

eLAB® Essential

Compact User-Friendly
Bioreactor

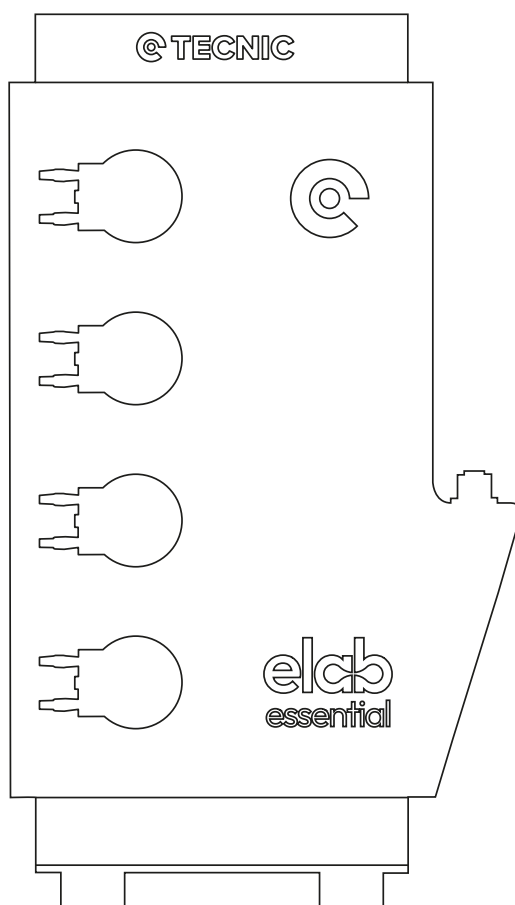


eLAB® Essential

The eLAB® Essential is a compact, easy-to-use bioreactor designed for carefree operation in laboratory environments. It focuses on key functionalities, ensuring high reliability and efficiency, allowing you to concentrate on research or production without distractions.

It has distinctive features such as the ability to assign colours to different projects for quick identification, and a compact design that weighs less than 5 kg and is only 20 cm wide, optimising space in the lab without compromising functionality.

The eOS operating system offers an intuitive and simple user interface that integrates seamlessly with the bioreactor, making laboratory operations more efficient. Among its technical specifications, it includes 4 addition pumps for multiple solutions, a wide range of vessel volumes (from 0.5 to 5L), and is ready for use with single-use or multipurpose vessels. In addition, it provides full control over pH, temperature, agitation, foam and pO² with cascade strategies.



Basic configuration - Microbial

Control configuration	
Temperature control	Included
DO control (simple cascade controller)	Included
Stirrer speed control	Included
pH control via addition of acid or base	Included
Foam control	Included
Mass flow controller for air addition	Included
Mass flow controller for O ² addition	Included
Advanced gas performance (total gas management)	Included
Integrated peristaltic pumps	4x for acid, base, antifoam and media addition
eOS software	Included
Recipes management	Included
User's management	Included
Screen interface	Optional
Culture vessel	
Single wall vessel	Included
Brushless stirrer	Included
Stirrer shaft seal	Included
6-blade rushton impeller	Included
Aeration filters	Included
Ring sparger	Included
4 baffles for mixing performance	Included
Exhaust condenser	Included
4 way addition port	Included
Sampling kit	Included
Sampling pipe with height adjustment	Included
Harvest pipe with height adjustment	Included
pH sensor with cable	Included
DO sensor with cable	Included
Foam sensor with cable	Included
temperature sensor Pt100	Included
Heating blanket	Included
Port adapter 19 - 12 mm	Included
Starting kit of consumables	Included
Weight measurement bioreactor / External bottle	Optional
External pump for additional feeding	Optional
Microsparger	Optional
Dip pipe sparger	Optional
N ² MFC	Optional
CO ² MFC	Optional
External cooling unit	Optional

Basic configuration - Cellular

Control configuration	
Temperature control	Included
DO control (simple cascade controller)	Included

