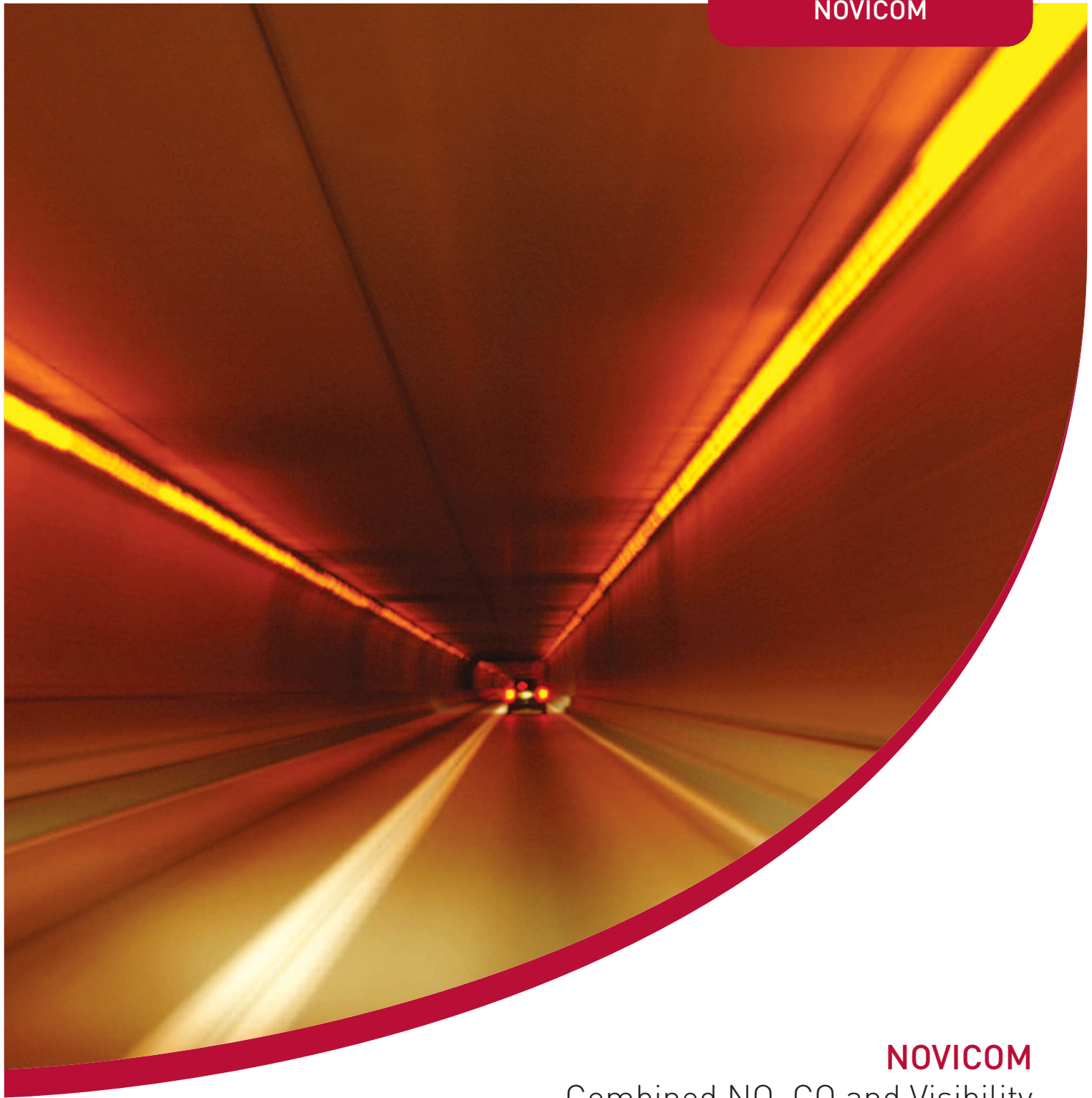




## NOVICOM

Combined NO, CO and Visibility  
Monitor for Tunnels



TUNNEL SENSORS

# NOVICOM

## Combined NO, CO and Visibility Monitor for Tunnels



### FEATURES

- Proven infrared spectroscopy technique for measurement of nitric oxide (NO) and carbon monoxide (CO)
- Data output for total oxides of nitrogen (NOx)\*
- Visibility measurement using the widely accepted light transmission opacity technique
- Temperature and humidity compensated measurements to ensure stable readings across all tunnel conditions
- IP65 / NEMA 4X rated external enclosure supplied with quick release dust protection tubes and wall brackets
- Intelligent analyser with optional Operator Interface
- Choice of interface options enabling easy integration into tunnel control system

