

## Incubator with gravity convection

The BINDER incubator of the BD series with gravity convection is the specialist in long-term and stable continuous operation. This incubator is specially designed for gentle incubation of organisms, as well as conditioning of heat-sensitive media or microbiological heating.



### Advantages:

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

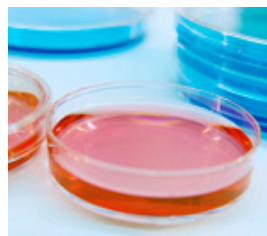
### Areas of application:



Basic Research / Research  
Institutes



Food / Beverage



Microbiology

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

- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range from 5 °C above room temperature to 100 °C
- DS control with integrated timer 0 to 99 hrs
- Digital temperature setting with an accuracy of a tenth of a degree
- Independent temperature safety device class 3.1 (DIN 12880) with optical alarm
- Adjustable ventilation by means of front ventilation flap slide and rear exhaust Ø 50 mm
- Inner glass doors
- RS 422 interface for communication software APT-COM™ DataControlSystem
- 2 chrome-plated racks included
- BINDER test confirmation

## BD 400

▶ Exterior dimensions	
Width (mm)	1235
Height (incl. feet) (mm)	1025
Depth (mm)	765
Plus door handle and connection (mm)	90
Wall clearance, rear (mm)	100
Wall clearance, side (mm)	160
Steam space volume (l)	457
Number of doors (ea.)	2

▶ Interior dimensions	
Width (mm)	1000
Height (mm)	800
Depth (mm)	500
Interior volume (l)	400
Racks (number standard/max.)	2 / 10
Load per rack (kg)	35
Permitted total load (kg)	90
Weight (empty) (kg)	135

▶ Temperature data	
Temperature range approx. 5 °C above ambient temperature to (°C)	100
Temperature variation	
at 37 °C (± K)	0,5
at 50 °C (± K)	0,9
Temperature fluctuation	
at 37 °C (± K)	0,1
at 50 °C (± K)	0,1
Warm-up time 1)	
to 37 °C (min.)	105
to 50 °C (min.)	132
Recovery time after doors were open for 30 sec. 1)	
at 37 °C (min.)	6
at 50 °C (min.)	29

**BD 400**

▶ Electrical data	
IP protection class acc. to EN 60529	IP 20
Voltage ( $\pm 10\%$ ) 50/60 Hz (V)	230
Nominal power (kW)	0,85
Energy consumption at 37 °C (W)	56

1) 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  $\pm 10\%$ . 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.



### 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.



### Additional PT 100 temperature sensor

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



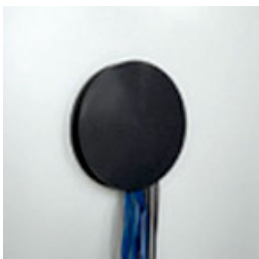
### Watertight inner chamber socket

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



### 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 diameters.

**BD 400**

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