

OZONE GENERATOR

GM 1-4 3.0

Primozone[®]
REDEFINING OZONE TECHNOLOGY

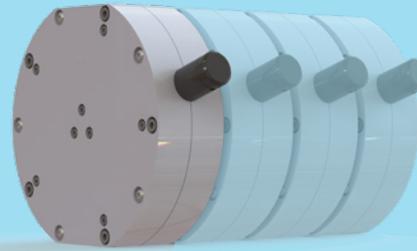




Primozone

EMC APPROVED

Electromagnetic compatibility is the ability of electrical equipment to function correctly and not cause unwanted effects such as electromagnetic interference to your surrounding electronics and personnel. Now you do not have to worry about the safety of your electronics and personnel around your ozone generator.



MODULAR

Add reactors for more ozone

MAINTENANCE FREE.
Only functional control

**COST EFFICIENT
ENERGY SAVER**

**LOW CAPEX
LOW OPEX**

**HIGH PRESSURE &
HIGH CONCENTRATION**

Ozone gas up to 3 bar(g) / 43.5 psi,
300g/m³ / 20% by weight



PREMIUM.

THE PRIME OZONE GENERATOR.

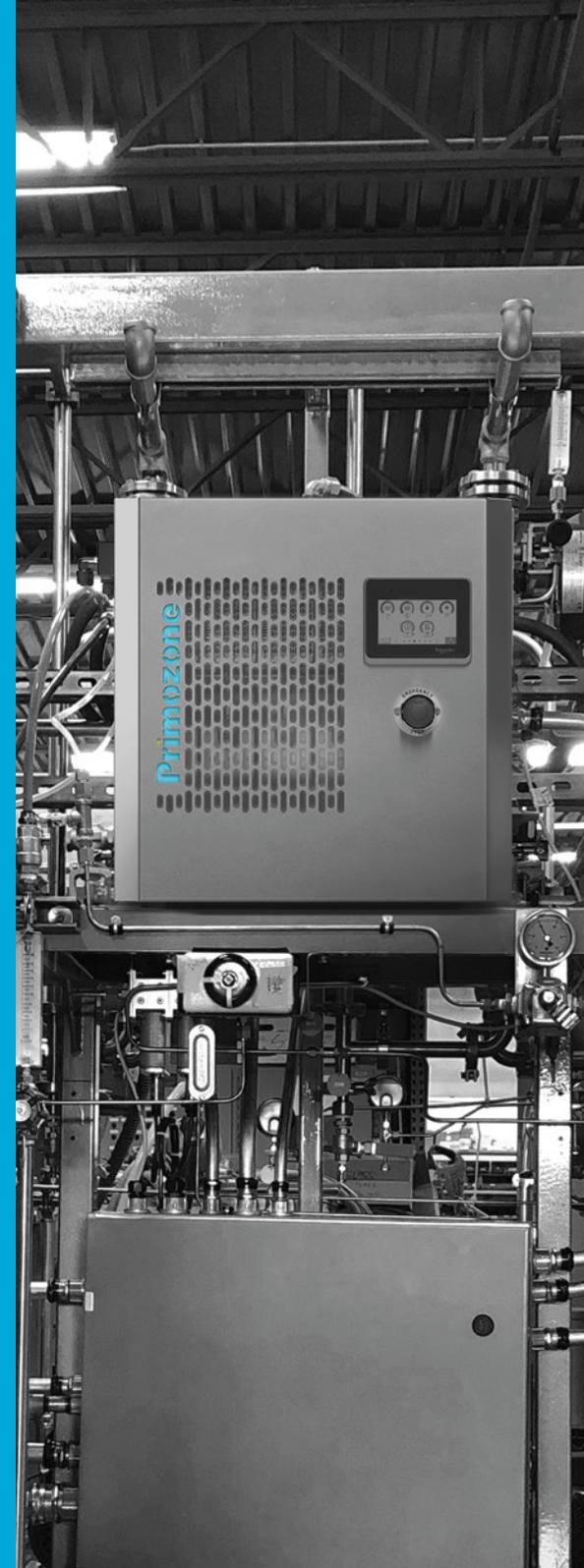
The Primozone GM1-4 3.0 series high-performance ozone generators are based on Primozone's patented technology. A technology that enables reliable ozone production, with low energy consumption and outstanding life cycle cost.

