BINDER
Best conditions for your success

Drying and heating chambers

Series ED | FD | FED | FP | M

EN

Avantgarde.Line:
Best in class

The newly developed ED, FD, and FED series **drying and heating chambers** impress with their **unparalleled performance.** The spatial temperature accuracy is the **best on the market.** The units supports **convenient operation** and **efficient working.**

Table of contents

• available – not available

Drying and heating chambers | Avantgarde.Line

When it comes to drying, sterilization, or heating, BINDER drying and heating chambers with natural or forced convection ensure quality and reliability every time. Thanks to the extensive redevelopment they have undergone, these all-rounders are even more firmly focused on addressing the requirements of laboratories. Not only does the state-of-the-art design indicate the shape of BINDER product portfolios in the future, the convenient operation and efficiency – plus outstanding temperature accuracy thanks to the very latest APT.line™ technology – also make these pioneering units truly stand out.

ED 56

AVANTGARDE.LINE WITH UNPARALLELED PERFORMANCE

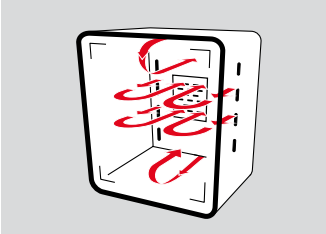
- Temperature distribution – perfect and precise
- Superior, exceptionally accurate drying chambers
- Innovative unit design
- Simple and ergonomic door opening
- State-of-the-art controller

VERFÜGBARE GRÖSSEN

Series	23	56	115	260	400	720
ED	Classic.Line	Avantgarde.Line	Avantgarde.Line	Avantgarde.Line	Classic.Line	Classic.Line
FD	Classic.Line	Avantgarde.Line	Avantgarde.Line	Avantgarde.Line	-	-
FED	-	Avantgarde.Line	Avantgarde.Line	Avantgarde.Line	Classic.Line	Classic.Line
FP	-	Classic.Line	Classic.Line	Classic.Line	Classic.Line	Classic.Line
M	-	Classic.Line	Classic.Line	Classic.Line	Classic.Line	Classic.Line

For information on Classic.Line, see page 8.

Get ahead with BINDER technology



Completely homogeneous temperature distribution with excellent temperature uniformity and fluctuation thanks to the all-new generation of APT.line™ technology.

Easy, intuitive handling thanks to state-of-the-art controller with LCD display, excellent readability, and various functions. The alphanumeric display makes it easier to communicate with the unit and read the data. Choice of languages as standard: English, German and French.

Simple data recording via the USB connector which comes as standard and via Ethernet, which is available as standard for FED and as an option for ED and FD.

Excellent energy efficiency and **low connected load** thanks to low heat dissipation and economical heating system.
Figure shows FD and FED

Ergonomic door opening based on a window handle principle: 6 o'clock = closed, 4 o'clock = open.

Series ED | Avantgarde.Line with natural convection

ED 56

STANDARD FEATURES

- Controller with LCD display
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm
- USB port

TECHNICAL DATA OF THE SERIES ED

Description	ED 56	ED 115	ED 260
Basic data			
Interior volume [L]	57	114	255
Housing dimensions not incl. fittings and connections W x H x D [mm]	560 x 625 x 565	710 x 735 x 605	810 x 965 x 760
Performance Data Temperature			
Temperature range 15 °C above ambient temperature to [°C]	300	–	–
Temperature range 8 °C above ambient temperature to [°C]	–	300	300
Temperature uniformity at 150 °C [± K]	2,5	2	-
Temperature fluctuation at 50 °C [± K]	0,4	0,4	-
Heating-up time to 150 °C [min]	45	60	-
Recovery time after 30 seconds door open at 150 °C [min]	25	20	-
Energy consumption at 150 °C [Wh/h]	180	250	-

Series FD | Avantgarde.Line with forced convection

FD 56

STANDARD FEATURES

- Controller with LCD display
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm
- USB port

