# Carbon monoxide CiTiceL® Specification

# A7E/F CiTiceL®

**N.B. For emissions monitoring applications use the A3E/F CiTiceL**
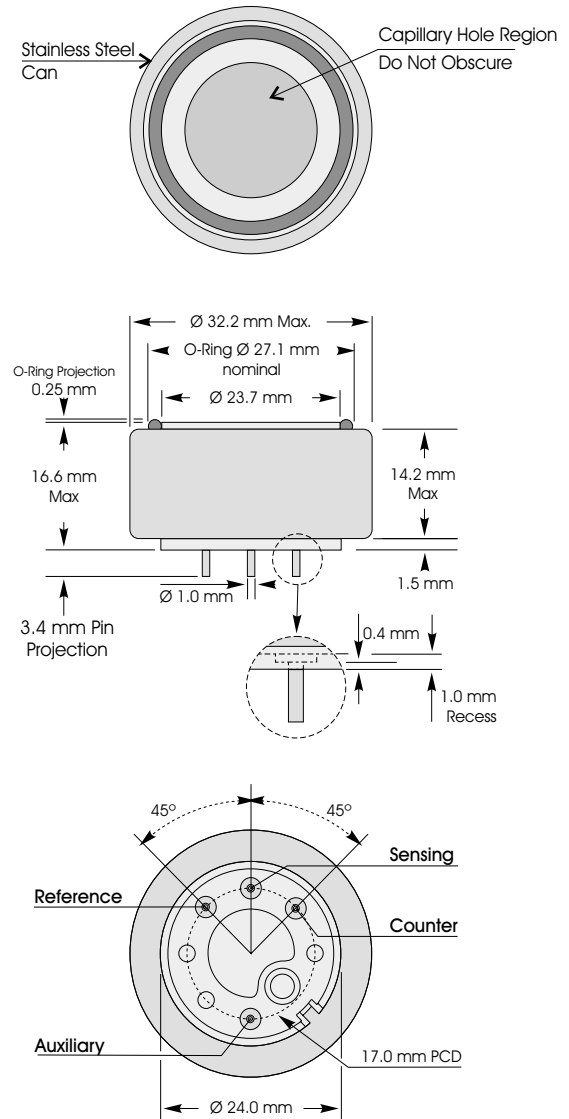
## Performance Characteristics

| | |
|---|---|
| **Nominal Range** | 0-1000ppm |
| **Maximum Overload** | 2000ppm |
| **Inboard Filter** | To remove $H_2S$ |
| **Auxiliary Electrode** | To compensate for $H_2$ cross-interference |
| **Expected Operating Life** | Three years in air |
| **Output Signal** | $0.1 \pm 0.02$ µA/ppm |
| **Resolution** | 0.5ppm |
| **Temperature Range** | -20°C to +50°C |
| **Pressure Range** | Atmospheric ± 10% |
| **Pressure Coefficient** | 0.02% signal/mBar |
| **$T_{90}$ Response Time** | ≤35 seconds |
| **Relative Humidity Range** | 15 to 90% non-condensing |
| **Typical Baseline Range (pure air)** | -2 to +15ppm equivalent |
| **Maximum Zero Shift (+20°C to +40°C)** | No data |
| **Long Term Output Drift** | <5% signal loss/year |
| **Recommended Load Resistor** | 10 Ω |
| **Bias Voltage** | 0 or +250mV |
| **Repeatability** | <1% of signal |
| **Output Linearity** | Linear |

N.B. All performance data is based on conditions at 20°C, 50%RH, and 1013mBar

## Physical Characteristics

| | |
|---|---|
| **Weight** | 25g |
| **Position Sensitivity** | None |
| **Storage Life** | Six months in CTL container |
| **Recommended Storage Temperature** | 0-20°C |
| **Warranty Period** | 12 monthbs from date of despatch |

## Outline Dimensions



Stainless Steel Can

Capillary Hole Region Do Not Obscure

Ø 32.2 mm Max.
O-Ring Ø 27.1 mm nominal
Ø 23.7 mm
O-Ring Projection 0.25 mm
16.6 mm Max
14.2 mm Max
Ø 1.0 mm
1.5 mm
3.4 mm Pin Projection
0.4 mm
1.0 mm Recess

45°   45°
Reference
Sensing
Counter
Auxiliary
17.0 mm PCD
Ø 24.0 mm

All tolerances ±0.15mm unless otherwise stated.

