

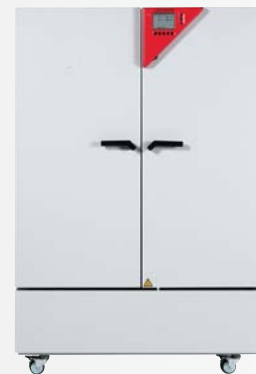
KBF series 115; 720: Climatic chambers for constant climatic conditions

The KBF series is the expert for absolutely reliable stability tests and precise maintenance of constant climatic conditions. It naturally also complies with all applicable guidelines such as ICH, FDA, GMP and GLP, with respect to programming and documentation requirements; with its large reserve capacity and wide range of climate area, it is designed to meet future challenges for many years to come.



► Performance features and equipment:

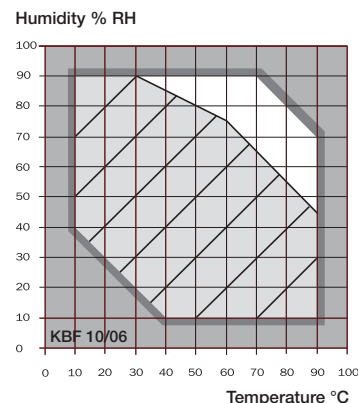
- Electronically controlled APT.line™ preheating chamber technology
- Temperature range: -10 °C to 100 °C (14 °F to 212 °F) (without humidity)
- Humidity range: 10 % - 90 % RH
- MCS controller with 25 storable programs of 100 sections each for a maximum of 500 program segments
 - User-friendly LCD screen
 - 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
- Environmentally friendly refrigerant R 134a
- 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
- BINDER test certificate





	KBF 115	KBF 720
Exterior dimensions		
Width (mm/inch)	834 / 32.8	1234 / 48.6
Height (incl. feet/roller) (mm/inch)	1022 / 40.2	1816 / 71.5
Depth (mm/inch)	646 / 25.4	867 / 34.1
Plus door handle, l-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.)	158 / 5.6	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)	600 / 23.6	1000 / 39.4
Height (mm/inch)	480 / 18.9	1168 / 46.0
Depth (mm/inch)	400 / 15.8	600 / 23.6
Interior volume (l/cu.ft.)	115 / 4.1	700 / 24.7
Racks (number standard/max.)	2 / 5	2 / 14
Load per rack (kg/lbs.)	20 / 44	45 / 99
Permitted total load (kg/lbs.)	50 / 110	120 / 265
Weight (empty) (kg/lbs.)	115 / 254	278 / 614
Temperature data		
Permissible ambient temperature range (°C/°F) ⁵⁾	18-32/64.4-89.6	18-32/64.4-89.6
KBF without humidity (°C/°F)	-10-100/14-212	-10-100/14-212
KBF with humidity (°C/°F)	10-90 / 50-194	10-90 / 50-194
Temperature variation without humidity		
at 10 °C (50 °F) (± °C)	0.4/-	0.4/-
at 37 °C (98.6 °F) (± °C)	0.3/-	0.4/-
Temperature variation with humidity ²⁾		
at 25°C (77 °F) (± °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.)	23	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)	1300	2800
Energy consumption ⁴⁾ at 37 °C/40°C (W)	530	610

Temperature-humidity chart



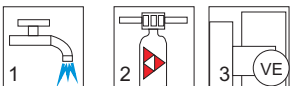
The light area indicates the control range of temperature and relative humidity. The hatched area indicates the control range of temperature and relative humidity without condensation.

- 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) Recommended ambient temperature 20 °C

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.

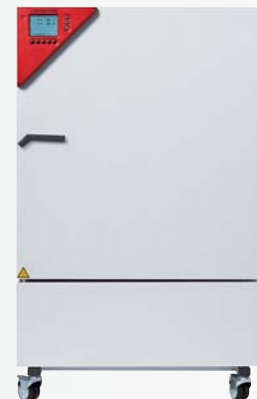
New model - KBF series 240:

The constant climate chamber KBF is the expert for absolutely reliable stability tests and precise maintenance of constant climatic conditions. It naturally also complies with all applicable guidelines such as ICH, FDA, GMP and GLP, with respect to programming and documentation requirements; with its large reserve capacity and wide range of climate area, it is designed to meet future challenges for many years to come.



