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## Mini-Ozone System

### OZONE DELIVERY SYSTEM



### Ideal for Semiconductor Applications

#### Features

- Compact design
- Produces O<sub>3</sub> Concentrations over 21% w/w
- 19" rack mountable or table top
- Low cost of ownership / no consumables
- Fully integrated solution including:
  - High Purity Ozone Generator
  - High Concentration Ozone Analyzer
  - Closed Loop Servo Controller
  - Oxygen MFC
  - Nitrogen MFC
  - Back Pressure Regulator
  - Electro-pneumatic divert valve
- Ideal for Atomic Layer Deposition (ALD)

#### Options

- Ozone Destruct
- Dissolved Ozone Analyzer
- Ozone Safety Analyzer
- Expandable to control additional Ozone Generators

#### Description

The MINI-OZONE SYSTEM is an innovative Ozone Delivery System designed to produce high concentrations of ozone for ALD, TEOS, MOCVD, Photoresist Stripping, Surface Conditioning and other semiconductor processes. It is a very compact yet complete ozone delivery system including a High Purity Ozone Generator, a High Concentration Monitor, a powerful Microprocessor based SCI-Turbo-L controller and all the required regulators and pneumatics, making the MINI-OZONE SYSTEM a turnkey solution. It is designed specifically for the most demanding applications requiring very high concentrations of Ozone, 21% or more.

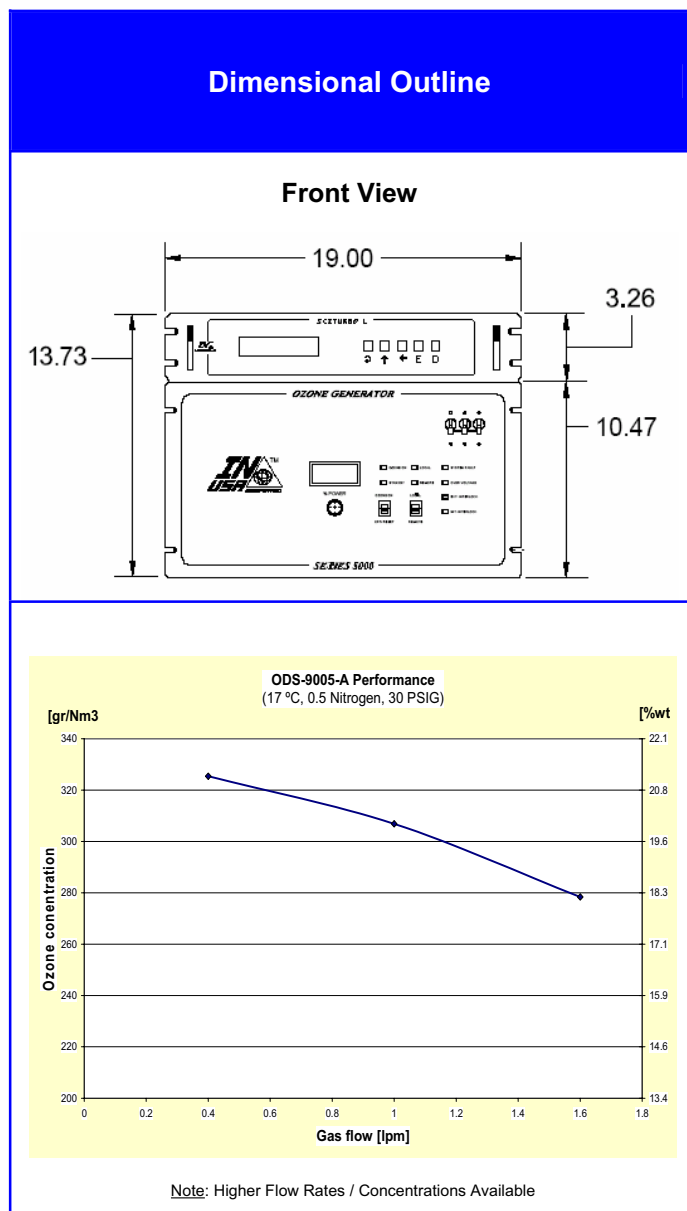
The MINI-OZONE SYSTEM's compact frame and lightweight body combine portable convenience with unparalleled performance, making it superior to other ozone systems on the market. The system is very easy to use and can be custom configured for any unique requirement.

