



## Tunnel Atmosphere Monitoring

# TunnelCraft II Air Quality Monitor for CO & Visibility

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

The AQM consists of a transceiver that projects visible and 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, carbon monoxide and nitric oxide concentrations 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.

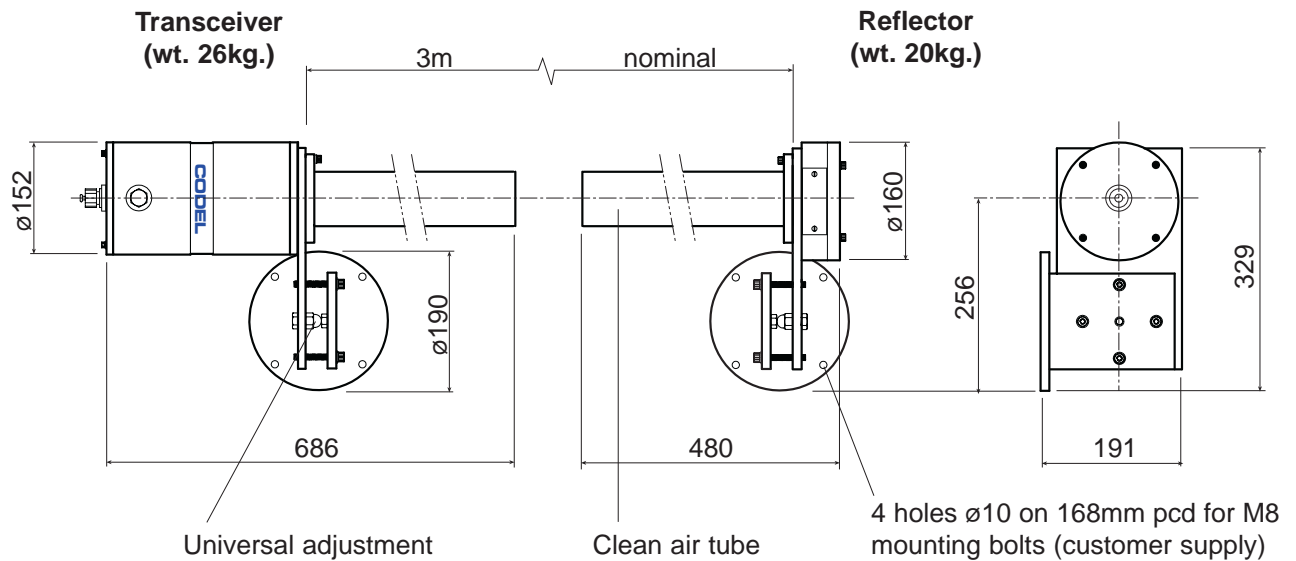
- measurement of CO by infrared absorption/gas cell correlation technology
- high resolution measurement of visibility
- accuracy +/-1ppm for CO, 0.0002m-1 for visibility
- measurements totally unaffected by stray light sources
- designed to withstand the harshest of tunnel environments
- routine maintenance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



## Total Solutions - Total Confidence



## 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 ranges selectable on setup

Averaging - 1 to 12 min  
Time

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

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 IP68

### 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

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### Distributor :

