Phyco-Conical

Airlift Photobioreactor



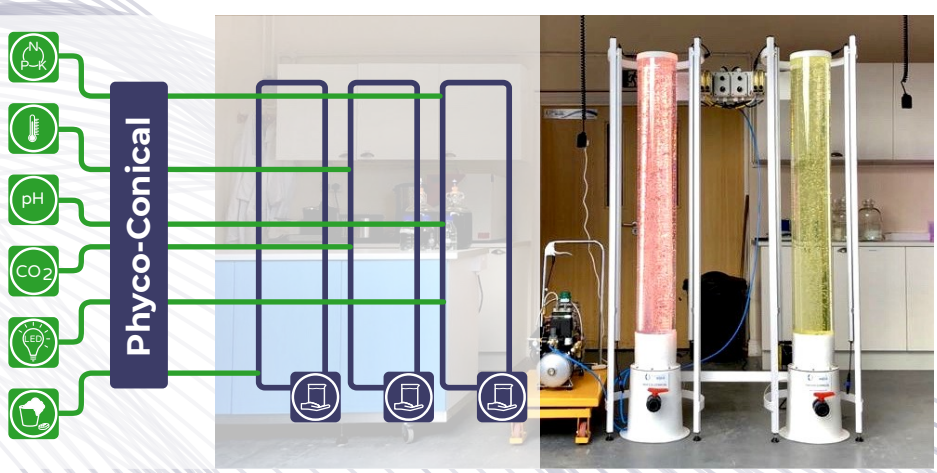
MAKING ALGAE EASY

Varicon Aqua is the manufacturer of the **Phyco-™** range of photobioreactors with more than 30 years' experience designing, constructing and deploying **algal photobioreactors**, high rate algal ponds and aquaculture algae production systems worldwide. As a global leader in this sector our close client engagement and supply chain relationships allow us to provide bespoke photobioreactor and cultivation systems for a broad range of applications. To date we have deployed over 270 photobioreactor systems across the globe, ranging in scale from 5 L to 400,000 L. Prominent products in the Phyco-™ line include **Phyco-Flow™**, **Phyco-Pond** systems, the **Phyco-Lift** and **Phyco-Bubble**.

The **Phyco-Conical** range of photobioreactors are ideally suited to laboratory and inoculum production. The **Conical** systems is comprised of a tube of 2 m in length, with a total volume dependent on the diameter (60-370 L). The system can be fabricated in either borosilicate glass, acrylic or polycarbonate, with the top and bottom connections made from fibreglass. Lights and control system are mounted on a light-weight aluminium frame. A variety of ports for inlet/outlet and sensors can be located on the base, with probe threads in plastic or stainless steel. The Phyco-Conical systems are mixed by aeration from the fibreglass base, providing a turbulent high mass transfer environment, whilst significantly reducing mechanical shear.

Phyco-Conical outline and options

All Phyco-Conical's can be equipped with the VAS control unit, and a range of sensor or lighting options to improve cultivation conditions.





Specifications and performance

Physical Considerations	
Volume/Height	60-370 L / 1-2 m (2 m standard)
Tube OD	0.2-0.5 m
Shape	Single tubular, mounted
Mixing	Aeration
Electricals	Lighting array, aerator, optional VAS unit

Example Performance (details of other species available)	
Algae	*Chlorella sorokiniana* (species)
Density	0.5-1 g L^{-1}
Productivity	0.05-0.15 g L^{-1} d^{-1}
Max yield	1 g L^{-1}
dO_2	≤ 150 %

Engineering Performance (in house data)	
Liquid	0.1-0.2 m s^{-1} (max - velocity)
Reynolds	≥10 k (number)
Maximum	2,000 µ E m^{-2} s^{-1} (light)
Temperature	10-45 °C
Mass	~0.05 s^{-1} (transfer coefficient)

Phyco-Conical configuration



Algae Production

In addition to our photobioreactor systems we also specialise in providing the auxiliary equipment for process monitoring and control, LED solutions and downstream processing.

As a one-stop shop for algae production we have a full range of nutrient mixes from our **Cell-Hi All-in-One** line.

MAKING ALGAE EASY

Our guarantee.

As with all Varicon Aqua systems we pride ourselves on the high level of after sales support we provide to our clients whether it's a systems issue or a technical production question. We are highly approachable. Come talk to us about your needs!

Contact: variconaqua@variconaqua.com - www.variconaqua.com

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