BIO UV Group

The water treatment specialist

OZONE triogen® PPO

Ozone made simple

The triogen[®] PPO₃ range is the newest generation of positive pressure Ozone from BIO-UV Group. The generators incorporate the triogen[®] PPO₃ Ozone production modules, **state-of-the-art communications and connectivity**, together with **advanced safety and operational features**. The Ozone generators are available in **two different control configurations**, alongside **a range of sized and specified ancillaries** as well as a **complete turn-key system** including feedgas and Ozone injection.

applications

- Recirculating Aquaculture System
- Process water, CIP
- Food and Beverage

- Water re-use and Wastewater
- Drinking and Municipal water
- Commercial leisure

benefits 🕂

- Efficient production of Ozone at high concentration
- Simple to install and operate
- Cost effective and reliable performance
- Variable, easily adjustable Ozone output
- Modern communications & networking
- · Advanced safety & operability features
- · Available in multiple configurations to suit requirements



PPO₃-2



PPO₃-4







technical features

- Corona discharge Ozone generation capable of up to 300 g O_3 /h variable Ozone production at up to 12 wt% concentration
- HMI Touch screen and PLC offer local, remote analogue, and remote digital controls as well as cutting edge Ozone yield and concentration matrix, power trending, and OPEX calculator
- Available in two different versions to suit requirements the flagship PPO₃ (local, remote analogue, and remote digital controls with yield/concentration matrix and OPEX calculator/ trending) and PPO₃-Lite (local & remote analogue controls)
- Also available in a complete skid-mounted, turn-key system with booster pump and injection manifold – PPO₃-Flex
- Oxygen (90-99 wt%) or dry air feedgas*
- Water cooled, Positive Pressure Ozone
- Optional SMS alerts

*All feed gases require a minimum 0.5% Nitrogen content, dewpoint ≤-60°C, and to be free of contaminants

system performance - nominal data

Model	Nominal Ozone Output (g/h)		Nominal input / operating pressure (bar g)		Cooling water flow	Power Supply Rating	Nominal Power
	Oxygen (10 wt% O ₃)	Dry air feedgas (4 wt% 0 ₃)	Oxygen (10 wt% O ₃)	Dry air feedgas (4 wt% 0 ₃)	temperature rise (m³/h)	v (±10v) / phase / Hz	(kW)
PPO ₃ -1	60	25	3/1	4/2	0.13	230/1/50	0.7
PPO ₃ -2	120	50	3/1	4/2	0.26	230/1/50	1.3
PPO ₃ -4	240	100	3/1	4/2	0.50	230/1/50	2.5
PPO ₃ -Flex-2	120	-	3/1	-	0.26	230/1/50	7.0

quality & safety standards

- ISO 9001 : 2015
- · CE/UKCA Compliance
- IP54 protection class







overall technical data

Model	Range Ozone	Output (g/h)	Range Ozone (w	Concentration /t %)	Cooling water	Range Power consumption
	Oxygen feedgas	Dry air feedgas	Oxygen feedgas	Dry air feedgas	flow range (m³/n)	(kŴ)
PPO ₃ -1	10 - 75	2.5 - 40	1 - 12	0.2 - 4.5	0.06 - 0.3	0.3 - 0.85
PPO ₃ -2	20 - 150	5 - 80	1 - 12	0.2 - 4.5	0.13 - 0.6	0.5 - 1.6
PPO ₃ -4	40 - 300	10 - 160	1 - 12	0.2 - 4.5	0.26 - 1.2	0.9 - 3.1
PPO ₃ -Flex-2	20 - 125	-	1.5 - 12	-	0.13 - 0.6	5.0 - 7.0

controls and outputs

	PPO ₃ and PPO ₃ -Flex	PPO ₃ -Lite			
Interface	5.7" Touch Screen Schneider M221 PLC with Proface GP4301 HMI	5" Touch Screen Own-label integrated PLC/HMI			
Screens	Operator menu System Setup Maintenance Alarm & Alarm History Event & Event History Analogue I/O Status I/O Status Critical Error Help OPEX Calculator Data trends Oxygen Concentrator control screen (Flex Only)	Operator menu Maintenance Alarm & Alarm History Event & Event History Analogue I/O Status Critical Error Help			
Data	Power Board Temperature in °C System hour counter Coolant water temperature Gas Pressure System power consumption (live and rolling average)	Power Board Temperature in °C System hour counter Coolant water temperature Gas Pressure			
Safety features (alarms)	Coolant flow failure Coolant over temperature Feed gas pressure fault Power Board over temperature Ozone cell failure Ozone gas detection through ATI F12 (optional) High current and RCD trip protection Emergency Stop Pressed				
USB backup	Selected Data Major alarms, and events	-			
Ozone Setpoint	20-100% selection via numeric input on HMI screen Selection using yield and concentration matrix on HMI External 4-20ma signal Value entered via Modbus TCP/IP	20-100% selection via numeric input on HMI screen External 4-20ma signal			
Local control	Intuitive start-up sequencing operation OPEX calculator and trending via the HMI	All core functionality via the HMI			
Remote Analogue	Terminals provided for external start, stop and reset pushbuttons Volt free relay outputs provided for Ozone on and Fault signals				
Modbus TCP/IP - Remote digital	The generator can be controlled via a third party system using Modbus TCP	-			

materials - PPO₃ and PPO₃-Lite

- Enclosure: Epoxy powder coated Sheet Steel
- · Ozone module: 316L stainless steel electrode assembly inside a ceramic dielectric tube

materials - PPO₃-Flex

- Enclosure: Epoxy powder coated Sheet Steel (Classic) or 316L Stainless Steel (Superior)
- Booster pump: Stainless Steel housing & impeller, 5.7m³/h nominal flow
- Injection manifold: Mazzei PVDF injector, PVC water pipework, and PTFE Ozone dosing tubing (Classic), or Stainless Steel injector and water pipework (Superior)





available ancillaries

- · A range of booster pumps & injectors for a variety of conditions
- Ozone off-gas vent valve & catalytic Ozone off-gas destructor
- 30LPM Oxygen concentrator
- Cooling water pump(s) and chiller(s)
- Dissolved Ozone and REDOX monitors
- Ambient Ozone gas monitor
- · Ozone gas concentration analyser
- All recommended spares and valves

Model	Overall System Dimension	Pipework connection (OD: in/mm)		Cooling water connections	Weight (e)
	(mm)	Feedgas in	Ozone out		
PPO ₃ -1	340L x 808W x 994H	0.39/10		0.47/12	80 kg
PPO ₃ -2	340L x 808W x 994H				100 kg
PPO ₃ -4	340L X 1208W X 994H				150 kg
PPO ₃ -Flex-2	664L X 816W X 1847H				200 kg



PPO₃-2







PPO₃- Flex-2

contact

triogen[®] by BIO-UV Group export@bio-uv.com www.bio-uv.com

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