

Model CB 60 | CO₂ incubators with hot air sterilization and heat sterilizable CO₂ sensor

The BINDER CB series CO₂ incubator is the premium class among the CO₂ incubators. It is suitable for all sensitive incubation applications and ensures optimal cell growth. A BINDER CB series CO₂ incubator can perform complex cultivation experiments as well as specific environmental conditions.

BENEFITS

- Hot air sterilization at 180 °C, with sterilizable built-in CO₂ sensor minimizes the risk of contamination
- Homogeneous temperature distribution thanks to VENTAIR™ air jacket system
- Stable pH-values thanks to drift-free CO₂ IR sensor technology
- Saturated relative humidity up to 95 % RH
- Easy cleaning thanks to seamless, deep-drawn inner chamber



Model 60

MAIN FEATURES

- Temperature range: room temperature plus 7 °C to 60 °C
- Humidity range: up to 95% RH
- Alternative O₂ control ranges: 0.2-20 vol. % O₂ or 10-95 vol. % O₂ (O₂ GO versions)
- Auto-sterilization with hot air at 180 °C
- Double-pan humidification system with condensation protection
- CO₂ gas-mixing jet with Venturi effect
- Hot-air sterilizable CO₂ sensor with infrared technology
- Display via color LCD monitor
- Lockable door handle
- Tightly-sealed inner door made of tempered safety glass
- Seamless, deep-drawn inner stainless steel chamber
- 2 perforated stainless steel shelves
- Units are stackable with stacking adapter
- Troubleshooting system with visual and audible alarms
- Computer interface: Ethernet
- Internal data recording and USB interface
- Zero-voltage alarm contact

ORDERING INFORMATION

| Interior volume [cu.ft.] | Voltage | Option model | Version | Art.-No. |
|--------------------------|---------------------------|--|-----------------|-----------|
| Model CB 60 | | | | |
| 1.9 | 200...240 V 1 ph 50/60 Hz | Standard | CB060-230V | 9040-0088 |
| | | with 4x divided inner door | CB060-230V-G | 9040-0104 |
| | | with O ₂ control | CB060-230V-O | 9040-0090 |
| | | with O ₂ control and with 4x divided inner door | CB060-230V-GO | 9040-0106 |
| | 100...120 V 1 ph 50/60 Hz | Standard | CB060UL-120V | 9040-0089 |
| | | with 4x divided inner door | CB060UL-120V-G | 9040-0105 |
| | | with O ₂ control | CB060UL-120V-O | 9040-0091 |
| | | with O ₂ control and with 4x divided inner door | CB060UL-120V-GO | 9040-0107 |

TECHNICAL DATA (Version 1-4 from 8)

| Description | CB060-230V ¹ | CB060-230V-G ¹ | CB060-230V-O ¹ | CB060-230V-GO ¹ |
|--|-------------------------|---------------------------|---------------------------|----------------------------|
| Article Number | 9040-0088 | 9040-0104 | 9040-0090 | 9040-0106 |
| Performance Data Temperature | | | | |
| Temperature range 7 °C above ambient temperature to [°C] | 60 | 60 | 60 | 60 |
| Temperature variation at 37 °C [± K] | 0.3 | 0.3 | 0.3 | 0.3 |
| Temperature fluctuation at 37 °C | 0,1 ± K | 0,1 ± K | 0,1 ± K | 0,1 ± K |
| Recovery time after 30 seconds door open at 37 °C [min] | 4 | 4 | 4 | 4 |
| Performance Data Climate | | | | |
| Humidity range [% RH] | 90...95 | 90...95 | 90...95 | 90...95 |
| CO₂-Data | | | | |
| CO ₂ range [Vol.-% CO ₂] | 0...20 | 0...20 | 0...20 | 0...20 |
| CO ₂ measurement | IR | IR | IR | IR |
| CO ₂ Recovery time after 30 seconds door open at 5 Vol.-% CO ₂ [min] | 5 | 5 | 5 | 5 |
| O₂-Data | | | | |
| Standard O ₂ control ranges: O ₂ range [Vol.-% O ₂] | | | 0.2...20 | 0.2...20 |
| O ₂ control ranges with option: O ₂ range [Vol.-% O ₂] | | | 10...95 | 10...95 |
| O ₂ Recovery time after 30 seconds door open at 5 Vol.-% O ₂ [min] | | | 8 | 8 |
| Electrical data | | | | |
| Rated Voltage [V] | 200...240 | 200...240 | 200...240 | 200...240 |
| Power frequency [Hz] | 50/60 | 50/60 | 50/60 | 50/60 |
| Nominal power [kW] | 1 | 0 | 1 | 0 |
| Unit fuse [A] | 10 | 10 | 10 | 10 |
| Phase (Nominal voltage) [ph] | 1 | 1 | 1 | 1 |
| Outer dimensions | | | | |
| Width net [mm] | 580 | 580 | 580 | 580 |
| Height net [mm] | 720 | 720 | 720 | 720 |
| Depth net [mm] | 545 | 545 | 545 | 545 |
| Wall clearance back [mm] | 100 | 100 | 100 | 100 |
| Wall clearance sidewise [mm] | 50 | 50 | 50 | 50 |
| Doors | | | | |
| Inner doors | 1 | 4 | 1 | 4 |
| Unit doors | 1 | 1 | 1 | 1 |
| Internal Dimensions | | | | |
| Width [mm] | 400 | 400 | 400 | 400 |
| Height [mm] | 400 | 400 | 400 | 400 |
| Depth [mm] | 330 | 330 | 330 | 330 |
| Measures | | | | |
| Interior volume [L] | 53 | 53 | 53 | 53 |
| Net weight of the unit (empty) [kg] | 60 | 65 | 63 | 68 |
| permitted load [kg] | 30 | 30 | 30 | 30 |
| Load per rack [kg] | 10 | 10 | 10 | 10 |
| Environment-specific data | | | | |
| Energy consumption at 37 °C [Wh/h] | 80 | 80 | 80 | 80 |

