



# Microbiological incubators

BD | BF | KB | KT

# Perfect in application. Variable in use.

When working with microorganisms, nothing is more crucial than precision incubation which remains stable in the long term. With the APT.line™ preheating chamber technology and the cooling system, we have developed two components that stand for unique precision – and results that are reproducible in each routine test. Whether food microbiology or hygiene control, BINDER is the complete outfitter for you in the area of microbiological incubators. We offer a range of incubators that meet any application need.

## Outstanding in detail: BINDER microbiological incubators

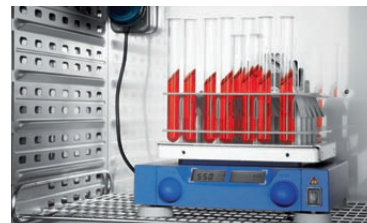
- ▶ Outstanding precision
  - ▶ Always the best culture conditions
  - ▶ High temperature uniformity due to APT.line™ preheating chamber technology
  - ▶ Tenths of a degree accuracy, precise temperature setting
  - ▶ Optimal convection conditions due to adjustable fan speed
  
- ▶ Outstandingly simple
  - ▶ Disinfection routine at 100°C
  - ▶ Inner chamber made of stainless steel with autoclavable fixtures
  - ▶ Inner glass door: "First look, then open"



Qualitative detection



Quantitative detection



In vitro tests

# Best culture conditions

## BD | BF | KB | KT series



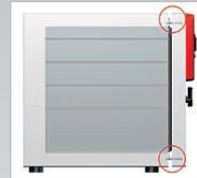
Reproducible incubator conditions

- ▶ BINDER APT.line™ preheating chamber technology
- ▶ Gentle temperature distribution with gravity convection (BD series)
- ▶ Homogeneous temperatures at all levels even under full load
- ▶ Rapid heating up and recovery times thanks to mechanical convection (BF, KB series)



Reliable decontamination

- ▶ Disinfection routine at 100 °C
- ▶ Simple and fast cleaning
  - High-quality stainless steel inner chamber
  - No permanent fixtures



Minimal operating costs, environmentally friendly

- ▶ Energy saving
  - Hermetic door closure with 2-points door closure
  - Low heat dissipation due to 60 mm insulation
- ▶ Stable atmosphere
  - Inner glass door



Wide range of programming options

- ▶ Multifunctional controller (KB, KT series)
  - Weekly program function
  - Easy-to-read menu guidance
  - Various interfaces



