

KBF P 720 (E2) - Constant climate chamber for photostability tests

Specialized equipment for photostability tests. Integrated cooling of fans consistently compensates for the additional heat from the light and thus provides unambiguous, meaningful test results in compliance with guideline ICH Q1B, Option 2. The two sources for visible and UV light can be controlled separately, which provides higher accuracy for analysis.



► Performance features and equipment :

- Electronically controlled APT.line™ preheating chamber and refrigerating system assuring temperature accuracy and reproducible results
- ICH compliant illumination integrated into the doors, for photo-stability testing in accordance with ICH guideline Q1B, option 2
- Temperature range -10 °C (14 °F) up to 100 °C (212 °F) - without illumination and humidity
- Temperature range 20 °C (68 °F) up to 90 °C (194 °F) - with illumination and humidity
- Humidity range 10 % RH to 90 % RH
- MCS controller with 25 storable programs of 100 sections each for a maximum of 500 program segments
- Features:
 - User friendly LCD screen
 - Easy-to-read menu guide
 - Integrated electronic chart recorder
 - Variety of options for the graphic display of process parameters
 - Real time clock
- Electronically controlled humidification and dehumidification system with capacitive humidity sensor suitable for stability tests according to ICH guideline Q1A (R2)
- Inner glass door
- Independent adjustable temperature safety device class 3.1 (DIN 12880), with visual and audible temperature alarm
- Access port with silicone plug Ø 30 mm (1.18 inch), left side
- Complete safety connection kit for water supply and drainage, including water hose, total length 6 m (19.7 ft.)
- RS 422 interface for GLP/GMP and the FDA guideline 21 CFR Part 11 compliant APT-COM™ DataControlSystem software
- 2 stainless steel racks included
- BINDER test certificate



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Exterior dimensions	
Width (mm/inch)	1234 / 48.6
Height (inclusive castors) (mm/inch)	1816 / 71.5
Depth (mm/inch)	867 / 34.1
Plus door handle, l - panel, connection (mm/inch)	100 / 3.9
Wall clearance rear (mm/inch)	100 / 3.9
Wall clearance side (mm/inch)	160 / 6.3
Steam space volume (l/cu.ft.)	855 / 30.2
Height of water connections (± 3 mm / 0.12 inch)	190 / 7.5
Number of doors	2
Number of inner glass doors	2

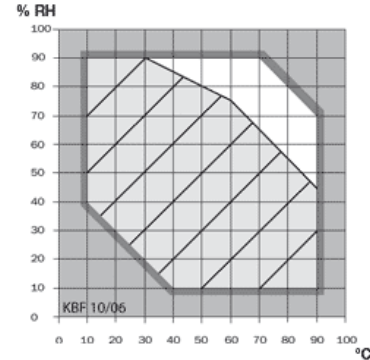
Interior dimensions	
Width (mm/inch)	1000 / 39.4
Height (mm/inch)	1168 / 46
Depth (mm/inch)	600 / 23.6
Interior volume (l/cu.ft.)	700 / 24.7
Racks, chrome - plated (number standard/max.)	2 / 14
Load per rack (kg/lbs.)	45 / 99
Permitted total load (kg/lbs.)	120 / 265
Weight of the unit (empty) (kg/lbs.)	345 / 762

Temperature data	
Temperature range	
without humidity / without lighting °C / °F	-5 - 100 / 23 - 212
without humidity / with lighting (approx. °C / °F)	5 - 100 / 41 - 212
with humidity / without lighting (approx. °C / °F)	20 - 90 / 68.0 - 194.0
with humidity / with lighting (approx. °C / °F)	20 - 90 / 68.0 - 194.0
Temperature variation without humidity	
at 10 °C (± °C)	0.4
at 37 °C (± °C)	0.4
Temperature variation with humidity 2) (± °C)	1
Temperature fluctuation fwhen heating 2) (± °C)	0.1
Temperature fluctuation when refrigerating (± °C)	0.5
Heating up time 1) 2) to 37°C (minutes)	28
Cooling down time from room temp. 1) 2) to 10°C (minutes)	35
Recovery time after doors were open for 30 sec 1) 2)	
to 37 °C (minutes)	5
to 50 °C (minutes)	4
Humidity fluctuation 2) 4) (± RH %)	1.5

Electrical data	
Housing protection acc. to EN 60529	IP 20
Nominal voltage (±10 %) 50 / 60 Hz (V)	230
Nominal power (kW)	2.95
Energy consumption 5) at 37 °C (W)	970

Illumination data	
ICH compliant illumination in the doors (KBF-ICH) for photo stability testing 5) (Lux)	4000
ICH compliant illumination in the doors (KBF-ICH) for photo stability testing 5) (UVA W/m ²)	1.7

Temperature-humidity chart



The light area indicates the control range of temperature and relative humidity. The hatched area indicates the control range of temperature and relative humidity without condensation.

ICH compliant illumination under the ceiling for photo stability testing (option 5) (Lux)	4000
ICH compliant illumination under the ceiling for photo stability testing (option 5) (UVA W/m ²)	1.7

1) up to 98 % of the set value

2) value without illumin.

