



OPAL 200X

Opacity & Dust Monitoring System for EX Zone Application



- Opacity %
- Optical Density
- Dust (mg/m³)



- **USEPA PS-1 certified**
- **Double pass technology**
- **Dual outputs and alarms**
- **Keypad control, calibration & testing**
- **Complete range of accessories**
- **IECEX EXp Zone 2 IIC T6 certification**



CONTROL UNIT

Enclosure
Weight
Ambient Temperature
Power Supply
Display
Operator Indicating LED's
Outputs -analogue

IP65 weatherproof, suitable for safe zone location
1.8 Kg
-20 to +50 Deg C
110 or 240vac, 50/60Hz, 125va (+/- 10%) supplied via purge control panel.
Alphanumeric, two line display selectable – Opacity, Optical Density, mg/m3, Lens Dirt %.
Power, Alarm active, Setup mode
Dual 4-20mA output channels with selectable outputs for:
i) Opacity %, scaleable span 10 – 100% opacity
ii) Optical Density, scaleable span 0.05 – 2.0
iii) Quantitative (mg/m3), scaleable span 10 – 500 mg/m3
4 hour internal data storage for isokinetic test calibration response. Autocorrelation for mg/m3
Two (2) programmable SP-NC, 0.5A at 24vdc (50vac / 30vdc maximum)
Fault: Optical system FAIL, Blower FAIL, Lens dirt HIGH, Emission level HIGH, Cal FAIL
Procedure: Service mode, Autocal in progress
Automatic: programmable 1 to 24 hour, or local initiate from control unit, transceiver or via remote signal.
Manual: SPAN and ZERO test – live display, frozen output
10 core screened cable, max 300 metres. Must be compliant for local Ex zone application.

Data logging
Outputs - Relay
Alarms

Calibration self tests

Control – transceiver cable

PURGE PANEL

Enclosure
Dimensions
Power Supply
Input
Output
Air Supply

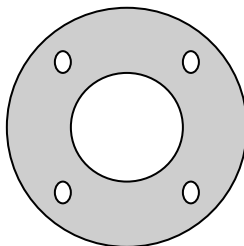
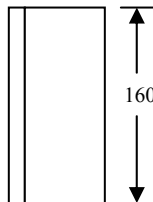
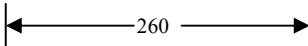
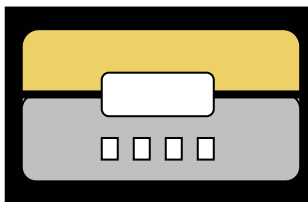
IP65 weatherproof for safe zone location.
300W x 450H x 150D with wall mount brackets.
110 or 240vac, 50/60Hz, 125va (+/- 10%)
Return purge air supply from transceiver – monitors DP and flow rate display.
Power supply (controlled) to OPAL Control Unit.
Instrument air supply required, maximum 2.0 bar / 5 litres per minute maximum flow rate.

OPTICAL SYSTEM

Enclosure
Power supply
Installation
Path Length
Optical System
Alignment
Lens Protection
Ambient Temperature
Process Temperature
Temperature Stability
Spectral Response
Angle of View and Projection
Response Time
System Accuracy
Zero & Span Test Control
Options
Transceiver Display
Transceiver Control

IECExp Zone IIC T6 certification. With lift-off weather covers supplied as standard.
6 vdc regulated, 300mA, provided by control unit.
Via 90NB standard flange: 205mm diameter, 4 x 18 mm holes on 165mm pcd.
0.5 to 15 metre, flange to flange
Digitised temperature stabilised double pass system with modulated LED light source, stray light immune.
TTL (thru-the-lens) view – 4 point adjustment on transceiver flange spool, +/- 4 degree variation.
Purge air inlets on flanged air purge spools, suitable for 10mm plant instrument air line.
-20 to +50 Deg C
Maximum 450° C standard. Consult factory for higher levels.
Less than 0.5% opacity drift between from 0 - 50° C (USEPA PS-1conformant)
515 to 585 nm, less than 2% of peak response outside 400 to 700 nm. (USEPA PS-1 conformant)
<4.0° from optical axis. (USEPA PS-1 conformant)
< 3 seconds, to 100% of actual value.
Better than or equal to +/- 2.0% opacity (USEPA PS-1 conformant)
Automatic or manual test operation via control unit, transceiver keypad or remote input.
Field audit module kit with set of 3 secondary certified ND filters as per USEPA requirements.
2 line, 32 character, alphanumeric LCD display, backlit
4 push button operation - Select DISPLAY, TEST, INSTALL, and FACTORY modes.

CONTROL UNIT (3.2Kg)



90NB ANSI flange with 4 x 18mm holes on 165 pcd

TRANSCIEVER (8.4Kg) / RETROREFLECTOR (2.3Kg)