TECHNICAL DATA OF THE SERIES FD

Description	FD 56	FD 115	FD 260
Basic data			
Interior volume [L]	60	116	259
Housing dimensions not incl. fittings and connections W x H x D [mm]	560 x 625 x 565	710 x 735 x 605	810 x 965 x 760
Performance Data Temperature			
Temperature range 15 °C above ambient temperature to [°C]	300	300	300
Temperature uniformity at 150 °C [± K]	1,7	1,7	-
Temperature fluctuation at 150 °C [± K]	0,3	0,3	-
Heating-up time to 150 °C [min]	15	20	-
Recovery time after 30 seconds door open at 150 °C [min]	5	5	-
Energy consumption at 150 °C [Wh/h]	290	340	-

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

FED 260

STANDARD FEATURES

- Adjustable fan speed
- Controller with LCD display with enhanced timer functions
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm
- Ethernet interface
- USB port

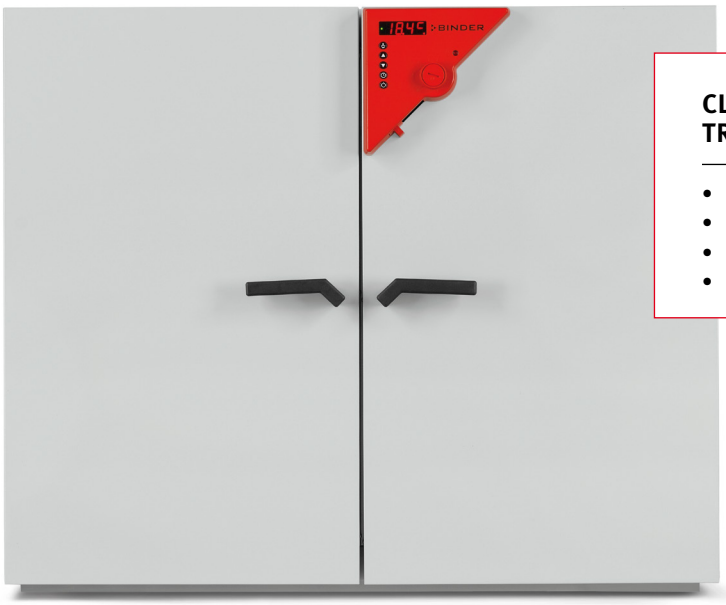
TECHNICAL DATA OF THE SERIES FED

Description	FED 56	FED 115	FED 260
Basic data			
Interior volume [L]	60	116	259
Housing dimensions not incl. fittings and connections W x H x D [mm]	560 x 625 x 565	710 x 735 x 605	810 x 965 x 760
Performance Data Temperature			
Temperature range 10 °C above ambient temperature to [°C]	300	300	300
Temperature uniformity at 150 °C [± K]	1,4	1,2	-
Temperature fluctuation at 150 °C [± K]	0,3	0,3	-
Heating-up time to 150 °C [min]	15	20	-
Recovery time after 30 seconds door open at 150 °C [min]	5	5	-
Energy consumption at 150 °C [Wh/h]	290	340	-

› 250.000 **sold units** of this technology

Drying and heating chambers | Classic.Line

As well as the new Avantgarde.Line drying and heating chambers, we also offer a wide selection of drying and heating chambers from our tried-and-tested Classic.Line – and it goes without saying that these products offer outstanding levels of quality and process reliability too. You can choose from drying chambers with natural convection and forced convection, as well as programmable material test chambers.



ED 400

CLASSIC.LINE WITH TRIED-AND-TESTED PERFORMANCE

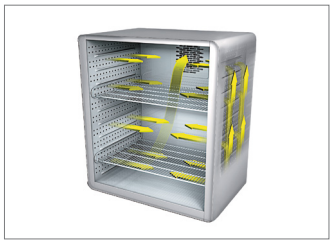
- Fast and uniform tempering
- Temperature range up to 300 °C
- Short heating up and recovery times
- User-friendly multi-functional control

AVAILABLE SIZES

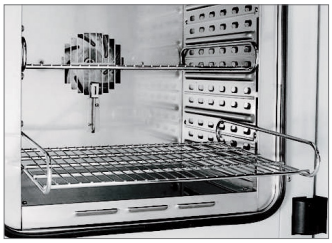
Series	23	56	115	260	400	720
ED	Classic.Line	Avantgarde.Line	Avantgarde.Line	Avantgarde.Line	Classic.Line	Classic.Line
FD	Classic.Line	Avantgarde.Line	Avantgarde.Line	Avantgarde.Line	-	-
FED	-	Avantgarde.Line	Avantgarde.Line	Avantgarde.Line	Classic.Line	Classic.Line
FP	-	Classic.Line	Classic.Line	Classic.Line	Classic.Line	Classic.Line
M	-	Classic.Line	Classic.Line	Classic.Line	Classic.Line	Classic.Line

For information on Avantgarde.Line, see page 4.