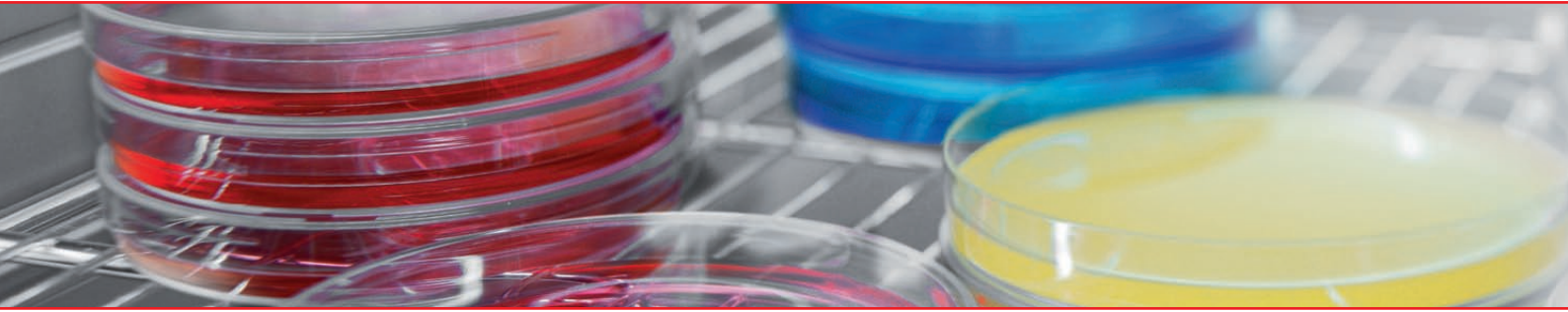
# Specifications

## BD | BF series



	BD 23	BD 53	BF 53	BD 115	BF 115	BD 240	BF 240	BD 400	BF 400	BD 720	BF 720
<b>Exterior dimensions</b>											
Width (mm)	435	635	635	835	835	1035	1035	1235	1235	1235	1235
Height (incl. feet/casters) (mm)	495	620	620	705	705	825	825	1025	1025	1530	1530
Depth (mm)	520	575	575	645	645	745	745	765	765	865	865
Plus door handle, I-panel, connection (mm)	105	105	105	105	105	105	105	105	105	105	105
Number of doors (ea.)	1	1	1	1	1	2	2	2	2	2	2
<b>Interior dimensions</b>											
Width (mm)	222	400	400	600	600	800	800	1000	1000	1000	1000
Height (mm)	330	400	400	480	480	600	600	800	800	1200	1200
Depth (mm)	277	330	330	400	400	500	500	500	500	600	600
Interior volume (l)	20	53	53	115	115	240	240	400	400	720	720
Number of racks (standard/max.)	2 / 3	2 / 4	2 / 5	2 / 5	2 / 5	2 / 7	2 / 7	2 / 10	2 / 10	2 / 15	2 / 15
Load per rack (kg)	12	15	15	20	20	30	30	35	35	45	45
Permitted total load (kg)	25	40	40	50	50	70	70	90	90	120	120
Weight (empty) (kg)	26	43	43	61	64	93	104	135	145	191	180
<b>Temperature data</b>											
Temperature range from 5 °C above ambient temperature to (°C) <sup>1)</sup>	100	100	100	100	100	100	100	100	100	100	100
Temperature variation at 37 °C (±K)	0.5	0.5	0.4	0.4	0.3	0.5	0.3	0.5	0.4	0.5	0.4
Temperature fluctuation at 37 °C (± C)	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.1
Warm-up time <sup>1)</sup> to 37 °C (min.)	49	38	12	62	22	70	12	105	18	84	21
Recovery time 30 sec. after door was opened <sup>1)</sup> at 37 °C (min.)	3	5	1	5	1	5	1	6	2	4	1
<b>Electrical data</b>											
IP protection class acc. to EN 60529	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Voltage (± 10%) 50/60 Hz (V)	230	230	230	230	230	230	230	230	230	230	230
Nominal power (kW)	0.2	0.4	0.4	0.4	0.4	0.68	0.68	0.85	0.85	1.25	1.25
Energy consumption at 37 °C (Wh/h)	11	11	11	20	20	33	33	56	56	80	80
<b>Item number</b>	9010–0187	9010–0081	9010–0235	9010–0088	9010–0237	9010–0095	9010–0239	9010–0073	9010–0241	9010–0074	9010–0243

<sup>1)</sup> 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 line voltage fluctuation of ±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 change technical specifications at any time.



**BD series | Incubators with gravity convection**

BD series incubators from BINDER with gravity convection are specially designed for long-term and stable continuous operation, ideal for gentle incubation of organisms, as well as conditioning of heat-sensitive media.

**▶ STANDARD EQUIPMENT**

- Electronically controlled APT.line™ preheating chamber technology
- Temperature range from 5 °C above ambient temperature to 100 °C
- DS controller with integrated timer 0 to 99 hrs
  - Digital temperature setting accurate to tenths of a degree
  - Independent temperature safety device class 3.1 (DIN 12880) with visual alarm
- Adjustable ventilation by means of front ventilation flap slide and rear exhaust Ø 50 mm
- Inner glass door
- RS 422 interface for APT-COM™ DataControlSystem communication software
- Units up to 115 liters are stackable
- Two chrome-plated racks
- BINDER test confirmation



**BF series | Incubators with mechanical convection**

The BF series is suitable for demanding incubation tasks, particularly for full loads and large batch throughputs. The incubator with mechanical convection provides optimal homogeneous conditions and has quick recovery times.

