

# Model BF 400 | Standard-Incubators with forced convection

The BINDER incubator of the BF series with mechanical convection is suitable for all gentle incubation applications, particularly under a full load and large batch throughputs. This incubator is extremely homogeneous and has quick recovery times.

## BENEFITS

- Safe and reproducible incubation even under high batch throughputs in long-term operation
- Disinfection routine at 100 °C
- Stable atmosphere by inner glass door



Model 400



Model 400

## IMPORTANT FEATURES

- Temperature range: room temperature plus 5 °C to 100 °C
  - APT.line™ preheating chamber technology
  - Adjustable fan speed
  - Adjustable exhaust air flap
  - Controller with timer functions
- Inner door made of tempered safety glass
  - 2 chrome-plated racks
  - Class 3.1 independent temperature safety device (DIN 12880) with visual temperature alarm
  - Computer interface: RS 422

## ORDERING INFORMATION

| Interior volume |     | Power supply - unit fuse  | Plug*     | Version  | Model version | Art.-No.  |
|-----------------|-----|---------------------------|-----------|----------|---------------|-----------|
| [cu.ft.]        | [L] |                           |           |          |               |           |
| Model BF 400    |     |                           |           |          |               |           |
| 14              | 400 | 230 V 1~ 50/60 Hz -12,5 A | CEE 7/7   | Standard | BF400-230V    | 9010-0241 |
|                 |     | 120 V 1~ 60 Hz -12,5 A    | NEMA 5-15 | Standard | BF400UL-120V  | 9010-0242 |

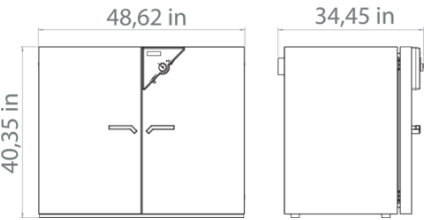
## TECHNICAL DATA

| Data                                                  |                                           |                                           |
|-------------------------------------------------------|-------------------------------------------|-------------------------------------------|
| Article Number                                        | 9010-0241                                 | 9010-0242                                 |
| Designation                                           | BF400-230V                                | BF400UL-120V                              |
| Option model                                          | Standard                                  | Standard                                  |
| Performance Data Temperature                          |                                           |                                           |
| Temperature range                                     | +5 °C above ambient temperature to 100 °C | +5 °C above ambient temperature to 100 °C |
| Temperature uniformity at 37°C                        | 0.4 ± K                                   | 0.4 ± K                                   |
| Temperature fluctuation at 37°C                       | 0.1 ± K                                   | 0.1 ± K                                   |
| Heating up time to 37°C                               | 12 min                                    | 12 min                                    |
| Recovery time after door was opened for 30 s at 37°C  | 5 min                                     | 5 min                                     |
| Electrical data                                       |                                           |                                           |
| Rated Voltage                                         | 230 V                                     | 120 V                                     |
| Power frequency                                       | 50/60 Hz                                  | 60 Hz                                     |
| Nominal power                                         | 0,85 kW                                   | 0,85 kW                                   |
| Unit fuse                                             | 12,5 A                                    | 12,5 A                                    |
| Phase (Nominal voltage)                               | 1~                                        | 1~                                        |
| Dimensions and weights                                |                                           |                                           |
| Interior volume                                       | 14 cu.ft.                                 | 14 cu.ft.                                 |
| Net weight of the unit (empty)                        | 320 lbs                                   | 320 lbs                                   |
| Load per rack                                         | 77 lbs                                    | 77 lbs                                    |
| Permitted load                                        | 198 lbs                                   | 198 lbs                                   |
| Wall clearance back                                   | 6,3 in                                    | 6,3 in                                    |
| Wall clearance sidewise                               | 3,94 in                                   | 3,94 in                                   |
| Housing dimensions not incl. fittings and connections |                                           |                                           |
| Width net                                             | 48.62 in                                  | 48.62 in                                  |
| Height net                                            | 40.35 in                                  | 40.35 in                                  |
| Depth net                                             | 30.12 in                                  | 30.12 in                                  |
| Internal Dimensions                                   |                                           |                                           |
| Interior width                                        | 39.37 in                                  | 39.37 in                                  |
| Interior height                                       | 31.5 in                                   | 31.5 in                                   |

|                               |          |          |
|-------------------------------|----------|----------|
| Interior depth                | 19.69 in | 19.69 in |
| Unit doors                    | 2        | 2        |
| Environment-specific data     |          |          |
| Energy consumption at 37°C    | 56 Wh/h  | 56 Wh/h  |
| Fixtures                      |          |          |
| Number of shelves (std./max.) | 2/9      | 2/9      |

