

# Model ED 720 | Drying and heating chambers 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.

### **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: +5 °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
- Natural 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 [L]	Voltage	Option model	Version	ArtNo.
743	400 V 3~ ph 50/60 Hz	Standard	ED720-400V	9010-0341



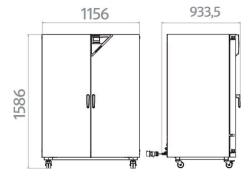
### **TECHNICAL DATA**

Anticle Number         opto-again           Performance Data Temperature         Secondary Commentation and Secondar	Description	ED720-400V <sup>1</sup>
Temperature variation at 15 of 15 kg         3.2           Temperature variation at 15 of 15 kg         3.2           Temperature variation at 15 of 15 kg         8.8           Recovery time after so seconds door open at 150 cf (min)         25           Tabeller         Variation at 150 cf (xin)           Tabeller         2           Recovery time after so seconds door open at 150 cf (xin)         2           Tabeller         Variation of 15 kg           Rich range (approx) at 150 cf (xin)         2           Returned (approx) at 150 cf (xin)         2           Returned (approx) at 150 cf (xin)         400           Power frequency [Hz]         50 f60           Nominal power [kw]         41           Unit (use [A)         16           Power frequency [Hz]         42           Neas (kwin 15 kg)         3           Result (user (xin)         43           Near (kwin 15 kg)         45           New weight of the unit (empty) [kg]         55           New weight of the unit (empty) [kg]         45           Valid clear not sidewise [mm]         60           Valid clear not back [mm]         60           Valid (learn not back [mm]         60           Relight [mm]         62	Article Number	9010-0341
Temperature variation at 55 °C [x K]         3.2           Temperature fluctuation at 55 °C [x K]         6.8           Heating-up time to 55 °C [x K]         8.5           Recovery time after 30 seconds door open at 350 °C [min]         2           Tabellen            Air change (approx.) at 100 °C [x/h]         2           Electrical data            Rated Vistage [V]         400           Power frequency [Hz]         50/60           Nominal power [kW]         4.1           Phase (Moninal voltage)         6           Phase (Moninal voltage)         73           Measures            Interior voltume [L]         73           Net weight of the unit (empty) [kg]         66           Permitted load [kg]         50           Vall clearance back [mm]         60           Wall clearance sidewise [mm]         60           Width learning         96           Height [mm]         96           Height [mm]         65           Door         12           Unit doors         2           Liner doors         2           Unit doors         2           Liner doors         2           U	Performance Data Temperature	
Temperature fluctuation at sp °C[a K]         a.8           Heating up time to sp °C[min]         85           Recovery time after 30 seconds door open at 150 °C [min]         2           Tabellen         V           Air change (approx.) at 100 °C [k/h]         2           Electrical data         Ao           Rated Voltage [V]         50/60           Power frequency [Hz]         50/60           Nominal power [kW]         4.1           Unit tase [A]         6           Phase (Nominal votage)         3-2           Wessures         V           Interior volume [L]         743           Net weight of the unit (empty) [kg]         16-1           Very locate back [mm]         16-2           Wall clearance back [mm]         16-2           Wall clearance back [mm]         16-2           Wall clearance sidewise [mm]         16-2           Wall clearance sidewise [mm]         16-2           Width [mm]         96           Height [mm]         18-8           Depth [mm]         6-5           Unit doors         2           Unit doors         2           Unit doors         2           Unit doors         2	Temperature range +5 °C above ambient temperature to [°C]	300
Heating-up time to 150 °C [min]         85           Recovery time after 30 seconds door open at 150 °C [min]         25           Tabellen         2           Air change (approx.) at 100 °C [x/h]         2           Electrical data         30           Electrical double [v]         400           Power frequency [t2]         50/60           Nominal power [w]         6           Intil fuse [A]         6           Phase (Nominal voltage)         3-           Measures         3-           Interior volume [L]         73           Et veright of the unit (empty) [kg]         35           Et veright of the unit (empty) [kg]         35           Build clearance sledwise [min]         36           Wall clearance sledwise [min]         36           Wall clearance sledwise [min]         96           Height [min]         96           Height [min]         96           Build [min]         92           United on S         9           United on S         9           United on S         9           Permitted Load         9           Height [min]         9           United on S         9           United on S	Temperature variation at 150 °C [± K]	3.2
Recovery time after 30 seconds door open at 150°C[min]         25           Tabellen         2           Electrical data         400           Rated Voltage [V]         400           Power frequency [Hz]         50/60           Nominal power [kW]         4.1           Unit tase [A]         6           Phase (Nominal voltage)         743           Resaures         161           New wight of the unit (empty) [kg]         61           Permitted load [kg]         45           Load per rack [kg]         45           Wall clearance back [mm]         160           Wall clearance sidewise [mm]         160           Wall clearance sidewise [mm]         960           Height [mm]         860           Depth [mm]         960           Height [mm]         180           Doors         180           Inter doors         2           Unit doors         2           House difference in [mm]         165           Height net [mm]         1950           Doors         180           Fine [mm]         1960           House [mm]         2           Unit doors         2           Height net	Temperature fluctuation at 150 °C [± K]	0.8
Tabellen           Air change (approx.) at 100°C (x/h)         2           Electrical data         400           Rated Voltage (Y)         400           Power frequency (Hz)         50/60           Nominal power (kW)         4.1           Unit fuse (A)         16           Phase (Rominal voltage)         3°           Messures         William (approx.)           Interior volume (L)         743           Net weight of the unit (empty) (kg)         161           Verwight of the unit (empty) (kg)         162           Vall clearance back (kg)         45           Wall clearance back (km]         100           Wall clearance sidewise (km)         100           Wall clearance back (km)         960           Height (km)         180           Depth (km)         2           Unit doors         2           Loos op         2           Unit doors         2           Unit doors         2           Height net (km)         165           Height net (km)         2           Unit doors         2           Unit doors         2           Unit doors         350           Unit doors	Heating-up time to 150 °C [min]	85
Air change (approx.) at 100 °(x/h)         2           Electrical data         Commod (by 10 cm)         400           Power frequency (Hz)         50/60           Dominal power (RW)         4.0           Unit fuse (A)         6           Phase (Nominal voltage)         3-           Measures         7.3           Net weight of the unit (empty) (kg)         16           Permitted load (kg)         35           Load per rack (kg)         45           Wall clearance back (mm)         16           Wall clearance sidewise (mm)         90           Wall clearance sidewise (mm)         96           Wall clearance sidewise (mm)         96           Height (mm)         65           Doss         96           Unit doss         2           Doss         90           Unit doss         2           Unit doss         2           Unit doss         2           Unit doss         90           Unit doss	Recovery time after 30 seconds door open at 150 °C [min]	25
Electrical data         Electrical data           Rated Voltage [V]         400           Power frequency [Hz]         50/60           Nominal power [kW]         4.1           Unif fuse [A]         3-           Phase (Nominal voltage)         3-           Measures         Interior volume [L]         743           Net weight of the unit (empt) [kg]         161           Permitted load [kg]         155           Load per rack [kg]         45           Wall clearance back [mm]         160           Wall clearance back [mm]         160           Wall clearance sidewise [mm]         160           Wall clearance sidewise [mm]         160           Wall clearance sidewise [mm]         20           Width [mm]         960           Height [mm]         1280           Dopth [mm]         280           Dopth [mm]         2           Inter doors         2           Unit doors         2           House find [mensions not incl. fittings and connections         4           Width net [mm]         165           Height net [mm]         800           Height net [mm]         800           Permitted [mm]         800	Tabellen	
