

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~ 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

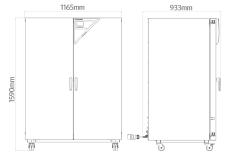
Insignation Paysound Paysound Paysound Article Number senders senders senders Performined Data Temperature senders senders senders Temperature Temperature target staff Calore ambient temperature to yoo "C staff Calore ambient temperature to yoo "C staff Calore ambient temperature to yoo "C Temperature fluctuation at signt C soft K soft K soft K Temperature fluctuation at signt C soft K soft K soft K Reservery time after time case separed targe set striggt C frain soft K soft K Reservery time after time case separed targe set striggt C frain frain soft K Reservery time after time case separed targe set striggt C frain frain frain Reservery time after time case genered targe set striggt C frain frain frain Reservery time after time case genered targe set striggt C frain frain frain Reservery time after targe set striggt C frain frain frain Reservery time after targe set striggt C frain frain frain	Data		
Dation model Standard Standard Performance Data Temperature +12 °C above ambient temperature to yoo °C +12 °C above ambient temperature to yoo °C Temperature tarrige +12 °C above ambient temperature to yoo °C +12 °C above ambient temperature to yoo °C Temperature function at xoo °C 24 + K 24 + K Temperature function at xoo °C 0.6 + K 0.6 + K Neating up time to zoo °C 25 min 0.6 + K Neating up time to zoo °C 0.6 + K 0.6 + K Neating up time to zoo °C 0.6 + K 0.6 + K Neating up time to zoo °C 0.6 + K 0.6 + K Archange data 5 x/h 5 x/h Archange data 5 x/h 5 x/h Electrical data 5 x/h 5 x/h Electrical data 5 x/h 6.0 P Present tengion y 9.1/K 0.1 P 6.0 P Nominal poper 4.6 N 4.5 N Initia fusion 16.0 A 4.5 N Initia fusion 16.0 A 4.5 N Nearch Partition Value 2.4 L 7.4 L	Designation	FP720-400V	FP720UL-208V
Preformance Data Temperature	Article Number	9010-0366	9010-0370
Importative range into % Coboor ambient temperature to goo % Temperature uniformity at spo% 2.4 = K Temperature uniformity at spo% 6.6 ± K Temperature function at spo% 6.6 ± K Archange data 5.7 m Recel Valage 6.0 fV Power frequency 5.7 m Softer Frequency 5.6 A Differior value 5.6 A Marchange data data (sego 5.6 m Lobe value 5.6 m <td>Option model</td> <td>Standard</td> <td>Standard</td>	Option model	Standard	Standard
Temperature uniformity at spo*C 2.4 + K Temperature fluctuation at spo*C 0.6 + K 0.6 + K Heading up time to spo*C 2.5 min 2.5 min Recovery time after door was opened for spo s at spo*C 6 min Air change data 5 x/h Electrical data 5 x/h Electrical data 5 x/h Electrical data 5 x/h Electrical data 5 x/h Prover frequency 600 V 208 V Prover frequency 600 KI2 60 H2 Nominal power 4.5 kW 4.5 kW Uit fusion 16.0 A 16.0 A Phase (Nominal votage) 3- 3- Dimensions and weights 741 741 Net weight of the unit (mpmy) 165 kg 156 kg Load per mack 4.5 kg 355 kg Queight act set weight of the unit (mpmy) 160 mm 160 mm Valid clearance sidewise 100 mm 100 mm Wild clearance sidewise 100 mm 1.60 mm Valid clearance sidewise 1.60 mm 1.60 mm Valid heat 1.60 mm 1.60 mm	Performance Data Temperature		
