

# ACO UV Deodorization Unit

ACO UV Deodorization unit is used for decomposing waste odour from waste water treatment plant, sludge tanks, collecting tanks or grey water tanks. It is often used for killing bacteriological or biological smell from natural processes.

- Deodorization units consist of active and passive elements
  - UV lamps and photocatalytic sheets
  - Special mixture of granulated active carbon (GAC), zeolith (ZC), etc.
- Pressure inside box is controlled and analyzed by differential pressure sensor on inlet side and outlet side. Pressure disbalance information is sent to operational crew.
- Condensate which could occur on the bottom of unit is automatically drained through electronic solenoid valve.

## How it works

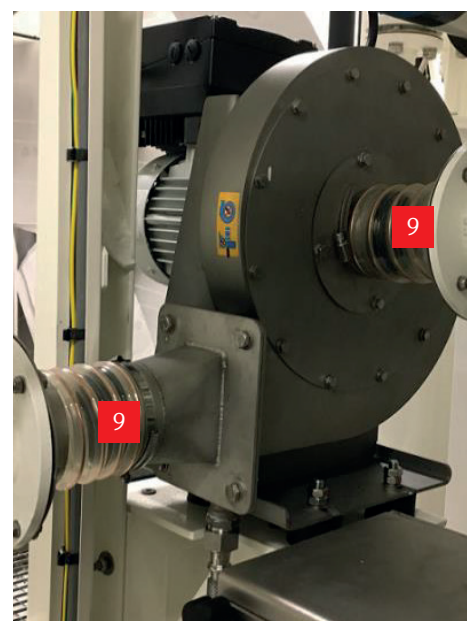
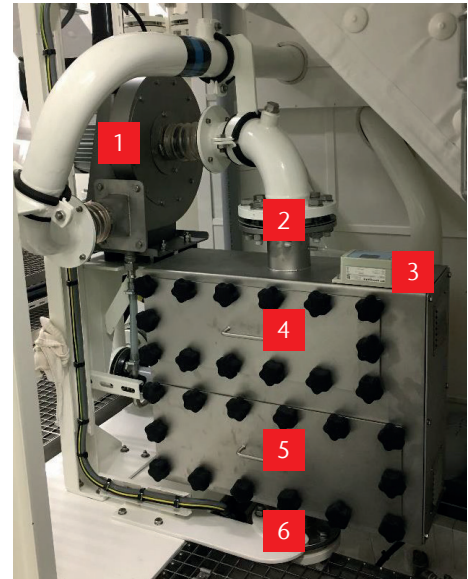
- Air from tanks is permanently sucked to chamber with UV lightning where light reflects from photocatalytic sheets and dissolves odour made by bacteriological pollutants. UV lamps create low concentration of ozone which effectively helps while this process.
- Ozone is afterwards dissolved in a special chambers with mixture of GAC and ZC.
- Possible pressure losses in the ventilation pipe line are compensated by installed radial fan with variable frequency drive. Radial fan supports the air flow in the ventilation pipe, and it's capacity is controlled by variable frequency drive.

### Radial fan is part of the total scope of supply

- Functionality of whole system is controlled by supplied control cabinet, which can be connected to ship's control and monitoring system

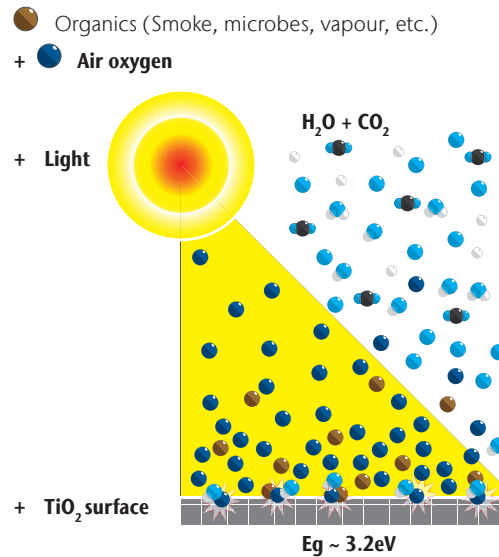
### Indication of Device Position

- 1 Radial fan
- 2 Clean air – outlet pipe
- 3 Differential pressure sensor
- 4 Filter chambers with special mixture of GAC + ZC
- 5 UV lamps + photocatalytic sheets
- 6 Waste air from tanks – inlet pipe
- 7 VFD (Variable frequency drive)
- 8 Solenoid valve for condensate drain
- 9 Compensator hoses



**Process Principle**

- Photocatalysis is a process of chemical decomposition of substances in the presence of photocatalyst and light radiation. It is principally based on photolysis, the natural decomposition of some substances by light, accelerated by the presence of photocatalyst.
- If the material with photocatalytic properties is exposed to light radiation of the appropriate wavelength, its surface is activated and a characteristic reaction is triggered.
- Applying the principle of photocatalysis may differ primarily in the type of catalyst. The most commonly used is nanocrystalline titanium dioxide TiO<sub>2</sub>, which is activated by UV-A radiation.

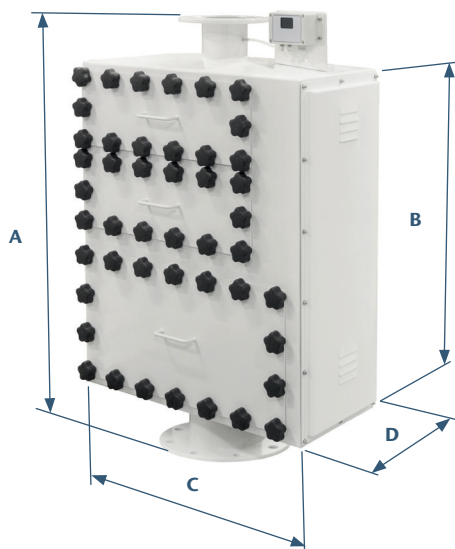


**Technical information**

**ACO UV Deodorization Unit**

| Model                          | 0248                    | 0448                     | 0848                     |
|--------------------------------|-------------------------|--------------------------|--------------------------|
| <b>Voltage</b>                 | 230 V, 50 Hz            | 230 V, 50 Hz             | 230 V, 50 Hz             |
| <b>Power</b>                   | 96 W                    | 192 W                    | 384 W                    |
| <b>IP (Ingress Protection)</b> | 52                      | 52                       | 52                       |
| <b>Outlet pipe</b>             | DN 80                   | DN 80                    | DN 80                    |
| <b>Inlet pipe</b>              | DN 100                  | DN 150                   | DN 200                   |
| <b>Flow</b>                    | 50 m <sup>3</sup> /hour | 100 m <sup>3</sup> /hour | 200 m <sup>3</sup> /hour |
| <b>Material</b>                | AISI 316L               | AISI 316L                | AISI 316L                |
| <b>Dimensions</b>              |                         |                          |                          |
| <b>A - height 1 [mm]</b>       | 930                     | 930                      | 1 030                    |
| <b>B - height 2 [mm]</b>       | 684                     | 684                      | 784                      |
| <b>C - width [mm]</b>          | 650                     | 650                      | 671                      |
| <b>D - depth [mm]</b>          | 303                     | 303                      | 303                      |

Note: Bespoke dimensions are subject of technical clarification



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