

# Drying and heating chambers



Avantgarde.Line  
ED | FD | FED | FP | M series

Solid.Line  
ED-S | FD-S series





# Drying and heating chambers Avantgarde.Line

|                            |         |
|----------------------------|---------|
| Series ED Avantgarde.Line  | Page 6  |
| Series FD Avantgarde.Line  | Page 12 |
| Series FED Avantgarde.Line | Page 19 |
| Series FP Avantgarde.Line  | Page 26 |
| Series M Avantgarde.Line   | Page 31 |

BINDER drying chambers with natural convection or forced convection are renowned for their high quality and reliability. Thanks to their extensive redevelopment, these all-rounders are now even more firmly focused on addressing the requirements involved in drying or heating samples. What's more, in addition to the best energy efficiency on the market and convenient operation, the latest APT.line™ technology offers outstanding temperature accuracy to give the Avantgarde.Line incubators real appeal.



## ADVANTAGES AT A GLANCE



### **EASY DATA LOGGING**

Via USB connector or Ethernet



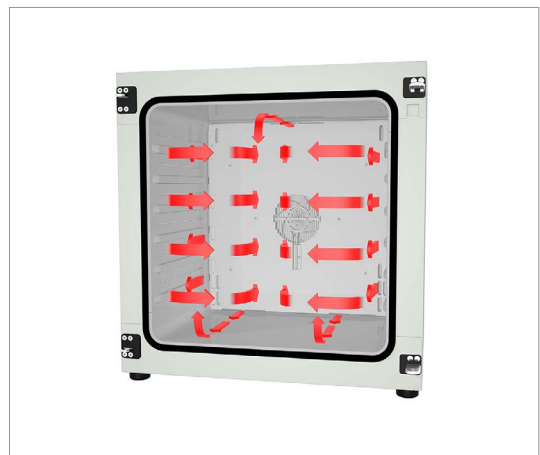
### **BEST ENERGY EFFICIENCY AND LOW INSTALLATION REQUIREMENTS**

thanks to low heat dissipation and an optimized heating system.



### **EASY, INTUITIVE HANDLING**

Our state-of-the-art controller with LCD display, excellent readability, alphanumeric display, and various functions provide a user friendly interface. Choice of languages as standard: English, German, and French.



### **COMPLETELY HOMOGENEOUS TEMPERATURE DISTRIBUTION**

This feature provides excellent spatial and temporal temperature accuracy with the all-new generation of APT.line™ technology.

## Series ED Avantgarde.Line | with natural convection

The strengths of a BINDER ED series drying chamber include routine drying and sterilization tasks up to 300 °C. Thanks to the natural convection, all thermal processes which use this drying chamber are highly efficient. The ED series ensures fast, uniform drying.



ED 56 model



### BENEFITS

- Best energy efficiency on the market
- Excellent temporal and spatial temperature accuracy
- USB connection for recording data
- Temperature range up to +300 °C

### MAIN FEATURES

- Temperature range: +5 °C above ambient temperature to +300 °C
- Up to 30% lower energy consumption compared to conventional units on the market
- High temperature accuracy thanks to APT.line™ technology
- Natural convection
- Controller with LCD display
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks
- Units up to 115 liters are stackable
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm
- Ergonomic handle design

### AVAILABLE SIZES

| Model  | Interior volume [L] | Online data sheets                                                          |
|--------|---------------------|-----------------------------------------------------------------------------|
| ED 56  | 57                  | › <a href="https://go2binder.com/en-ED56-AL">go2binder.com/en-ED56-AL</a>   |
| ED 115 | 114                 | › <a href="https://go2binder.com/en-ED115-AL">go2binder.com/en-ED115-AL</a> |
| ED 260 | 255                 | › <a href="https://go2binder.com/en-ED260-AL">go2binder.com/en-ED260-AL</a> |
| ED 720 | 743                 | › <a href="https://go2binder.com/en-ED720-AL">go2binder.com/en-ED720-AL</a> |



Find all details online: [go2binder.com/en-ED](https://go2binder.com/en-ED)

## OPTIONAL EQUIPMENT

### Access port with silicone plug

For introducing external measuring instruments. Large selection of different diameters and positions (left, right, or top)



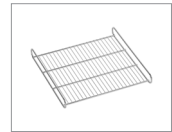
### Viewing window and interior lighting

Viewing window in the door with a triple-glazed insulating glass and interior lighting for easy visibility of the samples.



