

Model FP 720 | Drying and heating chambers with forced convection and program functions

A BINDER material test chamber with mechanical convection of the FP series provides reliably short drying times and particularly fast heating – even for chambers under full loads.

BENEFITS

- High temperature accuracy thanks to APT.line™ technology
- User-friendly controller with large display
- Computer interface: Ethernet
- Class 2 independent adjustable temperature safety device (DIN 12880) and class 3.1 independent temperature safety device (DIN 12880) with visual/acoustic alarm available for selection on the controller





Model 720

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IMPORTANT FEATURES

- Temperature range: +12°C above ambient temperature up to +300°C
- High temperature accuracy thanks to APT.line™ technology
- Adjustable fan speed
- Controller with interval and real-time programming
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks

- Class 2 independent adjustable temperature safety device (DIN 12880) and class 3.1 independent temperature safety device (DIN 12880) with visual/ acoustic alarm available for selection on the controller
- Ergonomic handle design
- Computer interface: Ethernet
- Internal data logger, measured values can be read out in open format via USB

ORDERING INFORMATION

Interior volume [L]	Power supply - unit fuse	Plug*	Version	Model version	ArtNo.
Model FP 720					
741	400 V 3~/N/PE 50/60 Hz -16,0 A	CEE 16 / 6 H plug 5- pin	Standard	FP720-400V	9010-0366
	208 V 3~ 60 Hz -16,0 A	NEMA L21-20	Standard	FP720UL-208V	9010-0370



