RTS-1, Personal Bioreactor

DESCRIPTION

Grant RTS-1 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 single use 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 micro-organisms (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 automatisation
- 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

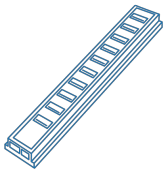
Typical applications:

- 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

SPECIFICATIONS

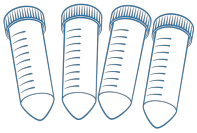
Measurement range	0–10 OD at 10–20ml volume (0–19 OD λ600 nm equivalent) 0–8 OD at 20–30ml volume (0–15.2 OD λ600 nm equivalent)
Measurement precision	±0.3 OD
Light source	NIR Light diode
Measurement wavelength (λ)	850 nm
Measurement periodicity per hour	1–60
Cultural media volume	10–30 ml
Temperature setting range	+25°C ... +70°C
Temperature control range	5°C above 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	1.7 kg
Input current/power consumption	12 V DC, 3.3 A / 40 W
External power supply	Input AC 100–240 V 50/60 Hz, Output DC 12 V

ACCESSORIES



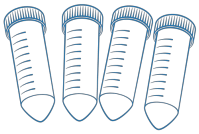
USB10

USB Hub for RTS Units



50TUB20

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



50TUB180

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

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www.wolflabs.co.uk

01759 301142

sales@wolflabs.co.uk

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Pricing on any accessories shown can be found by keying the part number into the search box on our website.

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed, please provide these to our sales team so that details can be confirmed.