### Shelf racks

Perforated shelves or shelf racks, chrome-plated or made from stainless steel.



### HEPA air filter

Particle filter on fresh air supply for unit; filter classification H14 (acc. to. EN 1822-1:2009, > 99.995% at 0.3 µm).



### Services

You can access our installation, maintenance, calibration, validation, or warranty services by taking out a Maintenance Service Agreement or by simply getting in touch when you need us. More information is available in the accessories and services chapter.



### BINDER INDIVIDUAL

Using a BINDER series production product as a basis, we develop individual solutions as a single unit or in small batches. All products are tested, certified, and supplied with a full functional guarantee and warranty. More information is available in the accessories and services chapter.



► All extras online [go2binder.com/en-options](https://go2binder.com/en-options)

## TECHNICAL DATA

| Description                                                  | ED 56 | ED 115 | ED 260 | ED 720 |
|--------------------------------------------------------------|-------|--------|--------|--------|
| <b>Measures</b>                                              |       |        |        |        |
| Interior volume [L]                                          | 57    | 114    | 255    | 743    |
| Net weight of the unit (empty) [kg]                          | 42    | 57     | 85     | 169    |
| Permitted load [kg]                                          | 70    | 150    | 270    | 315    |
| Load per rack [kg]                                           | 30    | 30     | 40     | 45     |
| Wall clearance back [mm]                                     | 160   | 160    | 160    | 160    |
| Wall clearance sidewise [mm]                                 | 100   | 100    | 100    | 100    |
| <b>Internal Dimensions</b>                                   |       |        |        |        |
| Width [mm]                                                   | 360   | 510    | 610    | 960    |
| Height [mm]                                                  | 420   | 530    | 760    | 1280   |
| Depth [mm]                                                   | 380   | 425    | 550    | 605    |
| <b>Housing dimensions not incl. fittings and connections</b> |       |        |        |        |
| Width net [mm]                                               | 560   | 710    | 810    | 1165   |
| Height net [mm]                                              | 625   | 705    | 940    | 1590   |
| Depth net [mm]                                               | 565   | 605    | 760    | 870    |
| <b>Performance Data Temperature</b>                          |       |        |        |        |
| Temperature range +5 °C above ambient temperature to [°C]    | 300   | 300    | 300    | 300    |
| Temperature variation at 150 °C [± K]                        | 2.3   | 1.5    | 1.8    | 3.2    |
| Temperature fluctuation at 150 °C [± K]                      | 0.4   | 0.4    | 0.8    | 0.8    |
| Heating-up time to 150 °C [min]                              | 50    | 45     | 50     | 85     |
| Recovery time after 30 seconds door open at 150 °C [min]     | 19    | 16     | 20     | 25     |
| <b>Tabellen</b>                                              |       |        |        |        |
| Air change (approx.) at 100 °C [x/h]                         | 8     | 6      | 3      | 2      |
| <b>Electrical data</b>                                       |       |        |        |        |
| Nominal power (version 120 V) [kW]                           | 1.15  | 1.35   | –      | –      |
| Nominal power (version 230 V) [kW]                           | 1.05  | 1.25   | 2.25   | –      |
| Nominal power (version 240 V) [kW]                           | –     | –      | 2.45   | –      |
| Nominal power (version 400 V) [kW]                           | –     | –      | –      | 4.1    |
| <b>Fixtures</b>                                              |       |        |        |        |
| Number of shelves (std./max.)                                | 2/4   | 2/5    | 2/8    | 2/16   |

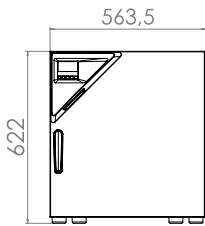
## ORDERING INFORMATION [Art. No.]

