

# Dynamic climate chambers



MK | MKF | MKT | MKFT series





# Dynamic climate chambers

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BINDER environmental chambers are perfectly suited to material testing under dynamic conditions. The standard rapid alternation speeds of around 5 K/min make standard-compliant testing possible. An environmental simulation chamber of the MK and MKT Series is suitable for complex temperature profiles in the range of -40 °C or -70 °C to 180 °C. MKF and MKFT Series of dynamic climate chambers not only make material testing in this temperature range possible, but can also regulate humidity in the range of 10 % to 98 % RH.

## PRODUCT SELECTION DYNAMIC CLIMATE CHAMBERS

Features	Series MK › Page 6	Series MKF › Page 9	Series MKT › Page 13	Series MKFT › Page 16
<b>Model</b>				
Model 56	•	•	–	–
Model 115	•	•	•	•
Model 240	•	•	•	•
Model 720	•	•	•	•
<b>General data</b>				
Temperature range [°C]	-40...180	-40...180	-70...180	-70...180
Humidity range [% RH]	–	10...98	–	10...98
Ethernet interface	•	•	•	•
USB interface	•	•	•	•
Forced convection	•	•	•	•
<b>Controller and timer functions</b>				
Controller display			TFT touch	
Ramp function	•	•	•	•
Time delayed ON	•	•	•	•
Programming option	•	•	•	•
Class 1 temperature safety device	•	•	•	•
Class 2 independent adjustable temperature safety device	•	•	•	•
Temperature alarm, acoustic	•	•	•	•
Temperature alarm, visual	•	•	•	•

•Standard equipment

## ADVANTAGES AT A GLANCE



### **HOMOGENEOUS TEMPERATURE DISTRIBUTION**

Series MK, MKF, MKT, MKFT

BINDER APT.line™ preheating chamber technology ensures long-term operational stability even under full load.



### **FLEXIBLE WATER SUPPLY**

Series MKF, MKFT

The flexible water supply is easy to handle and can be operated independently of the water supply.



### **CONVENIENT WORK ENVIRONMENT**

Series MK, MKF, MKT, MKFT

With our high level of standard equipment, such as the heated viewing window with LED illumination and a large access area for easy assembly a convenient work environment can be established.



### **PROGRAMMING AND DATA COLLECTION**

Series MK, MKF, MKT, MKFT

Data collection and programming can be created via the program controller featuring an color display and our APT.COM™ software for remotely through a PC.

## Series MK | for rapid temperature changes

The BINDER MK series chamber is suitable for all heat and cold tests between -40 °C and 180 °C. The MK is a clever alternative to complex individual solutions for cyclical temperature tests.



MK 56 model

### MAIN FEATURES

- Temperature range: -40 °C to 180 °C
- APT.line™ preheating chamber technology
- Programmable condensation protection for test material
- Heated viewing window with LED interior lighting
- BINDER APT-COM™ 3 Basic Edition communication software
- Troubleshooting system with visual and audible alarms
- Intuitive touchscreen controller with time-segment and real-time programming
- Internal data logger, measured values can be read out in open format via USB
- Access port with silicone plug (Models 56, 115, 240), 50 mm, left
- 2 access ports with silicone plugs (Model 720), 80 mm, left and right

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
MK 56	60	› <a href="https://go2binder.com/en-MK56">go2binder.com/en-MK56</a>
MK 115	115	› <a href="https://go2binder.com/en-MK115">go2binder.com/en-MK115</a>
MK 240	228	› <a href="https://go2binder.com/en-MK240">go2binder.com/en-MK240</a>
MK 720	734	› <a href="https://go2binder.com/en-MK720">go2binder.com/en-MK720</a>

