

## FD 53 - Drying oven with forced convection



FD series units are primarily used in applications needing rapid drying and sterilization. Totally homogenous temperature distribution, rapid dynamic response, and a special air turbine which was developed by us and has 20 % higher output, have made the FD series a genuine time-saving device.



### ► 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)
- DS controller with integrated timer 0 to 99 h
- Digital temperature setting with an accuracy of one degree
- Independent adjustable temperature safety device class 2, providing full protection against chamber over-temperature, with visual alarm
- Adjustable front ventilation flap slide and rear exhaust ø 50 mm (1.97 inch)
- Units up to 115 liters are stackable
- 2 chrome-plated racks included
- BINDER test certificate



**FD 53**

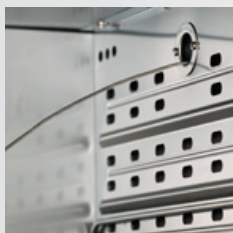
<b>Exterior dimensions</b>	
Width (mm/inch)	634 / 25.0
Height (inclusive feet/casters) (mm/inch)	617 / 24.3
Depth (mm/inch)	575 / 22.6
plus door handle and exhaust duct (mm/inch)	90 / 3.5
Wall clearance rear (mm/inch)	100 / 3.9
Wall clearance side (mm/inch)	160 / 6.3
Exhaust duct outer- Ø (mm/inch)	52 / 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
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.)	44 / 97
<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 1), 2)	
to 70 °C (Min.)	7
to 150 °C (Min.)	22
auf 300 °C (Min.)	45
Recov. time after door was opened for 30 sec.	
at 70 °C (Min.)	2
at 150 °C (Min.)	4
at 300 °C (Min.)	9
<b>Air change data</b>	
Air change	
at 70 °C (x/h)	59
at 150 °C (x/h)	64
at 300 °C (x/h)	53
<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)	172
at 150 °C (W)	429
at 300 °C (W)	951

1) value without window

2) up to 98 % of the set value

3) The air change depends on the inner chamber- and ambient temperature and is subject to significant individual variance. The indicated air change rate represents average values for standard equipment. Individual measurement of air change rate in acc. To ASTM D 5374 are optionally available.

All technical specifications are specified for units with standard equipment at an ambient temperature of 25 °C (77 °F) and a voltage fluctuation of ±10 %. The temperature data are determined in accordance to factory standard following 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.



### ► 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.



### ► Lockable door

Prevents unauthorized access and interference with processes in the chamber.



### ► Calibration certificates and validation

BINDER can significantly reduce the time and effort needed for equipment qualification. We draw on unparalleled knowledge of our equipment applications and years of experience in certification.

**FD 53**

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)	<input type="radio"/>
Anti-slip rubber pads for safe stacking (4 pieces)	<input type="radio"/>
Independent adjustable temperature safety device, Class 3.1 (DIN 12880)	<input type="radio"/>
Analog temperature output, 4 - 20 mA, with 6 - pin DIN socket (output not adjustable)	<input type="radio"/>
Over temperature alarm, audible, can be switched off. Temperature limit can be set at the independent, adjustable temperature safety device	<input type="radio"/>
Securing elements for additional fastening of racks (1 set of 4 pieces)	<input type="radio"/>
Temperature measurement acc. to DIN 12880 (27 measuring points, for 23 liter units 15 measuring points) at 150 °C (302 °F) or at specified temperature with measuring protocol and certificate	<input type="radio"/>
Factory calibration certificate. Measurement in center of chamber at 150 °C (302 °F) or at specified testing temperature	<input type="radio"/>
Extension to factory calibration certificate. Each additional measurement at an additional measuring point or temperature	<input type="radio"/>
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	<input type="radio"/>
Data Logger Software: Configuration und evaluation software for all BINDER Data Logger Kits, incl. data cable	<input type="radio"/>
Rack, chrome - plated	<input type="radio"/>
Rack, stainless steel	<input type="radio"/>
Shelf, perforated, stainless steel	<input type="radio"/>
Door Lock	<input type="radio"/>
Door gasket, FKM (Viton)	<input type="radio"/>
Door with window 230 x 230 mm (9.06 x 9.06 inch) and interior lighting (15 W)	<input type="radio"/>