

BF series**Microbiological incubators with forced convection**

Premium equipment for all gentle incubation applications, including processing large numbers of samples at high throughput. Outstanding dynamics keep the required temperature virtually stable with homogenous distribution, irrespective of how many times the door is opened.

**Leistungsmerkmale/Ausstattung:**

- Electronically controlled APT.line™ preheating chamber technology
- Temperature range of 5 °C (9 °F) above ambient temperature up to 100 °C (212 °F)
- MS controller with several timer functions
- Digital temperature setting with tenth of a degree accuracy
- Time functions: delayed ON, delayed OFF, and temperature-dependent delayed OFF
- One adjustable ramp function
- Adjustable fan speed (0 – 100 %)
- Adjustable ventilation by means of rear exhaust duct, 50 mm (2 inch) diameter with ventilation flap and front ventilation slide
- Inner glass door
- Independent adjustable temperature safety device, Class 3.1 (DIN 12880), with visual alarm
- 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 (4.1 cu.ft) are stackable
- 2 chrome-plated racks
- BINDER test certificate

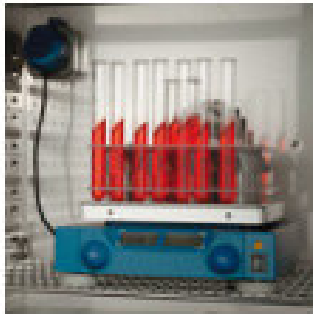
	BF 53	BF 115	BF 240	BF 400	BF 720
Exterior dimensions					
Width (mm/inch)	634 / 25.0	834 / 32.8	1034 / 40.7	1234 / 48.6	1234 / 48.6
Height (inclusive feet/castors) (mm/inch)	617 / 24.3	702 / 27.6	822 / 32.4	1022 / 40.2	1528 / 60.2
Depth (mm/inch)	575 / 22.6	645 / 25.4	745 / 29.3	765 / 30.1	865 / 34.1
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
Steam space volume (l/cu.ft.)	70 / 2.5	142 / 5.0	283 / 10.0	457 / 16.2	808 / 28.6
Number of doors	1	1	2	2	2
Number of inner glass 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	2/5	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.)	43 / 95	64 / 141	104 / 230	145 / 320	180 / 397
Temperature data					
Temperature range, 5°C (9°F) above ambient up to (°C/°F)	100 / 212	100 / 212	100 / 212	100 / 212	100 / 212
Temperature variation 1)					
at 37°C (98.6 °F) (± °C)	0,4	0,3	0,3	0,4	0,4
at 50°C (122 °F) (± °C)	0,7	0,6	0,8	0,9	0,6
Temperature fluctuation					
at 37 °C (98.6 °F) (± °C)	0,2	0,2	0,2	0,2	0,1
at 50 °C (122 °F) (± °C)	0,2	0,2	0,2	0,2	0,2
Heating up time 2)					
to 37 °C (98.6 °F) (Min.) 98 %	12	22	12	18	21
to 50 °C (122 °F) (Min.) 98 %	20	23	24	26	24
Recov. time after door was opened for 30 sec. 2)					
at 37 °C (98.6 °F) (Min.)	1	1	1	2	1
at 50 °C (122 °F) (Min.)	1,5	2	2	4	4
Air change at 70 °C (158 °F) (x/h)	59	29	19	17	11
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 / 115	230 / 115	230 / 115	230 / 115	230 / 115
Nominal power (W)	400	400	660	850	1250
Energy consumption at 37 °C (98.6 °F) (W) 3)	11	20	33	56	80

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.



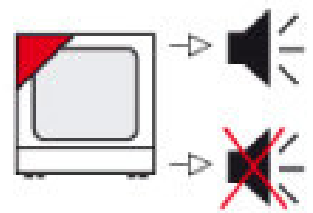
Waterproof interior power socket in the inner chamber

Connected to the main switch. To connect ancillary equipment inside the chamber.



Additional PT 100 temperature sensor

In situ or flexible installation for exact temperature measurement within the specimen material; connects to a special plug on the back wall of the inner chamber.



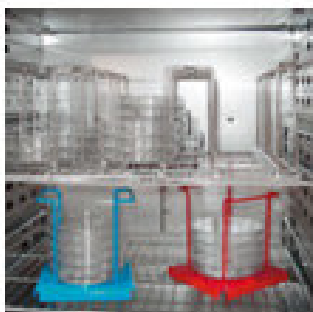
Acoustic alarm

Activates in the event of excess temperature, with adjustable setpoint at the temperature controller. Acoustic alarm can be switched off.



Lockable door

Prevents unauthorized access and interference with processes in the chamber.



Petri dish rack

For fast and organized loading of specimens. Available in stainless steel or with different color coding for rapid identification of batches.



Calibration certificates and validation

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



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.



Reinforced refrigeration system

Provides constant low temperature in the interior in the case of additional heat input.

	BF 53	BF 115	BF 240	BF 400	BF 720
Access port with silicone plug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rack, chrome-plated or stainless steel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rack, perforated, stainless steel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Perforated shelf (positioned at bottom level), with additional fixation for shaker operation	-	-	-	-	-
Reinforced rack, stainless steel, with 1 set of rack securings (max. 70 kg / 154 lbs.)	-	-	-	-	-
Securing elements for additional fastening of racks (1 set of 4)	-	-	-	-	-
Enhanced refrigeration system	-	-	-	-	-
Interior lighting	-	-	-	-	-
Lockable door	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Waterproof interior socket 230 V (maximum 500 W)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature measurement according to DIN 12880-2 or with 9 measuring points with measurement log and certificate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ind. adjustable temp. safety device, Class 3.3 (DIN 12880)	-	-	-	-	-
Additional PT 100 temperature sensor flexible or fix with external connection, incl. LEMO collector (3-pin)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analog temperature output, 4-20 mA, with 6-pin DIN socket (output not adjustable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Potential free switching outputs accessible via 6-pin DIN socket. Additional module to control 3 switching outputs via 3 contacts of program controller	-	-	-	-	-
Over-temperature alarm, acoustic, can be switched off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rubber pads for safe stacking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	-
Serial printer with interface converter for printing temp. logs. Incl. set of connection cables for RS 422 interface and RS 232/RS 422 interface converter, 230 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calibration certificate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extension of calibration certificate (additional values)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning kit cleaning and disinfection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rack for stacking petri dishes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stable table on castors with locking brakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-