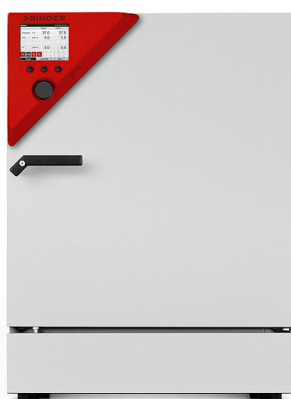


Model CB 160 | CO₂ incubators with hot air sterilization and heat sterilizable CO₂ sensor

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 160



Model 160

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
- 3 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 160				
5.3	200...240 V 1 ph 50/60 Hz	Standard	CB160-230V	9040-0092
		with 4x divided inner door	CB160-230V-G	9040-0100
		with O ₂ control	CB160-230V-O	9040-0094
		with O ₂ control and with 4x divided inner door	CB160-230V-GO	9040-0102
	100...120 V 1 ph 50/60 Hz	Standard	CB160UL-120V	9040-0093
with 4x divided inner door		CB160UL-120V-G	9040-0101	
with O ₂ control		CB160UL-120V-O	9040-0095	
		with O ₂ control and with 4x divided inner door	CB160UL-120V-GO	9040-0103

TECHNICAL DATA (Version 1-4 from 8)

Description	CB160-230V ¹	CB160-230V-G ¹	CB160-230V-O ¹	CB160-230V-GO ¹
Article Number	9040-0092	9040-0100	9040-0094	9040-0102
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]	5	5	5	5
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...10
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]			12	12
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]	1.3	0	1.3	0
Unit fuse [A]	10	10	10	10
Phase (Nominal voltage) [ph]	1	1	1	1
Outer dimensions				
Width net [mm]	680	680	680	680
Height net [mm]	920	920	920	920
Depth net [mm]	715	715	715	715
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]	500	500	500	500
Height [mm]	600	600	600	600
Depth [mm]	500	500	500	500
Measures				
Interior volume [L]	150	150	150	150
Net weight of the unit (empty) [kg]	107	108	106	110
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]	100	100	100	100

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	CB160-230V ¹	CB160-230V-G ¹	CB160-230V-O ¹	CB160-230V-GO ¹
Article Number	9040-0092	9040-0100	9040-0094	9040-0102
Fixtures				
Number of shelves (std./max.)	3/6	2/2	3/6	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.

TECHNICAL DATA (Version 5-8 from 8)

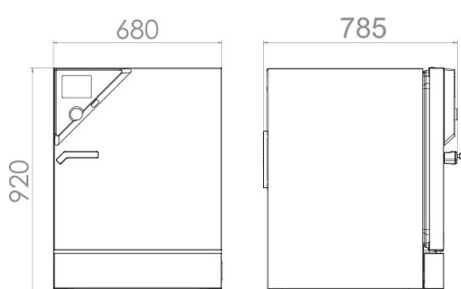
Description	CB160UL-120V ¹	CB160UL-120V-G ¹	CB160UL-120V-O ¹	CB160UL-120V-GO ¹
Article Number	9040-0093	9040-0101	9040-0095	9040-0103
Performance Data Temperature				
Temperature range 7 °C above ambient temperature to [°C]	60	60	60	60
Temperature variation at 37 °C [± K]	0.3	0.3	0.3	0.3
Temperature 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]	5	5	5	5
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]			12	12
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]	1.3	0	1.3	0
Unit fuse [A]	16	16	16	16
Phase (Nominal voltage) [ph]	1	1	1	1
Outer dimensions				
Width net [mm]	680	680	680	680
Height net [mm]	920	920	920	920
Depth net [mm]	715	715	715	715
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]	500	500	500	500
Height [mm]	600	600	600	600
Depth [mm]	500	500	500	500

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	CB160UL-120V ¹	CB160UL-120V-G ¹	CB160UL-120V-O ¹	CB160UL-120V-GO ¹
Article Number	9040-0093	9040-0101	9040-0095	9040-0103
Measures				
Interior volume [L]	150	150	150	150
Net weight of the unit (empty) [kg]	107	108	106	110
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]	100	100	100	100
Fixtures				
Number of shelves (std./max.)	3/6	2/2	3/6	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
Base	with casters	-	9051-0028
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
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
Calibration certificate, temperature and CO ₂	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-1550
	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
CELLROLL set	modular, expandable roller bottle system for cell cultivation, 4 roller bottles	-	8012-0571
Electric access port	8-pin, for low voltage with LEMO socket (coverable) and LEMO plug (max. 24 V – 2 A)	-	8012-0826
Gas cylinder connection set	for CO ₂ , consisting of a gas tank pressure regulator with connection parts and 5-meter hose	-	8012-0014
	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
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	-	6004-0139
	for divided inner door		
Software	Stainless steel, divided	-	8012-0578
	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 frame	version 3, GLP DEMO Edition	19	9053-0008
	for thermally decoupled stacking of two identical units	-	9051-0035
Stacking frame	stable, vibration-free stacking frame on casters with stop brake for safe stacking of two CB series units	-	9051-0020

* 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

* Notes › See last page

Designation	Description	*	Art.-No.
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
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.