

KMF 240 - Environmental test chamber for constant climate

The KMF is designed for absolutely reliable stability tests and precise maintenance of constant climatic conditions. Its advanced reserve capacity and extremely broad climatic range are designed to meet any future requirements.



► Performance features and equipment:

- Electronically controlled APT.line™ preheating chamber and refrigerating system assuring temperature accuracy and reproducible results
- Temperature range -10 °C - 100 °C (14 °F - 212 °F)
- Temperature range with humidity 10 - 90 °C (50 °F - 194 °F)
- 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
- Heated door, inner glass door with sealing
- Environmental friendly refrigerant R 134a
- Independent adjustable temperature safety device class 3.1, providing full protection against chamber over-temperature, 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.)
- Ethernet interface for use with optional GMP/GLP and FDA guideline 21 CFR Part 11 compliant APT-COM™ DataControlSystem software
- 1 stainless steel rack included
- BINDER test certificate



KMF 240

Exterior dimensions

Width (mm/inch)	925 / 36.4
Height (incl. feet/casters) (mm/inch)	1460 / 57.5
Depth (mm/inch)	800 / 31.5
plus door handle, I-triangle, connection (mm/inch)	850 / 33.5
Wall clearance rear (minimum) (spacer) (mm/inch)	100 / 3.94
Wall clearance side (minimum) (mm/inch)	100 / 3.94
Steam space volume (l/cu.ft.)	348 / 12.3
Number of doors	1
Number of inner glass doors	1

Interior dimensions

Width (mm/inch)	650 / 25.6
Height (mm/inch)	785 / 30.9
Depth (mm/inch)	485 / 19.1
Interior volume (l/cu.ft.)	247 / 8.6
Racks (standard/max.)	1 / 9
Load per rack (kg/lbs.)	30 / 66
Permitted total load (kg/lbs.)	100 / 221
Weight (empty) (kg/lbs.)	185 / 408

Temperature data (without humidity)

Temperature range 1) (°C/°F)	-10 - 100 (14 - 212)
Average heating up time acc. to IEC 60068-3-5 (K/min.)	1.1
Average cooling down time acc. to IEC 60068-3-5 (K/min.)	0.6
Heating up time from -10 °C to 100 °C (14 °F - 212 °F) 2) (min.)	100
Cooling down time from 100 °C to -10 °C (212 °F - 14 °F) 2) (min.)	285

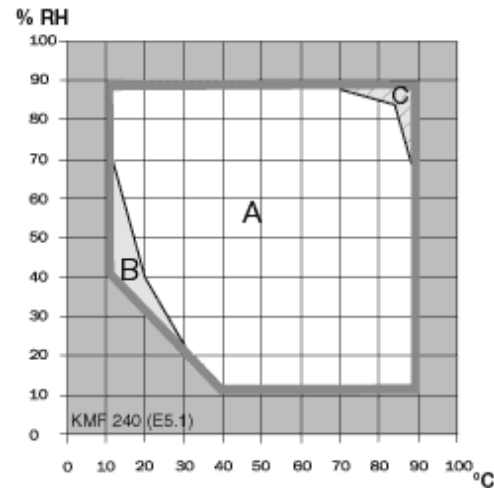
Climatic data (with humidity)

Temperature range 1) (°C/°F)	10 - 90 (14 - 212)
Temperature variation (spatial) 3) (± K)	0.3 - 1.5
Temperature fluctuation 3) (± K)	0.1 - 0.5
Humidity range (% RH)	10 - 90
Humidity fluctuation 3) (±% RH)	≤ 2
Max. heat compensation at 25°C / 77°F / 90% RH (W)	100
Dew point temperature range (°C)	5 - 80

Electrical data

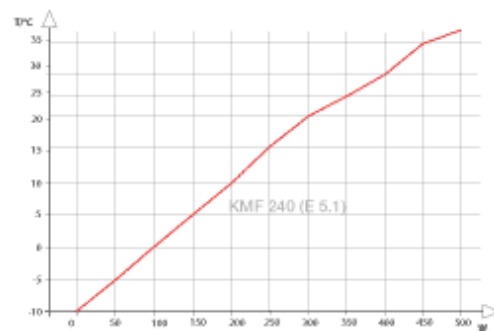
Housing protection acc. to EN 60529	IP 20
Nominal voltage (±10 %) 50 / 60 Hz (V)	200-240
Nominal power at 240 V (kW)	2.1
Energy consumption 4) at 85 °C (104 °F) (W)	500
Noise level (dB (A))	52

Temperature-humidity chart



A: Standard Climate range / B: Discontinuous range / C: In this range, condensation in the inner chamber is possible

Heat compensation



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 customers location.

- 1) Lower values are valid up to an ambient temperature of max. 25 °C (77 °F)
- 2) up to 98 % of the set value
- 3) depending on the set-point
- 4) Use this value for dimensioning air condition systems

All technical data are specified for units with standard equipment at an ambient temperature of 25 °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. Technical data refers to 100 % fan speed. 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, 50, and 100 mm diameter.



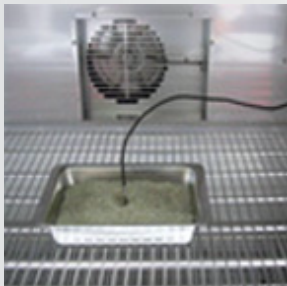
▶ BINDER Pure Aqua Service

Our efficient, flexible water purification system delivers top water quality and extends the maintenance period. Special feature: Our system uses a disposable purification cartridge and also has a water quality indicator.



▶ External fresh water supply set

External fresh water supply set consists of fresh and waste water canister, cabling and pump.



▶ Specimen temperature measurement

Additional flexible PT 100 temperature sensor for precise temperature measurement of the specimen with digital temperature display. Recording of measured data possible via Ethernet or RS 422 interface.

**KMF 240**

Access port with silicone plugs, 30 mm (1.18 inch), 50 mm (1.97 inch), 100 mm (3.94 inch)	<input type="radio"/>
Securing elements for additional fastening of racks (1 set of 4).	<input type="radio"/>
Rack, stainless steel	<input type="radio"/>
Reinforced rack, stainless steel, with 1 set of securing elements (4 pieces) (max. load 70 kg / 154 lbs.).	<input type="radio"/>
Shelf, perforated, stainless steel	<input type="radio"/>
Lockable door	<input type="radio"/>
Reinforced inner chamber, including 2 Reinforced racks, maximum total load 250 kg (552 lbs.), max. load per rack 70 kg (154 lbs.)	<input type="radio"/>
Safety device, Class 3.3 (DIN 12880) with optical 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"/>
Additional PT 100 temperature sensor, flexibly installed, with external connection, including LEMO connector (3 - pin).	<input type="radio"/>
RS 422 interface	<input type="radio"/>
External fresh supply set consists of fresh and waste water canister, cabling and pump	<input type="radio"/>
BINDER PURE AQUA SERVICE consisting of disposable cartridge, cabling and measuring device	<input type="radio"/>
Temperature precision measurement according to DIN 12880 and 9-point humidity measurement / factory standard with measurement log and certificate, measured at 20 °C (68 °F) / 60% RH or at specified values.	<input type="radio"/>
Factory calibration certificate for temperature and humidity. Measurement in center of chamber at 20 °C (68 °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"/>