FP series

Temperature test chambers with forced convection

FP series chambers are designed for the most demanding test applications and are particularly effective, thanks to their extensive programming abilities. The forced convection reliably facilitates quick drying times as well as extra rapid heating-up, even with fully loaded chambers.

Leistungsmerkmale/Ausstattung:

- Electronically controlled APT.line™ preheating chamber technology with forced convection
- Temperature range of 5 °C (9 °F) above ambient temperature up to 300 °C (572 °F)
- MP controller with 2 programs with 10 sections each, alternatively one program with 20 sections
- The time interval of single program sections can be adjusted up to a maximum of 99:59 hours or 999:59 hours. This adjustment applies to all program sections.
- Integrated week time program time with real time function
- Digital temperature setting with accuracy of one or a tenth of a degree
- Adjustable ramp functions via program editor
- Adjustable fan speed (0 to 100 %)
- Elapsed time indicator
- Independent adjustable temperature safety device, Class 2 (DIN 12880), with visual alarm
- Adjustable ventilation by means of rear exhaust duct Ø 50 mm (2 inch) with ventilation flap and front ventilation slide
- RS 422 interface for communication software APT-COM™ DataControlSystem, or switch over to printer output with RS 232/RS 422 interface converter
- Adjustable intervals for printer
- Units up to 115 (4.1 cu.ft.) liters are stackable
- 2 chrome-plated racks
- BINDER test certificate

	FP 53	FP 115	FP 240	FP 400	FP 720
Exterior dimensions					
Width (mm/inch)	634 / 25.0	834 / 32.8	1034 / 40.7	1234 / 48.6	1234 / 48.6
Height (inclusive feet/castors) (mm/inch)	617 / 24.3	702 / 27.6	822 / 32.4	1022 / 40.2	1528 / 60.2
Depth (mm/inch)	575 / 22.6	645 / 25.4	745 / 29.3	765 / 30.1	865 / 34.1
plus door handle, I-panel and exhaust duct (mm/inch)	105 / 4.1	105 / 4.1	105 / 4.1	105 / 4.1	105 / 4.1
Wall clearance rear (mm/inch)	100 / 3.9	100 / 3.9	100 / 3.9	100 / 3.9	100 / 3.9
Wall clearance side (mm/inch)	160 / 6.3	160 / 6.3	160 / 6.3	160 / 6.3	160 / 6.3
Exhaust duct outer- Ø (mm/inch)	52 / 2.1	52 / 2.1	52 / 2.1	52 / 2.1	52 / 2.1
Steam space volume (l/cu.ft.)	77 / 2.7	158 / 5.6	308 / 10.9	498 / 17.6	869 / 30.7
Number of doors	1	1	2	2	2
Interior dimensions					
Width (mm/inch)	400 / 15.8	600 / 23.6	800 / 31.5	1000 / 39.4	1000 / 39.4
Height (mm/inch)	400 / 15.8	480 / 18.9	600 / 23.6	800 / 31.5	1200 / 47.2
Depth (mm/inch)	330 / 13.0	400 / 15.8	500 / 19.7	500 / 19.7	600 / 23.6
Interior volume (l/cu.ft.)	53 / 1.9	115 / 4.1	240 / 8.6	400 / 14.3	720 / 25.7
Racks, chrome-plated (number standard/max.)	2 / 5	2 / 6	2 / 7	2 / 10	2 / 16
Load per rack (kg/lbs.)	15 / 33	20 / 44	30 / 66	35 / 77	45 / 99
Permitted total load (kg/lbs.)	40 / 88	50 / 110	70 / 155	90 / 199	120 / 265
Weight of the unit (empty) (kg/lbs.)	45 / 99	62 / 137	98 / 216	145 / 320	184 / 406
Temperature data					
Temperature range, 5°C (9°F) above ambient up to (°C/°F)	300 / 572	300 / 572	300 / 572	300 / 572	300 / 572
Temperature variation 1)					
at 70 °C (158 °F) (± °C)	0,8	0,7	0,8	1	1
at 150 °C (302 °F) (± °C)	2	1,8	2	2,5	2
at 300 °C (572 °F) (± °C)	3,7	3,9	4,3	4,8	5,5
Temperature fluctuation (± °C)	0,3	0,3	0,3	0,3	0,3
Heating up time 2)					
to 70 °C (158 °F) (Min.)	6	7	12	18	25
to 150 °C (302 °F) (Min.)	24	30	27	35	39
to 250 °C (482 °F) (Min.)	45	49	50	60	65
Recov. time after door was opened for 30 sec. 2)					
at 70 °C (158 °F) (Min.)	2	2	2	2	2
at 150 °C (302 °F) (Min.)	5	8	10	17	20
at 300 °C (572 °F) (Min.)	10	15	16	21	24
Electrical data					
Housing protection acc. to EN 60529	IP 20	IP 20	IP 20	IP 20	IP 20
Nominal voltage (±10 %) 50/60 Hz (V)	230 / 1 N~	230 / 1 N~	230 / 3 N~	400 / 3 N~	400 / 3 N~
Nominal power (W)	1200	1600	2700	3400	5000
Energy consumption					
at 70 °C (158 °F) (W)	145	230	370	520	570
at 150 °C (302 °F) (W)	300	544	850	1200	1320
at 300 °C (572 °F) (W)	720	1100	1400	2340	2600