All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

DIMENSIONS Incl. fittings and connections [mm]



OPTIONS

| Designation                    | Description | BF 400 | *  | Art.-No.  |
|--------------------------------|-------------|--------|----|-----------|
| Access port with silicone plug | back        |        |    |           |
|                                | 10 mm       | •      | 01 | 8012-1281 |
|                                | 30 mm       | •      | 01 | 8012-1291 |
|                                | 50 mm       | •      | 01 | 8012-1293 |
|                                | left        |        |    |           |
|                                | 10 mm       | •      | 01 | 8012-1274 |
|                                | 30 mm       | •      | 01 | 8012-1156 |
|                                | 50 mm       | •      | 01 | 8012-1164 |
|                                | right       |        |    |           |
|                                | 10 mm       | •      | 01 | 8012-1267 |
|                                | 30 mm       | •      | 01 | 8012-1153 |
|                                | 50 mm       | •      | 01 | 8012-1162 |
|                                | top         |        |    |           |
|                                | 10 mm       | •      | 01 | 8012-1261 |

| Designation                          | Description                                                                                             | BF 400 | *  | Art.-No.  |
|--------------------------------------|---------------------------------------------------------------------------------------------------------|--------|----|-----------|
|                                      | 30 mm                                                                                                   | •      | 01 | 8012-1150 |
|                                      | 50 mm                                                                                                   | •      | 01 | 8012-1159 |
|                                      | 100 mm                                                                                                  | •      | 01 | 8012-1166 |
| Alarm function for overheating       | Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device     |        |    |           |
|                                      | 120 V option model                                                                                      | •      | -  | 8012-1302 |
|                                      | 230 V option model                                                                                      | •      | -  | 8012-1298 |
| Analog output 4-20 mA                | for temperature values (output not adjustable)                                                          | •      | -  | 8012-0482 |
| Calibration certificate, expanded    | for temperature; for extending the measurement in center of chamber to include another test temperature | •      | -  | 8012-1111 |
| Calibration certificate, temperature | for temperature, measurement in center of chamber at specified temperature                              | •      | -  | 8012-1130 |
|                                      | temperature measurement incl. certificate, 9 measuring points at specified temperature                  | •      | -  | 8012-1548 |
|                                      | temperature measurement incl. certificate, 15- 18 measuring points at specified temperature             | •      | -  | 8012-1569 |
|                                      | temperature measurement incl. certificate and 27 measuring points at specified temperature              | •      | -  | 8012-1590 |
| Door lock                            | lockable door handle                                                                                    | •      | -  | 8012-1252 |
| Inner chamber, reinforced            | including 2 reinforced racks                                                                            | •      | -  | 8012-1732 |
| Pt 100 temperature sensor            | additional flexible Pt 100, interior, with external connection incl. LEMO connector (3-pin)             | •      | -  | 8012-1172 |

## ACCESSORIES

| Designation                     | Description                                                                                                                                                                                                   | BF 400 | * | 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 |
| APT-COM™ 4 GLP-Edition          | 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 |
| APT-COM™ 4 PROFESSIONAL-Edition | convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.                                                                                                      |        |   |           |
|                                 | version 4, PROFESSIONAL edition                                                                                                                                                                               | •      | - | 9053-0040 |
| pH-neutral detergent            | concentrated, for gentle remove of residual contaminants; 1 kg                                                                                                                                                | •      | - | 8012-2250 |
| Qualification documents IQ/OQ   | IQ/OQ documents digital in PDF format – supporting documents for validation consisting of: IQ/OQ checklists, comprehensive unit documentation covering: temperature. Excluded: Document execution is separate |        |   |           |

