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**BINDER**  
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# Drying and heating chambers



**Avantgarde.Line**  
ED | FD | FED series

**Classic.Line**  
E | ED | FD | FED | FP | M series

**Solid.Line**  
ED-S | FD-S series



# PRODUCT SELECTION DRYING AND HEATING CHAMBERS

	Classic.Line	Avantgarde.Line	Classic.Line	Solid.Line	Avantgarde.Line	Classic.Line	Solid.Line	Avantgarde.Line	Classic.Line	Classic.Line	Classic.Line
Serie	E › Page 20	ED › Page 6	ED › Page 22	ED-S › Page 40	FD › Page 9	FD › Page 25	FD-S › Page 42	FED › Page 12	FED › Page 27	FP › Page 29	M › Page 32
<b>Model</b>											
Model 23	-	-	●	-	-	●	-	-	-	-	-
Model 28	●	-	-	-	-	-	-	-	-	-	-
Model 53	-	-	-	-	-	-	-	-	-	●	●
Model 56	-	●	-	●	●	-	●	●	-	-	-
Model 115	-	●	-	●	●	-	●	●	-	●	●
Model 260	-	●	-	-	●	-	-	-	-	●	●
Model 400	-	-	●	-	-	-	-	-	●	●	●
Model 720	-	●	-	-	●	-	-	●	-	●	●
<b>General data</b>											
Temperature range 5 °C above ambient temperature to [°C]	60-230	300	300	-	-	300	-	-	300	300	300
Temperature range 7°C above ambient temperature to [°C]	-	-	-	250	-	-	-	-	-	-	-
Temperature range 10 °C above ambient temperature to [°C]	300	-	-	-	300	-	250	300	-	-	-
Temperature range 12 °C above ambient temperature to [°C]	-	-	-	-	-	-	-	300	-	-	-
Interface	-	USB	-	-	USB	-	-	Ethernet	RS 422	RS 422	RS 422
Natural convection	●	●	●	●	-	-	-	-	-	-	-
Forced convection	-	-	-	-	●	●	●	●	●	●	●
<b>Controller and timer functions</b>											
Controller display	Analog	LCD	LED	LED	LCD	LED	LED	LCD	LED	LED	LCD
Ramp function	-	●	●	●	●	●	●	●	●	-	-
Time delayed OFF	●	●	●	●	●	●	●	●	●	-	-
Time delayed ON	-	●	-	-	●	-	-	●	●	-	-
Temperature dependent delayed OFF	-	●	-	-	●	-	-	●	●	-	-
Programming option	-	-	-	-	-	-	-	-	-	●	●
Weekly program function	-	-	-	-	-	-	-	-	-	●	-
Adjustable fan speed	-	-	-	-	-	-	-	●	●	●	●
Real-time clock	-	○	-	-	○	-	-	○	-	●	●
Class 2 independent adjustable temperature safety device	-	●	●	●	●	●	●	●	●	●	●
Temperature alarm, acoustic	-	○	○	-	○	○	-	○	○	-	-
Temperature alarm, visual	-	●	●	●	●	●	●	●	●	●	●

● Standard equipment | ○ Option

# Drying and heating chambers Avantgarde.Line

Series ED Avantgarde.Line	Page 6
Series FD Avantgarde.Line	Page 9
Series FED Avantgarde.Line	Page 12
Options and Accessories	Page 15

BINDER drying chambers with natural convection or forced convection are renowned for their high quality and reliability. Thanks to their extensive redevelopment, these all-rounders are now even more firmly focused on addressing the requirements involved in drying or heating samples. What's more, in addition to the best energy efficiency on the market and convenient operation, the latest APT.line™ technology offers outstanding temperature accuracy to give this new generation of incubators real appeal.

# PRODUCT SELECTION DRYING AND HEATING CHAMBERS AVANTGARDE.LINE

Features	Series ED Avantgarde.Line › Page 6	Series FD Avantgarde.Line › Page 9	Series FED Avantgarde.Line › Page 12
<b>Model</b>			
Model 56	•	•	•
Model 115	•	•	•
Model 260	•	•	•
Model 720	•	•	•
<b>General data</b>			
Temperature range 5 °C above ambient temperature to [°C]	300	–	–
Temperature range 10 °C above ambient temperature to [°C]	–	300	300
Temperature range 12 °C above ambient temperature to [°C]	–	300	300
Ethernet interface	–	–	•
USB interface	•	•	•
Natural convection	•	–	–
Forced convection	–	•	•
<b>Controller and timer functions</b>			
Controller display		LCD	
Ramp function	•	•	•
Time delayed OFF	•	•	•
Time delayed ON	•	•	•
Temperature dependent delayed OFF	•	•	•
Adjustable fan speed	–	–	•
Class 2 independent adjustable temperature safety device	•	•	•
Temperature alarm, visual	•	•	•

•Standard equipment

## ADVANTAGES AT A GLANCE



### **EASY DATA LOGGING**

Series ED, FD, FED

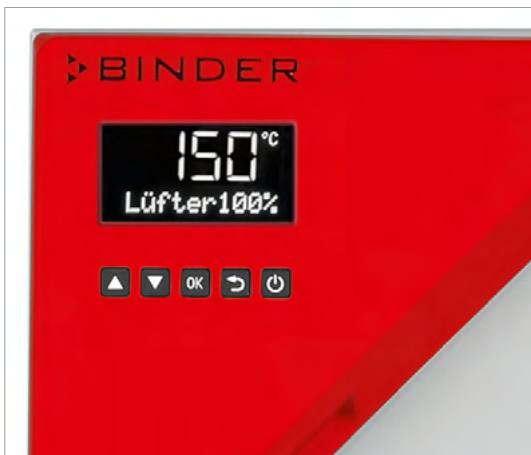
The USB connector, standard on the ED, FD and FED, provides easy data logging. Ethernet connectivity is standard on FED and an option for ED and FD.



### **BEST ENERGY EFFICIENCY ON THE MARKET AND LOW INSTALLATION REQUIREMENTS**

Series ED, FD, FED

thanks to low heat dissipation and an optimized heating system.



### **EASY, INTUITIVE HANDLING**

Series ED, FD, FED

Our state-of-the-art controller with LCD display, excellent readability, alphanumeric display, and various functions provide a user friendly interface. Choice of languages as standard: English, German, and French.



### **COMPLETELY HOMOGENEOUS TEMPERATURE DISTRIBUTION**

Series FD, FED

This feature provides excellent spatial and temporal temperature accuracy with the all-new generation of APT.line™ technology.

## Series ED Avantgarde.Line | with natural convection

The strengths of a BINDER ED series drying chamber include routine drying and sterilization tasks up to 300 °C. Thanks to the natural convection, all thermal processes which use this drying chamber are highly efficient. The ED series ensures fast, uniform drying.



