

# Model CB 170 | CO<sub>2</sub> incubators with hot air sterilization and heat sterilizable CO<sub>2</sub> sensor

The BINDER CB series CO<sub>2</sub> incubator is the premium class among the CO<sub>2</sub> incubators. It is suitable for all sensitive incubation applications and ensures optimal cell growth. A BINDER CO<sub>2</sub> incubator of the CB series is up to even complex cultivation experiments or individual environments.

## 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



Model 170

## IMPORTANT FEATURES

- Optimized double-pan humidification system with condensation protection
- 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 recording, can be read out in open format via USB interface
- Fault diagnosis system with visual and acoustic alarm
- Interfaces: Ethernet, USB, zero-voltage alarm contact
- Fail-safe CO<sub>2</sub> system for protecting the pH of cell cultures

## ORDERING INFORMATION

Interior volume [L]	Power supply - unit fuse	Plug*	Version	Model version	Art.-No.	
Model CB 170	200...230 V 1~ 50/60 Hz -10,0 A	CEE 7/7	Standard	CB170-230V	9640-0009	
			with Access port 30 mm left	CB170-230V-D	9640-0027	
			with O <sub>2</sub> control 0.2–20%	CB170-230V-O	9640-0010	
	170	100...120 V 1~ 50/60 Hz -16,0 A	NEMA 5-20	Standard	CB170UL-120V	9640-0011
				with Access port 30 mm left	CB170UL-120V-D	9640-0028
				with O <sub>2</sub> control 0.2–20%	CB170UL-120V-O	9640-0012

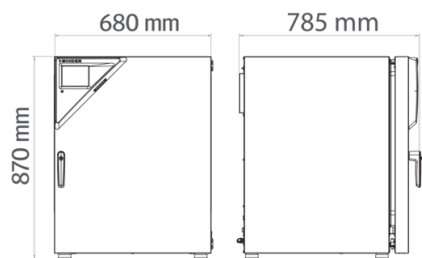
## TECHNICAL DATA

Data						
Designation	CB170-230V	CB170-230V-D	CB170-230V-O	CB170UL-120V	CB170UL-120V-D	CB170UL-120V-O
Article Number	9640-0009	9640-0027	9640-0010	9640-0011	9640-0028	9640-0012
Option model	Standard	with Access port 30 mm left	with O <sub>2</sub> control 0.2–20%	Standard	with Access port 30 mm left	with O <sub>2</sub> control 0.2–20%
Performance Data Temperature						
Temperature range	+4 °C above ambient temperature to 60 °C	+4 °C above ambient temperature to 60 °C	+6 °C above ambient temperature to 60 °C	+4 °C above ambient temperature to 60 °C	+4 °C above ambient temperature to 60 °C	+6 °C above ambient temperature to 60 °C
Temperature uniformity at 37°C	0.3 ± K	0.3 ± K	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	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	6 min	6 min
Performance Data Climate						
Humidity range	90 ...95 % RH	90 ...95 % RH	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>	0 ...20 Vol.-% CO <sub>2</sub>	0 ...20 Vol.-% CO <sub>2</sub>
CO <sub>2</sub> measuring technology	IR	IR	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	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 ...95 Vol.-% O <sub>2</sub>			10 ...95 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>			10 min			10 min
Electrical data						
Rated Voltage	200...230 V	200...230 V	200...230 V	100...120 V	100...120 V	100...120 V
Power frequency	50/60 Hz	50/60 Hz	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	1,4 kW	1,4 kW
Unit fuse	10,0 A	10,0 A	10,0 A	16,0 A	16,0 A	16,0 A
Phase (Nominal voltage)	1~	1~	1~	1~	1~	1~
Measures						
Interior volume	170 L	170 L	170 L	170 L	170 L	170 L
Net weight of the unit (empty)	95 kg	95 kg	95 kg	95 kg	95 kg	95 kg
Load per rack	10 kg	10 kg	10 kg	10 kg	10 kg	10 kg
Permitted load	30 kg	30 kg	30 kg	30 kg	30 kg	30 kg
Wall clearance back	100 mm	100 mm	100 mm	100 mm	100 mm	100 mm
Wall clearance sidewise	50 mm	50 mm	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	680 mm	680 mm
Height net	870 mm	870 mm	870 mm	870 mm	870 mm	870 mm
Depth net	715 mm	715 mm	715 mm	715 mm	715 mm	715 mm
Internal Dimensions						
Interior width	560 mm	560 mm	560 mm	560 mm	560 mm	560 mm

