

## Model CB-S 170 | CO<sub>2</sub> incubators with hot air sterilization

The durable and affordable CB-S series incubators are suitable for routine cell cultivation applications in the field of cell production, particularly in academic settings. They are contamination-proof due to 180°C hot air sterilization and reliably pH-stable thanks to the drift-free infrared CO<sub>2</sub> measurements conducted in real time.

### 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 170



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### IMPORTANT FEATURES

- Temperature range: +6°C above ambient temperature to +50°C
- Humidity range: 90 to 95% RH
- CO<sub>2</sub> control range: 0 to 20 vol.% CO<sub>2</sub>
- Tried-and-tested anti-contamination concept with 180°C hot air sterilization
- Humidification system with condensation protection
- CO<sub>2</sub> gas mixing jet with Venturi effect
- CO<sub>2</sub> sensor with infrared technology
- LCD to display temperature and CO<sub>2</sub> along with additional information and alarms
- Internal data logger, measured values can be read out in open format via USB
- Tightly fitted inner door made of safety glass
- Seamless stainless steel inner chamber
- Perforated shelves, stainless steel
- Troubleshooting system with visual and acoustic alarms
- Interfaces: Ethernet, USB, zero-voltage alarm contact
- Units can be stacked with stacking adapters; the CB-S is suitable for stacking with CB and CBF models of the same size

### OPTIONAL EQUIPMENT

- Copper interior fittings consisting of copper shelves and copper-plated water pan
- Stacking adapter for secure, space-saving installation
- CO<sub>2</sub> gas tank changer for connecting two gas tanks to one or two incubators
- CO<sub>2</sub> shaker with corrosion-resistant components in a stainless-steel housing
- APT-COM Multi Management Software – for managing, recording, and documenting unit parameters
- Services – wide range of services to ensure that the unit functions correctly

### ORDERING INFORMATION

| Interior volume [L]   | Power supply - unit fuse        | Plug*     | Version                     | Model version   | Art.-No.  |
|-----------------------|---------------------------------|-----------|-----------------------------|-----------------|-----------|
| <b>Model CB-S 170</b> |                                 |           |                             |                 |           |
| 170                   | 100...120 V 1~ 50/60 Hz -16,0 A | NEMA 5-20 | Standard                    | CBS170UL-120V   | 9640-0002 |
|                       |                                 |           | with Access port 30 mm left | CBS170UL-120V-D | 9640-0030 |

| Interior volume<br>[L] | Power supply - unit fuse        | Plug*   | Version                     | Model version | Art.-No.  |
|------------------------|---------------------------------|---------|-----------------------------|---------------|-----------|
|                        | 200...230 V 1~ 50/60 Hz -10,0 A | CEE 7/7 | Standard                    | CBS170-230V   | 9640-0001 |
|                        |                                 |         | with Access port 30 mm left | CBS170-230V-D | 9640-0029 |

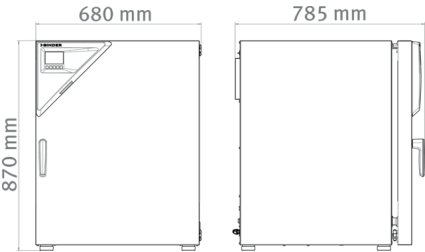
## TECHNICAL DATA

| Data   |  |  |  |  |
|--|--|--|--|--|
| Designation  | CBS170-230V                              | CBS170-230V-D                            | CBS170UL-120V                            | CBS170UL-120V-D                          |
| Article Number   | 9640-0001                                | 9640-0029                                | 9640-0002                                | 9640-0030                                |
| Option model   | Standard                                 | with Access port 30 mm left              | Standard                                 | with Access port 30 mm left              |
| 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   | 0.3 ± K                                  | 0.3 ± K                                  | 0.3 ± K                                  | 0.3 ± 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   | 90 ...95 % RH                            | 90 ...95 % RH                            | 90 ...95 % RH                            | 90 ...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                                    |
| 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  | 1,3 kW                                   | 1,3 kW                                   | 1,3 kW                                   | 1,3 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)   | 96 kg                                    | 96 kg                                    | 96 kg                                    | 96 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                                    |
| Housing dimensions not incl. fittings and connections                                    |  |  |  |  |

