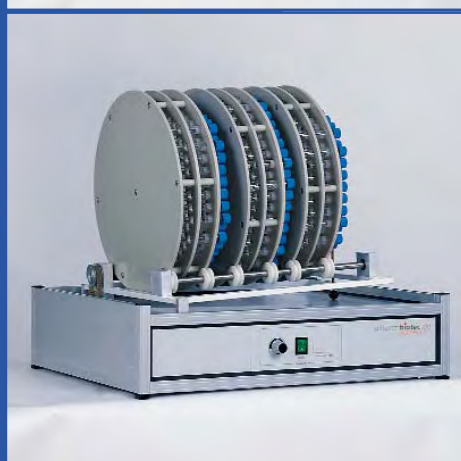
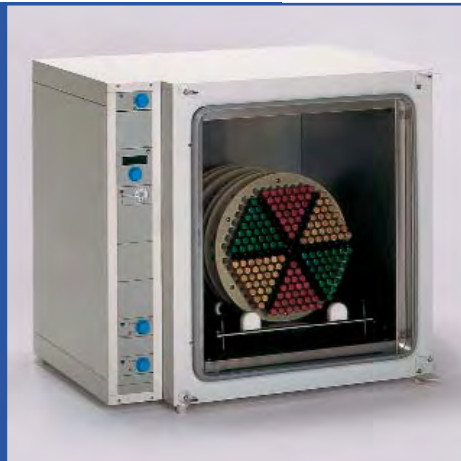


