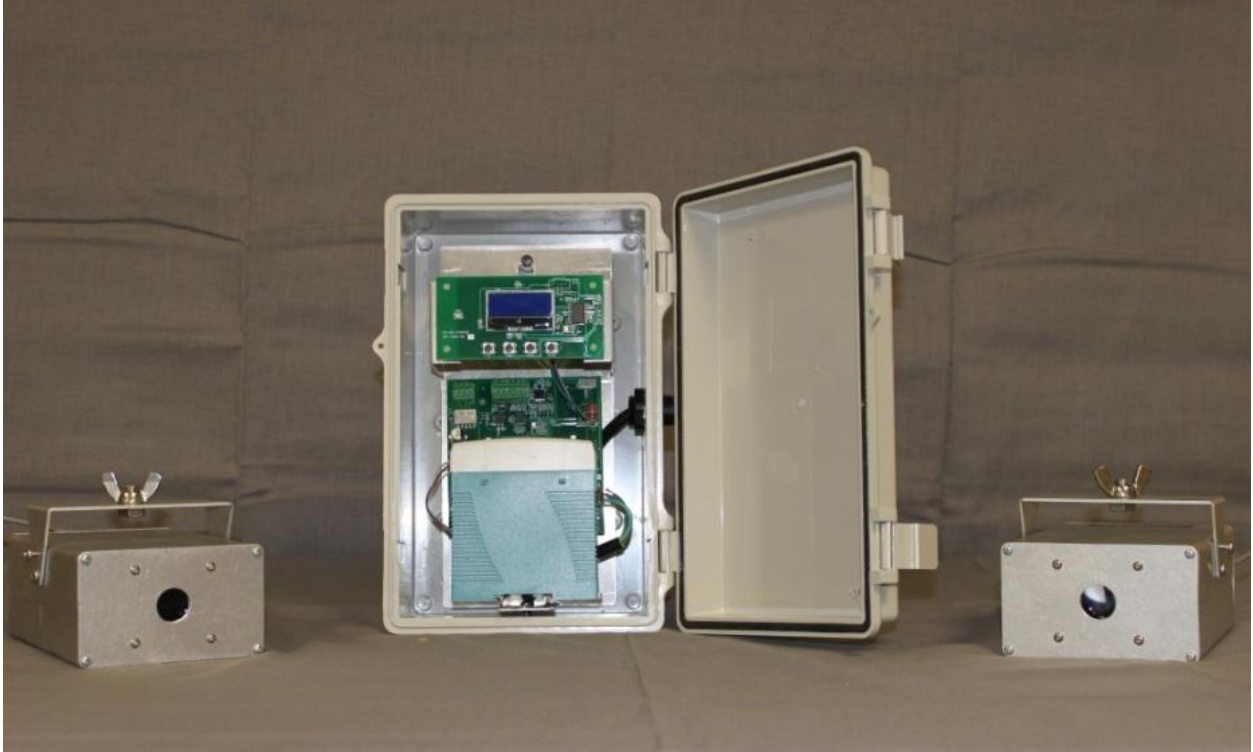

EMS800 LED OPACITY/DUST MONITOR



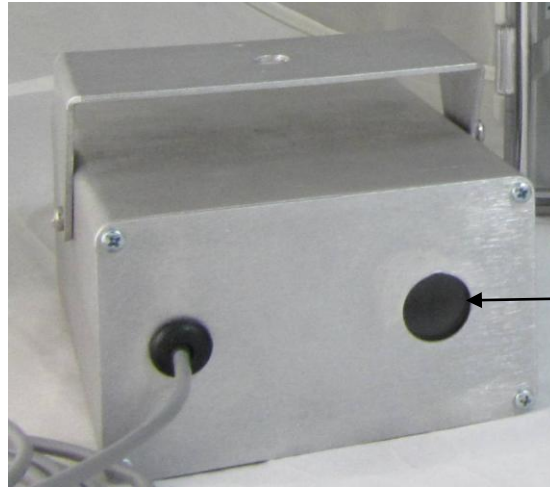
ENVIRONMENTAL MONITOR SERVICE

Quality Manufacturing, Integrity and Dependable Service by Design

Environmental Monitor Service, Inc. PO Box 4340, Yalesville, CT 06492
Ph. 203.935.0102, Fax 203.634.6663 Email: sales@emsct.com

EMS800 LED OPACITY/DUST MONITOR

The EMS800 is an economical system with electronic modulated single-pass transmitter technology. This microprocessor controlled opacity/dust monitor provides accurate, affordable and reliable process control information.



