

Main Features

- Compact (500 L/m^2)
- Easy to operate and maintain.
- High areal productivity ($\text{g/m}^2 \text{ day}$).
- Modular – Different volumes available.
- Real Time algal concentration (g/L or cells/mL).
- Automated harvesting, dilution, evaporation refill, pH and temperature control.

Bio-Box Technical Brochure

BioBox
A NOVEL COMPACT MICROALGAE REACTOR.

BioSyntex
MICROALGAE FOR A GREEN ECONOMY.

Main Components

Probes and Controls

- PH and Temperature
- Turbidity probe (Abs, g/L or cell/mL)
- Level sensor
- Dissolved Oxygen (optional)

Nutrients & Chemicals

- Dosometric pumps
- Medium filter 0.2 micron
- Nutrient tanks

LEDs

- 190 W/pcs IP68 LED panels
- Customizable spectra and PPFD
- PPFD: 0-630 $\mu\text{mol}/\text{m}^2 \text{ sec.}$

Process Control

- Automatic harvesting
- Automatic medium refill
- Automatic evaporation refill
- Automatic dilutions
- pH and Temperature control

Other

- AISI 316L heat exchanger
- Membrane harvesting pump
- Air bubbling diffuser
- CO₂ small bubble diffuser
- Air filter 0.2 micron.

Productivity by Species

Strains	Bsx-Box	Volumetric Productivity		Daily Production
		g/L day	Cells/ mL day *10 ⁶	Cell/day *10 ⁹
<i>Phaeodactylum tricornutum</i>	BOX_548/1	0.25	12	6,500
<i>T-isochrysis lutea</i>		0.20	10	5,500
<i>Chaetoceros sp.</i>		0.15	5	2,740
<i>A. platensis</i>		0.25	-	-

Performance comparison

T-Isochrysis lutea



- **N.1 BSX_548/1 (548 L)**
- 10*10⁶ Cells/mL day (20% daily dilution)
- 2 m² Foot-print (1,8*1*0,9 m - L*W*H)
- **5,500 *10⁹ cell/day**

- **N.4 (460 L - 115 L/cad.) BSX_COLUMNS**
- 12*10⁶ Cells/mL day (20% daily dilution)
- 2,4 m² Foot-print (3,4*0,7*2,45 m - L*W*H)
- **5,500 *10⁹ cell/day**



Available Sizes

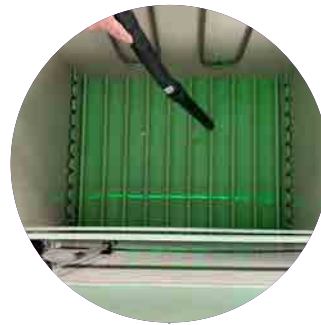
	BIO-BOX 274/1	BIO-BOX 548/1	BIO-BOX 822/1	BIO-BOX 548/2
Max. culture volume (L)	274	548	822	1100
Vessel	1	1	1	2 (548 L x 2)
Installed Power (kW)	2	4	6	8
IP 68 LED Panels	5	10	15	20
Max. cooling request (kW _{th})	2	4	6	8
Dimensions (cm)(LxWxH)	175x100x170	175x150x170	175x200x170	175x250x170
Avg. Biomass Production <i>T-Isochrysis lutea</i> (kg d.w/week)	0.5	1	1.5	2

Easy of maintenance



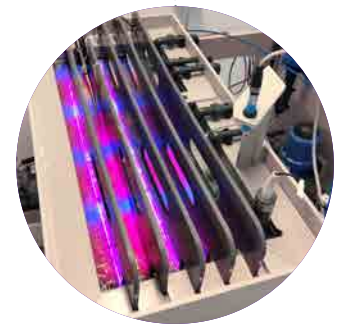
LED Panels Cleaning

Easy removal



Vessel Cleaning

Ready for
a new cycle



Administrative office

BioSyntex S.r.l.
via d'Azeglio, 57
40123 Bologna (BO)
Italy
Ph +39 051 332644
Fax +39 051 3395790
info@biosyntex.it
amministr@biosyntex.it

Head office

BioSyntex S.r.l.
via Ugo la Malfa, 10
40026 Imola (BO)
Italy
Ph +39 0542 73 01 34
info@biosyntex.it