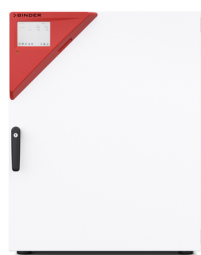


# Model CBF 170 | CO<sub>2</sub> incubators with hot air sterilization and humidity regulation

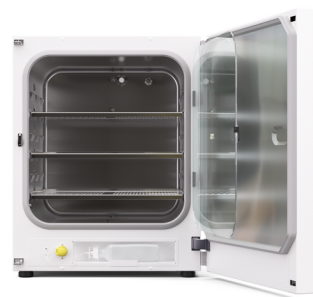
The BINDER CBF is the high-end CO<sub>2</sub> incubator with humidity control that is suitable for all sensitive incubation applications in GMP environments. It ensures consistent results including in cell-based assays with multiwell plates. This BINDER incubator is even suitable for complex cultivation experiments or individual environments with hypoxic conditions thanks to its comprehensive assortment of options and accessories.

## BENEFITS

- Safe – cell cultures receive maximum protection against contamination
- Reliable – constant well-being conditions for the cells
- Smart – simple routine cleaning and convenient operation
- Economical – efficient operation without consumables



Model



Model

## IMPORTANT FEATURES

- Contamination-safe humidification system without water pan
- Tried-and-tested anti-contamination concept with 180 °C hot air sterilization
- Hot-air sterilizable CO<sub>2</sub> sensor with single-beam infrared technology
- Seamless inner chamber made of stainless steel with flanges as shelf support system
- Fanless interior with Venturi CO<sub>2</sub> gas mixing nozzle
- Intuitive touchscreen controller
- Internal data logger, measured values can be read out in open format via USB
- Troubleshooting system with visual and acoustic alarms
- Interfaces: Ethernet, USB, zero-voltage alarm contact
- Fail-safe CO<sub>2</sub> system for protecting the pH of cell cultures

## OPTIONAL EQUIPMENT

- O<sub>2</sub> control with O<sub>2</sub> control ranges: 0.2 to 20 vol.% O<sub>2</sub> or 10 to 90 vol.% O<sub>2</sub>
- Multi-sectional glass doors with special shelves for dividing up the space to accommodate different experiments
- Stacking adapter for secure, space-saving installation
- Gas tank changer for connecting two gas tanks to one or two incubators

## ORDERING INFORMATION

| Interior volume [L] | Power supply - unit fuse        | Plug*     | Version                             | Model version | Art.-No.  |
|---------------------|---------------------------------|-----------|-------------------------------------|---------------|-----------|
| 170                 | 200...230 V 1~ 50/60 Hz -10,0 A | CEE 7/7   | Standard                            | CBF170-230V   | 9040-0211 |
|                     |                                 |           | with O <sub>2</sub> control 0.2–20% | CBF170-230V-O | 9040-0212 |
|                     | 100...120 V 1~ 50/60 Hz -16,0 A | NEMA 5-20 | Standard                            | CBF170UL-120V | 9040-0213 |

| Interior volume<br>[L] | Power supply - unit fuse | Plug* | Version                             | Model version   | Art.-No.  |
|------------------------|--------------------------|-------|-------------------------------------|-----------------|-----------|
|                        |                          |       | with O <sub>2</sub> control 0.2–20% | CBF170UL-120V-O | 9040-0214 |