Rated Voltage [V]         400           Power frequency [Hz]         50/60           Nominal power [kW]         4.1           Unit fuse [A]         6           Phase (Nominal voltage)         3~           Measures         The color woltume [L]           Interior volume [L]         73           Net weight of the unit (empty) [kg]         61           Permitted load [kg]         315           Bull clearance back [mm]         60           Wall clearance sidewise [mm]         60           Height [mm]         960           Height [mm]         60           Doors         8           Droots         8           Unit doors         2           Housing dimensions not int. fittings and connections         8           Width net [mm]         165           Housing dimensions not int. fittings and connections         8           Width net [mm]         165           Height net [mm]         166           Height net [mm]         169           Height net [mm]	Air change (approx.) at 100 °C [x/h]	2
Power frequency [Hz]         50/60           Nominal power [kW]         4.1           Unit fuse [A]         16           Phase (Nominal voltage)         3~           Measures	Electrical data	
Nominal power [kW]         4.1           Unit fuse [A]         16           Phase (Nominal voltage)         3~           Measures         ************************************	Rated Voltage [V]	400
Unit fuse [A]         16           Phase (Nominal voltage)         3~           Measures         743           Net weight of the unit (empty) [kg]         161           Permitted load [kg]         315           Load per rack [kg]         45           Wall clearance back [mm]         160           Wall clearance sidewise [mm]         100           Internal Dimensions         960           Height [mm]         960           Depth [mm]         65           Doors         9           Inter doors         2           Unit doors         2           Housing dimensions not incl. fittings and connections         165           Width net [mm]         165           Height net [mm]         590           Depth net [mm]         870	Power frequency [Hz]	50/60
Phase (Nominal voltage)         3~           Measures         743           Net weight of the unit (empty) [kg]         161           Permitted load [kg]         315           Load per rack [kg]         45           Wall clearance back [mm]         160           Wall clearance sidewise [mm]         100           Internal Dimensions         960           Height [mm]         280           Depth [mm]         665           Doors         2           Unit doors         2           Housing dimensions not incl. fittings and connections         2           Width net [mm]         1165           Height net [mm]         590           Depth net [mm]         870           Fixtures         870	Nominal power [kW]	4.1
Measures           Interior volume [L]         743           Net weight of the unit (empty) [kg]         161           Permitted load [kg]         315           Load per rack [kg]         45           Wall clearance back [mm]         160           Wall clearance sidewise [mm]         100           Internal Dimensions         960           Height [mm]         960           Height [mm]         605           Doors         900           Inner doors         2           Unit doors         2           Housing dimensions not incl. fittings and connections         960           Width net [mm]         165           Height net [mm]         1690           Depth net [mm]         870           Fixtures         974	Unit fuse [A]	16
Interior volume [L]         743           Net weight of the unit (empty) [kg]         161           Permitted load [kg]         315           Load per rack [kg]         45           Wall clearance back [mm]         160           Wall clearance sidewise [mm]         100           Internal Dimensions         960           Height [mm]         280           Depth [mm]         605           Doors         2           Unit doors         2           Housing dimensions not incl. fittings and connections         2           Width net [mm]         1165           Height net [mm]         590           Depth net [mm]         870           Fixtures	Phase (Nominal voltage)	3~
Net weight of the unit (empty) [kg]         161           Permitted load [kg]         315           Load per rack [kg]         45           Wall clearance back [mm]         160           Wall clearance sidewise [mm]         100           Internal Dimensions         **** Width [mm]           Width [mm]         960           Height [mm]         1280           Depth [mm]         605           Doors         **** Unit doors         2           Unit doors         2           Housing dimensions not incl. fittings and connections         ***           Width net [mm]         1165           Height net [mm]         870           Fixtures         ***	Measures	
Permitted load [kg]         315           Load per rack [kg]         45           Wall clearance back [mm]         160           Wall clearance sidewise [mm]         100           Internal Dimensions         **** Width [mm]         960           Height [mm]         1280           Depth [mm]         605           Doors         **** Inner doors         2           Unit doors         2           Housing dimensions not incl. fittings and connections         **** Width net [mm]         1165           Height net [mm]         590           Depth net [mm]         870           Fixtures	Interior volume [L]	743
Load per rack [kg]         45           Wall clearance back [mm]         160           Wall clearance sidewise [mm]         100           Internal Dimensions         **** Width [mm]         960           Height [mm]         1280           Depth [mm]         605           Doors         ***           Inner doors         2           Unit doors         2           Housing dimensions not incl. fittings and connections         ***           Width net [mm]         1165           Height net [mm]         1590           Depth net [mm]         870           Fixtures	Net weight of the unit (empty) [kg]	161
Wall clearance back [mm]         160           Wall clearance sidewise [mm]         100           Internal Dimensions         ************************************	Permitted load [kg]	315
Wall clearance sidewise [mm]         100           Internal Dimensions         960           Width [mm]         1280           Depth [mm]         605           Doors         2           Unit doors         2           Housing dimensions not incl. fittings and connections         2           Width net [mm]         1165           Height net [mm]         1590           Depth net [mm]         870	Load per rack [kg]	45
Internal Dimensions           Width [mm]         960           Height [mm]         1280           Dopth [mm]         605           Doors         2           Unit doors         2           Housing dimensions not incl. fittings and connections         2           Width net [mm]         1165           Height net [mm]         1590           Depth net [mm]         870           Fixtures	Wall clearance back [mm]	160
Width [mm]         960           Height [mm]         1280           Depth [mm]         605           Doors         2           Unit doors         2           Housing dimensions not incl. fittings and connections         2           Width net [mm]         1165           Height net [mm]         1590           Depth net [mm]         870           Fixtures         ***	Wall clearance sidewise [mm]	100
Height [mm]       1280         Depth [mm]       605         Doors       Inner doors         Unit doors       2         Housing dimensions not incl. fittings and connections       2         Width net [mm]       1165         Height net [mm]       1590         Depth net [mm]       870         Fixtures	Internal Dimensions	
Depth [mm]         605           Doors	Width [mm]	960
Doors           Inner doors         2           Unit doors         2           Housing dimensions not incl. fittings and connections         Infest           Width net [mm]         1165           Height net [mm]         1590           Depth net [mm]         870           Fixtures         Fixtures	Height [mm]	1280
Inner doors         2           Unit doors         2           Housing dimensions not incl. fittings and connections         Infest           Width net [mm]         1165           Height net [mm]         1590           Depth net [mm]         870           Fixtures         Fixtures	Depth [mm]	605
Unit doors         2           Housing dimensions not incl. fittings and connections         Infection of the property of t	Doors	
Housing dimensions not incl. fittings and connections  Width net [mm] 1165  Height net [mm] 1590  Depth net [mm] 870  Fixtures	Inner doors	2
Width net [mm]       1165         Height net [mm]       1590         Depth net [mm]       870         Fixtures	Unit doors	2
Height net [mm]         1590           Depth net [mm]         870           Fixtures	Housing dimensions not incl. fittings and connections	
Depth net [mm] 870 Fixtures	Width net [mm]	1165
Fixtures	Height net [mm]	1590
	Depth net [mm]	870
Number of shelves (std./max.) 2/16	Fixtures	
	Number of shelves (std./max.)	2/16