ED 56 model

### MAIN FEATURES

- Temperature range: ambient temperature plus 5 °C to 300 °C
- Up to 30% lower energy consumption compared to conventional units on the market
- High temperature accuracy thanks to APT.line™ technology
- Natural convection
- Controller with LCD display
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks
- Units up to 115 liters are stackable
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm
- Ergonomic handle design

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
ED 56	57	› <a href="https://go2binder.com/en-ED56">go2binder.com/en-ED56</a>
ED 115	114	› <a href="https://go2binder.com/en-ED115">go2binder.com/en-ED115</a>
ED 260	255	› <a href="https://go2binder.com/en-ED260">go2binder.com/en-ED260</a>
ED 720	743	› <a href="https://go2binder.com/en-ED720">go2binder.com/en-ED720</a>



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Find all details online  
[go2binder.com/en-ED-a](https://go2binder.com/en-ED-a)

## TECHNICAL DATA

Description	ED 56	ED 115	ED 260	ED 720
<b>Outer dimensions</b>				
Width net [mm]	560	710	810	1165
Height net [mm]	625	735	965	1590
Depth net [mm]	565	605	760	870
<b>Internal Dimensions</b>				
Width [mm]	360	510	610	960
Height [mm]	420	530	760	1280
Depth [mm]	380	425	550	605
<b>Measures</b>				
Interior volume [L]	57	114	255	743
Net weight of the unit (empty) [kg]	39	54	85	169
permitted load [kg]	70	150	270	315
Load per rack [kg]	30	30	40	45
<b>Performance Data Temperature</b>				
Temperature range 5 °C above ambient temperature to [°C]	300	300	300	300
Temperature variation at 150 °C [± K]	2.3	1.5	1.8	3.2
Temperature fluctuation at 150 °C [± K]	0.4	0.4	0.8	0.8
Heating-up time to 150 °C [min]	50	45	50	85
Recovery time after 30 seconds door open at 150 °C [min]	19	16	20	25
<b>Electrical data</b>				
Nominal power (version 120 V) [kW]	1.15	1.35	–	–
Nominal power (version 230 V) [kW]	1.05	1.25	2.25	–
Nominal power (version 240 V) [kW]	–	–	2.45	–
Nominal power (version 400 V) [kW]	–	–	–	4.1
<b>Fixtures</b>				
Number of shelves (std./max.)	2/4	2/5	2/8	2/16

## ORDERING INFORMATION [Art. No.]

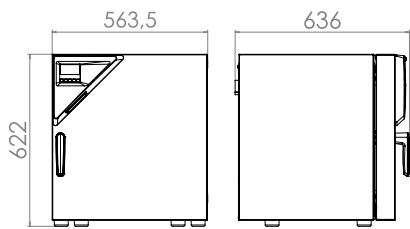
**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

Voltage	Option model	ED 56	ED 115	ED 260	ED 720
400 V 3 50/60 Hz	Standard	–	–	–	9010-0341
240 V 1 60 Hz	Standard	–	–	9010-0340	–
230 V 1 50/60 Hz	Standard	9010-0333	9010-0335	9010-0339	–
120 V 1 60 Hz	Standard	9010-0334	9010-0336	–	–

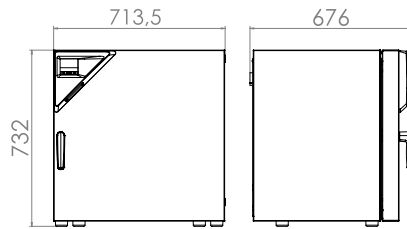
► You will find a selection of options, accessories and services suitable for each product on page 15

DIMENSIONS incl. fittings and connections [mm]

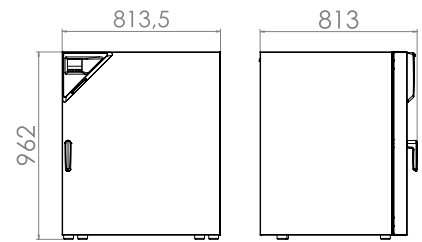
ED 56



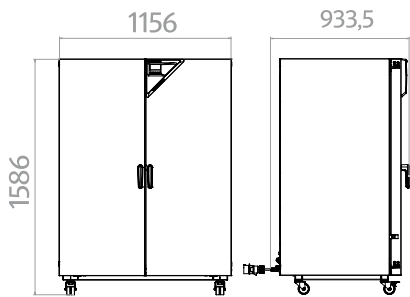
ED 115



ED 260



ED 720





## Series FD Avantgarde.Line | with forced convection

A BINDER FD series Avantgarde.Line heating oven is always used when fast drying and sterilization is required. Thanks to its fully homogeneous temperature distribution, quick dynamics and powerful fan, this heating oven saves valuable time.



FD 56 model

### MAIN FEATURES

- Temperature range: ambient temperature plus 10 °C to 300 °C
- High temperature accuracy thanks to APT.line™ technology
- Forced convection
- Controller with LCD display
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks
- Units up to 115 L are stackable
- Class 2 independent temperature safety device (DIN 12880) with visual temperature alarm
- Ergonomic handle design
- USB port for recording data

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
FD 56	60	› <a href="https://go2binder.com/en-FD56">go2binder.com/en-FD56</a>
FD 115	116	› <a href="https://go2binder.com/en-FD115">go2binder.com/en-FD115</a>
FD 260	259	› <a href="https://go2binder.com/en-FD260">go2binder.com/en-FD260</a>
FD 720	741	› <a href="https://go2binder.com/en-FD720">go2binder.com/en-FD720</a>



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## TECHNICAL DATA

Description	FD 56	FD 115	FD 260	FD 720
<b>Outer dimensions</b>				
Width net [mm]	560	710	810	1165
Height net [mm]	625	735	965	1590
Depth net [mm]	565	605	760	870
<b>Internal Dimensions</b>				
Width [mm]	400	550	650	1000
Height [mm]	440	550	780	1300
Depth [mm]	345	385	515	570
<b>Measures</b>				
Interior volume [L]	60	116	259	741
Net weight of the unit (empty) [kg]	39	54	85	166
permitted load [kg]	70	150	270	315
Load per rack [kg]	30	30	40	45
<b>Performance Data Temperature</b>				
Temperature range 10 °C above ambient temperature to [°C]	300	300	300	–
Temperature range 12 °C above ambient temperature to [°C]	–	–	–	300
Temperature variation at 150 °C [± K]	1.7	1.7	1.9	2.5
Temperature fluctuation at 150 °C [± K]	0.3	0.3	0.4	0.6
Heating-up time to 150 °C [min]	15	18	19	25
Recovery time after 30 seconds door open at 150 °C [min]	4	4	5	6
<b>Electrical data</b>				
Nominal power (version 120 V) [kW]	1.2	1.4	–	–
Nominal power (version 230 V) [kW]	1.1	1.3	2.3	–
Nominal power (version 240 V) [kW]	–	–	2.5	–
Nominal power (version 400 V) [kW]	–	–	–	4.5
<b>Fixtures</b>				
Number of shelves (std./max.)	2/4	2/5	2/8	2/16

## ORDERING INFORMATION [Art. No.]

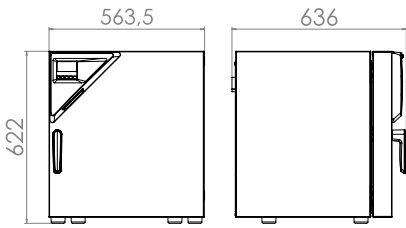
**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

Voltage	Option model	FD 56	FD 115	FD 260	FD 720
400 V 3 50/60 Hz	Standard	–	–	–	9010-0311
240 V 1 60 Hz	Standard	–	–	9010-0310	–
230 V 1 50/60 Hz	Standard	9010-0303	9010-0305	9010-0309	–
120 V 1 60 Hz	Standard	9010-0304	9010-0306	–	–

