

PURE AIR, PURE LIFE

Urban'Alg®

A living air-treatment unit. Microalgae fix excess CO₂ through photosynthesis and return cleaner, oxygen-enriched air to the spaces where people gather.



350–450

ppm local reduction in
excess CO₂¹

50 / 150

m² zone of influence,
Compact / Standard

92–99%

less water than ponds
or photobioreactors

Urban'Alg® treats the air biologically, at source. Ambient air is drawn in at the top of the unit and passed across SYKLEA's ALIUM® biological plates, where photosynthetic microalgae fix CO₂ and release oxygen. The treated air is returned to the surroundings, creating a local zone of rebalanced air. The unit works alongside existing ventilation rather than replacing it.

The microalgae grow under No Water Technology™, a thin-film process with no free water. A unit needs only a few litres of top-up per month, produces no liquid effluent, and involves no combustion, particulates or chemical filtration, which makes it suited to occupied, public-facing spaces.

Two models share one platform: the Compact 3 m for offices, concourses, stations and airports, and the Standard 5 m for large halls, streets, plazas, campuses and parks. Both come in Temperate, Cold and Hot climate versions and scale unit by unit across a multi-site estate.

Urban'Alg® draws on more than 25 years of microalgae research and over 100 patents. It is an air-quality solution, not a carbon-offset instrument.

Action at source

Acts on the CO₂ itself in occupied zones, instead of diluting it with more ventilation and more energy.

Safe in public spaces

Quiet, sealed and combustion-free, with a non-GMO, BSL-1 strain and no liquid effluent.

Plug & Play, scalable

Delivered pre-assembled and added one unit at a time, from a single flagship to a fleet across sites.

Monitored performance

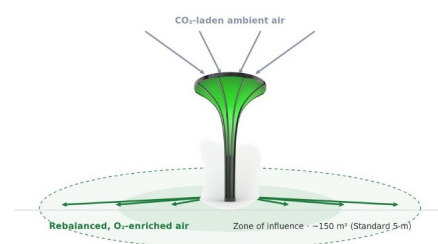
On-board sensors, optional remote supervision and a 10-year commercial warranty on the equipment.

A visible commitment

An architectural presence that makes an ESG commitment tangible, with data for CSRD and WELL reporting.

1. Within the zone of influence; confirmed per site against a baseline recorded at commissioning.

	Compact 3 m	Standard 5 m
Dimensions		
Overall height	3.15 m	5.20 m
Crown diameter	2.3 m	3.7 m
Superstructure mass	< 1 t	≈ 1 t
Anchoring	Self-supporting base indoors, concrete base outdoors	
Performance		
Local CO ₂ reduction ¹	350–450 ppm of excess CO ₂	
Zone of influence	≈ 50 m ²	≈ 150 m ²
Airflow	50 m ³ /h	200 m ³ /h
Oxygen	Continuous return, 1 mol O ₂ per mol CO ₂ fixed	
Operating conditions		
Ambient temperature	15–30 °C indoor, 5–45 °C outdoor	
Internal humidity	RH 90–98 %	
Climate versions	Temperate, Cold (frost protection), Hot (enhanced cooling)	
Water and energy		
Water reservoir	20 L	80 L
Water top-up	≈ 5 L/month	≈ 20 L/month
Liquid effluent	None	
Electricity ²	From 9,200 kWh/year	
Power supply	Dedicated, single-phase 230 V, 50/60 Hz	
Biology		
Strain	Plectonema sp., non-GMO, BSL-1	
Cultivation	No Water Technology™ on ALIUM® plates	
Monitoring and compliance		
Sensors	Humidity, temperature, CO ₂	
Communication	PLC via IO-Link or bus; optional remote supervision	
Marking	CE (Europe), UL (North America)	
Ingress protection	IP44 structure, IP68 electrical enclosure and reactor	
Warranty	10-year commercial warranty on the equipment	



Zone of rebalanced air around a unit

How it works

- 1 Air capture at the top of the unit
- 2 Contact with ALIUM® biological plates
- 3 Photosynthesis fixes CO₂, releases O₂
- 4 Cleaner, oxygen-enriched air returned

Siting

One unit every 5 to 6 m is recommended. Keep about 1 m clear for maintenance and about 3 m from HVAC outlets and walls.

Installation and maintenance

Delivered pre-assembled and commissioned by SYKLEA, with a 2-month run-in included. Technical visits taper from monthly to quarterly from year 2, plus a mandatory annual biological maintenance of the strain.

Commercial model

Purchase (CAPEX) or multi-year lease (OPEX). Equipment, installation and maintenance are always quoted as three separate line items.

1. Within each unit's zone of influence. Actual reduction depends on volume, ventilation, occupancy and initial CO₂, and is confirmed per site.

2. Reference value. Larger, outdoor and Cold-version units consume more.