KBF ICH series

Environmental simulation chambers for constant climatic conditions with light

As regards compliance with standards, performance and functionality, the characteristics are identical to the KBF series, except for the following impressive expanded photostability test features: two spherical, non-directional sensors capture the available light quantity at a specific sampling location; this flexible method has proven more reliable than those found in any other systems and, in combination with BINDER's light integration, is the only method of simulating the chemical actinometry electronically in accordance with ICH Q1B. BINDER has patented this process and is the only company offering this system.

Leistungsmerkmale/Ausstattung:

- Electronically controlled APT.line™ preheating chamber technology with DCT™ refridgeration system
- Temperature range: -5 °C to +100 °C (23 °F to 212 °F) (without humidity)
- Humidity range: 10 % r.H. to 90 % r.H.
- MCS controller with 25 storable programs of 100 sections each for a maximum of 500 program segments
  - 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 SPH sensor technology
- Capacitive humidity sensor
- Suitable for stability tests in accordance with the ICH guideline Q1A(R2)
- Automatic defrosting device for long-term operation
- Inner glass door
- Environmentally friendly refrigerant R 134a
- Collecting pan for condensate on the door
- Independent adjustable temperature safety device, Class 3.1 (DIN 12880) with optical and acoustic alarm
- Access port with silicone plug, Ø 30 mm (1.2 inch), right side (KBF ICH 240: left side)
- Complete safety connection kit for water supply incl. water hose and drain (total length 6 m / 19.7 ft)
- RS 422 interface for communication software APT-COM™ DataControlSystem
- 2 stainless steel racks
- ICH-compliant illumination in the doors for photostability tests in accordance with the ICH guideline Q1B, Option 2
- Vertically positioned illumination in both doors (10 light tubes)
- Fulfils all criteria of the ICH guideline for the visible and the ultraviolet part of the light spectrum.
- BINDER test certificate

	KBF 240	KBF 720
Exterior dimensions		
Width (mm/inch)	905 / 35.6	1234 / 48.6
Height (inclusive feet/castors) (mm/inch)	1458 / 57.4	1816 / 71.5
Depth (mm/inch)	765 / 30.1	867 / 34.1
Plus door handle, I-panel, connection (mm/inch)	100 / 3.9	100 / 3.9
Wall clearance rear (mm/inch)	100 / 3.9	100 / 3.9
Wall clearance side (mm/inch)	100 / 3.9	160 / 6.3
Steam space volume (l/cu.ft.)	338 / 11.9	855 / 30.2
Height of water connections (± 3 mm / 0.12 inch)	84 / 3.3	190 / 7.5
Number of doors	1	2
Number of inner glass doors	1	2
Interior dimensions		
Width (mm/inch)	650 / 25.6	1000 / 39.4
Height (mm/inch)	785 / 30.9	1168 / 46.0
Depth (mm/inch)	470 / 18.5	600 / 23.6
Interior volume (l/cu.ft.)	240 / 8.5	700 / 24.7
Racks, chrome-plated (number standard/max.)	2 / 7	2 / 14
Load per rack (kg/lbs.)	30 / 66	45 / 99
Permitted total load (kg/lbs.)	100 / 221	120 / 265
Weight of the unit (empty) (kg/lbs.)	213 / 470	278 / 614
Temperature data		
Temperature range KBF without humidity (°C/°F)	-10-100/14-212	-10-100/14-212
Temperature range KBF with humidity (°C/°F)	+10-90 / 50-194	+10-90 / 50-194
KBF ICH without humidity / without illumin. (°C/°F)	-5-100 / 23-212	-5-100 / 23-212
KBF ICH without humidity / with illumination (°C/°F)	5-100 / 41-212	5-100 / 41-212
KBF ICH with humidity / with/without illumin. (°C/°F)	20-90 / 68-194	20-90 / 68-194
Temperature variation without humidity		
at 10 °C (50 °F) (± °C)	0,4	0,4
at 37 °C (98.6 °F) (± °C)	0,4	0,4
Temperature variation with humidity 2) (± °C)	1	1
Temperature fluctuation from 5 °C (9 °F) above ambient		
temperature 2) (± °C)	0,1	0,1
Temperature fluctuation when refrigeration system		
is in operation (± °C)	0,5	0,5
Heating up time 1), 2)		
at 37 °C (98.6 °F) (Min.)	30	28
Cooling down time from room temp. 1), 2)		
at 10 °C (50 °F) (Min.)	35	35
Recovery time after doors were open for 30 sec. 1), 2)		
at 37 °C (98.6 °F) (Min.)	5	5
at 50 °C (122 °F) (Min.)	4	4
Humidity fluctuation 2), 4) (± RH%)	1,5	1,5
Electrical data		
Housing protection acc. to EN 60529	IP 20	IP 20
Nominal voltage (±10 %) 50/60 Hz (V)	200-240 1N~	200-240 1N~
Nominal power (W)	2700	2760
Energy consumption 4) at 37 °C (W)	434	610

