

Title: Operation of MetOne Model 229 B Laser Particle Counter

Approvals

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1. Purpose:

1.1. Operation of the MetOne Laser Particle Counter.

2. Scope:

2.1. Applies to the MetOne Laser Particle Counter for performing sampling of air quality.

3. Responsibilities:

3.1. It is the responsibility of the course instructor/lab assistant to ensure that this SOP is performed as described and to update the procedure when necessary.

3.2. It is the responsibility of the students/technician to follow the SOP as described and to inform the instructor about any deviations or problems that may occur while performing the procedure.

4. References:

4.1. MetOne Model 228/229 Particle Counter Operating Guide

5. Definitions: N/A

6. Precautions: N/A

7. Materials:

7.1. MetOne Unit, Model 229B

7.2. Isokinetic Probe

7.3. Purge Filter

7.4. MetOne Battery Charger

8. Procedure:

8.1. Operation

8.1.1. Place the MetOne unit on the bench or cart at the appropriate location facing into the center of the room. Battery or AC power source may be used.

8.1.2. Remove the red inlet cap from sensor inlet tube and attach the isokinetic probe.

8.1.3. Turn on the MetOne unit using the switch on the side of the unit. After power on the model 229 will start counting and the display will be continuously updated as particles are detected. The counter will run for one minute then hold the displayed count until the unit is turned off. This count represents the number of particles in one tenth of a cubic foot of air. (To determine the number of particles in 1m³ of air divide by 0.002832.) Record this value.

8.1.4. Turn off the MetOne unit.

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- 8.1.5. Remove isokinetic probe and replace red inlet cap on sensor inlet tube.
- 8.1.5. Store unit.
- 8.2. Recharging the MetOne battery.
 - 8.2.1. When the "low battery" display appears on the MetOne unit, the battery needs to be recharged.
 - 8.2.1.1. Turn off the MetOne unit and connect the AC adapter to the unit.
 - 8.2.1.2. Plug in the AC adapter and charge the battery for 16 hours.
- 8.3. Contamination.
 - 8.3.1. When the counter is used in high concentration or uncontrolled environments, it is possible for the sensor to become contaminated. If this happens the sensor light will come on. If this occurs, replace the isokinetic probe with the purge filter.
 - 8.3.2. Run the counter until the display reads 0 counts.
 - 8.3.3. This usually clears the contamination and the sensor light will go out. (The sensor light also comes on if the laser diode fails.)