

# O3CS

## Ozone Compact System



The O3CS compact ozone system uses Grade 6 oxygen to generate pure ozone, enabling the creation of high quality thin films for the semiconductor industry. Reacting with a wide range of precursor gases such as  $\text{Al}_2\text{O}_3$ ,  $\text{ZrO}_2$ ,  $\text{HfO}_2$ , and  $\text{La}_2\text{O}_3$  metal oxides, ozone enables thin film deposition processes like Atomic Layer Deposition (ALD) and Etch (ALE). MKS' patented ozone generator cell technology, combined with high purity wetted materials and dopant gas levels far below those required for other ozone generators, creates ultra-clean, high concentration ozone resulting in improved thin film densities and product yield.

Available in either a standalone form or integrated with up to 4 channel units into a system rack, each unit delivers a precise ozone concentration to the equipment chamber. The O3CS ozone gas delivery system incorporates MKS field-proven modular ozone generation technology, an integrated ozone concentration monitor, flow control for both  $\text{O}_2$  and dopant gas species, and an electronic pressure controller.

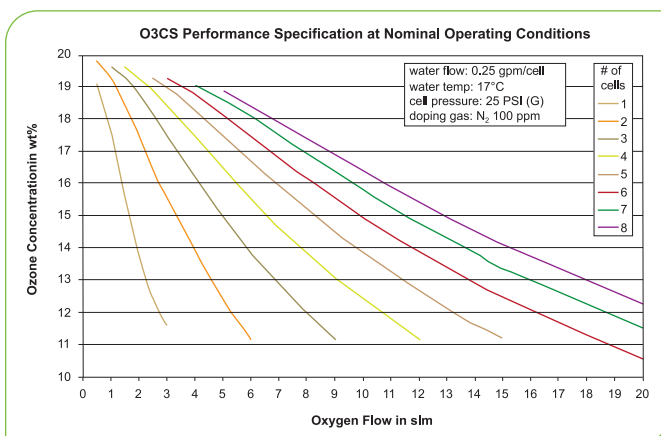
### Product Features

- Compact ozone delivery subsystem easily integrates with the chamber tool
- Concentrations up to 20 wt% ( $300 \text{ g/m}^3$ )
- Flow rates from 0.5 to 20 slm
- Patented ozone cells with advanced cooling
- Full electronic control including closed loop ozone concentration control with integrated process monitor
  - Mass flow control for  $\text{O}_2$  and dopant gas
  - Electronic pressure control for stable operation during process point



### Key Benefits

- High quality thin films created using Grade 6 gas
- Configurable to adapt ozone output to specific process steps like deposition of  $\text{Al}_2\text{O}_3$
- Clean, safe alternative to conventional chemical processing



Typical ozone output in wt%

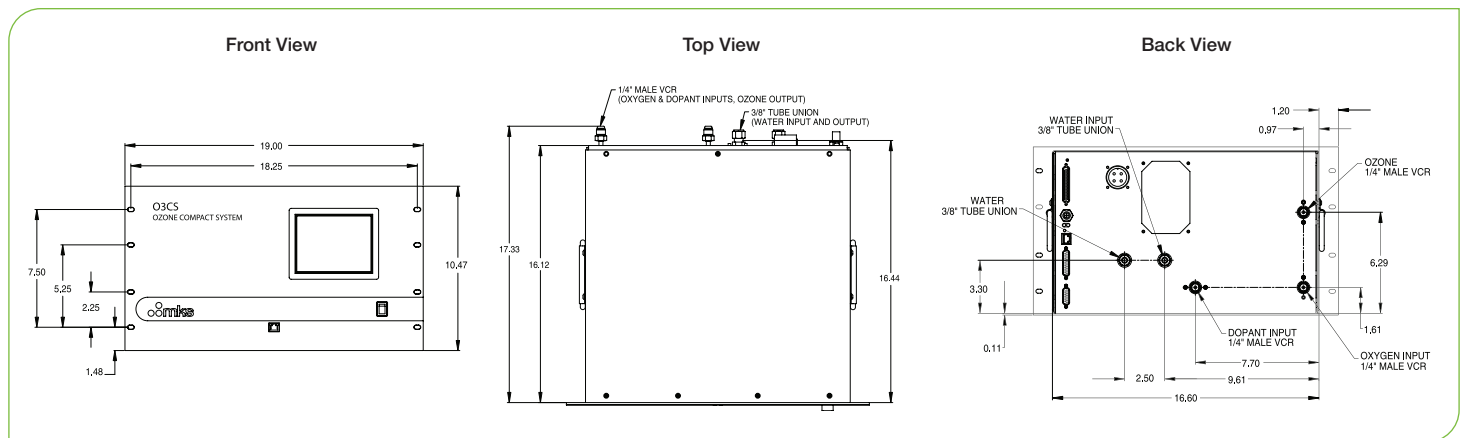
# Specifications & Ordering Information

<b>Model</b>	O3CS
<b>Maximum Ozone Output*</b>	25 - 225 g/hr (configuration dependent)
<b>Flow Range</b>	0.5 to 20 slm (configuration dependent)
<b>Operating Range</b>	
Ambient Temperature	20 – 40°C (68 – 104°F)
Nominal Cell Pressure (Delivery)	0.7 – 3.1 bar <sub>gauge</sub> (10 – 45 psig)
<b>Control Interface</b>	Remote operation, Discrete analog I/O 25 pin D-sub, DeviceNet®, Ethernet Modbus TCP
<b>Feed Gas</b>	
Oxygen	Grade 6 or better O <sub>2</sub>
Nitrogen or CO <sub>2</sub>	20 – 100 ppm grade 5 or better N <sub>2</sub> 1000 – 2000 ppm grade 5 or better CO <sub>2</sub>
<b>Cooling Water</b>	
Temperature	17 – 23°C (63 – 73°F)
Filtration	100 microns
Quality	Resistivity ≥ 50 KΩ/cm
Minimum Flow @ 20°C	
L/min	0.95 – 7.60 l/min minimum (configuration dependent)
Gpm	0.40 – 2.00 gpm minimum (configuration dependent)
<b>AC Power</b>	
Nominal	208 VAC
Phase	3 phase and GND (no neutral)
Amps	Nominal current 2A – 10A max (configuration dependent)
Hz	50/60 Hz
<b>Weight (approximate)</b>	40 kg (88 lb) (configuration dependent)
<b>Dimensions (W x D x H)</b>	482 x 429 x 267 mm (19 x 16.89 x 10.5 in)
<b>Compliance</b>	SEMI S2-0302, SEMI F47, UL 61010-1, CAN/CSA-61010-1

\*@ 25 psi ozone delivery pressure and 17°C cooling water

Ordering Code: O3CS	Code	Configuration
Ozone Compact System	O3CS	O3CS

The O3CS is available with varying power and flow capabilities. Contact your local sales office for pricing, availability, and applications guidance.



## Dimensional Drawing

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



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