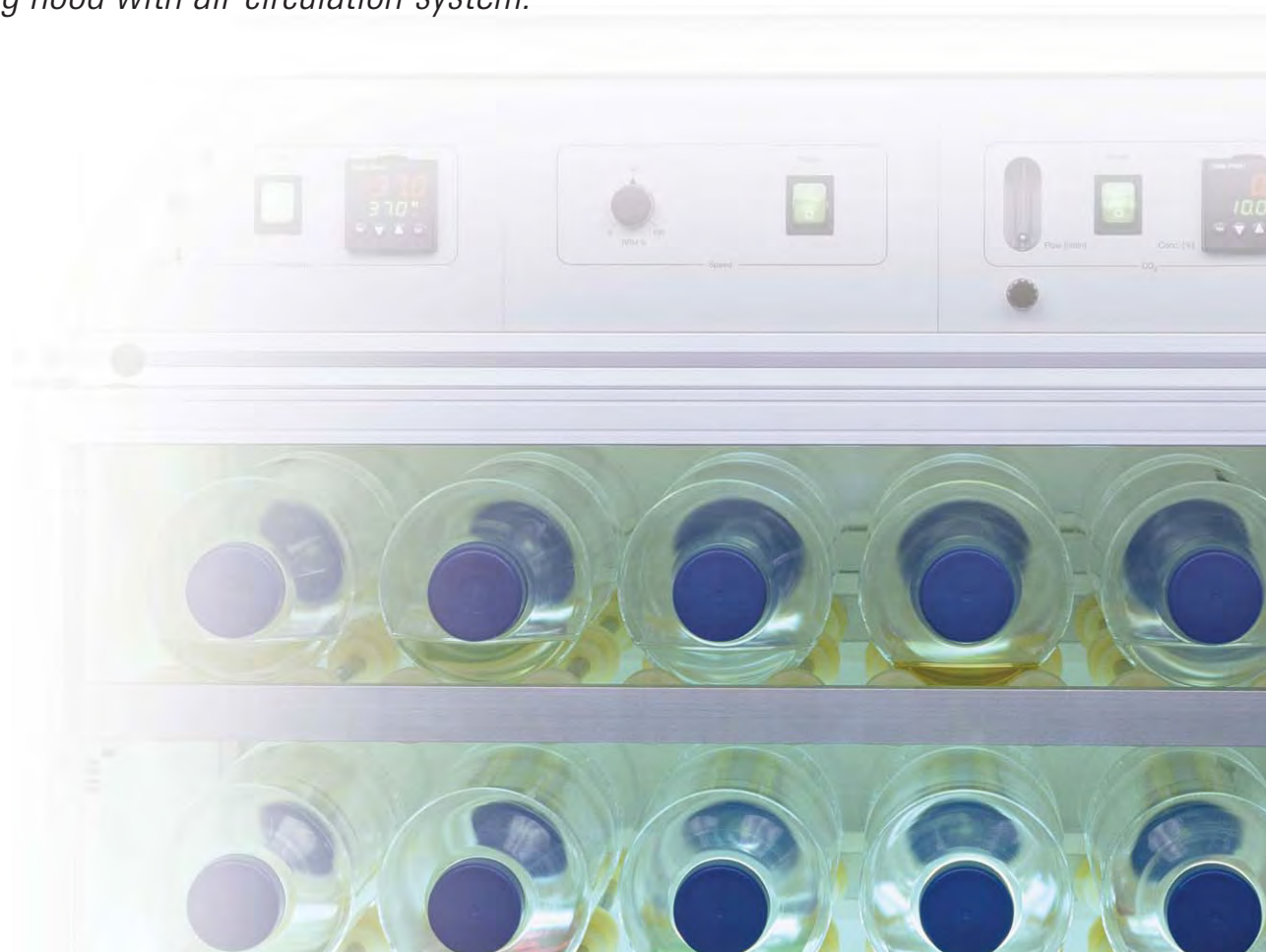
INCUDRIVE *Rollersystems*

and Incubators



The INCUDRIVE Biotec-motion-systems and the INCUDRIVE incubators are designed for rotating and rolling test tubes and bottles used in cell biology, virology, microbiology and pharmacy.

- ¹ **INCUDRIVE 90 (optional with CO₂ provision)**
Roller bottle incubator, max. of 90 bottles, for the production of e.g. vaccines using adherent cell cultures
- ² **INCUDRIVE S**
Incubator with drive unit to rotate and roll up to 630 test tubes or 7 roller bottles.
- ³ **INCUDRIVE D-I**
Drive unit with incubating hood and air-circulation system to rotate up to 16 roller bottles.
- ⁴ **INCUDRIVE R**
Roller system with drive unit and roller frame to rotate and roll up to 630 test tubes or 7 bottles for cell culture.
- ⁵ **INCUDRIVE H**
Incubating hood with air-circulation-system.



INCUDRIVE 90

●¹ INCUDRIVE 90



Roller bottle incubator, max. of 90 bottles, for the production of e.g. vaccines using adherent cell cultures

- self-contained incubator/roller for 90 bottles
- energy savings
- mobile, built on castors
- passes any standard laboratory door
- limits cross-contamination
- CO₂-provision (optional)
- warm-up period max. 2 hours

Compact

Consists of an incubator and a drive mechanism for rolling up to 90 cell culture bottles with a diameter of between 100 and 120 mm on 9 levels of 5 bottles side by side in 2 rows.

The rotational speed of a bottle with Ø 120 mm is continuously adjustable from 0.1 to 2 rpm.

Heavy-duty, all-metal construction. Roller axles fitted with ball bearings made of stainless steel. Sealed incubation compartment, physically separated from drive mechanism.

A half-transparent front door permits permanent monitoring of incubation compartment.

Energy savings & Flexible

Energy savings

Heating of only the exactly needed space for the cultivation of seed cultures and production cultures results in considerable energy savings compared to heating large warm rooms.

Temperature range is + 5° C above room temperature to + 50° C, temperature continuously adjustable and stabilized, forced air-circulation.

An overheat protection guards against accidental overheating.

Flexible

INCUDRIVE 90 comes with castors and is therefore mobile.

Suitable for roller bottles made by different manufacturers. Can be adjusted to fit varying 2-liter bottle lengths.

Production capacity can be adapted by adding more INCUDRIVE 90 devices as needed. Methods, which are generated inside one INCUDRIVE 90 can be scaled up to the number of devices, which are required for the production.

Production and harvesting can be handled in the same clean-room.

The INCUDRIVE 90 roller bottle incubator allows for working with a second virus without need for an additional warmroom. The same applies if a second temperature is needed.

Documentation relative to Installation Qualification (IQ) and Operation Qualification (OQ) optionally available.

Optionally available for Long Expanded Surface Bottles.

