- ✓ Automatic pressure and temperature compensation allows direct entry of ozone dosage in mg/L in manual mode
- ✓ Maintains dissolved ozone concentration setpoint in auto mode
- ✓ Automatic calculation of ozone transfer efficiency and applied dosage
- ✓ Integrated oxygen generation system
- ✓ Ambient ozone concentration transmitter for ozone leak detection and automatic shutdown
- ✓ Feed pump with automatic flow control
- ✓ Chemical feed systems configurable for flow-pacing, closed-loop PID, or trim control
- ✓ Chemical feed pump configurable as a composite sampler
- ✓ Twenty-five equally-spaced sampling ports in contactor for decay analysis
- ✓ Influent piping weir eliminates need for feed tank
- ✓ All equipment integrated onto one skid for plug-and-play operation
- ✓ Designed for automatic un-manned operation
- ✓ Monitored and controlled remotely via wireless cellular connection
- ✓ Data logging to formatted text file for importing into spreadsheet and charting applications
- ✓ Historical and real-time trending visualization tool
- ✓ Alarm notification via email or text messaging
- ✓ IoT network of sensors provides exceptional diagnostic information

All information presented in this data sheet is for configuration code Z11-12PC-1GC-2OS-1TM-2DO-0PH-2CF. See ordering section for other configurations.

Specifications

Flow Rate	2...10 gpm	7.6...37.9 L/min
Contactor Volume	130 gallon	492 L
Maximum Ozone Delivery	80 (mg/L)(gpm)	303 (mg/L)(L/min)
Ozone Concentraton	8...13 %W	117...194 g/Nm^3
Chemical Feed Systems	2	2
Chemical Feed Rate	0.02...16.5 mL/min	0.02...16.5 mL/min
Chemical Tank Volume	4 gallon	15.1 L
Operating Dimensions	90 X 48 X 74.5 inch	2286 X 1219 X 1892 mm
Operating Weight	2800 lbs	1270 kg
Electrical Supply	Single Phase	Single Phase
Voltage	120 / 240 V	230 V
Frequency	60 Hz	50 Hz
Maximum Current	13.8 / 6.9 A	8.6 A

Operation

Simple

Operation of ozone water treatment systems can be complex but our automatic control system makes it simple. In manual mode the dosage is entered directly in mg/L, eliminating the need for complex pressure, temperature, and concentration calculations. In auto mode the controller will vary the dosage to maintain a dissolved ozone concentration setpoint. The resulting transfer efficiency is calculated and displayed on the operator interface.

Safe

Most people can smell an ozone leak before it reaches a dangerous level, but the automatic control system includes an ambient ozone concentration analyzer that is used to shut down the ozone generator if a leak is detected. If the module is installed in an Intuitech Pilot Enclosure the automatic control system will run the ventilation system at maximum capacity until the ozone concentration is reduced to a safe level.

Reliable

The ozone gas system consists of an oxygen generation panel and an ozone generation panel. The oxygen generation panel includes a compressor, heat exchanger, particle filter, air dryer, and oxygen concentrator. The ozone generation panel consists of an ozone generator, particle filters, ozone concentration analyzer with automatic zeroing, and a pressure and temperature compensated mass flow controller. Both panels are monitored with an extensive network of diagnostic sensors including temperature, pressure, humidity, and oxygen concentration. This information is used for predictive maintenance to ensure reliability.


Oxygen Generation Panel

Ozone Generation Panel

General Arrangement Drawings

FRONT VIEW

97.4 [2473]
74.5 [1892]
68.5 [1740]
90.0 [2286]