Interior height	600 mm	600 mm	600 mm	600 mm	600 mm	600 mm
Interior depth	500 mm	500 mm	500 mm	500 mm	500 mm	500 mm
Inner doors	1	1	1	1	1	1
Unit doors	1	1	1	1	1	1
<b>Environment-specific data</b>						
Sound-pressure level	41 dB(A)	41 dB(A)	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	55 Wh/h	55 Wh/h
<b>Fixtures</b>						
Number of shelves (std./max.)	3/6	3/6	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	CB 170	*	Art.-No.
	back			
	30 mm	•	01	8612-0025
	left			
Access port with silicone plug	30 mm	•	01	8612-0026
	right			
	30 mm	•	01	8612-0027
Analog output 4-20 mA	for temperature and CO <sub>2</sub> values (outputs not adjustable)	•	02	8612-0022
CELLROLL Set	modular, expandable roller bottle system for cell cultivation, 4 roller bottles	•	-	8612-0023
	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

Designation	Description	CB 170	*	Art.-No.
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
Calibration certificate O <sub>2</sub>	for versions with O <sub>2</sub> control; a measuring point in center of chamber at a specified O <sub>2</sub> percentage value	•	-	8012-0229
Door hinged on the left	Unit door and standard glass inner door with door hinged on the left	•	-	8612-0034
Electric access port	8-pin, for low voltage with LEMO socket (coverable) and LEMO plug (max. 24 V – 2 A)	•	-	8612-0033
Inner door, divided	Cell therapy compartmentalization, consisting of 6 inner doors and three shelf levels with one partition wall each	•	-	8612-0030
O <sub>2</sub> control range	alternative to the standard range, for controlling O <sub>2</sub> concentrations between 10 and 95 vol. %, only in conjunction with option models with O <sub>2</sub> control	•	-	8612-0028
Quick sample access	viewing window (13 x 25 cm) in the inner door for quick access	•	-	8612-0032

## ACCESSORIES

Designation	Description	CB 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
Copper interior fittings	Set consisting of 3 shelves (all-copper) and a water pan (copper-plated)	•	-	8012-1918
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

Designation	Description	CB 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	•	-	8012-2030
Shaker „Professional“	Shaker and controller equipped with LEMO connectors, exclusively for CB with electric access port, 100 – 240 V, 50/60 Hz	•	-	8012-1772
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
WLAN kit	The kit contains a client bridge that establishes a wireless connection between BINDER units and APT-COM4, LIMS, or customer-specific software via an Ethernet interface. It provides an alternative solution in situations where units need to be positioned in locations without an on-site Ethernet connection. In secured networks, installation and configuration must be performed by the customer's IT service.	•	-	8012-2262
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250

## SERVICES

Designation	Description	*	Art.-No.
Calibration services			
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	-	DL30-0401
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate	-	DL30-0101
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate	-	DL30-0102

Designation	Description	*	Art.-No.
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	-	DL30-0402
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	-	DL30-0109
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	-	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	-	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)	-	DL10-0100
		-	DL10-0110
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0500
		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	-	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 temperature and CO <sub>2</sub> value, including certificate	-	DL20-0940
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	-	DL20-0820
<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	-	DL20-0400
		-	DL20-0440
<b>Validation services</b>			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	-	DL41-0200
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	-	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	-	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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