

## Tunnel Atmosphere Monitoring

# TunnelCraft III Air Quality Monitor for CO & Visibility

### Low-Cost Precision Sensors

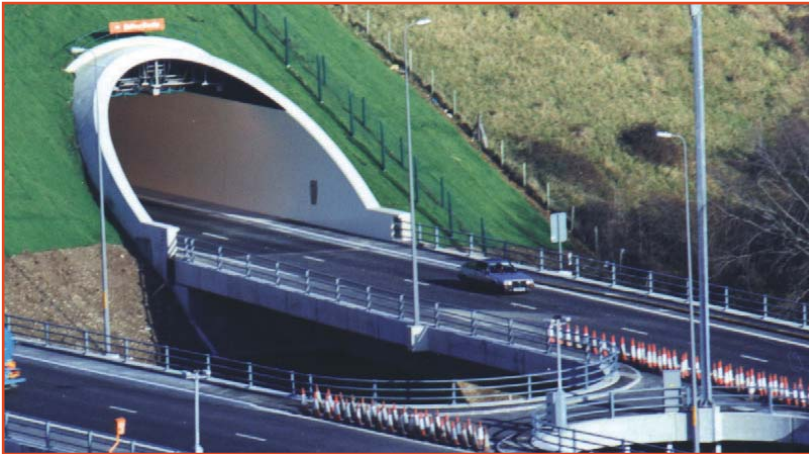
The Air Quality Monitor (AQM) uses infrared light and visible light to measure carbon monoxide and visibility in a single compact instrument.

The AQM consists of a transceiver that projects infrared beams to a reflector unit mounted 3m away. The reflected light is received by the transceiver and the specific absorption is measured to determine the visibility dimming coefficient and carbon monoxide concentration within the path of the beams.

CO concentrations are derived using gas cell correlation infrared absorption technology to provide accurate, low-drift measurements.

Visibility is measured using visible light transmission from a high-power modulated LED, enabling high accuracy measurements to be obtained without interference from other light sources within the tunnel.

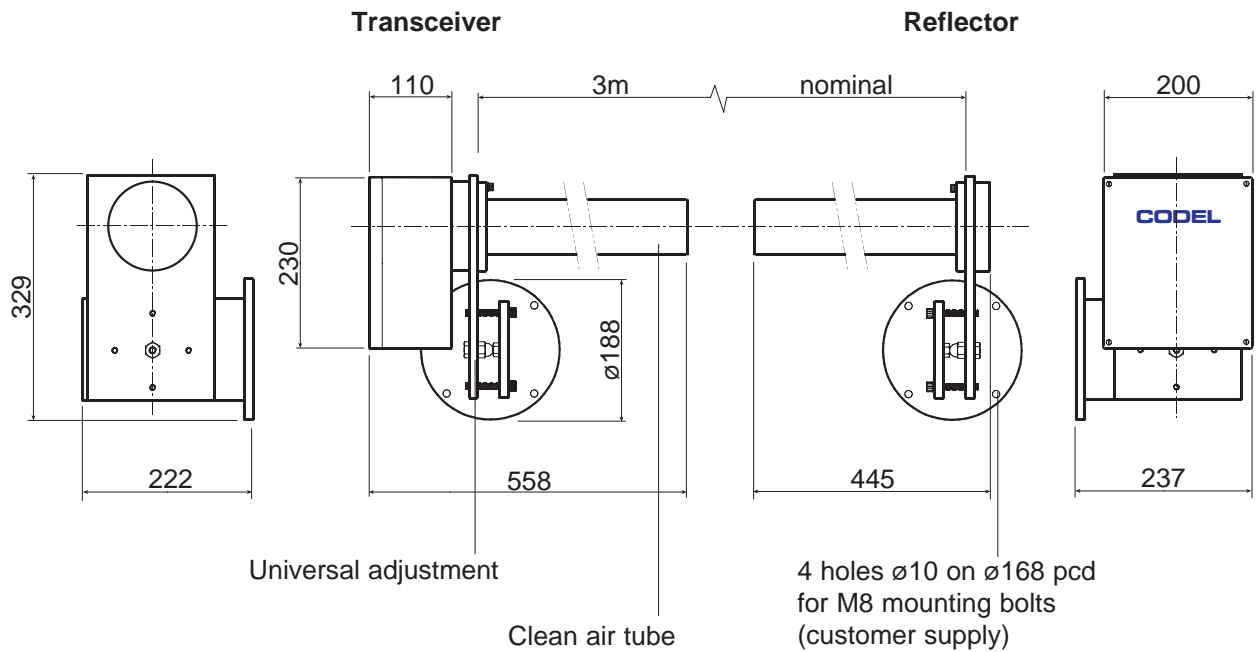
- measurement of CO by infrared absorption/gas cell correlation technology
- high resolution measurement of visibility
- accuracy +/-1ppm for CO, 0.0002m-1 for visibility
- measurements totally unaffected by stray light sources
- designed to withstand the harshest of tunnel environments
- routine maintenance limited to annual cleaning of optical surfaces
- 2 x 4-20mA analogue outputs
- 1 x volt-free contact output for data valid
- 2 x volt-free contact output for alarm



## No.1 in Tunnel Atmosphere Monitoring



## Overall Unit Dimensions



## Specification

### General

Measurement: 3m (6m folded beam)  
Path

Measurement: up to 2 channels for CO & visibility  
Channels

Measurement: CO - 0 to 300ppm  
Range VIS -  $0-15 \times 10^{-3} \text{ m}^{-1}$   
other output ranges field selectable

Averaging : 1 to 12 min  
Time

Accuracy : CO - +/- 1ppm  
Vis - +/-  $0.2 \times 10^{-3} \text{ m}^{-1}$

Power : 12V DC, 20VA from separate  
Requirement power supply unit

Ambient : -20°C to +50°C  
Temperature

### Construction

Housing : corrosion resistant epoxy coated  
aluminium sealed to IP67

### Communications & Outputs

Local : RS232 (optional RS485) serial  
Comms. interface via plug & socket

Analogue : 2 x 4-20mA, 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)

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