

NEW: CO2 incubator with sterilizable sensor

The new CB series offers optimal growth conditions for cell cultures. The ANTI.PLENUM concept, the 180 °C sterilization routine with the world's first sterilizable CO2 sensor and other unique BINDER technologies meet the highest requirements for best possible cell growth and maximum sample safety in the premium class of BINDER CO2 incubators.



Advantages:

- ANTI.PLENUM DESIGN inner chamber concept "Less is More"
- Hot air sterilization at 180 °C
- Sterilizable CO2 sensor
- Unique BINDER technologies (patented air jacket system, controlled condensation, etc.)

Areas of application:



Bio Tissue Engineering



In vitro Fertilization (IVF) Clinics / University Hospitals



Features	Customer benefits	Characteristics
Inner chamber concept	<ul style="list-style-type: none"> • Low risk of contamination • Low running expenses • Inner chamber quick and easy to clean • Fully usable nominal volume 	ANTI.PLENUM™ DESIGN "Less is More" with <ul style="list-style-type: none"> • Minimized surface area • Integrated shelf support system • Eliminates all fixtures
Autosterilization	<ul style="list-style-type: none"> • Low risk of contamination • Low costs for complete sterilization of the entire inner chamber 	Fixed program controls 180°C hot air sterilization: <ul style="list-style-type: none"> • Effective • Standards-compliant • CO2 sensor is also sterilized
Heating	<ul style="list-style-type: none"> • Optimal cell growth throughout the inner chamber • Low thermal degradation of the cell growth due to occasional door openings 	Ventair Jacket System™ air jacket for: <ul style="list-style-type: none"> • Accurate temperature control • Homogeneous temperature distribution • Fast recovery times
Humidification	<ul style="list-style-type: none"> • Constant osmotic pressure of the medium • No risk of contamination due to damp areas 	Permady™ double pan for: <ul style="list-style-type: none"> • High humidity • Defined recondensation • Dry interior walls
CO2 measurement	<ul style="list-style-type: none"> • Optimal cell growth due to stable pH value • Sensor does not have to be removed for sterilization 	Sterilizable CO2 humidity sensor in NIR technology for: <ul style="list-style-type: none"> • Long-term stability • Drift-free measurement • Quick response

- VENTAIR™ air jacket system
- Temperature range: 7 °C above room temperature up to 60 °C
- BINDER controller with LCD color display for simultaneous display of all important parameters (temperature, % CO₂, % O₂ concentration, humidity) and user-friendly push button/rotary knob
 - Intuitive menu guidance
 - Electronic chart recorder
 - Variety of options for graphic display of process parameters
 - Real-time clock
- Hot air sterilization at 180 °C
- with sterilizable built-in CO₂ sensor
- Drift-free infrared CO₂ measurement system
- CO₂ introduction through patented gas mixing nozzle
- ANTI.PLENUM Design to avoid contamination of critical fixtures Permadry™ System
- Permadry™ system, double pan humidification system with defined condensation site for condensate-free interior walls
- Seamless deep-drawn inner chamber made of stainless steel with round corners and integrated shelf support system
- Electronic error self-diagnostic system with visual and audible alarms, as well as potential-free contact for central monitoring
- Independent temperature safety device class 3.1 (DIN 12880) with visual and audible temperature alarm
- Tightly-fitted inner glass door made of safety glass
- Ethernet interface for communication software
- APT-COM™ DataControlSystem
- Three perforated shelves made of stainless steel
- Stackable units with new stacking adapter
- 2-point door lock
- BINDER test certificate

CB 220

▶ Exterior dimensions	
Width (mm)	740
Height (incl. feet) (mm)	1070
Depth (plus 54 mm for door handle and connection) (mm)	715
Wall clearance side / rear (mm)	50 / 100
Number of doors (ea.)	1
Inner glass door(s)	1
▶ Interior dimensions	
Width (mm)	560
Height (mm)	750
Depth (mm)	500
Interior volume (l)	210
Stainless steel shelf (number standard/max.)	3 / 8
Dimensions of shelf, width x depth (mm)	555,5 x 444
Load per shelf (kg)	10
Permitted total load (kg)	30
Weight (empty) (kg)	121
▶ Temperature data	
Temperature range approx. 7 °C above ambient temperature to (°C)	60
Temperature variation at 37 °C (± K)	0,4
Temperature fluctuation (± K)	0,1
Recovery time after door was opened for 30 sec. at 37 °C (min) 1)	5
▶ Humidity data	
Humidity (% r.h.)	90 - 95
▶ CO2 data	
CO2 range (% CO2)	0-20
Setting accuracy (Vol.-% CO2)	0,1
Recovery time after door was opened for 30 sec. at 5 vol. % (min.) 1)	5
CO2 measurement	IR
Connection hose nozzle for CO2 DN 6 for hose with internal diameter (mm)	6
▶ O2 data	
O2 range (Vol.-% O2)	0,2 - 95
Setting accuracy (Vol.-% O2)	0,1