TECHNICAL DATA

Data

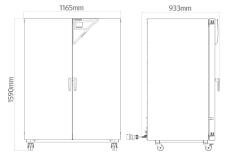
Pagendin Payou quéV Payouti-mak Alch Number gano cypic gano cypic Dépoin noblé Standard Standard Perparature auge 1m2 * claose aminint temperature to gon *C 1m2 * claose aminint temperature to gon *C Perparature auge 1m2 * claose aminint temperature to gon *C 1m2 * claose aminint temperature to gon *C Responsible fluctuation at gon *C 2m2 * claose aminint temperature to gon *C 2minint Responsible fluctuation at gon *C 3minint 3minint Responsible flu	Data		
Dation model Standard Standard Performance Data Temperature +12 °C above ambient temperature to 300 °C +12 °C above ambient temperature to 300 °C Temperature range +12 °C above ambient temperature to 300 °C +12 °C above ambient temperature to 300 °C Temperature range +12 °C above ambient temperature to 300 °C +12 °C above ambient temperature to 300 °C Temperature functation at 300 °C 24 = K 24 = K Temperature functation at 300 °C 30 A K 30 A K Recovery time after aborevect operand for 30 at 300 °C 30 A K 40 A K Actange data 50 A f 50 A f 50 A f Actange data 50 A f 50 A f 50 A f Exercised data 50 A f 50 A f 50 A f Exercised ata 50 A f 50 A f 50 A f Exercised ata 50 A f 50 A f 50 A f Exercised ata 50 A f 50 A f 50 A f Exercised ata 50 A f 50 A f 50 A f Exercised ata 50 A f 50 A f 50 A f Exercised ata f 50 A f </td <td>Designation</td> <td>FP720-400V</td> <td>FP720UL-208V</td>	Designation	FP720-400V	FP720UL-208V
Preformance Data Temperature -+12 % above antibient temperature to joo % 2 % above antibient temperature to joo % Temperature ningen +12 % above antibient temperature to joo % 2.4 + K Temperature ningen 2.4 + K 2.4 + K Temperature ningen 2.5 min 5.5 min Reading up time to sys% 2.5 min 5.5 min Arbange data 5.4 min 5.4 min Arbange data 5.4 min 5.4 for Protectard data 5.4 for 5.4 for Reading up time to sys% 5.4 for 5.4 for Reading up time to sys% 5.4 for 5.4 for Reading up time to sys% 5.4 for 5.4 for Reading up time to sys% 5.4 for 5.4 for Reading	Article Number	9010-0366	9010-0370
Tenpersture range +2 °C above ambient tenpersture to 300 °C Tempersture range 2.4 ± K 2.4 ± K Tempersture fuctuation at 550°C 6.4 ± K 6.4 ± K Tempersture fuctuation at 550°C 5 min 6.4 ± K Needing up fume to 557°C 5 min 5 min Archange data 5 x/h 5 x/h Archange data 5 x/h 5 x/h Betrial data 6 x ½ 5 x/h Betrial fase 4 x ½ X 5 x ½ Nornial pooer 4 x ½ X 4 x ½ X It fase 4 x ½ X 4 x ½ X It fase 4 x ½ X 4 x ½ X It fase 4 x ½ X 4 x ½ X It fase 4 x ½ X 4 x ½ X It fase 4 x ½ X 4 x ½ X It fase 4 x ½ X 4 x ½ X It fase 2 x ½ X <td>Option model</td> <td>Standard</td> <td>Standard</td>	Option model	Standard	Standard
Iemperature unformity at 150°C 2-4 ± K 2-4 ± K Temperature fluctuation at 150°C 6-6 ± K 6-6 ± K Heading up time to 150°C 25 min 25 min Recovery time after door was opened for 150 at 150°C 6 min 5 min Ar change rate at 20°C 6 min 5 min Ar change rate at 20°C 6 min 5 x/h Recovery time after door was opened for 150 at 150°C 6 min 5 x/h Ar change rate at 20°C 6 min 5 x/h Recovery time after door was opened for 150 at 150°C 6 min 5 x/h Recovery time after door was opened for 150 at 150°C 6 min 5 x/h Ar change rate at 20°C 6 x/h 5 x/h Recovery time after door was opened for 150 at 150°C 6 min 5 x/h Recovery time after door was opened for 150 at 150°C 2 60°V 2 60°V Recovery time after door was opened for 150 at 150°C 6 0 12° 5 0 12° Recovery time after door was opened for 150 at 150°C 3 6 0 A 5 0 A Uhit fame 16 0 A 16 0 A 6 0 A Interior volume 126 10°	Performance Data Temperature		
