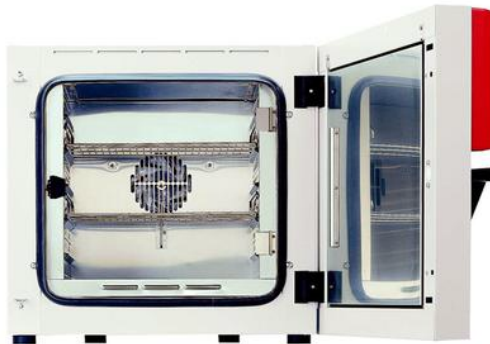


Incubators with forced convection

The BINDER BF is the highest-class for all gentle incubation tasks, particularly under a full load and large batch throughputs. It is extremely homogeneous and has quick recovery times.



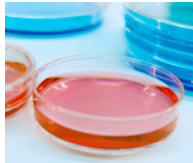
Advantages:

- Safe and reproducible incubation
- Disinfection routine
- Broad range of products and applications

Areas of application:



Plastics Industry



Microbiology

Features	Customer benefits	Characteristics
APT.line™	<ul style="list-style-type: none"> • Rapid and constant growth of microorganisms • Reliable and reproducible incubation results • Broad range of applications 	APT.line™ for maximum precision <ul style="list-style-type: none"> • Homogeneous temperature distribution even under full load • Tenths of a degree accuracy, precise temperature setting • Long-term stability • High standard according to DIN 12880 (27-point measurement)
Disinfection and cleaning	<ul style="list-style-type: none"> • Simple and fast cleaning • Maximum occupational safety 	Disinfection routine at 100 °C (212 °F) <ul style="list-style-type: none"> • High-quality inner chamber made of stainless steel • Fully removable elements without bothersome fixtures
Inner chamber concept	<ul style="list-style-type: none"> • More specimen storage with the same chamber volume • Minimal operating costs 	High energy efficiency <ul style="list-style-type: none"> • Very tight door closure with 2-point door latch • Low heat dissipation due to 60 mm (2.36 inch) insulation • Inner glass door • Condensation-free inner chamber
Control and Documentation	<ul style="list-style-type: none"> • Professional support during validation • Time and cost savings • Simple data transfer • FDA-compliant documentation 	<ul style="list-style-type: none"> • Microprocessor control • FDA-compliant software APT-COM™ • Years of proven and recognized validation and documentation materials • Standard RS 422 interface for network connection
Accessories and Service	<ul style="list-style-type: none"> • The appropriate BINDER device for every installation site • Broad range of applications • BINDER INDIVIDUAL for customer-specific solutions • Worldwide BINDER Service 	Wide range of products <ul style="list-style-type: none"> • 23 l (0.7 cu.ft.) to 720 l (25.7 cu.ft.) inner chamber with gravity convection • Additional product lines with humidity, light, CO2 or vacuum • Voltage variants and certificates (UL) • Various options: Shaker platform, inner chamber socket, access ports, Data Logger Kits • Worldwide service network

- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range from 5 °C (9 °F) above room temperature to 100 °C (212 °F)
- Digital temperature setting with an accuracy of a tenth of a degree
- MS controller with several timer functions
- Controller time functions:
 - 0 to 99 h 59 min delayed ON
 - 0 to 99 h 59 min delayed OFF
 - 0 to 99 h 59 min temperature-dependent
 - delayed OFF
- Adjustable fan speed
- Adjustable ventilation by means of front ventilation flap slide and rear exhaust Ø 50 mm (1.97 inch)
- Inner glass door
- Independent temperature safety device class 3.1 (DIN 12880) with optical alarm
- RS 422 interface for use with APT-COM™ DataControlSystem communication software or switch over to printer output with RS 232 / RS 422 interface converter
- Adjustable intervals for printer
- Units up to 115 l (4.1 cu.ft.) are stackable
- 2 chrome-plated racks included
- BINDER technical specification conformance certificate

BF 53

▶ Exterior dimensions	
Width (mm/inch)	635 / 25.0
Height (incl. feet) (mm/inch)	620 / 24.4
Depth (mm/inch)	575 / 22.6
Plus door handle and connection (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.)	70 / 2.5
Number of doors (ea.)	1

