



## Tunnel Atmosphere Monitoring

# TunnelCraft II Air Quality Monitor for Visibility

The visibility monitor operates by generating high frequency, high power pulses of red light from a light emitting diode. This light is focussed onto a mirror mounted 3m away and reflected back to the sensor. Variations in the intensity of the reflected light provide a high-resolution value of opacity and visibility dimming coefficient.

The measurement is totally immune from disturbance by other light sources, such as car headlamps and emergency vehicle beacons.

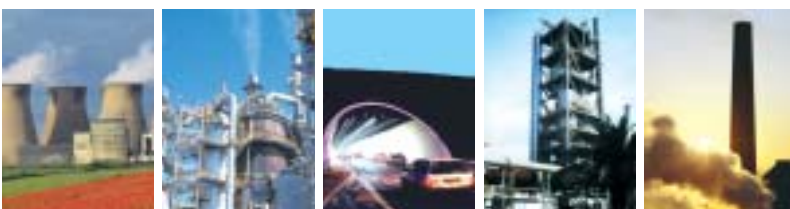
A 4-20mA output is configurable in either % opacity, visibility dimming coefficient in  $m^{-1}$ , or visibility (MOR) in metres. The range and average time of the output are also fully configurable.

Routine maintenance is limited to cleaning the reflector and sensor lenses once per year.

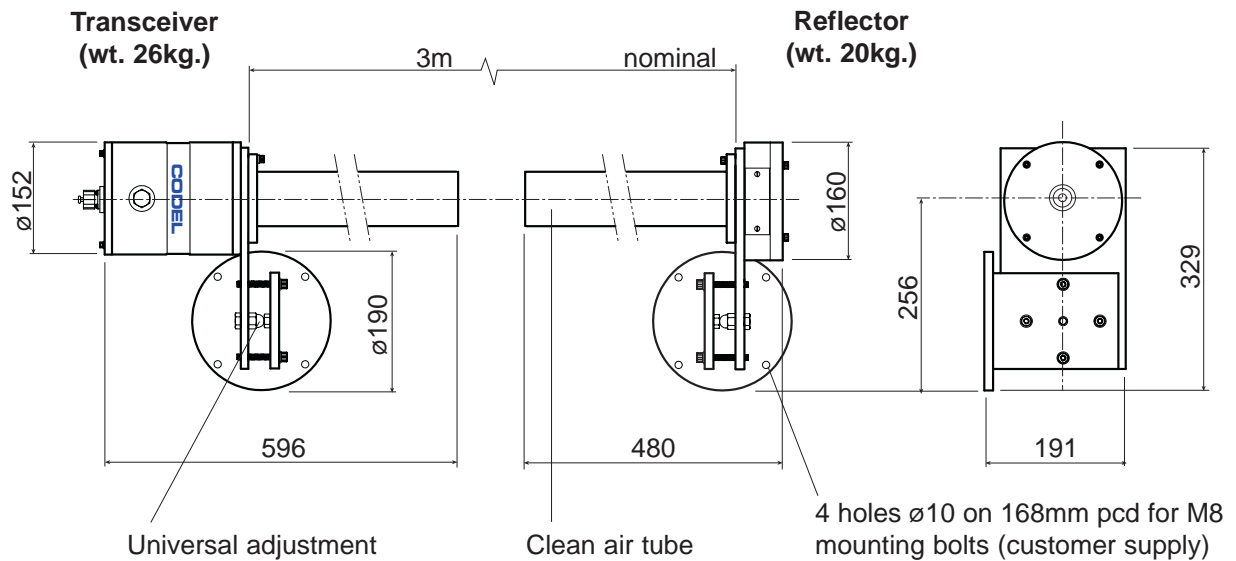
- high resolution measurement of visibility
- 0.0002 $m^{-1}$  accuracy for visibility dimming coefficient
- measurements totally unaffected by stray light sources
- designed to withstand the harshest of tunnel environments
- modular construction ensures simple installation and cabling
- routine maintenance limited to annual cleaning of optical surfaces
- 2 x 4-20mA fully isolated analogue outputs
- 1 x volt-free contact output for data valid
- 1 x volt-free contact output for alarm



## Total Solutions - Total Confidence



## Overall Unit Dimensions



## Specification

### General

Measurement- 3m (6m folded beam)  
Path

Measurement-  $0-15 \times 10^{-3} \text{ m}^{-1}$   
Range other ranges selectable on setup

Averaging - 1 to 12 min  
Time

Accuracy -  $\pm 0.2 \times 10^{-3} \text{ m}^{-1}$

Power - 17V DC, 50VA from separate power  
Requirement supply unit

Ambient -  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$   
Temperature

### Construction

Housing - corrosion resistant epoxy coated aluminium sealed to IP67

### Communications & Outputs

Comms. - serial RS232 interface via plug and socket for diagnostics

Analogue - 2 x 4-20mA, 200V common mode isolation, max. load  $500\Omega$

Logic - 2 x volt-free contacts SPCO, 0.25A @ 125V AC, 1A @ 30V DC, 0.25A @ 100V DC

### Compliances

EMC - 89/336/EEC directive compliant

Low Voltage - 73/23/EEC directive compliant

CODEL International Ltd.  
Station Building, Station Road  
Bakewell, Derbyshire DE45 1GE  
England

Tel: +44 (0) 1629 814 351  
Fax: +44 (0) 8700 566 307  
e-mail: [codel@codel.co.uk](mailto:codel@codel.co.uk)  
web site: [www.codel.co.uk](http://www.codel.co.uk)

### Distributor :