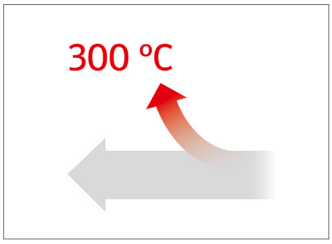
Get ahead with BINDER technology



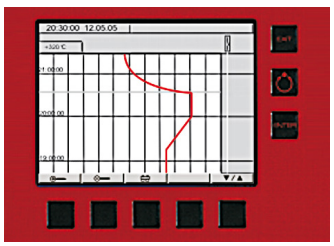
Uniform drying conditions regardless of the sample size and number of samples thanks to BINDER APT.line™ preheating chamber technology.



Convenient work environment thanks to the BINDER inner chamber concept: rack with tilt protection, no permanent fixtures, stainless-steel inner chamber.



Wide range of applications thanks to wide temperature range up to 300 °C. The FP and M series also impress with their adjustable air change rates and large power reserves.



Individual programming via LCD screen controller with comprehensive program functions. The process parameters can be displayed differently. (M series)

Series ED | Classic.Line with natural convection

ED 400

STANDARD FEATURES

- Adjustable exhaust air flap
- Controller with timer functions
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm

TECHNICAL DATA OF THE SERIES ED

Description	ED 23	ED 400	ED 720
Basic data			
Interior volume [L]	20	400	720
Housing dimensions not incl. fittings and connections W x H x D [mm]	435 x 495 x 520	1.235 x 1.025 x 765	1.235 x 1.530 x 865
Performance Data Temperature			
Temperature range 5 °C above ambient temperature to [°C]	300	300	300
Temperature uniformity at 150 °C [± K]	2,8	3	3,6
Temperature fluctuation at 150 °C [± K]	0,5	0,5	0,5
Heating-up time to 150 °C [min]	28	71	84
Recovery time after 30 seconds door open at 150 °C [min]	28	31	34

Series FD | Classic.Line with forced convection

FD 23

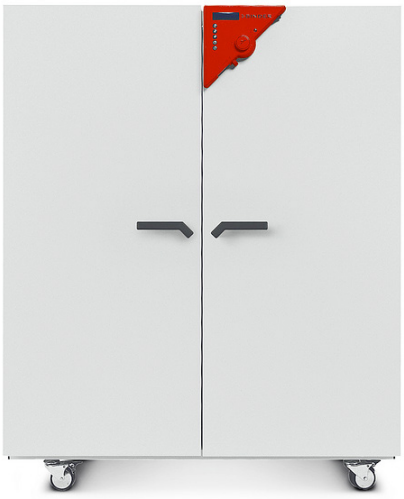
STANDARD FEATURES

- Adjustable exhaust air flap
- Controller with timer functions
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm

TECHNICAL DATA OF THE SERIES FD

Description	FD 23
Basic data	
Interior volume [L]	20
Housing dimensions not incl. fittings and connections W x H x D [mm]	435 x 495 x 520
Performance Data Temperature	
Temperature range 5 °C above ambient temperature to [°C]	300
Temperature uniformity 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

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



FED 720

STANDARD FEATURES

- 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

TECHNICAL DATA OF THE SERIES FED

Description	FED 400	FED 720
Basic data		
Interior volume [L]	400	720
Housing dimensions not incl. fittings and connections W x H x D [mm]	1.235 x 1.025 x 765	1.235 x 1.530 x 865
Performance Data Temperature		
Temperature range 5 °C above ambient temperature to [°C]	300	300
Temperature uniformity at 150 °C [± K]	3,8	3
Temperature fluctuation at 150 °C [± K]	0,7	0,3
Heating-up time to 150 °C [min]	29	29
Recovery time after 30 seconds door open at 150 °C [min]	6	8