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## TECHNICAL DATA

Description	MK 56	MK 115	MK 240	MK 720
<b>Outer dimensions</b>				
Width net [mm]	740	980	1115	1580
Height net [mm]	1445	1725	1715	2005
Depth net [mm]	778	865	925	1140
<b>Internal Dimensions</b>				
Width [mm]	400	600	735	1200
Height [mm]	420	480	700	1020
Depth [mm]	350	400	443	600
<b>Measures</b>				
Interior volume [L]	60	115	228	734
Net weight of the unit (empty) [kg]	168	260	340	570
permitted load [kg]	60	60	70	160
Load per rack [kg]	15	30	30	40
<b>Performance Data Temperature</b>				
Temperature range [°C]	-40...180	-40...180	-40...180	-40...180
Temperature variation depending on setpoint [± K]	0.5...1.5	0.1...2	0.1...1.2	0.3...2
Temperature fluctuation depending on setpoint [± K]	0.1...0.5	0.1...0.5	0.1...0.5	0.1...0.5
Average heating-up rate according to IEC 60068-3-5 [K/min]	5	5.3	5	4
Average cooling down time according to IEC 60068-3-5 [K/min]	5	5	4.5	4.5
<b>Electrical data</b>				
Nominal power (version 230 V) [kW]	2.8	–	–	–
Nominal power (version 240 V) [kW]	2.8	–	–	–
Nominal power (version 400 V) [kW]	–	3.5	5.6	8.7
<b>Fixtures</b>				
Number of shelves (std./max.)	1/4	1/4	1/6	1/11

## ORDERING INFORMATION [Art. No.]

**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

Voltage	Option model	MK 56	MK 115	MK 240	MK 720
480 V 3 60 Hz	with voltage and frequency converter	–	9020-0303	9020-0355	9020-0356
400 V 3 50 Hz	Standard	–	9020-0375	9020-0376	9020-0377
240 V 1 60 Hz	Standard	9020-0388	–	–	–
230 V 1 50 Hz	Standard	9020-0374	–	–	–

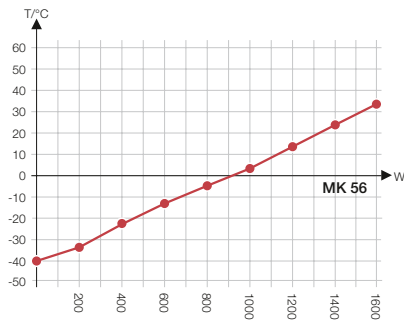
> You will find a selection of options, accessories and services suitable for each product on page 19

## EXTRACT OF FULLFILLED STANDARDS

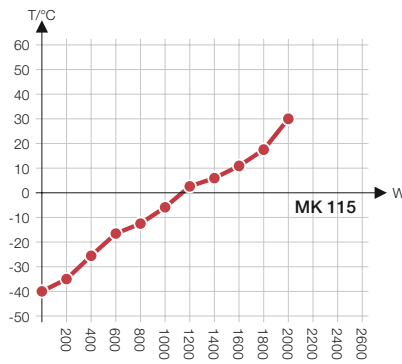
- MIL STD 810:2000-01
- DIN EN 60068-2-14

