

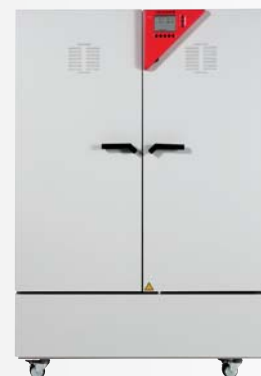
KBF series: Test chambers for constant climatic conditions

Long-term stable climatic conditions for standards-compliant. KBF series climatic chambers for constant conditions fulfill all the requirements for stability tests according to the ICH guideline Q1A. High performance reserves, numerous options and accessories, as well as FDA-, GLP-, and GMP-compliant documentation, ensure that these products will be deployable for future tasks and requirements as well.



► Performance features and equipment:

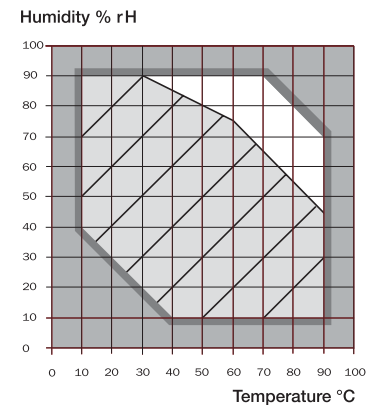
- Electronically controlled APT.line® preheating chamber technology with DCT® cooling system
- Temperature range: -10 °C to +100 °C (without humidity)
- Humidity range: 10 % RH to 90 % RH
- MCS-controller with 25 storable programs of 100 sections each for a maximum of 500 program segments
- Integrated electronic chart recorder
- Variety of options for the graphic display of process parameters
- Real-time clock
- Microprocessor-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 R134a
- Collecting pan for condensate on the door
- Adjustable safety device, Class 3.1 (DIN 12880) with visual and acoustic alarm
- Access port with silicone plug, 30 mm diameter, right side
- Complete safety connection kit for water supply incl. water hose and drain (total length 6 m)
- RS 422 interface for communication software APT-COM® DataControlSystem
- 2 stainless steel shelves



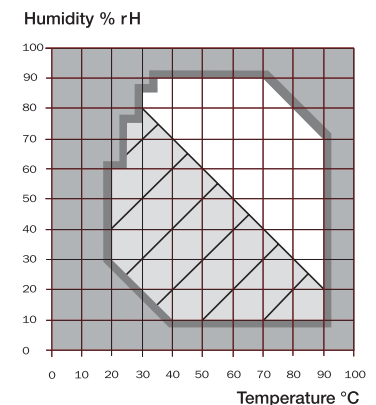


	KBF 115	KBF 240	KBF 720
▶ Exterior dimensions			
Width (mm/inch)	834 / 32.8	1034 / 40.7	1234 / 48.6
Height (incl. feet/roller) (mm/inch)	1022 / 40.2	1142 / 45.0	1816 / 71.5
Depth (mm/inch)	646 / 25.4	746 / 29.4	867 / 34.1
Plus door handle, I-panel, connection (mm/inch)	100 / 3.9	100 / 3.9	100 / 3.9
Wall clearance rear (mm/inch)	100 / 3.9	100 / 3.9	100 / 3.9
Wall clearance side (mm/inch)	160 / 6.3	160 / 6.3	160 / 6.3
Steam space volume (l/cu.ft.)	158 / 5.6	308 / 10.9	855 / 30.2
Height of water connections (± 3 mm)	84 / 3.3	84 / 3.3	190 / 7.5
Number of doors	1	2	2
Number of inner glass doors	1	2	2
▶ Interior dimensions			
Width (mm/inch)	600 / 23.6	800 / 31.5	1000 / 39.4
Height (mm/inch)	480 / 18.9	600 / 23.6	1145 / 45.1
Depth (mm/inch)	400 / 15.8	500 / 19.7	600 / 23.6
Interior volume (l/cu.ft.)	115 / 4.1	240 / 8.6	700 / 25.1
Shelves (number standard/max.)	2 / 5	2 / 7	2 / 14
Load per shelf (kg/lbs.)	20 / 44	30 / 66	45 / 99
Permitted total load (kg/lbs.)	50 / 110	70 / 155	120 / 265
Weight (empty) (kg/lbs.)	115 / 254	160 / 353	278 / 614
▶ Temperature data			
Temperature range			
without humidity / without lighting (°C/°F)	-10–100.0 / 14.0–212.0	-10–100.0 / 14.0–212.0	-10–100.0 / 14.0–212.0
with humidity / without lighting (approx. °C/°F)	10–90 / 50–194	10–90 / 50–194	10–90 / 50–194
with humidity / with lighting (lighting in the door) (approx. °C/°F)	20–90 / 68–194	20–90 / 68–194	20–90 / 68–194
Temperature variation without humidity			
at 10 °C (± °C)	0.4	0.4	0.4
at 37 °C (± °C)	0.3	0.4	0.4
Temperature variation with humidity ²⁾ (± °C)	1	1	1
Temperature fluctuation from 5°C above ambient temp. ²⁾ (± °C)	0.1	0.1	0.1
Temperature fluctuation when cooling system is in operation (± °C)	0.5	0.5	0.5
Heating up time ^{1), 2)}			
at 37 °C (Min.)	23	30	28
Cooling down time from room temp. ^{1), 2)}			
at 10 °C (Min.)	35	35	35
Recovery time after doors were open for 30 sec. ^{1), 2)}			
at 37 °C (Min.)	5	5	5
at 50 °C (Min.)	4	4	4
Humidity fluctuation ^{2), 4)} (± r.H.%)	1.5	1.5	1.5
▶ Electrical data			
Housing protection acc. to EN 60529	IP 20	IP 20	IP 20
Nominal voltage (± 10 %) 50/60 Hz (V)	230	230	230
Nominal power (W)	1700	2250	2760
Energy consumption ⁴⁾ at 37 °C (W)	530	550	610

Humidity chart



Humidity chart with ICH light



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 lighting 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 bringing in a humidity source to the inner chamber the minimal humidity range is affected. A water tap (1–10 bar) with normal tap water (approx. 200–500 µS/tolerance + 300–150 µS) 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 ± 10 %. The temperature data are determined in accordance to 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.