

Cooled incubators with precision

## KB series: more dynamic, safer, superior

Cooled incubators are mainly used for incubation tasks below room temperature or in cases where high ambient temperatures cannot be excluded. The patented DCT® cooling system, in conjunction with the APT.Line temperature technology, creates the ideal prerequisites for highly accurate and constant temperature conditions. The enormous cooling capacity allows a final temperature of approx.  $-10\text{ }^{\circ}\text{C}$ . This considerable reserve capacity and the high level of outfitting enable the performance of many applications from the most diverse areas and the compensation of additional heat loads, such as those, for example, due to devices in the inner chamber. The DCT® cooling system and the controllable air turbine guarantee high levels of humidity even during cooling operation or long-duration tests, reliably preventing samples from drying out.

The KB series is optimally suitable for all those who also require safe incubation at unstable ambient temperatures and highest cooling capacities, even on hot days. It is also excellently suited for storing blood products, e.g. as thrombocyte storage cabinets.



### ► Operative ranges:

Pharmaceutical/chemical industry, cosmetic industry, industrial biotechnology, biosensor technology, foodstuffs industry, animal food industry, paper and textile industry, fundamental medical research, universities/research institutes, health service/ blood banks, hygiene, quality assurance, water analysis, environmental technology

### ► Performance features:

- $-9.9\text{ }^{\circ}\text{C}$  to  $99\text{ }^{\circ}\text{C}$
- Digital temperature setting with ramp function
- Diverse timer functions
- Digitally adjustable air turbine
- Option: Outside door with Thermopen glass
- Temperature cycling device option
- Temperature safety device Cl. 3.1
- Foamed CFC-free insulation
- Environmentally friendly refrigerant R134a (series 23 with Peltier cooling)
- RS 232 printer and communication interface for standard software APT-COM® DataControlSystem, adjustable print intervals
- Calibrations and validations possible
- Inner chamber volume in litres: 23; 53; 115; 240; 400; 720

### ► Equipment:

- Microprocessor PID controller with LED display
- One ramp function
- Adjustable heat load (0 to 100 %)
- Adjustable fan speed (0 – 100 %)
- Inner glass door with smooth inner side
- 2 shelves with adapter, stainless steel
- Front Access Maintenance

# Technical Data

KB series	KB 23	KB 53	KB 115	KB 240	KB 400	KB 720
<b>Exterior dimensions</b>						
Width (mm)	433	634	834	1034	884	1234
Height (inclusive feet/castors) (mm)	575	837	1022	1142	1850	1816
Depth (mm)	519	576	646	746	716	867
plus door handle, l-panel, connection (mm)	85	100	100	100	100	100
<b>Interior dimensions</b>						
Width (mm)	222	400	600	800	650	1000
Height (mm)	330	400	480	600	1308	1168
Depth (mm)	280	330	400	500	470	600
Interior volume (l)	21	53	115	240	400	700
Shelves (number standard/max)	1/3	2/4	2/5	2/7	2/15	2/14
Load per shelf (kg)	12	15	20	30	20	45
Permitted total load (kg)	25	40	50	70	50	120
Temperature range <sup>1)</sup> (°C)	4–60	–9.9–99.9	–9.9–99.9	–9.9–99.9	–9.9–99.9	–9.9–99.9
Temperature variation						
at 10 °C (± °C)	0.5	0.5	0.5	0.6	0.6	0.6
at 37 °C (± °C)	0.4	0.4	0.4	0.5	0.3	0.4
Temperature fluctuation during heating operation (≤± °C)	0.1	0.1	0.1	0.1	0.1	0.1
Temperature fluctuation during cooling operation (≤± °C)	0.3	0.3	0.3	0.3	0.3	0.3
Nominal voltage (10%) 50/60 Hz (V)	230	230	230	230	230	230
Nominal power (W)	300	460	460	930	1100	1350
Number of doors	1	1	1	2	1	2
<b>Optional</b>						
Communication interface RS 422	●	–	–	–	–	–
Temperature safety device cl. 3.3 acc. to DIN 12880 <sup>2)</sup>	–	●	●	●	●	●
Stainless steel shelves	●	●	●	●	●	●
Perforated shelf with additional fixation for shaker operation	–	●	●	●	●	●
Lockable door	●	●	●	●	●	●
Interior lightning	–	●	●	●	●	●
Closable access ports	–	●	●	●	●	●
Rubber pads for safe stacking	●	●	●	●	–	–
Program timer with week program with Temperature cycling device <sup>3)</sup>	–	●	●	●	●	●
Additional PT 100 temperature sensor. fix or flexible with external connection incl. 3 pin LEMO plug	–	●	●	●	●	●
Temperature measurement acc. to DIN 12880-2 at 37°C or at specified temperature with measuring protocol and certificate	●	●	●	●	●	●
Temperature measurement with 9 measuring points at one temperature with measuring protocol and certificate	●	●	●	●	●	●
Calibration certificate	●	●	●	●	●	●
Water-proof interior socket 230 V	–	●	●	●	●	●
Protocol printer for a numerical and graphical temperature recording	–	●	●	●	●	●

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

<sup>1)</sup> at ambient temperature < 20 °C

<sup>2)</sup> Not possible in connection with the use of the timer functions

<sup>3)</sup> Not possible in connection with the use of the temperature safety device 3.3

● Optional

– not available