

Application Note MO-100

Measuring Generator Output

We have sold many instruments for testing ozone generators either when they are manufactured or at the customer's site. Most popular for this is our A-21ZX because of its 0-10 ppm range. Our new UV-100 ozone analyzer using the ultra violet absorption principle will measure over the 0-100 ppm which will be suitable for measuring the output of most smaller ozone generators. The UV-100 can log the data for playback and analysis at a later time, and it can send the data directly as it is sensed to a PC.

It is key to realize that the output of ozone generators is almost always measured in grams per hour whereas ozone instruments measure concentrations in parts per million. To relate these two mathematically, you need to know the generator's air flow rate in cubic meters per minute. The formula is:

Output (g/hr) = .128 X air flow(m³/min) X concentration(ppm).

= .00364 X cfm X ppm in cubic feet per minute units

For typical small generators, such as for room air "purification," outputs of 1/10-1/2 gram/hour are used. For their air flow rates, our A-21ZX will reach its 10 ppm maximum reading at 1/2 gram per hour or a little less (from which we can deduce that the air flow rate is typically 3-4 m³/min which is indeed typical for equipment blowers). The easiest way to get the air flow rate is from the label on the blower.

The concentration of ozone declines rapidly as the measurement distance increases from the generator. Ozone that reads 10 ppm right at the output grill rarely exceeds .1 ppm 1 meter from the generator.