Alignment Viewing Window

Standard Features

- ✓ Microprocessor controlled
- ✓ Push button for automatic gain, LED, zero, span and linearity calibration
- ✓ 24VDC power supply for worldwide use
- ✓ Modulated Green LED technology
 - ✓ Immune to ambient light
 - ✓ Alignment viewing window
 - ✓ NEMA 4X enclosure
- ✓ 4-20 mA output (Optional MODBUS RS-485)
 - ✓ Intuitive bright LED user interface
 - ✓ LED source guarantee of 70,000 hours

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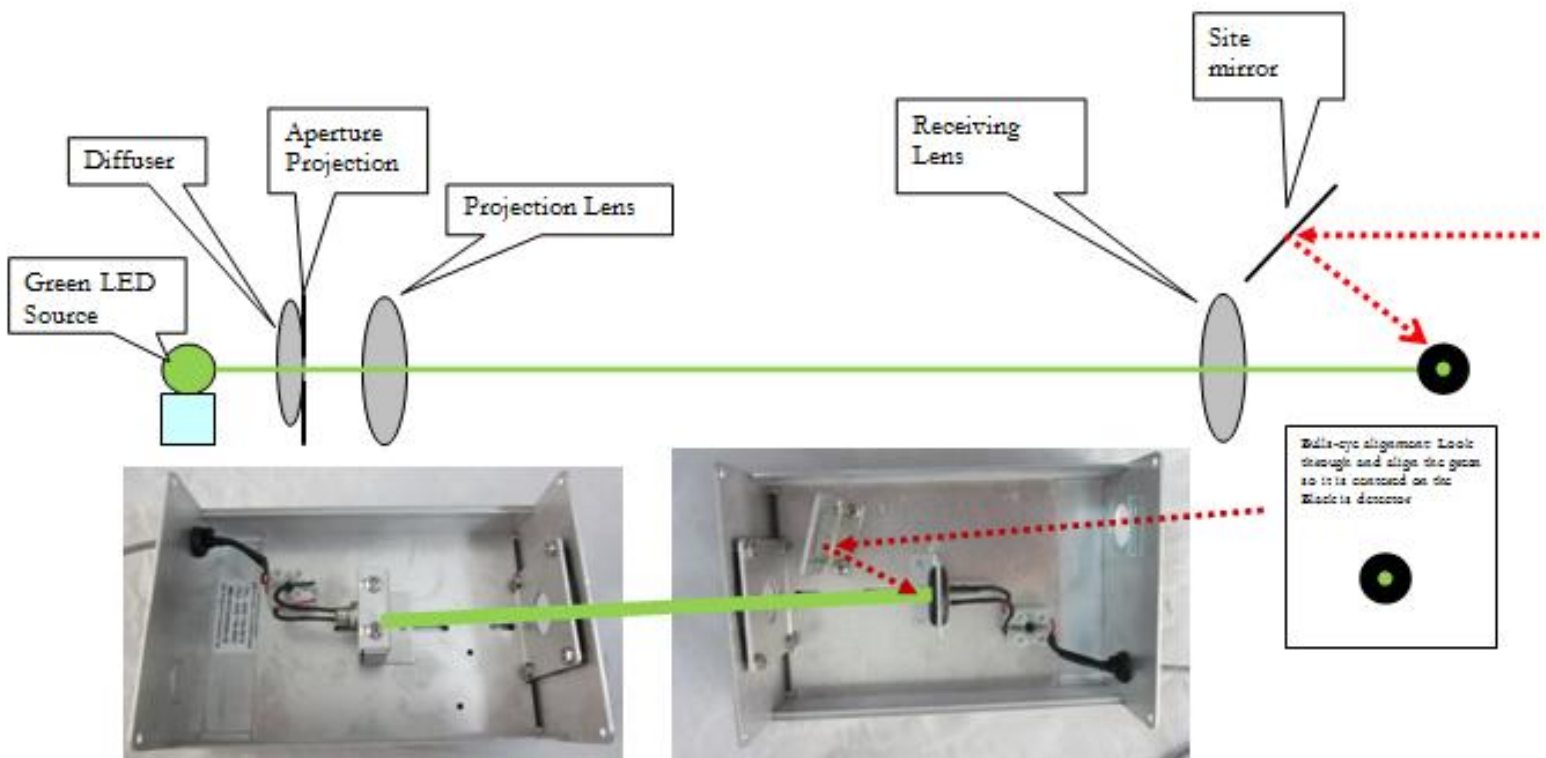
EMS800 LED OPACITY/DUST MONITOR

