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CEL BIC[®]

Single Use Bioreactor

μ 2
microdigital

Introducing CELBIC

CELBIC is a Single Use Bioreactor with a unique mixing algorithm and a real-time, in-situ monitor for biomedical material production: a great system for antibody and protein/cell treatment production.

CELBIC is applicable for various bio-process researches as well as industrial biomedical material production.

CELBIC monitors and analyzes various matters during bioprocessing and adjusts its conditions for optimum proliferation.



CELBIC 25 & CELBIC 100



CELBIC 1000 Orbital Rocker & Controller

Advantages of SUB vs. STR

- + **Reduced Contamination Risks**
Conventional Systems at 5-20%
- + **Lowered Initial Investment Costs**
Up to 74% Cost Savings,
Reduced Time, Facility and Services.
- + **Minimized Operating Costs**
Up to 90% Water Reduction,
Up to 45% Faster Change-over,
and Up to 40% Energy Reduction.
- + **Business Advantages**
Faster Speed to market,
Easy Capacity Expansion,
and Faster Project Change-over Speed.
- + **Sustainability**
Reduced Environmental Stress,
and Up to 50% Reduced Labors.

Advantages of CELBIC

+ **Mixing and Movement**

Capable of Free Rocking and Movement in all directions: Left, Right, Up, Down and Diagonal.

+ **Easy expansion of culture capacity**

Multiple versions to match different needs: CELBIC 25, CELBIC 50, CELBIC 100, CELBIC 200, CELBIC 500 and CELBIC 1000 for 10L, 25L, 50L, 100L, 250L and 500L working volumes, respectively.

+ **High Torque**

Faster Mixing and Reduced Mixing Time.

+ **Designed for Low Shear**

Rocking motion for mixing with low shear.



Orbital Motion of CELBIC



CELBIC 25/50 Controller

Advantages of CELBIC

+ All-in-One Controller

All the necessary MFC Gas Modules, Peristaltic Pumps, and Temperature Control Modules for the Cultivation Process are installed and controlled within the CELBIC Controller for optimum efficiency as well as space saving.

+ Intuitive User Interface

CELBIC includes an intuitive and simple UI that can easily perform all the functions required for the Cultivation Process with an option for Ethernet Connection.

Advantages of CELBIC

+ 3-D Culture Bags

3-D bags with smaller footprint and less stress to the mixing mechanism which leads to longer life-cycles.

3-layered film for durability and for the safety of the cell culture encased within.

Each 3-D Culture Bag is equipped with single use optical sensors and filters required for cell cultures.

The 3-D Culture Bags can be customized to suit the needs of the user.

To reduce contamination risk of the batch, each bag is decontaminated via gamma rays.



