

OREC™ DM-100 Series Ozone Monitors: Description



The OREC™ DM-100 Series Ozone Monitors are a continuous ozone measurement instrument for the determination of ozone in air or oxygen. The standard instrument provides the range of 0 - 1000 ppm (parts per million) by volume, displayed on a panel mounted digital readout meter. The DM-100 Series also alternately displays ozone concentration in millipascals (mPa).

The principle of ozone measurement is the absorption of ultraviolet light by ozone as determined by the [Beer-Lambert Absorption Law](#), in conjunction with the standard gas laws for temperature and pressure correction is recognized by the EPA as the method used in the calibration of ambient ozone analyzers.

[ASTM D4575](#) (Volume 09.01) states: "UV absorption is adopted as the reference method against which other ozone measurement instruments shall be calibrated."

The OREC™ DM-100 Series Ozone Monitors incorporate an ultraviolet light source, a narrow band 254 nm interference filter and a phototube for measuring light intensities. Ultraviolet light passing through a sample of gas containing no ozone is measured and the value stored. This value is then compared to the light intensity with ozone present.

The two values are sent to a signal processor which calculates the ozone concentration using the Beer-Lambert equation, providing non-linear approximations, but accurate over the entire range of the instrument.

The signal processor also includes automatic temperature compensation and a front panel mounted potentiometer calibrated to the barometric pressure is provided for manual pressure compensation.

The OREC™ DM-100 Series Ozone Monitors are unique in that a single instrument provides accurate measurement from 0 - 1000 ppm, with three ranges for increased sensitivity. Recognizing the requirement for rapid Ozone measurement, the instrument incorporates design features which minimize warm-up time.

Whether your requirement is for ambient air monitoring, ozone test chamber measurement, plant safety monitoring, research, control of ozone monitors or other applications, the OREC™ DM-100 Series Ozone Monitors fulfill the need for accurate, reliable and automatic ozone monitoring.

This, combined with the widest range, shortest warm-up period, and maximum updated reading time of any available monitor make the OREC™ DM-100 Series the industry's choice!

OREC™ DM-100 Series Ozone Monitors: Features

- Absolute Calibration based on Beer-Lambert Absorption Law;
- Two Minute Warm-Up Time;
- No Chemicals Required;
- Automatic Zeroing;
- Automatic Temperature Compensation;
- Calibrated Pressure Compensation;
- Direct Reading Digital Display;
- Specific to Ozone;
- Rapid and Accurate;
- 0 - 1000 PPM Measurement;
- Three Operating Ranges.

OREC™ DM-100 Series Ozone Monitors: Specifications

Full Measurement Span:	0 - 1000 ppm/vol
Ranges:	0 - 10; 0 - 100; 0 - 1000 ppm/vol
Sensitivity:	0.1% of Range
Accuracy:	3% of Reading
Repeatability:	the larger of 1% or 1 digit
Zero Drift:	Readout 0% (auto-zeroed) Analog output 0.5% Max
Span Drift:	Readout 0.1% Analog output 0.5% Max
Linearity:	± 0.5%
Response Time:	5 Seconds
Sample Measurement Period:	45 seconds / minute
Gas Sampling:	Nominal 2 l/min (± 1 l/min)
Temperature Compensation:	Automatic 0 - 100 C° ±1 C°
Pressure Compensation:	400 - 1000 ± 2.5 mm Hg
Recorder Output Scales:	.1x, .2x, .5x, 1x of Ranges
Recorder Output Voltage:	0 - 1 V on all scales
Connections:	¼" (6.35 mm) Tube fittings
Weight:	30 lbs (13.6 kg)
Dimensions:	12.25 x 21.0 x 5.75 in (311 x 533 x 146 mm)
Power Requirements:	115 or 220 ± 10% VAC 60/50 Hz

OREC™ DM-100 Series Ozone Monitors: Options

- DM-110 High Concentration Ozone Monitor Range: 0 - 100 Mg/SL (0 - 8% wt);
- Strip Chart Recorder (dry, inkless, 30 day);
- Alarm Output (adjustable 0 - full range);
- Automatic Control System;
- NEMA 12 Enclosure;
- 220 VAC Power.

OREC™ DM-100 Series Ozone Monitors: Available Basic Models

Model	Part Number	Power Requirement	Description
DM-100	1100976	115 VAC 60/50 Hz	Ambient
DM-100	1101919	115 VAC 60/50 Hz	Ambient w/ alarm
DM-100	1104377	230 VAC 60/50 Hz	Ambient
DM-100	1104370	230 VAC 60/50 Hz	Ambient w/ alarm
DM-110	1100977	115 VAC 60/50 Hz	High concentration
DM-110	1104371	230 VAC 60/50 Hz	High concentration

Copyright © 2007 CCSi, Inc. • All Rights Reserved • Published June, 2007