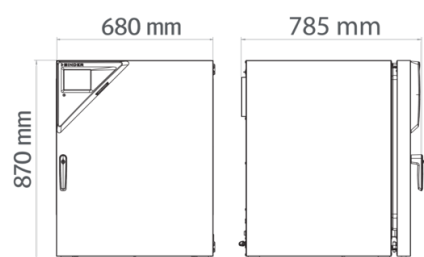
## TECHNICAL DATA

| Data                                                                                     |                                          |                                          |                                          |                                          |
|------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| Article Number                                                                           | 9040-0211                                | 9040-0212                                | 9040-0213                                | 9040-0214                                |
| Designation                                                                              | CBF170-230V                              | CBF170-230V-O                            | CBF170UL-120V                            | CBF170UL-120V-O                          |
| Option model                                                                             | Standard                                 | with O <sub>2</sub> control 0.2–20%      | Standard                                 | with O <sub>2</sub> control 0.2–20%      |
| Performance Data Temperature                                                             |                                          |                                          |                                          |                                          |
| Temperature range                                                                        | +6 °C above ambient temperature to 50 °C | +6 °C above ambient temperature to 50 °C | +6 °C above ambient temperature to 50 °C | +6 °C above ambient temperature to 50 °C |
| Temperature uniformity at 37°C                                                           | 0.4 ± K                                  | 0.4 ± K                                  | 0.4 ± K                                  | 0.4 ± K                                  |
| Temperature fluctuation at 37°C                                                          | 0.1 ± K                                  | 0.1 ± K                                  | 0.1 ± K                                  | 0.1 ± K                                  |
| Recovery time after door was opened for 30 s at 37°C                                     | 6 min                                    | 6 min                                    | 6 min                                    | 6 min                                    |
| Performance Data Climate                                                                 |                                          |                                          |                                          |                                          |
| Humidity range                                                                           | 50 ...95 % RH                            | 50 ...95 % RH                            | 50 ...95 % RH                            | 50 ...95 % RH                            |
| Gas Data                                                                                 |                                          |                                          |                                          |                                          |
| CO <sub>2</sub> range                                                                    | 0...20 Vol.-% CO <sub>2</sub>            | 0...20 Vol.-% CO <sub>2</sub>            | 0...20 Vol.-% CO <sub>2</sub>            | 0...20 Vol.-% CO <sub>2</sub>            |
| CO <sub>2</sub> measuring technology                                                     | IR                                       | IR                                       | IR                                       | IR                                       |
| CO <sub>2</sub> recovery time after door was opened for 30 s at 5 vol. % CO <sub>2</sub> | 5 min                                    | 5 min                                    | 5 min                                    | 5 min                                    |
| Standard O <sub>2</sub> control range                                                    |                                          | 0.2...20 Vol.-% O <sub>2</sub>           |                                          | 0.2...20 Vol.-% O <sub>2</sub>           |
| O <sub>2</sub> control ranges with option: O <sub>2</sub> range                          |                                          | 10...90 Vol.-% O <sub>2</sub>            |                                          | 10...90 Vol.-% O <sub>2</sub>            |
| O <sub>2</sub> recovery time after door was opened for 30 s at 5 vol. % O <sub>2</sub>   |                                          | 12 min                                   |                                          | 12 min                                   |
| Electrical data                                                                          |                                          |                                          |                                          |                                          |
| Rated Voltage                                                                            | 200...230 V                              | 200...230 V                              | 100...120 V                              | 100...120 V                              |
| Power frequency                                                                          | 50/60 Hz                                 | 50/60 Hz                                 | 50/60 Hz                                 | 50/60 Hz                                 |
| Nominal power                                                                            | 1,4 kW                                   | 1,4 kW                                   | 1,4 kW                                   | 1,4 kW                                   |
| Unit fuse                                                                                | 10,0 A                                   | 10,0 A                                   | 16,0 A                                   | 16,0 A                                   |
| Phase (Nominal voltage)                                                                  | 1~                                       | 1~                                       | 1~                                       | 1~                                       |
| Dimensions and weights                                                                   |                                          |                                          |                                          |                                          |
| Interior volume                                                                          | 170 L                                    | 170 L                                    | 170 L                                    | 170 L                                    |
| Net weight of the unit (empty)                                                           | 95 kg                                    | 95 kg                                    | 95 kg                                    | 95 kg                                    |
| Load per rack                                                                            | 10 kg                                    | 10 kg                                    | 10 kg                                    | 10 kg                                    |