1 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.

| Description | CB060-230V ¹ | CB060-230V-G ¹ | CB060-230V-O ¹ | CB060-230V-GO ¹ |
|-------------------------------|-------------------------|---------------------------|---------------------------|----------------------------|
| Article Number | 9040-0088 | 9040-0104 | 9040-0090 | 9040-0106 |
| Fixtures | | | | |
| Number of shelves (std./max.) | 2/3 | 2/2 | 2/3 | 2/2 |

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TECHNICAL DATA (Version 5-8 from 8)

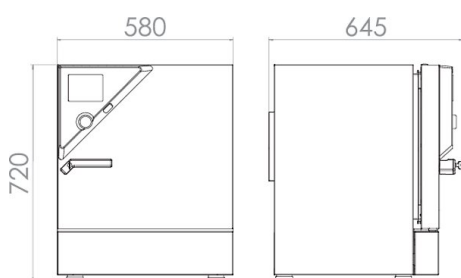
| Description | CB060UL-120V ¹ | CB060UL-120V-G ¹ | CB060UL-120V-O ¹ | CB060UL-120V-GO ¹ |
|--|---------------------------|-----------------------------|-----------------------------|------------------------------|
| Article Number | 9040-0089 | 9040-0105 | 9040-0091 | 9040-0107 |
| Performance Data Temperature | | | | |
| Temperature range 7 °C above ambient temperature to [°C] | 60 | 60 | 60 | 60 |
| Temperature variation at 37 °C [± K] | 0.3 | 0.3 | 0.3 | 0.3 |
| Temperature fluctuation at 37 °C | 0,1 ± K | 0,1 ± K | 0,1 ± K | 0,1 ± K |
| Recovery time after 30 seconds door open at 37 °C [min] | 4 | 4 | 4 | 4 |
| Performance Data Climate | | | | |
| Humidity range [% RH] | 90...95 | 90...95 | 90...95 | 90...95 |
| CO₂-Data | | | | |
| CO ₂ range [Vol.-% CO ₂] | 0...20 | 0...20 | 0...20 | 0...20 |
| CO ₂ measurement | IR | IR | IR | IR |
| CO ₂ Recovery time after 30 seconds door open at 5 Vol.-% CO ₂ [min] | 5 | 5 | 5 | 5 |
| O₂-Data | | | | |
| Standard O ₂ control ranges: O ₂ range [Vol.-% O ₂] | | | 0.2...20 | 0.2...20 |
| O ₂ control ranges with option: O ₂ range [Vol.-% O ₂] | | | 10...95 | 10...95 |
| O ₂ Recovery time after 30 seconds door open at 5 Vol.-% O ₂ [min] | | | 8 | 8 |
| Electrical data | | | | |
| Rated Voltage [V] | 100...120 | 100...120 | 100...120 | 100...120 |
| Power frequency [Hz] | 50/60 | 50/60 | 50/60 | 50/60 |
| Nominal power [kW] | 1 | 0 | 1 | 1 |
| Unit fuse [A] | 16 | 16 | 16 | 16 |
| Phase (Nominal voltage) [ph] | 1 | 1 | 1 | 1 |
| Outer dimensions | | | | |
| Width net [mm] | 580 | 580 | 580 | 580 |
| Height net [mm] | 720 | 720 | 720 | 720 |
| Depth net [mm] | 545 | 545 | 545 | 545 |
| Wall clearance back [mm] | 100 | 100 | 100 | 100 |
| Wall clearance sidewise [mm] | 50 | 50 | 50 | 50 |
| Doors | | | | |
| Inner doors | 1 | 4 | 1 | 4 |
| Unit doors | 1 | 1 | 1 | 1 |
| Internal Dimensions | | | | |
| Width [mm] | 400 | 400 | 400 | 400 |
| Height [mm] | 400 | 400 | 400 | 400 |
| Depth [mm] | 330 | 330 | 330 | 330 |