## HEAT COMPENSATION

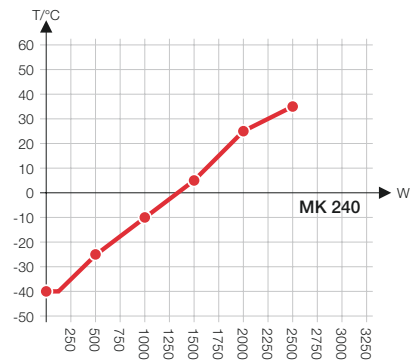
MK 56



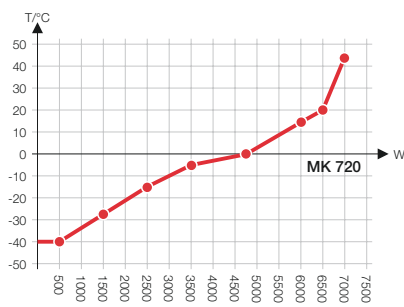
MK 115



MK 240

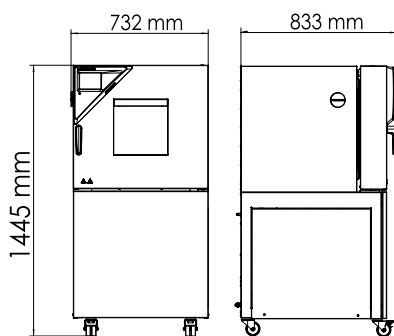


MK 720

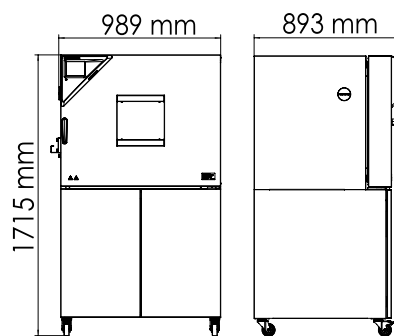


## DIMENSIONS incl. fittings and connections [mm]

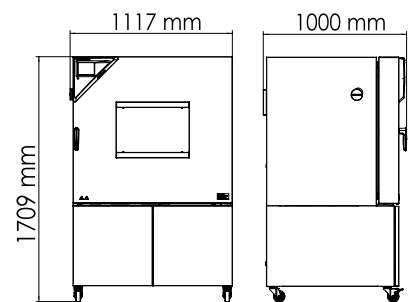
MK 56



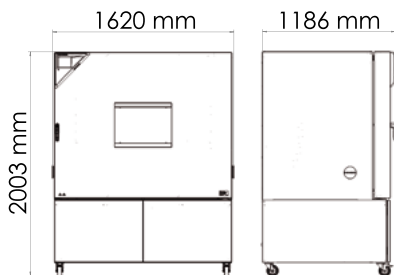
MK 115



MK 240



MK 720





## Series MKF | for rapid temperature changes with humidity control

A BINDER MKF series environmental simulation chamber is ideally suited for any cold and heat testing based on current temperature and climate testing methods according to DIN and IEC standards. The comprehensive standard equipment for this environmental simulation chamber ensures ease of operation.



MKF 56 model

### MAIN FEATURES

- Temperature range: -40 °C to 180 °C
- Humidity range: 10 % to 98 % RH
- Integrated water-storage tank, 20 liters (Models 115, 240, 720)
- 4 zero-voltage relay contacts
- 1 stainless steel rack
- APT.line™ preheating chamber technology
- Intuitive touchscreen controller with time-segment and real-time programming
- Internal data logger, measured values can be read out in open format via USB
- Programmable condensation protection for test material
- Heated viewing window with LED interior lighting

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
MKF 56	60	<a href="https://go2binder.com/en-MKF56">› go2binder.com/en-MKF56</a>
MKF 115	115	<a href="https://go2binder.com/en-MKF115">› go2binder.com/en-MKF115</a>
MKF 240	228	<a href="https://go2binder.com/en-MKF240">› go2binder.com/en-MKF240</a>
MKF 720	734	<a href="https://go2binder.com/en-MKF720">› go2binder.com/en-MKF720</a>



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## TECHNICAL DATA

Description	MKF 56	MKF 115	MKF 240	MKF 720
<b>Outer dimensions</b>				
Width net [mm]	720	980	1115	1580
Height net [mm]	1445	1725	1715	2005
Depth net [mm]	780	865	925	1140
<b>Internal Dimensions</b>				
Width [mm]	400	600	735	1200
Height [mm]	420	480	700	1020
Depth [mm]	348	400	443	600
<b>Measures</b>				
Interior volume [L]	60	115	228	734
Net weight of the unit (empty) [kg]	280	280	360	590
permitted load [kg]	60	60	70	160
Load per rack [kg]	15	30	30	40
<b>Performance Data Temperature</b>				
Temperature range [°C]	-40...180	-40...180	-40...180	-40...180
Temperature variation depending on setpoint [± K]	0.5...1.5	0.1...1.3	0.1...1.5	0.1...1.8
Temperature fluctuation depending on setpoint [± K]	0.1...0.5	0.1...0.6	0.1...0.5	0.1...0.5
Average heating-up rate according to IEC 60068-3-5 [K/min]	5	5.5	5	4.8
Average cooling down time according to IEC 60068-3-5 [K/min]	5	4.5	5	4.8
<b>Performance Data Climate</b>				
Temperature range [°C]	10...95	10...95	10...95	10...95
Temperature fluctuation depending on setpoint [± K]	0.1...0.5	0.1...1.3	0.1...1.3	0.2...1.5
Humidity range [% RH]	10...98	10...98	10...98	10...98
Humidity fluctuation depending on setpoint [± % RH]	≤2,5	≤2,5	≤2,5	≤2,5
<b>Electrical data</b>				
Nominal power (version 230 V) [kW]	2.8	–	–	–
Nominal power (version 240 V) [kW]	2.8	–	–	–
Nominal power (version 400 V) [kW]	–	4.8	6.8	11
<b>Fixtures</b>				
Number of shelves (std./max.)	1/4	1/4	1/6	1/11