Stirrer speed control	Included
pH control via addition of acid or base	Included
Foam control	Included
Mass flow controller for air addition	Included
Mass flow controller for O ² addition	Included
Mass flow controller for N ² addition	Included
Mass flow controller for CO ² addition	Included
Advanced gas performance (total gas management)	Included
Integrated peristaltic pumps	4x for acid, base, antifoam and media addition
eOS software	Included
Recipes management	Included
Advanced pO ² control with N ²	Included
Advanced pH control with CO ²	Included
User's management	Included
Screen interface	Optional
Culture vessel	
Single wall vessel	Included
Brushless agitation	Included
Stirrer shaft seal	Included
Pitched blade impeller	Included
Aeration filters	Included
Ring sparger	Included
Exhaust condenser	Included
4 way addition port	Included
Sampling kit	Included
Sampling pipe with height adjustment	Included
Harvest pipe with height adjustment	Included
pH sensor with cable	Included
DO sensor with cable	Included
Foam sensor with cable	Included
Temperature sensor Pt100	Included
Heating blanket	Included
Port adapter 19 - 12 mm	Included
Starting kit of consumables	Included
Weight measurement Bioreactor / External bottle	Optional
External pump for additional feeding	Optional
External cooling unit	Optional
Marine impeller	Optional
Microsparger	Optional
Dip pipe sparger	Optional

Control unit

Dimensions (WxHxD) (mm)	198 x 335 x 200
Weight approx (Kg)	5
Power supply	230 VAC, 50 Hz
Consumption	10 A
Housing material	Aluminium Polycarbonate front and back panel

Controller type	Integrated microcontroller
Operation / HMI Interface	eOS / Tablet (recommended size: 10.9")
Electrical interfaces	<ul style="list-style-type: none"> - 2x USB-C - 1x USB - 2x modbus connections for process sensors - 1x digital input for level/foam sensor - 1x RTD connector for temperature sensor

Utility connections

Gases: Air, O ² , CO ² , N ²	<ul style="list-style-type: none"> * Supply pressure of 2 barg * Pre-treated gas: dry and oil-free, * Connection: pneumatic fitting Ø 6 mm
Tap water / Cool water	<ul style="list-style-type: none"> * Supply pressure: 2 barg * Return pressure: atm * Flow rate: 2 L/min * Temp: 5-15°C * Needed cooling capacity * Single 400 W * Connections to vessel / Condenser: quick plug non-return connector 1/8

Culture vessel features

Volumes	1L	2L	5L
Total volume (L)	1.6	3	6.6
Working volume (L)	1	2	5
Minimum working volume (L)	0.4	0.6	0.6
Inner diameter (mm)	110	130	160
Inner height (working volume) (mm)	115	160	255
H/D ratio	1	1.2	1.6
External dimensions (WxHxD) (mm)	228x527x228	230x542x230	260x652x260
Space requirement in autoclave (DxH) (mm)	240x440	240x500	270x600
Total weight (Kg)	5	6	11
Maximum stirrer speed (rpm)		2000	
Maximum tip speed (m/s)	3.5	4.5	6.2
Motor type		Brushless	
Motor power (W)		250 W	
Impeller type MB / CC		6-blade rushton turbine / 3-pitched blade	
Number of impellers MB / CC	1 / 1	2 / 1	2 / 1
Impeller diameter (mm) MB / CC	30 / 35	43 / 57	60 / 70
Top ports 19 mm / 12 mm / 11 mm		3 / 3 / 5	

Gas system

Culture vessel	1L	2L	5L
Number of MFCs		Up to 4 different gases	
Air aeration (NL/min) Microbial / Cellular (*Flow limited by the user)	0-20 / 0-20	0-20 / 0-20	0-20 / 0-20
O ² addition (NL/min) Microbial / Cellular (*Flow limited by the user)	0-19.6 / 0-19.6	0-19.6 / 0-19.6	0-19.6 / 0-19.6

N ² addition (NL/min) Microbial /Cellular (*Flow limited by the user)	0-20 / 0-20	0-20 / 0-20	0-20 / 0-20
CO ² addition (NL/min) Microbial / Cellular (*Flow limited by the user)	0-14.8 / 0-14.8	0-14.8 / 0-14.8	0-14.8 / 0-14.8
Mass flow controller	Factory calibration with air and corrected for each gass		
Flow range	From 0 NL/min up to 20 NL/min of Air		
Accuracy	+- (4% MV +1.25% FS)		
Maximum operating presure	2.5 barg		
Gas connection to culture vessel	Pneumatic fitting Ø 6 mm		

