

RTS-1 and RTS-1C personal bioreactor

Compact and efficient personal bioreactor providing “Reverse-Spin” type of agitation and logging of microbial growth in 50 ml tubes in real time.

- Temperature setting range: RTS-1 +25 to 70 RTS-1C +4 to +70 °C
- Variable speed: 50 – 2,000 (increment 10 rpm)
- Temperature control allows use as an incubator (RTS-1C)
- Compact device with low profile and small footprint
- Connect up to 12 units simultaneously



3D graphical representation of OD or growth rate over time over unit.

Temperature control by microprocessor plus forced heated air circulation ensures a constant and even temperature within the chamber.

Programmable cycling/profiling of cultivation parameters such as temperature, RPM, “Reverse-Spin” frequency.



Real-Time cell growth logging.

Innovative mixing due to reverse spinning of the sample around its own axis.


Compact, sturdy construction with a low profile and small footprint - fits neatly into the workplace.

Easy-to-read LCD screen displaying temperature, RPM and time.

Applications

- Bacterial cultivation with real time growth kinetics, strain screening, temperature stress and fluctuation experiments media screening and optimization, synthetic and systems biology, inhibition and toxicity tests, strain quality control

Personal bioreactors - Technical specifications

		Personal bioreactor	Personal bioreactor with cooling
		RTS-1	RTS-1C
			
Dimensions	h x d x w mm	130 x 212 x 200	130 x 212 x 200
Theoretically possible measurement range in OD850, at 10 ml working volume*:	°C	0-25 (0-45.6 OD600 equivalent**) 0-50 (0-75 OD600 equivalent)	
Rod shaped bacteria		0 – 10 OD (0 – 19 OD600 equivalent)	
Yeast		0 – 8 OD (0 – 15.2 OD600 equivalent)	
E.coli BL21 Factory calibration measurement range, in OD850 :			
at 10-20 ml volume		0 – 10 OD (0 – 19 OD600 equivalent)	
at 20-30 ml volume		0 – 8 OD (0 – 15.2 OD600 equivalent)	
Measurement wavelength (λ)	nm	850 ± 15	
Measurement Precision		±0.3 OD	
Mass transfer coefficient kLa	(h-1)	Up to 350 ± 26 h-1 at 5 ml	
Light source		LED	
Real time measurement	(minutes)	1-60	
Temperature setting range	°C	+25 to 70 (increment 0.1 °C)	+4 to +70 °C (increment 0.1 °C)
Bottom control range point	°C	Ambient +5	Ambient -15
Top control range point	°C	70	
Stability	°C	±0.1	
Sample temperature accuracy:			
20 °C - 45 °C		± 1	
< 20 °C		± 2	
> 45 °C		± 3	
Sample temperature heating/cooling rate	°C/min	0.7	
Sample volume	ml	5 – 30	
Speed control range	rpm	50 – 2,000 (increment 10 rpm)	
Speed control precision	rpm	±15	
Reverse Spin Time	(seconds)	1- 60 (increment 1 s)	
Display		LCD	
Minimum PC requirements		Intel/AMD Processor, 1 GB RAM, Windows XP**/Vista/7/8/8.1/10, 2.0 USB port	
Optimal PC requirements		Intel/AMD Processor, 3 GB RAM, Windows 7/8/8.1/10, 2.0 USB port	
Power consumption		40 (3.3A)	60 (5A)
Nominal operating voltage	V	120 - 230 (50/60Hz)	
Weight	kg	1.7	2.2

* – Highest kLa (h-1) is achieved at 5 ml working volume which is optimal for aerobic cultivation

** – 850 to OD600 vary between strains and phases of growth

*** – Not guaranteed because OS not supported by producer

Options and accessories

		RTS-1	RTS-1C
• = optional			
50TUB20	20x 50 ml tubes with membrane filter TubeSpin® Bioreactor 50, TPP®	•	•
50TUB180	180x 50 ml tubes with membrane filter TubeSpin® Bioreactor 50, TPP®	•	•
USB10	USB 2.0 Hub 10 x ports	•	•