**▶ STANDARD EQUIPMENT**

- Electronically controlled APT.line™ preheating chamber technology
- Temperature range from 5 °C above ambient temperature to 100 °C
- MS controller with several timer functions
  - Timer functions: delayed ON, delayed OFF, temperature dependent delayed OFF
  - Digital temperature setting accurate to tenths of a degree
  - Adjustable fan speed
- Adjustable ventilation by means of front ventilation flap slide and rear exhaust Ø 50 mm
- Inner glass door
- Independent temperature safety device class (DIN 12880) with visual alarm
- RS 422 interface for APT-COM™ DataControlSystem communication software
- Adjustable intervals for printer
- Units up to 115 liters are stackable
- Two chrome-plated racks
- BINDER test confirmation

**▶ OPTIONAL EQUIPMENT**



Various access ports  
With silicone plugs for introducing external measuring instruments



Data Logger Kits  
For independent recording of temperature data



PT 100 sensor  
For accurate temperature measurement within the sample material



BINDER INDIVIDUAL  
Incubator with keyboard lock



**KB series | Cooled incubators**

The BINDER refrigerated incubators are all-rounders for the incubation of microorganisms. The KB series controls a temperature range of -5 °C to 100 °C. With their comprehensive program functions, they offer a wide range of capabilities and deliver reproducible test results.

► **STANDARD EQUIPMENT**

- Electronically controlled APT.line™ preheating chamber technology
- Temperature range -5 °C to 100 °C
- MP controller with 2 programs each with 10 sections, alternatively switchable to 1 program with 20 sections
  - Integrated weekly program timer with real-time function
  - Adjustable ramp function via program editor
  - Digital temperature setting accurate to a tenth of a degree
  - Adjustable fan speed
  - Elapsed time indicator
- Independent temperature safety device class 3.1 (DIN 12880) with visual and acoustic alarm
- Inner glass door
- RS 422 interface for APT-COM™ DataControlSystem communication software
- Adjustable intervals for printer
- Units up to 115 liters are stackable
- Two shelves, stainless steel
- BINDER test confirmation



**KT series | Refrigerated incubators with Peltier technology**

The new KT series combines outstanding performance with impressive energy efficiency and environmental friendliness. The incubators with Peltier technology are state-of-the-art in application and protect the samples.

► **STANDARD EQUIPMENT**

- Electronically controlled APT.line™ preheating chamber technology
- Temperature control through state-of-the-art Peltier cooling system and efficient tubular heating element
- Temperature range 4 °C to 100 °C
- BINDER controller with monochrome 5.7 inch LCD monitor and pushbutton/rotary knob for input
  - Easy-to-read menu guidance
  - Variable time and weekday programming
  - Can store up to 60 programs
  - Recording of measurement data on internal memory
  - Programs and data easily readable via USB port
- Independent temperature safety device class 3.1 (DIN 12880) with visual and acoustic alarm
- Ethernet interface for e.g. APT-COM™ DataControlSystem communication software
- Inner glass door
- Units are stackable
- Two shelves, stainless steel
- BINDER test confirmation

► **OPTIONAL EQUIPMENT**



Validations and calibrations  
Workload reduction for unit qualification and validation



Reinforced shelves  
To ensure safe and stable storage of heavy test specimens.



Shaker platform  
Stable shelf with additional mount is suitable for the operation of shakers.



