

# Model CB 56 | CO<sub>2</sub> incubators with hot air sterilization and heat sterilizable CO<sub>2</sub> sensor

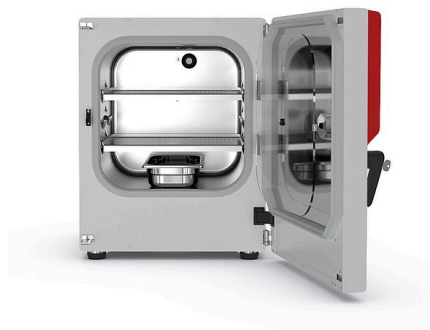
The BINDER CB series CO<sub>2</sub> incubator is the premium class among the CO<sub>2</sub> incubators. It is suitable for all sensitive incubation applications and ensures optimal cell growth. A BINDER CB series CO<sub>2</sub> incubator can perform complex cultivation experiments as well as specific environmental conditions.

## BENEFITS

- Maximum usable space with minimal footprint and excellent ease of use
- Minimum risk of contamination thanks to uncompromising hot-air sterilization
- Fanless, easy-to-clean hygienic interior without fixtures
- Stable pH values thanks to drift-free CO<sub>2</sub> IR sensor technology
- Low evaporation of the medium due to high levels of humidity and quick recovery time



Model 56



Model 56

## MAIN FEATURES

- Temperature range: +4 °C above ambient temperature to +60 °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
- Optimized humidification system with condensation protection
- CO<sub>2</sub> gas-mixing jet with Venturi effect
- Hot-air sterilizable CO<sub>2</sub> sensor with single-beam infrared technology
- Intuitive touchscreen controller
- Internal data recording, can be read out in open format via USB interface
- Fail-safe CO<sub>2</sub> system for protecting the pH of cell cultures
- DuoDoor™ system: Unit door and glass door can be opened with one handle
- Tightly fitted inner door made of safety glass
- Lockable door handle
- Seamless inner chamber made of stainless steel with flanges as shelf support system
- Perforated shelves, stainless steel
- Troubleshooting system with visual and acoustic alarms
- Interfaces: Ethernet, USB, zero-voltage alarm contact
- Units are stackable with stacking adapter

## OPTIONAL EQUIPMENT

- Versions with O<sub>2</sub> control range: 0.2 to 20 vol.% O<sub>2</sub> or 10 to 95 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
- CO<sub>2</sub> gas tank changer for connecting two gas tanks to one or two incubators
- 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]	Voltage	Option model	Version	Art.-No.
53	200...230 V 1~ ph 50/60 Hz	Standard	CB056-230V	9040-0167
		with O <sub>2</sub> control	CB056-230V-O	9040-0168
	100...120 V 1~ ph 50/60 Hz	Standard	CB056UL-120V	9040-0169
		with O <sub>2</sub> control	CB056UL-120V-O	9040-0170

## TECHNICAL DATA

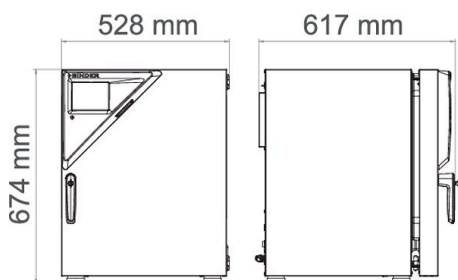
Description	CB056-230V <sup>1</sup>	CB056-230V-O <sup>1</sup>	CB056UL-120V <sup>1</sup>	CB056UL-120V-O <sup>1</sup>
Article Number	9040-0167	9040-0168	9040-0169	9040-0170
Performance Data Temperature				
Temperature range +4 °C above ambient temperature to	60 °C		60 °C	
Temperature range +6 °C above ambient temperature to		60 °C		60 °C
Temperature variation at 37 °C [± K]	0.3	0.3	0.3	0.3
Temperature fluctuation at 37 °C [± K]	0.1	0.1	0.1	0.1
Recovery time after 30 seconds door open at 37 °C [min]	5	5	5	5
Performance Data Climate				
Humidity range [% RH]	90...95	90...95	90...95	90...95
CO <sub>2</sub> -Data				
CO <sub>2</sub> range [Vol.-% CO <sub>2</sub> ]	0...20	0...20	0...20	0...20
CO <sub>2</sub> measurement	IR	IR	IR	IR
CO <sub>2</sub> Recovery time after 30 seconds door open at 5 Vol.-% CO <sub>2</sub> [min]	5	5	5	5
O <sub>2</sub> -Data				
Standard O <sub>2</sub> control ranges: O <sub>2</sub> range [Vol.-% O <sub>2</sub> ]		0.2...20		0.2...20
O <sub>2</sub> control ranges with option: O <sub>2</sub> range [Vol.-% O <sub>2</sub> ]		10...95		10...95
O <sub>2</sub> Recovery time after 30 seconds door open at 5 Vol.-% O <sub>2</sub> [min]		5		5
O <sub>2</sub> Recovery time after 30 seconds door open at 10 Vol.-% O <sub>2</sub> [min]		5		5
Electrical data				
Rated Voltage [V]	200...230	200...230	100...120	100...120
Power frequency [Hz]	50/60	50/60	50/60	50/60
Nominal power [kW]	0.8	0.8	0.8	0.8
Unit fuse [A]	10	10	16	16
Phase (Nominal voltage)	1~	1~	1~	1~
Measures				
Interior volume [L]	53	53	53	53
Net weight of the unit (empty) [kg]	53	53	53	53
Permitted load [kg]	30	30	30	30
Load per rack [kg]	10	10	10	10
Wall clearance back [mm]	100	100	100	100
Wall clearance sidewise [mm]	50	50	50	50