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

FP 53

STANDARD FEATURES

- 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

TECHNICAL DATA OF THE SERIES FP

Description	FP 53	FP 115	FP 240	FP 400	FP 720
Basic data					
Interior volume [L]	53	115	240	400	720
Housing dimensions not incl. fittings and connections – W x H x D [mm]	635 x 620 x 575	835 x 705 x 645	1.035 x 825 x 745	1.235 x 1.025 x 765	1.235 x 1.560 x 865
Performance Data Temperature					
Temperature range 5 °C above ambient temperature to [°C]	300	300	300	300	300
Temperature uniformity 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

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

M 720

STANDARD FEATURES

- 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

TECHNICAL DATA OF THE SERIES M

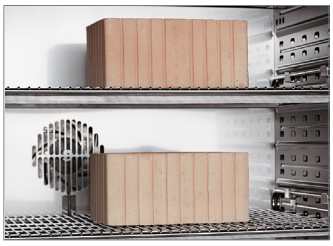
Description	M 53	M 115	M 240	M 400	M 720
Basic data					
Interior volume [L]	53	115	240	400	720
Housing dimensions not incl. fittings and connections – W x H x D [mm]	635 x 790 x 680	835 x 865 x 750	1035 x 985 x 850	1.235 x 1.185 x 870	1.235 x 1.695 x 970
Performance Data Temperature					
Temperature range 5 °C above ambient temperature to [°C]	300	300	300	300	300
Temperature uniformity 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

Product overview Drying and heating chambers

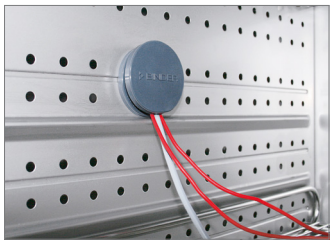
Model		23	53	56	115	240	260	400	720	Series
Drying and heating chambers Avantgarde.Line	Natural convection	–	–	•	•	–	•	–	–	ED
	Forced convection	–	–	•	•	–	•	–	–	FD
	forced convection and enhanced timer functions	–	–	•	•	–	•	–	–	FED
Drying and heating chambers Classic.Line	Natural convection	•	–	–	–	–	–	•	•	ED
	Forced convection	•	–	–	–	–	–	–	–	FD
	forced convection and enhanced timer functions	–	–	–	–	–	–	•	•	FED
	Forced convection and program functions	–	•	–	•	•	–	•	•	FP
	Forced convection and advanced program functions	–	•	–	•	•	–	•	•	M

EXCERPT FROM OPTIONS AND ACCESSORIES

Data Logger Kits
Various different systems for recording temperature and humidity values



Reinforced shelves to ensure safe and stable storage of heavy test specimens



Access ports
with silicone plug for connections to several measuring instruments

IQ/OQ qualification folder
Supporting documents for validation performed by customer, consisting of: IQ/OQ checklists, unit schematics, and QM certificate in accordance with ISO 9001

Temperature and timer functions

Temperature range ambient temperature plus	Delayed OFF	Delayed ON	Temperature-dependent delayed OFF	Programming function	Weekly program function	Fans	Computer interface	Temperature safety class	Temperature alarm	Controller	Page
8 °C / 15° – 300 °C	•	–	–	–	–	–	USB	2	visual	LCD	6
10 °C – 300 °C	•	–	–	–	–	–	USB	2	visual	LCD	6
10 °C – 300 °C	•	•	•	–	–	Adjustable	USB/ Ethernet	2	visual	LCD	7
5 °C – 300 °C	•	–	–	–	–	–	RS422	2	visual	LED	10
5 °C – 300 °C	•	–	–	–	–	–	–	2	visual	LED	10
5 °C – 300 °C	•	•	•	–	–	Adjustable	RS422	2	visual	LED	11
5 °C – 300 °C	•	•	•	•	•	Adjustable	RS422	2	visual	LED	12
5 °C – 300 °C	•	•	•	•	–	Programmable	RS422	2	visual	LCD	13

• available – not available

BINDER

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