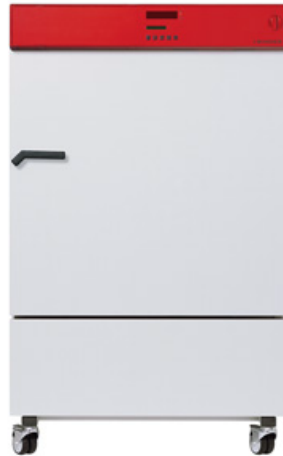**▶BINDER**

Best conditions for your success

KB 240 (E5.1) - Refrigerated incubator with program controller

The KB is the all-rounder for microorganisms. With its wide range of individual programming functions, including a real-time clock function and an enormous temperature span, it can be used for a broad range of sophisticated applications in laboratories – with minimal dehumidification of specimens and impressive extra performance. The APT.line™ with its electronically controlled preheating chamber ensures rapid recovery times and maximum precision, unaffected by the ambient temperature.

▸ Performance features and equipment:

- Electronically controlled APT.line™ preheating chamber and patented DCT™ refrigeration system assuring temperature accuracy and reproducible results in both heating and cooling situations
- Temperature range: -5 °C to 100 °C (23 °F to 212 °F)
- MP controller with 2 programs with 10 sections each, alternatively switchable to 1 program with 20 sections
- Features:
  - Integrated week program timer with real time function
  - Adjustable ramp function via program editor
  - Digital temperature setting with an accuracy of a tenth of a degree
  - Adjustable fan speed
  - Elapsed time indicator
- Independent adjustable temperature safety device class 3.1, providing full protection against chamber over-temperature, with visual and audible temperature alarm
- Inner glass door
- RS 422 interface for communication software APT-COM™ DataControlSystem, or switch over to printer output with RS 232 / RS 422 interface converter
- Adjustable intervals for printer
- Access port with silicone plug Ø 30 mm (1.18 inch), left side
- 2 stainless steel racks
- BINDER test certificate

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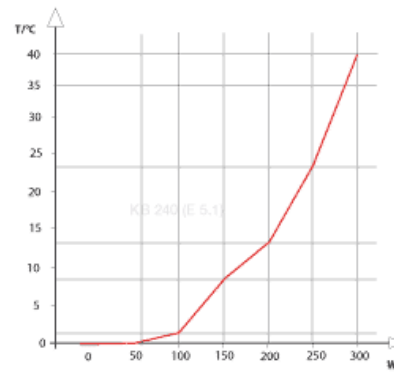www.somatco.com

Heat compensation

	KB 240 (E5.1)
Exterior dimensions	
Width (mm/inch)	925 / 36.4
Height (inclusive castors) (mm/inch)	1460 / 57.5
Depth (mm/inch)	800 / 31.5
including door handle, I-panel, connection (mm/inch)	850 / 33.5
Wall clearance rear (mm/inch)	100 / 3.9
Wall clearance side (mm/inch)	100 / 3.9
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 / 8.7
Racks (number standard/max.)	2 / 9
Load per rack (kg/lbs.)	30 / 66
Permitted total load (kg/lbs.)	100 / 221
Weight (empty) (kg/lbs.)	170 / 375
Temperature data	
Temperature range (°C/°F) 1)	-5 - 100 / 23 - 212
Temperature variation max. (± K)	0.5
at 4 °C (39.2 °F) (± K)	0.2
at 25 °C (77 °F) (± K)	0.2
at 37 °C (98.6 °F) (± K)	0.2
Temperature fluctuation max. (± K)	0.1
Max. heat compensation up to 40°C / 104°F (W)	300
Recovery time after door was open for 30 sec at 4°C / 39.2°F (min) 2)	
at 4 °C (39.2 °F) (Min.)	16
at 25 °C (77 °F) (Min.)	1
at 37 °C (98.6 °F) (Min.)	1
Electrical data	
Housing protection acc. to EN 60529	IP 20
Nominal voltage (±10%) 50/60 Hz (V)	200-240, 1 N ~
Nominal power at 240V (kW)	1.2
Energy consumption 3)	
at 4 °C (39.2°F) (W)	245
at 25 °C (77 °F) (W)	225
at 37 °C (98.6 °F) (W)	260
Noise level (dB (A))	52

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) these values can be used upon calculation of air conditioning systems
All technical data is specified for units with standard equipment at an ambient temperature of 25 °C (77 °F) and a mains voltage fluctuation of ±10 %. The temperature data is determined in accordance to factory standard following DIN 12880, observing 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.

