VEOLIA

Ozonia* cVOD

Catalytic Ozone Destruct Units

WATER TECHNOLOGIES

Ozone Destruct Technology:
Ozonia cVOD

^Figure includes optional equipment

Vent gases from processes where ozone has been used invariably contain residual amounts of unreacted ozone. Before this vent can be released into the atmosphere, it is necessary to decompose this residual of ozone. In most countries it is prohibited to release even low-level ozone concentrations into the atmosphere. There are various methods available to treat vent gas containing ozone - the two most popular being catalytic and thermal ozone destruction which are selected to match the process in question. In catalytic units, the ozone decay rate is accelerated on the surface of the catalyst to reduce the ozone to oxygen. Alternatively, thermal destruct units raise the temperature of the vent gas to a level where the half-life of the ozone is reduced to milliseconds, reconverting it to oxygen.

Applications

Vent-gases containing trace levels of unreacted ozone must be passed through a catalytic or thermal type vent ozone destruct unit before being released to the atmosphere.

Catalytic ozone destruct units are meant to be used in all main applications of ozone.

This includes especially:

- Drinking water treatment
- Industrial oxidation processes
- Process water disinfection
- Advanced oxidation processes (AOP)

The **Ozonia cVOD** units are also applicable for wastewater applications, when the ozonation step intervenes as a final treatment.

How It Works

Vent gases from ozone-based water treatment are saturated with water vapour and typically contain ozone concentrations <1 wt%. Catalytic destruction rapidly decomposes the residual ozone to oxygen at near ambient temperature. The catalytic process does not require high temperatures and only a small heater is used to heat the saturated vent gas to prevent condensation on the catalyst. Care has to be taken to ensure that catalytic poisons do not enter the system, so wastewater applications should be reviewed directly with an Ozonia expert. The **Ozonia cVOD** units include the heater, reaction chamber and fan.

Product Highlights

- Very high ozone destruct efficiency
- Low power consumption
- Long service life
- Virtually maintenance-free
- Easy integration
- Compact footprint
- Oxygen or air-based feedgas

Main Characteristics

The **Ozonia cVOD** units are an energy-efficient solution and include a heater, a reaction chamber with catalyst, and a suction fan.

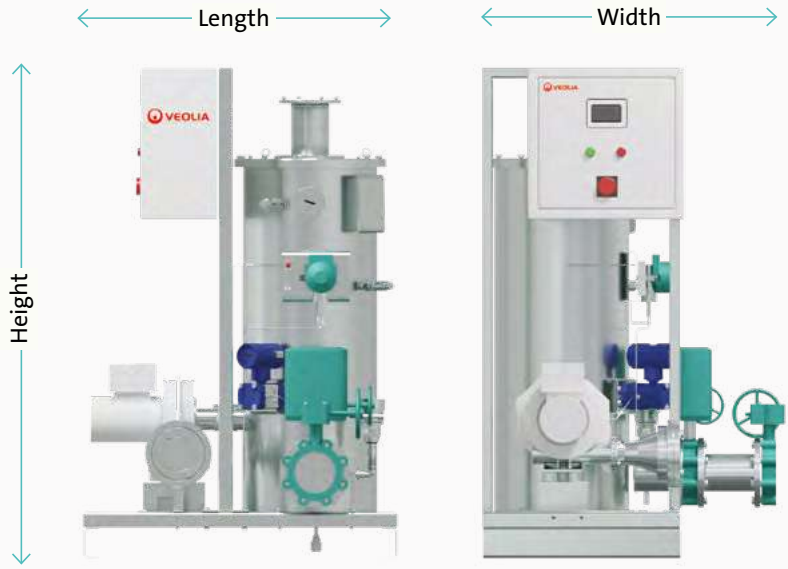
Flexible design with fully engineered options (valves, instruments, ozone monitoring, etc.) to meet specific plant and/or project requirements.

Model	Flow		Ozone Level		Operating Pressure	Electrical Rating	Dimensions†	Weight†
	Mass (kg/h)	Volume (m^3/h)	Inlet (%-wt)	Outlet (ppm)	(mbar)	(kW)	W x L x H (mm)	(kg)
cVOD-0075	75	62	< 2.5	< 0.1	-5	1.5	~700 x 800 x 1600	~140
cVOD-0150	150	123	< 2.5	< 0.1	-5	2.3	~780 x 900 x 1600	~200
cVOD-0300	300	246	< 2.5	< 0.1	-5	3.8	~990 x 1000 x 1600	~280
cVOD-0450	450	370	< 2.5	< 0.1	-5	5.2	~1030 x 1100 x 1600	~400
cVOD-0675	675	550	< 2.5	< 0.1	-5	7.6	~1130 x 1250 x 1650	~500
cVOD-1000	1000	820	< 2.5	< 0.1	-5	11.3	~1340 x 1400 x 1750	~750
cVOD-1250	1250	1030	< 2.5	< 0.1	-5	16.2	~1510 x 1500 x 1800	~840
cVOD-1550	1550	1270	< 2.5	< 0.1	-5	19.8	~1630 x 1600 x 1950	~1000
cVOD-1900	1900	1560	< 2.5	< 0.1	-5	22.8	~1700 x 1700 x 1950	~1150
cVOD-2300	2300	1900	< 2.5	< 0.1	-5	27.9	~1770 x 1850 x 2000	~1250

† Data for the unit with optional equipment installed

Technical Features

- **Design standards:** EN, IEC, ISO, SN
- **Connection data:**
  3 x 400 VAC +10%, 50 Hz / 60 Hz
- **Local control panel:** 230 VAC
  - **Communication protocol:** Modbus TCP, Profinet
- **Protection class:** IP 54
- **Conformity:** CE, RoHS



Materials

- **Reactor and piping:** Stainless steel, 316L
- **Heater:** Incoloy 800
- **Catalyst:** Metal oxide
- **Fan:** Aluminium
- **Frame:** Painted steel

Signals

- **Temperature heater higher than max**
- **Temperature gas lower than min**
- **Temperature gas higher than max**
- **Temperature reactor higher than max**

Options

- **Inlet valves**
- **Pressure transmitter**
- **Differential pressure transmitter**
- **Off-gas ozone concentration monitor**
- **Outlet check valve**
- **Silencer**
- **Local control panel**
- **Variable speed drive for fan**

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