BINDER INDIVIDUAL  
KB 720 cooled incubator  
with full glass doors

# Specifications

## KB | KT series

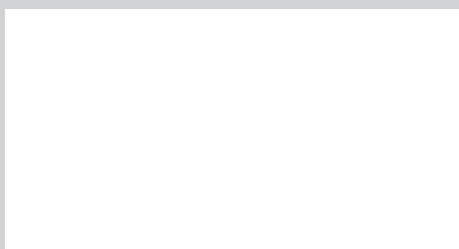
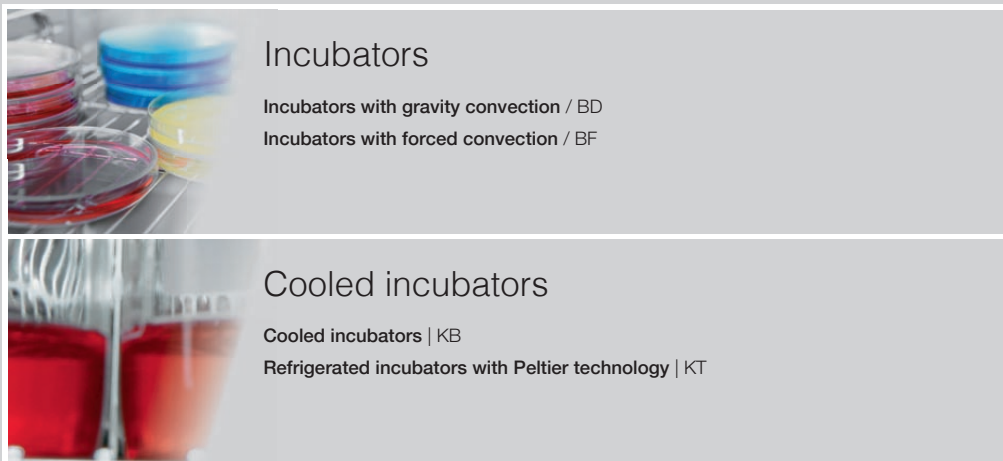


	KB 23	KB 53	KB 115	KB 240	KB 400	KB 720	KT 53	KT 115
<b>Exterior dimensions</b>								
Width (mm)	435	635	835	930	930	1255	600	860
Height (incl. feet/casters) (mm)	620	840	1025	1460	1945	1925	632	715
Depth (incl. door handle, l-panel, connection) (mm)	600	665	730	880	880	970	693	720
Number of doors (ea.)	1	1	1	1	1	2	1	1
<b>Interior dimensions</b>								
Width (mm)	222	400	600	650	650	970	400	600
Height (mm)	330	400	480	785	1270	1250	400	480
Depth (mm)	277	330	400	485	485	576	325	355
Interior volume (l)	20	53	115	247	400	698	52	102
Number of racks (standard/max.)	2 / 3	2 / 4	2 / 5	2 / 9	2 / 15	2 / 15	2 / 5	2 / 6
Load per rack (kg)	10	15	20	30	30	45	15	40
Permitted total load (kg)	25	40	50	100	120	150	40	120
Weight (empty) (kg)	44	72	105	170	220	309	65	88
<b>Temperature data</b>								
Temperature range (°C) <sup>1)</sup>	0 – 100	-5 – 100	-5 – 100	-5 – 100	-5 – 100	-5 – 100	4 – 100	4 – 100
Temperature variation at 37 °C (±K)	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.3
Temperature fluctuation max. (± C)	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recovery time <sup>2)</sup> after door was opened for 30 sec. at 5 °C (min.)	5	4	5	16	14	12	8	8
<b>Electrical data</b>								
IP protection class acc. to EN 60529	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Voltage (± 10%) 50 Hz (V)	230 1N~	230 1N~	230 1N~	200 – 240 1N~	200 – 240 1N~	200 – 240 1N~	200 – 240 1N~	200 – 240 1N~
Nominal power (kW)	0.34	0.46	0.46	1.2	1.4	2.3	1.1	0.7
Energy consumption <sup>3)</sup> at 40 °C (Wh/h)	60	215	115	260	420	510	75	75
Item number	9020-0112	9020-0243	9020-0242	9020-0241	9020-0178	9020-0111	9020-0250	9020-0209

<sup>1)</sup> Lower values are valid at an ambient temperature of max. 25 °C. // <sup>2)</sup> To 98% of the set value. // <sup>3)</sup> These values can be used for dimensioning air condition systems.

The usable interior height depends on the installation position of the shelf. /// All technical data are specified for units with standard equipment at an ambient temperature of +25 °C and a line voltage fluctuation of ±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.

# BINDER microbiological incubators



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