



# Electrolytic Ozone Application Guidebook

## Modular Systems and Applications

- Reduced maintenance
- No feed gas preparation
- Easy to install and operate
- High performance and reliability
- High purity ozone production up to 28wt%



**OWS Series**



**G Series**

Powered by **BES**

# Superior Benefits

Electrolytic Ozone Generation (EOG) is a novel technology which produces pure ozone from water instead of gaseous air or oxygen.

Introduced by BES Group since 1988, EOG (Electrolytic Ozone Generation) is a unique process which includes a built-in pure water preparation system for EOG module in our systems to enable them are capable of working in almost any conditions as long as tap water resource and electricity supply are available.

EOG is an effective and beneficial solution for **small to medium commercial-scale applications** without inherent disadvantages associated with conventional ozone processes that rely on air or oxygen preparation.



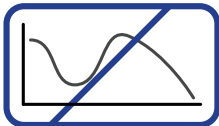
No feed gas preparation



Performance independent to air quality, humidity and flow.



No Nitric Oxides (NOx) & Nitrous Acid



No significant fluctuations in output



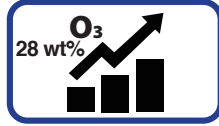
Reduced equipment size and maintenance



Easy integration & operation



Standardized modular design, expandable ozone capacity



Pure ozone generated at high concentrations

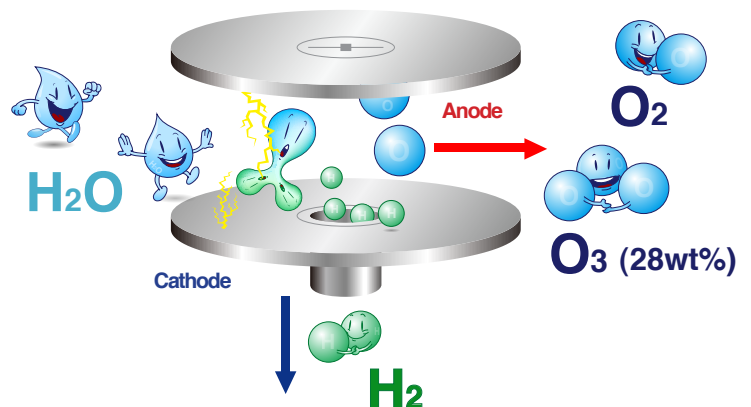


Full time self-monitoring, real-time alarm & service codes

## Technology Highlights

- PEM technology
- No ionic contamination
- Instant start-up performance
- Extreme high concentration output
- Solid and durable long working lifespan
- Easily integratable maintaining system integrity
- User friendly with cell controls and performance monitoring
- Modular and scalable intelligent design that is also extremely compact

In the process, the electrolytic cell splits water into its basic elements and then converts part of the liberated oxygen ( $O_2$ ) into ozone ( $O_3$ ).



# Market & Applications



**Pure and Ultrapure Water**  
**Recirculation Water Loop Disinfection**  
 - Electronics           - Cosmetics  
 - Pharmaceutical       - Biotechnology



**Medical Water**  
 Water & Waterline Disinfection  
 Waterline Biofilm Removal & Prevention



**Cooling Towers**  
 Replace Chemical Biocide  
 Legionella Control  
 Cost Savings



**Water Features**  
**Replace Chemical Biocides:**  
 - Water Sanitation  
 - Legionella Control



**Beverage & Breweries**  
 Process Water Disinfection  
 Bottle Rinsing  
 Barrel Washing Wineries  
 Clean-in-Place (CIP) Integration



**Agriculture & Greenhouse**  
 Complete Chemical-Free Microbial Control  
 Growing Surface Sanitation  
 Mist and Drip System Integration



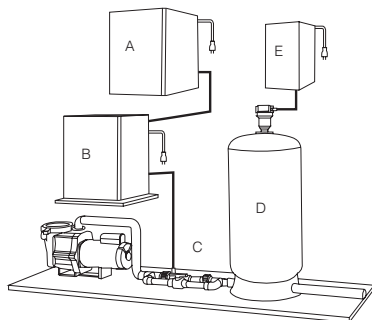
**Food Processing & Food Safety**  
**Replace or Reduce Chemical Sanitizer Usage**  
 - Food Contact Sanitation                   - Equipment & Tool Sanitation  
 - Tanks or Container Washing           - Walls and Floors  
 - Tray Washer Integration                 - Well Water Treatment Integration