Further details: Go to [www.binder-world.com](http://www.binder-world.com) › Search › Enter Article Number

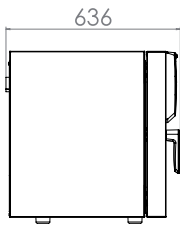
| Voltage           | Option model | ED 56     | ED 115    | ED 260    | ED 720    |
|-------------------|--------------|-----------|-----------|-----------|-----------|
| 400 V 3~ 50/60 Hz | Standard     | –         | –         | –         | 9010-0341 |
| 240 V 1~ 60 Hz    | Standard     | –         | –         | 9010-0340 | –         |
| 230 V 1~ 50/60 Hz | Standard     | 9010-0333 | 9010-0335 | 9010-0339 | –         |
| 120 V 1~ 60 Hz    | Standard     | 9010-0334 | 9010-0336 | –         | –         |

## DIMENSIONS incl. fittings and connections [mm]

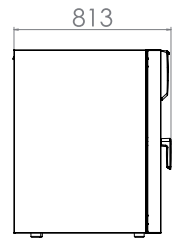
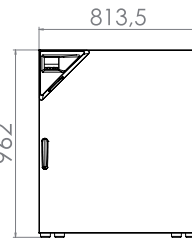
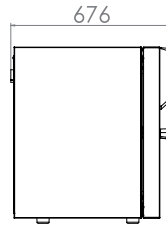
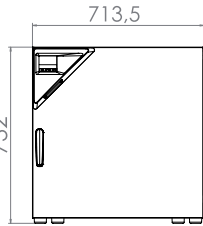
ED 56



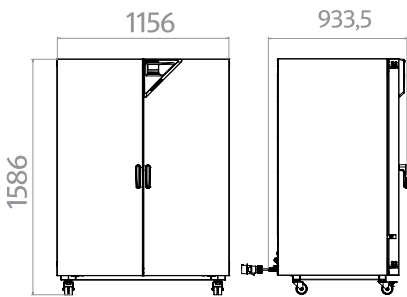
ED 115



ED 260



ED 720



## ORDERING INFORMATION OPTIONS

| Designation                       | Description                                                                                             | ED 56 | ED 115 | ED 260 | ED 720 | Art. No.  |
|-----------------------------------|---------------------------------------------------------------------------------------------------------|-------|--------|--------|--------|-----------|
| Access port with silicone plug    | back                                                                                                    |       |        |        |        |           |
|                                   | 10 mm                                                                                                   | •     | •      | •      | •      | 8012-1282 |
|                                   | 30 mm                                                                                                   | •     | •      | •      | •      | 8012-0540 |
|                                   | 50 mm                                                                                                   | •     | •      | •      | •      | 8012-0546 |
|                                   | left                                                                                                    |       |        |        |        |           |
|                                   | 10 mm                                                                                                   | •     | •      | •      | •      | 8012-1275 |
|                                   | 30 mm                                                                                                   | •     | •      | •      | •      | 8012-1018 |
|                                   | 50 mm                                                                                                   | •     | •      | •      | •      | 8012-1022 |
|                                   | 100 mm                                                                                                  | –     | •      | •      | •      | 8012-1030 |
|                                   | right                                                                                                   |       |        |        |        |           |
|                                   | 10 mm                                                                                                   | •     | •      | •      | •      | 8012-1268 |
|                                   | 30 mm                                                                                                   | •     | •      | •      | •      | 8012-1017 |
|                                   | 50 mm                                                                                                   | •     | •      | •      | •      | 8012-1021 |
|                                   | 100 mm                                                                                                  | –     | •      | •      | •      | 8012-1031 |
|                                   | top                                                                                                     |       |        |        |        |           |
|                                   | 10 mm                                                                                                   | •     | •      | •      | •      | 8012-1262 |
|                                   | 30 mm                                                                                                   | •     | •      | •      | •      | 8012-0539 |
|                                   | 50 mm                                                                                                   | •     | •      | •      | •      | 8012-0545 |
|                                   | 100 mm                                                                                                  | •     | •      | •      | •      | 8012-1029 |
| Alarm function for overheating    | Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device     | •     | •      | •      | •      | 8012-1635 |
| Analog output 4-20 mA             | for temperature values (output not adjustable)                                                          | •     | •      | •      | •      | 8012-1623 |
| Calibration certificate, expanded | for temperature; for extending the measurement in center of chamber to include another test temperature | •     | •      | •      | •      | 8012-1115 |