RIGHT VIEW

48.0 [1219]
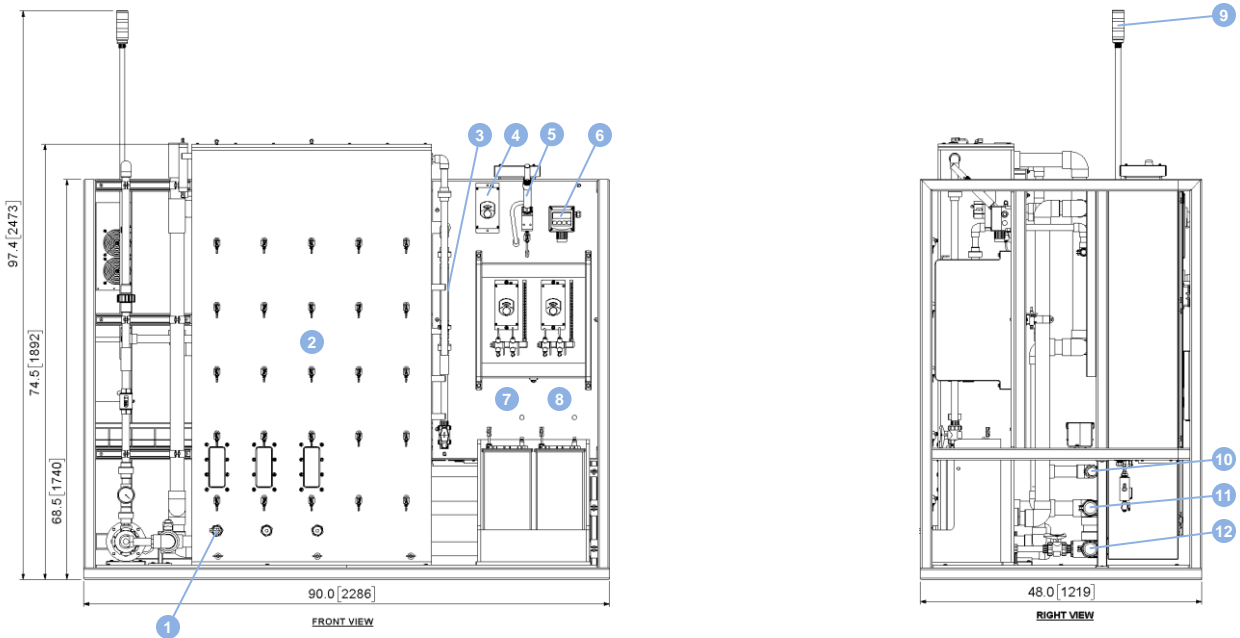
1	Fine Bubble Diffuser	6	Ambient Ozone Transmitter	11	Outlet, 2" MPT
2	Contactor	7	Chemical Feed System 1	12	Drain Waste, 2" MPT
3	Ozone Destruct Unit	8	Chemical Feed System 2		
4	Contactor Sample Pump	9	Status Beacon		
5	Dissolved Ozone Transmitter	10	Inlet, 1½" MPT		

BACK VIEW

LEFT VIEW
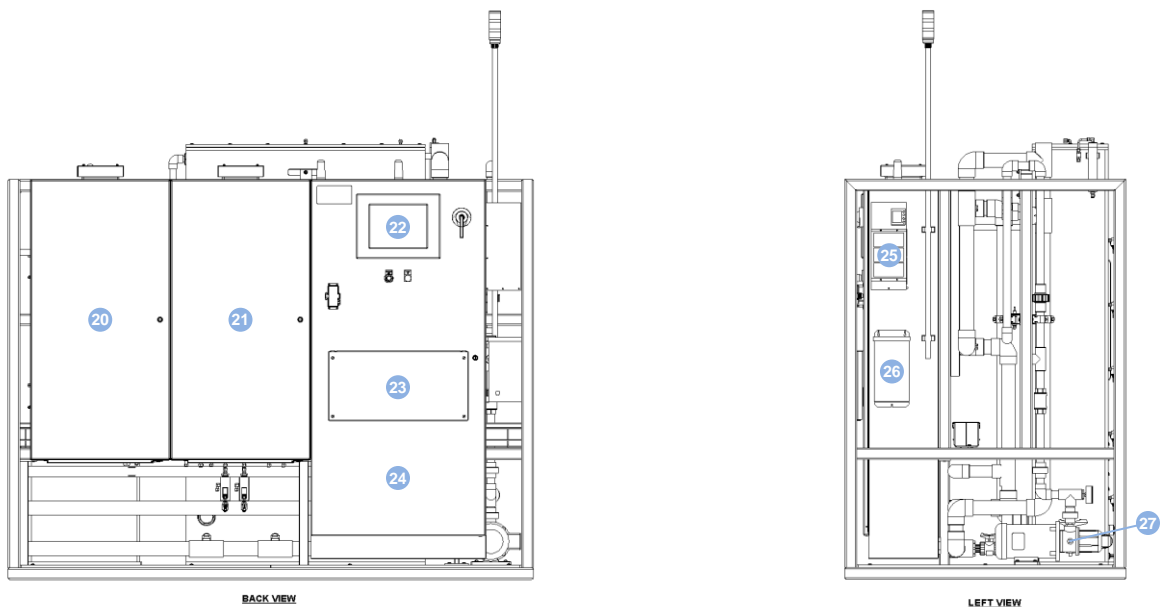
20	Oxygen Panel	25	Air Conditioner		
21	Ozone Panel	26	Power Transformer		
22	Operator Interface	27	Feed Pump		
23	Folding Shelf				
24	Control Panel				