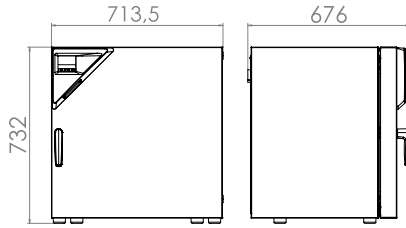
► You will find a selection of options, accessories and services suitable for each product on page 15

DIMENSIONS incl. fittings and connections [mm]

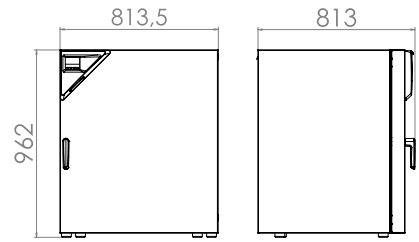
FD 56



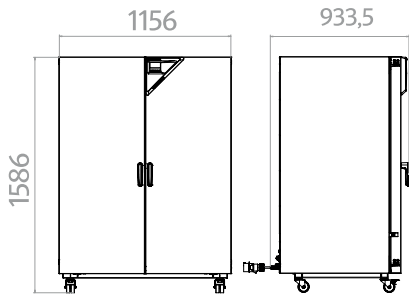
FD 115



FD 260



FD 720



## Series FED Avantgarde.Line | with forced convection and enhanced timer functions

BINDER heating chambers of the FED Avantgarde.Line series provide almost unlimited capacity and are particularly adaptable. With advanced timing functions and a controllable fan, temperature and convection conditions are easily controlled.



FED 56 model

### MAIN FEATURES

- Temperature range: ambient temperature plus 10 °C to 300 °C
- Up to 30% lower energy consumption compared to conventional units on the market
- High temperature accuracy thanks to APT.line™ technology
- Adjustable fan speed
- Controller with LCD display and enhanced time functions
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks
- Units up to 115 liters are stackable
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm
- Ergonomic handle design

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
FED 56	60	> <a href="https://go2binder.com/en-FED56">go2binder.com/en-FED56</a>
FED 115	116	> <a href="https://go2binder.com/en-FED115">go2binder.com/en-FED115</a>
FED 260	259	> <a href="https://go2binder.com/en-FED260">go2binder.com/en-FED260</a>
FED 720	741	> <a href="https://go2binder.com/en-FED720">go2binder.com/en-FED720</a>

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Find all details online  
[go2binder.com/en-FED-a](https://go2binder.com/en-FED-a)

## TECHNICAL DATA

Description	FED 56	FED 115	FED 260	FED 720
<b>Outer dimensions</b>				
Width net [mm]	560	710	810	1165
Height net [mm]	625	735	965	1590
Depth net [mm]	565	605	760	870
<b>Internal Dimensions</b>				
Width [mm]	400	550	650	1000
Height [mm]	440	550	780	1300
Depth [mm]	345	385	515	570
<b>Measures</b>				
Interior volume [L]	60	116	259	741
Net weight of the unit (empty) [kg]	39	54	85	166
permitted load [kg]	70	150	270	315
Load per rack [kg]	30	30	40	45
<b>Performance Data Temperature</b>				
Temperature range 10 °C above ambient temperature to [°C]	300	300	300	–
Temperature range 12 °C above ambient temperature to [°C]	–	–	–	300
Temperature variation at 150 °C [± K]	1.4	1.2	1.6	2.0
Temperature fluctuation at 150 °C [± K]	0.3	0.3	0.4	0.6
Heating-up time to 150 °C [min]	15	18	19	25
Recovery time after 30 seconds door open at 150 °C [min]	4	4	5	6
<b>Electrical data</b>				
Nominal power (version 120 V) [kW]	1.2	1.4	–	–
Nominal power (version 208 V) [kW]	–	–	–	4.5
Nominal power (version 230 V) [kW]	1.1	1.3	2.3	–
Nominal power (version 240 V) [kW]	–	–	2.5	–
Nominal power (version 400 V) [kW]	–	–	–	4.5
<b>Fixtures</b>				
Number of shelves (std./max.)	2/4	2/5	2/8	2/16

## ORDERING INFORMATION [Art. No.]

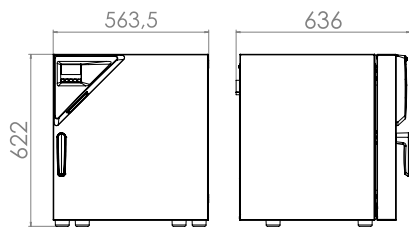
**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

Voltage	Option model	FED 56	FED 115	FED 260	FED 720
400 V 3 50/60 Hz	Standard	–	–	–	9010-0301
240 V 1 60 Hz	Standard	–	–	9010-0300	–
230 V 1 50/60 Hz	Standard	9010-0295	9010-0293	9010-0299	–
208 V 3 60 Hz	Standard	–	–	–	9010-0302
120 V 1 60 Hz	Standard	9010-0296	9010-0294	–	–

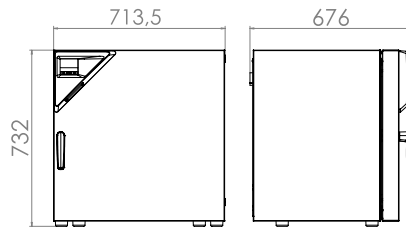
► You will find a selection of options, accessories and services suitable for each product on page 15

**DIMENSIONS incl. fittings and connections [mm]**

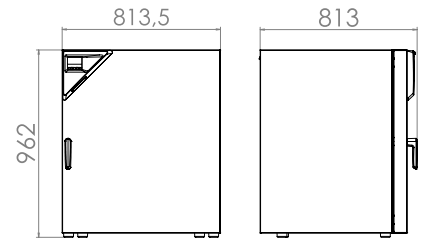
FED 56



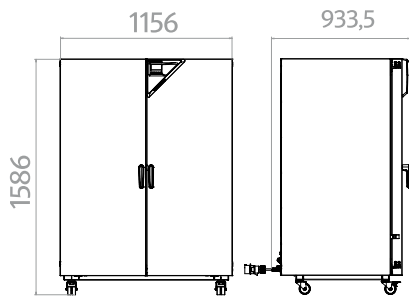
FED 115



FED 260



FED 720



## EXCERPT FROM OPTIONS AND ACCESSORIES

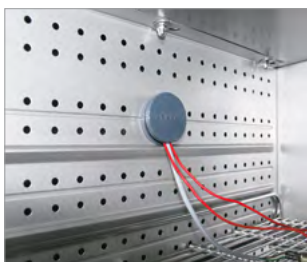
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<b>Access port with silicone plug</b>	For introducing external measuring instruments. Large selection of different diameters and positions (left, right, or top) Series ED, FD, FED
<b>Data Logger Kit T</b>	Independent temperature data logging. The tailored product solution contains helpful accessories: From the magnetic mounting of the data logger to the BINDER unit and securing sensor cable for accurate readings. Series ED, FD, FED
<b>Viewing window and interior lighting</b>	Viewing window in the door with a triple-glazed insulating glass and interior lighting for easy visibility of the samples. Series ED, FD, FED
<b>Shelf racks</b>	Perforated shelves or shelf racks, chrome-plated or made from stainless steel. Series ED, FD, FED
<b>HEPA air filter</b>	Particle filter on fresh air supply for unit; filter classification H14 (acc. to. EN 1822-1:2009, > 99.995% at 0.3 µm). Series ED, FD, FED
<b>Services</b>	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 ED, FD, FED
<b>BINDER INDIVIDUAL</b>	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 ED, FD, FED