The MINI-OZONE SYSTEM is expandable to support additional Ozone Generators running independent processes requiring different levels of Ozone concentrations and Flow rates. Optionally the MINI-OZONE SYSTEM can interface to IN USA's in line in situ dissolved Ozone Analyzer typically required in wet processes. It also can be interlocked with IN USA's NIST traceable UV absorption based Multi-Channel Ozone Leak Detectors and any of IN USA's range of Ozone destruct sub-systems. This makes the MINI-OZONE SYSTEM the only turnkey solution on the market from a single supplier.

# Specifications MINI-OZONE SYSTEM

|                               |   |
|-------------------------------|---|
| <b>System:</b>                | Model Mini-ODS<br>Turnkey Ozone Delivery System   |
| <b>Ozone Concentration:</b>   | Over 330 g/Nm <sup>3</sup> or 21.5 % w/w  |
| <b>Ozone Flow Rate:</b>       | Optimized for 1 slpm<br>(Other flow rates available)  |
| <b>Ozone Outlet Pressure:</b> | 15 to 40 PSIG<br>(typically set at 30 PSIG)   |
| <b>Ambient Temperature:</b>   | 5-35° C   |
| <b>Feed Gas:</b>              |   |
| <b>Oxygen</b>                 | Grade 6 or better   |
| <b>Nitrogen</b>               | Grade 5 or better (for doping only)   |
| <b>Cooling Water:</b>         |   |
| <b>Temperature:</b>           | 17 to 20° C   |
| <b>Flow Rate:</b>             | Configuration dependent   |
| <b>Setpoint Controller:</b>   | Automatic Servo Loop Control<br>User Programmable Setpoints <ul style="list-style-type: none"> <li>- Generator Power</li> <li>- Gas Flow Rate</li> <li>- O<sub>3</sub> Concentration</li> </ul> (controls up to two O <sub>3</sub> Generators simultaneously and independently) |
| <b>Analyzers:</b>             | UV O <sub>3</sub> Gas Concentration (gFFOZ)<br>UV O <sub>3</sub> Dissolved Concentration (dFFOZ optional)   |
| <b>Gas Flow Controllers:</b>  | MFC for O <sub>2</sub> and N <sub>2</sub> included  |
| <b>Regulator:</b>             | Back Pressure Regulator included  |
| <b>Display:</b>               | 20 Characters, Alphanumeric, LCD  |
| <b>Analog Outputs:</b>        | 4 to 20 mA and 0 to 10 VDC<br>(proportional to O <sub>3</sub> Concentration and O <sub>3</sub> Flow Rate)   |
| <b>Digital I/O:</b>           | RS-232-C, bi-directional  |
| <b>Diagnostics:</b>           | Internal diagnostics;<br>Instrument error relay   |
| <b>Power :</b>                | 208 to 240 VAC 1 or 3 Ø   |
| <b>Dimensions:</b>            | 19" x 13.7" x 18" (w x h x d)<br>(48 cm x 35 cm x 46 cm)  |
| <b>Compliance:</b>            | CE  |

Specifications subject to change without notice



| Ozone instrumentation for every application |                  |                       |                     |                       |                 |               |
|---|------------------|-----------------------|---------------------|-----------------------|-----------------|---------------|
|   | Generator Output | Safety/Leak Detection | Tool Leak Detection | Stack & Environmental | Dissolved Ozone | Spot Checking |
| Model dFFOZ                                 |                  |                       |                     |                       | •               |               |
| Model gFFOZ                                 | •                |                       |                     |                       |                 |               |
| Model Mini-HiCon                            | •                |                       |                     |                       |                 |               |
| Model L2RM                                  |                  |                       | •                   | •                     |                 |               |
| Model IN-2000                               |                  | •                     | •                   | •                     |                 |               |
| Model AET-030                               |                  | •                     |                     | •                     |                 | •             |
| Model dFFOZ-W                               |                  |                       |                     |                       | •               |               |



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