## ORDERING INFORMATION [Art. No.]

**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

Voltage	Option model	MKF 56	MKF 115	MKF 240	MKF 720
480 V 3 60 Hz	with voltage and frequency converter	–	9020-0357	9020-0358	9020-0359
400 V 3 50 Hz	Standard	–	9020-0207	9020-0208	9020-0210
200...230 V 1 50 Hz	Standard	9020-0317	–	–	–
200...240 V 1 60 Hz	Standard	9020-0396	–	–	–

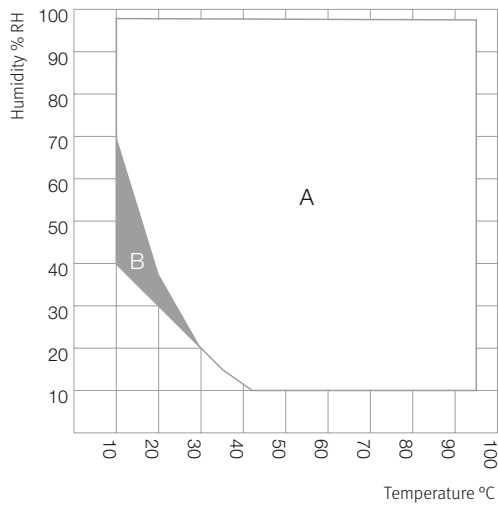
► You will find a selection of options, accessories and services suitable for each product on page 19

## EXTRACT OF FULLFILLED STANDARDS

- DIN EN 60068-2-30: 2006-06
- DIN EN 60068-2-38: 2010-06
- MIL STD 810:2000-01
- DIN EN 60068-2-66

## TEMPERATURE-HUMIDITY CHART

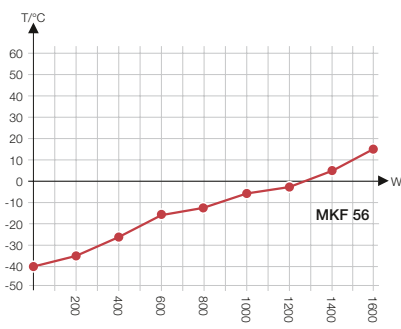
MKF 56, MKF 115, MKF 240, MKF 720



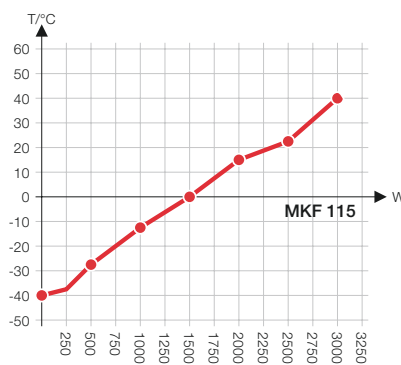
A: Standard Climate range  
B: Time-limited operation (max. 24 hours)