1) up to 98 % of the set value
2) value without illumin.
3) upon door opening or water exchange in humidity cylinder: > ± 1.5 r.H.%, recovery time approx. 20 min
4) these energy consumption values can be used upon calculation of air conditioning systems

By introducing in a humidity source to the inner chamber the minimal humidity range is affected. A water tap (1–10 bar/14.5–145 psi) with normal tap water (approx. 200–500 µS/cm tolerance + 300–150 µS/cm) is necessary for the installation of the humidifying and dehumidifying system. Furthermore, a 40 mm (1.6 inch) water drain with descending gradient is required.

All specified technical data apply for standard equipment operating at an ambient temperature of + 20 °C (68 °F), with line voltage fluctuations of ± 10%. These typical average values for series equipment were determined in accordance with the BINDER factory standard. They are based upon the recommended distances from the inner chamber walls, namely 10% of height, width and depth. Differing ambient temperatures or variances in the design of individual equipment may produce different performance data.

We therefore recommend that equipment be calibrated and/or validated on a case-by-case basis when working at the extremes of the permissible ambient temperature range.

Illumination below the working space ceiling

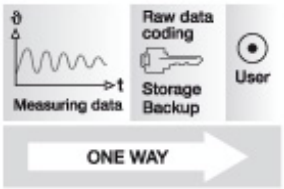
ICH-compliant illumination below the working space ceiling with thermal decoupling and ventilation, for photostability tests in accordance with ICH guidelines Q1B, Option 2.

Light integration

Absolutely precise measurement and real-time integration of lighting and UV intensity in the interior pursuant to ICH. The unit automatically switches off UV and daylight lighting separately, as soon as the selected radiation doses have been reached. As an additional option, light integration can be documented with APT-COM™ Software.

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.



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.

	KBF ICH 240	KBF ICH 720
Access port with silicone plug	O	O
Rack, stainless steel	O	O
Shelf, perforated, stainless steel	O	O
Reinforced rack, stainless steel, with 1 set of rack securings (max. 70 kg / 154 lbs.)	O	O
Independent adjustable temperature safety device, Class 3.3 (DIN 12880)	O	O
Analog output, 4-20 mA for temperature and humidity with 6-pin DIN socket (Outputs are adjusted automatically as the controller is adjusted)	O	O
Potential free alarm outputs for temperature and humidity, accessible via 6-pin DIN socket, with acustic signal that can be switched off (maximum power 24 V AC/DC, 2.5 A)	O	O
Interior lighting	30	30
Lockable door	O	O
ICH-compliant illumination according ICH guideline Q1B, Option 2 under the chamber celling	O	O
Light integration: Measurement, display and integration of illuminance and UV-light intensity for ICH-compliant illumination. Optional documentation of light intergration data in APT-COM™ software possible	O	O
Light qualification for ICH-compliant illumination	O	O
Waterproof interior socket 230 V (maximum 500 W)	O	O

Safety kit for water connection. Pre-mounted assembly of reflux prevention device and hose burst protection device	O	O
Locking of controller keyboard	O	O
Temperature measurement according to DIN 12880-2 or with 9 measuring points with measurement log and certificate	O	O
Calibration certificate for temperature and humidity	O	O
Extension for calibration certificate (additional values)	O	O
Fanfold chart paper	O	O
1 set fibre pens	O	O
Stable table on castors with locking brakes	O	-

O Option - not available

Technical specifications subject to change

BINDER GmbH Postfach 102 D-78502 Tuttlingen **Direction:** Im Mittleren Ösch 5 D-78532 Tuttlingen
Contact: Phone: +49 (0) 74 62/2005-0 | Fax: +49 (0) 74 62/2005-100 | info@binder-world.com | www.binder-world.com