Temperature fluctuation at sysPCa.6 ± K6.6 ± KHeating up lime to sysPC25 min25 minRecovery time after door was opened for 30 is at sysPC6 min6 minAr change data5 x/hAr change after at 200°C5 x/h5 x/hExectical data208 VPower frequency600 V208 VPower frequency60 ft260 ft2Norninal power4,5 kW60 ft2Power frequency16.0 A50.0 APower frequency20,7 kPE3-Dimensions and weights3-/k kPE3-Unit fuse16.0 A16.0 APower frequency2,7 kPE3-Dimensions and weights16.6 kg16.0 APower frequency3-/k kPE3-Unit fuse16.0 kg16.0 kgDimensions and weights16.6 kg16.0 kgLead per tock4,5 kg4,5 kgArrifield off the unit ferriphy16.6 kg16.0 kgUnited clearance back.160 mm150 mmWall clearance back.160 mm150 mmWall clearance back.160 mm160 mmWalt clearance back.1,500 mm1,500 mm <td>Temperature range</td> <td>+12 °C above ambient temperature to 300 °C</td> <td>+12 °C above ambient temperature to 300 °C</td>	Temperature range	+12 °C above ambient temperature to 300 °C	+12 °C above ambient temperature to 300 °C
Heating up time to sport 25 min 25 min Recovery time after door was opened for go at sport 6 min 6 min Ar change data 5 x/h 5 x/h Exected data 45 xW 5 x/h Power frequency 50/60 h2 60 h2 Nominal power 45 kW 45 kW Unit hase 160 A 150 A Plase (Nominal voltage) 5 x/h/PE 5 x Dimensions and weights 126 kg 126 kg Iteration volume 741 L 741 L Net weight of the unit (empty) 166 kg 150 mm Iteration was deve 150 mm 150 mm Wall clearance back 160 mm 160 mm Wall clearance back 160 mm 1500 mm <td< td=""><td>Temperature uniformity at 150°C</td><td>2.4 ± K</td><td>2.4 ± K</td></td<>	Temperature uniformity at 150°C	2.4 ± K	2.4 ± K
Recovery time after door was opened for go s at spore 6 min Ar change data Ar change data Air change rate at soo [®] C 5 x/h Electrical data Electrical data Rece Voltage 400 V Power frequency 50/60 Hz Normal power 4,5 kW Link frequency 60.42 Normal power 4,6 kW Pase (Normal voltage) 3-/N/PE Detection and wolghts 3-/N/PE Interior voltane 741 L New weight of the unit (empty) 66 kg Val clearance back 60 mn Wall clearance back 160 mn Val clearance sidewise 100 mm Wild thet 1,50 mn Height net 1,500 mn Lisfor main 1,500 mn	Temperature fluctuation at 150°C	0.6 ± K	0.6 ± K
Air change data Air change rate at oorc ş x/h \$ x/h Flectrical data Image rate at oorc \$ x/h Electrical data 208 V Rated Voltage 400 V 208 V Rower frequency \$ 00/60 Hz 60 Hz Nominal power 4,5 kW 4,5 kW Dint fuse 16,0 A 16,0 A Phase (Nominal voltago) 3-/I/PE 3- Dimensions and weights 741 I 741 I Netweight of the unit (empsy) 266 kg 166 kg Laad per rack 45 kg 45 kg Wall clearance sidewise 160 mm 100 mm Wall clearance sidewise 1.60 mm 100 mm Height net 1.60 mm 1.60 mm Height net 1.500 mm 5500 mm	Heating up time to 150°C	25 min	25 min
Air change rate at 100°C5 x/h5 x/hExcitcal dataExtect Voltage400 V208 VRated Voltage50/50 Hz60 HzPower frequency50/50 Hz60 HzNominal power4.5 kW4.5 kWUnit fuse16.0 A16.0 APhase (Nominal voltage)3-/N/PE3-Dimensions and weights166 kg166 kgLoad per rack4.5 kg4.5 kgLoad per rack4.5 kg4.5 kgVall clearance back1.60 mn1.60 mnVall clearance sidewise1.00 mn1.00 mnHeight net1.160 mn1.160 mnHeight net1.590 mn1.590 mn	Recovery time after door was opened for 30 s at 150°C	6 min	6 min
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 160,0 A 160,0 A Phase (Nominal voltage) 3~/N/PE 3~ Dimensions and weights 741 L 741 L Interfor volume 741 L 742 L Net weight of the unit (emphy) 166 kg 166 kg Load per rack 45 kg 45 kg Vall clearance sidewise 160 nm 160 nm Wall clearance sidewise 160 nm 160 nm With net 1,160 nm 1,260 nm Height net 1,590 nm 1,590 nm Height net 1,590 nm 1,590 nm	Air change data		
Rated Voltage400 V208 VPower frequency50/60 Hz60 HzNominal power4,5 kW4,5 kWUnit fuse16,0 A16,0 APhase (Nominal voltage)3~/N/PE3~Dimensions and weightsInterior volume741 L741 LNet weight of the unit (empty)166 kg166 kgLoad per mck45 kg45 kgPemitted load315 kg315 kgWall clearance back100 mm100 mmWall clearance sidewise1.160 mm1.160 mmHeight net1.160 mm1.590 mmHeight net1.590 mm1.590 mm	Air change rate at 100°C	5 x/h	5 x/h
