MKT 240 (E3) - Environmental simulation chamber

The MKT test chambers meet all requirements for testing under extreme temperature conditions between -70 °C (-94 °F) and 180 °C (356 °F). The outstanding heating and cooling speeds permit even faster temperature changes and more complex test cycles to be performed.

## ▶ Performance features and equipment:

- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range from -70 °C to 180 °C (-94 °F to 356 °F)
- MCS controller with 25 storable programs of 100 sections each for a maximum of 500 program segments
- Features:
  - User-friendly LCD display
  - Integrated electronic line recorder
  - Different diagram possibilities of process parameters
  - Real time clock
- Heated viewing window with interior illumination
- Programmable condensation protection for test material
- Variable adjustable high-performance fan
- Environmental friendly refrigerants R 404a and R 23
- Temperature safety device, Class 2 (DIN 12880) with visual and audible temperature alarm
- 230 V power socket on the right-side operating panel
- 4 potential-free relay outputs that can be activated via MCS controller
- RS 422 interface for use with optional GMP/GLP and FDA guideline 21 CFR Part 11 compliant APT-COM™ DataControlSystem software
- Access port, Ø 50 mm (2 inch), left side
- 1 stainless steel rack included
- 4 castors (with 2 brakes)
- BINDER test certificate

Technical specification MKT 240 (E3)

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Best conditions for your success

|	**MKT 240 (E3)**
Exterior dimensions	
Width (mm/inch)	1130 / 44.5
Height (inclusive feet/castors) (mm/inch)	1938 / 76.3
Depth, excl. 54 mm (2.2 inch) for door handle (mm/inch)	946 / 37.2
Wall clearance rear (mm/inch)	100 / 3.9
Wall clearance side (mm/inch)	160 / 6.3
Viewing window width (mm/inch)	508 / 20
Viewing window height (mm/inch)	300 / 11.8
Number of doors	1
Interior dimensions	
Width (mm/inch)	735 / 28.9
Height (mm/inch)	700 / 27.6
Depth (mm/inch)	443 / 17.4
Interior volume (l/cu.ft.)	228 / 8.1
Racks (number standard/max.)	1 / 6
Load per rack (kg/lbs.)	30 / 66
Permitted total load (kg/lbs.)	70 / 155
Weight (empty) (kg/lbs.)	380 / 839
Temperature data	
Temperature range (°C/°F) 1)	-70 - 180 / -94 - 356
Temperature fluctuation (± K)	0.1 - 1.0
Temperature variation (± K) 2)	0.1 - 0.4
Mean heating rate acc. IEC 60068-3-5 (K/min.)	5.4
Mean cooling rate acc. IEC 60068-3-5 (K/min.)	4.2
Heating up time from -70 °C up to 180 °C (Min.) 3)	45
Cooling down time from 180 °C up to -70 °C (Min.) 3)	95
Max. Heat compensation (W)	2500
Electrical data	
Housing protection acc. to EN 50529	IP 20
Nominal voltage (+10%) 50 Hz (V)	400 3N~
Nominal power (kW)	6.5
Noise level (ca. dB(A))	64

## Heating - up rate
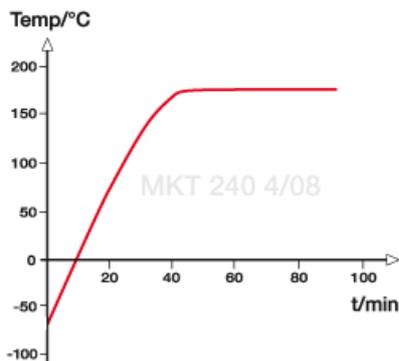
Cooling - down rate
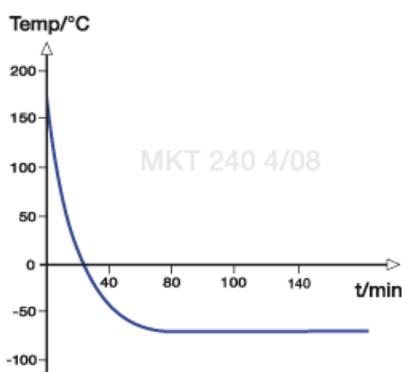
Heat compensation
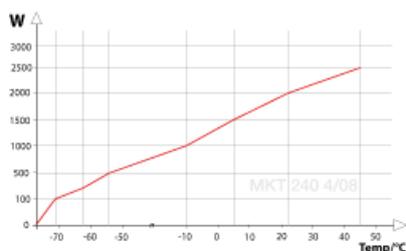
Energy consumption 4) at 20 °C (68 °F) (W)	1650

1) Lower values are valid at an ambient temperature of max. 25 °C (77 °F)
2) Depending on the set-point
3) to 98 % of the set value
4) 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 (77 °F) and a voltage fluctuation of ±10 %. The temperature data are determinated 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.

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Best conditions for your success
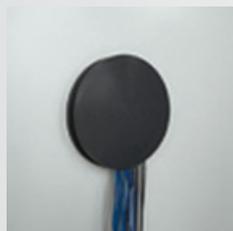
▸ Access port

With silicon plugs for inserting external measuring devices into the chamber. Access ports with 30, 50, 80, 100 and 125 mm (1.2, 2, 3.1, 4 and 4.9 inches) diameter.

▸ Notch-type access port in door

Provide easy connection of cables to test specimens and facilitate loading and unloading of the chamber. Doors have access ports measuring 100 x 35 mm (4 x 1.4 inches), which can be sealed with the included silicon plugs.
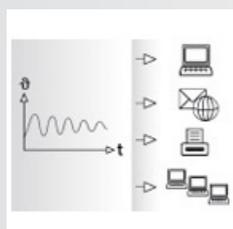

▸ Reinforced rack

To ensure safe and stable storage of heavy test specimens.

▸ 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 interface.

▸ APT-COM™ DataControlSystem

Software for easy control, programming, and documentation.

	MKT 240 (E3)
Access port with silicone plugs, 30 mm (1.18 inch), 50 mm (1.97 inch), 100 mm (3.94 inch), 125 mm (4.72 inch)	O
Notch-type access port in the door. For easy loading and unloading of test material, 100 x 35 mm	O
Securing elements for additional fastening of racks (1 set of 4).	O
Rack, stainless steel	O
Reinforced rack, stainless steel, with 1 set of securings (4 pieces)	O
Shelf, perforated, stainless steel	O
Door Lock	O
RS 422 interface	O
Analog outputs 4 to 20 mA for temperature,	O
Temperature safety device for preventing too low and high temperatures, class 2	
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	
Data Logger Software: Configuration und evaluation software for all BINDER Data Logger Kits, incl. data cable	
Temperature measurement acc. to DIN 12880 (27 measuring points) at 150 °C or at specified temperature with measuring protocol and certificate	O
Additional measuring channel for digital display of specimen temperature, with flexible PT 100 temperature sensor. Measuring data recorded through device interface	
Calibration certificate. Measurement in the center at 150 °C or at specified temperature	O
Extension for calibration certificate. Measurement at each additional measuring point or temperature	O

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