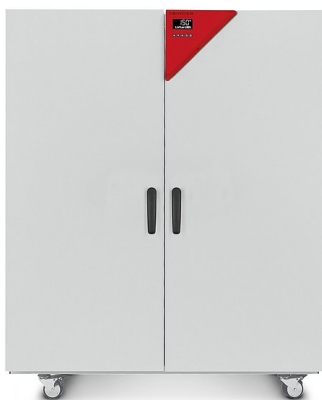


# Model FD 720 | Drying and heating chambers with forced convection

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.

## 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
- Forced convection
- 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
- Ergonomic handle design
- USB port for recording data

## ORDERING INFORMATION

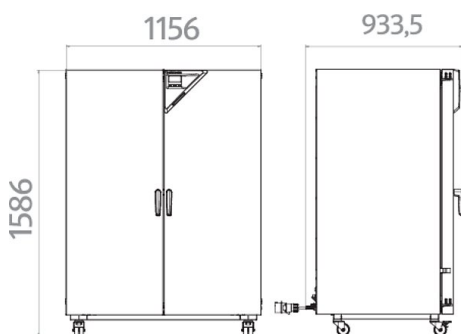
Interior volume [cu.ft.]	Voltage	Option model	Version	Art.-No.
26.2	400 V 3~ 50/60 Hz	Standard	FD720-400V	9010-0311

## TECHNICAL DATA

Description	FD720-400V <sup>1</sup>
Article Number	9010-0311
<b>Performance Data Temperature</b>	
Temperature range 12 °C above ambient temperature to [°C]	300
Temperature variation at 150 °C [± K]	2.5
Temperature fluctuation at 150 °C [± K]	0.6
Heating-up time to 150 °C [min]	25
Recovery time after 30 seconds door open at 150 °C [min]	6
<b>Air change data</b>	
Air change (approx.) at 100 °C [x/h]	5
<b>Electrical data</b>	
Rated Voltage [V]	400
Power frequency [Hz]	50/60
Nominal power [kW]	4.5
Unit fuse [A]	3 x 16
Phase (Nominal voltage)	3~
<b>Measures</b>	
Interior volume [cu.ft.]	26.2
Net weight of the unit (empty) [lbs]	357
Permitted load [lbs]	694
Load per rack [lbs]	99
Wall clearance back [in]	6.3
Wall clearance sidewise [in]	3.94
<b>Internal Dimensions</b>	
Width [in]	39.4
Height [in]	51.2
Depth [in]	22.46
<b>Doors</b>	
Unit doors	2
<b>Housing dimensions not incl. fittings and connections</b>	
Width net [in]	45.9
Height net [in]	62.6
Depth net [in]	34.28
<b>Environment-specific data</b>	
Energy consumption at 150 °C [Wh/h]	800
Sound-pressure level [dB(A)]	43
<b>Fixtures</b>	
Number of shelves (std./max.)	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 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.
Access port with silicone plug	left		
	10 mm	01	8012-1276
	30 mm	01	8012-1016
	50 mm	01	8012-1020
	100 mm	01	8012-1027
	right		
	10 mm	01	8012-1269
	30 mm	01	8012-1015
	50 mm	01	8012-1019
	100 mm	01	8012-1028
	top		
	10 mm	01	8012-1263
	30 mm	01	8012-1364
	50 mm	01	8012-1380
	100 mm	01, 10	8012-1671
	Alarm function for overheating	Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device	-
Analog output 4-20 mA	for temperature values (output not adjustable)	02	8012-1624
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	-	8012-1116
	for temperature, measurement in center of chamber at specified temperature	-	8012-1135
Calibration certificate, temperature	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-1594
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-1573
	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-1552
Class 3.1 independent temperature safety device	with visual alarm (DIN 12880)	04, 12	8012-1643
Clock	battery-backed	-	8012-1641
Door gasket	made of FKM, silicone-free	03	8012-1833
Door lock	lockable door handle	-	8012-1818
Ethernet interface	for Multi Management Software APT-COM™	-	8012-0989
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	-	8012-1062
Heating output, reinforced	For faster heating up time and improved recovery time; max. 300 °C; not in conjunction with load management option		
	400 V option model	-	8012-1061
HEPA air filter	On fresh air supply for unit; filter classification H14 (acc. to. EN 1822-1:2009, > 99.995% at 0.3 µm)	-	8012-1099
Inner chamber, reinforced	max. total load 350 kg	-	8012-1821

\* Notes › See last page

Designation	Description	*	Art.-No.
Interior lighting	with two 15 W light bulbs 400 V option model	-	8012-1825
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	-	8012-1195
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	-	8012-1620
Viewing window and interior lighting	viewing window (triple insulating glass) in door, 300 x 480 mm, and 30 W interior 400 V option model	-	8012-1831

\* 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 with lid made from 18/8 stainless steel, stackable, dimensions: 315 x 215 x 60 mm	-	4022-0123 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 Hard copy inside folder	-	7057-0001 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 Hard copy inside folder	-	7057-0005 7007-0005
Rack	chrome plated stainless steel	-	6004-0171 6004-0155
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
<b>Calibration services</b>			
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	14, 16, 17, 18	DL33-0000

\* Notes › See last page

Designation	Description	*	Art.-No.
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	–	DL00-3041
Warranty extension from 2 to 5 years	The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded	–	DL00-3042

\* 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.

BINDER GmbH  
Tuttlingen, Germany  
TEL +49 7462 2005 0  
FAX +49 7462 2005 100  
info@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

Representative Office for CIS  
Moscow, Russia  
TEL +7 495 988 15 16  
FAX +7 495 988 15 17  
russia@binder-world.com  
www.binder-world.com

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