Reliable & Time efficient handling

Reliable

Temperature stability over the entire culture medium is ± 1 °C (INCUDRIVE 90 filled with 90 roller bottles). There is an interface available for temperature monitoring (quality management). Improved safety during production - the risk of problems during cultivation is limited to just the one incubator in question. No cross-contamination.

INCUDRIVE 90 has successfully been validated for the production of veterinary vaccines. Suitable for disinfection by Peracetic Acid 0.2 % concentration.

Time efficient handling

The Bottle Lifter (optional) allows for all 90 bottles to be loaded or removed simultaneously within seconds. The Bottle Lifter is mobile and sterilizable.

It also serves to remove the bottles from the incubator and to transport them to a separate room for harvesting, thereby further minimizing the risk of cross-contamination.

No ramp to be overcome when moving bottles into or out of the incubation compartment.

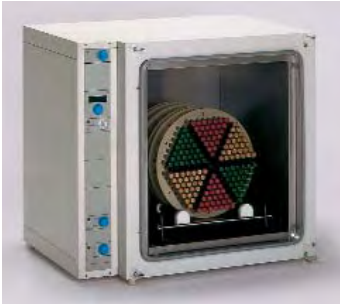
Of course, the Bottle Lifter may also be transferred to a cooling room for cell disruption by freezing.



Bottle Lifter for loading or removing all bottles simultaneously from the INCUDRIVE 90 (optional)

INCUDRIVE S

●² INCUDRIVE S



Incubator with drive unit to rotate and roll up to 630 test tubes or 7 bottles for cell culture.

The system consists of a high quality incubator fitted with motor drive unit, a roller frame and roller drums (1 to 3 ea. applicable) for the accommodation of test tubes. For loading with tubes or bottles, the roller drums may easily be lifted off the roller frame and taken out of the incubator.

The roller frame can also be taken out of the incubator for cleaning. The roller drums may be tilted for rotating open test tubes.

The robust inner housing is made of corrosion-resistant stainless steel with smooth surfaces and without joints. The edges are rounded and therefore easy to clean. The all-glass door can be taken off its hinges, features a continuously welded notch and a robust lock. Thus, it offers ideal protection against contamination. All controls are located on the front-panel.

The electronic temperature control features easy handling, LED-display of both the actual- and set-temperature and PD/PID-control mode for rapid heating, minimum overshoot and high accuracy.

INCUDRIVE D-I

●³ INCUDRIVE D-I



Drive unit for cell culture bottles and vessels with an outer diameter of 60 - 400 mm. With incubating hood and air-circulation system:

- slow rotation of cell culture bottles and vessels
- fast rotation for thorough mixing
- maximum length of the vessels 520 mm incl. screw-cap
- with stainless steel ball-bearings, suitable for continuous mode with heavy load
- sterilizable with Peracetic Acid 0.2 %

The incubator is delivered with drive unit and one roller insert with two mounting brackets.

The device has been designed for use at benchtop. The INCUDRIVE D-I Biotec-motion-system is suitable for defined, slow rotation of horizontally placed culture bottles and vessel. The rotational speed of a cell culture bottle with 120 mm diameter is approx. 0.1 to 4 rpm, continuously adjustable.

The device provides space for up to 4 individually removable roller inserts. The vertical placement of the roller inserts is predetermined. Alternatively, there may be wire mesh trays with mounting brackets instead of roller inserts to allow for placing various equipments in the same environmental/temperature conditions.

The toothed belt transmission from motor to drive axles reliably prevents from slippage or stopping of the bottles. The door of the incubator is made of transparent, thermally insulated UV-resistant plastics for permanent monitoring of the experiment without opening the door.

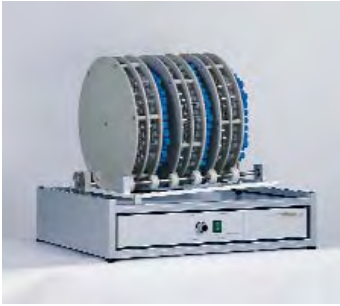
The temperature is regulated by an air-circulation system with integrated electronic temperature control. Additionally, the actual and set temperature is constantly shown on the LED-display.

The temperature is adjusted with an electronic control by using a keypad.

Additional safety provides an overheating guard that may be automatically reset.