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

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Access port with silicone plug



Data Logger for temperature



Viewing window in the door



Shelf





# Drying and heating chambers Classic.Line

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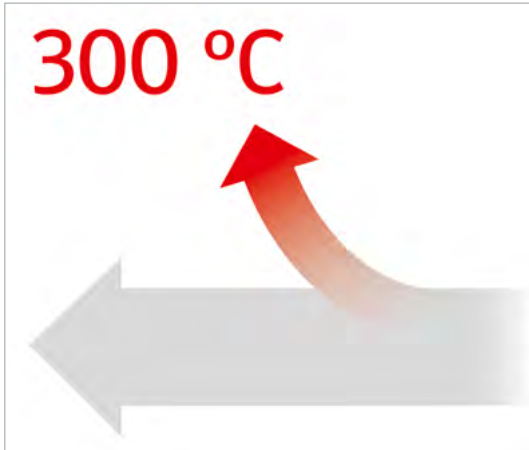
With natural or forced convection, all BINDER drying and heating chambers offer first-rate quality and process reliability. With its wide temperature range from 5 °C above ambient temperature to 300 °C, the heating chamber can be used in all applications. Short heating-up times and large power reserves are ideal for applications in science, research, and industry. The excellent thermal insulation also reduces operating costs. In its FP and M series, BINDER offers material test chambers with forced convection and customized programming.

## PRODUCT SELECTION DRYING AND HEATING CHAMBERS CLASSIC.LINE

Features	Series E Classic.Line › Page 20	Series ED Classic.Line › Page 22	Series FD Classic.Line › Page 25	Series FED Classic.Line › Page 27	Series FP Classic.Line › Page 29	Series M Classic.Line › Page 32
<b>Model</b>						
Model 23	–	•	•	–	–	–
Model 28	•	–	–	–	–	–
Model 53	–	–	–	–	•	•
Model 115	–	–	–	–	•	•
Model 240	–	–	–	–	•	•
Model 400	–	•	–	•	•	•
Model 720	–	–	–	–	•	•
<b>General data</b>						
Temperature range [°C]	60...230	–	–	–	–	–
Temperature range 5 °C above ambient temperature to [°C]	–	300	300	300	300	300
RS 422 interface	–	–	–	•	•	•
Natural convection	•	•	–	–	–	–
Forced convection	–	–	•	•	•	•
<b>Controller and timer functions</b>						
Controller display	Analog	LED	LED	LED	LED	LCD color display
Ramp function	–	•	•	•	–	–
Time delayed OFF	•	•	•	•	–	–
Time delayed ON	–	–	–	•	–	–
Temperature dependent delayed OFF	–	–	–	•	–	–
Programming option	–	–	–	–	•	•
Weekly program function	–	–	–	–	•	–
Adjustable fan speed	–	–	–	•	•	•
Real-time clock	–	–	–	–	•	•
Class 2 independent adjustable temperature safety device	–	•	•	•	•	•
Temperature alarm, visual	–	•	•	•	•	•

•Standard equipment

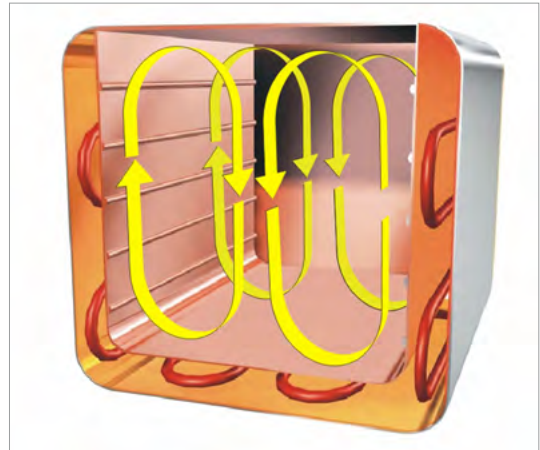
## ADVANTAGES AT A GLANCE



### **BROAD RANGE OF APPLICATIONS**

Series ED, FD, FED, FP, M

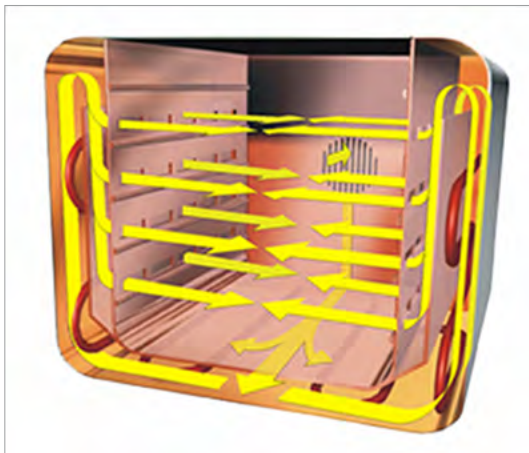
Many different applications can take advantage of the wide temperature range from 5 °C above ambient temperature to 300 °C. The FP and M series also impress with their adjustable air change rates and large power reserves.



### **HOMOGENEOUS TEMPERATURE CONDITIONS WITH NATURAL CONVECTION**

Series ED

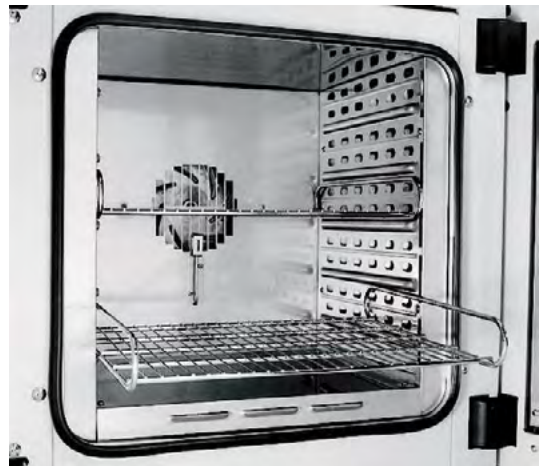
Gentle temperature distribution provided by the APT.line™ preheating chamber technology.



### **HOMOGENEOUS TEMPERATURE CONDITIONS WITH FORCED CONVECTION**

Series FD, FED, FP, M

Long-term operational stability even under full load from the APT.line™ preheating chamber technology.



### **CONVENIENT WORK ENVIRONMENT**

Series E, FD, FED, FP, M

BINDER interior concept: highlights rack with tilt protection, no permanent fixtures and stainless-steel inner chamber.

## Series E Classic.Line | with mechanical adjustment

With a BINDER E series heating oven, you obtain a reliable and powerful unit in a solid configuration at a very attractive price. This heating oven is preferred for tasks in basic research, as well as in human and veterinary medicine.



