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max. approx. 2800 W

Calibrating values

校正点

+23 °C and +80 °C

Characteristic values for climatic tests/气候试验参数

Temperature differences
after stabilisation, according
to IEC 60068-3-5
按照 IEC 60068-3-5 , 稳定状态后 ,
温度变化

Temperature range +10 °C to +95 °C
温度范围

Temperature fluctuation ±0.1 K to ±0.3 K
temporal, in the centre of
working space
试验空间中心 , 温度波动度

Temperature deviation, spatial ±0.5 K to ±1.0 K
温度均匀度

Humidity range 10 % to 98 % r.h.
湿度范围

Dew point range -3 °C to +94 °C
露点温度范围

Humidity fluctuation, temporal ±1.0 % r.h. to ±3.0 % r.h.
in the centre of working space
试验空间中心 , 湿度波动度

Heat compensation 400 W in the range of +25 °C to +95 °C with
热补偿 relative humidity ranging up to 90 % r. h.
相对湿度范围最高为 90% , 温度范围为+25 °C
至 +95 °C , 400 W。

Calibrating values +23 °C / 50 % r.h. and +95 °C / 50 % r.h.
校正点

Water consumption of humidification system at +40 °C, 92 % r.h. < 2 l/24 h
加湿系统水消耗量

Data for installation and operation/安装和操作数据

Dimensions 尺寸	Test space 试验空间	Cabinet (required space) 外形尺寸 (所需空间)
	580 mm wide 宽 450 mm deep 深 750 mm high 高	870 mm wide 宽 1280 mm deep 深 1775 mm high 高
Weight 重量	approx. 425 kg net	

Sound pressure level
声压级

approx. 58 dB(A) measured 1m distance from the front
at free field measurement
距试验箱 1 米，无障碍空间测量，约 58 dB(A)

EMC Test (electromagneti
compatibility)
EMC 测试 (电磁兼容性)

according to EN 50 081-1, 1993

Interference immunity
抗干扰

according to EN 50 082-2, 1996

Electrical connection
电源连接

nominal voltage 3//PE AC 400V ± 10% 50Hz
额定电压
nominal power approx. 4.1 kW
额定功率
nominal current approx.12.5 A (neutral conductor fully
额定电流 loaded)
connector Cekon 16 A
连接
connecting cable approx. 3.5 m
连接电缆
fuse protection
provided by the
customer 16 A, slow blow
现场保险丝

Humidification water
加湿水

demineralized water, pH-value 6-7
去离子水，pH 值 6-7
conductivity max. 10 Microsiemens/cm
电导率，最大 10 μs/cm
integrated supply tank approx. 20 l
试验箱配备水箱，容积约 20 升

Drain for condensate and
cleaning water
冷凝水和清洗水排放

hose connecting sleeve NW 12 mm
软管连接，直径 12 mm。

Operating conditions
操作条件

ambient temperature/环境温度：+10 °C to +35 °C
max. rel. air humidity/最大相对湿度：75 % r.h.

Installation conditions
安装条件

The equipment is designed for installation
in normal rooms. The max. permissible
ambient temperature for storage and
installation is +55 °C.
设备设计用于安装在常规房间，适合储存和安装的
最大允许环境温度+55 °C。

Design设计

Test space

polished stainless steel - grade 1.4301

试验空间	抛光不锈钢-牌号 1.4301 max. load of test space floor 50 kg, 试验空间底板最大负载 50 kg impressed side walls to accommodate shelves with a distance of 60 mm, 试验空间二侧模压成型试验样品架槽, 槽距为 60 mm internal racks must allow 20 mm space from the main walls 内部架子与试验空间主要壁保持 20 mm 空间
Shelf 试验样品架	1 shelf made of stainless steel, 1 个, 不锈钢制造 work space with moulded shelf supports, 试验空间配备模压成型的样品架槽 max. load for each shelf: 30 kg, 每个试验样品架最大负载: 30 kg a maximum of 8 shelves is possible max. total load 80 kg 最多可放置 8 个试验样品架, 最大总负载为 80 kg
Door 门	hinged on the left hand side, one-hand operation, lockable 绞链在左面, 单手操作, 有门锁
Entry ports 引线孔	1 entry port \varnothing 50 mm installed on l.h.side 1 个直径 50 mm, 位于左面。 1 entry port \varnothing 125 mm installed on r.h.side 1 个直径 125 mm, 位于右面。
Refrigeration unit 制冷机组	<ul style="list-style-type: none">• low-noise (silent) refrigeration unit 低噪音 (静音) 制冷机组• air-cooled 风冷式机组• continuously variable power adjustment by electronic monitoring and control system 由电子监控系统连续调节功率• hermetically sealed refrigeration cycle 密封制冷循环
Refrigerant 制冷剂	<ul style="list-style-type: none">• R 404A• chloride-free refrigerant 无氯化物制冷剂• The ozone depletion potential is zero (ODP = 0,00) 臭氧潜在损耗为零 (ODP = 0.00)
Condensation protection 冷凝保护	can be switched on to avoid condensation on test specimens by dehumidifying during heating phase. This is achieved via separate dehumidifying coil 在加热其间, 通过除湿, 可以开启避免冷凝在试验样品上的

