

FD series

Drying ovens 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.



Leistungsmerkmale/Ausstattung:

- Temperature range of 5 °C (9 °F) above ambient temperature up to 300 °C (572 °F)
- Electronically controlled APT.line™ preheating chamber technology with forced convection
- DS controller with integrated timer 0 to 99 hours
- Digital temperature setting with an accuracy of one degree
- One ramp function
- Independent adjustable temperature safety device, Class 2 (DIN 12880), with visual temperature alarm
- Adjustable ventilation by means of rear exhaust duct Ø 50 mm (2 inch) with ventilation flap and front ventilation slide
- Units up to 115 liters (4.1 cu.ft.) are stackable
- 2 chrome-plated racks
- BINDER test certificate
- **Only at BINDER: Precision regardless of size – the 20-liter (0.7 cu.ft.) bench-top units.**

	FD 23	FD 53	FD 115	FD 240
Exterior dimensions				
Width (mm/inch)	433 / 17.1	634 / 25.0	834 / 32.8	1034 / 40.7
Height (inclusive feet/castors) (mm/inch)	492 / 19.4	617 / 24.3	702 / 27.6	822 / 32.4
Depth (mm/inch)	516 / 20.3	575 / 22.6	645 / 25.4	745 / 29.3
Plus door handle, I-panel and exhaust duct (mm/inch)	85 / 3.4	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
Wall clearance side (mm/inch)	100 / 3.9	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
Steam space volume (l/cu.ft.)	36 / 1.3	77 / 2.7	158 / 5.6	308 / 10.9
Number of doors	1	1	1	2
Interior dimensions				
Width (mm/inch)	222 / 8.7	400 / 15.8	600 / 23.6	800 / 31.5
Height (mm/inch)	330 / 13.0	400 / 15.8	480 / 18.9	600 / 23.6
Depth (mm/inch)	277 / 10.9	330 / 13.0	400 / 15.8	500 / 19.7
Interior volume (l/cu.ft.)	20 / 0.7	53 / 1.9	115 / 4.1	240 / 8.6
Racks, chrome-plated (number standard/max.)	2/3	2/5	2/6	2/7
Load per rack (kg/lbs.)	12 / 26	15 / 33	20 / 44	30 / 66
Permitted total load (kg/lbs.)	25 / 55	40 / 88	50 / 110	70 / 155
Weight of the unit (empty) (kg/lbs.)	33 / 73	44 / 97	62 / 137	96 / 212
Temperature data				
Temperature range, 5°C (9°F) above ambient up to (°C/°F)	300 / 572	300 / 572	300 / 572	300 / 572
Temperature variation 1)				
at 70 °C (158 °F) (± °C)	0,8	0,8	0,7	0,8
at 150 °C (302 °F) (± °C)	2,2	2	1,8	2
at 300 °C (572 °F) (± °C)	4,3	3,7	3,9	4,3
Temperature fluctuation (± °C)	0,3	0,3	0,3	0,3
Heating up time 1), 2)				
to 70 °C (158 °F) (Min.)	7	7	7	11
to 150 °C (302 °F) (Min.)	22	22	28	24
auf 300 °C (Min.)	45	45	49	50
Recov. time after door was opened for 30 sec.				
at 70 °C (158 °F) (Min.)	2	2	2	2
at 150 °C (302 °F) (Min.)	4	4	5	6
at 300 °C (572 °F) (Min.)	9	9	12	13
Air change 3)				
at 150 °C (302 °F) (x/h)	64	64	32	20
Electrical data				
Housing protection acc. to EN 60529	IP 20	IP 20	IP 20	IP 20
Nominal voltage (±10 %) 50/60 Hz (V)	230 / 115	230 / 115	230 / 115	230 / 208 (3N)
Nominal power (W)	800	1200	1600	2700
Energy consumption				
at 70 °C (158 °F) (W)	145	172	230	370
at 150 °C (302 °F) (W)	300	429	544	850
at 300 °C (572 °F) (W)	720	951	1100	1400

- 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 specification 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.



Transportable precision measuring unit

For temperature, using a PT 100 temperature sensor. Suitable for universal use as an independent monitoring device for temperature chambers.



Reinforced inner chamber

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



Serial printer

For recording temperature data. Suitable for connection to an RS 232 printer interface. Includes cables for the RS 422 interface and an interface converter.



Increased air change rate

Higher capacity air turbine (+ approx. 280 %)

	FD 23	FD 53	FD 115	FD 240
Access port with silicone plug	O	O	O	O
Rack, chrome-plated or stainless steel	O	O	O	O
Shelf, perforated, stainless steel	O	O	O	O
Rack securings for additional fastening of racks (1 set of 4)	O	O	O	O
Indep. adj. temp. safety device, Class 3.1 (DIN 12880) 230/400 V only	O	O	O	O
Door with window and interior lighting	O	O	O	O
Lockable door	O	O	O	O
Door gasket, viton (temperature-resistant up to 200 °C / 392 °F)	O	O	O	O
Over-temperature alarm, acoustic, can be switched off	O	O	O	O
Analogue temperature output, 4–20 mA, with 6-pin DIN socket	O	O	O	O
Calibration certificate	O	O	O	O
Extension for calibration certificate (additional values)	O	O	O	O
Stable table on castors with locking brakes	-	O	O	O
Evaporating dish with rim	O	O	O	O
Rubber pads for safe stacking	O	O	O	-

O Option - not available

Technical specifications subject to change

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