## HEAT COMPENSATION

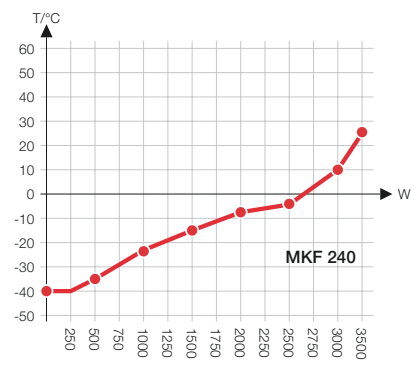
MKF 56



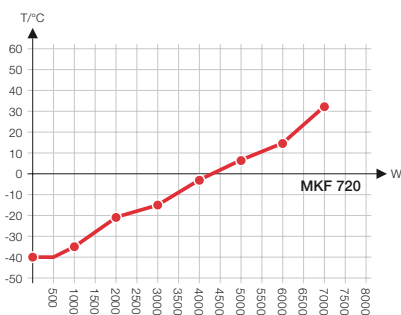
MKF 115



MKF 240

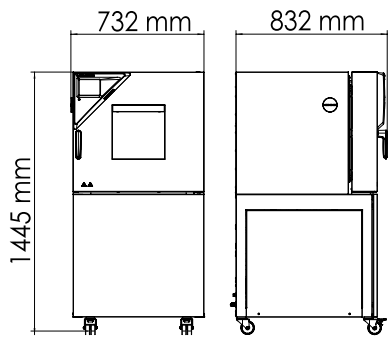


MKF 720

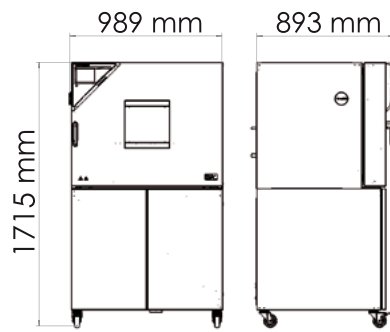


DIMENSIONS incl. fittings and connections [mm]

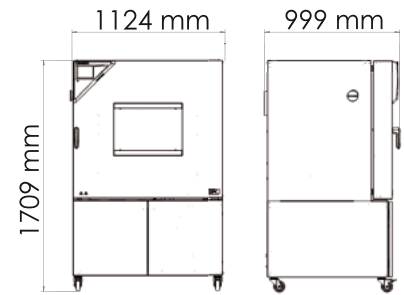
MKF 56



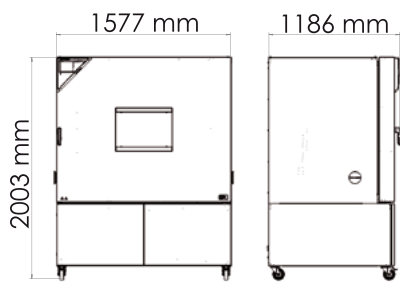
MKF 115



MKF 240



MKF 720



## Series MKT | for rapid temperature changes with extended low temperature range

Temperature ranges between -70 °C and 180 °C, with the added benefit of natural simulation, are what make the BINDER MKT series so unique. At the same time, this environmental simulation chamber fulfills the very highest precision and performance requirements for cyclical temperature tests.



Model MKT 240

### MAIN FEATURES

- Temperature range: -70 °C to 180 °C
- 4 zero-voltage relay contacts
- APT.line™ preheating chamber technology
- Programmable condensation protection for test material
- Heated viewing window with LED interior lighting
- BINDER APT-COM™ 3 Basic Edition communication software
- Troubleshooting system with visual and audible alarms
- Intuitive touchscreen controller with time-segment and real-time programming
- Internal data logger, measured values can be read out in open format via USB
- Access port with silicone plug (Models 115, 240: 50 mm, left)

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
MKT 115	115	› <a href="https://go2binder.com/en-MKT115">go2binder.com/en-MKT115</a>
MKT 240	228	› <a href="https://go2binder.com/en-MKT240">go2binder.com/en-MKT240</a>
MKT 720	734	› <a href="https://go2binder.com/en-MKT720">go2binder.com/en-MKT720</a>



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Find all details online  
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## TECHNICAL DATA

Description	MKT 115	MKT 240	MKT 720
<b>Outer dimensions</b>			
Width net [mm]	980	1115	1580
Height net [mm]	1725	1935	2005
Depth net [mm]	865	925	1140
<b>Internal Dimensions</b>			
Width [mm]	600	735	1200
Height [mm]	480	700	1020
Depth [mm]	400	443	600
<b>Measures</b>			
Interior volume [L]	115	228	734
Net weight of the unit (empty) [kg]	305	380	610
permitted load [kg]	60	70	160
Load per rack [kg]	30	30	40
<b>Performance Data Temperature</b>			
Temperature range [°C]	-70...180	-70...180	-70...180
Temperature variation depending on setpoint [± K]	0.2...1.8	0.1...1.0	0.3...2
Temperature fluctuation depending on setpoint [± K]	0.1...0.6	0.1...0.4	0.1...0.5
Average heating-up rate according to IEC 60068-3-5 [K/min]	5.3	5	4.5
Average cooling down time according to IEC 60068-3-5 [K/min]	4	4.2	4.2
<b>Electrical data</b>			
Nominal power (version 400 V) [kW]	5.5	6.5	13
<b>Fixtures</b>			
Number of shelves (std./max.)	1/4	1/6	1/11

## ORDERING INFORMATION [Art. No.]

**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

Voltage	Option model	MKT 115	MKT 240	MKT 720
480 V 3 60 Hz	with voltage and frequency converter	9020-0363	9020-0364	9020-0365
400 V 3 50 Hz	Standard	9020-0385	9020-0386	9020-0387

