



# OPAL 200X

## Opacity & Dust Monitoring System for Ex Zone Application



- Opacity %
- Optical Density
- Dust (mg/m<sup>3</sup>)



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



“ Australian environmental technology ”

## CONTROL UNIT

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

IP65 weatherproof 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 5.0 psig at 5 litres per minute maximum flow rate.

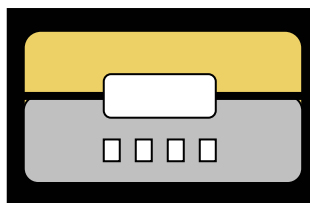
## OPTICAL SYSTEM

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  
Options

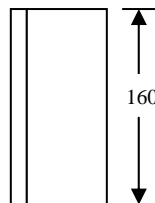
IECExp Zone IIC T6 certification. With lift-off weather covers supplied as standard.  
6 vdc regulated, 300mA, provided by control unit.  
Via 90NB standard flange: 205mm diameter, 4 x 18 mm holes on 165mm pcd.  
0.5 to 15 metre, flange to flange  
Temperature stabilised double pass system with high power LED light source, modulated for ambient immunity.  
TTL ( thru-the-lens ) view – 4 adjustment bolts on transceiver flange spool, +/- 4 degrees.  
Air blower inlets on flanged air purge spools. Optional adaptors for plant instrument air.  
-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)  
Manual test operation via control unit, transceiver keypad or remote input.  
Pre-filtered air blower assembly, with weatherproof cover set. NOTE: EX blower may be required.  
Air purge adaptors for instrument air connection.  
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.

Transceiver Display  
Transceiver Control

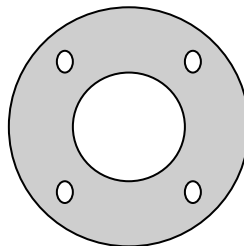
CONTROL UNIT (3.2Kg)



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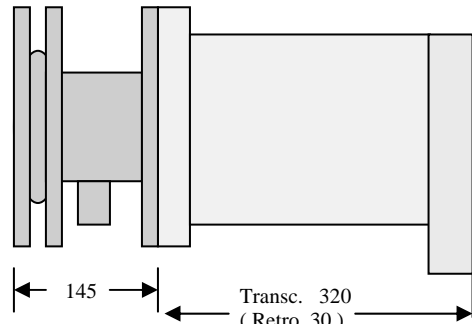


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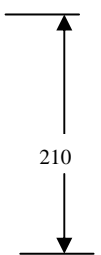
90NB ANSI flange with 4 x 18mm holes on 165 pcd

TRANSCEIVER (8.4Kg) / RETROREFLECTOR (2.3Kg)



145

Transc. 320  
( Retro 30 )



210



## OPAL Environmental Pty Ltd

Unit 30 / 24 Anzac Avenue Smeaton Grange NSW 2567  
Post Office Box 57 Cobbitty NSW 2570 Australia  
Tel: (61) 2 4648 4500 Fax: (61) 2 4648 4055

[www.opalenvironmental.com.au](http://www.opalenvironmental.com.au)

## LOCAL SALES & SERVICE

Technical and performance specifications for OPAL opacity and dust monitoring systems are correct at time of print. We reserve the right to review, and change where necessary, product technical specifications without obligation to advise current users and maintainers. Wherever possible, all new project tenders will be advised of change.