

KBF series LQC: Climatic chambers for constant conditions with intelligent light measurement

Genuine KBF equipment including lighting for compliance with standards, performance and functionality, with expanded photostability test features which we have patented. Two non-directional spherical sensors flexibly capture the available quantity of light at a specific sampling location more realistically than all other systems; in combination with BINDER's light integration, this is the only method that simulates chemical actinometry electronically in accordance with ICH Q1B.



► Performance features and equipment:

- Electronically controlled APT.line™ preheating chamber technology
- Temperature range: -10 °C to 100 °C (14 °F to 212 °F) (without humidity)
- Humidity range: 10 % - 90 % RH
- 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 capacitive humidity sensor
- Suitable for stability tests in accordance with the ICH guideline Q1A
- 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
- 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)
- Fulfills all criteria of the ICH guideline for the visible and the ultraviolet part of the light spectrum.
- Light Quantum Control - LQC
- BINDER test certificate

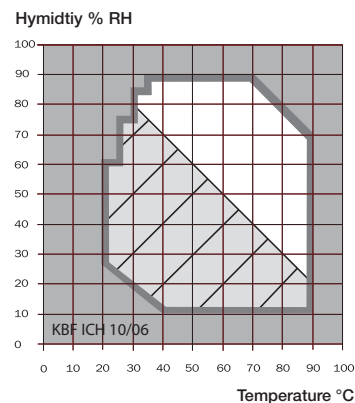




KBF LQC 240 KBF LQC 720

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▶ Exterior dimensions		
Width (mm/inch)	1034 / 40.7	1234 / 48.6
Height (incl. feet/roller) (mm/inch)	1142 / 45.0	1816 / 71.5
Depth (mm/inch)	746 / 29.4	867 / 34.1
Plus door handle, I-triangle, 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)	160 / 6.3	160 / 6.3
Steam space volume (l/cu.ft.)	308 / 10.9	855 / 30.2
Height of water connections (± 3 mm / 0.12 inch)	84 / 3.3	190 / 7.5
Number of doors	2	2
Number of inner glass doors	2	2
▶ Interior dimensions		
Width (mm/inch)	800 / 31.5	1000 / 39.4
Height (mm/inch)	600 / 23.6	1168 / 46.0
Depth (mm/inch)	500 / 19.7	600 / 23.6
Interior volume (l/cu.ft.)	240 / 8.6	700 / 25.1
Racks (number standard/max.)	2 / 7	2 / 14
Load per rack (kg/lbs.)	30 / 66	45 / 99
Permitted total load (kg/lbs.)	70 / 155	120 / 265
Weight (empty) (kg/lbs.)	184 / 405.7	345 / 762
▶ Temperature data		
Permissible ambient temperature range (°C/°F) ⁶⁾	18-32/64.4-89.6	18-32/64.4-89.6
without humidity / without illumin. (°C/°F)	-5-100 / 23-212	-5-100 / 23-212
without humidity / with illumination (°C/°F)	5-100 / 41-212	5-100 / 41-212
with humidity / without illumin. (°C/°F)	20-90 / 68-194	20-90 / 68-194
with humidity / with 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 ^{1), 2) 3)} (± RH %)	1.5	1.5
▶ Electrical data		
Housing protection acc. to EN 60529	IP 20	IP 20
Nominal voltage (± 10 %) 50 / 60 Hz (V)	230	230
Nominal power (W)	2420	2950
Energy consumption ⁴⁾ at 37 °C (W)	730	970
▶ Illumination data		
ICH compliant illumination in the doors in acc. Lux	4000	4000
with ICH guideline Q1B Option 2 UVA (W/m ²) ⁵⁾	1.7	1.7
ICH compliant illumination underneath the ceiling in acc. Lux	4000	4000
with ICH guideline Q1B Option 2 UVA (W/m ²) ⁵⁾	1.7	1.7

Temperature-humidity chart with ICH compliant illumination



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.

- 1) up to 98 % of the set value
- 2) value without illumin.
- 3) upon door opening or water exchange in humidity cylinder: > ± 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
⁶⁾ Recommended ambient temperature: +20 °C (68 °F)

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, total hardness 4°–8° dH, content of chloride < 100mg/l) 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 technical data are specified for units with standard equipment at an ambient temperature of 20 °C (68 °F) and a voltage fluctuation of ± 10 %. The temperature data are determined in accordance to factory standard following DIN 12880, part 2 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.