

Bioreactor RTS-1C

Description

RTS-1C is a bioreactor that measures microbial growth in tubes in real time. Equipped with the patented Reverse-Spin® technology, the bioreactor mixes the cell suspension by rotating the Falcon tube around its own axis and changing the direction of rotation, resulting in highly efficient mixing and oxygenation for aerobic cultivation. In combination with an optical near-infrared system, it is possible to measure the kinetics of cell growth non-invasively in real time.

Specifications

- The Reverse-Spin® mixing principle in 50 ml Falcon tubes enables high kLa values (h^{-1}) of up to 450, which are essential for efficient aerobic cultivation.
- Individually controlled bioreactor accelerates optimization processes
- Possibility of cultivating microaerophilic and obligate anaerobic microorganisms (not strict anaerobic conditions).
- Reverse-Spin® mixing principle enables non-invasive biomass measurement in real time
- Near-infrared optical system makes it possible to register cell growth kinetics
- Free of charge software for storage, demonstration and analysis of data in real time
- Compact design with low profile and small footprint for personal application
- Temperature control for bioprocess applications
- Active cooling for rapid temperature control, e.g. for temperature fluctuation experiments
- Task profiling for process automatization
- Cloud data storage to remotely monitor the process of cultivation while at home or using a mobile phone

Software Features

- Logging of cell growth in real time
- Graphical 3D representation of OD or growth rate over time and unit
- Pause option
- Save/Load option
- Report option: PDF and Excel
- Connect up to 10 units simultaneously to one PC
- Remote monitoring option (internet connection required)
- Cycling/Profiling options
- User manual calibration possibility for most cells



Bioreaktor RTS-1C



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Technical Data

Model	RTS-1C
Measurement range	0–10 OD at 10–20ml volume (0–19 OD λ 600 nm equivalent) 0–8 OD at 20–30ml volume (0–15.2 OD λ 600 nm equivalent)
Measurement precision	± 0.3 OD
Light source	NIR light diode
Measurement wavelength (λ)	850 nm
Measurement periodicity per hour	1 – 60
Cultural media volume	10 – 30 ml
Type of tube for aerobic cultivation	50 ml tube with membrane filter (TubeSpin® Bioreactor 50, TPP®)*
Type of tube for anaerobic cultivation	50 ml tube with membrane filter (TubeSpin® Bioreactor 50, TPP®)* *it is also possible to use other manufacturer tubes of the same type, e.g. Corning® 50ml Mini Bioreactor, but the device rotor must be modified. It is possible to request this modif.
Temperature setting range	+4°C up to +70°C
Temperature control range	15°C below ambient up to +70°C
Temperature stability	$\pm 0.1^\circ\text{C}$
Speed control range	50 – 2000 rpm
Max. number of units connected to the software	10
Display	LCD
Minimum PC requirements	Intel/AMD Processor, 1 GB RAM Windows Vista/7/8/8.1/10/11, USB 2.0 port
Optimal PC requirements	Intel/AMD Processor, 3 GB RAM Windows Vista/7/8/8.1/10/11, USB 2.0 port
Overall dimensions (W x D x H)	130 x 212 x 200 mm
Weight	2.2 kg
Input current	12 V DC, 5 A / 60 W
External power supply	Input AC 100–240 V, 50/60 Hz; Output DC 12 V

Accessories

USB 2.0 Hub

10 x ports



TubeSpin® Bioreactor 50-20

50ml tubes with membrane filter

Number of tubes per set: 180 x 50 ml



TubeSpin® Bioreactor 50-180

50ml tubes with membrane filter

Number of tubes per set: 180 x 50 ml

