BINDER
Best conditions for your success

# 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


Biotechnology


Basic Research / Research Institutes

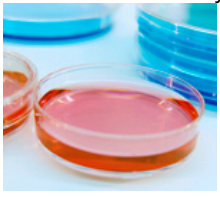

Human / Veterinary Medicine


In vitro Fertilization (IVF)


Clinics / University Hospitals


Cosmetics Industry


Food / Beverage


Microbiology


Plant / Insect Growth

Pharmaceuticals Industry

| Features | Customer benefits | Characteristics |
|---|---|---|
| Inner chamber concept | • Low risk of contamination<br>• Low running expenses<br>• Inner chamber quick and easy to clean<br>• Fully usable nominal volume | **ANTI.PLENUM™ DESIGN "Less is More" with**<br>• Minimized surface area<br>• Integrated shelf support system<br>• Eliminates all fixtures |
| Autosterilization | • Low risk of contamination<br>• Low costs for complete sterilization of the entire inner chamber | Fixed program controls<br>180°C hot air sterilization:<br>• Effective<br>• Standards-compliant<br>• CO2 sensor is also sterilized |
| Heating | • Optimal cell growth throughout the inner chamber<br>• Low thermal degradation of the cell growth due to occasional door openings | Ventair Jacket System™ air jacket for:<br>• Accurate temperature control<br>• Homogeneous temperature distribution<br>• Fast recovery times |
| Humidification | • Constant osmotic pressure of the medium<br>• No risk of contamination due to damp areas | Permadry™ double pan for:<br>• High humidity<br>• Defined recondensation<br>• Dry interior walls |
| CO2 measurement | • Optimal cell growth due to stable pH value<br>• Sensor does not have to be removed for sterilization | Sterilizable CO2 humidity sensor in NIR technology for:<br>• Long-term stability<br>• Drift-free measurement<br>• Quick response |



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- 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 °
- 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 fixturesPermadry™ 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



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## CB 160

| Exterior dimensions | |
|---|---|
| Housing | |
| Width (mm) | 680 |
| Height (incl. feet/castors) (mm) | 920 |
| Depth (plus connections and fittings) (mm) | 715 |
| Depth (incl. connections and fittings) (mm) | 810 |
| Wall clearance side / rear (mm) | 50 / 100 |
| Number of doors (ea.) | 1 |
| Inner glass door(s) | 1 |

| Interior dimensions | |
|---|---|
| Width (mm) | 500 |
| Height (mm) | 600 |
| Depth (mm) | 500 |
| Interior volume (l) | 150 |
| Stainless steel shelf (number standard/max.) | 3 / 6 |
| Dimensions of shelf, width x depth (mm) | 495 x 444 |
| Load per shelf (kg) | 10 |
| Permitted total load (kg) | 30 |
| Weight (empty) (kg) | 107 |

| Temperature data | |
|---|---|
| Temperature range from 7 °C above ambient temperature to (°C) | 60 |
| Temperature variation at 37 °C (± K) | 0,3 |
| Temperature fluctuation (± K) | 0,1 |
| Recovery time after door was opened for 30 sec. at 37 °C (min) 1) | 4 |

| Humidity data | |
|---|---|
| Humidity (% r.h.) | 90 - 95 |

| CO2 data | |
|---|---|
| CO2 range (Vol.-% CO2) | 0-20 |
| Setting accuracy (Vol.-% CO2) | 0,1 |
| Recovery time after doors 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 | |
|---|---|



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| | |
|---|---|
| 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. % O2 (min.) | 12 |
| at 5.0 vol. % O2 (min.) | 12 |
| O2 measurement | ZrO2 |
| Gas connection hose nozzle for O2 / N2 DN 6 for hose with internal diameter (mm) | 6 |

| | |
|---|---|
| Electrical data | |
| Voltage (± 10%) 50/60 Hz (V) | 200-230 |
| Nominal power (kW) | 1,3 |
| Energy consumption at 37 °C (W) 2) | 100 |

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.***



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### 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.



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## CB 160

| | |
|---|---|
| Silicone access port on both sides closable with two silicone lids 30 mm (1.18 inch), left side | O |
| Silicone access port on both sidSilicone access port on both sides closable with two silicone lids 30 mm (1.18 inch), right sidees closable with two | O |
| Silicone access port on both sides closable with two silicone lids 30 mm (1.18 inch), back | O |
| Gastank connection kit for CO2, consisting of a gastank pressure regulator, max. pressure 10 bar, with connection parts, and a (5 m / 16.4 ft.) hose | O |
| Gastank connection kit for O2, consisting of a gastank pressure regulator, max. pressure 10 bar, with connection parts, and a (5 m / 16.4 ft.) hose | O |
| Gastank connection kit for N2, consisting of a gastank pressure regulator, max. pressure 10 bar, with connection parts, and a (5 m / 16.4 ft.) hose | O |
| BINDER Gas Supply Service, external gas tank changer for connection of 2 gastanks, either CO2 or N2, with audible and visible alarm and zero-voltage alarm output | O |
| Additional RS 422 to USB and Ethernet | O |
| 4-20 mA analog output for temperature and CO2 measurements (e.g. chart recorder connection), with 6-pin DIN socket (output not adjustable) | O |
| Interior power socket with ON/OFF switch and LEMO connector (maximum power rating 230 V, 1N, 50 / 60 Hz) | O |
| Factory calibration certificate for temperature and CO2. Temperature measurement in center / CO2 measurement performed using analyzed test gas at (37 °C / 98.6 °F) and 5 % CO2 | O |
| Factory calibration certificate for the O2 control option. O2 measurement performed using analyzed test gas at 1 % O2 | O |
| Temperature measurement acc. to DIN 12880 (27 measuring points) at 37 °C (98.6 °F) or at specified temperature with measuring protocol and certificate | O |
| Manual for cell culture technology Primary Human Cell Culture | O |
| Current feedthrough (8-pin) for low voltage with | O |
| Shelf, perforated, stainless steel | O |
| Divided shelf, stainless steel for divided gas-tight inner glass door | O |
| Base on castors | |
| Stacking frame vibration-free, on castors with stop brake, for direct and safe stacking of two CB 160 with wedge equipment | O |
| Stacking adapter for thermal decoupled stacking of two CB 160 CO2 incubators | O |
| Stacking adapter C / CB for direct thermal decoupled stacking of a CB 160 / C 150 combination | O |
| CELLROLL Set. Modular and expandable roller bottle system for cell cultivation, for 4 roller bottles | O |



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