ONE

BENCHTOP
AUTOCLAVABLE
FERMENTER
BIOREACTOR

SOLARIS
BIOTECH SOLUTIONS

ONE

The system consists of 2L fermenter/bioreactor (total volume), single wall glass vessel, bench-top, pre-assembled unit, supplied with all necessary tubes, valves and instruments, automation, control panel (software license). The system is designed for aerobic and anaerobic cultivations/ fermentations, closed aseptic operations.

No one like the One

Integrated wifi connection
Fully automated
Accurate stirring, temperature, pH and oxygen controls
Precise feedings via peristaltic pumps
Multiple use available up to 24 units managed in parallel

Applications

Process development and optimization

Education

Basic Research

Scale up and scale-down studies

Small production

- Rushton, Pitched Blade or Marine impellers
- Toro or Sintered sparger
- Single-wall borosilicate glass vessel, with thermoregulation performed through heating blanket and cooling finger.
- Measurements and control options included: stirring, temperature, pH, dO_2
- Suitable for batch, fed-batch and continuous processes

- Gas control through TMFC

- Accurate and powerful rpm control, from 1 to 1900 rpm
- Modbus digital sensors reduce background noise and guarantee quick response time.
- Compact stainless-steel PCS equipped with 4 Watson Marlow peristaltic pumps

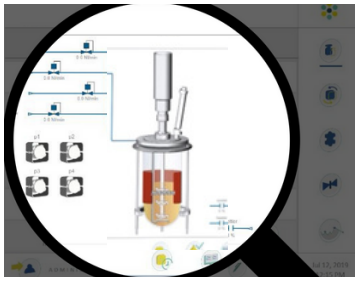
- Connectivity and data exchange via in-built WiFi system
- Multiple use available up to 24 units managed in parallel

Leonardo

Innovative SCADA software LEONARDO: a smart and user-friendly controller designed to provide a high level of automated management of the fermentation/cultivation processes. Multiple use available up to 24 units managed in parallel

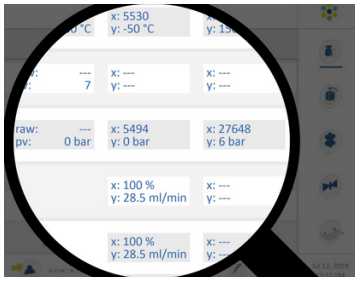
Workflow

- custom phase manager
- parallel visualization
- cascade settings
- peristaltic pumps function assignable from software



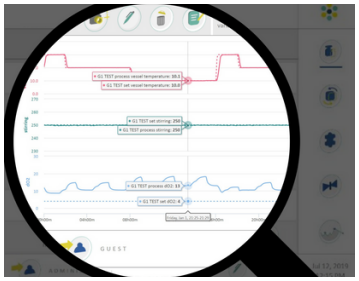
Synoptic

- real time 3D view
- parallel control
- manual control



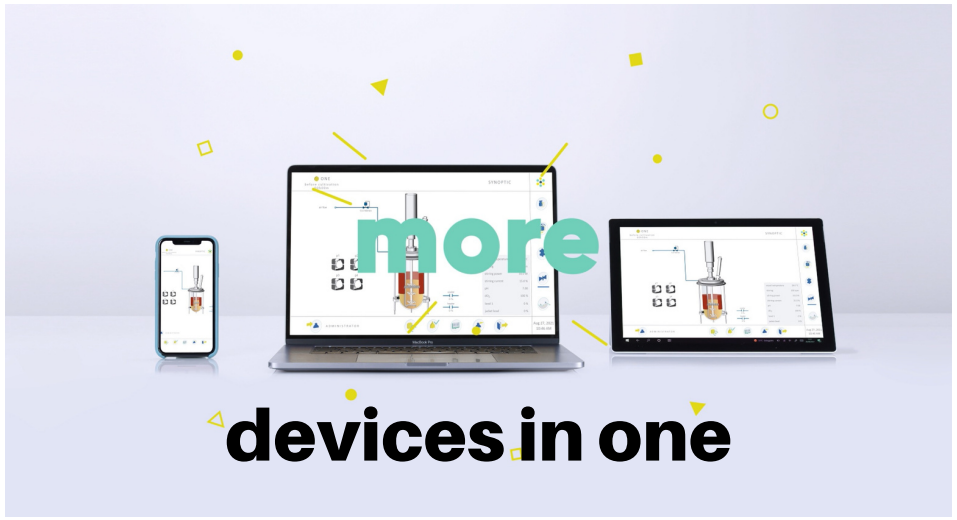
Calibration

- up to three-point calibration
- simoultaneus calibration values for parallel work



Trends

- custom acquisition time
- up to 6 values simultaneously display
- automatic graph comparison



Vessel

Solaris Code	One 2.0
Production Code	onest2.0
Total Volume (L)	2.00
Ratio D/H	1:3.0
Min. Working Volume (L)	0,35
Max. Working Volume (L)	1,40
Max. temperature	70 °C
Operating pressure	< 0.5 bar
Headplate ports	n.5 x M19 - n.4 x M16 - n.1 x M25
Design	Borosilicate glass vessel (single wall)
Materials	Borosilicate Glass and AISI 316 L

Sensors length (mm)

pH	325
dO_2	325

Dimensions for autoclave (with Condenser)

Height (mm)	610
Diameter (mm)	275

Stirring

Drive	Brushless Motor
Speed (rpm)	1-1900
Nominal Torque (Nm)	0,9
Impellers	Select from: Rushtons impellers, Marine impellers, Pitched blade

Thermoregulation

Control	PID Control - Accurancy 0,1 °C
Total heater power (W)	400

Gas Control & Gas Mixing

Gas Control (Air)	n.1 TMFC for Air
Sparger type	Select from: Toro type (ring), sintered microbubbling - both provided with 0,22 µm sintered filter
Gas Out	n. 1 Condenser + 0,22 µm sinterized filter

Peristaltic Pumps

Type	up to n. 4 Watson Marlow type 114, fixed speed, max. 60 rpm, volumetric flow 0,5-51 ml/min, function assignable from software

Controller

Master Control Module	35 x35 x 35 cm
Leonardo software	Licence

Temperature

Sensor	PT100
Accuracy	0,1 °C
Control system	Measuring resident in Leonardo 3.2 software
Control range	0 - 70 °C

pH

Sensor	Digital sensor
Sensitivity	57 to 59 mV/pH
Control system	Measuring resident in Leonardo 3.2 software
Control range	0 - 14 °C
Operation temperature	0 - 130 °C
Pressure range	0 - 12 bar

dO_2

Sensor	Digital Optical sensor
Accuracy	±0.05%-vol, 21±0.2%-vol, 50±0.5%-vol
Control system	Measuring resident in Leonardo 3.2 software
Control range	0,05 - 300% air saturation
Operation temperature	-10 - 130 °C
Pressure range	0 - 12 bar