INCUDRIVE R

●⁴ INCUDRIVE R



Roller system with drive unit and roller frame, to rotate and roll up to 630 test tubes or 7 bottles for cell culture. May be combined with INCUDRIVE H.

- *slow rotational speed for the cultivation of microorganisms and cell cultures in test tubes*
- *fast rotational speed for optimal supply with oxygen*
- *inclination of the frame can be adjusted*
- *easily removable drum to handle samples*
- *for up to 420 tubes 160 x 16 mm respectively 630 tubes 100 x 16 mm*

To slowly rotate drums with test tubes and bottles. Perfectly suitable for tubes that are not hermetically sealed.

The device was designed for use in an incubating room or other temperature-controlled environment.

The rotational speed of the drums is continuously variable from 0.1 to 4.8 rpm. The inclination of the frame may be adjusted individually.

Custom-made roller drums for other vessels may be manufactured on request.

INCUDRIVE H

●⁵ INCUDRIVE H



Incubating hood with air-circulation system. Open bottom. May be combined with INCUDRIVE R.

The hood was designed for use with various kinds of experiments or apparatus on even surfaces, e.g. vortexers or other devices.

The door and sidewalls of the incubating hood are made of transparent thermally insulated windows that allow for permanent monitoring of the samples without opening the door.

The incubating hood features soft rubber lining at the bottom for passage of power cords. The air-circulation as well as the heating unit and all controls are located at the top of the device. The integrated air-circulation system provides for homogenous temperature distribution.

The LED-display shows simultaneously the actual and set temperature.

The settings for temperature can be adjusted directly on the electronic controller. Additionally, a mechanical overheating protection for the device is included.

Technical Data

●¹ **INCUDRIVE 90**
Roller bottle incubator



●² **INCUDRIVE S**
Roller bottle incubator

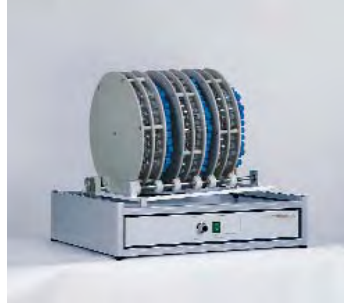


| | | |
|---|---|--|
| Rotational speed (bottle Ø 110 mm) | 0.1-2 rpm | 0.1-2 rpm (other rotational speed on request) |
| Rotational speed of drum | - | 0.1-2 rpm (other rotational speed on request) |
| Vessel diameter | 55-130 mm | 16 mm (tube) 110 mm (bottle) Special design available |
| Roller rack (tilt angle) | - | 0-10° |
| Drum diameter | - | 380 mm |
| Temperature range | | |
| Temperature stability inside the medium | < +/- 1 °C | < +/- 1 °C |
| Working temperature internal | + 5 °C above room temperature max. + 50 °C | + 5 °C above room temperature max. + 70 °C |
| Environmental temperature | + 5 °C up to + 40 °C | + 5 °C up to + 40 °C |
| Temperature control | electronic with actual and set temperature display | electronic with actual and set temperature display |
| Temperature stability | function of time +/- 0.2 °C function of location +/- 1 °C | function of time +/- 0.5 °C function of location +/- 0.9 °C |
| Heating | forced air-circulation fixed air speed | - |
| Temperature sensor | Pt 100 | Pt 100 |
| Overheat protection, adjustable | 0 up to + 70 °C | yes (without °C-graduation) |
| Power & Dimensions | | |
| Power | 230 V, 50-60 Hz, 1,300 W max. or 115 V, 50-60 Hz, 1,300 W max. | 230 V, 50-60 Hz, 550 W or 115 V, 50-60 Hz, 550 W |
| Dimensions outer (w x h x d) | 800 x 1,950 x 950 mm | 895 x 840 x 715 mm |
| Dimensions inner (w x h x d) | 675 x 1,540 x 655 mm | 554 x 644 x 550 mm |
| Dimensions (w x h x d, without drum) | - | - |
| Dimensions (w x h x d, with drum) | - | - |
| Weight | approx. 260 kg | approx. 110 kg |

