HORIZON SERIES INTEGRATED OZONE SYSTEMS

Features

- Modular Ozone Chassis Design
- Stainless Steel Frame & Ozone Generator Enclosure
- Air-Cooled Ceramic and Titanium Reactor Cell
- Over-Temperature Protection
- Optional Degas Separator
- Redundant Backflow Prevention

Controls

- 4-20mA or 0-10VDC Input
- Variable Output Control
- Reactor Pressure Control
- Feed Gas Flow Control
- Remote On/Off Control
- Optional Programmable PID Controller
- Optional Dissolved Ozone Sensor
- Optional Ambient Ozone Detector with Safety Interlock

Complete Integrated Solutions.
Single Trusted Source.

Complete Systems

The Horizon Series integrated ozone systems eliminate the complexity of integrating the four critical elements of ozone systems: feed gas preparation/ oxygen concentration, ozone generation, mass transfer, and complete process control. All Horizon Series systems are complete and fully integrated ozone systems that seamlessly combine these elements into stainless steel skid-based packages.

The performance and simplicity of Pacific Ozone's integrated ozone systems make them ideal platforms for countless ozone processes, including:

- Beverage industry
- Bottled water
- Food processing
- Industrial water treatment and more

Model: Horizon with Fat Pipe System

High Performance

Horizon Series systems are available for a variety of flow rates and process requirements: 5-200 gallon per minute water flow rates at 0.5-10 pounds per day ozone production. This range of performance allows Pacific Ozone systems to be configured to address the finest application of ozone at a small food processing plant to high ozone production for a large industrial water treatment facility.

HORIZON SERIES INTEGRATED OZONE SYSTEMS

A Strong Foundation

The Horizon Series integrated ozone systems are built on the strong foundation of Pacific Ozone's SGA and SGC Series ozone generators. The SGA generator line offers five models producing 0.6 to 3.2 pounds per day ozone production from high-quality air provided from the facility. The SGC series, with three models providing 0.5 to 1.3 pounds of ozone per day, includes onboard oil-less air compression when plant air is unavailable or insufficient. Please see cut sheets for the SGA and SGC Series ozone generators for more information. Custom, high-output systems producing up to 10 pounds of ozone per day are available.

Model: Horizon with 50 Gallon Mass Transfer Vessel

Enhanced Mass Transfer

The Horizon Series systems are equipped with Pacific Ozone's unique Enhanced Mass Transfer™ ozone injection and off-gas destruction system. To ensure consistent supply of ozone-injected water to the process, applications with periodic stops and starts should generally include a stainless steel mass transfer vessel. Standard mass transfer vessels are available at 50 and 150 gallons. Larger mass transfer vessels are also available. Processes that operate continuously with few interruptions are typically best served with the tank-less Fat Pipe mass transfer system, providing complete ozone injection and off-gas destruction without a conventional tank.

Standard Features and Option Packages

Standard Horizon Series systems provide all of the basic features of the SGA or SGC ozone generators, including 4-20mA inputs and Remote On/Off control. Standard systems may be augmented with two option packages. The PLUS option package improves system control with the addition of a PID controller and one or two channels of dissolved ozone detection. The MAX option package provides the features of the PLUS package plus the safety of an ambient ozone detector with safety interlock. The ambient ozone detector alarms if the ambient ozone gas concentration reaches the OSHA long-term exposure limit and shuts down ozone production if the ambient ozone exceeds the OSHA short-term exposure limit.

Additional optional features are also available, including the Degas Separator option, process pumps, and additional process inputs. Optional air compressor packages are also available, if needed.

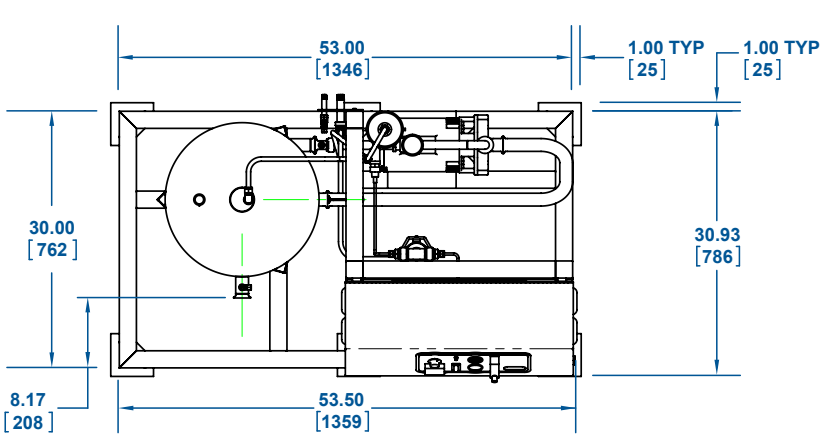
Options			
Standard Features	PLUS Option Package	MAX Option Package	Additional Options
• 4-20mA/0-10 VDC Inputs • Remote On/Off • Remote Lockout	• PID Controller • Dissolved Ozone Detection (One or Two Channels)	• Ambient Ozone Detector	• Degas Separator • Process Pumps • Additional Process Inputs • Air Compressor