20% BY WEIGHT.

The Primozone ozone generators produce ozone at a higher concentration than most other commercially available high capacity ozone generators. The Primozone ozone generators can produce ozone at a concentration of up to 300 g O₃/m³ O₂, equivalent to 20% by weight, with an absolute gas pressure of 3 bar(g) / 43.5 psi.

TRUSTED.

The high ozone concentration produced in Primozone's generators, together with the high gas pressure, result in a greatly improved efficiency when dissolving the ozone gas in water. Tests at the Norwegian Institute of Technology have measured 98% dissolution in less than 3 minutes. This proves that the Primozone generators are very efficient for water treatment, and also very cost effective. The high gas pressure makes it possible to use alternative injection systems and to place the generators further away from a reaction tank.



EASY TO OPERATE

Operation and Control as well as Integrations made easy.



HIGH PERFORMANCE

High Pressure.
Low to high Concentration.
O₃ production: 4 g/h - 240 g/h
Compact size.



SAFE, QUIET, RELIABLE

Suitable for Lab environments.
IP65
< 45 dB: "Library level"



MODULAR

Independent ozone reactors
and power supplies



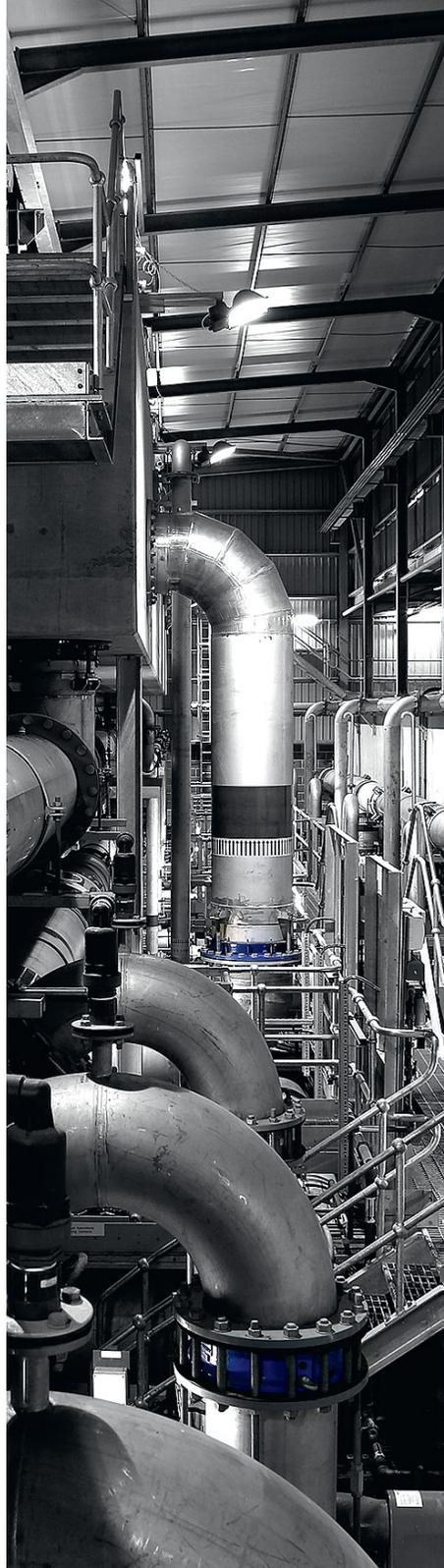
COMPACT DESIGN

Space efficient
Enables easy retrofitting



LESS ENERGY, LOWER OPEX

Significant savings in energy use
and cost compared with
traditional ozone solutions



EXCLUSIVE. INTELLIGENT.

Whatever size ozone generator you need, there is no reason to compromise on any features. All the Primozone ozone generators are based on the same redefining ozone technology that delivers world class ozone production.

The GM series offers ten standard size ozone generators. The modular design makes it possible to combine the standard generators to fit almost all your ozone needs, from small to large demand. Regardless of capacity needed, Primozone can offer a suitable solution.