▶ Interior dimensions	
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 (number standard/max.)	2 / 5
Load per rack (kg/lbs.)	15 / 33
Permitted total load (kg/lbs.)	40 / 88
Weight (empty) (kg/lbs.)	43 / 95

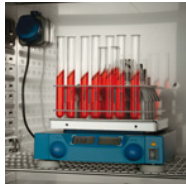
▶ Temperature data	
Temperature range approx. 5 °C (9 °F) above ambient temperature to (°C/°F)	100 / 212
Temperature variation	
at 37 °C (98.6 °F) (± K)	0.4
at 50 °C (122 °F) (± K)	0.7
Temperature fluctuation	
at 37 °C (98.6 °F) (± K)	0.2
at 50 °C (122 °F) (± K)	0,2
Warm-up time 1)	
to 37 °C (98.6 °F) (min.)	12
to 50 °C (122 °F) (min.)	20
Recovery time after doors were open for 30 sec. 1)	
at 37 °C (98.6 °F) (min.)	1
at 50 °C (122 °F) (min.)	1.5
Ventilation at 70 °C (158 °F) (x/h)	59

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► Electrical data	
IP protection class acc. to EN 60529	IP 20
Voltage ($\pm 10\%$) 50 / 60 Hz (V)	230
Voltage ($\pm 10\%$) 60 Hz (V)	115
Nominal power (kW)	0.4
Energy consumption at 37 °C (98.6 °F) (W)	11

1) To 98% of the set value

All technical data are specified for units with standard equipment at an ambient temperature of 25 °C (77 °F) and a line voltage fluctuation of $\pm 10\%$. The temperature data is 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 figures are typical average values for series devices. We reserve the right to alter technical specifications at any time.



Watertight inner chamber socket

Switched via main switch. For connecting external devices within the chamber.



Additional PT 100 temperature sensor

Fixed or flexible installation with external connection for accurate temperature measurement within the sample material.



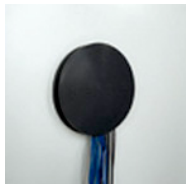
BINDER Data Logger Kits

The new BINDER Data Logger Kits – Makes independent recording of temperature data in the BINDER device possible. The tailored product solution contains helpful accessories: from mounting the logger to the BINDER device to cable access assistance to the sensor mount.



Door lock

Prevents unauthorized access to the process sequences in the chamber.



Numerous access ports

With silicone plugs for introducing external measuring instruments into the chamber, access ports with 10, 30, 50, 100 mm (0.4, 1.2, 2, 4 inch) diameters.

BF 53

Access ports with silicone plug, 10, 30, 50, 100 mm (0.4, 1.2, 2, 4 inch)	O
Switchable audible alarm for over temperature. Adjustable limit on the independent temperature safety device	O
Switchable waterproof interior socket 230 V AC (max. 500 W), protection class IP 65, with corresponding plug. Max. permissible operating temperature 50 °C	O
Additional PT 100 temperature sensor, flexibly installed with external connection, includes LEMO connector (3-pin)	O
Temperature measurement acc. to DIN 12880 (27 measuring points) at 37 °C (98.6 °F) or at specified temperature with measuring protocol and certificate	O
Calibration certificate, measurement in center of chamber at 37 °C (98.6 °F) or at specified testing temperature	O
Extension to calibration certificate. Each additional measurement at additional measuring point or testing temperature	O
Anti-slip rubber pads for safe stacking (1 set of 4 pieces)	O
Data Logger Kit T 220: For continuous temperature recording of -90 °C (-130 °F) to 220 °C (428 °F). Kit includes 1 data logger, PT 100 sensor with 2 m Teflon extension cable and 1 fixture for mounting to the BINDER unit	O
Data Logger Software: Configuration and evaluation software for all BINDER Data Logger Kits, incl. data cable	O
Rack, chrome-plated	O
Rack, stainless steel	O
Perforated shelf, stainless steel	O
Door lock	O