



## bioreactors

### SabaCell 110

The Bench top bioreactor manufactured by ZFSS Co. Ltd, is known as SabaCell 110. This product is used to cultivate various cell types, including CHO, BHK, etc. and for the production of various biological products, including antibodies, drugs, vaccines, etc. in laboratory and industrial scale.



#### Features and unique advantages of SabaCell 110 are:

- Easy operation.
- Various vessels 2,5 and 10 liters.
- Autoclavable several times .
- Exhaust gas condenser minimizes evaporation .
- SabaCell 110 is basically equipped with accurate controllers for PH, DO, Dissolved CO<sub>2</sub>, temperature, agitation and foam level.
- Equipped with a PID control processor.
- Equipped with PC with touch screen panel.
- Operation parameters and set points are displayed and easily adjusted using flexible software. The Biosab installed on a touch-screen panel PC in the control box.
- Display the operating time of each of the pumps (acid, base, antifoam and feed)
- store data in each operation and the ability to read and print them easily.
- warning based on user defined patterns.
- SabaCell 110 permits rapid fermentation process development for a broad range of application.

## Technical Specification of Bench top Bioreactor (SabaCell 110)

<b>Vessel volume</b>	Total capacity (L)	2	5	10
	Working volume (L)	0.4-1.5	1.5-3.8	2.5-7.5
<b>Vessel construction</b>	Aspect ratio (H:D)	≈2.5		
	Fabrication	Glass		
<b>Sterilization</b>	Autoclavable			
<b>Controller</b>	Control station	Temperature, PH, DO, Dissolved CO <sub>2</sub> , antifoam, RPM		
		Touch screen interface/ display		
<b>Agitation</b>	Brushless Servo Drive	120 W/5A	180 W/5A	
	Range and control	5-1000 rpm		
	Impellers	Two Marin propeller	Three Marin impellers	
<b>Temperature</b>	Range and control	Water temperature until 60°C		
	sensor	Pt100		
<b>PH</b>	Control range	0-14, ±0.02		
	Sensor	Mettler Toledo or Hamilton		
<b>DO</b>	Range and control	4ppb-25ppm or 1-300% sat, PID Control Cascade with agitation and Oxygen		
	Sensor	Mettler Toledo or Hamilton		
<b>Dissolved CO<sub>2</sub></b>	Range and control	10-1000 mbar CO <sub>2</sub>		
	Sensor	Mettler Toledo or Hamilton		
<b>Other sensors</b>	Foam/ level	Foam		
	Optional sensors	OD		
<b>Aeration</b>	Gas system	Mass Flow Controller and Rotameter for air, O <sub>2</sub> and CO <sub>2</sub>		
	Gas inlet	Air , CO <sub>2</sub> and oxygen		
<b>Exhaust</b>	Condenser and filter	Stainless steel condenser/ 0.2 μm filter		
<b>Pumps</b>	Standards, Options and Control	4 peristaltic pumps (acid, base, feed, foam)		
	Speed	Variable/fixed		
<b>Utility requirements and connections</b>	Process air and oxygen	Air ,O <sub>2</sub> and CO <sub>2</sub> ports		
	Water return	Circulation pump		
	Facility water	Heat and circulation pump and input port		
	Electrical source	220V~5A 50/60Hz		
<b>Net weight</b>	Control station	28 kg		
	Vessel For 5lit	Glass (4.1 kg)		
		Without condenser (11.1 kg)		
<b>Dimensions</b>	Cm (L*W*H) For 5lit	With condenser (12.1 kg)		
		Control unit (45*37.5*69)		
		Vessel without condenser and motor (30*30*56)		
<b>Communication port</b>	USB			
	<b>wifi</b>	Optional		
<b>Biosab software</b>	Control	PID for temperature, PH, DO , Dissolved CO <sub>2</sub> and RPM		
	Data logger	Yes		
	Output data	Graph ,table		
	Flexibility	Yes		
	Pump and valve	Manual and automatic		

## Technical Specification of Pilot Bioreactor (SabaCell 110-P)

<b>Vessel volume</b>	Total capacity (L)	20 – Industrial scale	
	Working volume (L)	0.25-0.75 Total volume	
<b>Vessel construction</b>	Aspect ratio (H:D)	≈2.5	
	Fabrication	Stainless steel 316L	
<b>Cleaning and sterilization</b>	Sterilization	Sterilization in place (SIP)	
	Cleaning	Cleaning in place (CIP)-optional	
<b>Controller</b>	Control station	Temperature, pH, DO, Dissolved CO <sub>2</sub> , antifoam, agitation rate	
	Touch screen interface/ display		
<b>Agitation</b>	Brushless Servo Drive	Based on the working volume (>180 W)	
	Range and control	until 50 L working volume	5- 1000 ± 1rpm
		More than 50 L working volume	5 – 600 ± 1rpm
	Impellers	Two to three Marin impellers	
<b>Temperature</b>	Range and control	Water temperature until 60°C ± 0.1	
	sensor	Pt100	
<b>pH</b>	Control range	0-14 ±0. 02	
	Sensor	Hamilton or Mettler Toledo	
<b>DO</b>	Range and control	4ppb-25ppm or 1-300% sat, PID Control Cascade with agitation and Oxygen	
	Sensor	Hamilton or Mettler Toledo	
<b>Dissolved CO<sub>2</sub></b>	Range and control	10-1000 mbar CO <sub>2</sub>	
	Sensor	Mettler Toledo	
<b>Other sensors</b>	Foam/ level	Foam	
	Optional sensors	OD	
<b>Aeration</b>	Gas system	Mass Flow controller and Rotameter for air, O <sub>2</sub> and CO <sub>2</sub>	
	Gas inlet	Air , CO <sub>2</sub> and oxygen	
<b>Exhaust</b>	Condenser and filter	Stainless steel 316 L/0.2µm filter	
<b>Pumps</b>	Standards, Options and Control	4 peristaltic pumps (acid, base, feed, foam)	
	Speed	50 - 100 rpm	
<b>Utility requirements and connections</b>	Process air and oxygen	Air , O <sub>2</sub> and CO <sub>2</sub> ports	
	Water return	Circulation pump	
	Facility water	Heat and circulation pump and input port	
	Electrical source	220V~5A 50/60Hz	
<b>Communication port</b>	USB		
<b>wifi</b>	optional		
<b>Biosab software</b>	Control	PID for temperature, pH, DO, Dissolved CO <sub>2</sub> and RPM	
	Data logger	Yes	
	Output data	Graph ,table	
	Flexibility	Yes	
	Pump and valve	Manual and automatic	