Temperature fluctuation at sysPCo 6 ± KHeating up fine to sysPC25 min25 minRecovery time after door was opened for so at sysPC6 min6 minArchange data5 x/h5 x/hArchange data5 x/h5 x/hExet/rical data9 a0 V208 VPower frequency5 x/b6 oH 2Norminal power4,5 kW4,5 kWUt tipes16,0 A16,0 APhase (Norminal voltage)3 -3 -Preser frequency5 x/a3 -Power frequency5 x/a16,0 AUt tipes16,0 A16,0 AUt tipes16,0 A16,0 APhase (Norminal voltage)2 -2 -Preser (Norminal voltage)2 -2 -Ut tipes16 kg16 kgUt tipes16 kg16 kgLead per rack4 5 kg4 5 kgValid eleasance back3 to xm16 o minValid eleasance back16 o min16 o minValid eleasance back1,200 mm1,200 mmValid fine rations not incl. fittings and connections1,200 mmHeight net1,200 mm1,200 mmHeight net1,200 mm1,200 mmLead per ratk1,200 mm1,200 mmValid hereit1,200 mm1,200 mmHeight net1,200 mm<	Temperature range	+12 °C above ambient temperature to 300 °C	+12 °C above ambient temperature to 300 °C
Heating up line to sporC25 min25 minRecovery time after door was opened for 30 s at 150°C6 min6 minArchange data5 x/h5 x/hArchange data5 x/h5 x/hExcircia data5 x/h6 minRecovery time after door was opened for 30 s at 150°C5 x/h5 x/hExcircia data5 x/h5 x/hExcircia data6 min6 minPower frequency5 x/6 miz6 minNominal power4,5 kW4,5 kWUnit fuse5 x/a5 x/aPhase (Nominal voltage)3 -3 -Dimensions and weights72 L72 LInterfor volume72 L L72 LNet weight of the unit (mpny)166 kg166 kgParentited load3 to 5 kg3 to 5 kgWild heat science idewise160 mm160 mmWild heat science idewise1,500 mm1,500 mmHeight het1,500 mm1,500 mm <td>Temperature uniformity at 150°C</td> <td>2.4 ± K</td> <td>2.4 ± K</td>	Temperature uniformity at 150°C	2.4 ± K	2.4 ± K
Recovery time after door was opened for yp s at 150°C 6 min 6 min Ar change data 5 x/h 5 x/h Ar change rats at 200°C 5 x/h 5 x/h Electrical data 00 V 008 V Power frequency 50/60 Hz 60 Hz Nominal power 4,5 kW 60 Hz Unit fuse 160 A 5,6 A Phrese (Nominal voltage) 3- 3- Dimensions and weights 160 A 56 kg Interfor volume 141 L 741 L New eight of the unit (empty) 166 kg 166 kg Qual clearance back 1500 mm 1500 mm Vall clearance back 1500 mm 1500 mm Vall clearance sidewise 1000 mm 1000 mm Vall clearance sidewise 1,600 mm 1,600 mm Vall ther 1,600 mm 1,500 mm Height net 1,500 mm 1,500 mm	Temperature fluctuation at 150°C	0.6 ± K	0.6 ± K
Air change data Air change rate at loo ⁿ C 5 x/h Air change rate at loo ⁿ C 5 x/h Etertrical data 208 V Rated Voltage 400 V 208 V Rower frequency 50/60 Hz 60 Hz Nominal power 45 kW 45 kW Dint fuse 160 A 16,0 A Dint fuse 16,0 A 3-0 Dintersions and weights 741 L 741 L New weight of the unit (empty) 166 kg 45 kg Qual perrock 45 kg 45 kg Wall clearance back 160 nm 160 nm Wall clearance sidewise 100 nm 100 nm Hueight net 1,00 nm 100 nm Hueight net 1,100 nm 1,500 nm Hueight net 1,500 nm 1,500 nm Hueight net 1,500 nm 1,500 nm	Heating up time to 150°C	25 min	25 min
Air change rate at 100°C5 x/h5 x/hExcitcal detaRated Voltage400 V208 VPower frequency50/60 Hz60 HzNominal power4.5 kW4.5 kWUnit fuse16.0 A16.0 APhase (Nominal voltage)3-3-Dimensions and weights166 kg166 kgLead per rack45 kB45 kBVal detarance sidewise100 mmVal detarance sidewise100 mmWalt detarance sidewise100 mmHetel tert1,60 mmHetel tert1,500 mm </td <td>Recovery time after door was opened for 30 s at 150°C</td> <td>6 min</td> <td>6 min</td>	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 16,0 A 16,0 A Phase (Nominal voltage) 3~ 3~ Dimensions and weights 741 L 744 L Net weight of the unit (empty) 166 kg 166 kg Load per rack 45 kg 45 kg Vall clearance back 160 mm 160 mm Vall clearance sidewise 100 mm 100 mm Vidth riet 1,60 mm 1,60 mm Height net 1,60 mm 1,60 mm Height net 1,60 mm 1,60 mm	Air change data		