开关，由分离的去湿盘管达到去湿目的。

Climatic system
湿度系统

- water bath with temperature control
温度控制的水槽
- aerosol-free humidification and dehumidification
无雾状的加湿和去湿
- psychrometric humidity measuring system with
continuously wetted, self-cleaning wet-bulb sensor
配备连续湿润，自清洗湿球传感器的温湿球湿度测量系统
- integrated supply tank for humidification water with
level indication
带水位指示器的加湿水水箱，与试验箱一体化。
- automatic water replenishment for connection to
customer demineralized water supply
自动水补充功能用于连接用户去离子水供应
- water depletion protection
水耗尽保护

Finish
外观

resistant powder coating
高强度粉末喷涂，
colour: RAL 9002, grey-white
颜色：RAL 9002，灰白色

Installation
安装

feet separately adjustable in height
试验箱各个支撑脚高度均可调节

Control
控制

- microprocessor control and monitoring
system **SIMCON/32**
微处理器控制和监测系统 SIMCON/32
- 32 bit technology
32 位技术
 - graphical representation of set point and actual value
图形化表示设置值和实际值
 - digital display of set point and actual value of
temperature in °C and relative humidity in % relative
humidity
温度以°C 形式和相对湿度以%形式，数字显示设置值
和实际值
 - digital input of temperature in °C and humidity in %
relative humidity
温度以°C 和湿度以%相对湿度形式数字输入
 - integrated programme generator
集成试验程序发生器
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- programme memory
试验程序储存
 - manual and automatic operation

手动和自动工作模式

- fault diagnostic system
故障自诊断系统

Control terminal
控制终端

Touch control panel
触摸屏控制器

- graphics LCD-display
图形 LCD 显示器
- display with $\frac{1}{4}$ VGA resolution
显示分辨率 $\frac{1}{4}$ VGA
- display with backlighting
带背光的显示器
- operation by touching function symbols
操作由触摸功能符号执行
- graphics symbols for programming functions
用于编程功能的图形符号
- graphical representation of the current test values
图示当前试验值
- menu-guiding, clear text display, trend function
菜单引导, 清晰的文字显示, 试验趋势功能
- easy programming of individual test programmes
方便编制各个试验程序
- storage of individual programmes, which can be activated at any time.
各个试验程序的储存, 随时可以调用任何一个试验程序
- programme storage for 100 programmes with total 1000 sections, 250 loops and 9999 cycles
可储存 100 个试验程序, 试验程序 1000 行, 250 次程序行间循环, 9999 次试验程序循环。
- software support for up to 32 digital switching channels
软件支持至多 32 个数字式开关通道
- password protection
个人密码保护功能
- inspection system (maintenance system), giving information about combined working hours, number of switching events of a particular component and its failures
检查系统 (维修系统) 给出有关的工作小时数、一个特别部件开关事件数和故障信息。

Centronics interface
打印机接口

for graphical documentation for HP Deskjet Color and Epson printer
适用 HP 彩色喷墨打印机和 Epson 打印机支持图形文件

Interface RS 232
RS 232 接口

for connection of the laptop control unit or for communication with customer's computer
用于连接膝上型PC或者与用户PC通信