Power frequency50/60 Hz60 HzNominal power4,5 kW4,5 kWNominal power4,5 kW4,5 kWUnit fuse16,0 A16,0 APhase (Nominal voltage)3~/N/PE3~Dimensions and weightsInterior volume741 L741 LNet weight of the unit (empty)166 kg166 kgLoad per rack4,5 kg4,5 kgVall clearance back160 mm160 mmWall clearance sidewise100 mm100 mmHueight net1,160 mm1,160 mmHeight net1,590 mm1,590 mmLeight net1,590 mm1,590 mm	Electrical data		
Nominal power4,5 kW4,5 kWUnit fuse16,0 A16,0 APhase (Nominal voltage)3-/N/PE3- Dimensions and weights 74,1 L74,1 LInterior volume74,1 L74,1 LNet weight of the unit (empty)166 kg166 kgLoad per rack4,5 kg4,5 kgPermitted load315 kg315 kgWall clearance back100 mm100 mmHousing dimensions not incl. fittings and connections1,60 mmHeight net1,500 mm1,500 mmHeight net1,500 mm1,500 mmHeight net1,60 mm1,500 mmHeight net1,600 mm1,600 mm <td>Rated Voltage</td> <td>400 V</td> <td>208 V</td>	Rated Voltage	400 V	208 V
Unit fuse16,0 APhase (Nominal voltage)3-/N/PEPimensions and weightsInterior volume741 LNet weight of the unit (empty)166 kgLoad per rack45 kgPermitted load315 kgWall clearance back100 mmHousing dimensions not incl. fittings and connections100 mmHeight net1,160 mmHeight net1,590 mmHeight net1,590 mmHeight net1,590 mmHeight net1,590 mm	Power frequency	50/60 Hz	60 Hz
Phase (Nominal voltage)3~/N/PEDimensions and weightsInterior volume741 LNet weight of the unit (empty)166 kgLoad per rack45 kg45 kgPermitted load315 kgWall clearance back160 mmWall clearance sidewise100 mmWidth net1,160 mmHeight net1,590 mmDepth net816 mm	Nominal power	4,5 kW	4,5 kW
Dimensions and weightsInterior volume741 LNet weight of the unit (empty)166 kgLoad per rack45 kg45 kg45 kgPermitted load315 kgWall clearance back160 mmVall clearance sidewise100 mmHousing dimensions not incl. fittings and connectionsWidth net1.160 mmHeight net1.590 mmDepth net816 mm	Unit fuse	16,0 A	16,0 A
Interior volume741 L744 LNet weight of the unit (empty)166 kg166 kgLoad per rack45 kg45 kgPermitted load315 kg315 kgWall clearance back160 mm160 mmWall clearance sidewise100 mm100 mmHousing dimensions not Incl. fittings and connections1,160 mm1,160 mmHeight net1,590 mm1,590 mm1590 mm	Phase (Nominal voltage)	3~/N/PE	3~
Net weight of the unit (empty)166 kg166 kgLoad per rack45 kg45 kgPermitted load315 kg315 kgWall clearance back160 mm160 mmWall clearance sidewise100 mm100 mmHousing dimensions not incl. fittings and connections1,160 mm1,160 mmHeight net1,160 mm1,250 mm1,590 mmDepth net816 mm816 mm1,590 mm	Dimensions and weights		
Load per rack45 kg45 kgPermitted load315 kg315 kgWall clearance back160 mm160 mmWall clearance sidewise100 mm100 mmHousing dimensions not incl. fittings and connections1,160 mm1,160 mmHeight net1,590 mm1,590 mm1,590 mmDepth net816 mm816 mm816 mm	Interior volume	741 L	741 L
Permitted load315 kg315 kgWall clearance back160 mm160 mmWall clearance sidewise100 mm100 mmHousing dimensions not incl. fittings and connections1,160 mm1,160 mmWidth net1,160 mm1,160 mmHeight net1,590 mm1,590 mmDepth net816 mm816 mm	Net weight of the unit (empty)	166 kg	166 kg
Wall clearance back 160 mm Wall clearance sidewise 100 mm Housing dimensions not incl. fittings and connections 100 mm Width net 1,160 mm Height net 1,590 mm Depth net 816 mm	Load per rack	45 kg	45 kg
Wall clearance sidewise 100 mm 100 mm Housing dimensions not incl. fittings and connections 1,160 mm 1,160 mm Width net 1,160 mm 1,160 mm 1,160 mm Height net 1,590 mm 1,590 mm 1,590 mm Depth net 816 mm 816 mm 816 mm	Permitted load	315 kg	315 kg
Housing dimensions not incl. fittings and connections Width net 1,160 mm 1,160 mm Height net 1,590 mm 1,590 mm Depth net 816 mm 816 mm	Wall clearance back	160 mm	160 mm
Width net 1,160 mm Height net 1,590 mm Depth net 816 mm	Wall clearance sidewise	100 mm	100 mm
Height net 1,590 mm Depth net 816 mm	Housing dimensions not incl. fittings and connections		
Depth net 816 mm 816 mm	Width net	1,160 mm	1,160 mm
	Height net	1,590 mm	1,590 mm
Laborat Discontinue	Depth net	816 mm	816 mm
Internal Dimensions	Internal Dimensions		



