

DEL:OZONEPRO

# PRESERVING THE NATURAL BALANCE

ANIMAL LIFE SUPPORT SYSTEMS



**CMP** COMMERCIAL  
PRODUCTS

“ Brookfield Zoo has two DEL Ozone Systems that have been performing perfectly for over 23 years. They are simple to operate, and maintenance is extremely easy. **DEL’s service department is the best in the business** ”

– Dave Derk, Lead Life Support, Brookfield Zoo

## SETTING THE STANDARD

Reliable equipment means a healthy habitat. We understand that, and that’s why DEL has been setting the standard for ozone integration into aquatic life support facilities for nearly 20 years. Now as a part of CMP, DEL brand products have access to an expanded network for service, support and product distribution.

DEL is trusted by Life Support Designers, Facility Operators and Animal Husbandry professionals. A properly sized and installed DEL system will provide safe, reliable sanitation with minimum maintenance. Systems are UL listed (large systems are built to UL standards) and NSF/ANSI Standard 50 validated and listed for antimicrobial efficacy, animal safety and equipment longevity.

## OUR APPROACH

Our innovative systems are designed to operate under vacuum, utilizing on-board oxygen concentrators and fully-automated PLC Controllers. DEL systems utilize integrated oxygen concentrators to provide optimal performance in a smaller package, while enabling the highest ozone mass-transfer.

Our systems produce ozone under vacuum. This design is safer and also ensures peak efficiency of the injection system. This approach outperforms a pressurized, air-fed ozone system. We’ve got the science to prove it.

San Diego Zoo – San Diego, CA



Beijing Aquarium – China



“ Unlike our ‘people-pools’ the aquarium inhabitants live in and breathe the water - no sanitizing chemicals allowed . . . **decades ago the aquarium industry turned to ozone as the primary sanitizer & oxidizer** ”

– Allen Clawson, Cloward H2O ”



*Ozone is safe, reliable and highly effective as a disinfection and oxidation method to improve water quality and clarity; providing and maintaining healthy water for aquatic life.*

## SYSTEM DESIGN

### LEAK-PREVENTION SAFETY

An ozone generator that produces and delivers ozone gas under pressure runs the risk of releasing ozone into an inhabited area if a leak develops. If a leak in the system lets air into a vacuum generated ozone system, the loss of vacuum is detected. This shuts down the generator and isolates the ozone chamber. Once shut down no ozone can leak from the system.

### OZONE TRANSFER EFFICIENCY

The mass-transfer performance of the injector is optimized when it is pulling against a vacuum, versus trying to balance a pressurized system to convert to vacuum.

This optimization is even greater when the injector is pulling against a slight restriction. Vacuum systems using venturi injection have an ozone mass-transfer of greater than 95%.

### OXIDATION PERFORMANCE

Only dissolved ozone gas performs readily as an antimicrobial oxidizer, while providing oxidation of organic and inorganic contaminants in the water. Dissolved ozone also acts as a microfloculant; this enhances filter performance with or without a foam fractionator.



## EXPERIENCE

DEL products are used to maintain healthy water for some of the most prestigious facilities in the world.

Alaska SeaLife Center – Seward, AK  
Atlantis, Paradise Island – Bahamas  
Atlantis, The Palm – Dubai  
Audubon Zoo – New Orleans, LA  
Beijing Aquarium – China  
Brookfield Zoo - Chicago, IL  
Calgary Zoo – Alberta, Canada  
Cleveland Metropark Zoo – Cleveland, OH  
Granby Zoo – Quebec, Canada  
Houston Zoo – Houston, TX  
Miami Metro Zoo – Miami, FL  
Oregon Coast Aquarium – Newport, OR  
Riverbanks Zoo – Columbia, SC  
San Diego Zoo – San Diego, CA  
Sea Life Aquarium – Mall of America, MN  
Seattle Aquarium – Seattle, WA  
Silverton Casino – Las Vegas, NV  
Toronto Zoo – Ontario, Canada  
uShaka Marine World – South Africa  
Woodland Park Zoo – Seattle, WA

# OZONE SYSTEMS

These self-contained systems incorporate standard and optional features:

- Multiple safety interlocks
- Backflow prevention devices
- External control interfaces
- 4-20 mA capability, 0-100% adjustability
- Complete isolation during shut-down
- PLC controllers
- Oxygen monitors with low level protection
- Integrated ORP Controller/Monitors.