**Commercial Laundry**  
**Clinics & Hospitals**  
 - Rags & Mops  
**Senior Care & Welfare Institutes**  
 - Linens  
**Laundromats**  
 - Contaminated Items

## The Most Advanced, Yet the Easiest-to-Use

### Corona Discharge



- A. Feed gas preparation
- B. Ozone generator
- C. Injection module
- D. Contact Vessel
- E. Off-gas vent and destructor



**Improved simplicity**

### Integrated Solution



**OWS Series**  
**Fully Integrated System**



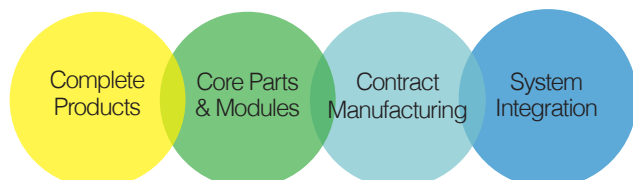
# Specifications

Series		OWS Series		G Series		
Model Name		OWS-1	OWS-3	G3	G6	G9
Model Number		EOS8131-CD	EOS8132-SD	EOS8131-CL	EOS8132-CL	EOS8134-CL
System Type		Modular EOG Ozonated Water System		Scalable EOG Ozone Generator		
Output Property		Dissolved Ozone in Solution		28wt% Ozone Gas		
Ozone Production		1.2 g/h	3 g/h	3 g/h	6 g/h	9 g/h
		Equivalent to <b>15g, 30g, and 45g</b> .O <sub>3</sub> /h by O <sub>2</sub> feed Corona Discharge Ozone Generator				
Water Ozonation	Scale	Up to 30 g.O <sub>3</sub> /h including self-produced				NA
	Flow Rate	200 - 6000 LPH (0.88 - 26.42 GPM)				
	Pressure	≤ Input pressure (max. 4 kg/cm <sup>2</sup> or 57 psi)				
	Conc. Level (ppm)	Depend on the amount of ozone supplied, water flow and dissolution rate. Suggested given quotes to the dissolution rate in a result calculation are: - 85% for G-Series + OWS-Series or OWS-Series - 50-65% for G-Series applied with a venturi Note: This is a conservative minimum performance considerable for water temperature ranging 20 - 30°C (68 - 86°F).				
iEOG Feed Water Requirements		5 - 30°C (41 - 86°F), Conductivity < 500 µs/cm, Chlorine < 0.1ppm, Flow rate ≥ 500 LPH (2.2 GPM), Pressure 2 - 7 kg/cm <sup>2</sup> (29 - 100 psi).				
Ambient Temp. & RH%		5 - 35°C (41 - 95°F) & < 90% R.H. without condensation				
Power Supply		100 - 120V, 60 Hz or 220 - 240V, 50Hz				
Rated Power		950W	1150W	300W	600W	900W
Protection Class		IPX2				
Materials		Enclosure: Stainless Steel 304 Interior: Wet surface and ozone contact: Stainless Steel 304*, Titanium, PVDF, PTFE, Viton				
Dimensions (W x D x H)		550 x 310 x 680 (mm) 21.7 x 12.2 x 25.6 (in)	760 x 350 x 1000 (mm) 29.9 x 13.8 x 39.4 (in)	905 x 260 x 1079.5 (mm); 35.6 x 10.2 x 42.5 (in)		
Weight		50kg (110.2lbs)	80kg (176.4lbs)	60kg (132.3lb)	68kg (149.9lbs)	75kg (165.3lbs)
Connections	iEOG feed water inlet	3/8" compression connect				
	External supply inlet	3/8" compression connect				
	Water Inlet & Outlet	1 1/2"		NA		
	Gas Outlet	NA		3/8" compression connect		
	Drain	7x10				
Control Method		Primary: Built-in flow switch Alternative/Optional: External timer switch or contact type on-off switch of similar.				

\*Optional Stainless Steel 316(L) for certain parts is available upon request. Please contact BES Group for more information.

## About Us

Since 1988, BES Group has been the global leader of electrolytic technology that converts water to ultra-pure ozone and hydrogen. Products applications include Food Safety, Ice & Beverage, Dentistry, Healthcare, Professional Laundry, Professional Cleaning, Maritime, and Home Sanitation & Wellness. All products and components are tested for high performance, safety, efficacy and reliability with certifications from government agencies and leading 3rd party labs.



Technologies applied are protected by one or more of the following patents:  
US 8,306,914 B2, US 9,757,697 B2, US 9,248,208 B2

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