

# Model FED 720 | Drying and heating chambers 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.

## BENEFITS

- Best energy efficiency on the market
- Excellent temporal and spatial temperature accuracy
- USB connection for recording data
- Temperature range up to 300 °C



Model 720

## IMPORTANT FEATURES

- Temperature range: +12°C above ambient temperature 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
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm
- Ergonomic handle design
- Ethernet interface
- USB port for recording data

## ORDERING INFORMATION

Interior volume [L]	Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
<b>Model FED 720</b>					
741	400 V 3~ 50/60 Hz -16,0 A	CEE 16 / 6 H plug 5-pin	Standard	FED720-400V	9010-0301
	208 V 3~ 60 Hz -16,0 A	NEMA L21-20	Standard	FED720UL-208V	9010-0302

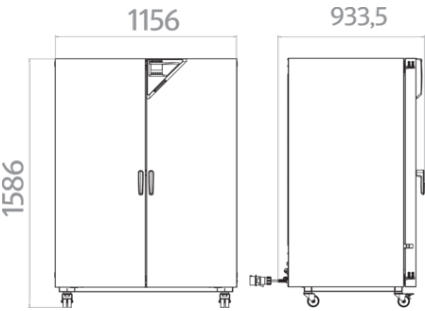
## TECHNICAL DATA

Data		
Designation	FED720-400V	FED720UL-208V
Article Number	9010-0301	9010-0302
Option model	Standard	Standard
Performance Data Temperature		
Temperature range	+12 °C above ambient temperature to 300 °C	+12 °C above ambient temperature to 300 °C
Temperature uniformity at 150°C	2 ± K	2 ± K
Temperature fluctuation at 150°C	0.6 ± K	0.6 ± K
Heating up time to 150°C	25 min	25 min
Recovery time after door was opened for 30 s at 150°C	6 min	6 min
Air change data		
Air change rate at 100°C	5 x/h	5 x/h
Electrical data		
Rated Voltage	400 V	208 V
Power frequency	50/60 Hz	60 Hz
Nominal power	4,5 kW	4,5 kW
Unit fuse	16,0 A	16,0 A
Phase (Nominal voltage)	3~	3~
Measures		
Interior volume	741 L	741 L
Net weight of the unit (empty)	166 kg	166 kg
Load per rack	45 kg	45 kg
Permitted load	315 kg	315 kg
Wall clearance back	160 mm	160 mm
Wall clearance sidewise	100 mm	100 mm
Housing dimensions not incl. fittings and connections		
Width net	1,165 mm	1,165 mm
Height net	1,590 mm	1,590 mm
Depth net	870 mm	870 mm
Internal Dimensions		

Interior width	1,000 mm	1,000 mm
Interior height	1,300 mm	1,300 mm
Interior depth	570 mm	570 mm
Unit doors	2	2
Environment-specific data		
Sound-pressure level	43 dB(A)	43 dB(A)
Energy consumption at 100°C	480 Wh/h	480 Wh/h
Energy consumption at 150°C	800 Wh/h	800 Wh/h
Fixtures		
Number of shelves (std./max.)	2/16	2/16

All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

DIMENSIONS Incl. fittings and connections [mm]



OPTIONS

Designation	Description	FED 720	*	Art.-No.
Access port with silicone plug	left			
	10 mm	•	01	8012-1278
	30 mm	•	01	8012-1655
	50 mm	•	01	8012-1657
	100 mm	•	01	8012-1669
	right			
	10 mm	•	01	8012-1271
	30 mm	•	01	8012-1654
	50 mm	•	01	8012-1656

Designation	Description	FED 720	*	Art.-No.
	100 mm	•	01	8012-1670
	top			
	10 mm	•	01	8012-1264
	30 mm	•	01	8012-1365
	50 mm	•	01	8012-1381
	100 mm	•	01	8012-1672
Alarm function for overheating	Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device	•	-	8012-1637
Analog output 4-20 mA	for temperature values (output not adjustable)	•	02	8012-1625
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	•	-	8012-1118
	for temperature, measurement in center of chamber at specified temperature	•	-	8012-1137
Calibration certificate, temperature	temperature measurement incl. certificate, 9 measuring points at specified temperature	•	-	8012-1554
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	•	-	8012-1575
	temperature measurement incl. certificate and 27 measuring points at specified temperature	•	-	8012-1596
Class 3.1 independent temperature safety device	with visual alarm (DIN 12880)	•	-	8012-1644
Clock	battery-backed	•	-	8012-1642
Door lock	lockable door handle	•	-	8012-1819
Fan, reinforced	for increased air change rates, incl. uprated heat output for faster heating up time and improved recovery time; max. 300°C; not in conjunction with load management option			
	400 V option model	•	-	8012-1781
HEPA air filter	On fresh air supply for unit; filter classification H14 (acc. to. EN 1822-1:2009, > 99.995% at 0.3 µm); not in conjunction with reinforced heating output, reinforced fan	•	-	8012-1835
Inner chamber, reinforced	max. total load 350 kg	•	-	8012-1822
	with two 25 W light bulbs			
Interior lighting	208 V option model	•	-	8012-0972
	with two 27 W light bulbs			
	400 V option model	•	-	8012-1826
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	•	-	8012-1197
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	•	-	8012-1621