| Designation                                     | Description                                                                                 | ED 56 | ED 115 | ED 260 | ED 720 | Art. No.  |
|-------------------------------------------------|---------------------------------------------------------------------------------------------|-------|--------|--------|--------|-----------|
| Calibration certificate, temperature            | for temperature, measurement in center of chamber at specified temperature                  | •     | •      | •      | •      | 8012-1134 |
|                                                 | temperature measurement incl. certificate and 27 measuring points at specified temperature  | •     | •      | •      | •      | 8012-1593 |
|                                                 | temperature measurement incl. certificate, 15- 18 measuring points at specified temperature | •     | •      | •      | •      | 8012-1572 |
|                                                 | temperature measurement incl. certificate, 9 measuring points at specified temperature      | •     | •      | •      | •      | 8012-1551 |
| Class 3.1 independent temperature safety device | with visual alarm (DIN 12880)                                                               | •     | •      | •      | •      | 8012-0985 |
| Clock                                           | battery-backed                                                                              | •     | •      | •      | •      | 8012-1640 |
| Door gasket                                     | made of FKM, silicone-free                                                                  | •     | –      | –      | –      | 8012-1008 |
|                                                 |                                                                                             | –     | •      | –      | –      | 8012-1009 |
|                                                 |                                                                                             | –     | –      | •      | –      | 8012-1011 |
|                                                 |                                                                                             | –     | –      | –      | •      | 8012-1013 |
| Door lock                                       | lockable door handle                                                                        | •     | •      | •      | –      | 8012-1664 |
|                                                 |                                                                                             | –     | –      | –      | •      | 8012-1817 |
| Ethernet interface                              | for Multi Management Software APT-COM™                                                      | •     | •      | •      | –      | 8012-1645 |
|                                                 |                                                                                             | –     | –      | –      | •      | 8012-1836 |
| Inner chamber, reinforced                       | max. total load 350 kg                                                                      | –     | –      | –      | •      | 8012-1827 |
| Interior lighting                               | with 15 W light bulb                                                                        |       |        |        |        |           |
|                                                 | 120 V option model                                                                          | •     | •      | –      | –      | 8012-1631 |
|                                                 | 230/240 V option model                                                                      | •     | •      | •      | –      | 8012-1627 |
|                                                 | with two 15 W light bulbs                                                                   |       |        |        |        |           |
|                                                 | 400 V option model                                                                          | –     | –      | –      | •      | 8012-1824 |
| Measurement of air exchange rate                | in accordance with ASTM D5374, definition and protocol according to ambient temperature     | •     | •      | •      | •      | 8012-0195 |
| Pt 100 temperature sensor                       | additional flexible Pt 100, interior, for displaying the temperature on the unit display    | •     | •      | •      | •      | 8012-1619 |
| Viewing window and interior lighting            | viewing window (triple insulating glass) in door, 240 x 240 mm, and 15 W interior           |       |        |        |        |           |
|                                                 | 120 V option model                                                                          | •     | –      | –      | –      | 8012-1059 |
|                                                 | 230 V option model                                                                          | •     | –      | –      | –      | 8012-1058 |
|                                                 | viewing window (triple insulating glass) in door, 300 x 480 mm, and 30 W interior           |       |        |        |        |           |
|                                                 | 400 V option model                                                                          | –     | –      | –      | •      | 8012-1830 |
|                                                 | viewing window (triple insulating glass) in door, 370 x 370 mm, and 15 W interior           |       |        |        |        |           |
|                                                 | 120 V option model                                                                          | –     | •      | –      | –      | 8012-1063 |
|                                                 | 230 V option model                                                                          | –     | •      | –      | –      | 8012-1060 |
|                                                 |                                                                                             | –     | –      | •      | –      | 8012-1064 |
|                                                 | 240 V option model                                                                          | –     | –      | •      | –      | 8012-1065 |

## ORDERING INFORMATION ACCESSORIES

| Designation              | Description                                                                     | ED 56 | ED 115 | ED 260 | ED 720 | Art. No.  |
|--------------------------|---------------------------------------------------------------------------------|-------|--------|--------|--------|-----------|
| APT-COM™ 4 BASIC-Edition | for simple logging and documentation requirements with up to 5 networked units. |       |        |        |        |           |
|                          | version 4, BASIC edition                                                        | •     | •      | •      | •      | 9053-0039 |