E 28 model

### MAIN FEATURES

- Temperature range: 60 °C to 230 °C
- Adjustable exhaust air flap
- Hydro-mechanical thermostat
- Class 1 temperature limitation device (Model E028-230V-T)
- Timer 0 – 120 min
- 2 chrome-plated racks

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
E 28	28	› <a href="https://go2binder.com/en-E28">go2binder.com/en-E28</a>



Find all details online  
[go2binder.com/en-E-c](https://go2binder.com/en-E-c)

## TECHNICAL DATA

Description	E 28
<b>Outer dimensions</b>	
Width net [mm]	580
Height net [mm]	405
Depth net [mm]	425
<b>Internal Dimensions</b>	
Width [mm]	400
Height [mm]	280
Depth [mm]	250
<b>Measures</b>	
Interior volume [L]	28
Net weight of the unit (empty) [kg]	22
permitted load [kg]	25
Load per rack [kg]	10
<b>Performance Data Temperature</b>	
Temperature range [°C]	60...230
Heating-up time to 150 °C [min]	36
Recovery time after 30 seconds door open at 150 °C [min]	19
<b>Electrical data</b>	
Nominal power (version 120 V) [kW]	0.8
Nominal power (version 230 V) [kW]	0.8
<b>Fixtures</b>	
Number of shelves (std./max.)	2/4

## ORDERING INFORMATION [Art. No.]

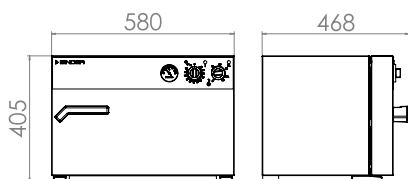
**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

Voltage	Option model	E 28
230 V 1 50/60 Hz	Standard	9010-0001
	with TB class 1	9010-0003
120 V 1 60 Hz	Standard	9010-0106

► You will find a selection of options, accessories and services suitable for each product on page 35

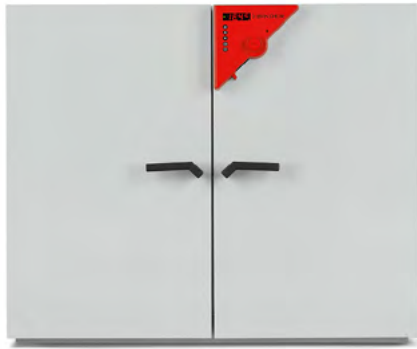
## DIMENSIONS incl. fittings and connections [mm]

E 28



## Series ED Classic.Line | with natural convection

The strengths of a BINDER ED series drying chamber include routine drying and sterilization tasks up to 300 °C. Thanks to the natural convection, all thermal processes which use this drying chamber are highly efficient. The ED series ensures fast, uniform drying.



BD 400 model

### MAIN FEATURES

- Temperature range: room temperature plus 5 °C to 300 °C
- APT.line™ preheating chamber technology
- Natural convection
- Adjustable exhaust air flap
- Controller with timer functions
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
ED 23	20	› <a href="https://go2binder.com/en-ED23">go2binder.com/en-ED23</a>
ED 400	400	› <a href="https://go2binder.com/en-ED400">go2binder.com/en-ED400</a>

## TECHNICAL DATA

Description	ED 23	ED 400
<b>Outer dimensions</b>		
Width net [mm]	435	1235
Height net [mm]	495	1025
Depth net [mm]	520	765
<b>Internal Dimensions</b>		
Width [mm]	222	1000
Height [mm]	330	800
Depth [mm]	300	520
<b>Measures</b>		
Interior volume [L]	20	400
Net weight of the unit (empty) [kg]	27	125
permitted load [kg]	25	90
Load per rack [kg]	12	35
<b>Performance Data Temperature</b>		
Temperature range 5 °C above ambient temperature to [°C]	300	300
Temperature variation at 150 °C [± K]	2.8	3
Temperature fluctuation at 150 °C [± K]	0.5	0.5
Heating-up time to 150 °C [min]	28	71
Recovery time after 30 seconds door open at 150 °C [min]	28	31
<b>Electrical data</b>		
Nominal power (version 120 V) [kW]	0.8	–
Nominal power (version 208 V) [kW]	–	3.4
Nominal power (version 230 V) [kW]	0.8	–
Nominal power (version 400 V) [kW]	–	3.4
<b>Fixtures</b>		
Number of shelves (std./max.)	2/4	2/10

## ORDERING INFORMATION [Art. No.]

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

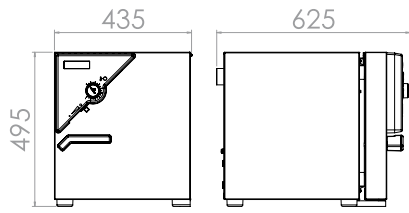
Voltage	Option model	ED 23	ED 400
400 V 3 50/60 Hz	with RS 422	–	9010-0075
	Standard	9010-0190	–
230 V 1 50/60 Hz	with RS 422	9010-0191	–
	Standard	9010-0192	–
208 V 3 60 Hz	with RS 422	–	9010-0168
	Standard	9010-0192	–
120 V 1 60 Hz	with RS 422	9010-0193	–
	Standard	9010-0192	–

► You will find a selection of options, accessories and services suitable for each product on page 35

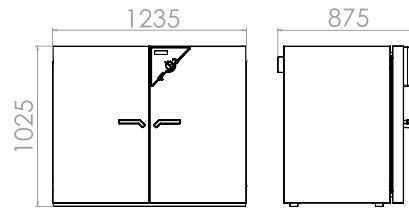
DIMENSIONS incl. fittings and connections [mm]

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ED 23



ED 400





## Series FD Classic.Line | with forced convection

A BINDER FD series heating oven is always used when fast drying and sterilization is required. Thanks to its fully homogeneous temperature distribution, quick dynamics and powerful fan, this heating oven saves valuable time.



FD 23 model

### MAIN FEATURES

- Temperature range: room temperature plus 5 °C to 300 °C
- APT.line™ preheating chamber technology
- Forced convection
- Adjustable exhaust air flap
- Controller with timer functions
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
FD 23	20	› <a href="https://go2binder.com/en-FD23">go2binder.com/en-FD23</a>



Find all details online  
[go2binder.com/en-FD-c](https://go2binder.com/en-FD-c)

## TECHNICAL DATA

Description	FD 23
<b>Outer dimensions</b>	
Width net [mm]	435
Height net [mm]	495
Depth net [mm]	520
<b>Internal Dimensions</b>	
Width [mm]	222
Height [mm]	330
Depth [mm]	300
<b>Measures</b>	
Interior volume [L]	20
Net weight of the unit (empty) [kg]	27
permitted load [kg]	25
Load per rack [kg]	12
<b>Performance Data Temperature</b>	
Temperature range 5 °C above ambient temperature to [°C]	300
Temperature variation at 150 °C [± K]	2.5
Temperature fluctuation at 150 °C [± K]	0.3
Heating-up time to 150 °C [min]	25
Recovery time after 30 seconds door open at 150 °C [min]	6
<b>Electrical data</b>	
Nominal power (version 120 V) [kW]	0.8
Nominal power (version 230 V) [kW]	0.8
<b>Fixtures</b>	
Number of shelves (std./max.)	2/4

## ORDERING INFORMATION [Art. No.]

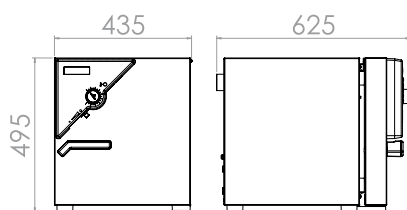
**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

Voltage	Option model	FD 23
230 V 1 50/60 Hz	Standard	9010-0194
120 V 1 60 Hz	Standard	9010-0196

► You will find a selection of options, accessories and services suitable for each product on page 35

## DIMENSIONS incl. fittings and connections [mm]

FD 23



## Series FED Classic.Line | with forced convection and enhanced timer functions

BINDER heating chambers of the FED series provide almost unlimited capacity and are particularly adaptable. With advanced timing functions and a adjustable fan, temperature and convection conditions are easily controlled.



