

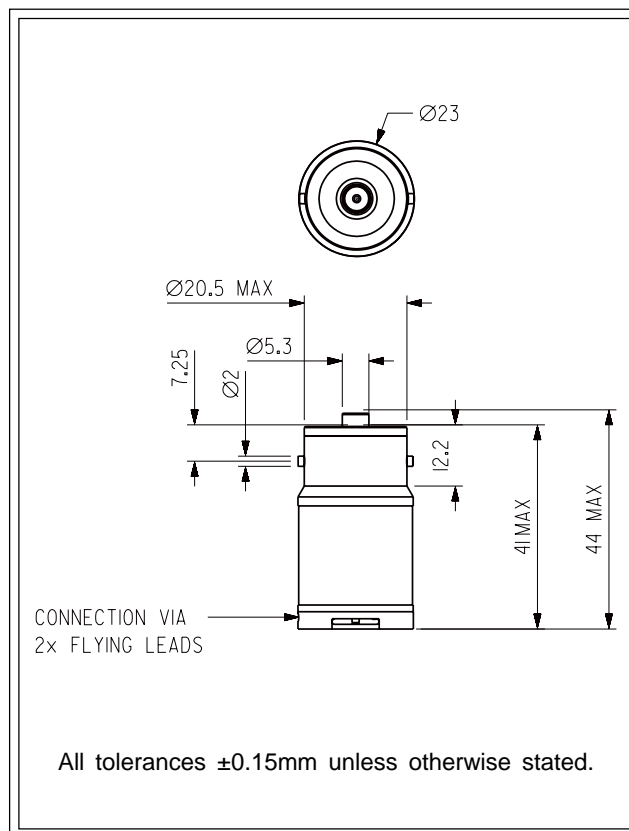
## Oxygen CiTiceL<sup>®</sup> Specification



# 2FO-N Flue Gas CiTiceL<sup>®</sup>

### Performance Characteristics

<b>Nominal Range</b>	0-25% Oxygen
<b>Max Overload</b>	30% Oxygen
<b>Expected Operating Life</b>	Two years in Air
<b>Output Signal</b>	0.41 ± 0.07mA in Air
<b>T<sub>95</sub> Response Time</b>	<10 seconds (see note)
<b>Temperature Range</b>	-20°C to +45°C
<b>Temperature Coefficient</b>	0.2% signal/°C
<b>Pressure Range</b>	Atmospheric ± 10%
<b>Pressure Coefficient</b>	<0.02% signal/mBar
<b>Operating Humidity</b>	0 to 99% RH non-condensing
<b>Long Term Output Drift</b>	<5% signal loss/year
<b>Maximum Load Resistor</b>	100Ω
<b>Storage Life</b>	Six months in CTL container
<b>Recommended Storage Temperature</b>	0-20°C
<b>Warranty Period</b>	12 months from date of despatch

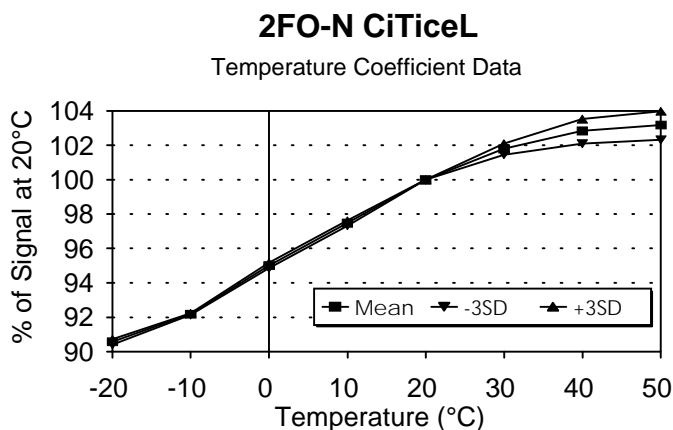


**Note:** Signal <0.1% O<sub>2</sub> after 3mins in zero oxygen  
 N.B. All performance data is based on conditions at 20°C, 50%RH, and 1013mBar

### Temperature Behaviour

The output of a 2FO-N CiTiceL varies slightly with gradual changes in temperature. The graph shows the behaviour of a batch of 20 sensors. Output was measured at a range of temperatures and expressed as a percentage of the signal at 20°C.

Statistically, for a sample of this size, the range in values observed will normally fall within a range three times the standard deviation above or below the mean. Assuming this sample is typical, then the temperature behaviour of all 2FO-N CiTiceLs will fall in the band +3SD to -3SD.





### Linearity

The output signal of an Oxygen CiTiceL follows the relationship:

$$S = K \log_e 1/(1-C)$$

where:

- S** = Output signal;
- C** = Fractional oxygen concentration;
- K** = a constant for the sensor.

For most applications the deviation from a linear response will be insignificant, and no compensation needed. For example, the graph below shows the output of a sensor calibrated in air (20.9% O<sub>2</sub>). In this case the maximum error in the 0-25% range is ≈0.5% at around 10% O<sub>2</sub>.

