DEL ozone™

# OZONE GENERATORS

**Standard Equipment:**

- High frequency, Corona Discharge ozone cell(s)
- Self-regulating high voltage power supply(ies)
- Water cooled aluminum block (CD-15G/25G/45G)
- Air cooled finned aluminum heat sink (CD-2G/5G/7G)
- Ceramic tube dielectric
- Oxygen concentrator with compressor
- Fast-blo fusing on all circuits
- Powder-coated, ventilated steel enclosure built to NEMA-12 specifications.
- Adjustable ozone output on CD-45G
- Flow meter indicating the oxygen flow through the system
- Fault protection from:
  - Door open-door switch
  - Feed gas pressure failure-pressure switch
  - Loss of vacuum-low vacuum switch
  - Overheating on cells-temperature switch
  - Water Backflow-backflow preventer switch (CD-15G/25G/45G), solenoid & check valves.
  - Current overdraw-circuit breaker, fuse(s)
  - Over-pressurizing of Oxygen Concentrator- pressure relief valve

**Accessories and Optional Equipment:**

- Adjustable ozone output on CD-7GV,CD-15GV,CD-25GV
- ORP Monitor / Controller
- Ambient Ozone monitor / controller
- Dissolved Ozone monitor / controller
- Mixing / Degassing tower
- Contact / Degas tanks
- Degas valves
- Carbon & Catalytic Ozone destruct units
- Dry Tap™ Sensor Port
- Injectors
- Injector Assemblies
- Booster pumps

**Specification:**

## I. Ozone Generator

### A. Listings

1. Ozone generator and all components shall be UL/CUL classified for electrical safety and output standards.*****
2. Ozone generator shall be NSF listed Standard 50.

### B. Design Standards

1. The generator shall be capable of continuous operation for at least one (1) year with no major service (when installed and operated in accordance with the manufacturer's instructions.)
2. Ozone shall be generated at a concentration greater than 2% by weight to provide enhanced mass transfer to the water stream.
3. Generator module and all materials in contact with ozone shall be constructed of stainless steel, ceramic, Alfas and Teflon. No generators utilizing combustible or non-ozone resistant materials shall be allowed.
4. Generator module and power supply shall be designed such that contamination entering module (including water backflow) will not be destructive to the module, dielectric or power supply.
5. Ozone shall be generated and maintained under vacuum until the point of injection into the process water. Critical vacuum loss in the generator module shall cause a system fault and initiate shutdown.
6. All valves and fittings for ozone conveyance shall be type 316 stainless steel.
7. All ozone conveying tubing shall be of 316 stainless steel or Teflon.

***** MODELS CD-2G, CD-5G, CD-7G, CD-7GV, CD-15G, CD-25G &CD-45GV, are UL classified. Other models, if not U.L. classified, shall be built to the same standards.

**C. High Voltage Power Supply**

1. The ozone generator shall utilize a self-contained solid state high frequency / high voltage power supply.
2. High Voltage power supplies shall be UL recognized.

**D. Oxygen Concentrator**

1. Ozone generator systems shall utilize an oxygen concentrator to supply low pressure (0-20 psig) oxygen rich feed gas enabling increased ozone production at high concentrations and low flow rates.
2. Oxygen concentrators shall be capable of supplying oxygen at the rated flow rate of the ozone generator (see model specifications) at a minimum of 85% purity.
3. Feed gas from the oxygen concentrator shall be dry to less than minus 70°C dew point.
4. Oxygen concentrator(s) shall be SeQual ATF™ units sized to supply the necessary oxygen flow to the system.

**E. Ozone Generator Module**

1. Module shall be encased in a finned aluminum heat sink or mounted on a water-cooling jacket for cooling of modules.
2. Internal (ozone wetted) components shall be of all ozone resistant materials (stainless steel, ceramic, Teflon, Alfas).
3. Generator cell design shall be essentially disposable and allow for ease of replacement at the end of its service life.

**F. Controls**

1. Ozone generator shall be furnished as a package that shall include the following fully interlocked controls:
   a. Door safety switch.
   b. Thermal protection on the generator module(s).
   c. Vacuum loss.
   d. Pressure loss.

**G. Testing**

1. Each ozone generator shall be tested at its maximum rated output for at least 4 to 8 hours prior to shipment.
2. Each ozone generator shall be tested for ozone output and rated flow and validated against unit specification.

## II. Manufacturer Support

**A. Warranty**

1. A two year warranty shall be provided.

**Manufactured by:**

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