Recovery time after door was opened for 30 sec. (min.) 1)	
at 1.0 vol. % O ₂ (min.)	18
at 5.0 vol. % O ₂ (min.)	18
O ₂ measurement	ZrO ₂
Gas connection hose nozzle for O ₂ / N ₂ DN 6 for hose with internal diameter (mm)	6

▶ Electrical data	
Voltage (± 10%) 50 / 60 Hz (V)	230
Nominal power (kW)	1,5
Energy consumption at 37 °C (W) 2)	120

1) up to 98 % of the set value

2) These values can be used for dimensioning air condition systems.

*All technical data is specified for unloaded units with standard equipment at an ambient temperature of 22 ± 3 °C / 71.6 ± 5.4 °F and a power supply voltage fluctuation of ± 10 . The temperature data is determined in accordance to BINDER factory standard and 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.***



Gas-tight, divided inner glass door

For stable climate conditions in the broad chamber. Minimal loss of humidity, heat, and CO₂ when loading. Ensures short recovery times.



O₂ control

For hyper- or hypoxic culture conditions. The O₂ or N₂ gas supply can be controlled using an additional control loop as needed. A zirconium oxide sensor (ZrO₂) is used for the measurement.



BINDER Gas Supply Service

The external tank changer makes automatic changeover to a second tank possible when the first tank is empty. It has audible and visual alarms and is equipped with a zero-voltage alarm output for external notification systems. It can be used with a maximum of two CO₂ incubators and is suitable for CO₂, O₂ and N₂ tanks.



Stacking adapter

Used for stacking of two CB incubators which are thermally isolated from each other. The incubators can thus be sterilized with hot air independent of each other. Available as stacking adapters, stacking frames or base frames.

CB 220

Silicone access port on both sides closable with two silicone lids 30 mm (1.18 inch), left side	<input type="radio"/>
Silicone access port on both sides closable with two silicone lids 30 mm (1.18 inch), right side	<input type="radio"/>
Silicone access port on both sides closable with two silicone lids 30 mm (1.18 inch), back	<input type="radio"/>
Gastank connection kit for CO ₂ , consisting of a gastank pressure regulator, max. pressure 10 bar, with connection parts, and a (5 m / 16.4 ft.) hose	<input type="radio"/>
Gastank connection kit for O ₂ , consisting of a gastank pressure regulator, max. pressure 10 bar, with connection parts, and a (5 m / 16.4 ft.) hose	<input type="radio"/>
Gastank connection kit for N ₂ , consisting of a gastank pressure regulator, max. pressure 10 bar, with connection parts, and a (5 m / 16.4 ft.) hose	<input type="radio"/>
BINDER Gas Supply Service, external gas tank changer for connection of 2 gastanks, either CO ₂ or N ₂ , with audible and visible alarm and zero-voltage alarm output	<input type="radio"/>
Additional RS 422 to USB and Ethernet	<input type="radio"/>
4-20 mA analog output for temperature and CO ₂ measurements (e.g. chart recorder connection), with 6-pin DIN socket (output not adjustable)	<input type="radio"/>
Interior power socket with ON/OFF switch and LEMO connector (maximum power rating 230 V, 1N, 50 / 60 Hz)	<input type="radio"/>
Factory calibration certificate for temperature and CO ₂ . Temperature measurement in center / CO ₂ measurement performed using analyzed test gas at (37 °C / 98.6 °F) and 5 % CO ₂	<input type="radio"/>
Factory calibration certificate for the O ₂ control option. O ₂ measurement performed using analyzed test gas at 1 % O ₂	<input type="radio"/>
Temperature measurement acc. to DIN 12880 (27 measuring points) at 37 °C (98.6 °F) or at specified temperature with measuring protocol and certificate	<input type="radio"/>
Manual for cell culture technology Primary Human Cell Culture	<input type="radio"/>
Current feedthrough (8-pin) for low voltage with	<input type="radio"/>
Shelf, perforated, stainless steel	<input type="radio"/>
Divided shelf, stainless steel for divided gas-tight inner glass door	<input type="radio"/>
Base on castors	<input type="radio"/>
Stacking frame vibration-free, on castors with stop brake, for direct and safe stacking of two CB 220 with wedge equipment	<input type="radio"/>
Stacking adapter for thermal decoupled stacking of two CB 220 CO ₂ incubators	<input type="radio"/>
CELLROLL Set. Modular and expandable roller bottle system for cell cultivation for 6 roller bottles	<input type="radio"/>