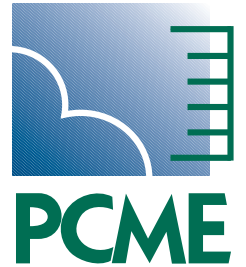


Passionate about Particulate



## PCME View 580

DYNAMIC OPACITY™  
INSIDE

Particulate

Measurement

Systems

Particulate CEM  
without approvals



- Reliable monitoring of dust concentration emissions from industrial boiler stacks
- In-built continuous compensation for dust on lenses due to Dynamic Opacity ratiometric Opacity measurement principle
- Quick access to optics for one-off cleaning or inspection



Certificate No: 9389

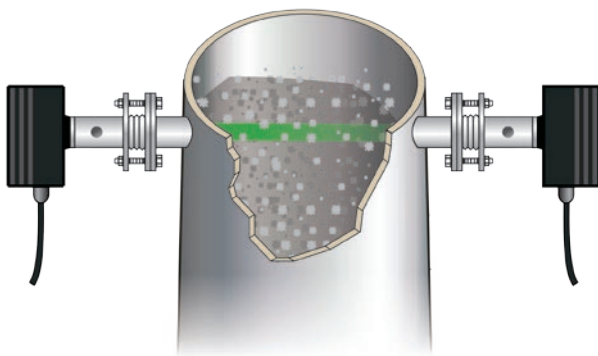
# applications

## System Description and Product Range

The PCME View 580 is suitable for monitoring particle emissions from combustion boilers and stacks controlled by electrostatic precipitators, with high levels of reliability and robustness. The instrument comprises transmitter and receiver modules mounted on opposite side of the stack using a unique ratiometric opacity algorithm to overcome contamination which are catastrophic to the performance of traditional opacity systems. Mains power and a choice of user outputs are wired directly to the transmitter avoiding the need for separate remote control units.



## Principles of Operation



The PCME View 580 continuous particulate monitor uses the *dynamic opacity™* ratiometric optical measurement principle. This technique monitors the variation in the amount of received light from the light beam transmitted across the stack. The variation derives from the temporal distribution of particulate which attenuates the light beam. The PCME View 580 calculates the dynamic response (ratio of light variation to light intensity or obscuration). This method has the added benefit that the measurement is unaffected by lens contamination. The instrument response which is proportional to dust concentration is used to calculate Ringelmann, extinction and can also be calibrated to read in  $\text{mg}/\text{m}^3$  by reference to an Iso-kinetic sample (mass gravimetric technique).

## Simple Instrument Maintenance and Installation

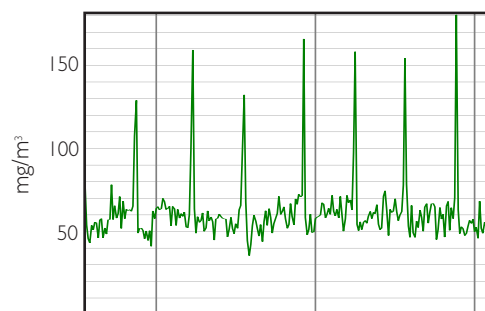
The PCME View 580 includes automatic electronic zero and span checks to give increased quality assurance that the instrument is measuring correctly. In addition, the ratiometric dynamic opacity algorithm is highly resistant to dust contamination and the instrument's automatic light check provides an alarm should light levels fall below 10% of normal, indicating the need to clean the optical surfaces.

Lens condition	Light intensity	Variation	Scintillation
100% transmission	$I$	$x$	$x/I$
90% transmission	$0.9I$	$0.9x$	$0.9x/0.9I = x/I$
50% transmission	$0.5I$	$0.5x$	$0.5x/0.5I = x/I$

The instrument has inherent low cost of ownership due to its measurement algorithm, however, should maintenance be necessary, easy access for cleaning is provided to all windows and mechanical parts which might come into contact with the flue gas through a simple disconnect of the optics.

The transmitter and receiver do not require elaborate alignment, simply mounting on opposite sides of the stack in a way to give direct line of site between the two sensor heads.

The instrument is designed for use as a stand alone dust monitor or simple integration into a CEMs system. There is no need for a separate control unit with all user interface and external connections (mains power; relays, 4-20mA) provided directly in the sensor. The instrument may be set up by the display/keypad in the sensor or by remote PC software (optional)



Emissions from electrostatic precipitator (during rapping cycle)

# specifications

## User selectable added value options

Monitoring range and application limits	
Stack size (flange to flange)	1 to 10m
Stack gas temperature	Standard Up to 250°C Option Up to 400°C
Humidity	Up to 90% non condensing
Velocity	Normal plant load (3m/s minimum)
Dust measurement range	<10 to 10,000mg/m <sup>3</sup> (application dependent)
Typical measurement range of use	0 - 300 mg/m <sup>3</sup>
Response time	< 10 sec, 95% change (user defined)
Ambient light rejection	Modulated LED (non-visible spectrum)