Pumps

Pump type	4 integrated fixed speed pumps
Pump head	For 1 mm wall thickness tubing Bore: ID 0.8-4.8 mm
Flow rate (ml/min) *Provided by default	ID 1 mm - 14.88 ml/min ID 2 mm - 50.05 ml/min * ID 3 mm - 110.27 ml/min ID 4 mm - 149.23 ml/min
External pump Flow rate (ml/min)	ID 0.8 mm - 10 ml/min ID 1.6 mm - 56 ml/min ID 2.4 mm - 111 ml/min ID 3.1 mm - 191 ml/min ID 4.8 mm - 366 ml/min

Temperature control system

Operation	Cooling bar inside bessel
Heating blanket	Heating resistance: 285 W
Cooling	Module with automatic valve for cooling water regulation
Temperature range	Temperature control between 8°C - 70°C
Connection	Quick plug connector 1/8

Sensors

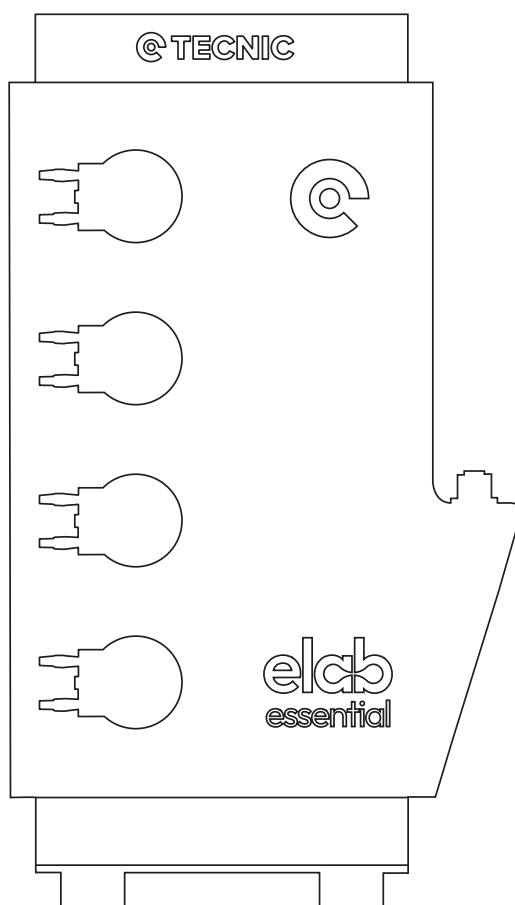
pH	Biocompatible (FDA) electrolyte filled 0 -14 pH
Dissolved O ²	Optical DO sensor 0-300%-sat
Temperature sensor	Pt100 0-150°C
Foam / Level sensor	Conductive probe, stainless steel ceramic isolated
External balance	Capacity: 0-30 Kg Accuracy: 0.1 g

eLAB® Essential SU

The eLAB® Essential Single Use bioreactor is designed for seamless operation in laboratory environments, focusing on essential functionalities for reliability and efficiency. This compact system, weighing less than 5 kg and only 20 cm wide, optimizes lab space without sacrificing functionality.

The eLAB® Essential Single Use features the eOS operating system, offering an intuitive user interface that integrates smoothly with the bioreactor. It comes equipped with 4 addition pumps for multiple solutions and supports a wide range of vessel volumes from 0.5 to 5L.

The bioreactor is designed for single-use applications, providing flexibility for various bioprocessing needs. It also offers comprehensive control over key parameters like pH, temperature, agitation, foam, and pO_2 , utilizing effective cascade strategies for optimal bioprocessing conditions.