| Designation                            | Description                                                                                                                                                                                                                                                         | ED<br>56 | ED<br>115 | ED<br>260 | ED<br>720 | Art. No.  |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|-----------|-----------|-----------|
| <b>APT-COM™ 4 GLP-Edition</b>          | for working under GLP-compliant conditions. Measured values are documented in a tamper-proof way in line with the requirements of FDA Regulation 21 CFR 11.                                                                                                         |          |           |           |           |           |
|                                        | version 4, GLP edition                                                                                                                                                                                                                                              | •        | •         | •         | •         | 9053-0042 |
| <b>APT-COM™ 4 PROFESSIONAL-Edition</b> | convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.                                                                                                                                                            |          |           |           |           |           |
|                                        | version 4, PROFESSIONAL edition                                                                                                                                                                                                                                     | •        | •         | •         | •         | 9053-0040 |
| <b>Ethernet interface</b>              | for Multi Management Software APT-COM™                                                                                                                                                                                                                              | •        | •         | •         | –         | 8012-1645 |
| <b>pH-neutral detergent</b>            | concentrated, for gentle remove of residual contaminants; 1 kg                                                                                                                                                                                                      | •        | •         | •         | •         | 8012-2250 |
| <b>Qualification documents</b>         | IQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ checklists incl. calibration guide and comprehensive unit documentation; parameters: temperature, CO <sub>2</sub> , O <sub>2</sub> , pressure, depending on unit |          |           |           |           |           |
|                                        | Digital in PDF format                                                                                                                                                                                                                                               | •        | •         | •         | •         | 7057-0001 |
|                                        | Hard copy inside folder                                                                                                                                                                                                                                             | •        | •         | •         | •         | 7007-0001 |
|                                        | IQ/OQ/PQ documents – supporting documents for validation performed by customers, according to customer requirements, PQ section added to qualification folder IQ/OQ; parameters: temperature, CO <sub>2</sub> , O <sub>2</sub> – or pressure, depending on unit     |          |           |           |           |           |
|                                        | Digital in PDF format                                                                                                                                                                                                                                               | •        | •         | •         | •         | 7057-0005 |
|                                        | Hard copy inside folder                                                                                                                                                                                                                                             | •        | •         | •         | •         | 7007-0005 |
| <b>Rack</b>                            | chrome plated                                                                                                                                                                                                                                                       | •        | –         | –         | –         | 8012-2039 |
|                                        |                                                                                                                                                                                                                                                                     | –        | •         | –         | –         | 8012-2041 |
|                                        |                                                                                                                                                                                                                                                                     | –        | –         | •         | –         | 8012-2043 |
|                                        |                                                                                                                                                                                                                                                                     | –        | –         | –         | •         | 8012-2045 |
|                                        | stainless steel                                                                                                                                                                                                                                                     | •        | –         | –         | –         | 8012-2171 |
|                                        |                                                                                                                                                                                                                                                                     | –        | •         | –         | –         | 8012-2172 |
|                                        |                                                                                                                                                                                                                                                                     | –        | –         | •         | –         | 8012-2173 |
|                                        |                                                                                                                                                                                                                                                                     | –        | –         | –         | •         | 8012-2174 |
|                                        |                                                                                                                                                                                                                                                                     | –        | –         | •         | –         | 8012-2187 |
|                                        |                                                                                                                                                                                                                                                                     | –        | –         | –         | •         | 8012-2186 |
| <b>Rack, heavy load</b>                | Stainless steel, max. load per rack 70 kg                                                                                                                                                                                                                           |          |           |           |           |           |
| <b>Rubber pads</b>                     | set anti-slip feet                                                                                                                                                                                                                                                  | •        | •         | •         | –         | 8012-2030 |
| <b>Shelf, perforated</b>               | Stainless steel                                                                                                                                                                                                                                                     | •        | –         | –         | –         | 8012-2179 |
|                                        |                                                                                                                                                                                                                                                                     | –        | •         | –         | –         | 8012-2180 |
|                                        |                                                                                                                                                                                                                                                                     | –        | –         | •         | –         | 8012-2181 |
|                                        |                                                                                                                                                                                                                                                                     | –        | –         | –         | •         | 8012-2182 |
|                                        |                                                                                                                                                                                                                                                                     | –        | –         | –         | –         | 8012-2182 |
| <b>Table on castors</b>                | stable cart, casters with locking brakes, dimensions: W 1,000 x D 800 x H 780 mm                                                                                                                                                                                    | •        | •         | –         | –         | 9051-0018 |
|                                        | stable cart, casters with locking brakes, dimensions: W 1,300 x D 800 x H 780 mm                                                                                                                                                                                    | –        | –         | •         | –         | 9051-0019 |