BF 400 model

### MAIN FEATURES

- Temperature range: room temperature plus 5 °C to 300 °C
- APT.line™ preheating chamber technology
- Adjustable fan speed
- Adjustable exhaust air flap
- Controller with expanded timer functions
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- Computer interface: RS 422

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
FED 400	400	› <a href="https://go2binder.com/en-FED400">go2binder.com/en-FED400</a>



Find all details online  
[go2binder.com/en-FED-c](https://go2binder.com/en-FED-c)

## TECHNICAL DATA

Description	FED 400
<b>Outer dimensions</b>	
Width net [mm]	1235
Height net [mm]	1025
Depth net [mm]	765
<b>Internal Dimensions</b>	
Width [mm]	1000
Height [mm]	800
Depth [mm]	510
<b>Measures</b>	
Interior volume [L]	400
Net weight of the unit (empty) [kg]	145
permitted load [kg]	90
Load per rack [kg]	35
<b>Performance Data Temperature</b>	
Temperature range 5 °C above ambient temperature to [°C]	300
Temperature variation at 150 °C [± K]	3.8
Temperature fluctuation at 150 °C [± K]	0.7
Heating-up time to 150 °C [min]	29
Recovery time after 30 seconds door open at 150 °C [min]	6
<b>Electrical data</b>	
Nominal power (version 208 V) [kW]	3.4
Nominal power (version 400 V) [kW]	3.4
<b>Fixtures</b>	
Number of shelves (std./max.)	2/10

## ORDERING INFORMATION [Art. No.]

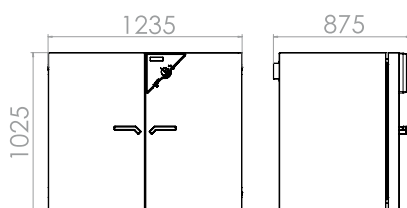
**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

Voltage	Option model	FED 400
400 V 3 50/60 Hz	Standard	9010-0216
208 V 3 60 Hz	Standard	9010-0217

► You will find a selection of options, accessories and services suitable for each product on page 35

## DIMENSIONS incl. fittings and connections [mm]

FED 400



## Series FP Classic.Line | with forced convection and program functions

A BINDER material test chamber with mechanical convection of the FP series provides reliably short drying times and particularly fast heating – even for chambers under full loads.



FP 115 model

### MAIN FEATURES

- Temperature range: room temperature plus 5 °C to 300 °C
- APT.line™ preheating chamber technology
- Adjustable fan speed
- Adjustable exhaust air flap
- Controller with time-segment and real-time programming
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- Computer interface: RS 422

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
FP 53	53	› <a href="https://go2binder.com/en-FP53">go2binder.com/en-FP53</a>
FP 115	115	› <a href="https://go2binder.com/en-FP115">go2binder.com/en-FP115</a>
FP 240	240	› <a href="https://go2binder.com/en-FP240">go2binder.com/en-FP240</a>
FP 400	400	› <a href="https://go2binder.com/en-FP400">go2binder.com/en-FP400</a>
FP 720	720	› <a href="https://go2binder.com/en-FP720">go2binder.com/en-FP720</a>



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Find all details online  
[go2binder.com/en-FP-c](https://go2binder.com/en-FP-c)

## TECHNICAL DATA

Description	FP 53	FP 115	FP 240	FP 400	FP 720
<b>Outer dimensions</b>					
Width net [mm]	635	835	1035	1235	1235
Height net [mm]	620	705	825	1025	1530
Depth net [mm]	575	645	745	765	865
<b>Internal Dimensions</b>					
Width [mm]	400	600	800	1000	1000
Height [mm]	400	480	600	800	1200
Depth [mm]	340	410	510	510	610
<b>Measures</b>					
Interior volume [L]	53	115	240	400	720
Net weight of the unit (empty) [kg]	44	62	96	145	194
permitted load [kg]	40	50	70	90	120
Load per rack [kg]	15	20	30	35	45
<b>Performance Data Temperature</b>					
Temperature range 5 °C above ambient temperature to [°C]	300	300	300	300	300
Temperature variation at 150 °C [± K]	2	1.8	2	2.5	2
Temperature fluctuation at 150 °C [± K]	0.3	0.3	0.3	0.3	0.3
Heating-up time to 150 °C [min]	24	30	27	35	39
Recovery time after 30 seconds door open at 150 °C [min]	5	8	10	17	20
<b>Electrical data</b>					
Nominal power (version 120 V) [kW]	1.2	1.6	–	–	–
Nominal power (version 208 V) [kW]	–	–	2.7	3.4	5
Nominal power (version 230 V) [kW]	1.2	1.6	2.7	–	–
Nominal power (version 400 V) [kW]	–	–	–	3.4	5
<b>Fixtures</b>					
Number of shelves (std./max.)	2/5	2/6	2/7	2/10	2/16

## ORDERING INFORMATION [Art. No.]

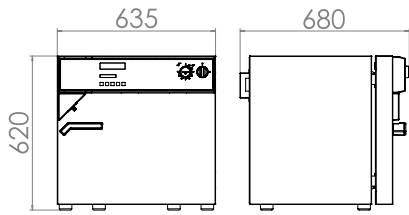
**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

Voltage	Option model	FP 53	FP 115	FP 240	FP 400	FP 720
400 V 3 50/60 Hz	Standard	–	–	–	9010-0265	9010-0267
230 V 1 50/60 Hz	Standard	9010-0153	9010-0255	9010-0263	–	–
208 V 1 60 Hz	Standard	–	–	9010-0264	9010-0266	9010-0268
120 V 1 60 Hz	Standard	9010-0175	9010-0262	–	–	–

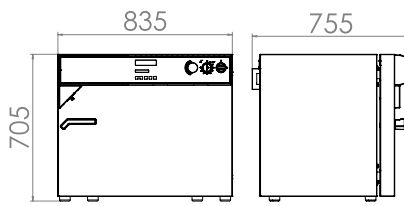
► You will find a selection of options, accessories and services suitable for each product on page 35

DIMENSIONS incl. fittings and connections [mm]

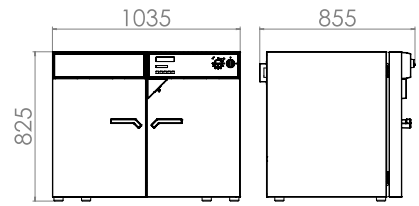
FP 53



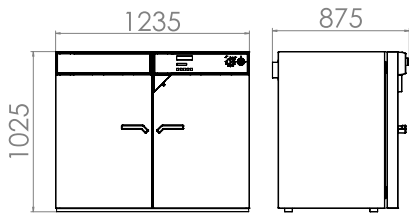
FP 115



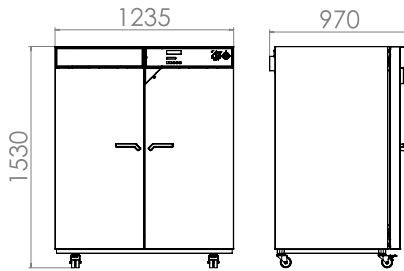
FP 240



FP 400



FP 720



## Series M Classic.Line | with forced convection and advanced program functions

With a maximum of 300 °C and various programming options the M series material test chambers are ideal for material and aging tests. With a high air flow, the powerful fans ensure rapid heating.