Designation	Description	FED 720	*	Art.-No.
Viewing window and interior lighting	viewing window (triple insulating glass) in door, 300 x 480 mm, and 30 W interior lighting			
	208/400 V option model	•	-	8012-1832

## ACCESSORIES

Designation	Description	FED 720	*	Art.-No.
APT-COM™ 4 BASIC-Edition	for simple logging and documentation requirements with up to 5 networked units.			
	version 4, BASIC edition	•	-	9053-0039
APT-COM™ 4 GLP-Edition	for working under GLP-compliant conditions. Measured values are documented in a tamper-proof way in line with the requirements of FDA Regulation 21 CFR 11.			
	version 4, GLP edition	•	-	9053-0042
APT-COM™ 4 PROFESSIONAL-Edition	convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.			
	version 4, PROFESSIONAL edition	•	-	9053-0040
Qualification documents	IQ/OQ/PQ documents – supporting documents for validation performed by customers, according to customer requirements, PQ section added to qualification folder IQ/OQ; parameters: temperature, CO <sub>2</sub> , O <sub>2</sub> – or pressure, depending on unit			
	Digital in PDF format	•	-	7057-0005
	Hard copy inside folder	•	-	7007-0005
	IQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ checklists incl. calibration guide and comprehensive unit documentation; parameters: temperature, CO <sub>2</sub> , O <sub>2</sub> , pressure, depending on unit			
	Digital in PDF format	•	-	7057-0001
	Hard copy inside folder	•	-	7007-0001
Rack	max. load per rack 45 kg			
	chrome plated	•	-	8012-2044
	stainless steel	•	-	8012-2170
Rack, heavy load	max. load per rack 70 kg			
	Stainless steel	•	-	8012-2185
Shelves	max. load per rack 40 kg			
	Stainless steel	•	-	8012-2178
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250

## SERVICES

Designation	Description	*	Art.-No.
<b>Calibration services</b>			
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate	-	DL30-0101
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate	-	DL30-0102
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	-	DL33-0000
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	-	DL30-0109
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	-	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	-	DL30-0127
<b>Installation services</b>			
Unit commissioning	Connect the unit to the customer-side connections (electricity, water, wastewater, gas), basic functions check, brief operating instructions. (excl.: unpacking, setup, controller instructions, programming, installation work)	-	DL10-0100
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0500
<b>Maintenance contracts</b>			
BRONZE 3-year maintenance contract	Maintenance service as contractually agreed, visual inspection of mechanical and electrical components, check of control response, 20% discount on spare parts	-	DL20-0710
GOLD 3-year maintenance contract	Maintenance service as contractually agreed, visual inspection of mechanical and electrical components, check of control response, 20% discount on spare parts, testing of all key functions, replacement of wear parts, calibration of one test temperature specified by the user in the center of the usable space, including certificate	-	DL20-0910
SILVER 3-year maintenance contract	Maintenance service as contractually agreed, visual inspection of mechanical and electrical components, check of control response, 20% discount on spare parts, testing of all key functions, calibration of one test temperature specified by the user in the center of the usable space, without certificate	-	DL20-0810
<b>Maintenance services</b>			
Maintenance	One-off maintenance service in accordance with maintenance schedule. Visual inspection of mechanical and electrical components, testing of all key functions. Calibration of a test temperature specified by the user in center of usable space without certificate	-	DL20-0200
<b>Validation services</b>			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	-	DL40-0100
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	-	DL44-0500
<b>Warranty service</b>			
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	-	DL50-0010

## NOTES

- 01      Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge.
- 02      UL mark is not granted when this option is used.
- 05      Quoted prices do not include travel costs. Please refer to the chapter on BINDER Service for travel costs for your region. Quoted prices for services performed in Switzerland do not include a country-specific added fee (available on request).

### **BINDER GmbH**

Tuttlingen, Germany  
TEL +49 7462 2005 0  
FAX +49 7462 2005 100  
info@binder-world.com  
www.binder-world.com

### **BINDER Inc.**

Bohemia, NY, USA  
TEL +1 631 224 4340  
FAX +1 631 224 4354  
usa@binder-world.com  
www.binder-world.us

### **BINDER Environmental Testing Equipment (Shanghai) Co., Ltd.**

Shanghai, P.R. China  
TEL +86 21 685 808 25  
FAX +86 21 685 808 29  
china@binder-world.com  
www.binder-world.com

### **BINDER Asia Pacific (Hong Kong) Ltd.**

Kowloon, Hong Kong, P.R. China  
TEL +852 39070500  
FAX +852 39070507  
asia@binder-world.com  
www.binder-world.com