1 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.

| Description | CB060UL-120V ¹ | CB060UL-120V-G ¹ | CB060UL-120V-O ¹ | CB060UL-120V-GO ¹ |
|-------------------------------------|---------------------------|-----------------------------|-----------------------------|------------------------------|
| Article Number | 9040-0089 | 9040-0105 | 9040-0091 | 9040-0107 |
| Measures | | | | |
| Interior volume [L] | 53 | 53 | 53 | 53 |
| Net weight of the unit (empty) [kg] | 60 | 65 | 63 | 68 |
| permitted load [kg] | 30 | 30 | 30 | 30 |
| Load per rack [kg] | 10 | 10 | 10 | 10 |
| Environment-specific data | | | | |
| Energy consumption at 37 °C [Wh/h] | 80 | 80 | 80 | 80 |
| Fixtures | | | | |
| Number of shelves (std./max.) | 2/3 | 2/2 | 2/3 | 2/2 |

¹ 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 AND ACCESSORIES

| Designation | Description | * | Art.-No. |
|--|---|----|-----------|
| Access port with silicone plug | back 30 mm | 01 | 8012-1390 |
| | left 30 mm | 01 | 8012-1391 |
| | right 30 mm | 01 | 8012-1392 |
| Analog output 4-20 mA | for temperature and CO ₂ values (outputs not adjustable) | 02 | 8012-0822 |
| Base | with casters | - | 9051-0031 |
| Calibration certificate O ₂ | for the O ₂ control option; a measuring point in center of chamber at a specified O ₂ percentage value | - | 8012-0229 |
| Calibration certificate, expanded | for temperature; for extending the measurement in center of chamber to include another test temperature | - | 8012-1113 |
| | for temperature, measurement in center of chamber at specified temperature | - | 8012-1132 |
| Calibration certificate, temperature | temperature measurement incl. certificate and 27 measuring points at specified temperature | - | 8012-1592 |
| | temperature measurement incl. certificate, 15- 18 measuring points at specified temperature | - | 8012-1571 |
| | temperature measurement incl. certificate, 9 measuring points at specified temperature | - | 8012-1550 |
| Calibration certificate, temperature and CO ₂ | for temperature and CO ₂ , temperature measurement in center of chamber, CO ₂ measurement performed using test gas at 37 °C and 5 % CO ₂ | - | 8012-1235 |
| Electric access port | 8-pin, for low voltage with LEMO socket (coverable) and LEMO plug (max. 24 V – 2 A) | - | 8012-0826 |
| | for CO ₂ , consisting of a gas tank pressure regulator with connection parts and 5-meter hose | - | 8012-0014 |
| Gas cylinder connection set | for N ₂ , consisting of a gas tank pressure regulator with connection parts and 5-meter hose | - | 8012-0016 |
| | for O ₂ , 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 ₂ , N ₂ or O ₂), with audible and visual alarms, as well as zero-voltage alarm output | - | 8012-0408 |

* Notes › See last page

| Designation | Description | * | Art.-No. |
|----------------------------------|---|----|-----------|
| Interface converter | RS 422 cable set and RS 232 / RS 422 interface converter for connection to 10-way plug distributor or for connection to a unit | | |
| | 120 V, 60 Hz option model | - | 8012-0557 |
| | 230 V, 50/60 Hz option model | - | 8012-0556 |
| | RS 422 cable set and RS 422 / Ethernet interface converter for connection to 10-way plug distributor or for connection to a unit | | |
| Interface converter, USB / RS422 | 120 V, 60 Hz option model | - | 8012-0405 |
| | 230 V, 50/60 Hz option model | - | 8012-0380 |
| Interface converter, USB / RS422 | RS 422 cable set and RS 422 / USB interface converter for connection to 10-way plug distributor or for connection to a unit (USB-powered converter) | - | 8012-0665 |
| Interior socket | waterproof, switched flush-mounting box (LEMO) for nominal voltage in unit interior, coverable, with corresponding plug (nominal voltage; max. 3 A; protection class IP65) | 07 | 8012-0823 |
| O ₂ control range | alternative to the standard range, for controlling O ₂ concentrations between 10 and 95 vol. %, only in conjunction with option models with O ₂ control | - | 8012-1106 |
| pH-neutral detergent | concentrated, for gentle remove of residual contaminants; 1 kg | - | 1002-0016 |
| RS 422 interface | in place of Ethernet, for communication software | - | 8012-0824 |
| | modular plug distributor for 10 RS 422 interfaces | - | 8012-0295 |
| RS 422 interface, cable (15 m) | RS 422 connection cable (15 m) between plug distributor and RS 422 interface | - | 5023-0036 |
| RS 422 interface, cable (50 m) | RS 422 extension cable (50 m) between interface converter and unit or RS 232 / RS 422 plug distributor | - | 5023-0117 |
| Shelf, perforated | Stainless steel | - | 6004-0136 |
| | stainless steel, for divided inner door | | |
| Software | stainless steel | - | 6004-0140 |
| | APT-COM™ communications software | | |
| | version 2 to 3, GLP edition | 19 | 9053-0016 |
| | version 3, BASIC edition | 19 | 9053-0014 |
| | version 3, GLP edition | 19 | 9053-0015 |
| Stacking adapter, flat | version 3, STANDARD edition | 19 | 9053-0013 |
| | APT-COM™ communications software, price: for free | | |
| Stacking adapter, flat | version 3, GLP DEMO Edition | 19 | 9053-0008 |
| | for thermally decoupled stacking of two identical units | - | 9051-0037 |

