



## Opacity and Dust Concentration Monitors for Emissions and Process Monitoring

Environmental Monitor Service, Inc. was founded by James Cогnetta who possesses over 45 years in the opacity and dust monitor industry. As a former Owner/Vice-President of Dynatron, Inc., he was with the company from its inception in 1972 until its sale in 1989. He and his partners pioneered many of the technology that is still used today in the opacity and dust monitor industry.

In 1990, Mr. Cогnetta took his knowledge and expertise gained during these years to his new company, Environmental Monitor Service. His vision was to provide his customers with the highest level of reliability, service and support. Through his hard work and dedication, EMS has become synonymous with quality, dependable opacity and dust monitors as well as factory and field service which is second to none.

Environmental Monitor Service offers a complete line of opacity and dust monitor systems for air pollution control, including coal and oil fired boilers, cement kiln clinker, dual fired package boiler, crematoriums, ship board stacks, ESP control, Power Utility, Recovery boiler, and more. Additional offerings include engineering support during installation, on-site certifications, service and support after the sale and preventive maintenance packages. EMS has been in the air pollution control and energy industries for over 26 years.

Our broad range of Opacity and Dust Monitors are suitable for both emission monitoring and process control. EMS can fulfill all your measurement requirements-whether you need a specific device or a tailor-made system.

# Applications

Our broad range of Opacity and Dust Monitor systems is suitable for both emission monitoring and process control. Well-established in all industries, EMS can fulfill all your measuring requirements- whether you need one monitor or a custom engineered multi-point system.



## Emission Monitoring

Continuous and precise-our Opacity and Dust monitors provide accurate and dependable readings in flue-gas and exhaust-gas ducts. This assures that you adhere to the permissible permit limits. They meet the requirements of US EPA PS-1, PS-11 and Procedure 3.



## Process Measurement

The reliability, precisions and short response times of the Opacity and Dust monitors significantly enhance the efficiency of open and closed-loop control circuits. Instantaneous measurements reflect the current process status-even under extreme conditions such as high temperatures or pressures.



### MEASUREMENT PRINCIPLE

**Transmissometry:** When a light beam passes through a mixture of gas and particles, its intensity is effected by the particles because of absorption and scattering. The more particles in the light beam, the greater the reduction. By comparing the intensity of the initial light and emerging light beams enables the accurate measurement of transmission. By converting the transmission values with a specific math formula, the measurement results are displayed.

# Applications



## Power Generation/Waste Disposal

- Power Plants
- Trash to energy incinerators

## Application Filter Plants

- Monitoring/control of Electrostatic Precipitators
- Monitoring of bag houses



## Process Industry

- Cement industry
- Iron & steel manufacturing
- Asphalt mixing plants



## Other Applications

- Package Boilers
- Crematoriums
- Commercial fan control
- Plastics industry
- Chemical plants
- Shipboard incinerators





# Service/Engineering

## Field Service

- PS-1 Audit Testing and Reporting
- Opacity Monitor Startup
- Opacity Monitor Field Certification
- Procedure 3 Off-Stack Zero Service
- Preventative Maintenance

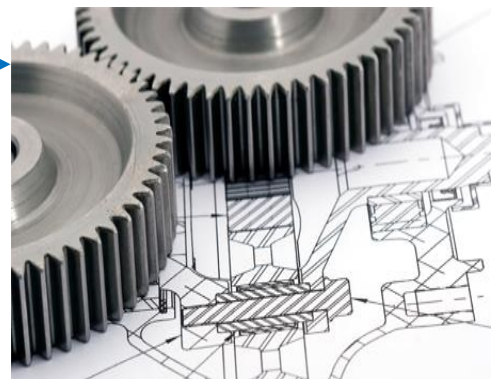


## Factory Service

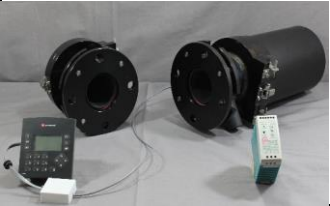
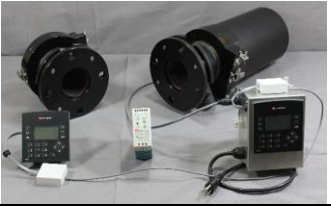


- Opacity Monitor Repair
- System Overhaul
- Factory Recertification
- Neutral Density Filter Sales and Certification
- Preventative Maintenance

## Engineering Services

- Custom Engineered Systems
- System Replacement/Upgrade
- Site Design and Integration
- Multi-Point System Design
- Wireless Communication Integration
- Controller Screen Personalization



## Model Comparison

|  |          |  |  |  |  |  |  |  |
|--|---|--|--|--|---|--|---|--|
|  | EMS500  |  | EMS510   |  | EMS520  |  | EMS800  |  |
| <b>Application</b>                         | Emission Monitoring   |  |  |  |   |  |   |  |
| <b>Light Source</b>                        | Green LED   |  |  |  |   |  |   |  |
| <b>Measurement Path (Flange to Flange)</b> | 3-50 feet   |  |  |  |   |  | 2-15 feet   |  |
| <b>Single/Dual Beam</b>                    | Dual Beam   |  |  |  |   |  | Single Beam   |  |
| <b>Zero/Span</b>                           | Auto Zero/Span, Gain, Lilarity and LED  |  | Auto Zero/Span Solenoids, Gain, Lilarity and LED                                   |  |   |  | Auto Zero/Span, Gain, Lilarity and LED  |  |
| <b>Compliance</b>                          | EPA Compliant Optics  |  | US EPA 40 CFR 60, PS-1 and ASTM D 6216   |  |   |  | EPA Compliant Optics  |  |
| <b>Standard System Measurement</b>         | Opacity or Dust   |  |  |  | Opacity and Dust  |  | Opacity   |  |
| <b>SD Card</b>                             | Optional  |  |  |  | Yes   |  | Optional  |  |
| <b>Display Resolution</b>                  | Selectable 1% or .1%  |  |  |  |   |  | 1% (Selectable with Enhanced Controller)  |  |
| <b>Response Time</b>                       | Adjustable from .2 to 10 Sec  |  |  |  |   |  |   |  |
| <b>Communication</b>                       | Standard Modbus RS-485, Optional 4-20 mA (Minimum 2), Optional Relay Contacts (Minimum 8) |  |  |  |   |  |   |  |
| <b>Controller Upgrades Available</b>       | Yes   |  |  |  |   |  |   |  |
| <b>Multi-Point Capable</b>                 | Yes   |  |  |  |   |  |   |  |
| <b>Wireless Capable</b>                    | Yes   |  |  |  |   |  |   |  |
| <b>24 Vdc Power Supply</b>                 | Input: 90-240 VAC, 50/60 Hz, 0.55 amp +10%  |  |  |  |   |  |   |  |
| <b>Stainless Steel Weather Covers</b>      | Optional  |  |  |  |   |  | N/A   |  |
| <b>Purge Air Supply</b>                    | Optional Single/Dual Purge Air Blowers, Negative Draft Assemblies or Plant Air Adapters   |  |  |  |   |  | N/A   |  |