



Key Features & Benefits:

- Fast response and recovery time
- Superior long-term performance at temperature and humidity extremes.

Technical Specifications

MEASUREMENT

Operating Principle	3-electrode electrochemical
Nominal Range	0 to 10,000 ppm
Maximum Overload	20,000 ppm
Filter	To remove acid gases
Filter Life	See page 2
Sensitivity	70 ± 15 nA/ppm
Response Time (T₉₀)	< 15 s
Recovery Time (R₉₀)	< 15 s
Baseline Offset (clean air)	< ±2 ppm CO equivalent
Baseline Shift:	
-20°C to +20°C	< ±2 ppm CO equivalent
+20°C to +55°C	Typically < +4 ppm (+9 ppm max.)
Repeatability	< ±2% CO equivalent
Linearity	Linear up to 20,000 ppm

ELECTRICAL

Resolution	<1 ppm
(Electronics dependent)	
Recommended Load Resistor	5 Ω
Bias Voltage	Not required

MECHANICAL

Housing Material	Noryl N110
Pin Material	Gold over nickel plated brass
Weight	5 g (nominal)
Orientation Sensitivity	None

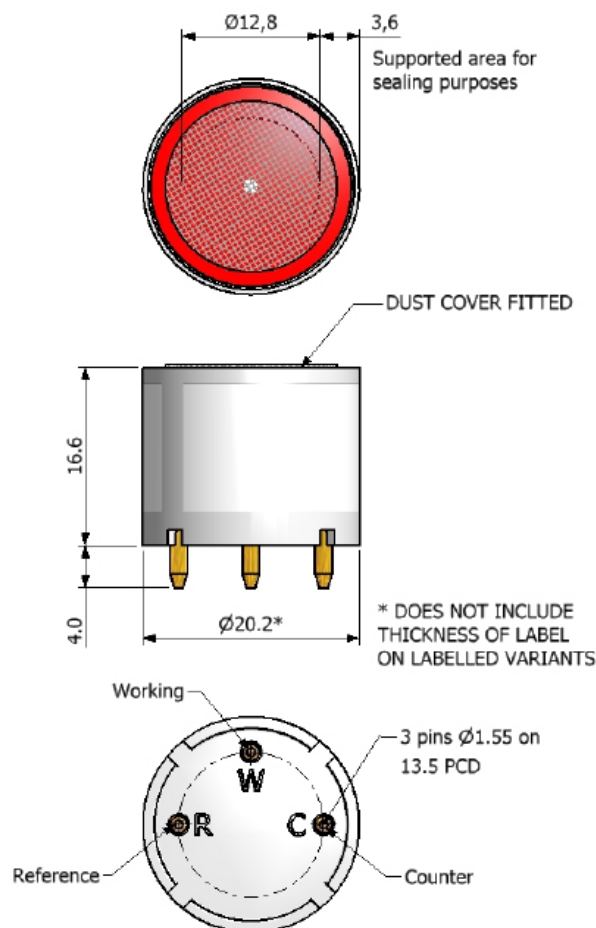
ENVIRONMENTAL

Intended Use	Portable instruments for Flue Gas analysis
Operating Temperature Range	-40°C to +55°C See Characterisation Note
Temperature Coefficient:	
at -40°C	65 ± 25% of signal w.r.t. +20°C
at -20°C	80 ± 15% of signal w.r.t. +20°C
at +55°C	105 ± 15% of signal w.r.t. +20°C
Operating Pressure Range	800 to 1200 mbar
Operating Humidity Range	15% RH to 95% RH

LIFETIME

Long Term Output Drift	< 5% per annum
Recommended Storage Temp	0°C to +20°C in sealed container
Expected Operating Life	36 months in air
Standard Warranty	24 months from date of despatch

Product Dimensions



All dimensions in mm

All tolerances ±0.15 mm unless otherwise stated

IMPORTANT NOTE:

Connection should be made via recommended mating parts only. Soldering to the sensor will result in damage and invalidate the warranty.

All performance data is based on conditions at 20°C, 50% RH and 1013 mBar, using City Technology recommended circuitry and flow rates.

Poisoning

CiTiceLs are designed for operation in a wide range of environments and harsh conditions. However, it is important that exposure to high concentrations of solvent vapours is avoided, both during storage, fitting into instruments, and operation.

When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted. Do not glue directly on or near the CiTiceL as the solvent may cause crazing of the plastic.

Filter Information

High surface area high capacity filter removes acid gases such as SO₂, NO & NO₂

Cross Sensitivity Table

Whilst CiTiceLs are designed to be highly specific to the gas they are intended to measure, they will still respond to some degree to various other gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.

Gas	Concentration Used (ppm)	Cross Sensitivity (ppm CO equiv.)	Cross Sensitivity (%)	Filter Life (ppm hours)
Hydrogen Sulfide (H ₂ S)	20	0 < x\$ < 1.5	0 < x\$ < 8	TBC
Sulfur Dioxide (SO ₂)	200	0	0	> 200,000
Nitric Oxide (NO)	100	-3 < x\$ < 0	-3% < x\$ < 0	> 60,000
Nitrogen Dioxide (NO ₂)	100	-3 < x\$ < 0	-3% < x\$ < 0	TBC
Hydrogen (H ₂)	800	< 480	< 60	n/a
Hydrogen Chloride (HCl)	150	0	0	n/a

The cross-sensitivity values quoted are based on tests conducted on a small number of sensors. They are intended to indicate sensor response to gases other than the target gas. Sensors may behave differently with changes in ambient conditions and may vary from batch to batch and with time from the values quoted.

SAFETY NOTE

Although this product is not designed for use in safety applications, if it is used in such applications it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument, to ensure that the sensor and/or instrument in which it is used, are operating properly. Failure to carry out such tests may jeopardize the safety of people and property.

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Performance characteristics on this data sheet outline the performance of newly supplied sensors. Output signal can drift below the lower limit over time.