Specifications	Receiver/User Interface	Transmitter
Ambient temperature (for stack temperature see above)	-25°C to 55°C	-25°C to 55°C
Stack connection	DN40 PN6	DN40 PN6
External dimensions (mm)	200W x 190H x 200D (from flange)	200W x 190H x 200D (from flange)
Weight (kg)	3.9	3.5
Enclosure rating	IP-65 (with hinged lid closed)	IP-65
Power requirements	110/230VAC 50/60Hz 350mA	Supplied by receiver
Outputs	Isolated 4-20mA (500 ohm) Alarm 1: Fault SPST 1A@24VDC Alarm 2: Emission alarm SPST 1A@24VDC (fail safe connected) RS-232 output - option RS-485 (Modbus) - option	N/A
External LED x3	Indicates power fault and emission alarm	
User set up	4 digit display and Set-up keys accessible on opening hinged lid (option for external keys and display)	N/A
Cable entries	3 x M20 gland/conduit entries	3 x M20 gland/conduit entries
Connecting cable between receiver and transmitter	Supplied with 10m of cable (8 core 7 x0.22mm screened, PVC insulated, over all diameter 6.3mm)	
Air purge connection	1/2" BSP	1/2" BSP
Anti fouling connection (for high humidity/high dust applications)	Optional extra	Optional extra

## Optional PC Software

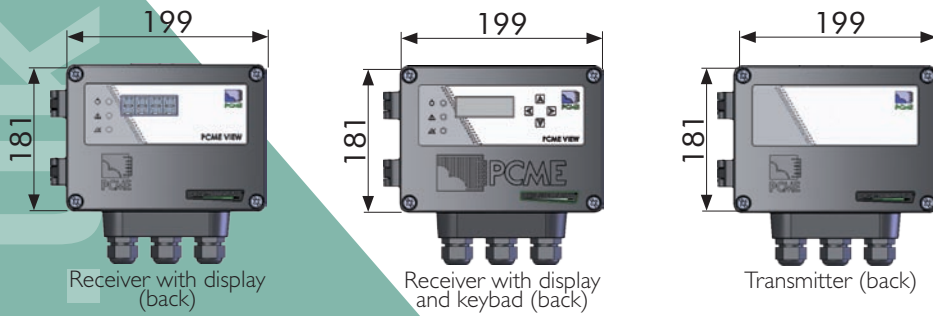
PC connects to PCME View 580 via RS232 input connector (RS485 optional)



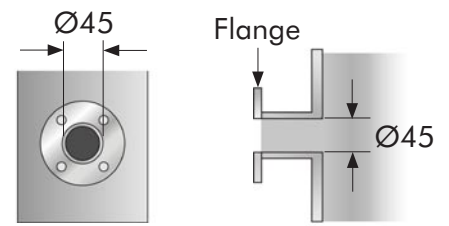
PC software	Purpose
Configuration	For instrument configuration by PC
Service diagnostic	For advanced service diagnostics
Dustview	For viewing emissions on PC

## Physical Dimensions & Order Codes

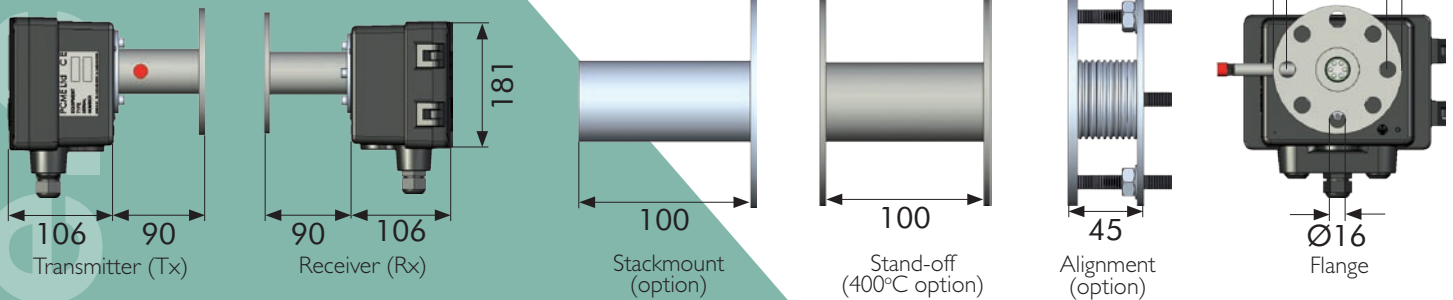
### Display Options (back views)



### Stack Connection



### Sensor Options (side views)



## Order Code

### PCMEView 580 - 1 2 3 4 - A B C D E

Example

PCMEView 580 - 250C 0 ALIGN 0 - AC 485 0 0 KEY

### Mechanical Options (1234)

	Requirement	Option	Code
1	Stack Temperature	Up to 250°C Up to 400°C	250C 400C
2	Antifouling Device	None Provided	0 AF
3	Alignment Fitting	None Provided on transmitter (Tx)	0 ALIGN
4	Stack Mounts	None Provided for Tx and Rx	0 SM

### Electrical Options (A B C D E)

	Feature	Option	Code
A	Power option	115/230V AC 24V DC	AC 24V
B	RS485 Data output	4-20mA only 4-20mA and RS485	0 485
C	RS232 Data output	4-20mA only 4-20mA and RS232	0 232
D	Connector for RS232 or RS485	Internal connector External flylead	0 FLY
E	Keypad	Internal buttons External keypad for ease of setup	0 KEY

## About PCME Ltd

As a progressive environmental Company, PCME specialises in particulate measurement for industrial processes. With a worldwide reputation for reliability, innovation and technological excellence, the Company produces equipment for concentration and mass monitoring for regulatory, environmental and process control requirements. A dedicated team of qualified application and sales engineers is always on hand and should be consulted in the selection and usage of the most suitable equipment for any particulate application.



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