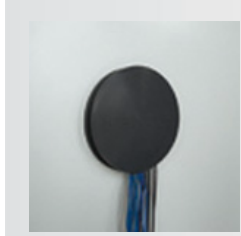
3) Upon door opening or water exchange in humidity cylinder: $> \pm 1.5\%$ RH, recovery time approx. 20 min

4) These energy consumption values can be used upon calculation of air conditioning systems.

5) Maximal value, measured in center of usable volume

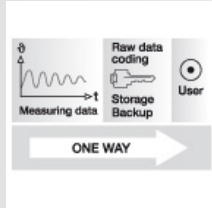
By bringing in a humidity source to the inner chamber the minimal humidity range is affected. A water tap (1 – 6 bar) with normal tap water (approx. 200 – 500 μS /tolerance +300 – 150 μS , total hardness appr. 4-8°dH) is necessary for the installation of the "humidifying and dehumidifying system". Furthermore, a 40 mm water drain with descending gradient is required.

All technical data are specified for units with standard equipment at an ambient temperature of 20 °C and a voltage fluctuation of $\pm 10\%$. The temperature data are determined in accordance to factory standard following DIN 12880 respecting the recommended wall clearances of 10 % of the height, width and depth of the inner chamber. All indications are average values, typical for units produced in series. We reserve the right to alter technical specifications at all times.



▶ Access ports

With silicon plugs for inserting external measuring devices into the chamber. Access ports with 10, 30, 50, and 100 mm diameter.



▶ APT-COM™ DataControlSystem GLP Edition

Software for GLP compliant control, programming, and documentation. Permits networks of up to 30 units and/or controllers. Meets the requirements of FDA 21 CFR Part 11.



▶ BINDER Data Logger kits

The new BINDER Data Logger kits for temperature and humidity can record temperature and humidity data of BINDER equipment. This finely tuned product solution also contains useful accessories for mounting the Logger on the BINDER unit, including cable bushings and a sensor mounting bracket.



▶ Calibration certificates and validation

BINDER can significantly reduce the time and effort needed for equipment qualification and validation. We draw on unparalleled knowledge of our equipment applications and years of experience in certification.

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Access port with silicone plugs, 10 mm (0.39), 30 mm (1.18 inch), 50 mm (1.97 inch), 100 mm (3.94 inch)	<input type="radio"/>
Keyboard lock	<input type="radio"/>
Certificate Light Measurement with ICH - compliant illumination. Radiometric measurements in the visible and UV - A spectral ranges with definition and documentation at 25 positions in 3 measurement levels (qualitative spectral measurements 250-785 nm)	<input type="radio"/>
Temperature precision measurement according to DIN 12880 and 9-point humidity measurement / factory standard with measurement log and certificate, measured at 25 °C (77 °F) / 60% RH or at specified values	<input type="radio"/>
Factory calibration certificate for temperature and humidity. Measurement in center of chamber at 25 °C (77 °F) / 60% RH or at specified values	<input type="radio"/>
Extension to factory calibration certificate for temperature and humidity. Each additional measurement at an additional measuring point or set of values	<input type="radio"/>
Temperature safety device, Class 3.3 (DIN 12880) with visual alarm	<input type="radio"/>
4-20 mA analog output for temperature and humidity measurements (e.g. chart recorder connection), with 6 - pin DIN socket. Outputs are adjusted automatically as the controller is adjusted	<input type="radio"/>
Zero-voltage relay alarm outputs for temperature (± 2 °C) and humidity (± 5 % RH), accessible via 6 - pin DIN socket, with acoustic signal that can be switched off (maximum power rating 24 V AC/DC, 2.5 A)	<input type="radio"/>
Switchable waterproof interior socket 230 V AC (max. 500 W), IP 65 protected, with corresponding plug. Max. allowed operating temperature 50 °C (122 °F)	<input type="radio"/>
Securing elements for additional fastening of racks (1 set of 4 pieces)	<input type="radio"/>
Door lock	<input type="radio"/>
Interior lighting (30 W)	<input type="radio"/>
External chart recorder for temperature and humidity	<input type="radio"/>
Data Logger Kit TH 70: For the continuous temperature and humidity recording of -40 °C (-40 °F) to 70 °C (158 °F) / 0% to 100 % RH. Kit includes 1 data logger, 1 attachable combined humidity/temperature sensor with 2 m extension cable and 1 fixture for the connection at the BINDER unit	<input type="radio"/>
Data Logger Kit TH 70/70: With two attachable combined sensors. One for the continuous temperature and humidity recording of -40 °C (-40 °F) to 70 °C (158 °F) / 0% to 100 % RH. Second one at the data logger for recording the environmental conditions. Kit includes 1 data logger, 2 attachable combined humidity/temperature sensors with 2 m extension cable and 1 fixture for the connection at the BINDER unit	<input type="radio"/>
Data Logger Kit T 220: For the continuous temperature recording of -90 °C (-130 °F) to 220 °C (428 °F). Kit includes 1 data logger, PT 100 sensor with 2 m Teflon extension cable and 1 fixture for the connection at the BINDER unit	<input type="radio"/>
Data Logger Software: Configuration und evaluation software for all BINDER Data Logger Kits, incl. data cable	<input type="radio"/>
Rack, stainless steel	<input type="radio"/>
Shelf, perforated, stainless steel	<input type="radio"/>
Reinforced rack, stainless steel, with 1 set of securing elements (1 set of 4 pieces) max. load 70 kg (154 lbs.)	<input type="radio"/>