|                                                              |          |          |          |          |
|--------------------------------------------------------------|----------|----------|----------|----------|
| Permitted load                                               | 30 kg    | 30 kg    | 30 kg    | 30 kg    |
| Wall clearance back                                          | 100 mm   | 100 mm   | 100 mm   | 100 mm   |
| Wall clearance sidewise                                      | 50 mm    | 50 mm    | 50 mm    | 50 mm    |
| <b>Housing dimensions not incl. fittings and connections</b> |          |          |          |          |
| Width net                                                    | 680 mm   | 680 mm   | 680 mm   | 680 mm   |
| Height net                                                   | 870 mm   | 870 mm   | 870 mm   | 870 mm   |
| Depth net                                                    | 715 mm   | 715 mm   | 715 mm   | 715 mm   |
| <b>Internal Dimensions</b>                                   |          |          |          |          |
| Interior width                                               | 560 mm   | 560 mm   | 560 mm   | 560 mm   |
| Interior height                                              | 600 mm   | 600 mm   | 600 mm   | 600 mm   |
| Interior depth                                               | 500 mm   | 500 mm   | 500 mm   | 500 mm   |
| Inner doors                                                  | 1        | 1        | 1        | 1        |
| Unit doors                                                   | 1        | 1        | 1        | 1        |
| <b>Environment-specific data</b>                             |          |          |          |          |
| Sound-pressure level                                         | 41 dB(A) | 41 dB(A) | 41 dB(A) | 41 dB(A) |
| Energy consumption at 37°C                                   | 55 Wh/h  | 55 Wh/h  | 55 Wh/h  | 55 Wh/h  |
| <b>Fixtures</b>                                              |          |          |          |          |
| Number of shelves (std./max.)                                | 3/6      | 3/6      | 3/6      | 3/6      |

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 to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. 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 | CBF 170 | *  | Art.-No.  |
|--------------------------------|-------------|---------|----|-----------|
|                                | back        |         |    |           |
| Access port with silicone plug | 30 mm       | •       | 01 | 8012-1390 |
|                                | left        |         |    |           |

| Designation                                              | Description                                                                                                                                                               | CBF 170 | *  | Art.-No.  |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----|-----------|
|                                                          | 30 mm                                                                                                                                                                     | •       | 01 | 8012-1391 |
|                                                          | right                                                                                                                                                                     |         |    |           |
|                                                          | 30 mm                                                                                                                                                                     | •       | 01 | 8012-1392 |
| Analog output 4-20 mA                                    | for temperature and CO <sub>2</sub> values (outputs not adjustable)                                                                                                       | •       | 02 | 8012-1840 |
|                                                          | for temperature, measurement in center of chamber at specified temperature                                                                                                | •       | -  | 8012-1132 |
|                                                          | temperature measurement incl. certificate, 9 measuring points at specified temperature                                                                                    | •       | -  | 8012-1550 |
| Calibration certificate, temperature                     | temperature measurement incl. certificate, 15- 18 measuring points at specified temperature                                                                               | •       | -  | 8012-1571 |
|                                                          | temperature measurement incl. certificate and 27 measuring points at specified temperature                                                                                | •       | -  | 8012-1592 |
| Calibration certificate, temperature and CO <sub>2</sub> | for temperature and CO <sub>2</sub> , temperature measurement in center of chamber, CO <sub>2</sub> measurement performed using test gas at 37 °C and 5 % CO <sub>2</sub> | •       | -  | 8012-1235 |
|                                                          | for versions with O <sub>2</sub> control; a measuring point in center of chamber at 80 Vol.-% O <sub>2</sub>                                                              | •       | -  | 8012-2604 |
| Calibration certificate O2                               | for versions with O <sub>2</sub> control; a measuring point in center of chamber at 1 Vol.-% O <sub>2</sub>                                                               | •       | -  | 8012-2603 |
| CELLROLL Set                                             | modular, expandable roller bottle system for cell cultivation, 4 roller bottles                                                                                           | •       | -  | 8012-1885 |
| Electric access port                                     | 8-pin, for low voltage with LEMO socket (coverable) and LEMO plug (max. 24 V – 2 A)                                                                                       | •       | -  | 8012-1848 |
| Inner door, divided                                      | Cell therapy compartmentalization, consisting of 6 inner doors and three shelf levels with one partition wall each                                                        | •       | -  | 8012-2024 |
| Quick sample access                                      | viewing window (13 x 25 cm) in the inner door for quick access                                                                                                            | •       | -  | 8012-2726 |