► 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
- Heated door, inner glass door with sealing
- Environmentally friendly refrigerant R 134a
- 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), left side
- Complete safety connection kit for water supply incl. water hose and drain (total length 6 m / 19.7 ft)
- Ethernet interface for communication software APT-COM™ DataControlSystem
- 2 stainless steel racks
- BINDER test certificate

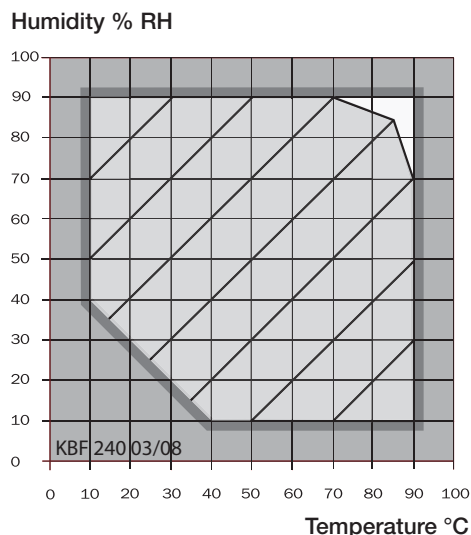




KBF 240

Exterior dimensions	
Width (mm/inch)	905/35.6
Height (incl. castors) (mm)	1458/57.4
Depth (mm/inch)	765/30.1
Plus door handle, l-triangle, connection (mm/inch)	52/2.0
Wall clearance rear (mm/inch)	100/3.9
Wall clearance side (mm/inch)	100/3.9
Steam space volume (l/qu.ft.)	338/11.9
Number of doors	1
Number of inner glas doors	1
Interior dimensions	
Width (mm/inch)	650/25.6
Height (mm/inch)	785/30.9
Depth (mm/inch)	470/18.5
Interior volume (l/qu.ft.)	240/8.5
Racks (number standard/max.)	2/9
Load per rack (kg/lbs.)	30/66
Permitted total load (kg/lbs.)	100/221
Weight (empty) (kg/lbs.)	185/408
Temperature data	
Temperature range without humidity (°C/°F)	-10 - 100/14 - 212
with humidity (°C/°F)	10 - 90/50 - 194
Temperature variation without humidity	
at 25 °C/77 °F (± °C)	0.3
at 40 °C/104 °F (± °C)	0.4
Temperature variation with humidity ²⁾	
at 25 °C/77 °F (± °C)	1.5
Temperature fluctuation from 5 °C (9°F)	
above ambient temperature ²⁾ (± °C)	0.1
Temperature fluctuation when refrigerating	0.5
Heating up time ^{1), 2)} from 25°C (77°F) to 40°C (104°F) (min.)	15
Cooling down time ^{1), 2)} from 40°C (104°F) to 5 °C (41°F) (min.)	80
Recovery time after doors were open for 30 sec. ^{1), 2)}	
at 25°C (77°F)/60% RH (min.)	15
at 40°C (104°F)/75% RH (min.)	6
Humidity fluctuation ^{2), 3)} (± RF%)	1.5
Electrical data	
Housing protection acc. to EN 60529	IP 30
Nominal voltage (± 5%/10 %) 50/60 Hz (V)	200 - 240
Nominal power at 240 V (kW)	2.7
Energy consumption ar 40°C/104°F (W)	434

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.

You can operate your KBF 240 with water from three different sources:



1- Tap water [municipal] with a max. hardness of 8.0 °dH = 1.4285 mmol/l (the hardness can be established from the water analysis of your water supplier)



2- We recommend the BINDER Pure Aqua Service for longer maintenance intervals, regardless of water quality.



3- Demineralized or deionized water available at the customer's location.

¹⁾ up to 98 % of the set value ²⁾ value without illumin. ³⁾ upon door opening or water ex change in humidity cylinder: > ± 1.5 RH %, recovery time approx. 20 min

All technical data are specified for units with standard equipment at an ambient temperature of 25 °C (77 °F) and a voltage fluctuation of ± 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.



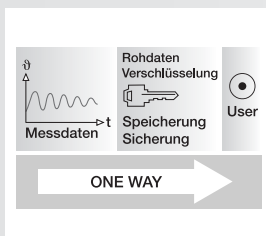
► **BINDER PURE AQUA Service**

A disposable, multifunctional replacement cartridge, which improves water quality and extends time between maintenance intervals. Can be used regardless of feed water quality.



► **Validation package**

Our BINDER validation package can be ordered together with your equipment. A convenient and cost-effective option that contains IQ/OQ checklists, QM, drawings and circuit diagrams, as well as refrigeration circuit schematics.



► **APT-COM™ DataControlSystem GLP Edition**

Software 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.



► **Calibration certificate**

Measurement in the center at specified values. Additional measuring points or test values according to your specification.



► **KBF for photostability tests**

Photosensitive materials require extensive inspection and testing. In order to meet all of these requirements, we offer special light spectra and BINDER light measurement LQC.



► **Access ports**

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