

Portable Ozone Monitoring Station (POMS-III)



OVERVIEW

The portable ozone monitoring station (POMS-III) continuously measures ambient ozone concentrations, wind speed and direction, air temperature, relative humidity, and barometric pressure. The station operates on low power (battery-supplied 12 volts DC) which is recharged with solar panels. Data are transmitted hourly via a satellite modem by Air Resource Specialists, Inc., for validation and reporting. Data are also stored on-site within the datalogger and can be retrieved via laptop computer or removable memory stick.

This third-generation POMS has a lightweight, compact design that allows for quick and easy setup. The ozone monitor, datalogger, and modem are all neatly outfitted in a rugged shipping case, ready for operation. The case and solar panel are mounted on a lightweight tripod, and the meteorological sensor is mounted to the top of the monitoring mast. To setup the station, simply erect the tripod legs, slide the case on, mount the solar panel, connect the keyed and color-coded quick-connect cables to the batteries, and the unit is ready for operation.

The meteorological package incorporates all sensors into one sensing head; the wind direction self-oriens using an internal magnetic compass.

Monthly station checks are suggested for filter changes and quality assurance checks.



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SPECIFICATIONS

Ozone

2B Technologies, Inc. model 202 ozone monitor

Range (0-100,000 ppb), Accuracy (± 1.5 ppb)

An automated zero check of the ozone monitor is performed daily and included as part of the data output.

All-in-one weather station (Climatronics)

<u>Parameter</u>	<u>Range</u>	<u>Accuracy</u>
Wind Speed	0-50 m/s	± 0.5 m/s
Wind Direction	0-360°	$\pm 5^\circ$
Temperature	-50° to +50° C	$\pm 0.2^\circ$ C
Relative Humidity	0 to 100%	$\pm 3\%$
Pressure	600 to 110 hPa	± 0.35 hPa
Compass	0-360°	$\pm 2^\circ$

The wind direction sensor is self aligning and the magnetic declination for each location is easily programmable by the operator through the datalogger keypad.

Optional Satellite Communications

Hourly averages of all parameters are available in near real-time from any location. Custom real-time Web sites can be created at an additional cost.

Optional Cellular Communications

For locations with cellular service, a cellular modem can be utilized in place of a satellite modem.

Solar Power System

The entire system is solar-powered so it can be operated in virtually any remote location. The solar system utilizes DC relays rather than fuses for ease of operation in the field. Also a low voltage disconnect is used to prevent the batteries from discharging below a rechargeable voltage. The size and specifications of each solar power system are dependent on the location to be monitored. Please contact ARS for specific battery and solar panel requirements at your monitoring location.

Weight

The entire system weighs 183 pounds. The heaviest single component weighs 47 pounds so the system can be easily moved and set up by one person.

Installation

The system was designed with ease of installation and portability in mind. The station can be set up and operational in five minutes. All electrical connections are color-coded with quick-connect fittings so even non-technical personnel can install the system. Custom configurations are available and additional sensors can easily be added.

COST

The base price for a POMS-III is \$16,400 although a formal quotation is recommended based on your exact monitoring needs.