M 53 model

### MAIN FEATURES

- Temperature range: room temperature plus 5 °C to 300 °C
- APT.line™ preheating chamber technology
- Adjustable fan speed
- Program-controlled ventilation flap
- Color LCD controller with time-segment programming
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- Computer interface: RS 422

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
M 53	53	<a href="https://go2binder.com/en-M53">go2binder.com/en-M53</a>
M 115	115	<a href="https://go2binder.com/en-M115">go2binder.com/en-M115</a>
M 240	240	<a href="https://go2binder.com/en-M240">go2binder.com/en-M240</a>
M 400	400	<a href="https://go2binder.com/en-M400">go2binder.com/en-M400</a>
M 720	720	<a href="https://go2binder.com/en-M720">go2binder.com/en-M720</a>

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## TECHNICAL DATA

Description	M 53	M 115	M 240	M 400	M 720
<b>Outer dimensions</b>					
Width net [mm]	635	835	1035	1235	1235
Height net [mm]	780	865	985	1190	1690
Depth net [mm]	575	645	745	795	865
<b>Internal Dimensions</b>					
Width [mm]	400	600	800	1000	1000
Height [mm]	400	480	600	800	1200
Depth [mm]	340	410	510	510	610
<b>Measures</b>					
Interior volume [L]	53	115	240	400	720
Net weight of the unit (empty) [kg]	61	89	131	173	203
permitted load [kg]	40	50	70	90	120
Load per rack [kg]	15	20	30	35	45
<b>Performance Data Temperature</b>					
Temperature range 5 °C above ambient temperature to [°C]	300	300	300	300	300
Temperature variation at 150 °C [± K]	1.3	1.5	1.5	1.5	1.9
Temperature fluctuation at 150 °C [± K]	0.3	0.3	0.3	0.3	0.3
Heating-up time to 150 °C [min]	15	16	19	18	21
Recovery time after 30 seconds door open at 150 °C [min]	3	3	3	3	3
<b>Electrical data</b>					
Nominal power (version 230 V) [kW]	1.2	1.6	2.7	–	–
Nominal power (version 400 V) [kW]	–	–	–	3.4	5
<b>Fixtures</b>					
Number of shelves (std./max.)	2/5	2/6	2/7	2/10	2/16

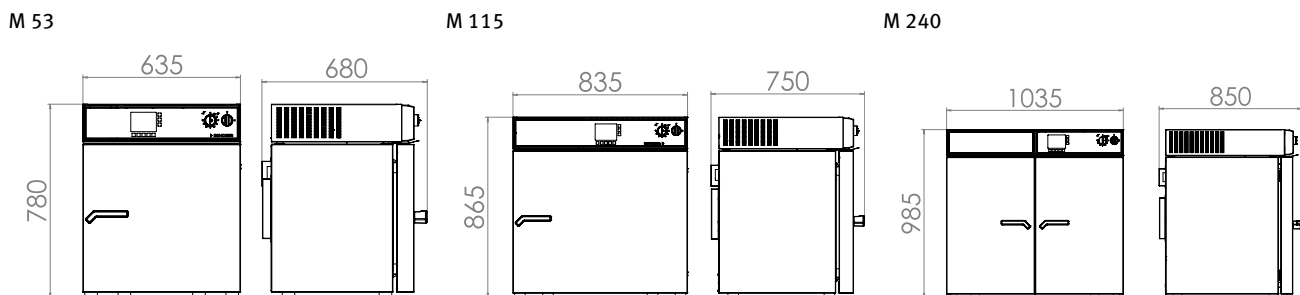
## ORDERING INFORMATION [Art. No.]

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

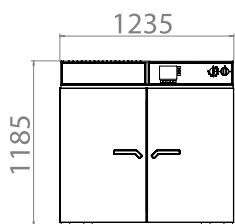
Voltage	Option model	M 53	M 115	M 240	M 400	M 720
400 V 3 50/60 Hz	Standard	–	–	–	9010-0204	9010-0205
230 V 1 50/60 Hz	Standard	9010-0201	9010-0202	9010-0203	–	–

► You will find a selection of options, accessories and services suitable for each product on page 35

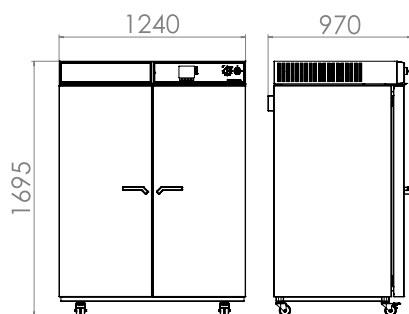
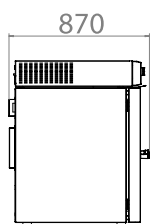
## DIMENSIONS incl. fittings and connections [mm]



M 400



M 720



## EXCERPT FROM OPTIONS AND ACCESSORIES

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**Access port with silicone plug** For introducing external measuring instruments. Large selection of different diameters and positions (left, right, or top)  
Series E, ED, FD, FED, FP, M

---

**Viewing window and interior lighting** Viewing window in the door with interior lighting for easy samples viewing.  
Series E, ED, FD, FED, FP, M

---

**Shelf racks** Perforated shelves or shelf racks, chrome-plated or made from stainless steel.  
Series E, ED, FD, FED, FP, M

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**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 E, ED, FD, FED, FP, M

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**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 E, ED, FD, FED, FP, M

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

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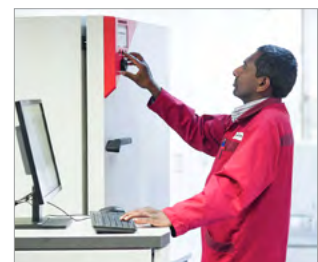
Access port with silicone plug



Viewing window in the door



Shelf



Services



# Drying and heating chambers Solid.Line

ED-S Solid.Line series	Page 40
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FD-S Solid.Line series	Page 42
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Options and Accessories	Page 44
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The new products in the Solid.Line impress with their tried-and-tested BINDER quality and reliability. They are suited to drying and heating. The attributes of the Solid.Line are geared towards the application in question and therefore used in research and quality assurance.

## PRODUCT SELECTION DRYING AND HEATING CHAMBERS SOLID.LINE

Features	ED-S Solid.Line series <small>› Page 40</small>	FD-S Solid.Line series <small>› Page 42</small>
<b>Model</b>		
Model 56	•	•
Model 115	•	•
<b>General data</b>		
Temperature range 7 °C above ambient temperature to [°C]	250	–
Temperature range 10 °C above ambient temperature to [°C]	–	250
Natural convection	•	–
Forced convection	–	•
<b>Controller and timer functions</b>		
Controller display		LED
Ramp function	•	•
Time delayed OFF	•	•
Class 2 independent adjustable temperature safety device	•	•
Temperature alarm, visual	•	•
•Standard equipment		

## ADVANTAGES AT A GLANCE



### **EASY OPERATION OF THE UNIT**

Series ED-S, FD-S

Using controller with digital display in °C and °F.



### **ADJUSTABLE EXHAUST AIR FLAP ABOVE THE UNIT**

Series ED-S, FD-S

For setting the air change rates.



