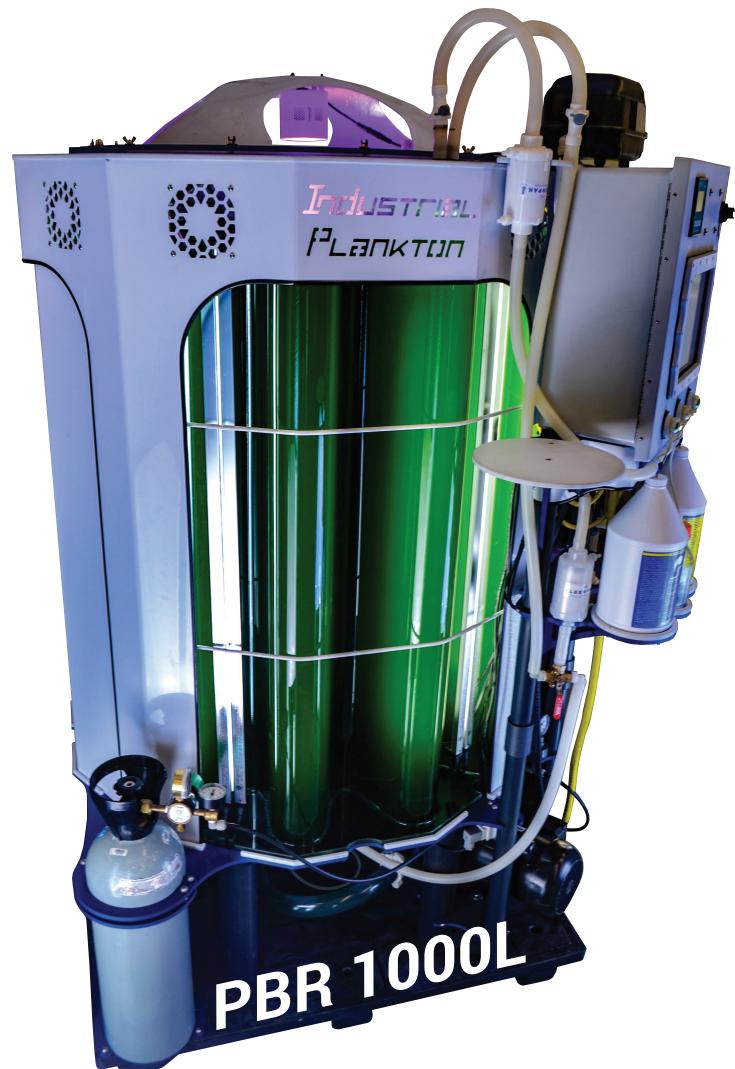


INDUSTRIAL
PLANKTON™
Automated Bioreactors



www.industrialplankton.com

Turn-Key Algae Solutions



Biosecure Algae Culture



Clean In Place

- Automated Chemical Jet Spray



Automated Scale-up & Harvest



High Surface Area Tanks



Closed Loop pH Control



Integrated Temperature Control



Remote Access & WiFi

Example PBR 1000L Production

Operating Expense / 7-10 Day Batch:

| | |
|-----------------------------|-------------|
| Nutrients & CO ₂ | \$10 |
| Electricity (10¢/kWh) | \$16 |
| Labor (1 @ \$20/hr) | \$20 |
| Total: | \$46 |

Density

- *T-1so* 20M cells/ml
- *Nannochloropsis* sp. 187M cells/ml
- *Tetraselmis* sp. 4.3M cells/ml

Continuous* Operating Expense / Month:

| | |
|-----------------------------|--------------|
| Nutrients & CO ₂ | \$39 |
| Electricity (10¢/kWh) | \$71 |
| Labor (3 @ \$20/hr) | \$60 |
| Total: | \$170 |

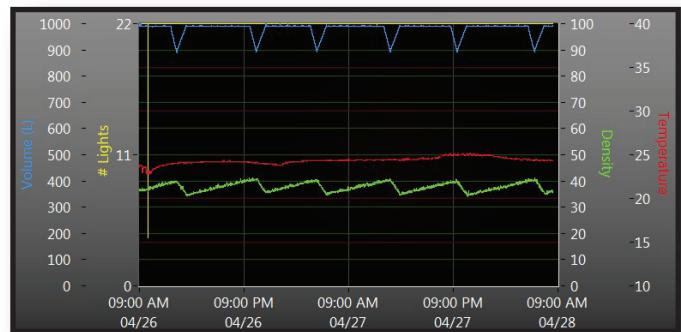
Density*

- *T-1so* 12M cells/ml
- *Nannochloropsis* sp. 48M cells/ml
- *Tetraselmis* sp. 2.4M cells/ml
- *Thalassiosira weissflogii* 11M cells/ml
- *Skeletonema costatum* 15M cells/ml
- *Haematococcus pluvialis* 700K cells/ml

*Based on 350- 500L harvest/day



Touch Screen Controls



Real Time Data Logging



| Specifications | PBR 1000L | PBR 100L |
|-------------------------------------|----------------------------------------------|------------------------------------------|
| Volume (L/Gal) | 1000/265 | 100/27 |
| Steady State Power Consumption | ~1200W | ~500W |
| Power Requirements (VAC/Hz/A/Phase) | 110-120/60/30/1, 220-240/50/15/1 | 110-120/60/15/1, 220-240/50/7.5/1 |
| Assembled Dimensions (LxWxH) | 54" x 59.5" x 87.5" 1.37m x 1.51m x 2.22m | 54" x 28" x 72" 1.37m x 0.71m x 1.83m |
| Ideal Working Space (LxWxH) | 66" x 70" x 96" 1.7m x 1.8m x 2.4m | 60" x 36" x 84" 1.5m x 0.9m x 2.1m |
| Yearly Maintenance Cost (USD) | \$1100 | \$900 |
| Scale-up Time | 7-10 days (20L inoculum) | 6-8 days (2L inoculum) |

*other options available

Requires min. 48.5" x 78.5" doorway

Requires min. 24" x 68" doorway



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