### BENEFITS

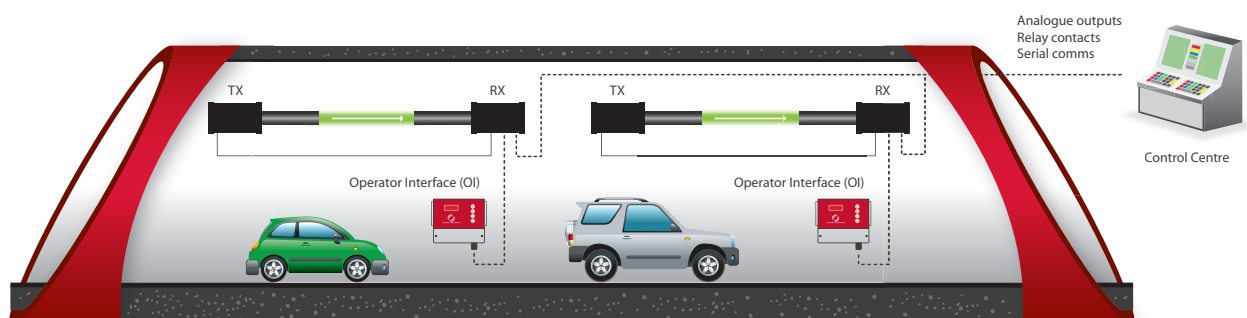
- Designed specifically for monitoring in tunnels
- Rugged design to withstand corrosive atmosphere and regular tunnel washing
- Simple installation and alignment
- Low maintenance requirements
- Suitable for right or left hanging to enable compliance with regulations governing light emissions facing on-coming traffic flow

### APPLICATIONS

The NOVICOM tunnel monitor measures the concentration of nitric oxide (NO) and carbon monoxide (CO) in tunnel atmospheres and makes a visible opacity measurement to determine the visibility within the tunnel. Total oxides of nitrogen (NOx) can be inferred, or calculated, from the NO measurement so the NOVICOM can also present a NOx reading\*. These measurements can be used as part of an air quality management system for ventilation control and/or secondary smoke detection within a traffic tunnel or other confined space.

### OPERATION

The NOVICOM sensor consists of a Transmitter (TX) and Receiver (RX) mounted “facing” each other on the wall or ceiling of the tunnel. The Transmitter emits two optical beams; one visible (green) light for measurement of the visibility and the other infrared (IR) for NO and CO measurement. Both optical beams are received by the RX, where the signals are conditioned and processed on independent internal optical benches.



### SYSTEM COMPONENTS

- NOVICOM sensor consisting of Transmitter (TX) and Receiver (RX)
- LSZH cable with connectors for connecting the RX and TX
- Wall mounting brackets
- PC based utility software package for set-up and control of the instrument
- Optional Operator Interface with remote or local mounting configurations
- Optional variable input AC power supply
- Optional reference gas cells and filters for routine calibration check of the instrument

## TECHNICAL SPECIFICATION

### NO / CO MEASUREMENT PERFORMANCE

| Parameter           | Comment                         |
|---------------------|---------------------------------|
| Measuring Principle | Infrared absorption             |
| Measurement Reading | Concentration in ppm            |
| Measuring Range     | 0 – 300 ppm (user configurable) |
| Path Length         | 5.5 – 6.5 m (6.0 m optimum)     |
| Accuracy            | + / - 2 ppm                     |

### VISIBILITY MEASUREMENT PERFORMANCE

|                                    |                                                                                             |
|------------------------------------|---------------------------------------------------------------------------------------------|
| Measuring Principle                | Light transmission                                                                          |
| Measurement Reading                | Transmission<br>Extinction Coefficient (k)<br>Meteorological Optical Range (MOR)<br>Opacity |
| Measuring Range                    |                                                                                             |
| Transmission                       | 0 – 1.000                                                                                   |
| Extinction Coefficient (k)         | 0 – 1.000 m <sup>-1</sup>                                                                   |
| Meteorological Optical Range (MOR) | 0 – 15,000 m                                                                                |
| Opacity                            | 0 – 100 %                                                                                   |
| Path Length                        | 5.5 – 6.5 m (6.0 m optimum)                                                                 |
| Accuracy                           | + / - 2 % as opacity                                                                        |

### POWER REQUIREMENTS

|                              |         |
|------------------------------|---------|
| Voltage                      | +24 Vdc |
| Nominal Current Consumption  | 1.0 A   |
| Power Up Current Consumption | 2.0 A   |

### INTERFACE OPTIONS

|                        |                                                 |
|------------------------|-------------------------------------------------|
| Serial Comms           | ModBus RTU via RS485<br>External USB            |
| Analogue Outputs       | 4.0 – 20 mA (isolated and scalable)             |
| Digital Relay Contacts | 3A @ 30 Vdc (level alarms and data valid alarm) |

### PHYSICAL

|                               |                                          |
|-------------------------------|------------------------------------------|
| Ambient Operating Temperature | -20 – +55 °C                             |
| Ambient Operating Humidity    | 0 – 100 %                                |
| Ingress Protection            | IP65 for external use                    |
| Materials                     | Powder coated stainless steel            |
| Dimensions (incl. dust tube)  | 790 x 160 x 230 mm (each measuring head) |
| Weight                        | 8.5 kg per head                          |

## Tunnel Sensors

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**TUNNEL SENSORS**

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