

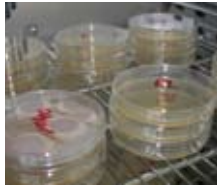
## BINDER incubators and refrigerating incubators

The optimal solution for consistent incubation.

- ▶ Reliable and reproducible incubation
- ▶ Disinfection routine at 100°C
- ▶ Broad range of applications

### Applications:

Microbiological tests:



Closed sample containers



Open sample containers (BD)



Food products



Mixing samples with shakers (KB)



|                                     | BINDER features  | Customer benefits   | What the competition offers  |
|-------------------------------------|--|---|--|
| <b>APT.line™</b>                    | <p><b>APT.line™ delivers maximum precision</b></p> <ul style="list-style-type: none"> <li>• uniform airflow across the side walls even when fully loaded</li> <li>• temperature setting with an accuracy of a tenth of a degree</li> <li>• long-term stability</li> <li>• high standard following to DIN 12880 (27-point measurement)</li> </ul>   | <ul style="list-style-type: none"> <li>▶ fast and constant growth of microorganism</li> <li>▶ reliable and reproducible incubation results</li> <li>▶ broad range of applications</li> </ul>  | <ul style="list-style-type: none"> <li>• uneven and limited temperature distribution</li> <li>• samples are dehydrated by heavy air turbulence</li> </ul>  |
| <b>Disinfection and cleaning</b>    | <p><b>Disinfection routine at 100 °C</b></p> <ul style="list-style-type: none"> <li>• high-quality stainless steel interior chamber</li> <li>• no fittings in the interior chamber</li> </ul>  | <ul style="list-style-type: none"> <li>▶ easy and quick cleaning procedure</li> <li>▶ safe operation</li> </ul>   | <ul style="list-style-type: none"> <li>• maximum attainable temperature of 60 °C, which means high contamination risk</li> <li>• low-quality materials are used for the interior chamber</li> <li>• fixed interior fittings complicate cleaning</li> </ul>   |
| <b>Interior chamber design</b>      | <p><b>High energy efficiency</b></p> <ul style="list-style-type: none"> <li>• secure and dense door cause the two-point door lock and KB series with double door gaskets</li> <li>• 60 mm insulation protects against heat radiation</li> <li>• inner glass door</li> <li>• condensation-free interior</li> <li>• door heating (KB)</li> </ul>   | <ul style="list-style-type: none"> <li>▶ ability to accommodate more samples in the same chamber size</li> <li>▶ low operating costs</li> </ul>   | <ul style="list-style-type: none"> <li>• unsatisfactory sealing because of single-point door lock, e.g. with magnets</li> <li>• energy losses through poor insulation and leaks (single seal)</li> <li>• condensations in the interior</li> <li>• limited working space because of fixed components</li> </ul> |
| <b>Refrigeration system (KB)</b>    | <ul style="list-style-type: none"> <li>• refrigeration system with large evaporator plates</li> <li>• absence of icing thanks to a duplex evaporator plate</li> <li>• finely adjusted refrigeration up to -5 °C</li> </ul>   | <ul style="list-style-type: none"> <li>▶ reproducible test results</li> <li>▶ safe incubation conditions even at elevated ambient temperatures</li> <li>▶ flexible use of external equipment (e.g. shakers)</li> </ul>  | <ul style="list-style-type: none"> <li>• large temperature fluctuations</li> <li>• limited temperature range (only above 5 °C)</li> <li>• smaller reserve capacity prevents use of external equipment</li> </ul>   |
| <b>Controller and documentation</b> | <ul style="list-style-type: none"> <li>• programmable controller with intelligent temperature control and integrated week program function (KB)</li> <li>• FDA-compliant APT-COM™ documentation software</li> <li>• long term accepted validation and documentation materials available</li> <li>• standard interface RS 422 for network connection</li> </ul>   | <ul style="list-style-type: none"> <li>▶ professional support during validation</li> <li>▶ time and cost saving</li> <li>▶ easy data transfer</li> <li>▶ FDA compliant documentation</li> </ul>   | <ul style="list-style-type: none"> <li>• programmable controller only at additional cost</li> <li>• software does not comply with GLP/GMP requirements</li> <li>• limited validation program</li> <li>• interfaces only at additional cost</li> </ul>  |
| <b>Accessories and services</b>     | <p><b>Large product range</b></p> <ul style="list-style-type: none"> <li>• interior volume from 23 to 720 liters with natural (BD) and forced (BF, KB) convection</li> <li>• supplemental product lines with humidity, lighting, CO<sub>2</sub> or vacuum</li> <li>• optional voltages and certification (UL)</li> <li>• large variety of options: shaker platform, electrical interior socket, access ports, Data Logger Kits</li> <li>• worldwide service network</li> </ul> | <ul style="list-style-type: none"> <li>▶ the right BINDER chamber for any place of installation</li> <li>▶ optimal solution for a large variety of applications</li> <li>▶ BINDER INDIVIDUAL provides customized solutions</li> <li>▶ worldwide BINDER service</li> </ul> | <ul style="list-style-type: none"> <li>• fewer model sizes</li> <li>• limited product range</li> <li>• minimum standard equipment, options are expensive</li> <li>• no worldwide service support</li> </ul>  |