Depending on application and your needs, Primozone offers ten different ozone generators with an ozone capacity that range from 4 g to 2.9 kg O_3 /h (0.3 to 153 lbs/day) with a 150-300 g/m³ ozone concentration. The GM1-4 series ranges from 4 g to 240 g O_3 /h (0.3 to 0.5 lbs/day). A combination of two or more generators can cover larger needs, with a capacity of up to 60 kg O_3 /h (3200 lbs/day). An existing system can easily be upgraded with additional ozone generators to cover future increased needs.

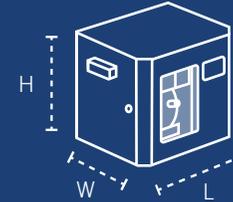
The Primozone ozone generators produce ozone at the exact levels needed at any given time. When ozone production varies according to redox (ORP) value or flow, the oxygen and energy consumption for the complete system adjusts accordingly, making the complete solution energy efficient. This is only one of the unique features of the Primozone ozone generator.

Each generator has an integrated control system providing safety, monitoring and control. The system delivers information in real-time about ozone levels, gas pressure and gas flow. The ozone generator is equipped with a user friendly interface which makes it easy to operate. The built-in control system will automatically log and handle different production disturbances, e.g. loss of oxygen supply.

The Primozone ozone generator is a complete Plug and Play system, easy to install and operate. The modular design makes the generator reliable and very easy to maintain. Most systems are up and running within 24 hours after delivery. The small footprint of the Primozone ozone generator is a great advantage compared to conventional ozone generators. The space requirement could be as low as 20% of a standard generator.



TECHNICAL SPECIFICATIONS



GM	OZONE CONCENTRATION		MAX OZONE PRODUCTION		MAX OXYGEN CONSUMPTION			MAX POWER (kW)	LENGTH x WIDTH x HEIGHT	WEIGHT
	g/m ³	%	g/hour	lbs/day	m ³ /h*	l/min*	SCFH*			
GM1	150	10%	60	3.2	0.41	6.8	14	0.60	603 x 437 x 517 mm 23.7 x 17.2 x 20.3 "	36 kg 79.3 lb
	200	13%	50	2.6	0.25	4.2	8.9			
	250	17%	40	2.1	0.16	2.6	5.6			
	300	20%	27	1.4	0.098	1.6	3.5			
GM2	150	10%	120	6.3	0.81	14	29	1.2	603 x 437 x 517 mm 23.7 x 17.2 x 20.3 "	45 kg 99.2 lb
	200	13%	100	5.3	0.50	8.4	18			
	250	17%	80	4.2	0.32	5.3	11			
	300	20%	54	2.9	0.20	3.3	6.9			
GM3	150	10%	180	9.5	1.2	20	43	1.8	603 x 437 x 517 mm 23.7 x 17.2 x 20.3 "	52 kg 114.6 lb
	200	13%	150	7.9	0.75	13	27			
	250	17%	120	6.3	0.48	7.9	17			
	300	20%	81	4.3	0.29	4.9	10			
GM4	150	10%	240	13	1.6	27	57	2.4	603 x 437 x 517 mm 23.7 x 17.2 x 20.3 "	60 kg 132.2 lb
	200	13%	200	11	1.0	17	35			
	250	17%	160	8.3	0.63	11	22			
	300	20%	110	5.7	0.39	6.5	14			

The above figures can vary ±10% and apply under the cooling conditions recommended by Primozone.

*These values assume gas properties are standardized at 0°C / 68°F and atmospheric pressure.

