

High Purity Ozone System

SEMPA SYSTEM's high purity ozone module is designed to generate high concentrations of ozone for applications in the semiconductor and photo-voltaic industry.

The system is capable of handling two ozone generators and is specified to deliver a steady and long term stable concentration of up to 425 g/Nm³ at an oxygen feed rate of 50 slpm at 2.75 barg. The stand-alone system features a modular design combining mechanical and electrical components in a compact way. Core component is a PLC controlled ozone generator with an operator panel as HMI. Depending on specific on-site requirements various concentrations can be realized.

Ozone is generated by feeding oxygen into an electric discharge process. In order to improve the ozone generation and to stabilize the process, the oxygen feed gas is mixed with nitrogen. The mixing and dosing conditions can be controlled through the HMI.

Modulare Design

1. Gaspanel for feed O₂/N₂ and O₃ Outlet
Gaspanel for catalysator O₃' bypass
2. PLC and Monitoring Panel
3. Gas Detection Model 452
4. Generator MKS/Sumitomo

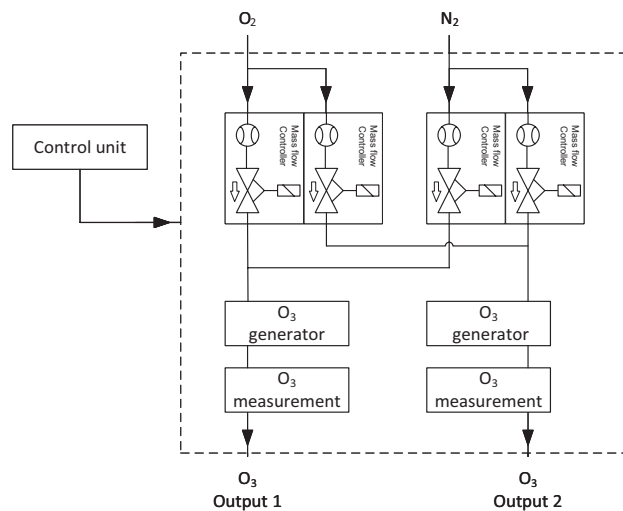
Applications

- CVD (Chemical Vapor Deposition)
- ALD (Atomic Layer Deposition)
- Improvement of oxide deposition rates
- Surface conditioning
- Ashing
- Wet treatments
- Cleaning
- Removal of photomasks
- Epitaxy



O₃'BOT Features

- High Purity Ozone
- High Ozone concentration up to 425 g/Nm³ at 5°C
- Attractive cost of ownership
- Environmental friendly
- Low maintenance cost
- Active measurement of ozone concentration
- Remote-Functionality with process tool Proven Technology
- Long term stable ozone generation
- Compact and modular design
- Autonomous System
- Catalytic converter as bypass in case of missing abatement or flow rates < 2 slpm
- Thresholds for concentration, mixing ratio and signals adjustable



Function Diagram

Configure your O₃'BOT

Many options are available to adapt the system exactly to your application or the specific requirements.

Please contact us to customize your O₃'BOT. Our experienced engineers will be happy to assist you.

Technical Data

Ozone Module Specification

Max. O₃ Concentration
 Connection
 Max. Pressure O₃
 Operating Pressure O₃
 Flow rate
 Temperature
 Cooling water Pressure
 Cooling water Flow
 Cooling water Temp
 Cooling water Specification
 CDA-Connection
 CDA max. Pressure
 CDA Operating Pressure
 CDA spec.
 Dimensions
 Weight
 Power Supply

MKS

upto 425g/Nm³ (@5°C and 2,5 slpm)
 ¼" VCR
 3.1 barg
 1.72 barg – 2.75 barg
 upto 50 NI/min
 10 – 40 °C
 2 barg – 6.8 barg
 least 9,4 l/min
 5 – 25 °C
 Demineralized
 6 mm Swagelok
 7 barg
 5.5 barg
 Oil & gas free
 608(B)*2132(H)*603(T)mm
 320 Kg
 3Ø 208 VAC (±10%), 50/60 Hz

Sumitomo

upto 300 g/h
 ¼" VCR
 5 barg
 1.5 barg – 2 barg
 upto 24 NI/min
 10 – 40 °C
 1.5 barg – 3.5 barg
 20 l/min
 18 – 22°C
 Demineralized
 6 mm Swagelok
 7 barg
 5.5 barg
 Oil & gas free
 3Ø 200-220VAC (±10%), 50/60 Hz

Process Gas Specification

Connections
 Max. Pressure
 Operating Pressure
 Flow rate
 Quality

O₂

¼" VCR
 85 psia
 30 – 60 psia
 5 – 60 slpm
 > 6N

N₂

¼" VCR
 85 psia
 30 – 60 psia
 0 – 15 slpm
 > 5N