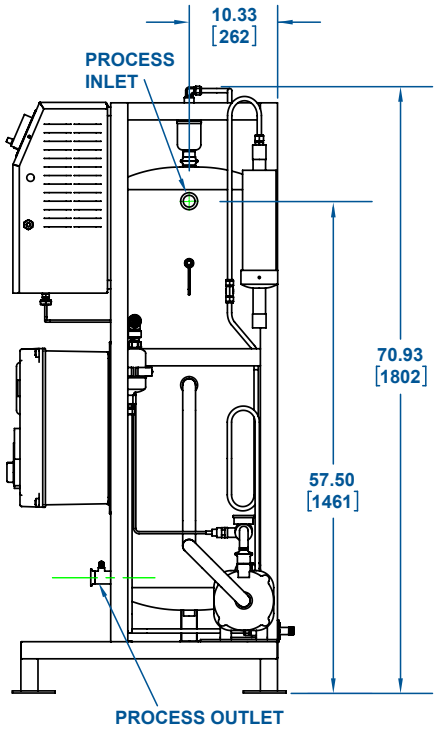
Built to Last

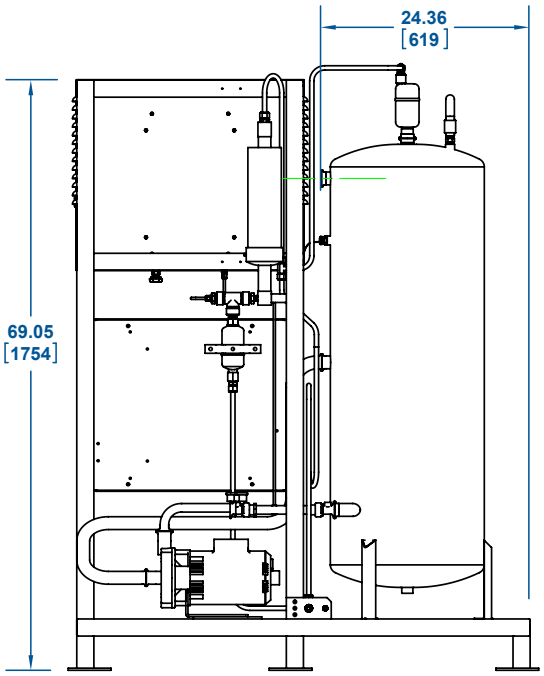
The Horizon Series integrated ozone systems are engineered to meet ozone process requirements found in the most demanding applications; yet they are easy to install, simple to operate, and will provide years of trouble-free operation.