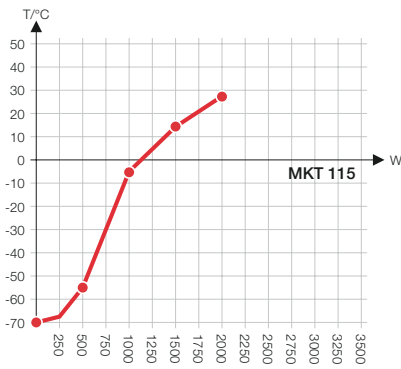
► You will find a selection of options, accessories and services suitable for each product on page 19

## EXTRACT OF FULLFILLED STANDARDS

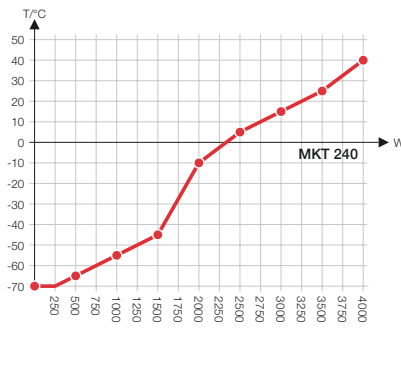
- DIN EN 60068-2-1: 2008-01
- DIN EN 60068-3-5:2002-12
- MIL STD 810:2000-01

## HEAT COMPENSATION

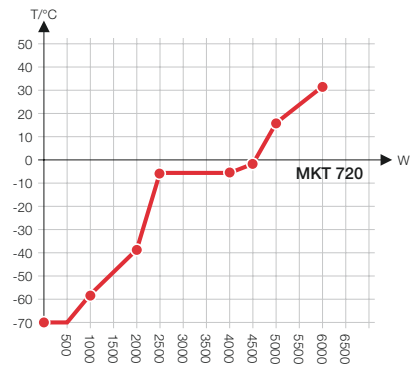
MKT 115



MKT 240

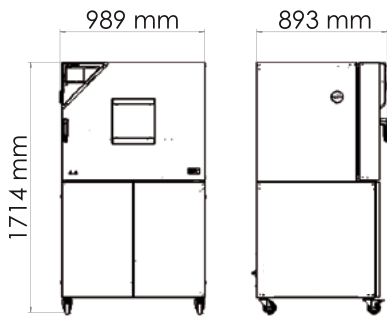


MKT 720

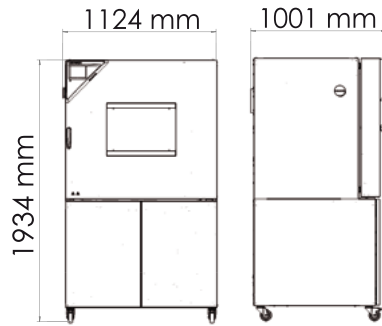


## DIMENSIONS incl. fittings and connections [mm]

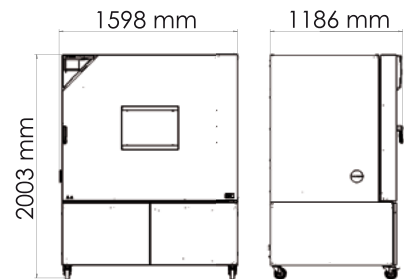
MKT 115



MKT 240



MKT 720



## Series MKFT | for rapid temperature changes with humidity control and extended low temperature range

The BINDER MKFT series environmental simulation chamber for low temperature alternating climate profiles is the specialist for dynamic alternating climate change between -70 °C and 180 °C. Large performance reserves and rapid cooling make the MKFT environmental simulation chamber the high-end product for complex standards-based climate tests.



