

## FP series: High-precision temperature test chamber for thermal cycling tests

Realization of demanding thermal cycling tests through comprehensive programming.



### ► Performance features and equipment:

- Electronically-controlled APT.line® preheating chamber technology with forced convection
- Temperature range of 5 °C above ambient temperature up to 300 °C
- MP-controller with 2 programs with 10 sections each, alternatively 1 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.
- Program controller timer functions: delayed ON, delayed OFF, temperature dependent delayed OFF
- Adjustable ramp functions via program editor
- Adjustable fan speed (0 to 100 %)
- Elapsed time indicator
- Adjustable safety device, Class 2 (DIN 12880), with visual alarm
- Adjustable ventilation by means of rear exhaust duct Ø 50 mm 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 liters are stackable
- 2 chrome-plated shelves





	FP 53	FP 115	FP 240	FP 400	FP 720
<b>▶ Exterior dimensions</b>					
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
<b>▶ Interior dimensions</b>					
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
Shelves, chrome-plated (number standard/max.)	2/5	2/6	2/7	2/10	2/16
Load per shelf (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.)	46 / 102	62 / 137	98 / 216	145 / 320	184 / 406
<b>▶ Temperature data</b>					
Temperature range, 5 °C/41 °F above ambient up to (°C/°F)	300 / 572	300 / 572	300 / 572	300 / 572	300 / 572
Temperature variation <sup>1)</sup>					
at 70 °C (± °C)	0.8	0.7	0.8	1	1
at 150 °C (± °C)	2	1.8	2	2.5	2
at 300 °C (± °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 <sup>2)</sup>					
to 70 °C (Min.)	6	7	12	18	25
to 150 °C (Min.)	24	30	27	35	39
to 250 °C (Min.)	45	49	50	60	65
Recov. time after door was opened for 30 sec. <sup>2)</sup>					
at 70 °C (Min.)	2	2	2	2	2
at 150 °C (Min.)	5	8	10	17	20
at 300 °C (Min.)	10	15	16	21	24
Air change					
at 70 °C (x/h)	59	29	19	17	11
at 150 °C (x/h)	64	32	20	18	12
at 300 °C (x/h)	53	26	18	16	10
<b>▶ Electrical data</b>					
Housing protection acc. to EN 60529	IP 20	IP 20	IP 20	IP 20	IP 20
Nominal voltage (± 10%) 50/60 Hz (V)	230/1N~	230/1N~	230/1N~	400 3/N~	400 3/N~
Nominal power (W)	1200	1600	2700	3400	5000
Energy consumption					
at 70 °C (W)	145	230	370	520	570
at 150 °C (W)	300	544	850	1200	1320
at 300 °C (W)	720	1100	1400	2340	2600

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

All technical data are specified for units with standard equipment at an ambient temperature of + 25 °C and a voltage fluctuation of ± 10 %. The temperature data are determined in accordance to DIN 12880, part 2 respecting 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 alter technical specifications at all times.