Basic configuration - Microbial

Control configuration	
Temperature control	Included
DO control (simple cascade controller)	Included
Stirrer speed control	Included
pH control via addition of acid or base	Included
Foam control	Included
Mass flow controller for air addition	Included
Mass flow controller for O ² addition	Included
Advanced gas performance (total gas management)	Included
Integrated peristaltic pumps	4x for acid, base, antifoam and media addition
eOS software	Included
Recipes management	Included
User's management	Included
Screen interface	Optional
Culture vessel	
Single use vessel	Included
Brushless stirrer	Included
Stirrer shaft seal	Included
6-blade rushton impeller	Included
Aeration filters	Included
Open sparger	Included (2 mm hole)
Inlet air port for 6.4 ID tubing	Included
Air exhaust port for 6.4 ID tubing	Included
4x addition port for 3.2 ID tubing	Included
Sampling / Harvest port for 3.2 ID tubing	Included
2x port for foam electrodes detection	Included
pH spot sensor with cable	Optional
DO spot sensor with cable	Optional
temperature sensor Pt100	Included
Foam sensor with cable	Included
Heating blanket	Included
Weight measurement bioreactor / External bottle	Optional
External pump for additional feeding	Optional
Sparger stone	Optional
Jet sparger	Optional
N ² MFC	Optional
CO ² MFC	Optional

Basic configuration - Cellular

Control configuration	
Temperature control	Included
DO control (simple cascade controller)	Included
Stirrer speed control	Included
pH control via addition of acid or base	Included
Mass flow controller for air addition	Included
Mass flow controller for O ² addition	Included

Mass flow controller for N ² addition	Included
Mass flow controller for CO ² addition	Included
Advanced gas performance (total gas management)	Included
Integrated peristaltic pumps	4x for acid, base, antifoam and media addition
eOS software	Included
Recipes management	Included
Advanced pO ² control with N ²	Included
Advanced pH control with CO ²	Included
User's management	Included
Screen interface	Optional
Culture vessel	
Single use vessel	Included
Brushless agitation	Included
Stirrer shaft seal	Included
Pitched blade impeller	Included
Aeration filters	Included
Sparger stone	Included
Inlet air port for 6.4 ID tubing	Included
Air exhaust port for 6.4 ID tubing	Included
4x addition port for 3.2 ID tubing	Included
Sampling / Harvest port for 3.2 ID tubing	Included
pH spot sensor with cable	Optional
DO spot sensor with cable	Optional
Temperature sensor Pt100	Included
Heating blanket	Included
Weight measurement bioreactor / External bottle	Optional
External pump for additional feeding	Optional
Marine impeller	Optional
Other sparger configuration	Optional

Control unit

Dimensions (WxHxD) (mm)	198 x 335 x 200
Weight approx (Kg)	5
Power supply	230 VAC, 50 Hz
Consumption	10 A
Housing material	Aluminium Polycarbonate front and back panel
Controller type	Integrated microcontroller
Operation / HMI Interface	eOS / Tablet (recommended size: 10.9")
Electrical interfaces	<ul style="list-style-type: none"> - 2x USB-C - 1x USB - 2x Modbus connections for process sensors - 1x Digital input for level/foam sensor - 1x RTD connector for temperature sensor

Utility connections

Gases: Air, O₂, CO₂, N₂

* Supply pressure of 2 barg
 * Pre-treated gas: dry and oil-free,
 * Connection: pneumatic fitting Ø 6 mm

Culture vessel features

Volumes	0.5L	1L	2L	5L
Total volume (L)	0.575	1.25	2.5	6.5
Working volume (L)	0.4	1	2	5
Minimum working volume (L)	0.1	0.4	0.6	0.6
Inner diameter (mm)	75	100	125	170
Inner height (working volume) (mm)	110	129	163	221
H/D ratio (working volume)	1.5	1.3	1.3	1.3
Total weight (Kg)	0.2	0.3	0.5	0.8
Maximum stirrer speed (rpm)	2000			
Maximum tip speed (m/s)	2.9	3.5	4.5	6.2
Motor type	Brushless			
Motor power (W)	250 W			
Impeller type MB / CC	6-blade rushton turbine / 3-pitched blade			
Number of impellers MB / CC	2 / 1	2 / 1	2 / 1	2 / 1
Impeller diameter (mm) MB / CC	28	30	43	57