Model MKFT 240

### MAIN FEATURES

- Temperature range: -70 °C to 180 °C
- Humidity range: 10 % to 98 % RH
- Integrated water-storage tank, 20 liters
- 4 zero-voltage relay contacts
- APT.line™ preheating chamber technology
- Programmable condensation protection for test material
- Intuitive touchscreen controller with time-segment and real-time programming
- Internal data logger, measured values can be read out in open format via USB
- Heated viewing window with LED interior lighting
- Humidity regulation with capacitive humidity sensor and vapor humidification

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
MKFT 115	115	› <a href="https://go2binder.com/en-MKFT115">go2binder.com/en-MKFT115</a>
MKFT 240	228	› <a href="https://go2binder.com/en-MKFT240">go2binder.com/en-MKFT240</a>
MKFT 720	734	› <a href="https://go2binder.com/en-MKFT720">go2binder.com/en-MKFT720</a>

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## TECHNICAL DATA

Description	MKFT 115	MKFT 240	MKFT 720
<b>Outer dimensions</b>			
Width net [mm]	980	1115	1580
Height net [mm]	1725	1940	2005
Depth net [mm]	865	925	1140
<b>Internal Dimensions</b>			
Width [mm]	600	735	1200
Height [mm]	480	700	1020
Depth [mm]	400	443	600
<b>Measures</b>			
Interior volume [L]	115	228	734
Net weight of the unit (empty) [kg]	330	415	635
permitted load [kg]	60	70	160
Load per rack [kg]	30	30	40
<b>Performance Data Temperature</b>			
Temperature range [°C]	-70...180	-70...180	-70...180
Temperature variation depending on setpoint [± K]	0.1...1.3	0.2...1.8	0.3...2
Temperature fluctuation depending on setpoint [± K]	0.1...0.5	0.1...0.5	0.1...0.5
Average heating-up rate according to IEC 60068-3-5 [K/min]	5.5	5	4.8
Average cooling down time according to IEC 60068-3-5 [K/min]	4.2	4.2	4
<b>Performance Data Climate</b>			
Temperature range [°C]	10...95	10...95	10...95
Temperature fluctuation depending on setpoint [± K]	0.1...1	0.1...1.5	0.1...1
Humidity range [% RH]	10...98	10...98	10...98
Humidity fluctuation depending on setpoint [± % RH]	≤2,5	≤2,5	≤2,5
<b>Electrical data</b>			
Nominal power (version 400 V) [kW]	5.5	6.5	13
<b>Fixtures</b>			
Number of shelves (std./max.)	1/4	1/6	1/11

## ORDERING INFORMATION [Art. No.]

**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

Voltage	Option model	MKFT 115	MKFT 240	MKFT 720
480 V 3 60 Hz	with voltage and frequency converter	9020-0362	9020-0361	9020-0360
400 V 3 50 Hz	Standard	9020-0211	9020-0212	9020-0228

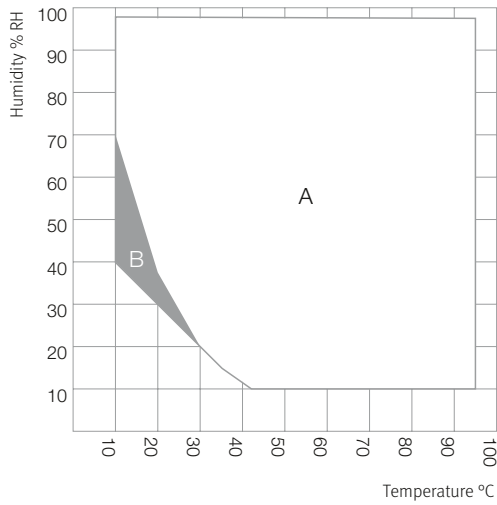
► You will find a selection of options, accessories and services suitable for each product on page 19

## EXTRACT OF FULLFILLED STANDARDS

- DIN EN 60068-2-30: 2006-06
- DIN EN 60068-2-38: 2010-06
- DIN EN 60068-2-1: 2008-01
- MIL STD 331:2005-01
- DIN EN 60068-3-6:2002-12

## TEMPERATURE-HUMIDITY CHART

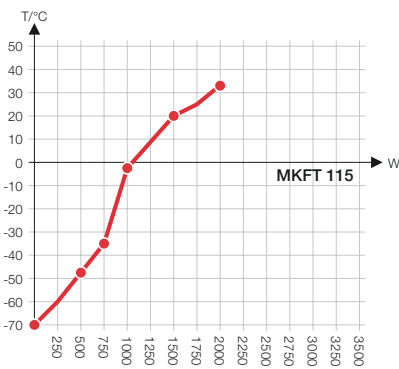
MKFT 115, MKFT 240, MKFT 720



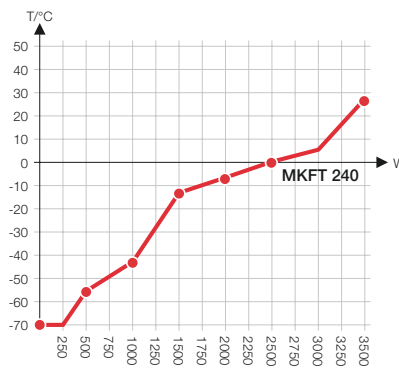
A: Standard Climate range  
B: Time-limited operation (max. 24 hours)

