

AX8585

Stand-Alone High Concentration Ozone Delivery System with the AX8410 PRIME Ozone Generator



The AX8585 stand-alone ozone gas delivery system is designed around the AX8410 PRIME ozone generator to provide high concentration, ultra clean ozone generation and delivery. This fully configurable product line is designed to meet the ever changing needs of the semiconductor industry. Each AX8585 is a fully integrated, high output ozone gas delivery system intended for use in an increasing number of semiconductor process applications

such as ALD, CVD, TEOS/Ozone CVD, photoresist strip, wafer cleaning, contaminant removal, and oxide growth. The system can be configured as a multi-channel system delivering ozone for up to 4 channels supporting multiple chambers or multiple tools. Flow rates of up to 200 slm and concentrations up to 375 g/Nm³ can be achieved depending on the configuration of the system.

Product Features

- Provides concentrations up to 375 g/Nm³ at higher flow rates to meet newer process requirements
- Ozone is generated at point-of-use, no storage or transportation is required
- Reduces oxidation time and increases throughput
- Closed-loop concentration control provides tighter process control for higher yields
- User friendly controller with touch screen provides easy, central controls for interfacing with the tool, setting ozone concentration and flow rate, and safety monitoring



Key Benefits

- Allows for a fast, easy installation and quick startup with minimum connections required
- Supports single or multiple process tools for maximum efficiency and a lower cost of operation
- Allows each channel to be process matched for maximum flexibility
- Ozone converts back to benign O₂ avoiding the need for hazardous chemical disposal

Ozone has many advantages over other oxidizers as a strong oxidizing agent. Ozone has a high redox potential, can be generated at the point-of-use, and it decays naturally into oxygen ($2O_3 \Rightarrow 3O_2$). Therefore, it is considered a "green" chemical. If required, ozone can also be destroyed at the output of the process chamber using a catalytic or thermal destruct unit. This significantly lowers the chemical disposal cost, as the output is oxygen and contains no ozone. Ozone is very stable at room temperature, making it a good choice for most applications. Typical ozone applications include atomic layer deposition (ALD), chemical vapor deposition (CVD), photoresist strip, wafer cleaning, contaminant removal, surface conditioning, and oxide growth.

The AX8585 system is configurable with up to four (4) independent channels to support multiple tools or chambers concurrently. Each channel can be matched to the specific concentration and flow required for a specific process. The ozone source for each channel is the newly released AX8410 PRIME ozone generator. It incorporates MKS patented, high flow, high concentration, ultra clean ozone generation technology. The AX8585 includes all subassemblies required for stand-alone operation, including power distribution, an ambient ozone safety monitor, and status indicator panel.



