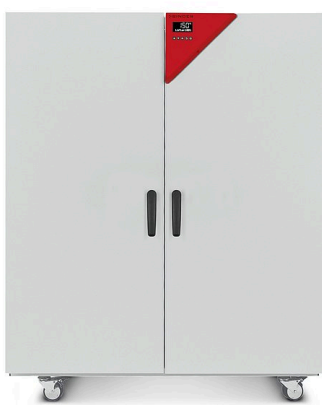


# Model FED 720 | Drying and heating chambers with forced convection and enhanced timer functions

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

## MAIN FEATURES

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

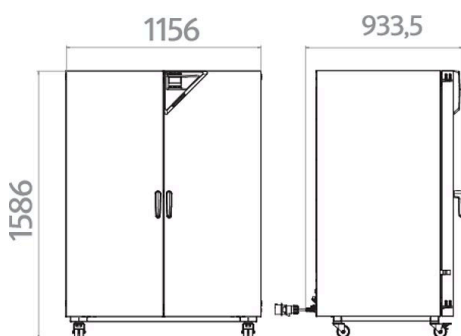
## ORDERING INFORMATION

Interior volume [L]	Voltage	Option model	Version	Art.-No.
741	400 V 3~ ph 50/60 Hz	Standard	FED720-400V	9010-0301
	208 V 3~ ph 60 Hz	Standard	FED720UL-208V	9010-0302

**TECHNICAL DATA**

Description	FED720-400V <sup>1</sup>	FED720UL-208V <sup>1</sup>
Article Number	9010-0301	9010-0302
<b>Performance Data Temperature</b>		
Temperature range +12 °C above ambient temperature to [°C]	300	300
Temperature variation at 150 °C [± K]	2.0	2.0
Temperature fluctuation at 150 °C [± K]	0.6	0.6
Heating-up time to 150 °C [min]	25	25
Recovery time after 30 seconds door open at 150 °C [min]	6	6
<b>Air change data</b>		
Air change (approx.) at 100 °C [x/h]	5	5
<b>Electrical data</b>		
Rated Voltage [V]	400	208
Power frequency [Hz]	50/60	60
Nominal power [kW]	4.5	4.5
Unit fuse [A]	3 x 16	3 x 16
Phase (Nominal voltage)	3~	3~
<b>Measures</b>		
Interior volume [L]	741	741
Net weight of the unit (empty) [kg]	162	162
Permitted load [kg]	315	315
Load per rack [kg]	45	45
Wall clearance back [mm]	160	160
Wall clearance sidewise [mm]	100	100
<b>Internal Dimensions</b>		
Width [mm]	1000	1000
Height [mm]	1300	1300
Depth [mm]	570	570
<b>Doors</b>		
Unit doors	2	2
<b>Housing dimensions not incl. fittings and connections</b>		
Width net [mm]	1165	1165
Height net [mm]	1590	1590
Depth net [mm]	870	870
<b>Environment-specific data</b>		
Energy consumption at 150 °C [Wh/h]	800	800
Sound-pressure level [dB(A)]	43	43
<b>Fixtures</b>		
Number of shelves (std./max.)	2/16	2/16

1 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	*	Art.-No.
<b>Access port with silicone plug</b>	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
	100 mm	01	8012-1670
	top		
	10 mm	01	8012-1264
	30 mm	01	8012-1365
	50 mm	01	8012-1381
	100 mm	01, 10	8012-1672
	<b>Alarm function for overheating</b>	Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device	-
<b>Analog output 4-20 mA</b>	for temperature values (output not adjustable)	02	8012-1625
<b>Calibration certificate, expanded</b>	for temperature; for extending the measurement in center of chamber to include another test temperature	-	8012-1118
<b>Calibration certificate, temperature</b>	for temperature, measurement in center of chamber at specified temperature	-	8012-1137
	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-1596
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-1575
	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-1554
<b>Class 3.1 independent temperature safety device</b>	with visual alarm (DIN 12880)	04, 12	8012-1644
<b>Clock</b>	battery-backed	-	8012-1642
<b>Door gasket</b>	made of FKM, silicone-free	03	8012-1834
<b>Door lock</b>	lockable door handle	-	8012-1819
<b>Fan, reinforced</b>	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
<b>Heating output, reinforced</b>	For faster heating up time and improved recovery time; max. 300 °C; not in conjunction with load management option		
	400 V option model	-	8012-1780
<b>HEPA air filter</b>	On fresh air supply for unit; filter classification H14 (acc. to EN 1822-1:2009, > 99.995% at 0.3 µm)	-	8012-1835
<b>Inner chamber, reinforced</b>	max. total load 350 kg	-	8012-1822