* Notes › See last page

SERVICES

| Designation | Description | * | Art.-No. |
|---|---|-------------------|------------------------|
| Installation services | | | |
| Installation | and set up of unit at operating location, connect to existing connections | 13, 18 | DL10-0100 DL10-0200 |
| Instruction | unit function instructions for operation and programming of the controller | 18 | DL10-0500 |
| Preventive maintenance | | | |
| Preventive maintenance | Executive of equipment inspection according to maintenance plan | 14, 18 | DL20-0400 |
| Calibration services | | | |
| Calibration CO ₂ | including certificate, CO ₂ measurement with analyzed test gas at 5 % or at specified value | 14, 16, 17, 18 | DL30-0401 |
| Calibration O ₂ | calibration of O ₂ , including certificate (one measuring point in center of chamber at specified O ₂ percentage) | 14, 16, 17, 18 | DL30-0402 |
| Calibration temperature incl. certificate | including certificate, one measuring point in center of chamber at specified temperature | 14, 16, 17, 18 | DL30-0101 |
| Temperature measurement 18 measuring points | including certificate, 18 measuring points at specified temperature | 14, 16, 17, 18 | DL30-0118 |
| Temperature measurement 27 measuring points | including certificate, 27 measuring points at specified temperature | 14, 16, 17, 18 | DL30-0127 |

* Notes › See last page

| Designation | Description | * | Art.-No. |
|---|---|----------------|-----------|
| Temperature measurement 9 measuring points | including certificate, 9 measuring points at specified temperature | 14, 16, 17, 18 | DL30-0109 |
| Validation services | | | |
| Execution of IQ/OQ | in accordance with qualification folder | 15, 18, 20 | DL41-0200 |
| Execution of IQ/OQ/PQ | in accordance with customer's requirement, price: on request | 15, 18 | DL44-0500 |
| Qualification folder IQ/OQ | supporting documents for validation performed by customer, consisting of: IQ/OQ checklists, unit schematics, QM certificate in accordance with ISO 9001 | 15, 18, 20 | 8012-0876 |
| Qualification folder IQ/OQ/PQ | supporting documents for validation performed by customer, in accordance with customer's requirement, extension of Qualification folder IQ/OQ by chapter PQ | 15, 18 | 8012-0963 |
| Warranty service | | | |
| Extension of the warranty from 2 to 3 years | beginning with the date of delivery, wearing parts are not included | - | DL02-1041 |
| Extension of the warranty from 2 to 5 years | beginning with the date of delivery, wearing parts are not included | - | DL02-1042 |

* Notes › See last page

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.
- 03 Heat resistant only to max. 200 °C.
- 04 Only available on units rated for 230 V.
- 06 Heating-up time may increase as a result of the lower heat conductivity.
- 07 The additional heat input may affect the temperature behavior.
- 09 Not in conjunction with the optional access port, door with window and interior lighting.
- 10 Not available on 23-liter units.
- 11 Not available on 23- or 53-liter units.
- 12 Only available on units rated for 230 V or 400 V.
- 13 Installation and connections take place at unit location; transport within the company only upon consultation.
- 14 We recommend a BINDER service contract to cover unit inspections, calibrations and validations.
- 15 OQ according to Yellow Paper = completed factory validation documentation of all OQ checklists.
- 16 Sensor calibration is performed in an accredited calibration laboratory.
- 17 Calibration is performed according to the BINDER factory standard.
- 18 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).
- 19 For additional accessories, refer to the Process documentation chapter.
- 20 When ordering IQ/OQ qualification folders and associated IQ/OQ execution on one order, we offer a 15 % discount for the item of the IQ/OQ folder.
When ordering IQ/OQ/PQ qualification folders and associated IQ/OQ/PQ execution on one order, we offer a 15 % discount for the item of the IQ/OQ/PQ folder.