**CELBIC 1000
3-D Culture Bag**

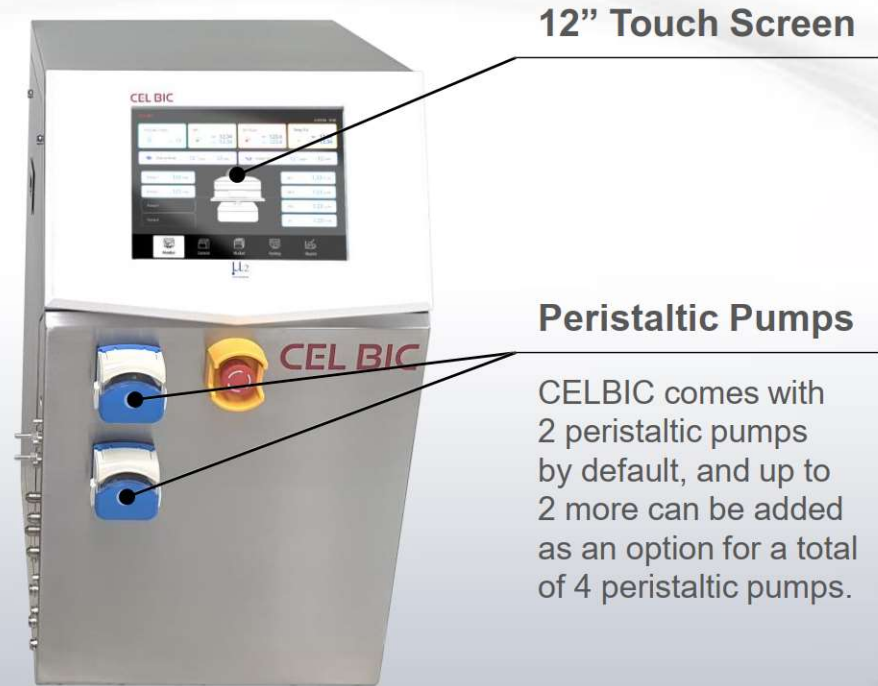


**CELBIC 25
3-D Culture Bag**

Components of CELBIC



Orbital Rocker



Controller

Components of CELBIC

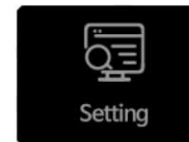


Controller UI



Monitor

Menu for monitoring all the necessary factors such as pH, DO saturation, temperature or mixing RPM for cell cultivation.



Setting

Menu for inputting the parameter settings of the measurement and calibration of optical sensors



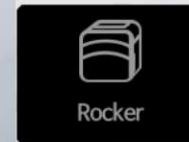
Control

Menu for manual control of the sensors, MFC and pumps



Report

Real-time line graph can be seen on this menu for temperature, pH and DO.





Rocker

Menu for setting the RPM, angle and mode of mixing (Orbital or Rocking)

System Dimension and Weight

Model	Dimension (W x D x H)	Weight	Material
CELBIC 25 (Including Lid) 	556 x 556 x 550 mm	32.5 kg	Stainless Steel, ABS, Aluminum
CELBIC 50 (Including Lid) 	686 x 686 x 595 mm	38 kg	Stainless Steel, ABS, Aluminum
CELBIC 100 	785 x 758 x 1,124 mm	280 kg	Stainless Steel, ABS, Aluminum
CELBIC 200 	972 x 1,014 x 1,346 mm	380 kg (approx.)	AISI 304 Stainless Steel & ABS
CELBIC 500 	1,296 x 1,296 x 1,600 mm	700 kg (approx.)	AISI 304 Stainless Steel & ABS
CELBIC 1000 	1,688 x 1,640 x 1,801 mm	950 kg (approx.)	AISI 304 Stainless Steel & ABS

System Dimension and Weight

Model	Dimension (W x D x H)	Weight	Material
CELBIC 25/50/100 Controller (Including MFC Box) 	450 x 560 x 798 mm	55 kg	Stainless Steel, ABS
CELBIC 200/500/1000 Controller (Including MFC Box) 	600 x 830 x 1,245 mm	110 kg (approx.)	AISI 304 Stainless Steel
Electric Transformer (For CELBIC 200, 500 and 1000)	500 x 452 x 685mm	147 kg	

Facility & Utility Requirements

Model							
		CELBIC 25	CELBIC 50	CELBIC 100	CELBIC 200	CELBIC 500	CELBIC 1000
Power	Controller	220V - 2Phase, 60(50)Hz, 5A, 1.1KW		220V - 2Phase, 60(50)Hz, 9.1A, 2.0KW	220V - 2Phase, 60(50)Hz, 5A, 1.1KW	220V - 2Phase, 60(50)Hz, 7.3A, 1.6KW	220V - 2Phase, 60(50)Hz, 9.6A, 2.1KW
Electric Transformer	Input	N / A			380V - 3Phase, 60(50)Hz, 16A, 8KW	380V - 3Phase, 60(50)Hz, 33A, 16.5KW	380V - 3Phase, 60(50)Hz, 44A, 22KW
	Output	N / A			220V - 3Phase, 60(50)Hz, 21A, 8KW	220V - 3Phase, 60(50)Hz, 43.4A, 16.5KW	220V - 3Phase, 60(50)Hz, 57.8A, 22KW
Gas Supply	Inlet Pressure	<600KPa					
	Gas Tubes	Ø6.0mm					
	Connection Hose Coupling (External)	Ø6.0mm					
Operative Environment	Ambient Temperature	5 - 40°C					
	Relative Humidity Range	50% (40°C) - 80% (31°C)					