|                               |          |          |          |          |
|-------------------------------|----------|----------|----------|----------|
| 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   |
| Internal Dimensions           |          |          |          |          |
| Interior width                | 560 mm   | 560 mm   | 560 mm   | 560 mm   |
| Interior height               | 600 mm   | 600 mm   | 600 mm   | 600 mm   |
| Interior depth                | 505 mm   | 505 mm   | 505 mm   | 505 mm   |
| Inner doors                   | 1        | 1        | 1        | 1        |
| Unit doors                    | 1        | 1        | 1        | 1        |
| Environment-specific data     |          |          |          |          |
| Sound-pressure level          | 41 dB(A) | 41 dB(A) | 41 dB(A) | 41 dB(A) |
| Energy consumption at 37°C    | 45 Wh/h  | 45 Wh/h  | 45 Wh/h  | 45 Wh/h  |
| Fixtures                      |          |          |          |          |
| Number of shelves (std./max.) | 2/6      | 2/6      | 2/6      | 2/6      |

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 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. 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 | CB-S 170 | *  | Art.-No.  |
|--------------------------------|-------------|----------|----|-----------|
| Access port with silicone plug | back        |          |    |           |
|                                | 30 mm       | •        | 01 | 8612-0017 |
|                                | left        |          |    |           |
|                                | 30 mm       | •        | 01 | 8612-0018 |
|                                | right       |          |    |           |
|                                | 30 mm       | •        | 01 | 8612-0019 |

| Designation  | Description   | CB-S 170 | *  | Art.-No.  |
|--|---|----------|----|-----------|
| Analog output 4-20 mA                                    | for temperature and CO <sub>2</sub> values (outputs not adjustable)   | •        | 02 | 8612-0016 |
| Calibration certificate, expanded                        | for temperature; for extending the measurement in center of chamber to include another test temperature   | •        | -  | 8012-1112 |
| Calibration certificate, temperature                     | for temperature, measurement in center of chamber at specified temperature  | •        | -  | 8012-1131 |
|  | temperature measurement incl. certificate, 9 measuring points at specified temperature  | •        | -  | 8012-1549 |
|  | temperature measurement incl. certificate, 15- 18 measuring points at specified temperature   | •        | -  | 8012-1570 |
|  | temperature measurement incl. certificate and 27 measuring points at specified temperature  | •        | -  | 8012-1591 |
| 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> | •        | -  | 8012-0228 |
| Door hinged on the left                                  | Unit door and standard glass inner door with door hinged on the left  | •        | -  | 8612-0020 |
| Door lock  | lockable door handle  | •        | -  | 8612-0021 |

## ACCESSORIES

| Designation                     | Description  | CB-S 170 | * | 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 |
| 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 |
| Copper interior fittings        | Set consisting of 2 shelves (all-copper) and a water pan (copper-plated)   | •        | - | 8012-1997 |
| 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 |
| 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 |

| Designation             | Description   | CB-S 170 | * | Art.-No.  |
|-------------------------|---|----------|---|-----------|
| 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 |
| 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 |
| Water supply            | Set consisting of 6 bottles, each with 1,000 ml of sterile humidification water   |          |   |           |
|                         | for versions with active humidification   | •        | - | 8009-1192 |

## 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 | DL30-0140 |
|  | 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 |
| 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>                 |  |    |           |

| Designation                        | Description   | *  | Art.-No.  |
|------------------------------------|---|----|-----------|
| 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 | DL10-0110 |
| Unit instructions                  | Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming   | 05 | DL10-0510 |
| <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 | DL20-0975 |
| 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 | DL20-0875 |
| <b>Maintenance services</b>        |   |    |           |
| 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 | DL20-0608 |
| <b>Validation services</b>         |   |    |           |
| Execution of IQ/OQ                 | Execution of IQ/OQ in accordance with qualification folder  | 05 | DL41-0200 |
| Execution of IQ/OQ/PQ              | Execution of IQ/OQ/PQ in accordance with qualification folder   | 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 | DL50-0020 |

## 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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