\* Notes &gt; See last page

Designation	Description	*	Art.-No.
Interior lighting	with two 15 W light bulbs		
	208 V option model	-	8012-0972
	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
Viewing window and interior lighting	viewing window (triple insulating glass) in door, 300 x 480 mm, and 30 W interior 208/400 V option model	-	8012-1832

\* Notes › See last page

## ACCESSORIES

Designation	Description	*	Art.-No.
APT-COM™ 4 BASIC-Edition	for simple logging and documentation requirements with up to 5 networked units. version 4, BASIC edition	19	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	19	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	19	9053-0040
Data Logger Kit	T 350: For continuous temperature logging from 0 °C to 350 °C; kit includes 1 data logger, Pt 100 sensor with 2 m extension cable and 1 magnetic fixture for mounting to the BINDER unit	19	8012-0714
Data Logger Software	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	19	8012-0821
Instrument tray	with lid made from 18/8 stainless steel, stackable, dimensions: 230 x 133 x 45 mm	-	4022-0123
	with lid made from 18/8 stainless steel, stackable, dimensions: 315 x 215 x 60 mm	-	4022-0124
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	-	1002-0016
Qualification documents	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
	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
Rack	chrome plated	-	6004-0171
	stainless steel	-	6004-0155
Rack, heavy load	Stainless steel, max. load per rack 70 kg	-	6004-0204
Shelf, perforated	Stainless steel	-	6004-0187

\* Notes › See last page

## SERVICES

Designation	Description	*	Art.-No.
<b>Installation services</b>			
Unit installation	Unpacking and setting up of unit, connecting to existing connections, and checking function	13, 18	DL10-0100
Unit instructions	Unit function instructions for operation and programming of the controller	18	DL10-0500
<b>Preventive maintenance</b>			
Maintenance	Functional testing of all electrical and mechanical components, short calibration, documentation in the maintenance schedule	14, 18	DL20-0200

\* Notes › See last page

Designation	Description	*	Art.-No.
<b>Calibration services</b>			
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	14, 16, 17, 18	DL33-0000
Temperature calibration	Expansion – including certificate, each additional measuring point in center of chamber at specified test temperature	14, 16, 17, 18	DL30-0102
	Temperature calibration with 1 measuring point in center of chamber at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0101
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0127
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0109
<b>Validation services</b>			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	15, 18	DL40-0100
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	15, 18	DL44-0500
<b>Warranty service</b>			
Warranty extension from 2 to 3 years	The warranty is extended from 2 to 3 years from the delivery date, wear parts are excluded	–	DL00-4041
Warranty extension from 2 to 5 years	The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded	–	DL00-4042

\* Notes › See last page

**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.
- 03 Heat resistant only to max. 200 °C.
- 04 Only available on units rated for 230 V.
- 07 The additional heat input may affect the temperature behavior.
- 09 Not in conjunction with the optional access port, door with window and interior lighting.
- 10 Not available on 23-liter units.
- 11 Not available on 23- or 53-liter units.
- 12 Only available on units rated for 230 V or 400 V.
- 13 Installation and connections take place at unit location; transport within the company only upon consultation.
- 14 We recommend a BINDER service contract to cover unit inspections, calibrations and validations.
- 15 OQ according to Yellow Paper = completed factory validation documentation of all OQ checklists.
- 16 Sensor calibration is performed in an accredited calibration laboratory.
- 17 Calibration is performed according to the BINDER factory standard.
- 18 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).
- 19 For additional accessories, refer to the Process documentation chapter.

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