Gas system

Culture vessel	1L	2L	5L
Number of MFCs	Up to 4 different gases		
Air aeration (NL/min) Microbial / Cellular (*Flow limited by the user)	0-20 / 0-20	0-20 / 0-20	0-20 / 0-20
O ₂ addition (NL/min) Microbial / Cellular (*Flow limited by the user)	0-19.6 / 0-19.6	0-19.6 / 0-19.6	0-19.6 / 0-19.6
N ₂ addition (NL/min) Microbial / Cellular (*Flow limited by the user)	0-20 / 0-20	0-20 / 0-20	0-20 / 0-20
CO ₂ addition (NL/min) Microbial / Cellular (*Flow limited by the user)	0-14.8 / 0-14.8	0-14.8 / 0-14.8	0-14.8 / 0-14.8
Mass flow controller	Factory calibration with air and corrected for each gas		
Flow range	From 0 NL/min up to 20 NL/min of Air		
Accuracy	+- (4% MV +1.25% FS)		
Maximum operating pressure	2.5 barg		
Gas connection to culture vessel	Pneumatic fitting Ø 6 mm		

Pumps

Pump type	4 integrated fixed speed pumps
Pump head	For 1 mm wall thickness tubing Bore: ID 0.8-4.8 mm
Flow rate (ml/min) *Provided by default	ID 1 mm - 14.88 ml/min ID 2 mm - 50.05 ml/min * ID 3 mm - 110.27 ml/min ID 4 mm - 149.23 ml/min

External pump flow rate (ml/min)	ID 0.8 mm - 10 ml/min
	ID 1.6 mm - 56 ml/min
	ID 2.4 mm - 111 ml/min
	ID 3.1 mm - 191 ml/min
	ID 4.8 mm - 366 ml/min

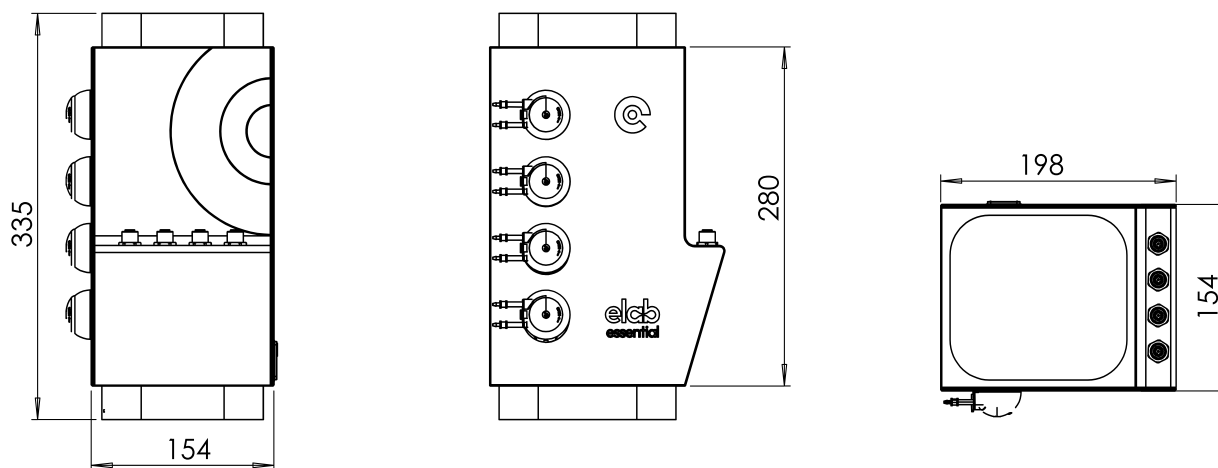
Temperature control system

Heating blanket	Heating resistance: 285 W
Temperature range	Working temperature 5-45°C
Storage temperature	-80 / 45°C

Sensors

pH	5.5 - 8.5 pH
Dissolved O ²	Optical DO sensor 0-2 mg/L O ²
Temperature sensor	Pt100 0-150°C
Foam / Level sensor	Conductive probe, stainless steel
External balance	Capacity: 0-30 Kg Accuracy: 0.1 g

eLAB Essential (measurements in mm)



Partnerships



Regulation



Do you need more information?
We are here to help you

Headquarters, Riudarenes -Spain

sales@tecnic.eu
+34 972 877 327
tecnic.eu



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sales@tecnic.eu · +34 972 877 327 · tecnic.eu