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Medical-Biological Research & Technologies

RTS-1C, Personal bioreactor

Smart Plus Product Class

DESCRIPTION

RTS-1C is personal bioreactor which utilize patented Reverse-Spin® technology that applies non-invasive, mechanically driven, low energy consumption, innovative type of agitation where cell suspension is mixed by the singleuse falcon bioreactor tube rotation around its axis with a change of direction of rotation motion resulting in highly efficient mixing and oxygenation for aerobic cultivation. Combined with a near-infrared optical system it is possible to register cell growth kinetics non-invasively in real time.

- Reverse–Spin® mixing principle in 50 ml falcon tubes allows to achieve high k_La (h^{-1}) up to 450 which is essential for efficient aerobic cultivation
- Individually controlled bioreactor accelerates optimization process
- Possibility to cultivate 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:

- Real–Time cell growth logging
- 3D graphical representation of OD or growth rate over time over unit
- Pause option
- Save/Load option
- Report option: PDF and Excel
- Connect up to 10 units simultaneously to 1 computer
- Remote monitoring option (requires internet connection)
- Cycling/Profiling options
- User manual calibration possibility for most cells

Typical applications:

- Fermentation real time growth kinetics
- Clone candidate screening
- Protein expression
- Temperature stress and fluctuation experiments
- Media screening and optimization
- Growth characterization
- Inhibition and toxicity tests
- Strain quality control

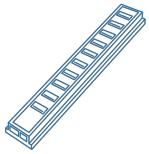
CAT. NUMBER

	Including TPP TubeSpin® Bioreactor vessels 50ml, 20pcs
BS-010160-A04	230VAC 50/60Hz Euro plug
BS-010160-A05	230VAC 50/60Hz UK plug
BS-010160-A03	230VAC 50/60Hz AU plug
BS-010160-A02	100VAC 50/60Hz US plug, 120VAC 60Hz US plug
BS-010160-AK	IQ OQ document
BS-010160-BK	PQ document

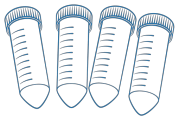
SPECIFICATIONS

Measurement range	0–10 OD at 10–20ml volume (0–19 OD λ600 nm equivalent) 0–8 OD at 20–30ml volume (0–15.2 OD λ600 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
Temperature setting range	+4°C ... +70°C
Temperature control range	15°C below ambient ... +70°C
Temperature stability	±0.1°C
Display	LCD
Speed control range	50–2,000 rpm
Max. number of units connected to the software	10
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.
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×D×H)	130 × 212 × 200 mm
Weight	2.2 kg
Input current/power consumption	12 V, 5 A / 60 W
External power supply	Input AC 100–240 V, 50/60 Hz; Output DC 12 V

ACCESSORIES

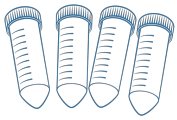


USB 2.0 Hub 10 × ports
BS-010158-BK



TubeSpin® Bioreactor 50 - 20
BS-010158-AK

50 ml tubes with membrane filter TPP TubeSpin® Bioreactor 50, 20 pcs.



TubeSpin® Bioreactor 50 - 180
BS-010158-CK

50 ml tubes with membrane filter TPP TubeSpin® Bioreactor 50, 180 pcs.