Process Control

Model							
		CELBIC 25	CELBIC 50	CELBIC 100	CELBIC 200	CELBIC 500	CELBIC 1000
Temperature Module Heating Only - Electrical Heating Plates	Temperature Control	RT - 70°C					
	Heating Capacity	1 x 300W (220V)	1 x 450W (220V)	1 x 600W (220V)	1 x 800W (220V)	2 x 650W (220V)	2 x 900W (220V)
	Over Temperature Protection	Maximum 75°C (Bi-metal Interrupted Heating)					
Gassing Module Control box (MFC BOX) 4-Gas Mix (O ₂ , N ₂ , CO ₂ , Air) with Headspace Outlet	MFC	Flow Rates	0.03 - 3.5LPM	0.1 - 5LPM	0.2 - 10LPM	0.4 - 20LPM	1.0 - 50LPM
		Accuracy	±1.0% F.S. (25°C)				
	DO Cascade	Available					

Process Control

Model			CELBIC 25	CELBIC 50	CELBIC 100	CELBIC 200	CELBIC 500	CELBIC 1000
Sensor & Measurement	Temperature Probe Pt 100	Temperature Range	0 - 150°C					
		Display Resolution	0.1°C					
		Amplifiers	1					
	pH Single Use	pH Range	6 - 10					
		Display Resolution	0.01pH					
		Amplifiers	Maximum 2					
		Recalibration Function	Available					
	DO Single Use	Saturation Range	0 - 250%					
		Display Resolution	0.1%					
		Amplifiers	Maximum 2					
		Recalibration Function	Available					
	Load Cells	Load Cells	Available (Default)					
	Balance Substrate		N/A			Optional: Up to 4 per side		
External Signal Input		N/A			4 (0 - 5V DC)			
Pump Module	Internal Pumps		2 (Longer Pump FG15-13, WM114)			3 (WM313)		
	Control Range (Fixed Speed)		5 - 59 rpm		10 - 99 rpm	19 - 190 rpm	36 - 360 rpm	

Communication & Technical Data

	Model	CELBIC 25	CELBIC 50	CELBIC 100	CELBIC 200	CELBIC 500	CELBIC 1000
Communication	Industrial Ethernet	Optional					
Technical Data	Maximum Total Volume (L)	25 / 50		100	200	500	1000
	Working Volume (L)	5 - 12.5 / 10 - 25 (20 - 50%)		25 - 60	40 - 100	100 - 250	200 - 500
	Rocking Rate (R / Min)	14 - 34 ± 1		14 - 32 ± 1			
	Rocking Angle (°)	6 - 12 ± 0.5		6 - 12 ± 0.5			
	Free Orbital Rocking Rate (R / Min)	14 - 34 ± 1		14 - 32 ± 1			
	Free Orbital Rocking Angle (°)	6 - 12 ± 0.5		6 - 12 ± 0.5			
	Sensor Clamps for Secure Fixation of Glass Fiber Cables	2					
	Filter Heater	Available					
	Color Touch Screen	Available					
	Safety Measurement & Shut-off	30mbar					
Measurement Data Storage	Optional SD memory card						

Certifications & Patents



CE Verification of Conformity



CELBIC SUB System Patent



ISO 13485:2016



CE EU-Type Examination Certificate



3-D Culture Bag Patent



ISO 9001:2015

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