Interior width	1,000 mm	1,000 mm
Interior height	1,300 mm	1,300 mm
Interior depth	574 mm	574 mm
Unit doors	2	2
Environment-specific data		
Sound-pressure level	43 dB(A)	43 dB(A)
Energy consumption at 100°C	510 Wh/h	510 Wh/h
Energy consumption at 150°C	880 Wh/h	880 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	FP 720	*	ArtNo.
	left			
	10 mm	•	01	8012-2198
	30 mm	•	01	8012-2210
	50 mm	٠	01	8012-2213
Access port with silicone plug	100 mm	•	01	8012-2207
	right			
	10 mm	•	01	8012-2206
	30 mm	•	01	8012-2212
	50 mm	•	01	8012-2215

Data sheet Model FP 720

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Designation	Description	FP 720	*	ArtNo.
	100 mm	•	01	8012-2209
	top			
	10 mm	•	01	8012-2199
	30 mm	•	01	8012-2211
	50 mm	•	01	8012-2214
	100 mm	•	01	8012-2208
Analog output 4-20 mA	for temperature values (output not adjustable)	•	02	8012-2188
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	•	-	8012-2231
	for temperature, measurement in center of chamber at specified temperature	•	-	8012-2227
Calibration certificate,	temperature measurement incl. certificate, 9 measuring points at specified temperature	•	-	8012-2230
temperature	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	•	-	8012-2228
	temperature measurement incl. certificate and 27 measuring points at specified temperature	•	-	8012-2229
Door lock	lockable door handle	•	-	8012-2238
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	•	-	8012-2222
Inner chamber, reinforced	max. total load 350 kg	•	-	8012-2226
Interior lighting	with two 27 W light bulbs			
Interior lighting	400 V option model	•	-	8012-2191
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	•	-	8012-2232
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	•	-	8012-2193

ACCESSORIES

Designation	Description	FP 720	*	ArtNo.
	for simple logging and documentation requirements with up to 5 networked units.			
APT-COM™ 4 BASIC-Edition	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

Data sheet Model FP 720

BINDER Best conditions for your success

Designation	Description	FP 720	*	ArtNo.
APT-COM™ 4 PROFESSIONAL-	convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.			
Edition	version 4, PROFESSIONAL edition	•	_	9053-0040
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250
	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	•	-	7057-0005
	Hard copy inside folder	•	-	7007-0005
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_2 , O_2 , pressure, depending on unit			
	Digital in PDF format	•	-	7057-0001
	- Hard copy inside folder	•	-	7007-0001
	max. load per rack 45 kg			
Rack	chrome plated	•	-	8012-2044
	- stainless steel	•	-	8012-2170
	max. load per rack 70 kg			
Rack, heavy load	- Stainless steel	•	-	8012-2185
Rack accessories	fasteners (1 set of 4) for additional security of racks	•	-	8012-0531
Chalf norferstad	max. load per rack 40 kg			
Shelf, perforated	- Stainless steel	•	-	8012-2178

SERVICES

Designation	Description	*	ArtNo.
Calibration services			
	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate	_	DL30-0120
Calibration certificate, temperature	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

Data sheet Model FP 720

BINDER Best conditions for your success

Designation	Description	*	ArtNo.
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	_	DL30-0127
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)	_	DL10-0100
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	_	DL10-0500
Maintenance contracts			
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	_	DL20-0720
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
Maintenance services			
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	_	DL20-0602
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	-	DL41-0200
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	_	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

NOTES

- 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.

BINDER GmbH

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BINDER Environmental Testing

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