

## KB series: Refrigerated microbiological incubators with program controller

KB is the all-rounder for microorganisms. With its wide range of individual programming functions, including a real-time clock function and an enormous temperature span from  $-10^{\circ}\text{C}$  to  $100^{\circ}\text{C}$ , it can be used for a broad range of sophisticated applications in laboratories – with minimal dehumidification of specimens and impressive extra performance. The APT.line™ with its electronically controlled preheating chamber ensures rapid recovery times and maximum precision, unaffected by the ambient temperature.



### ► Performance features and equipment:

- Electronically controlled APT.line™ preheating chamber technology
- Temperature range:  $-10^{\circ}\text{C}$  to  $100^{\circ}\text{C}$  ( $14^{\circ}\text{F}$  -  $212^{\circ}\text{F}$ )  
KB 23 Benchtop:  $0^{\circ}\text{C}$  -  $100^{\circ}\text{C}$  ( $32^{\circ}\text{F}$  -  $212^{\circ}\text{F}$ )
- MP controller with 2 programs with 10 sections each, alternatively switchable to 1 program with 20 sections
- The time interval of single program sections can be adjusted up to a maximum of 99:59 hours or 999:59 hours. This adjustment applies to all program sections.
- Adjustable ramp function via program editor
- Integrated week program timer with real time function
- Digital temperature setting with an accuracy of a tenth of a degree
- Adjustable fan speed (0 to 100 %)
- Elapsed time indicator
- Independent adjustable temperature safety device, Class 3.1 (DIN 12880) with visual and acoustic alarm
- Inner glass door
- Environmentally friendly refrigerant R 134a
- 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 stainless steel racks
- BINDER test certificate





	KB 23	KB 53	KB 115	KB 240	KB 400	KB 720
<b>▶ Exterior dimensions</b>						
Width (mm/inch)	433 / 17.1	634 / 25.0	834 / 32.8	1034 / 40.7	884 / 34.8	1234 / 48.6
Height (incl. feet/roller) (mm/inch)	618 / 24.3	837 / 33.0	1022 / 40.2	1142 / 45.0	1850 / 72.8	1816 / 71.5
Depth (mm/inch)	516 / 20.3	576 / 22.7	646 / 25.4	746 / 29.4	716 / 28.2	867 / 34.1
Plus door handle, I-panel, connection (mm/inch)	73 / 2.9	100 / 3.9	100 / 3.9	100 / 3.9	100 / 3.9	100 / 3.9
Wall clearance (mm/inch)	100 / 3.9	100 / 3.9	100 / 3.9	100 / 3.9	100 / 3.9	100 / 3.9
Wall clearance with open door(s) (mm/inch)	100 / 3.9	160 / 6.3	160 / 6.3	160 / 6.3	160 / 6.3	160 / 6.3
Steam space volume (l/cu.ft.)	36 / 1.3	77 / 2.7	158 / 5.6	308 / 10.9	515 / 18.2	855 / 30.2
Number of doors	1	1	1	2	1	2
Number of inner glass doors	1	1	1	2	1	2
<b>▶ Interior dimensions</b>						
Width (mm/inch)	222 / 8.7	400 / 15.8	600 / 23.6	800 / 31.5	650 / 25.6	1000 / 39.4
Height (mm/inch)	330 / 13.0	400 / 15.8	480 / 18.9	600 / 23.6	1308 / 51.5	1168 / 46.0
Depth (mm/inch)	277 / 10.9	330 / 13.0	400 / 15.8	500 / 19.7	470 / 18.5	600 / 23.6
Interior volume (l/cu.ft.)	20 / 0.7	53 / 1.9	115 / 4.1	240 / 8.5	400 / 14.1	700 / 24.7
Racks (number standard/max.)	2 / 3	2 / 4	2 / 5	2 / 7	2 / 15	2 / 14
Load per rack (kg/lbs.)	10 / 22	15 / 33	20 / 44	30 / 66	20 / 44	45 / 99
Permitted total load (kg/lbs.)	25 / 55	40 / 88	50 / 110	70 / 155	100 / 221	120 / 265
Weight (empty) (kg/lbs.)	44 / 97	72 / 159	105 / 232	147 / 325	216 / 477	262 / 578
<b>▶ Temperature data</b>						
Temperature range (°C/°F) <sup>1)</sup>	0 – 100 / 32 – 212	-10 – 100 / 14 – 212	-10 – 100 / 14 – 212	-10 – 100 / 14 – 212	-10 – 100 / 14 – 212	-10 – 100 / 14 – 212
Temperature variation at 5 °C (9 °F) (± °C)	0.7	0.6	0.4	0.5	0.6	0.2
at 25 °C (45 °F) (± °C)	0.3	0.2	0.1	0.2	0.3	0.1
at 40 °C (72 °F) (± °C)	0.3	0.3	0.2	0.4	0.3	0.2
Temperature fluctuation at 5 °C (9 °F) (± °C) (± °C)	0.2	0.1	0.1	0.1	0.1	0.1
at 40 °C (72 °F) (± °C)	0.2	0.1	0.1	0.1	0.1	0.2
Heating up time <sup>1)</sup>						
to 40 °C (72 °F) (Min.)	11	5	9	10	10	13
Cooling down time from 40 °C (72 °F) <sup>1)</sup>						
to 5 °C (9 °F) (Min.)	61	58	83	102	96	160
Recovery time after door (90°) was open for 30 sec <sup>1)</sup>						
at 5 °C (9 °F) (Min.)	5	4	5	8	6	17
at 40 °C (72 °F) (Min.)	2	1	1	1	1	2
<b>▶ Electrical data</b>						
Housing protection acc. to EN 60529	IP 20	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	230 / 115
Nominal power (W)	340	460	460	930	1100	1350
Energy consumption <sup>3)</sup> at 5 °C (9 °F) (W)	50	260	222	221	450	538
at 40 °C (72 °F) (W)	60	215	115	186	120	501

Based on the ice increase on the evaporators the refrigerating capacity decreases at a set value of < 0 °C (32 °F).  
For this reason the chambers have to be defrosted regularly (approx. once a week).

<sup>1)</sup> up to 98 % of the set value

<sup>2)</sup> not applicable for units with option independent adjustable temperature safety device 3.3

<sup>3)</sup> these energy consumption values can be used upon calculation of air conditioning systems

All technical specification are specified for units with standard equipment at an ambient temperature of +25 °C (68 °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.