

## FP 53 - Temperature test chamber 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.



### ► Performance features and equipment:

- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range 5 °C (9 °F) above ambient temperature up to 300 °C (572 °F)
- MP Controller, 2 programs with 10 sections each or alternatively switch over to 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
  - Integrated week program timer with real time function
  - Adjustable time functions and programmable temperature ramp function via program editor
- Digital temperature setting with an accuracy of one degree
- Adjustable fan speed
- Adjustable front ventilation flap slide and rear exhaust ø 50 mm (1.97 inch)
- Elapsed time indicator
- Independent adjustable temperature safety device class 2 (DIN 12880), with visual temperature alarm
- RS 422 interface for use with optional GMP/GLP and FDA guideline 21 CFR Part 11 compliant APT-COM™ DataControlSystem software, or switch over to printer output with RS 232 / RS 422 interface converter
- Units up to 115 liters are stackable
- 2 chrome-plated racks included
- BINDER test certificate



**FP 53**

<b>Exterior dimensions</b>	
Width (mm/inch)	634 / 25.0
Height (inclusive feet) (mm/inch)	617 / 24.3
Depth (mm/inch)	575 / 22.6
plus door handle and exhaust duct (mm/inch)	90 / 3.5
Wall clearance rear (mm/inch)	100 / 3.9
Wall clearance side (mm/inch)	160 / 6.3
Exhaust duct outer- Ø (mm/inch)	52 / 2.1
Steam space volume (l/cu.ft.)	77 / 2.7
Number of doors	1
<b>Interior dimensions</b>	
Width (mm/inch)	400 / 15.8
Height (mm/inch)	400 / 15.8
Depth (mm/inch)	330 / 13.0
Interior volume (l/cu.ft.)	53 / 1.9
Racks, chrome-plated (number standard/max.)	2 / 5
Load per rack (kg/lbs.)	15 / 33
Permitted total load (kg/lbs.)	40 / 88
Weight of the unit (empty) (kg/lbs.)	45 / 99
<b>Temperature data</b>	
Temperature range, 5 °C (41 °F) above ambient up to (°C / °F)	300 / 572
Temperature variation 1)	
at 70 °C (± °C)	0.8
at 150 °C (± °C)	2
at 300 °C (± °C)	3.7
Temperature fluctuation (± °C)	0.3
Heating up time 2)	
to 70 °C (Min.)	6
to 150 °C (Min.)	24
to 250 °C (Min.)	45
Recov. time after door was opened for 30 sec. 2)	
at 70 °C (Min.)	2
at 150 °C (Min.)	5
at 300 °C (Min.)	10
<b>Electrical data</b>	
Housing protection acc. to EN 60529	IP 20
Nominal voltage (±10 %) 50 / 60 Hz (V)	230
Nominal power (kW)	1.2
Energy consumption	
at 70 °C (W)	145
at 150 °C (W)	300
at 300 °C (W)	720

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 factory standard following DIN 12880 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.



## ▶ Access ports

With silicon plugs for inserting external measuring devices into the chamber. Access ports with 10, 30, 50, 100 mm (0.4, 1.2, 2, 3.94 inch) diameter.

## ▶ 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.



	<b>FP 53</b>
Access port with silicone plugs, 10 mm (0.39 inch), 30 mm (1.18 inch), 50 mm (1.97 inch), 100 mm (3.94 inch)	○
HEPA fresh-air filter, Class H 14 (according to EN 1822, min. 99.999% for 0.3 µm particles)	○
Securing elements for additional fastening of racks (1 set of 4 pieces)	○
Anti - slip rubber pads for safe stacking (1 set of 4 pieces)	○
Measurement of air change rate according to ASTM D5374, with definition and protocol according to ambient temperature (Measurement in factory)	○
Temperature measurement acc. to DIN 12880 (27 measuring points) at 150 °C (302 °F) or at specified temperature with measuring protocol and certificate	○
Factory calibration certificate. Measurement in center of chamber at 150 °C (302 °F) or at specified testing temperature	○
Extension to factory calibration certificate. Each additional measurement at an additional measuring point or temperature	○
Additional measuring channel for digital display of specimen temperature, with flexible PT 100 temperature sensor. Measuring data recorded through RS 422 port	○
Independent adjustable temperature safety device, Class 3.1 (DIN 12880) with visual alarm	○
Analog temperature output, 4 - 20 mA, with 6 - pin DIN socket (output not adjustable).	○
Zero-voltage relay outputs accessible via 6-pin DIN socket. Additional module for controlling 2 relay outputs via 2 of the programmable controller's controller contacts. Outputs can be switched on and off either automatically, or also manually	○
Data Logger Kit T 350: For the continuous temperature recording of 0 °C (32 °F) to 350 °C (662 °F). Kit includes 1 data logger, PT 100 sensor with 2 m Teflon extension cable and 1 fixture for the connection at the BINDER unit	○
Data Logger Software: Configuration und evaluation software for all BINDER Data Logger Kits, incl. data cable	○
Rack, chrome - plated	○
Rack, stainless steel	○
Shelf, perforated, stainless steel	○
Door Lock	○
Door gasket, FKM (Viton)	○
Inert gas connection (gas inlet and outlet; Ø 10 mm (0.39 inch)). We recommend, in addition, the option mostly gas-tight version	○
Mostly gas - tight version	○
Door with window 230 x 230 mm (9.06 x 9.06 inch) and interior lighting (15 W)	○
Increased air change rate through high performance fan	○