Honeywell

THE POWER OF **CONNECTED**

HPM Series Particle Sensor

Making every particle count

HPM Series Particle Sensor

The HPM Series is designed to help improve the air in every breath you take. Engineered for excellent accuracy and long life, the HPM Series detects airborne particulates to within ±15% accuracy and delivers a 20,000 hour service life. Both ensure the HPM Series maximizes system performance, extends system life and reduces overall system costs so you can rest easy with the air you're breathing.

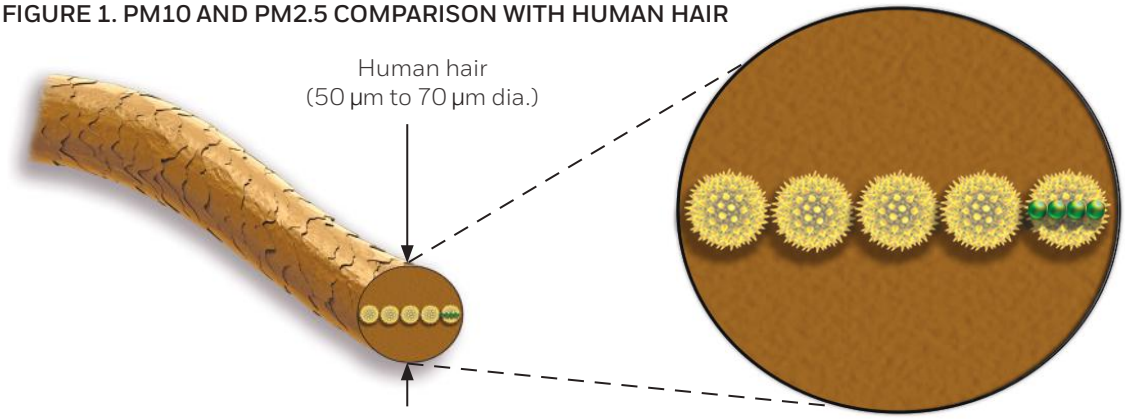
DID YOU KNOW that airborne particulates less than 10 µm in diameter are smaller than the diameter of a human hair? Without detection and remediation, particulates will remain suspended in the air and can have a negative impact on human health. Particles 10 µm in diameter include dust, pollen grains, and mold spores, all of which can enter and get lodged into the lungs. Particles less than 2.5 µm in diameter include smoke, smog, bacteria, fine dust and liquid droplets. These particles can get lodged deeper into the lungs, causing longer term illness.*

*Environmental Protection Agency: https://www.epa.gov/pm-pollution/particulate-matter-pm-basics

Features

- *Laser-based sensor design delivers industry-leading accuracy of ±15%*
- *Seven years expected service life when used eight hours per day*
- *Response time of <6 s is up to five times faster than many competitive sensors*
- *Compact design allows for seamless integration into a variety of applications*

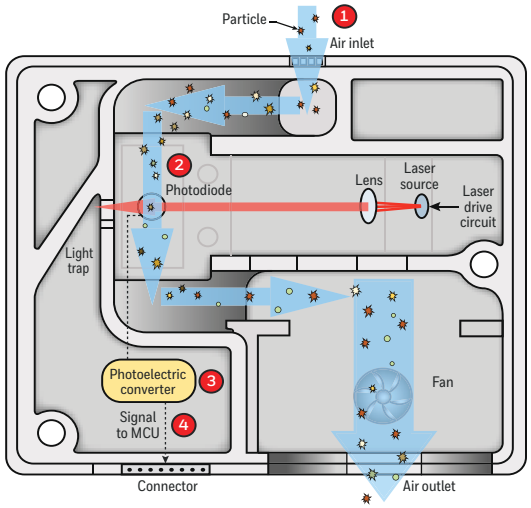
FIGURE 1. PM10 AND PM2.5 COMPARISON WITH HUMAN HAIR



PM10
Dust, pollen, mold
(10 µm dia.)

PM2.5
Smoke, smog, bacteria
(2.5 µm dia.)

FIGURE 2. HPM SERIES OPERATION (TOP DOWN VIEW)



Engineered for excellent accuracy, the HPM Series employs a laser-based sensing approach that detects airborne particulates with incredible accuracy.

The HPM Series operates in four key steps:

1. The fan at the air outlet draws the air in through the air inlet.
2. The air sample passes through the laser beam where the light reflected off the particles is captured and analyzed.
3. The photoelectric converter processes the signal into particle size and density.
4. The signal is transmitted to the micro control unit (MCU) where a proprietary algorithm processes the data and supplies outputs for the density of the particulate (µg/m^3).

⚠ WARNING
PERSONAL INJURY
DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.
Failure to comply with these instructions could result in death or serious injury.

⚠ WARNING
MISUSE OF DOCUMENTATION
- The information presented in this document is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

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