CB 53 - CO2 incubator with hot air sterilization

Precision equipment for cell cultivation of the future. It has a drift-free infrared CO2 measuring system to ensure stable pH values, condensation-free Permadry™ interior chamber with integrated shelf supports, easy to clean, where the surface area is kept to a minimum in order to reduce potential sites for germs to establish; an effective sterilization program that operates at 180 °C in compliance with standards, for cultivation without any contamination. All of these features along with the absolutely precise temperature accuracy, which you have come to expect from us.

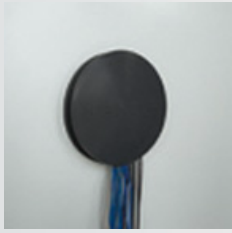

▶ Performance features and equipment:

- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range 5 °C (9 °F) above ambient temperature up to 60 °C (140 °F)
- MCS controller for temperature and CO2 concentration
- Features:
  - User friendly LCD screen
  - Easy-to-read menu guide
  - Integrated electronic chart recorder
  - Variety of options for the graphic display of process parameters
  - Real time clock
- Standard compliant 180 °C (356 °F) hot air sterilization using an overnight cycletime (acc to. DIN 58947, Pharmacopoeias, ANSI)
- VENTAIR™ Jacket System
- Drift free infrared CO2 measurement system
- Gas mixing head
- Permadry™ system - condensation-free double-pan humidification system, maintains dry interior walls
- Weldless deep-drawn inner chamber made of stainless steel with integrated shelf support system
- Electronic self-diagnostic system for errors with optical and audible alarm, as well as relay contact for central monitoring
- Independent adjustable temperature safety device class 3.1, providing full protection against chamber over-temperature, with visual and audible temperature alarm
- Tightly-fitting inner glass door
- RS 422 interface for use with optional GMP/GLP and FDA guideline 21 CFR Part 11 compliant APT-COM™ DataControlSystem software
- 3 perforated shelves made of stainless steel for CB 150, CB 210 with Standard equipment and O2-Control 2 perforated shelves made of stainless steel for CB 53 with Standard equipment and O2-Control
- Units are stackable with stacking adapter
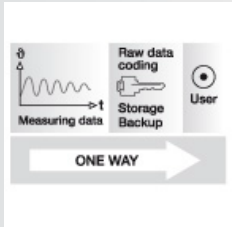- Door Lock
- BINDER test certificate

CB 53

Exterior dimensions	
Width (mm/inch)	580 / 22.8
Height (inclusive feet) (mm/inch)	720 / 28.3
Depth (mm/inch)	545 / 21.5
plus door handle and I-Triangle (mm/inch)	54 / 2.13
plus connections (mm/inch)	60 / 2.36
Wall clearance rear (mm/inch)	100 / 3.94
Wall clearance side (mm/inch)	50 / 1.97
Number of doors	1
Number of inner glass doors	1

Interior dimensions	
Width (mm/inch)	400 / 15.7
Height (mm/inch)	400 / 15.7
Depth (mm/inch)	332 / 13.1
Interior volume (l/cu.ft.)	53 / 1.9
Perforated shelves, stainless steel (number standard/max.)	2 / 3
Dimensions of perforated shelves, Width (mm/inch)	396 / 15.59
Dimensions of perforated shelves, Depth (mm/inch)	289 / 11.38
Weight of the unit (empty) (kg/lbs.)	60 / 133

Temperature data	
Temperature range 5 °C (9 °F) above ambient up to (°C/°F)	60 / 140
Temperature variation at 37 °C (98.6 °F) (± K)	0.3
Temperature fluctuation at 37 °C (98.6 °F) (± K)	0.1
Recovery time after door was opened for 30 sec. at 37 °C (98.6 °F) (Min.)	3

Humidity data	
Humidity average value (% RH)	≥ 95

CO_2 data	
CO_2 range (Vol.-% CO_2)	0 - 20
Setting accuracy (Vol.-% CO_2)	0.1
Recovery time after door was opened for 30 sec.	
at 5.0 Vol.-% (Min)	6
CO_2-measurement	IR
Connection hose nozzle for CO_2 for hose with internal diameter (mm/inch)	6 / 0.24

O_2 data	
O_2-range (Vol.-% O_2)	0.2 - 95
Setting accuracy (Vol.-% O_2)	0.1
Recovery time after door was opened for 30 sec.	
at 2.0 vol % O_2 (Min.)	30
at 5.0 vol % O_2 (Min.)	13
O_2-measurement	ZrO_2
Connection hose nozzle for O_2 / N_2 for hose with internal diameter (mm/inch)	6 / 0.24

Electrical data	
Nominal voltage (±10 %) 50 / 60 Hz (V)	230
Nominal power (kW)	1.0
Energy consumption at 37 °C (98.6 °F) (W)	70

All technical data are specified for units with standard equipment at an ambient temperature of 25 °C and a voltage fluctuation of ±10 %. The temperature data are determinated in accordance to factory standard following DIN 12880 respecting 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 alter technical specifications at all times.

25.03.2010

▶ Silicon access port

Silicon access port are provided for inserting external measuring devices. They have a diameter of 30 mm and can be sealed with a silicone plug, for positioning on the back side.
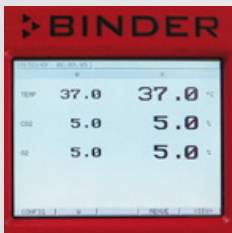
▶ APT-COM™ DataControlSystem GLP Edition

Software for GLP compliant control, programming, and documentation. Permits networks of up to 30 units and/or controllers. Meets the requirements of FDA 21 CFR Part 11.

▶ Calibration certificates

Measurement in the center at specified values. Additional measuring points or test values according to your specification.

▶ Control for variable O2 values

This adjustment is performed with an additional control circuit by controlled feeding of oxygen or nitrogen for hyperoxic or hypoxic culture conditions. Measurement is performed with a zirconium oxide sensor (ZrO_2).

▶ 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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BINDER GmbH   PO Box 102   D-78502 Tuttlingen   Address: Im Mittleren Ösch 5 D-78532 Tuttlingen, Germany
Contact: Phone: +49 (0) 7462/2005-0 | Fax: +49 (0) 7462/2005-100 | info@binder-world.com | www.binder-world.com

BINDER
Best conditions for your success

	CB 53
Silicone access port on both sides closable with two silicone lids 30 mm (1.18 inch), back	O
Keyboard lock	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 gastank changer for connection of 2 gastanks, either CO2 or N2, with audible and visual alarm and zero-voltage alarm output	O
Ethernet interface instead of the RS 422 interface	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
Independent electronic safety system Intelligent Fail Safe. Unique safety plus for continous monitoring of the CO2 control, preventing any unnoticed deviations of the CO2 concentration from the set point. Note: Not possible with options access port or divided glass door	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 Primary Human Cell Culture	O
Shelf, perforated, stainless steel	O
Base on castors	O
Stacking adapter for direct thermal decoupled stacking of two CB 53 CO2 incubators	O

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