3E & 3E/F CiTiceLs

Performance Characteristics
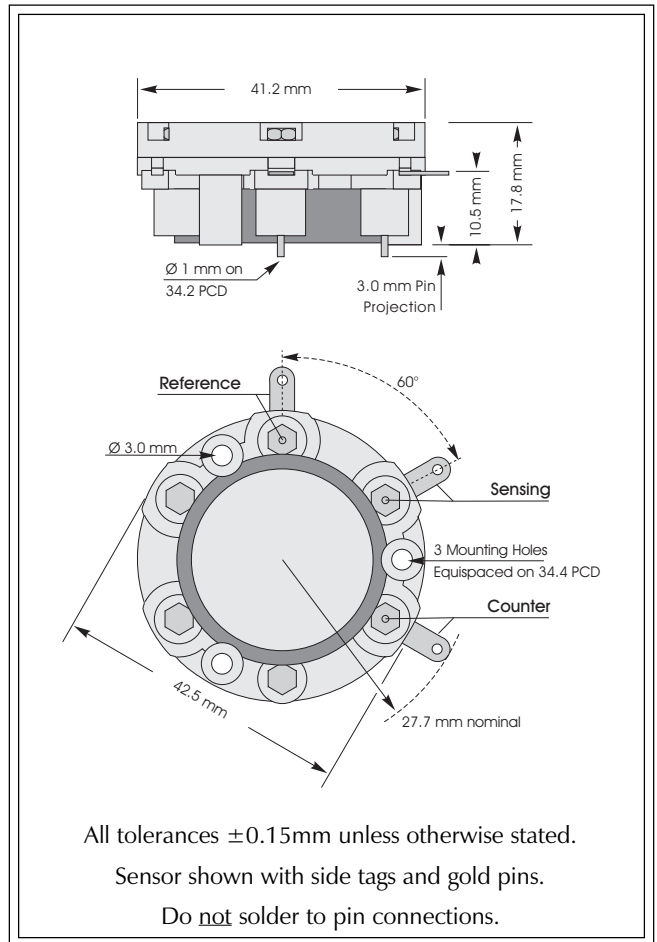
Nominal Range	0-1000ppm
Maximum Overload	2000ppm
Expected Operating Life	Three years in air
Output Signal	$0.10 \pm 0.02\ \mu A/ppm$
Inboard Filter (3E/F only)	To remove SO_x/NO_x & H_2S
Resolution	0.5ppm
Temperature Range	-20°C to +50°C
Pressure Range	Atmospheric $\pm$ 10%
Pressure Coefficient	0.020 ± 0.008 %signal/mBar
T_{90} Response Time	3E: ≤25 seconds 3E/F: ≤30 seconds
Relative Humidity Range	15 to 90% non-condensing
Typical Baseline Range (pure air)	-1 to +3ppm equivalent
Maximum Zero Shift (+20°C to +40°C)	9ppm equivalent
Long Term Output Drift	<5% signal loss/year
Recommended Load Resistor	10Ω
Bias Voltage	Not required
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	22g
Position Sensitivity	None
Storage Life	Six months in CTL container
Recommended Storage Temperature	0-20°C
Warranty Period	12 months from date of despatch

All tolerances ±0.15mm unless otherwise stated.

Sensor shown with side tags and gold pins.

Do not solder to pin connections.

Ordering Information

The 3E and 3E/F Carbon Monoxide CiTiceLs are available with side tags, gold-plated PCB pins, or both PCB pins and side tags. To ensure the appropriate option is supplied care must be taken to provide the correct code when ordering.

Type 3E

With side tag and PCB pin connections **3E**
With side tag connection .... **3E(S)**
With gold-plated PCB pin connection .... **3E(G)**

Type 3E/F

With side tag and PCB pin connections **3E/F**
With side tag connection .... **3E/F(S)**
With gold-plated PCB pin connection .... **3E/F(G)**

City Technology Ltd, City Technology Centre, Walton Rd, Portsmouth PO6 1SZ, UK
Tel:+44 23 9232 5511, Fax:+44 23 9238 6611, sensors@citytech.co.uk, www.citytech.com

Temperature Data

The temperature behaviour of 3E and 3E/F CiTiceLs can be considered to be virtually identical. The graphs below show the baseline and sensitivity changes with temperature for the 3E/F based on a sample size of about 15 sensors

3E/F CiTiceL
Sensitivity Change With Temperature

3E/F CiTiceL
Baseline change with temperature
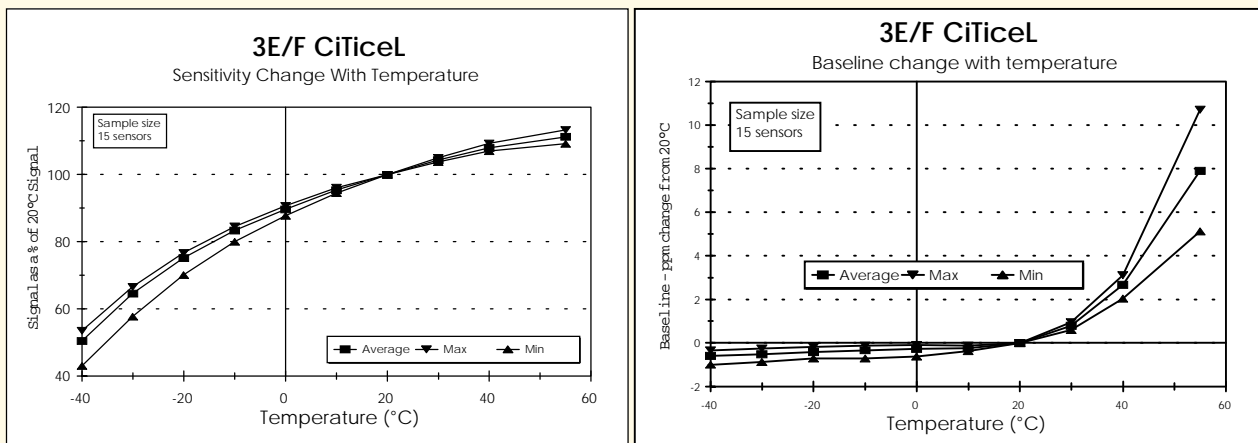
Cross-sensitivity Data

CiTiceLs may exhibit a response to certain gases in a sample other than the target gas. 3E and 3E/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.	3E	Gas	Conc.	3E/F
Hydrogen sulphide:	15ppm	≈50ppm	**Hydrogen sulphide:**	15ppm	≈1ppm
Sulphur dioxide:	5ppm	≈3ppm	**Sulphur dioxide:**	5ppm	0ppm
Nitric oxide:	35ppm	≈10ppm	**Nitric oxide:**	35ppm	<3.5ppm
Nitrogen dioxide:	5ppm	≈-3ppm	**Nitrogen dioxide:**	5ppm	0ppm
Chlorine:	1ppm	0ppm	**Chlorine:**	1ppm	0ppm
Hydrogen:	100ppm	<60ppm	**Hydrogen:**	100ppm	<60ppm
Hydrogen cyanide:	10ppm	≈5ppm	**Hydrogen cyanide:**	10ppm	0ppm
Hydrogen chloride:	5ppm	0ppm	**Hydrogen chloride:**	5ppm	0ppm
Ethylene:	100ppm	≈90ppm	**Ethylene:**	100ppm	≤75ppm

For details of other possible cross-interfering gases contact City Technology.