Rated Voltage400 V208 VPower frequency50/60 Hz60 HzNominal power4,5 kW4,5 kWUnit fuse16,0 A16,0 APhase (Nominal voltage)3-3-Dimensions and weightsInterior volume741 L741 LNet weight of the unit (empty)166 kg166 kgLoad per nack4,5 kg4,5 kgVall clearance back100 mm160 mmWall clearance sidewise100 mm100 mmHeight net1,260 mm1,360 mmHeight net1,350 mm1,350 mmHeight net1,590 mm1,590 mmHeight net1,590 mm1,590 mm	Air change rate at 100°C	5 x/h	5 x/h
Power frequency\$0/60 HzNominal power4,5 kW4,5 kWNominal power4,5 kW4,5 kWUnit fuse16,0 A16,0 APhase (Nominal voltage)3~3~Dimensions and weightsInterior volume741 L741 LNet weight of the unit (empty)166 kg166 kgLoad per rack4,5 kg35 kgPermitted load315 kg35 kgWall clearance back160 mm160 mmHousing dimensions not Incl. fittings and connections1,460 mmHeight net1,590 mm1,590 mmLeight net1,590 mm1,590 mm	Electrical data		
Nominal power4,5 kW4,5 kWNuif fuse16,0 A16,0 APhase (Nominal voltage)3~3~Dimensions and weights3~3~Interior volume741 L741 LNet weight of the unit (empty)166 kg166 kgLoad per rack45 kg45 kgPermitted load315 kg315 kgWall clearance back160 mm100 mmHousing dimensions not incl. fittings and connections1,160 mmHeight net1,590 mm1,590 mmLeight net1,590 mm1,590 mm	Rated Voltage	400 V	208 V
Line16.0 A16.0 APhase (Nominal voltage)3~3~Dimensions and weights741 L741 LInterior volume741 L741 LNet weight of the unit (empty)166 kg166 kgLoad per rack45 kg45 kgPermitted load315 kg315 kgWall clearance back100 mm100 mmHousing dimensions not incl. fittings and connections1.160 mmVidth net1.160 mm1.160 mmHeight net1.590 mm1.590 mmDepth net816 mm816 mm	Power frequency	50/60 Hz	60 Hz
Phase (Nominal voltage)3~Pinensions and weights741 LInterior volume741 LNet weight of the unit (empty)166 kgLoad per rack45 kgQermitted load315 kgWall clearance back160 mmWall clearance sidewise100 mmWuldt net1,160 mmHeight net1,590 mmDepth net816 mm	Nominal power	4,5 kW	4,5 kW
Dimensions and weights Interior volume 741 L Net weight of the unit (empty) 166 kg Load per rack 45 kg Ags Rg 45 kg Permitted load 315 kg Wall clearance back 160 mm Housing dimensions not incl. fittings and connections 100 mm Width net 1,160 mm 1,160 mm Height net 1,590 mm 1,590 mm	Unit fuse	16,0 A	16,0 A
Interior volume741 L741 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 connectionsWidth net1,160 mm1,160 mmHeight net1,590 mm1,590 mmDepth net816 mm816 mm	Phase (Nominal voltage)	3~	3~
Net weight of the unit (empty)166 kgLoad per rack45 kg45 kgPermitted load315 kg315 kgWall clearance back160 mm160 mmWall clearance sidewise100 mm100 mmHusing dimensions not incl. fittings and connections1.00 mmWidth net1.160 mm1.160 mmHeight net1.590 mm1.590 mmDepth net816 mm816 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 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 Height net 1,590 mm 1,590 mm Depth net 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
	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	•	01	8012-2213
Access port with silicone plug	100 mm	•	01	8012-2207
	right			
	10 mm	•	01	8012-2206
	30 mm	•	01	8012-2212

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Designation	Description	FP 720	*	ArtNo.
	50 mm	•	01	8012-2215
	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

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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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