▶ Waterproof interior socket

Switchable waterproof interior socket 230 V AC (max. 200 W), IP65 protected, with corresponding plug. Max. allowed operating temperature 50 °C (122 °F).
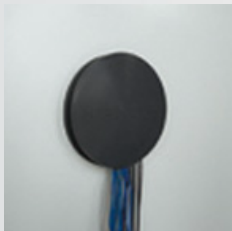

▶ Additional PT 100 temperature sensor

In situ or flexible installation for exact temperature measurement within the specimen material; connects to a special plug on the back wall of the inner chamber.
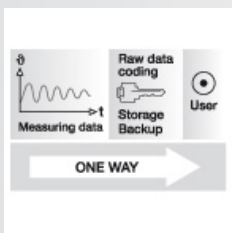

▶ Calibration certificates and validation

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.

▶ Access ports

With silicon plugs for inserting external measuring devices into the chamber. Access ports with 10, 30, 50, 100 mm (0.4, 1.2, 2, 3.94 inch) diameter.

▶ Operational data documentation: APT-COM™ DataControlSystem

The only standard software that guarantees seamless documentation of all testing parameters in compliance with standards. Can be fully validated in accordance with GLP/GMP and FDA 21 CFR Part 11.

	KB 240 (E5.1)
Access port with silicone plugs, 30 mm (1.18 inch), 50 mm (1.97 inch), 100 mm (3.94 inch)	O
Securing elements for additional fastening of racks (1 set of 4 pieces)	O
Additional PT 100 temperature sensor, flexibly installed, with external connection, including DIN connector (6-pin)	O
Ethernet interface for communication software APT-COM™ DataControlSystem	O
Factory calibration certificate. Measurement in center of chamber at 37 °C (98.6 °F) or at specified testing temperature	O
Extension to factory calibration certificate. Each additional measurement at an additional measuring point or temperature	O
Temperature measurement acc. to DIN 12880 (27 measuring points, at 23 liter units 15 measuring points) at 37 °C (98.6 °F) or at specified temperature with measuring protocol and certificate	O
Data Logger Kit T 220: For the continuous temperature recording of -90 °C (-130 °F) to 220 °C (428 °F). Kit includes 1 data logger, PT 100 sensor with 2 m Teflon extension cable and 1 fixture for the connection at the BINDER unit	O
Data Logger Software: Configuration und evaluation software for all BINDER Data Logger Kits, incl. data cable	O
Rack, stainless steel	O
Reinforced rack, stainless steel, with 1 set of securing elements (1 set of 4 pieces), max. load 70 kg (154 lbs.)	O
Shelf, perforated, stainless steel	O
Vibration compatible shelf / platform (positioned at bottom level) to be mounted inside the chamber for shaker / spinner / roller operation (> 500 rpm to be supported)	O
Door lock	O
Temperature safety device, class 3.3 (DIN 12880) with visual alarm	O
Switchable waterproof interior socket 230 V AC (max. 200 W), IP65 protected, with corresponding plug (IP66 protected) Max. allowed operating temperature 50 °C (122 °F)	O
Analog temperature output, 4-20 mA, with 6-pin DIN socket (output not adjustable)	O
Zero-voltage relay outputs accessible via 6-pin DIN socket. Additional module for controlling 2 relay outputs via 2 of the programmable controller's controller contacts. Outputs can be switched on and off program-controlled either automatically, or also manually	O

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