DETAILED SPECIFICATIONS

	GM1 3.0	GM2 3.0	GM3 3.0	GM4 3.0
Dimensions				
Height	517 mm / 20.4"	517 mm / 20.4"	517 mm / 20.4"	517 mm / 20.4"
Width	603 mm / 23.7"	603 mm / 23.7"	603 mm / 23.7"	603 mm / 23.7"
Depth	437 mm / 17.2"	437 mm / 17.2"	437 mm / 17.2"	437 mm / 17.2"
Weight	36 kg / 79 lbs	45 kg / 99 lbs	52 kg / 110 lbs	60 kg / 130 lbs
Ozone Output				
Max ozone productivity	60 g/h / 3.2 lbs/day	120 g/h / 6.3 lbs/day	180 g/h / 9.5 lbs/day	240 g/h / 13 lbs/day
Control range	10% - 100% up to 250 g O ₃ per m ³ 15% - 100% above 250 g O ₃ per m ³	10% - 100%	10% - 100%	10% - 100%
Feed Gas				
Oxygen purity	> 94%, < 1%N ₂ , Filtered	> 94%, < 1%N ₂ , Filtered	> 94%, < 1%N ₂ , Filtered	> 94%, < 1%N ₂ , Filtered
Oxygen dew point	< -70 °C / < -94 °F	< -70 °C / < -94 °F	< -70 °C / < -94 °F	< -70 °C / < -94 °F
Max gas pressure at inlet	3 bar(g) / 44 psig	3 bar(g) / 44 psig	3 bar(g) / 44 psig	3 bar(g) / 44 psig
Ozone pressure	< 2.9 bar(g) / < 42 psig	< 2.9 bar(g) / < 42 psig	< 2.9 bar(g) / < 42 psig	< 2.9 bar(g) / < 42 psig
Target inlet gas pressure	2.5 bar(g) / 36 psig	2.5 bar(g) / 36 psig	2.5 bar(g) / 36 psig	2.5 bar(g) / 36 psig
Gas connector	8/6 mm push on fitting	8/6 mm push on fitting	8/6 mm push on fitting	8/6 mm push on fitting
Max oxygen consumption	6.8 l/min / 14 SCFH	14 l/min / 29 SCFH	20 l/min / 43 SCFH	27 l/min / 57 SCFH
Cooling water				
Min water flow	0.11 m ³ /h / 0.48 GPM	0.21 m ³ /h / 0.92 GPM	0.32 m ³ /h / 1.4 GPM	0.42 m ³ /h / 1.8 GPM
Max water pressure	6 bar(g) / 87 psig	6 bar(g) / 87 psig	6 bar(g) / 87 psig	6 bar(g) / 87 psig
Water quality	Drinking water (98/83/EC), closed loop.	Drinking water (98/83/EC), closed loop.	Drinking water (98/83/EC), closed loop.	Drinking water (98/83/EC), closed loop.
Cooling water target T, ΔT	10 °C, 5 °C / 50° F, 41° F	10 °C, 5 °C / 50° F, 41° F	10 °C, 5 °C / 50° F, 41° F	10 °C, 5 °C / 50° F, 41° F
Water pressure drop	0.4 bar / 6 psi	0.4 bar / 6 psi	0.4 bar / 6 psi	0.4 bar / 6 psi
Water connector	12/10 mm push in fitting	12/10 mm push in fitting	12/10 mm push in fitting	12/10 mm push in fitting
Cooling agent composition	~30 % ethylene glycol, ~70 % water	~30 % ethylene glycol, ~70 % water	~30 % ethylene glycol, ~70 % water	~30 % ethylene glycol, ~70 % water
Power Input				
Power supply	1x230 V + N + PE / AC 50/60 Hz	1x230 V + N + PE / AC 50/60 Hz	1x230 V + N + PE / AC 50/60 Hz	1x230 V + N + PE / AC 50/60 Hz
Max power	0.6 kW	1.2 kW	1.8 kW	2.4 kW
Power factor, full %	0.99	0.99	0.99	0.99
Max fuse	6 A (C type)	10 A (C type)	10 A (C type)	16 A (C type)
Compliance & Certifications				
CE	EN 60204-1:2016, EN 61558-1:2005, EN 61558-2-16:2009, EN 1050: 1997			
FIFRA est. Number	95235-SWE-1			
Noise level	< 45 dB, EN 9614-1:2009			
Ingress protection	IP65, EN 60529:1991 + A1:2000 + A2:2013.IEC 60529:1989 + A1:1999 + A2:2013.			
EMC Emission & Immunity	Emission: EN 55011A:2016 (GM2-4), EN 55011B:2016 (GM1) + A1:2017 EN 61000-3-2:2014, EN 61000-3-3:2013. Immunity: EN 61000-6-2:2005 (GM1-4), EN 61000-4-2, -3, -4, -5, -6, -8, -11 (GM1-4)			