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	CB056-230V <sup>1</sup>	CB056-230V-0 <sup>1</sup>	CB056UL-120V <sup>1</sup>	CB056UL-120V-0 <sup>1</sup>
Article Number	9040-0167	9040-0168	9040-0169	9040-0170
Internal Dimensions				
Width [mm]	400	400	400	400
Height [mm]	400	400	400	400
Depth [mm]	330	330	330	330
Doors				
Inner doors	1	1	1	1
Unit doors	1	1	1	1
Housing dimensions not incl. fittings and connections				
Width net [mm]	528	528	528	528
Height net [mm]	674	674	674	674
Depth net [mm]	545	545	545	545
Environment-specific data				
Energy consumption at 37 °C [Wh/h]	45	45	45	45
Sound-pressure level [dB(A)]	41	41	41	41
Fixtures				
Number of shelves (std./max.)	2/3	2/3	2/3	2/3

- 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

Designation	Description	*	Art.-No.
Access port with silicone plug	back		
	30 mm	01	8012-1390
	left		
	30 mm	01	8012-1391
Analog output 4-20 mA	right		
	30 mm	01	8012-1392
	for temperature and CO <sub>2</sub> values (outputs not adjustable)	02	8012-1839
Calibration certificate O <sub>2</sub>	for temperature and CO <sub>2</sub> values (outputs not adjustable), for versions with O <sub>2</sub> control	02	8012-1840
	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
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	–	8012-1113
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	–	8012-1132
	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

\* Notes › See last page

Designation	Description	*	Art.-No.
<b>Calibration certificate, temperature and CO<sub>2</sub></b>	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
<b>Door hinged on the left</b>	Unit door and standard glass inner door with door hinged on the left	–	8012-1913
<b>Electric access port</b>	8-pin, for low voltage with LEMO socket (coverable) and LEMO plug (max. 24 V – 2 A)	–	8012-1848
<b>Inner door, divided</b>	Internal door divided into 4 parts		
	door hinged on the left (incl. option door hinged on the left)	–	8012-1927
	door hinged on the right	–	8012-1843
<b>O<sub>2</sub> control range</b>	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	–	9419-0135

\* Notes › See last page

## ACCESSORIES

Designation	Description	*	Art.-No.
<b>APT-COM™ 4 BASIC-Edition</b>	for simple logging and documentation requirements with up to 5 networked units. version 4, BASIC edition	–	9053-0039
<b>APT-COM™ 4 GLP-Edition</b>	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
<b>APT-COM™ 4 PROFESSIONAL-Edition</b>	convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units. version 4, PROFESSIONAL edition	–	9053-0040
<b>Base</b>	the base equipped with casters is used for the secure positioning and leveling of a BINDER CO <sub>2</sub> incubator	–	9051-0043
<b>Gas cylinder connection set</b>	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
<b>Gas tank changer</b>	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	–	8012-0408
<b>pH-neutral detergent</b>	concentrated, for gentle remove of residual contaminants; 1 kg	–	1002-0016
<b>Qualification documents</b>	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
	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
<b>Rubber pads</b>	set anti-slip feet	–	8012-0702
	Stainless steel	–	6004-0136
<b>Shelf, perforated</b>	for divided inner door		
	stainless steel	–	6004-0140
<b>Stacking adapter</b>	for the thermally isolated stacking of two BINDER CO <sub>2</sub> incubators	–	9051-0038

\* Notes › See last page

## SERVICES

Designation	Description	*	Art.-No.
Installation services			
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	DL10-0100
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0500
Maintenance services			
Maintenance	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 chamber without certificate	05	DL20-0400
Calibration services			
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber including certificate	03, 04, 05	DL30-0101
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate	03, 04, 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	03, 04, 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	03, 04, 05	DL30-0402
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0127
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0109
Validation services			
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
Warranty service			
Warranty extension from 2 to 3 years	The warranty is extended from 2 to 3 years from the delivery date, wear parts are excluded	–	DL02-1041
Warranty extension from 2 to 5 years	The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded	–	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 Sensor calibration is performed in an accredited calibration laboratory.  
04 Calibration is performed according to the BINDER factory standard.  
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).

**BINDER GmbH**

Tuttlingen, Germany  
TEL +49 7462 2005 0  
FAX +49 7462 2005 100  
info@binder-world.com  
www.binder-world.com

**BINDER Asia Pacific (Hong Kong) Ltd.**

Kowloon, Hong Kong, P.R. China  
TEL +852 39070500  
FAX +852 39070507  
asia@binder-world.com  
www.binder-world.com

**Representative Office for CIS**

Moscow, Russia  
TEL +7 495 988 15 16  
FAX +7 495 988 15 17  
russia@binder-world.com  
www.binder-world.com

**BINDER Environmental Testing  
Equipment (Shanghai) Co., Ltd.**

Shanghai, P.R. China  
TEL +86 21 685 808 25  
FAX +86 21 685 808 29  
china@binder-world.com  
www.binder-world.com

**BINDER Inc.**

Bohemia, NY, USA  
TEL +1 631 224 4340  
FAX +1 631 224 4354  
usa@binder-world.com  
www.binder-world.us