AX8410 PRIME Ozone Generator

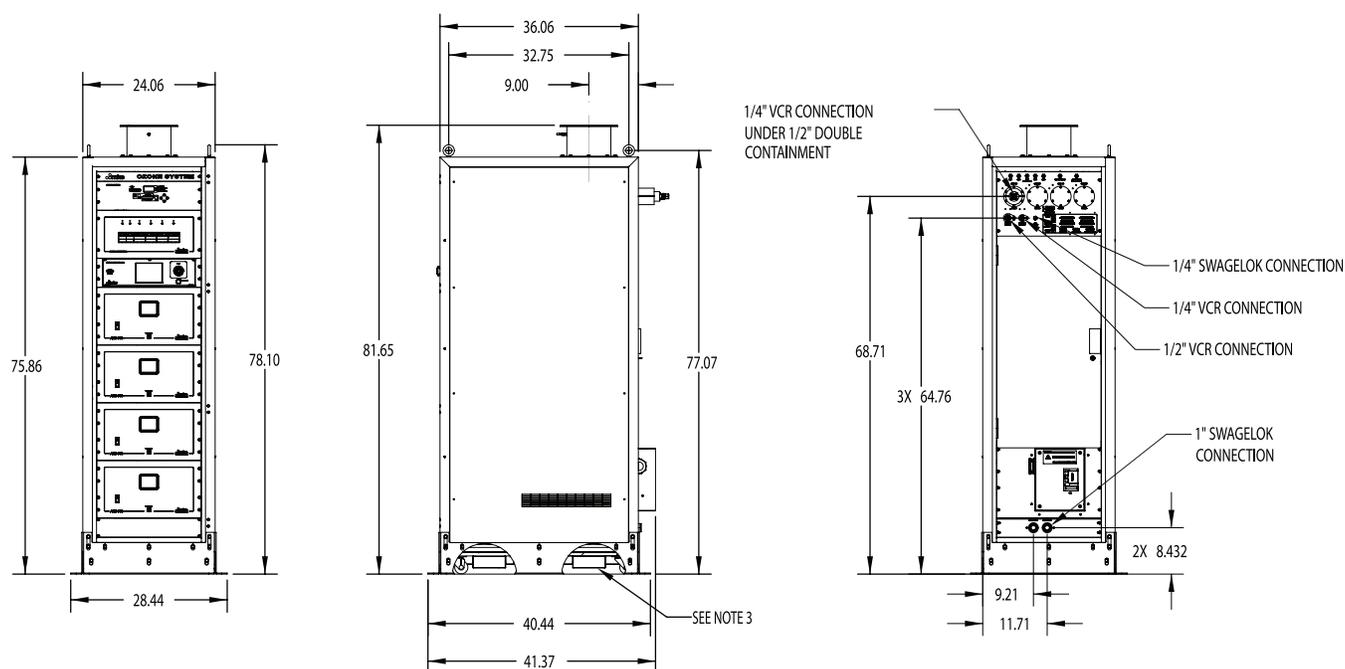
Specifications

Gases	Type	<ul style="list-style-type: none"> • Ozone • Oxygen • Nitrogen (100 - 1000 ppm of total flow)
	Purity	<ul style="list-style-type: none"> • Grade 6 or better O₂ • Grade 5 or better N₂
	Supply Pressure	<ul style="list-style-type: none"> • O₂ pressure 55 ±2 psig (379 ±13.5 kPa; 3.8 ±0.14 kg/cm²) • N₂ pressure 60 ±2 psig (413 ±13.5 kPa; 4.12 ±0.14 kg/cm²)
	Connections	<ul style="list-style-type: none"> • O₂: ½" face seal (VCR®) • N₂: ¼" face seal (VCR) • O₃: ¼" face seal (VCR) • CDA: ¼" Swagelok® male connection rear panel • O₃ monitor ports: ¼" tube (push lock)
Electrical Power	Voltage	208 volts AC (±10%), three phase
	Current	Depending on system configuration
	Frequency	50/60 Hz
External Cooling Water	Flow Rate	22.7 lpm (6.0 gpm) per generator (configuration dependant)
	Pressure	50 - 85 psig (345 - 586 kPa), 100 psig (689 kPa) maximum
	Temperature Range	5* - 25°C (41* - 77°F)
	Quality	3 - 0.5 MΩ cm DI with 100 micron filter**
	Connection	1" compression (Swagelok)
	Heat Load	11 kw per generator
Exhaust	Type	SEMI Category 4 (accidental or emergency release of hazardous gas or vapor)
	Flow Rate	70.8 l/s (150 cfm) per generator
	Static Pressure	3.05 mm (0.16 in) H ₂ O minimum, measured at duct entrance to cabinet
	Connection	8" diameter duct opening
Control Air (if required)	Type	CDA or dry nitrogen, 40µm filtered
	Pressure	70 - 100 psig (483 - 689 kPa)
	Fitting	¼" compression (Swagelok)
Environmental	Ambient Air Temperature	5 - 40°C (41 - 104°F)
	Relative Humidity	30% - 90% (non-condensing)
	Altitude	Up to 1000 m (3280 ft) above mean sea level
Mechanical	Dimensions (W x H x D)	722 x 2074 x 1051 mm (28.4 x 81.7 x 41.4 in)
	Weight	345 kg (760 lb) for system with one generator
	Compliance	CE, SEMI S2-0302, SEMI F47, SEMI S2, UL 61010-1, CAN/CSA-61010-1

* Temperatures <12°C (54°F) require additional line insulation as well as a system purge kit.

** Max DI water/Glycol blend: 70/30

Dimensional Drawing



NOTES:

1. RACK HAS SWIVEL CASTORS, LEVELLING FEET, AND SEISMIC BRACE COMBINATION.
2. ALL FLOOR HEIGHTS ARE WITH CASTORS TOUCHING THE FLOOR. LEVELLING FEET ALLOW CASTORS TO RAISE 3/16" MAXIMUM.
3. TUBES FOR FORKLIFT BLADES: 5.80" x 2.00" IS TUBING ON 18.17" CENTERS.

Note: Unless otherwise specified, dimensions are nominal values in inches.

Ordering Information

Please contact your local MKS sales office for price and availability information.