## ACCESSORIES

| Designation                     | Description                                                                                                                                                 | CBF 170 | * | Art.-No.  |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---|-----------|
|                                 | for simple logging and documentation requirements with up to 5 networked units.                                                                             |         |   |           |
| APT-COM™ 4 BASIC-Edition        | version 4, BASIC edition                                                                                                                                    | •       | - | 9053-0039 |
|                                 | 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. |         |   |           |
| APT-COM™ 4 GLP-Edition          | version 4, GLP edition                                                                                                                                      | •       | - | 9053-0042 |
|                                 | convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.                                                    |         |   |           |
| APT-COM™ 4 PROFESSIONAL-Edition | version 4, PROFESSIONAL edition                                                                                                                             | •       | - | 9053-0040 |

| Designation                 | Description                                                                                                                                                                                                                                                         | CBF 170 | * | Art.-No.  |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---|-----------|
| Base                        | the base equipped with casters is used for the secure positioning and leveling of a BINDER CO <sub>2</sub> incubator                                                                                                                                                | •       | - | 9051-0028 |
| Cleaning kit                | for equipment maintenance and disinfection, consisting of pH-neutral detergent (1000 g, concentrate), spray disinfectant (500 ml, ready-to-use solution), lint-free cleansing tissues, protective gloves, and protective glasses                                    | •       | - | 8012-0503 |
| Convenient water supply     | Set consisting of 10 liter water container with magnetic holder, hose adapter with practical quick coupling and water stop function, flexible positioning, enables water to be supplied to multiple CB units simultaneously via a water container, not pre-filled.  |         |   |           |
|                             | for versions with active humidification                                                                                                                                                                                                                             | •       | - | 8009-1128 |
| Gas cylinder connection set | for CO <sub>2</sub> , consisting of a gas tank pressure regulator with connection parts and 5-meter hose                                                                                                                                                            | •       | - | 8012-0014 |
|                             | for N <sub>2</sub> , consisting of a gas tank pressure regulator with connection parts and 5-meter hose                                                                                                                                                             | •       | - | 8012-0016 |
|                             | for O <sub>2</sub> , consisting of a gas tank pressure regulator with connection parts and 5-meter hose                                                                                                                                                             | •       | - | 8012-0015 |
| Gas tank changer            | external, BINDER Gas Supply Service, for connecting 2 gas tanks (CO <sub>2</sub> , N <sub>2</sub> or O <sub>2</sub> ), with audible and visual alarms, as well as zero-voltage alarm output                                                                         | •       | - | 8012-2344 |
| pH-neutral detergent        | concentrated, for gentle remove of residual contaminants; 1 kg                                                                                                                                                                                                      | •       | - | 8012-2250 |
| Qualification documents     | 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 |
|                             | 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 |
| Rubber pads                 | set anti-slip feet                                                                                                                                                                                                                                                  | •       | - | 8012-0702 |
| Shaker „Universal“          | Shaker and controller connected via ribbon cable, universally applicable, 100 – 240 V, 50/60 Hz                                                                                                                                                                     | •       | - | 8012-1771 |
| Shelf, perforated           | Stainless steel                                                                                                                                                                                                                                                     | •       | - | 8012-2167 |
|                             | for divided inner door                                                                                                                                                                                                                                              |         |   |           |
|                             | Stainless steel, divided                                                                                                                                                                                                                                            | •       | - | 8012-1888 |
| Stacking adapter            | for the thermally isolated stacking of two BINDER CO <sub>2</sub> incubators                                                                                                                                                                                        | •       | - | 9051-0035 |
| Stacking frame              | stable, vibration-free stacking frame on casters with stop brake for safe stacking of two CB series units                                                                                                                                                           | •       | - | 9051-0040 |

| Designation  | Description                                                                                                                                      | CBF 170 | * | Art.-No.  |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------|---|-----------|
| Water supply | Set consisting of 10 bottles, each with 1,000 ml of sterile humidification water, including peristaltic tubing, connectors, and fine gas filters |         |   |           |
|              | for versions with active humidification                                                                                                          | •       | - | 8009-1104 |
|              | Set consisting of 12 empty, refillable tubular bags including peristaltic tubing, connectors, and fine gas filters                               |         |   |           |
|              | for versions with active humidification                                                                                                          | •       | - | 8012-2255 |
|              | Set consisting of 3 empty, refillable tubular bags including peristaltic tubing, connectors, and fine gas filters                                |         |   |           |
|              | for versions with active humidification                                                                                                          | •       | - | 8012-2256 |