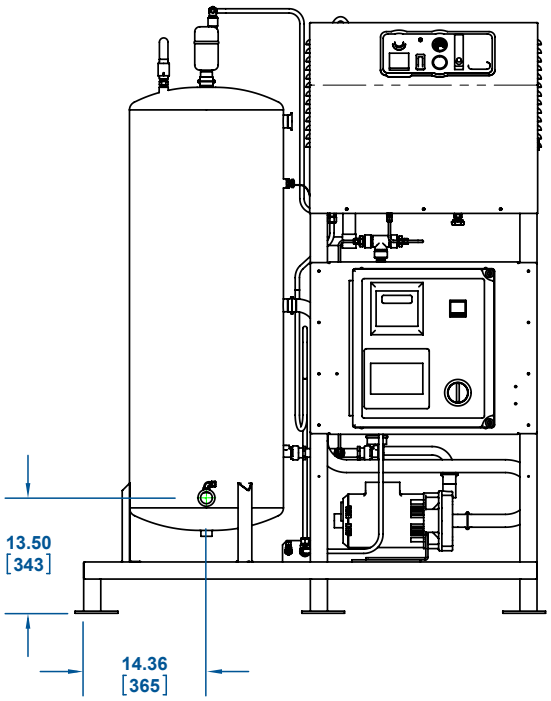
HORIZON SERIES INTEGRATED OZONE SYSTEMS

Model: Horizon Series with 50 Gallon Mass Transfer Vessel



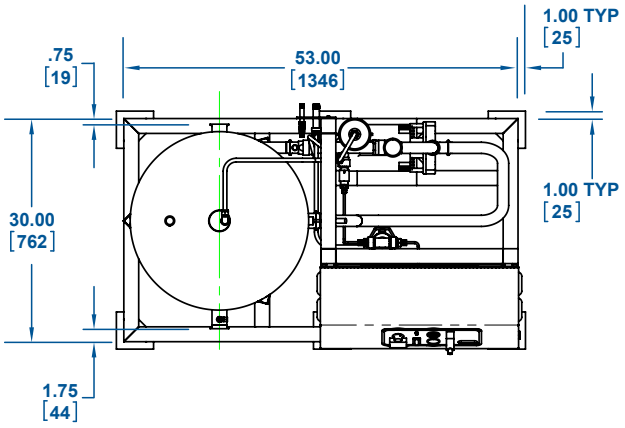


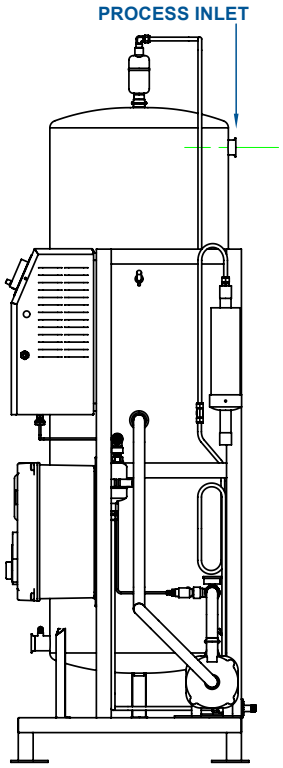


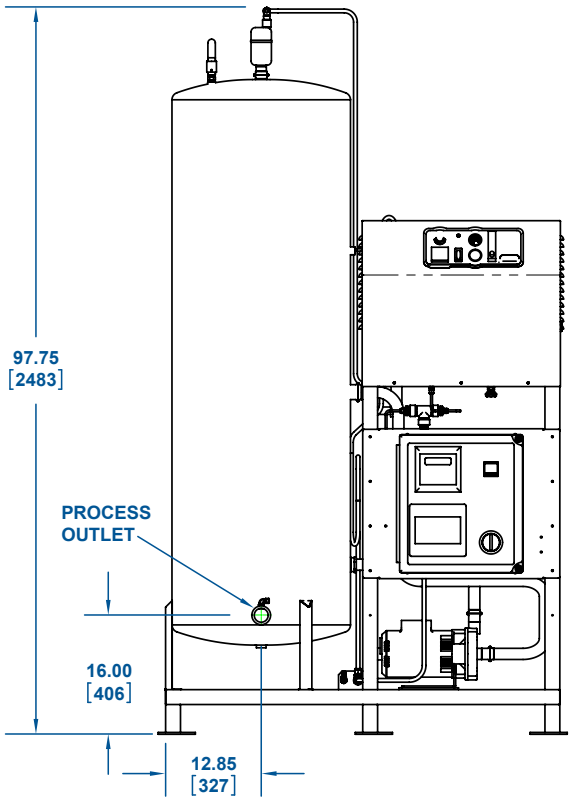


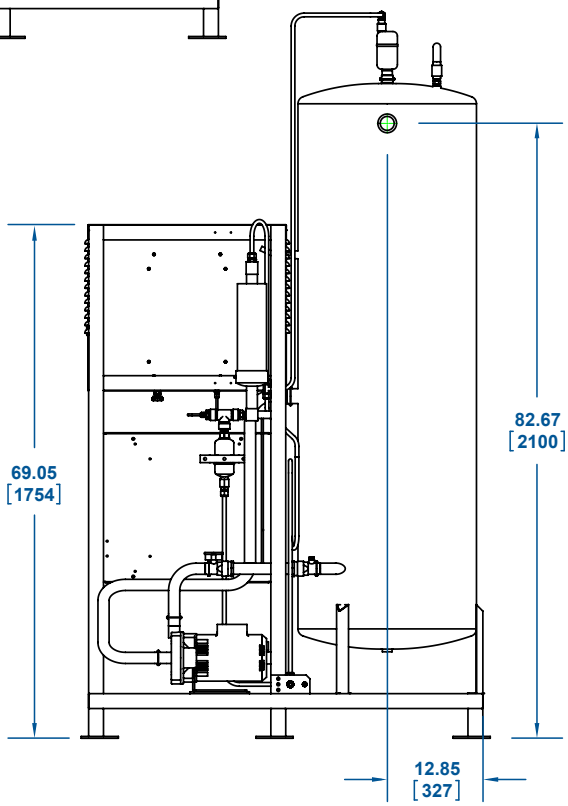
Dimensions: inches [mm]
Note: Drawings of other Horizon Series models are available upon request.