System and Measurement Principle

The EMS800 system consists of a green LED light source mounted on one side of the stack or duct and a detector mounted on the other. The LSEM (Light Source Electronic Modulation) measurement beam is projected across the stack to the detector. The output of the detector is analyzed and displayed on the bright lit user interface.

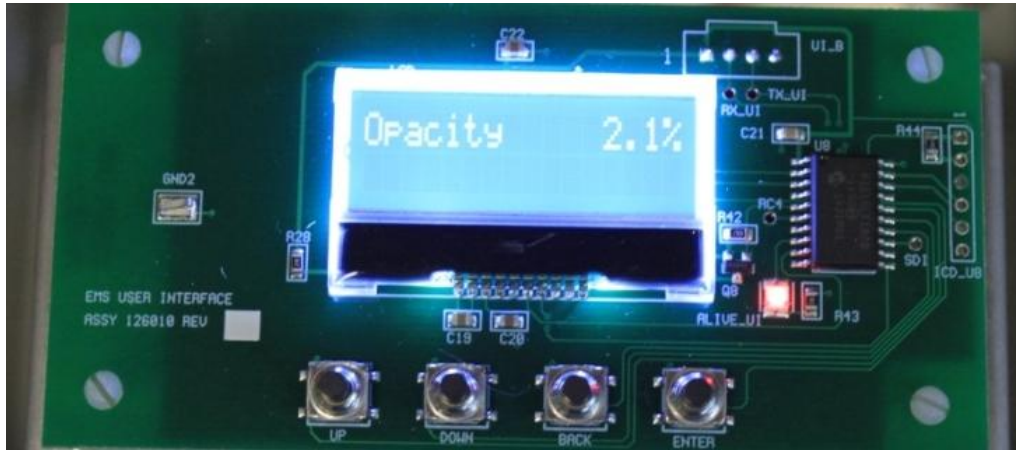


Green LED Transceiver



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EMS800 LED OPACITY/DUST MONITOR



User Interface

Applications

- ✓ Boilers
- ✓ Crematoriums
- ✓ Commercial Exhaust Systems
- ✓ Combustion Furnaces
- ✓ Bag Houses
- ✓ Duct Fire Alarm
- ✓ Fan Control
- ✓ Ship Board Boilers

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EMS800 Basics system:		Environmental Monitor Service, Inc.	
Sensor Electronic Processor Enclosure	NEMA 4X, Size, 10H x 6W x 5D inch (25.4 x 15.3 x 12.7 cm)		
EMS provided 24Vdc Supply	Input: 90-240 VAC, 50/60 Hz, 0.55 amp +10%;		
LED Display	1x1.75" Viewing area, Blue Backlight		
Approvals	CE, UL, cUL		
Measurement Ranges	0 to 100% Opacity		
Display resolution	1% Opacity		
4-20mA Outputs	One (1), 500 ohms max, Fixed F.S. 0-100%		
Relay Contacts	One 2amp 125Vac relay for alarm, Field programmable NC/NC.		
Alarm Reset, Range	Automatic upon clearing, 1-70%		
Clear Path Calibration	Push button Digital Auto Linearity, Z/S, Gain and LED current.		
Environment	Operational temperature 0 to 50°C (32 to 122°F), Storage temperature -20 to 60°C (-4 to 140°F), Relative Humidity (RH) 5% to 95% (non-condensing)		
Communications	1 port, RS485 Modbus		