<sup>1</sup> 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. 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	*	ArtNo.
	back		
	10 mm	01	8012-1282
	30 mm	01	8012-0540
	50 mm	01	8012-0546
	left		
	10 mm	01	8012-1275
	30 mm	01	8012-1018
	50 mm	01	8012-1022
	100 mm	01	8012-1030
Access port with silicone plug	right		
	10 mm	01	8012-1268
	30 mm	01	8012-1017
	50 mm	01	8012-1021
	100 mm	01	8012-1031
	top		
	10 mm	01	8012-1262
	30 mm	01	8012-0539
	50 mm	01	8012-054
	100 mm	01	8012-1029
Alarm function for overheating	Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device	-	8012-1635
Analog output 4-20 mA	for temperature values (output not adjustable)	02	8012-1623
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	-	8012-1115
	for temperature, measurement in center of chamber at specified temperature	-	8012-1134
Calibration certificate,	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-1593
temperature	temperature measurement incl. certificate, 15-18 measuring points at specified temperature	-	8012-1572
	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-1551
Class 3.1 independent temperature safety device	with visual alarm (DIN 12880)	-	8012-098
Clock	battery-backed	-	8012-1640
Door gasket	made of FKM, silicone-free	-	8012-1013
Door lock	lockable door handle	-	8012-1817
Ethernet interface	for Multi Management Software APT-COM™	-	8012-1836
Inner chamber, reinforced	max. total load 350 kg	_	8012-1827
	with two 15 W light bulbs		
Interior lighting	400 V option model	_	8012-1824