## SERVICES

| Designation                                  | Description                                                                                                                                                                                                                                                                                                                                 | *  | Art.-No.  |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------|
| <b>Calibration services</b>                  |                                                                                                                                                                                                                                                                                                                                             |    |           |
| Calibration certificate, temperature         | Calibration of one (1) test temperature specified by the user in center of chamber, including certificate                                                                                                                                                                                                                                   | 05 | DL30-0150 |
|                                              | Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate                                                                                                                                                                                              | 05 | DL30-0102 |
| CO <sub>2</sub> calibration                  | CO <sub>2</sub> calibration at a specified value, measurements are taken with analyzed test gas at 5%, including certificate                                                                                                                                                                                                                | 05 | DL30-0401 |
| O <sub>2</sub> calibration                   | O <sub>2</sub> calibration with 1 measuring point in center of chamber at a specified O <sub>2</sub> percentage value, including certificate                                                                                                                                                                                                | 05 | DL30-0402 |
| Temperature measurement, 9 measuring points  | Temperature measurement with 9 measuring points with a set value specified by the user, including certificate                                                                                                                                                                                                                               | 05 | DL30-0109 |
| Temperature measurement, 18 measuring points | Temperature measurement with 18 measuring points with a set value specified by the user, including certificate                                                                                                                                                                                                                              | 05 | DL30-0118 |
| Temperature measurement, 27 measuring points | Temperature measurement with 27 measuring points with a set value specified by the user, including certificate                                                                                                                                                                                                                              | 05 | DL30-0127 |
| <b>Installation services</b>                 |                                                                                                                                                                                                                                                                                                                                             |    |           |
| Unit commissioning                           | 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)                                                                                                            | 05 | DL10-0180 |
| Unit instructions                            | Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming                                                                                                                                                                                                       | 05 | DL10-0550 |
| <b>Maintenance contracts</b>                 |                                                                                                                                                                                                                                                                                                                                             |    |           |
| BRONZE 3-year maintenance contract           | Maintenance service as contractually agreed, visual inspection of mechanical and electrical components, check of control response, 20% discount on spare parts                                                                                                                                                                              | 05 | DL20-0710 |
| GOLD 3-year maintenance contract             | Maintenance service as contractually agreed, visual inspection of mechanical and electrical components, check of control response, 20% discount on spare parts, testing of all key functions, replacement of wear parts, calibration of one test temperature specified by the user in the center of the usable space, including certificate | 05 | DL20-0965 |

| Designation                        | Description                                                                                                                                                                                                                                                                                                    | *  | Art.-No.  |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------|
| SILVER 3-year maintenance contract | Maintenance service as contractually agreed, visual inspection of mechanical and electrical components, check of control response, 20% discount on spare parts, testing of all key functions, calibration of one test temperature specified by the user in the center of the usable space, without certificate | 05 | DL20-0865 |
| Maintenance services               |                                                                                                                                                                                                                                                                                                                |    |           |
| Maintenance                        | One-off maintenance service in accordance with maintenance schedule. Visual inspection of mechanical and electrical components, testing of all key functions. Calibration of a test temperature specified by the user in center of usable space without certificate                                            | 05 | DL20-0609 |
| Validation services                |                                                                                                                                                                                                                                                                                                                |    |           |
| Execution of IQ/OQ                 | Execution of IQ/OQ in accordance with qualification folder                                                                                                                                                                                                                                                     | 05 | DL41-0210 |
| Execution of IQ/OQ/PQ              | Execution of IQ/OQ/PQ in accordance with qualification folder                                                                                                                                                                                                                                                  | 05 | DL44-0500 |
| Warranty service                   |                                                                                                                                                                                                                                                                                                                |    |           |
| 1-year warranty extension          | The warranty is extended by 1 year from the delivery date, wear parts are excluded                                                                                                                                                                                                                             | 05 | DL50-0020 |

## NOTES

- 01      Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge.
- 02      UL mark is not granted when this option is used.
- 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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