



WACOGNIS

# Gea

Wacognis Gea is a system for extremely efficient water treatment with long-lived nanobubbles or ultra-fine bubbles (UFM), which without added chemicals ensure faster and healthier growth, purification and disinfection of irrigation, agricultural and wastewater.



## O<sub>3</sub>&O<sub>2</sub>

The water treated with Wacognis Gea is enriched with high concentrations of dissolved ozone and oxygen, generated from the atmospheric air without the use of connecting cylinders. Dissolved gas intake concentrations are monitored regularly and they can be set up for specific use.



Gea improves the treatment of industrial or municipal wastewater, as well as other systems where disinfected water, or water with high oxygen values is required. It is particularly suitable for enhancing the flotation treatment effect, weakly degradable organic substances treatment, and clean-in-place (CIP) processes. Gea is extremely effective also for permanent disinfection of rainwater storage tanks and pipelines.



The optional integrated SmartWater module provides real-time remote control and management of the system over a Wi-Fi or mobile data network using a mobile app. The module is connected to the integrated dissolved oxygen (DO) and ORP sensor to maintain the pre-set DO/ozone supersaturation.

► The Gea automated aeration system is energy efficient, simple to install, easy to manage, and durable in operation.

### Sports turf management or crop farming

- Maximized root system growth, improved substrate or soil biota and root rot prevention
- Improved crop yield (above 15%)
- Improved plant health, growth and crop quality
- Increased nutrient uptake efficiency and reduced nutrient consumption
- Reduction of biological additives required
- Improved seed germination and plant cutting propagation

### Surface and groundwater treatment

- Efficient oxygen delivery to the whole water body, including the sediment layer - improved natural biological treatment
- Improved pollution remediation

### Rainwater and recycled water disinfection and treatment

- Permanently disinfected rainwater in water reservoirs and in the entire piping system (removal of biofilm, pathogenic microorganisms, viruses, algae, mold, heavy metals)
- Greater efficiency than conventional disinfection and treatment methods, lower costs

### Animal and fish farming

- Accelerate growth and reduce mortality on animal farms
- Biofilm elimination
- Higher food to weight conversion rate and appetite improvement
- Decrease pathogenic organisms
- Reduction of heavy metals
- Improved immune system
- Reduction of operational costs
- Reduction of scale formation in water piping system



Gea is a modular water hyper-aeration system with integrated ozone (O<sub>3</sub>) and oxygen (O<sub>2</sub>) concentrators, with an optional SmartWater remote control and monitoring solution.

### Wastewater treatment

- Improved wastewater treatment
- Improved flotation systems treatment
- Improved treatment of non-degradable organic substances
- Improved CIP processes without chemical disinfectants
- Increase of production, efficiency, revenue and profits



Model	10	20	30
<b>Water</b>			
Water flow rate [m <sup>3</sup> /h]	10	20	30
Max pressure [Bar]	1,2	1,5	1,8
Operation Temp [°C]	5 - 50		
MIN/MAX inlet pipe height*	-2 / +3	-3 / +3	-4 / +3
MIN/MAX discharge pipe height*	-2 / +3	-2 / +4	-2 / +5
FDA upgrade option	✓	✓	✓
<b>Gas</b>			
Built-in Oxygen generation	✓	✓	✓
Built-in Ozone generation	✓	✓	✓
Available gas flow range [L/min]	5 - 10	10 - 15	15 - 25
Oxygen transfer [kg/hour]	0,7	1,3	2
Ozone transfer [g/hour]	0 - 80	0 - 120	0 - 200
Gas-tank ad-on option	✓	✓	✓
<b>Controls</b>			
Control modes	manual / timer / IoT		
Indicator lights	power		
IoT Controller option	✓	✓	✓
T sensor package with IoT controller (ambient, pump, compressor)	✓	✓	✓
DO sensor option	✓	✓	✓
ORP sensor option	✓	✓	✓
P sensor option (water)	✓	✓	✓
T sensor option (water)	✓	✓	✓
<b>Electrical</b>			
Voltage	230		
Phase	1		
Hz	50		
Power [kW]	2,1	2,5	2,9
Pump power [kW]	0,8	1,5	1,8
Pump peak power [kW]	1,2	2,0	2,5
Total current [A]	11,0	13,5	15,0
<b>Setup</b>			
Wetted parts material	AISI 316 / Noryl		
Self priming option	✓	✓	✓
Pipe connection	Flange / Valves		
Inlet [inch]	2,0	2,0	2,5
Discharge [inch]	1,5	2,0	2 x 1,5
Double discharge	-	-	✓
<b>Dimensions</b>			
Height [mm]	880,0	880,0	1000,0
Width [mm]	485,0	550,0	610,0
Length [mm]	900,0	1000,0	1100,0
Weight [kg]	85,0	90,0	95,0
*MIN/MAX height is measured from the position where the device is positioned to the MAX/MIN height of the inlet or outlet hose			
CE			

## FEATURES

- Fully automated water aeration system
- Delivery of dissolved oxygen to root system
- Completely free of added chemicals
- Real time remote monitoring and control
- Energy efficiency
- Low maintenance cost
- High water processing speed
- Precision controlled levels of dissolved oxygen in irrigation water
- Gas concentration from environmental air
- Reduction of pathogens in water

## MODELS

Wacognis Gea comes in three different water processing capacities and can transfer from 0,7 to 2 kg oxygen per hour or 80 to 200 g ozone per hour.

## SETUP

Wacognis Gea is a plug-in system that can easily be integrated into your existing irrigation or other water processing system.



## Nanobubbles

Nanobubbles or Ultra Fine Bubbles are extremely small bubbles with a diameter of 100 nanometers or less. Their size enables them to provide more than 1000 times the surface area compared to macrobubbles.

These ultra-fine bubbles are extremely stable, negatively charged, neutrally buoyant and they can persist highly dispersed in water up to several weeks, providing large storage of oxygen in water. Water treated with UFBs will remain aerated for a very long time. The physics of Brownian motion ensures that UFBs are distributed throughout the body of water.



Enrich your water with oxygen for better yield, higher profit and lower operation cost!



No chemicals.



No UV.



No biological agents.



Simple installation.



No filtration.



Remotely controlled.



No ultra sounds.