Dimensions: inch [mm]

Data Logging

The following parameters are automatically collected and stored for analysis. The collection is performed at a user-specified frequency from once per second to once per twelve hours. The values are time and data stamped and simultaneously written to a formatted text file on a removable flash drive and to a backup file on the internal solid state drive. These files can be transferred by removing the flash drive or using file transfer protocol over a remote connection.

Contactor Water Flow	Ambient Ozone Concentration	Air Dryer Inlet Pressure
Contactor Dissolved Ozone Concentration	Oxygen Concentrator Inlet Pressure	Chemical 1 Dosage
Contactor Off-Gas Ozone Concentration	Oxygen Concentrator Inlet Dewpoint	Chemical 1 Flow
Diffuser Ozone Flow	Ozone Generator Inlet Oxygen Concentration	Chemical 1 Tank Level
Diffuser Ozone Pressure	Ozone Generator Pre-filter Inlet Pressure	Chemical 2 Dosage
Air Compressor Inlet Pressure	Ozone Generator Pre-filter Outlet Pressure	Chemical 2 Flow
Air Compressor Outlet Pressure	Ozone Generator Post-filter Inlet Pressure	Chemical 2 Tank Level
Air Compressor Outlet Temperature	Ozone Generator Post-filter Outlet Pressure	System Diagnostic Data

Remote Operation

The pilot module is designed for fully automatic un-manned operation and can be monitored and controlled remotely. A wireless cellular router is installed in the control panel. This device can provide remote access to the pilot module in locations where adequate cellular data service is available. The router can be configured for the Verizon or AT&T networks depending on which network has the best service at the installed location. Data service is included during the warranty period. Data service beyond the warranty period can be purchased from Intuitech in one year blocks. Any task normally performed using the operator interface can also be performed remotely using a laptop computer, tablet, or smartphone. The operator interface can also be configured to send alarm notifications via email or text messaging.

Ordering

Our standard Ozonation Pilot Module can be configured as shown below. It can also be customized to meet specific requirements for an additional cost. Please contact Intuitech for more information.

Z _ _ - _ _ P C - _ G C - _ O S - _ T M - _ D O - _ P H - _ C F - _ _ _ _

Options:
RPS (reusable packaging system)
UPS (uninterruptible DC power supply)
SIU (SI units)
PSC (plant SCADA connection)
SAI (spare analog input module)

Number of Chemical Feed Systems: 0, 1, 2, 3

Number of pH Transmitters: 0, 1, 2, 3, 4

Number of Dissolved Ozone Transmitters: 1, 2, 3, 4

Transfer Method: 1 (Fine Bubble Diffuser), 2 (Side Stream), 3 (Both)

Oxygen Source: 0 (None), 1 (Dual CG Cylinders), 2 (Oxygen Generator)

Ozone Generator Capacity: 1 (20 g/h)

Feed Pump Capacity: 12 (2.0...12 gpm)

Contactor Configuration: 1 (6 feet high, 130 gallons), 2 (15 feet high, 130 gallons)

Number of Trains: 1, 2