Phyco-Lift

Airlift-Column Photobioreactor

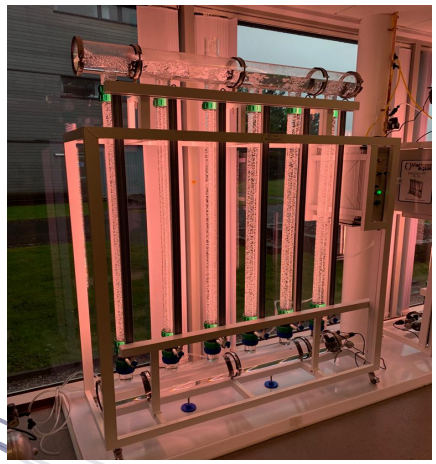
Varicon Aqua are specialists in the design, construction and deployment of algal growth platforms. With over **30 years of experience** and over **350 photobioreactor systems** deployed across the globe we are recognised as global leaders in the sector. Our close client engagement and supply chain relationships allow us to provide bespoke photobioreactor and cultivation systems for a broad range of applications; we have provided systems ranging in scale from **5 litres to 400,000 Litres**.

Our key algal growth platforms are represented within the **Phyco-™** line including the **Phyco-Flow™**, **Phyco-Pond** systems, **Phyco-Lift**, and **Phyco-Bubble**, each designed to meet specific needs and deliver optimal results in algal cultivation.

The **Phyco-Lift** range of airlift-column photobioreactors provides a robust lab or pilot plant sized solution to growing algae for commercial or research purposes. The **Lift** reactor can be built in borosilicate glass or plastic configurations. With the simple modular design allowing for scale-up with negligible performance drop. Furthermore, the reactor design gives a dual operation mode as it can be operated in either airlift or column mixing configurations, both of which allow for low shear, high turbulence and high mass transfer culturing conditions.

Phyco-Lift options

All Phyco-Lift™'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	≤2.5 m^3 / 1.5-3.5 m
Tube no.	4-8 Per linear metre
Tube OD	54, 65, 110 mm
Tube volume	10-20 L
Height	1.5-3.5 m

Example Performance (details of other species available)	
Algae	*Chlorella sorokiniana* (species)
Density	0.5-2.5 g L^{-1}
Productivity	0.25-1 g L^{-1} d^{-1}
Max yield	3-3.5 g L^{-1}
dO_2	≤ 200 %

Engineering Performance (in house data)	
Liquid	0.3-0.5 m s^{-1} (max - velocity)
Reynolds	4-10 k (number)
Maximum	2,500 µ E m^{-2} s^{-1} (light)
Temperature	10-45 °C
Mass	~0.04 s^{-1} (transfer coefficient)

Phyco-Lift basic 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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