► Product program at a glance



|   |            | Series | 23              | 53              | 115              | 240              | 400               | 720               |
|---|------------|--------|-----------------|-----------------|------------------|------------------|-------------------|-------------------|
| Exterior dimensions (mm)<br><small>*excl. 100 mm door handle, connections</small> | W x H x D* | BD     | 433 x 492 x 516 | 634 x 617 x 575 | 834 x 702 x 645  | 1034 x 822 x 745 | 1234 x 1022 x 765 | 1234 x 1528 x 865 |
|   | W x H x D* | BF     | -               | 634 x 617 x 575 | 834 x 702 x 645  | 1034 x 822 x 745 | 1234 x 1022 x 765 | 1234 x 1528 x 865 |
|   | W x H x D* | KB     | 433 x 618 x 516 | 634 x 837 x 576 | 834 x 1022 x 646 | 925 x 1460 x 800 | 925 x 1945 x 800  | 1250 x 1925 x 887 |
| Interior dimensions (mm)  | W x H x D  | BD     | 222 x 330 x 277 | 400 x 400 x 330 | 600 x 480 x 400  | 800 x 600 x 500  | 1000 x 800 x 500  | 1000 x 1200 x 600 |
|   | W x H x D  | BF     | -               | 400 x 400 x 330 | 600 x 480 x 400  | 800 x 600 x 500  | 1000 x 800 x 500  | 1000 x 1200 x 600 |
|   | W x H x D  | KB     | 222 x 330 x 277 | 400 x 400 x 330 | 600 x 480 x 400  | 650 x 785 x 485  | 650 x 1270 x 485  | 973 x 1250 x 576  |
| Inner chamber volume (l)  |            | BD     | 20              | 53              | 115              | 240              | 400               | 720               |
|   |            | BF     | -               | 53              | 115              | 240              | 400               | 720               |
|   |            | KB     | 23              | 53              | 115              | 240              | 400               | 720               |

► Temperature data

|                                    |                 |    |                                    |                |     |     |     |     |
|------------------------------------|-----------------|----|------------------------------------|----------------|-----|-----|-----|-----|
| Temperature range                  |                 | BD | 5 °C above room temperature 100 °C |                |     |     |     |     |
|                                    |                 | BF | 5 °C above room temperature 100 °C |                |     |     |     |     |
|                                    |                 | KB | 0 °C - 100 °C                      | -5 °C - 100 °C |     |     |     |     |
| Temperature uniformity             | at 37 °C (± °C) | BD | 0,5                                | 0,5            | 0,4 | 0,5 | 0,5 | 0,5 |
|                                    |                 | BF | -                                  | 0,4            | 0,3 | 0,3 | 0,4 | 0,4 |
|                                    |                 | KB | 0,2                                | 0,1            | 0,1 | 0,2 | 0,1 | 2   |
| Recovery time after 30 s door open | at 37° C (min)  | BD | 3                                  | 5              | 5   | 5   | 6   | 4   |
|                                    |                 | BF | -                                  | 1              | 1   | 1   | 2   | 1   |
|                                    |                 | KB | 2                                  | 1              | 1   | 1   | 1   | 2   |

|    |  |
|----|--|
| BD | Incubation with natural convection   in open containers  |
| BF | Incubation with forced convection   in closed containers (e.g. Stomacher bags)   |
| KB | Incubation with forced convection and DCT™ Cooling system   Weekly incubation cycle 37 °C/4 °C<br>Incubation > 25 °C   Incubation at 37 °C with integrated heat sources (e.g. shakers) |

► Options:



Access ports



Interior socket



Data Logger Kits



Calibration & Validation

Additional information:

- Catalog Scientific products
- Flyer incubators
- Latest technical data sheets at [www.binder-world.com](http://www.binder-world.com)