

RTS-1C, Personal bioreactor



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_a (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 12 units (recommended) 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. NR.

	RTS-1C with cooling, incl. software pack and external power supply unit
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
BS-010160-A02	120VAC 60Hz US plug
	Optional accessories
BS-010158-AK	50 ml tubes with membrane filter TubeSpin® Bioreactor 50, TPP® 20 pcs.
BS-010158-CK	50 ml tubes with membrane filter TubeSpin® Bioreactor 50, TPP® 180 pcs.

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SPECIFICATION

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 wavelength (λ)	850 nm
Measurement precision	± 0.3 OD
Light source	NIR Light diode
Measurement periodicity per hour	1-60
Cultural media volume	5-30 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 ... +70°C
Temperature control range	15°C below ambient ... +70°C
Temperature stability	± 0.1 °C
Speed control range	50-2,000 rpm
Max. number of units connected to the software	12
Display	LCD
Minimum PC requirements	Intel/AMD Processor, 1 GB RAM Windows XP*/Vista/7/8/8.1/10, USB 2.0 port
Optimal PC requirements	Intel/AMD Processor, 3 GB RAM Windows XP*/Vista/7/8/8.1/10, USB 2.0 port * not guaranteed because OS not supported by producer
Overall dimensions (WxDxH)	130 × 212 × 200 mm
Weight	2.2 kg
Input current/power consumption	12 V DC, 5 A / 60 W
External power supply	Input AC 100-240 V 50/60 Hz, Output DC 12 V

BS-010158-BK USB 2.0 Hub 10 × ports

BS-010160-AK IQ OQ document

BS-010160-BK PQ document