●³ **INCUDRIVE D-I**
Drive unit



●⁴ **INCUDRIVE R**
Rollersystem



●⁵ **INCUDRIVE H**
Incubating hood



| | | |
|--|---|--|
| 0.1-4 rpm | 0.1-4.8 rpm (optimal 0.75-15 rpm) | - |
| - | 0.1-4.8 rpm optional 0.75-15 rpm | - |
| 60-400 mm | 16 mm (tube) 120 mm (bottle) Special design available | - |
| - | 0-10° | - |
| - | 380 mm | - |
| < +/- 1 °C | - | - |
| + 5 °C above room temperature max. + 50 °C | - | + 5 °C above room temperature max. + 50 °C |
| + 5 °C up to + 40 °C | - | + 5 °C up to + 40 °C |
| electronic with actual and set temperature display | - | electronic with actual and set temperature display |
| function of time +/- 0.2 °C | - | function of time +/- 0.2 °C |
| function of location +/- 1 °C | - | function of location +/- 1 °C |
| forced air-circulation fixed air speed | - | forced air-circulation fixed air speed |
| Pt 100 | - | Pt 100 |
| 0 up to + 70 °C | - | 0 up to + 70 °C |
| 230 V, 50-60 Hz, 330 W or 115 V, 50-60 Hz, 330 W | 230 V, 50-60 Hz, 80 W or 115 V, 50-60 Hz, 80 W | 230 V, 50-60 Hz, 280 W or 115 V, 50-60 Hz, 280 W |
| 610 x 920 x 780 mm | 650 x 260 x 530 mm | 650 x 750 x 560 mm |
| 560 x 740 x 550 mm | - | 600 x 585 x 455 mm |
| - | 450 x 150 x 400 mm | - |
| - | 450 x 500 x 400 mm | - |
| approx. 45 kg | approx. 15 kg | approx. 10.5 kg |



| | Ordering Information | Cat.-No. |
|---|---|-----------------|
| ● ¹ | INCUDRIVE 90 Roller Bottle Incubator for 90 roller bottles | 3.068 001 |
| | INCUDRIVE 90 CO₂ Roller Bottle Incubator for 90 roller bottles with CO ₂ -provision | 3.069 001 |
| | Accessories | |
| | Bottle Lifter for loading and removing all 90 bottles simultaneously from the INCUDRIVE 90 | 3.068 011 |
| ● ² | INCUDRIVE S Incubator with drive unit, without drums | 3.051 001 |
| | Accessories | |
| | Roller tray | 3.055 101 |
| | Drum R for 7 roller bottle with Ø 120/125 mm, max. 1 per device | 3.056 071 |
| | Drum K10 for 210 culture tubes 100 x 16 mm, max. 3 per device | 3.056 101 |
| | Drum K16 for 210 culture tubes 160 x 16 mm, max. 2 per device | 3.056 161 |
| Drum M for other vessels (according to instructions), max. 2 per device | 3.056 311 | |
| ● ³ | INCUDRIVE D-I Drive unit with integrated incubating hood incl. roller insert with 2 brackets and 8 stainless steel ball bearing axles | 3.061 001 |
| | Accessories | |
| | Roller insert with 2 mounting brackets and 8 stainless steel ball bearing axles, for 4 bottles with Ø 70-120 mm <u>or</u> 3 bottles with Ø 40-70 mm, max. 4 roller inserts per device <u>or</u> 2 bottles with Ø 120-240 mm, max. 2 roller inserts per device <u>or</u> 1 bottle with up to Ø 400 mm, max. 1 roller insert per device (Weight of rolling goods up to max. 10 kg per level and max. 25 kg per device Maximum length of the vessels is 470 mm) | 3.061 011 |
| ● ⁴ | INCUDRIVE R Drive unit with roller frame, without drums | 3.064 001 |
| | Accessories | |
| | Drum R for 7 roller bottles with Ø 120/125 mm, max. 1 per device | 3.056 071 |
| | Drum K10 for 210 culture tubes 100 x 16 mm, max. 3 per device | 3.056 101 |
| | Drum K16 for 210 culture tubes 160 x 16 mm, max. 2 per device | 3.056 161 |
| Drum M for other vessels (according to instructions), max. 2 per device | 3.056 311 | |
| ● ⁵ | INCUDRIVE H Incubating hood with a large front door for small devices or to be combined with INCUDRIVE R | 3.065 001 |

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