

**Key Features & Benefits:**

- Linear output from 0-100% Oxygen
- Not intended for use in the presence of anaesthesia gases

**Technical Specifications**

**MEASUREMENT**

<b>Operating Principle</b>	Partial Pressure Electrochemical
<b>Measurement Range</b>	0-1500 mBar O <sub>2</sub>
<b>Output</b>	7 - 14 mV in 210 mBar O <sub>2</sub>
<b>Response Time (T<sub>90</sub>)</b>	<5 s
<b>Baseline Offset</b>	<200 µV
<b>Linearity</b>	Linear 0-100% O <sub>2</sub> See Note <sup>1</sup>

**ELECTRICAL**

<b>On Board Temperature Compensation</b>	<2% O <sub>2</sub> Equivalent from 0°C to 40°C
<b>External Load Resistor</b>	100 kΩ Maximum
<b>Connector</b>	3 Pin Molex header (MOLEX 22-29-2031)
<b>Recommended Mating Part</b>	Molex Housing (MOLEX 22-01-2035) Molex Crimp Terminals (MOLEX 08-45-0110)

**MECHANICAL**

<b>Weight</b>	40 g (nominal)
<b>Housing Material</b>	White ABS
<b>Orientation</b>	Any

**ENVIRONMENTAL**

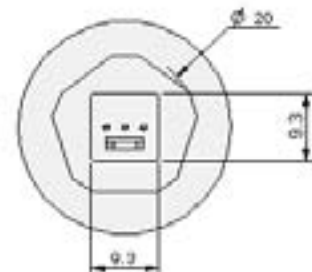
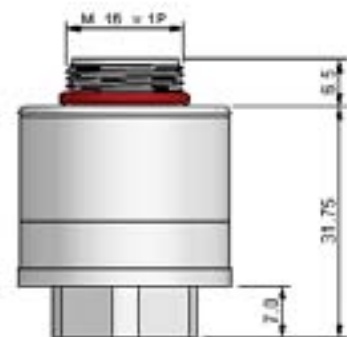
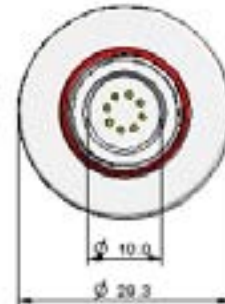
<b>Typical Applications</b>	Neonatal Incubators
<b>Operating Temperature Range</b>	-20°C to +50°C
<b>Operating Pressure Range</b>	0.5 - 2.0 Bar
<b>Differential Pressure Range</b>	0 to 500 mBar max
<b>Operating Humidity Range</b>	0 - 99% RH non-condensing

**LIFETIME**

<b>Long Term Output Drift in 100% O<sub>2</sub></b>	<5% signal loss/year
<b>Recommended Storage Temp</b>	-10°C to +40°C (short excursions to +50°C allowed)
<b>Expected Operating Life</b>	0.94 x 10 <sup>6</sup> % O <sub>2</sub> hours at 20°C 0.60 x 10 <sup>6</sup> % O <sub>2</sub> hours at 40°C
<b>Packaging</b>	Sealed blister
<b>Standard Warranty</b>	13 months from date of despatch (This amounts to a variation of condition 6 of our standard terms and conditions which otherwise apply)

**Note 1: The regression coefficient of the best fit line should be better than 0.9995 when measured through four data points from testing with 100% N<sub>2</sub>, 21% O<sub>2</sub>, 60% O<sub>2</sub> and 100% O<sub>2</sub>.**

**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 measurements made with cylinder gases using a flow rate of 100 ml/min. Conditions at 20°C, 50% RH and 1013 mBar, using City Technology recommended circuitry. For sensor performance data under other conditions, contact City Technology.



## **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.

## **Intended Use**

These sensors are designed to be used to monitor the partial pressure of oxygen in neonatal incubators, non-anaesthesia critical care, CPAP and general oxygen monitors.

## **Stabilisation Time**

Allow at least 15 minutes to stabilise in the instrument before calibration or refer to manufacturer's instructions.

## **Cleaning and Sterilisation**

In case of contamination, the sensor may be cleaned with distilled water and allowed to dry naturally. The sensor is not suitable for sterilisation by steam or exposure to chemicals such as ethylene oxide or hydrogen peroxide.

## **Calibration Interval**

These sensors are designed to have minimal drift over their useful lifetime. For maximum accuracy however, they should be calibrated in 100% Oxygen before use.

## **If the Sensor is Dropped**

If a sensor is dropped, then it should be placed in quarantine for 24 hours and a follow-up check made by a 2 point calibration.

## **Mechanical Installation**

When installing the sensor, it must only be screwed in hand-tight and a gas tight seal ensured. Spanners and similar mechanical aids may not be used, as excessive force may damage the sensor thread.

## **RFI/EMI Susceptibility**

MediceLs contain metal and may be susceptible to RFI or EMI. For further information please contact City Technology.

## 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 gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react:

<u>Test Gas</u>	<u>% O<sub>2</sub> Error</u>
50% He/50% O <sub>2</sub>	<1%
5% CO <sub>2</sub> /28.5% O <sub>2</sub> /66.5% N <sub>2</sub> O	<1%

## Certifications



### **SAFETY NOTE**

Although this product is not designed for use in life 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.