**IMPORTANT NOTE**: Connection should be made via PCB sockets only. Soldering to the pins will render your warranty void.
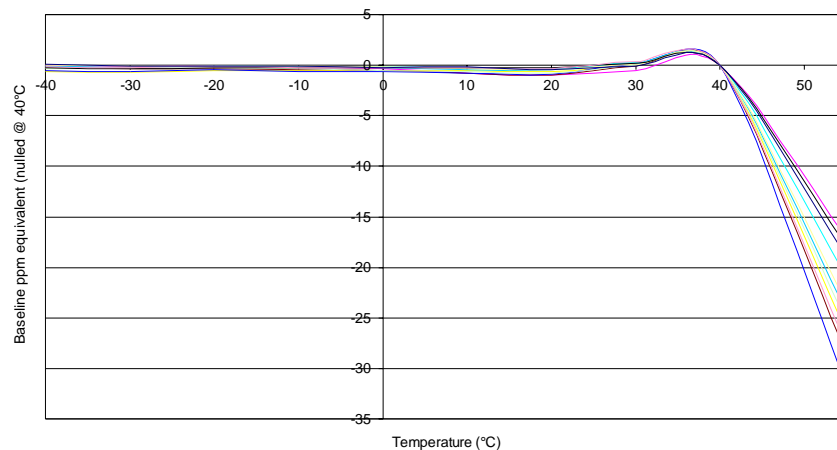
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### A7E/F Carbon monoxide CiTiceL - Output vs Temperature
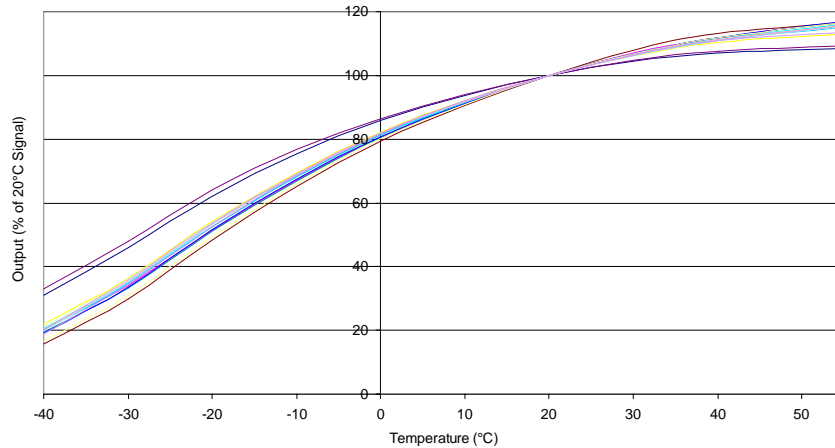


### A7E/F Carbon Monoxide CiTiceL Baseline vs Temperature



## Cross-sensitivity Data

CiTiceLs may exhibit a response to certain gases in a sample other than the target gas.  A7E/F CiTiceLs have been tested with a number of commonly cross-interfering gases and the results are given below.  The table shows the typical response to be expected from a sensor when exposed to a given test gas concentration (relevant to safety, e.g. TLV levels).

| Gas | Conc. | A7E/F | Gas | Conc. | A7E/F |
|---|---|---|---|---|---|
| Hydrogen sulphide: | 15ppm | ~1ppm | Hydrogen: | 100ppm | 0ppm |
| Sulphur dioxide: | 5ppm | 0ppm | Hydrogen cyanide: | 10ppm | <2ppm |
| Nitric oxide: | 35ppm | ≤7ppm | Hydrogen chloride: | 5ppm | 0ppm |
| Nitrogen dioxide: | 50ppm | -0.5<x$<+1.0ppm | Ethylene: | 100ppm | ≤75ppm |
| Chlorine: | 1ppm | 0ppm | **For details of other possible cross-interfering gases contact City Technology.** | | |

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