### **COMPLETELY HOMOGENEOUS TEMPERATURE DISTRIBUTION**

Series FD-S

This feature provides excellent spatial and temporal temperature accuracy with the all-new generation of APT.line™ technology.

## ED-S Solid.Line series | with natural convection

The new products in the Solid.Line impress with their tried-and-tested BINDER quality and reliability. They are suited to drying and heating. The attributes of the Solid.Line are geared towards the application in question and therefore used in research and quality assurance.




ED-S 56 model

### MAIN FEATURES

- Temperature range: ambient temperature +7 °C to 250 °C
- APT.line™ preheating chamber technology
- Natural convection
- Adjustable exhaust air flap
- Controller with timer function
- 1 chrome-plated rack
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
ED-S 56	62	<a href="https://go2binder.com/en-ED-S56">› go2binder.com/en-ED-S56</a>
ED-S 115	118	<a href="https://go2binder.com/en-ED-S115">› go2binder.com/en-ED-S115</a>

 Find all details online  
[go2binder.com/en-ED-S](https://go2binder.com/en-ED-S)



## TECHNICAL DATA

Description	ED-S 56	ED-S 115
<b>Outer dimensions</b>		
Width net [mm]	595	745
Height net [mm]	625	735
Depth net [mm]	525	565
<b>Internal Dimensions</b>		
Width [mm]	400	550
Height [mm]	440	550
Depth [mm]	350	390
<b>Measures</b>		
Interior volume [L]	62	118
Net weight of the unit (empty) [kg]	38	54
permitted load [kg]	30	75
Load per rack [kg]	15	20
<b>Performance Data Temperature</b>		
Temperature range 7 °C above ambient temperature to [°C]	250	250
Temperature variation at 150 °C [± K]	2.8	2.8
Temperature fluctuation at 150 °C [± K]	0.8	0.8
Heating-up time to 150 °C [min]	60	55
<b>Electrical data</b>		
Nominal power (version 120V) [kW]	1.05	1.25
Nominal power (version 230V) [kW]	1.05	1.25
<b>Environment-specific data</b>		
Energy consumption at 150 °C [Wh/h]	180	310
<b>Fixtures</b>		
Number of shelves (std./max.)	1/3	1/5

## ORDERING INFORMATION [Art. No.]

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

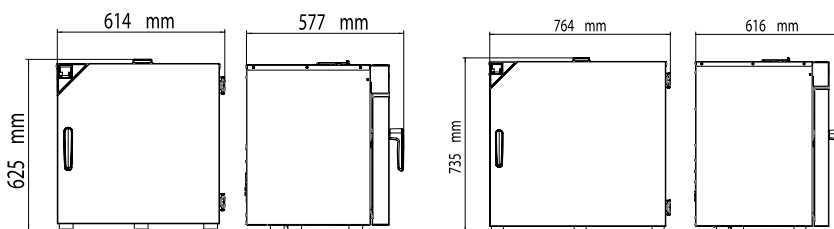
Voltage	Option model	ED-S 56	ED-S 115
230 V 1 50/60 Hz	Standard	9090-0014	9090-0020
120 V 1 60 Hz	Standard	9090-0015	9090-0021

> You will find a selection of options, accessories and services suitable for each product on page 44

## DIMENSIONS incl. fittings and connections [mm]

ED-S 56

ED-S 115



## FD-S Solid.Line series | with forced convection

The new products in the Solid.Line impress with their tried-and-tested BINDER quality and reliability. They are suited to drying and heating. The attributes of the Solid.Line are geared towards the application in question and therefore used in research and quality assurance.



FD-S 115 model

### MAIN FEATURES

- Temperature range: ambient temperature +10 °C to 250 °C
- APT.line™ preheating chamber technology
- Forced convection
- Adjustable exhaust air flap
- Controller with timer function
- 1 chrome-plated rack
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
FD-S 56	55	› <a href="https://go2binder.com/en-FD-S56">go2binder.com/en-FD-S56</a>
FD-S 115	106	› <a href="https://go2binder.com/en-FD-S115">go2binder.com/en-FD-S115</a>

## TECHNICAL DATA

Description	FD-S 56	FD-S 115
<b>Outer dimensions</b>		
Width net [mm]	595	745
Height net [mm]	625	735
Depth net [mm]	525	565
<b>Internal Dimensions</b>		
Width [mm]	400	550
Height [mm]	440	550
Depth [mm]	310	350
<b>Measures</b>		
Interior volume [L]	55	106
Net weight of the unit (empty) [kg]	38	54
permitted load [kg]	30	75
Load per rack [kg]	15	20
<b>Performance Data Temperature</b>		
Temperature range 10 °C above ambient temperature to [°C]	250	250
Temperature variation at 150 °C [± K]	2.6	2.4
Temperature fluctuation at 150 °C [± K]	0.5	0.5
Heating-up time to 150 °C [min]	20	22
<b>Air change data</b>		
Air change (approx.) at 100 °C [x/h]	80	32
<b>Electrical data</b>		
Nominal power (version 120V) [kW]	1.1	1.3
Nominal power (version 230V) [kW]	1.1	1.3
<b>Environment-specific data</b>		
Energy consumption at 150 °C [Wh/h]	290	340
<b>Fixtures</b>		
Number of shelves (std./max.)	1/3	1/5

## ORDERING INFORMATION [Art. No.]

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

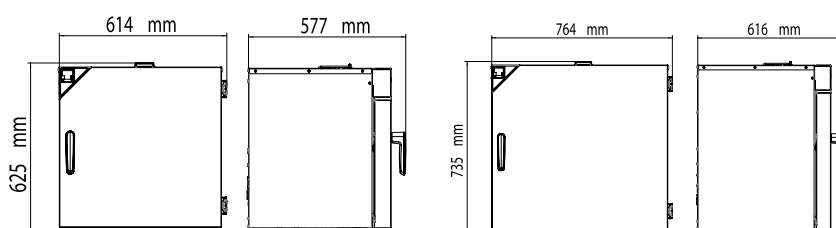
Voltage	Option model	FD-S 56	FD-S 115
230 V 1 50/60 Hz	Standard	9090-0018	9090-0024
120 V 1 60 Hz	Standard	9090-0019	9090-0025

► You will find a selection of options, accessories and services suitable for each product on page 44

## DIMENSIONS incl. fittings and connections [mm]

FD-S 56

FD-S 115



## EXCERPT FROM OPTIONS AND ACCESSORIES

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### Shelf racks

Chromed shelves.  
Series ED-S, FD-S

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### 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 ED-S, FD-S

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### BINDER INDIVIDUAL

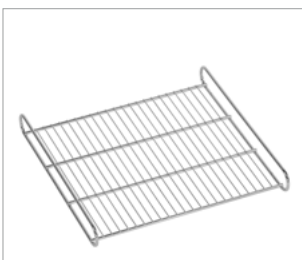
Using a BINDER series production product as a basis, we develop individual solutions as a single unit or in small batches. All products are tested, certified, and supplied with a full functional guarantee and warranty. More information is available in the accessories and services chapter.

Series ED-S, FD-S

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

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Chromed shelves



Services









## BINDER products

CO<sub>2</sub> incubators

Incubators

Cooling incubators

Growth chambers

Ultralow temperature freezers

Drying and heating chambers

Safety drying chambers

Vacuum drying chambers

Constant climate chambers

Dynamic climate chambers



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