Model: Horizon Series with 150 Gallon Mass Transfer Vessel



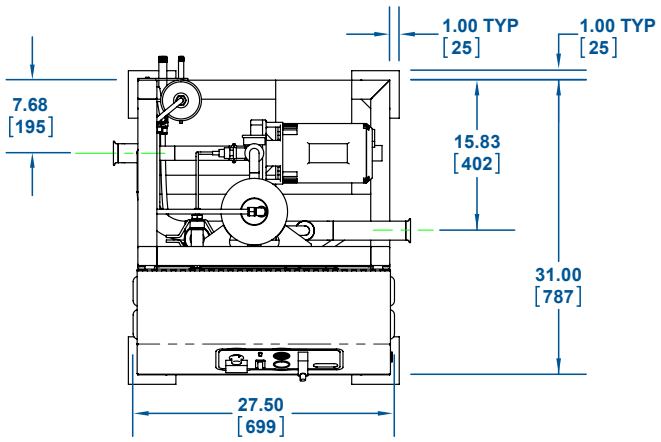


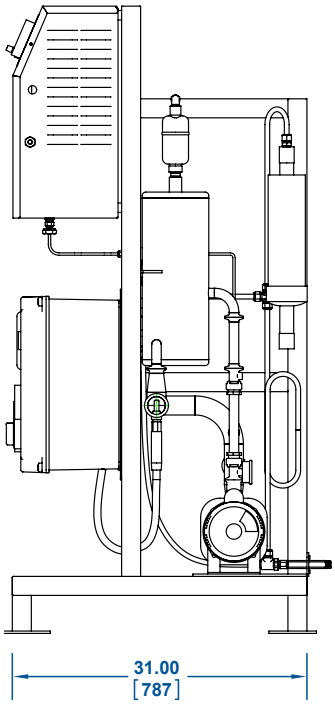


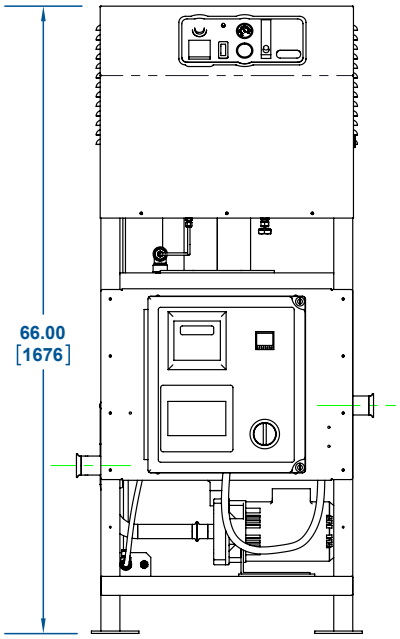


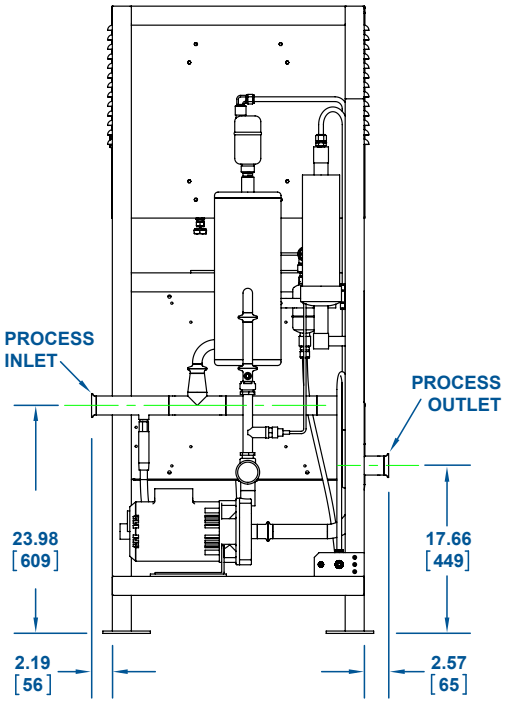
Dimensions: inches [mm]
Note: Drawings of other Horizon Series models are available upon request.

Model: Horizon Series with Fat Pipe Mass Transfer System









Dimensions: inches [mm]
Note: Drawings of other Horizon Series models are available upon request.

