

## Incubator with gravity convection

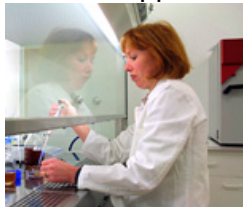
The BINDER incubator of the BD series with gravity convection is the specialist in long-term and stable continuous operation. This incubator is specially designed for gentle incubation of organisms, as well as conditioning of heat-sensitive media or microbiological heating.



### Advantages:

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

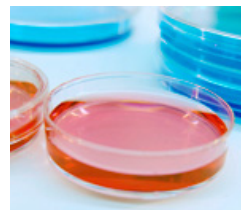
### Areas of application:



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>	<p><b>APT.line™ for maximum precision</b></p> <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>	<p><b>Disinfection routine at 100 °C (212 °F)</b></p> <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>	<p><b>High energy efficiency</b></p> <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 (2.36 inch) 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>	<p><b>Wide range of products</b></p> <ul style="list-style-type: none"> <li>• 23 l (0.7 cu.ft.) to 720 l (25.7 cu.ft.) inner chamber with gravity convection</li> <li>• Additional product lines with humidity, light, CO2 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 (9 °F) above room temperature to 100 °C (212 °F)
- 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 (1.97 inch)
- Inner glass doors
- RS 422 interface for communication software APT-COM™ DataControlSystem
- 2 chrome-plated racks included
- BINDER technical specification conformance certificate

## BD 400

▶ Exterior dimensions	
Width (mm/inch)	1235 / 48.6
Height (incl. feet) (mm/inch)	1025 / 40.3
Depth (mm/inch)	765 / 30.1
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
Steam space volume (l/cu.ft.)	457 / 16.2
Number of doors (ea.)	2

▶ Interior dimensions	
Width (mm/inch)	1000 / 39.4
Height (mm/inch)	800 / 31.5
Depth (mm/inch)	500 / 19.7
Interior volume (l/cu.ft.)	400 / 14.3
Racks (number standard/max.)	2 / 10
Load per rack (kg/lbs.)	35 / 77
Permitted total load (kg/lbs.)	90 / 199
Weight (empty) (kg/lbs.)	135 / 298

▶ 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)	0.5
at 50 °C (122 °F) (± K)	0.9
Temperature fluctuation	
at 37 °C (98.6 °F) (± K)	0.1
at 50 °C (122 °F) (± K)	0.1
Warm-up time 1)	
to 37 °C (98.6 °F) (min.)	105
to 50 °C (122 °F) (min.)	132
Recovery time after doors were open for 30 sec. 1)	
at 37 °C (98.6 °F) (min.)	6
at 50 °C (122 °F) (min.)	29

## BD 400

▶ Electrical data	
IP protection class acc. to EN 60529	IP 20
Voltage (± 10%) 50/60 Hz (V)	230
Voltage (±10 %) 60 Hz (V)	115
Nominal power (kW)	0.85
Energy consumption at 37 °C (98.6 °F) (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 (77 °F) 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.



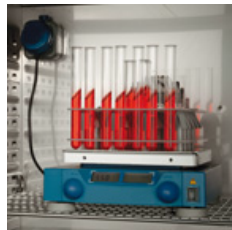
### BINDER Data Logger Kits

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.



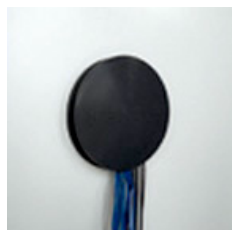
### Watertight inner chamber socket

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 (0.4, 1.2, 2, 3.9 inch) diameters.

**BD 400**

Access ports with silicone plug, 10, 30, 50, 100 mm (0.4, 1.2, 2 , 3.9 inch)	<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 (98.6 °F) or at specified temperature with measuring protocol and certificate	<input type="radio"/>
Calibration certificate, measurement in center of chamber at 37 °C (98.6 °F) 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 (-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	<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"/>