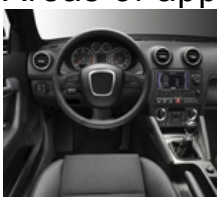
Environmental simulation chamber for complex temperature profiles

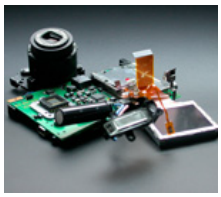
The BINDER MK series chamber is well-suited for all heating and cooling testing between -40 °C and 180 °C. The APT.line™ pre-heating chamber technology uniquely simulates a natural environment. For cyclical temperature testing, it is a smart alternative to complex individual solutions.

Advantages:

- State-of-the-art reliability
- User-friendly chamber interior
- Comprehensive standard equipment

Areas of application:


Automotive


Electronics / Semiconductor Industry


Plastics Industry

Features	Customer benefits	Characteristics
APT.line™ climate technology	• Same test conditions throughout the chamber interior • Independent of specimen size and quantity	**APT.line™** • Uniform circulation even under full load • Homogeneous climate conditions throughout test specimens
Standard equipment	• Very good price/performance ratio	**Well equipped** • Heated viewing window • LED illumination • Rugged chassis with rollers from 115 liters • Ethernet interface
Unit design	• Minimum space requirements • Convenient, safe access • Easy assembly	**Good use of space** • Optimal ratio of usable space and footprint • All operator controls accessible from the front • Wide construction
Production	• Reliable devices with long service lives • Short delivery times	• Premium quality made in Germany • Highly automated series production (20,000 units per year) • High-quality materials, state-of-the-art production technology
Accessories and Services	• Complete system from one source	**Comprehensive product portfolio** • Additional production lines with drying and vacuum chambers • Control and documentation software APT-COM™ • BINDER Data Logger Kits • Water treatment with BINDER PURE AQUA SERVICE • Years of proven and recognized validation and documentation materials

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- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range of -40 °C to 180 °C (at an ambient temperature of 25 °C)
- 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
- Programmable condensation protection for test material
- 230 V power socket on the right-side operating panel
- Adjustable ramp function via program editor
- 2 access ports Ø 80 mm, right and left side
- Heated viewing window with LED interior lighting
- Independent adjustable temperature safety device class 2 (DIN 12880), with visual and audible temperature alarm
- Ethernet interface for communication software APT-COM™ DataControlSystem
- 1 shelf, stainless steel
- BINDER test certificate

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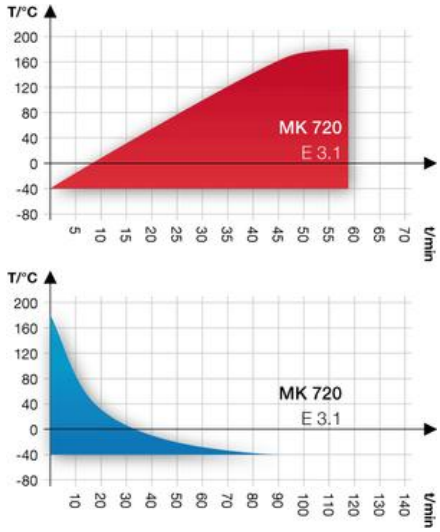
MK 720 (E3.1)

Exterior dimensions	
Width (incl. 80 mm access port with plug) (mm)	1615
Height (incl. casters) (mm)	2005
Depth (plus 95 mm door handle) (mm)	1175
Wall clearance, rear (mm)	300
Wall clearance, side (mm)	200
Viewing window width (mm)	508
Viewing window height (mm)	300
Number of doors	1

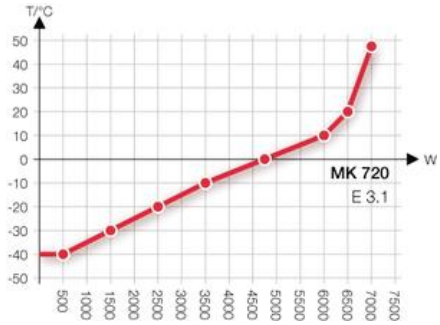
Interior dimensions	
Width (mm)	1200
Height (mm)	1020
Depth (mm)	600
Interior volume (l)	734
Shelves (number standard/max.)	1 / 11
Load per shelf (kg)	40
Permitted total load (kg)	160
Weight (empty) (kg)	570

Temperature data	
Temperature range (°C)	-40 - 180
Temperature variation (± K)	0,3 - 2,0
Temperature fluctuation (± K)	0,1 - 0,5
Mean warm-up rate acc. to IEC 60068-3-5 (°C/min.)	4
Mean cooling rate acc. to IEC 60068-3-5 (°C/min.)	4,5
Warm-up time from -40 °C to 180 °C (min.)	58
Cooling down time from 180 °C to -40 °C (min.)	75
Heat compensation (W)	6500

Heating up and cooling down rate



Heat compensation



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MK 720 (E3.1)

Electrical data	
Voltage (± 10%) 50 Hz (V)	400 3N~
Nominal power (kW)	7,2
Energy consumption at 20 °C (kW) 1)	1,9
Noise level (approx. dB(A))	65

1) These values can be used for dimensioning air condition systems.

All technical data are specified for units with standard equipment at an ambient temperature of 25 °C and a line voltage fluctuation of ±10%. The temperature data is 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 figures are typical average values for series devices. We reserve the right to alter technical specifications at any time.

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Access port

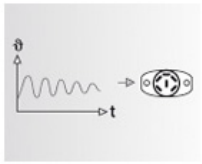
With silicone plugs for introducing external measuring instruments into the chamber, access ports with 30, 50, 80, 100, 125 mm diameters.

Notch-type access port in door

Provides easy connection of cables to test specimens and facilitates loading and unloading of the chamber. Doors have access ports measuring 100 x 35 mm, which can be sealed with the included silicone plugs.

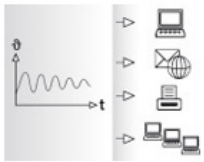
Reinforced rack

To ensure safe and stable storage of heavy test specimens.



Analog outputs

For temperature or temperature and humidity 4 - 20 mA with 6-pin DIN socket (output cannot be adjusted)



APT-COM™ DataControlSystem

Software for convenient control, programming, and documentation.

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MK 720 (E3.1)

Access ports with silicone plug, 30, 50, 80, 100, 125 mm	O
Analog output for temperature 4 - 20 mA with 6-pin DIN socket (output not adjustable)	O
Fasteners for additional security for racks (1 set of 4)	O
Door lock	O
Calibration certificate, measurement in center of chamber at 150 °C or at specified testing temperature	O
Extension to calibration certificate. Each additional measurement at additional measuring point or testing temperature	O
Additional measuring channel for digital display of specimen temperature with flexible PT 100 temperature sensor, measured data recorded via unit interface	O
Temperature safety device for over and under temperature, Class 2	O
Zero-voltage relay outputs accessible via 6-pin DIN socket. Additional module for controlling 3 relay outputs via 3 of the programmable controller's contacts	O
RS 422 interface	O
Rack, stainless steel	O
Reinforced rack, stainless steel, with 1 set of fasteners (4 pieces), max. load 70 kg	O
Perforated shelf, stainless steel	O
Notch-type access port in door, 100 x 35 mm	O

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