HORIZON SERIES INTEGRATED OZONE SYSTEMS

Technical Specifications						
Model/ Part Number*	Ozone Generator Model**	Max. Ozone Production	Performance † (at 2 ppm O_3)	Power Consumption	Water Inlet/Outlet	Compressed Air Inlet Fitting
		lbs/day (grams/hour)	gpm (lpm)	watts	inches (mm)	inches (mm)
Horizon A11/ R-HA11XX R-HA11XXYP R-HA11XXYM	SGA11	0.6 (12)	25 (95)	2500	1.5" (38mm) Sanitary Fitting	1/4" fnpt (6.35 mm)
Horizon A21/ R-HA21XX R-HA21XXYP R-HA21XXYM	SGA21	1.0 (18)	40 (151)	2500	1.5" (38mm) Sanitary Fitting	1/4" fnpt (6.35 mm)
Horizon A22/ R-HA22XX R-HA22XXYP R-HA22XXYM	SGA22	1.6 (30)	65 (246)	2500	1.5" (38mm) Sanitary Fitting	1/4" fnpt (6.35 mm)
Horizon A23/ R-HA23XX R-HA23XXYP R-HA23XXYM	SGA23	2.4 (45)	100 (379)	2500	1.5" (38mm) Sanitary Fitting	1/4" fnpt (6.35 mm)
Horizon A24/ R-HA24XX R-HA24XXYP R-HA24XXYM	SGA24	3.2 (60)	130 (492)	2500	1.5" (38mm) Sanitary Fitting	1/4" fnpt (6.35 mm)
Horizon C11/ R-HC11XX R-HC11XXYP R-HC11XXYM	SGC11	0.5 (10)	20 (76)	2500	1.5" (38mm) Sanitary Fitting	N/A Onboard Air Compressor
Horizon C21/ R-HC21XX R-HC21XXYP R-HC21XXYM	SGC21	0.8 (16)	35 (132)	2500	1.5" (38mm) Sanitary Fitting	N/A Onboard Air Compressor
Horizon C22/ R-HC22XX R-HC22XXYP R-HC22XXYM	SGC22	1.3 (25)	55 (208)	2500	1.5" (38mm) Sanitary Fitting	N/A Onboard Air Compressor

Notes:

* The value of "XX" in the part number indicates the mass transfer vessel size (Fat Pipe = 00, 50 gal. = 05, 150 gal. = 15, etc.).
The value of "Y" indicates the number of channels dissolved ozone detection (1 or 2).
The letter "P" indicates the PLUS option package and the letter "M" indicates the MAX option package.

** See ozone generator cut sheets for additional specifications pertaining to the generators.

† Typical system water flow rate at 2 ppm dissolved ozone concentration. Performance as tested with municipal water at 70° F (21° C).

Ozone Mass Transfer System

- Injection Pump: Stainless steel, sized to system requirements
- Venturi: MIC natural Kynar injector
- Back Flow Prevention: Stainless steel check valve and proprietary backflow prevention system
- Mass Transfer Vessel: Fat Pipe, 50 gal., or 150 gal. standard Larger vessels available
- Inlet/Outlet: 1.5" stainless steel sanitary connections Larger fittings available.
- Pump Protection: Tank level switch, interlocked
- Assembly: Stainless steel frame

Ozone Destruct System

- Catalyst: Manganese Dioxide/Copper Oxide
- Destruct Potential: Sized to application requirements
- Air Relief Valve: Stainless steel air relief vent
- Operating Temperature: 130°-140° F (54°-60° C), electronically controlled

HORIZON SERIES INTEGRATED OZONE SYSTEMS

Operational Requirements				
Model	Compressed Air Flow	Compressed Air Pressure	Water Pressure	Electrical Requirement
	scfm (lpm)	psig (bar)	psig (bar)	volts, Hz
Horizon A11	6 (170)	30 (2.07)	20-30 (1.4-2.1)	230V 50/60Hz, 1 phase 30A Circuit
Horizon A21	6 (170)	30 (2.07)	20-30 (1.4-2.1)	230V 50/60Hz, 1 phase 30A Circuit
Horizon A22	6 (170)	30 (2.07)	20-30 (1.4-2.1)	230V 50/60Hz, 1 phase 30A Circuit
Horizon A23	12 (340)	30 (2.07)	20-30 (1.4-2.1)	230V 50/60Hz, 1 phase 30A Circuit
Horizon A24	12 (340)	30 (2.07)	20-30 (1.4-2.1)	230V 50/60Hz, 1 phase 30A Circuit
Horizon C11, C21, C22	N/A*	N/A*	20-30 (1.4-2.1)	230V 50/60Hz, 1 phase 30A Circuit

*Not Applicable - All Horizon C-Line models (C11, C21, and C22) include onboard air compression.

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