Test specimen protection

- independent adjustable temperature limiter t_{\min} / t_{\max}

试验样品保护	<p>according to EN 60 519-2 1993, thermal safety class 2, individually adjustable fixed values, movable sensor in test space, 按照 EN 60 519-2 1993, 热安全 2 级, 独立的可调节温度限制器: 最低温度/最高温度, 可分别调节某一温度值 试验空间配置移动式温度传感器,</p> <ul style="list-style-type: none">• adjustable software temperature limiter min. / max., individually adjustable fixed values 可调节软件温度限制器最低温度/最高温度, 可分别调节某一温度值。
Protection of test specimens 保护试验样品	<p>safety switch especially for heat emitting test specimens connection onto potential-free changeover contact, max. load 24 V, 0.5 A 特别用于热辐射试验样品的安全开关, 连接至零电势转换接触器, 最大负载 24V, 0.5A。</p>
Temperature safety device 温度安全装置	<p>safety temperature limiter (STB) for protection of the test cabinet against overheating 安全温度限制器 (STB), 用于试验箱的超温保护。</p>
Digital customer I/O 数字式用户 I/O	<ul style="list-style-type: none">• 4 digital outputs for switching of customers' equipment via potential-free contacts, load max. 24 V-DC; 0.5 A 通过零电势接触器, 4 个数字输出用于开关用户设备, 最大负载为 24 V-DC; 0.5 A。• 4 digital inputs for feedback from customers equipment, load max. 24 V-DC, approx. 30 mA 4 个数字输入, 用于反馈用户设备信号, 最大负载 24 V-DC 30 mA。
Socket 插座	<p>European socket 220 - 230 V, max. 2 A, for connection of a measuring or registration device 欧洲型插座 220 – 230V, 最大 2A, 用于连接测量装置或记录装置。</p>
Protection class 保护级别	<p>climatic test cabinet: IP 22 气候试验箱: IP 22 electrical compartment: IP 54 电子部件: IP 54 control terminal: IP 54 控制终端: IP54</p>

Notes and definitions **注意事项和规定条款**

The temperature and humidity accuracy mentioned is measured in the centre of the test space. This is with stabilised conditions, without test specimens and without heat load and without optional accessories in the test space.

在试验空间中心，所测量的温度和湿度精度处于监控状态，而且在稳定条件、在试验空间无试验样品和无热负载和无选配件条件下得到。

The factory calibration of the temperature and humidity values will be done by traceable authorized national standards. The calibration is documented with a certificate.

工厂对温度和湿度值的校正为可追踪的、授权的和按国家标准进行，校正配有证书文件。

All figures are average values, which have been obtained at an ambient temperature of +25 °C and a nominal voltage of 230 V/50 Hz, without test specimens, without heat load and without optional accessories.

所有数据为平均值，这些参数在环境温度+25°C、额定电压 230V/50Hz、无试验样品、无热负载和无选配件条件下得到。

The noise measurement and sound level statements are according to DIN 45 635, Part 1, Accuracy class 2.

按照 DIN 45 635, Part 1, Accuracy class 2，进行噪音测量和声压级的声明。

The EMC Test (electromagnetic compatibility) and the statements regarding interference are according to EN 50 081-1. The interference immunity is according to EN 50 082-2.

按照 EN 50 081-1，进行 EMC 测试（电磁兼容性）和有关抗干扰声明按照 EN 50 082-2。

Basic Equipment/基本设备

Basic unit type VC 4018

型号 VC 4018 主机包括

- Touch control panel
控制终端为触摸式控制器
- Micro-processor monitoring and control unit SIMCON/32
微处理监控系统 SIMCON/32
- Digital customer I/O, potential-free 24 V, 4 freely disposable inputs/outputs
数字用户 I/O, 零电势, 24 V, 4 个自用输入/输出通道
- Independent adjustable temperature limiter t_{\min} / t_{\max}
独立的、可调节的温度限制器, 最低温度/最高温度
- Adjustable software temperature limiter min./max.
可调节的软件温度限制器, 最低温度/最高温度
- Humidity input and display in % relative humidity
相对湿度以%形式直接输入和显示
- Centronics interface
打印机接口
- Serial interface RS 232
接口 RS 232
- Potential-free contact for switching-off of test specimens
用于开-关试验样品的零电势接触板
- European socket
欧洲型插座
- Calibration of 2 temperature values and 2 climate values
2 个温度值的校正和 2 个温度、相对湿度值的校正
- Air-cooled refrigeration unit
风冷式制冷机组
- Condensation protection (dehumidification during heating phase)
冷凝保护 (加热其间去湿)
- Aerosol-free humidification and dehumidification
无雾状加湿和去湿
- Psychrometric humidity measuring system
干湿球湿度测量系统
- Water supply tank for humidification water with level indication
带水位指示的加湿水水箱
- Automatic water replenishment with low water alarm
自动水补充装置, 带低水位报警
- 1 Entry port, NW 50 mm, left-hand side
1 个直径 50mm 引线孔, 左面。
- 1 Entry port, NW 125 mm, right-hand side
1 个直径 125 mm 引线孔, 右面。
- 1 Shelf made of stainless steel
1 个不锈钢试验样品架

- 1 Set of operating instructions
1 册操作手册