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EMS800 Sensors:	Environmental Monitor Service, Inc.
Enclosure	NEMA 12 Aluminum
Sensors over all dimensions	2.5" x 4.1"x 6.0" (63.5x104x152.4)
Path Length	18" to 12 Ft (45.7 to 366cm)
Optical System	Single Pass
Transmitter/Receiver weight	Transmitter, Receiver: 1.25 Lbs (0.41kg)
Modulated LED Source	Green LED > 6 years)
Ambient Temperature Limits	From +4 to +52° C (+40 to + 125° F)
Process Gas	Up to 750° F (400° C), standard (higher available-contact factory)
Mounting Flanges	See manual for options
Ambient Light Immunity	Solid-state electronic LED modulation
Connections	2 pair twisted shielded cable, 22 AWG

EMS800 Design and performance:	Environmental Monitor Service, Inc.
Peak and Mean Spectral Response	Photopic; 520 nm, less than 50% of peak response +/- 20nm
Angle of View	< 5.0° from optical axis
Angle of Projection	< 5.0° from optical axis
Accuracy	+/- 3.0 opacity
Response time	< 10 second
Calibration	Push button Automatic for Zero and Span

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EMS800 Enhanced Control Unit:		Environmental Monitor Service, Inc.	
Enclosure	IP65/NEMA4X (when panel mounted), 96x96x64mm (3.8" x 3.8" x2.58"). Power 24Vdc +/- 10%.		
EMS provided 24Vdc Supply	Input: 90-240 VAC, 50/60 Hz, 0.55 amp +10%		
Graphic Display	1.5x2.25" Viewing area, LED Backlight		
Approvals	CE, UL, cUL		
Measurement Ranges	0 to 100% Opacity (additional with dust option: 0-2000/Actual mg³, 0-2 Optical Density)		
Display Resolution	0.1 for Opacity and Actual mg³, 0.001 O.D.		
Process Display screens	Selectable pages, LCD backlight Instant, average, split screen.		
Battery back up	7 years typical at 25°C		
S.D. Card	Optional - Back up by 2GB SD memory card.		
4-20mA Outputs	Two (2), 800 ohms max individually customer selected F.S. ranges and modes.		
Relay Contacts	6 relays for alarms, Field programmable.		
Alarm, Reset	High Opacity/Early warning Automatic and manual.		
Clear Path Calibration	Push button Automatic for Zero and Span		
Environment	Panel mounted IP65 / NEMA4X, Operational temperature 0 to 50°C (32 to 122°F), Storage temperature -20 to 60°C (-4 to 140°F), Relative Humidity (RH) 5% to 95% (non-condensing)		
Network	Protocol:RS485 Modbus		

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EMS800 Order Sheet			
	Part # instructions: Choose one number from the left from each category to create the part number. Example EMS800-1-4-6-8, MSRP \$2,675.00		
EMS761 Basic System			
1	EMS800 Opacity Basic Single-Pass, Auto Gain/Linearity Monitor system.	3183	\$2,675.00
2	EMS800 With Enhanced Panel Mount Remote Control unit. Opacity program.	3015	\$3,480.00
3	EMS800 With Enhanced Panel Mount Remote Control unit. Dust program.	3126	\$3,480.00
Enclosure Option			
4	None or N/A	3090	\$0.00
5	NEMA 4X enclosure for EMS controllers.	2846	\$250.00
Measurement Path			
6	7xx Measurement path 2-8Ft.	3120	\$0.00
7	7xx Measurement path >8-12Ft.	3121	\$45.00
Power Supply			
8	None or N/A	3090	\$0.00
9	24VDC, 25W, 1A Output Din-Rail Mount Power Supply.	2684	\$ 60.00

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