1) value without window
2) up to 98 % of the set value

All technical specification are specified for units with standard equipment at an ambient temperature of 25 ºC (77 ºF) and a voltage fluctuation of ±10 %. The temperature data are determinated in accordance to factory standard following DIN 12880 respecting the recommended wall clearances of 10 % of the height, width and depth of the inner chamber. All values have been specified at a fan speed of 100 %. All indications are average values, typical for units produced in series. We reserve the right to alter technical specifications at all times.

Access ports

With silicon plugs for inserting external measuring devices into the chamber. Access ports with 10, 30, 50 mm (0.4, 1.2, 2 inch) diameter.

Door with window and interior lighting

For optimum process control in the interior, available for all equipment sizes.

Reinforced inner chamber

Includes two reinforced racks for heavy loads. (Total load maximum 250 kg / 551 lbs.)

Increased air change rate

Higher capacity air turbine

Specimen temperature measurement

Additional flexible PT 100 temperature sensor for precise temperature measurement of the specimen with digital temperature display. Recording of measurement data possible via RS 422 interface.

Calibration certificates

Measurement in the center at specified values. Additional measuring points or test values according to your specification.

	FP 53	FP 115	FP 240	FP 400	FP 720
Access port with silicone plug	O	O	O	O	O
Rack, chrome-plated or stainless steel	O	O	O	O	O
Rack, perforated, stainless steel	O	O	O	O	O
Reinforced rack, stainless steel, with 1 set of rack securings (max. 70kg/154lbs.)	-	-	O	O	O
Reinforced inner chamber, including 2 reinforced racks (max. total load 250kg/552lbs. Load per rack 70kg/154lbs.)	-	-	O	O	O
Independent adjustable temperature safety device, Class 3.1 (DIN 12880)	O*	O*	O*	O*	O*
Door with window and interior lighting	O	O	O	O	O
Lockable door	O	O	O	O	O
Door gasket, FKM (temperature-resistant up to 200 °C / 392 °F)	O	O	O	O	O
Over-temperature alarm, acoustic, can be switched off	O	O	O	O	O
Analogue temperature output, 4–20mA, with DIN bushing 6 poles	O	O	O	O	O
Additional measuring channel for digital display of specimen temperature	O	O	O	O	O
Mostly gas-tight constructed chamber	O	O	-	-	-
Inert gas connection (gas inlet and outlet)	O	O	-	-	-
Temperature measurement according to DIN 12880-2 or with 9 measuring points with measurement protocol and certificate	O	O	O	O	O
HEPA Fresh-air filter, Class EU 14	O	O	O	O	O
Increased air change rate through stronger fan	O	O	O	O	O
Air change rate measurement according to ASTM D5374 with definition and measurement protocoll	O	O	O	O	O
Serial printer with interface converter for printing temperature logs. Connects to RS 232 printer interface. Includes set of connection cables for RS 422 interface and RS 232/RS 422 interface converter, 230 V	O	O	O	O	O
Potential-free relay outputs accessible with DIN bushing 6 poles	O	O	O	O	O
Unit acc. to CUL standard in 115 V 1N~ 60 Hz	O	O	-	-	-
Calibration certificate	O	O	O	O	O
Extension for calibration certificate (additional values)	O	O	O	O	O
Stable table on castors with locking brakes	O	O	O	O	-
Evaporating dish with rim	O	O	O	O	O
Rubber pads for safe stacking	O	O	O	-	-
Neutral cleaning agent (liquid concentrate)	O	O	O	O	O

O Option - not available

Technical specifications subject to change

BINDER GmbH Postfach 102 D-78502 Tuttlingen **Direction:** Im Mittleren Ösch 5 D-78532 Tuttlingen
Contact: Phone: +49 (0) 74 62/2005-0 | Fax: +49 (0) 74 62/2005-100 | info@binder-world.com | www.binder-world.com