## HEAT COMPENSATION

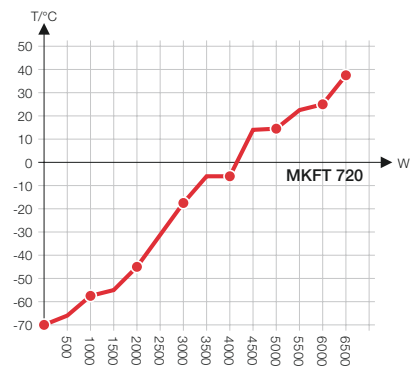
MKFT 115



MKFT 240

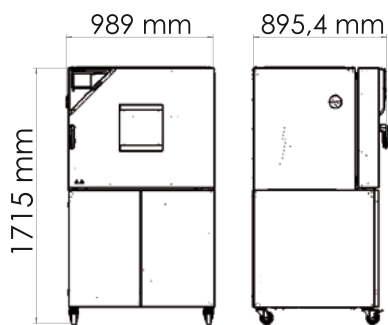


MKFT 720

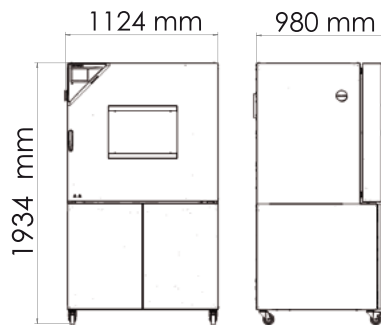


## DIMENSIONS incl. fittings and connections [mm]

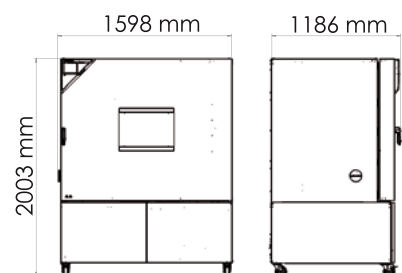
MKFT 115



MKFT 240



MKFT 720



## EXCERPT FROM OPTIONS AND ACCESSORIES

### Access port with silicone plug

For introducing external measuring instruments. Large selection of different diameters and positions (left, right, or top)

Series MK, MKF, MKT, MKFT

### BINDER PURE AQUA SERVICE

System for preparation or complete desalination of tap water, complete set containing PURE AQUA 300 single-use cartridge, measuring device, and all necessary connecting parts

Series MK, MKF, MKT, MKFT

### Dry-air purge

Suitable for simulating a dry, cold climate. In the MKF and MKFT series with controlled humidity, the temperature-humidity chart is significantly expanded, while the option of simulating current automobile industry standards, such as PV 2005; PV 1200; PR 308.2, is also available.

Series MK, MKF, MKT, MKFT

### Services

You can access our installation, maintenance, calibration, validation, or warranty services by taking out a Maintenance Service Agreement or by simply getting in touch when you need us. More information is available in the accessories and services chapter.

Series MK, MKF, MKT, MKFT

### BINDER INDIVIDUAL

Using a BINDER series production product as a basis, we develop individual solutions as a single unit or in small batches. All products are tested, certified, and supplied with a full functional guarantee and warranty. More information is available in the accessories and services chapter.

Series MK, MKF, MKT, MKFT

► All extras online [go2binder.com/en-options](http://go2binder.com/en-options)



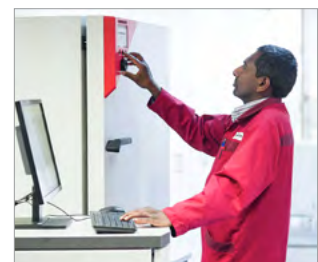
Access port with silicone plug



BINDER PURE AQUA Service



Dry-air purge



Services

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