<sup>\*</sup> Notes > See last page



Designation	Description	*	ArtNo.
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	-	8012-0195
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	-	8012-1619
Viewing window and interior lighting	viewing window (triple insulating glass) in door, 300 x 480 mm, and 30 W interior		
	400 V option model	-	8012-1830
* Notos - Coo last page			

<sup>\*</sup> Notes > See last page

# **ACCESSORIES**

Designation	Description	*	ArtNo.
APT-COM™ 4 BASIC-	for simple logging and documentation requirements with up to 5 networked units.		
Edition	version 4, BASIC edition	-	9053-003
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.		
Edition	version 4, GLP edition	-	9053-004
APT-COM™ 4	convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.		
PROFESSIONAL-Edition	version 4, PROFESSIONAL edition	-	9053-004
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	-	1002-001
	$IQ/OQ$ documents – supporting documents for validation performed by customers, consisting of: $IQ/OQ$ checklists incl. calibration guide and comprehensive unit documentation; parameters: temperature, $CO_2$ , $O_2$ , pressure, depending on unit		
	Digital in PDF format	-	7057-000
O	Hard copy inside folder	-	7007-000
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, $CO_2$ , $O_2$ – or pressure, depending on unit		
	Digital in PDF format	-	7057-000
	Hard copy inside folder	-	7007-000
Do ale	chrome plated	-	8012-204
Rack	stainless steel	-	6004-016
Rack, heavy load	Stainless steel, max. load per rack 70 kg	-	6004-024
Shelf, perforated	Stainless steel	_	6004-019

<sup>\*</sup> Notes > See last page

## **SERVICES**

Designation	Description	*	ArtNo.
Installation services			
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)	05	DL10-0100
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0500
Maintenance contracts			
Maintenance services			
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	05	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	05	DL20-0910
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	05	DL20-0200

<sup>\*</sup> Notes > See last page



Designation	Description	*	ArtNo.
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	05	DL20-0810
Calibration services			
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate	03, 04, 05	DL30-0101
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate	03, 04, 05	DL30-0102
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	03, 04, 05	DL33-0000
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0127
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0109
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	05	DL40-0100
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	05	DL44-0500
Warranty service			
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	_	DL50-0010

<sup>\*</sup> Notes > See last page



### **NOTES**

- Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge. UL mark is not granted when this option is used.
- 02
- Sensor calibration is performed in an accredited calibration laboratory. 03
- Calibration is performed according to the BINDER factory standard.
- 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**

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