Integrated features protect and correct the system in any situation.

Turnkey ozone packages include:

- Ozone generators (with oxygen concentrator & compressor)
- Injector Manifold Assemblies
- Flow Splitters
- Reaction Tanks
- De-gas Valves
- Thermal/Catalytic Ozone Destruct Systems
- ORP Monitor-Controllers
- Ambient Ozone Monitor-Controllers

## G-CLASS

G-Class models up to 45 grams per hour utilize exclusive ozone cell technology for years of consistent performance with no replacement or cleaning required.

## Q-CLASS

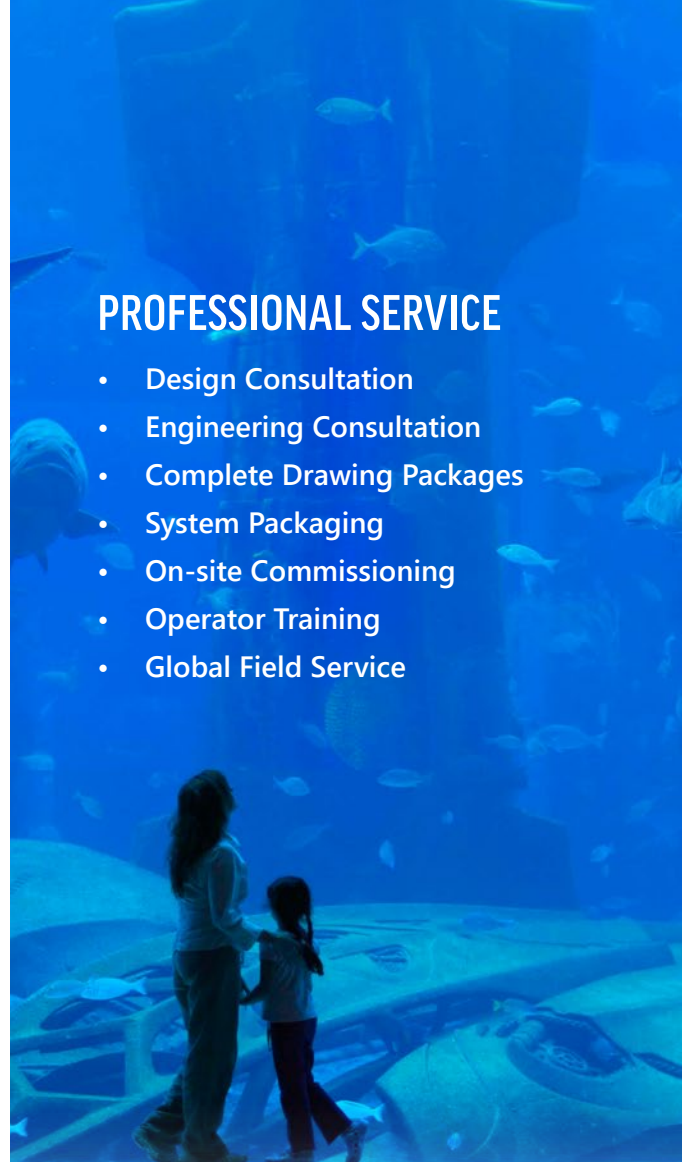
Larger models utilize self-fusing cold-cathode, gas filled glass electrodes. These can ensure long-lasting, impeccable performance with minimal annual cleaning.

# DEL:OZONE PRO



## PROFESSIONAL SERVICE

- Design Consultation
- Engineering Consultation
- Complete Drawing Packages
- System Packaging
- On-site Commissioning
- Operator Training
- Global Field Service



Atlantis, The Palm – Dubai



DEL OZONE Pro Q-Class (1200 grams/hr)

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