| Designation                      | Description                                                                                                                                                                                                                                                                                                                                          | BF 400 | * | Art.-No.  |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---|-----------|
|                                  | temperature. Excluded: Document execution is separate                                                                                                                                                                                                                                                                                                | •      | - | 7057-0010 |
| Qualification documents IQ/OQ/PQ | IQ/OQ/PQ documents digital in PDF format – supporting documents for validation customized to customer requirements, PQ section added to the qualification folder IQ/OQ; supporting documents for validation consisting of: IQ/OQ checklists, comprehensive unit documentation covering: temperature values. Excluded: Document execution is separate |        |   |           |
|                                  | temperature values. Excluded: Document execution is separate                                                                                                                                                                                                                                                                                         | •      | - | 7057-0016 |
| Rack                             | chrome plated                                                                                                                                                                                                                                                                                                                                        | •      | - | 8012-2036 |
|                                  | stainless steel                                                                                                                                                                                                                                                                                                                                      | •      | - | 8012-2159 |
| Rubber pads                      | set anti-slip feet                                                                                                                                                                                                                                                                                                                                   | •      | - | 8012-2030 |
| Shelf, perforated                | Stainless steel                                                                                                                                                                                                                                                                                                                                      | •      | - | 8012-2162 |
| Table on castors                 | stable cart, casters with locking brakes, dimensions: W 1,300 x D 800 x H 780 mm                                                                                                                                                                                                                                                                     | •      | - | 9051-0019 |

## SERVICES

| Designation                                  | Description                                                                                                                                                                                                                                                       | *  | Art.-No.  |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------|
| <b>Calibration services</b>                  |                                                                                                                                                                                                                                                                   |    |           |
| Temperature calibration                      | Calibration of one (1) test temperature specified by the user in center of chamber, including certificate Travel to be quoted separate.                                                                                                                           | 05 | DL30-0120 |
|                                              | Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate Travel to be quoted separate.                                                                                      | 05 | DL30-0102 |
| Temperature measurement, 9 measuring points  | Temperature measurement with 9 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required.                                                                                   | 05 | DL30-0109 |
| Temperature measurement, 18 measuring points | Temperature measurement with 18 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 2 shelves are required.                                                                                  | 05 | DL30-0118 |
| Temperature measurement, 27 measuring points | Temperature measurement with 27 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required.                                                                                  | 05 | DL30-0127 |
| <b>Installation services</b>                 |                                                                                                                                                                                                                                                                   |    |           |
| Unit installation                            | Connect the unit to the customer-side connections (electricity, water, wastewater, gas), basic functions check, brief operating instructions. (excl.: unpacking, setup, controller instructions, programming, installation work) Travel to be quoted as separate. | 05 | DL10-0160 |
| Unit instructions                            | Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming. Travel to be quoted as separate Limited to 3 hours.                                                                        | 05 | DL10-0540 |
| <b>Maintenance services</b>                  |                                                                                                                                                                                                                                                                   |    |           |
| BRONZE 3-year maintenance contract           | Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate. 10% Discount on Spare Parts and Labor for any additional Services                                                                                                          | 05 | DL20-0720 |

| Designation                        | Description                                                                                                                                                                                                                                                                                                                                                   | *  | Art.-No.  |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------|
|                                    | needed Wear + tear parts to be purchased or billed to customer. Travel to be quoted as separate.                                                                                                                                                                                                                                                              |    |           |
| GOLD 3-year maintenance contract   | Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate of Temperature. 25% Discount on Spare Parts and Labor for any additional Services needed. One additional courtesy visit per year can be used for service visit or operator. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.      | 05 | DL20-0910 |
| Preventive maintenance             | One-off maintenance service in accordance with maintenance schedule. Visual inspection of mechanical and electrical components, testing of all key functions. Checking a test temperature specified by the user in center of usable space without certificate. Wear + tear parts need to be purchased or billed to customer. Travel to be quoted as separate. | 05 | DL20-0602 |
| SILVER 3-year maintenance contract | Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate 15% Discount on Spare Parts and Labor for any additional Services needed One additional courtesy visit per year can be used for service visit or operator training. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.              | 05 | DL20-0810 |
| <b>Validation services</b>         |                                                                                                                                                                                                                                                                                                                                                               |    |           |
| Execution of IQ/OQ                 | Execution of IQ/OQ in accordance with qualification folder. Travel to be quoted separate.                                                                                                                                                                                                                                                                     | 05 | DL40-0100 |
| Execution of IQ/OQ/PQ              | Execution of IQ/OQ/PQ in accordance with qualification folder. Travel to be quoted separate.                                                                                                                                                                                                                                                                  | 05 | DL44-0500 |
| <b>Warranty service</b>            |                                                                                                                                                                                                                                                                                                                                                               |    |           |
| 1-year warranty extension          | The warranty is extended by 1 year from the delivery date, wear parts are excluded                                                                                                                                                                                                                                                                            | 05 | DL50-0010 |

## NOTES

- 01      Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge.
- 05      Quoted prices do not include travel costs. Please refer to the chapter on BINDER Service for travel costs for your region. Quoted prices for services performed in Switzerland do not include a country-specific added fee (available on request).

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