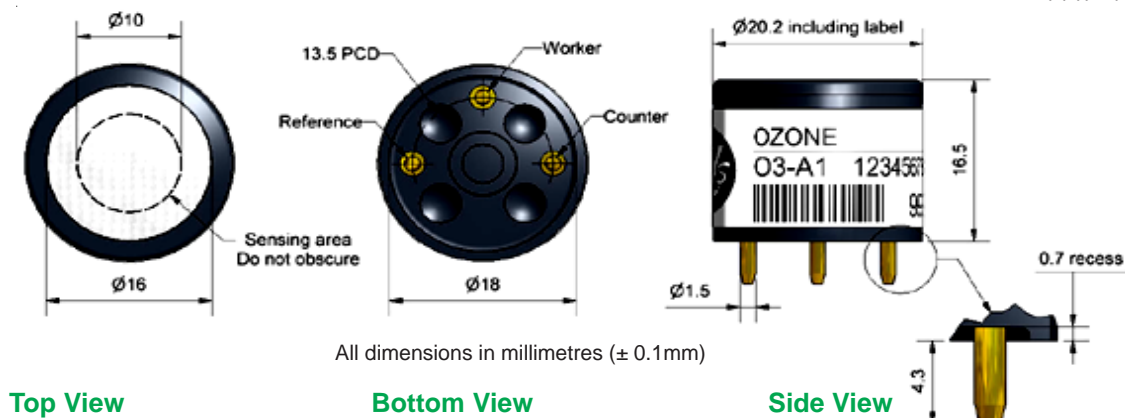


# O3-A1 Ozone Sensor



Figure 1 O3-A1 Schematic Diagram



PATENTED

Technical Specification

## PERFORMANCE

Sensitivity	nA/ppm in 1ppm O <sub>3</sub>	-400 to -1000
Response time	t <sub>90</sub> (s) from zero to 1ppm	<30
Zero current	ppb equivalent in zero air at 20°C	-200 to +100
Noise*	RMS (ppb equivalent)	2 to 5
Lower detection limit	(ppb equivalent)	5
Bias potential	V	0
Range	ppm O <sub>3</sub> limit of performance warranty	0 to 2
Linearity	ppm error at full scale, linear at zero and 1ppm O <sub>3</sub>	< 5%
Overgas limit	maximum ppm for stable response to gas pulse	10ppm (TBD)

## LIFETIME

Zero drift	ppm equivalent change/year in lab air	ND
Sensitivity drift	% change/year in lab air, monthly test	ND
Operating life	months until 80% original signal (12 month warranted)	>24

## ENVIRONMENTAL

Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 20ppm	ND
Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 20ppm	ND
Zero @ -20°C	ppm equivalent change from 20°C	ND
Zero @ 50°C	ppm equivalent change from 20°C	ND

## CROSS SENSITIVITY

H <sub>2</sub> S sensitivity	% measured gas @ 20ppm	H <sub>2</sub> S	ND
NO <sub>2</sub> sensitivity	% measured gas @ 0.5ppm	NO <sub>2</sub>	25 to 45
Cl <sub>2</sub> sensitivity	% measured gas @ 10ppm	Cl <sub>2</sub>	ND
NO sensitivity	% measured gas @ 50ppm	NO	ND
SO <sub>2</sub> sensitivity	% measured gas @ 1ppm	SO <sub>2</sub>	-5 to +3
CO sensitivity	% measured gas @ 400ppm	CO	ND
H <sub>2</sub> sensitivity	% measured gas @ 400ppm	H <sub>2</sub>	ND
C <sub>2</sub> H <sub>4</sub> sensitivity	% measured gas @ 400ppm	C <sub>2</sub> H <sub>4</sub>	ND
CO <sub>2</sub> sensitivity	% measured gas @ 5%	CO <sub>2</sub>	ND

## KEY SPECIFICATIONS

Temperature range	°C	-20 to +40
Pressure range	kPa	80 to 120
Humidity range	% rh non-condensing	15 to 90
Flow rate dependence	scm	500 (0.5L/m)
Storage period	months @ 3 to 20°C (stored in sealed pot)	6
Load resistor	Ω (recommended)	47 to 100
Weight	g	6

\* Requires a low noise potentiostat circuit for lowest noise and best resolution

# O3-A1 Performance Data

Technical Specification

Figure 2 : Time trace of the linear response between 0 - 226 ppb Ozone

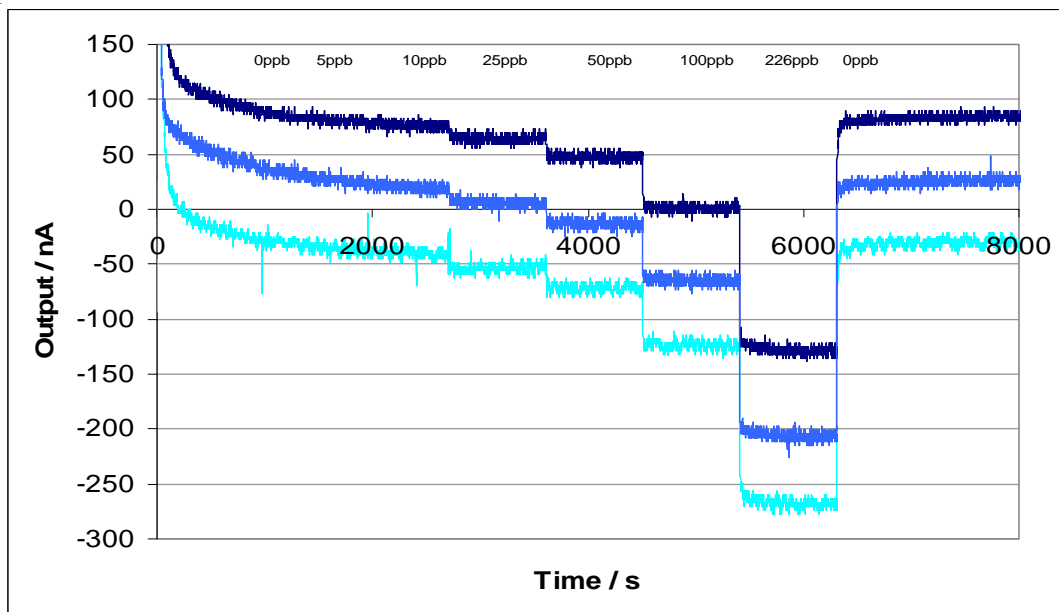
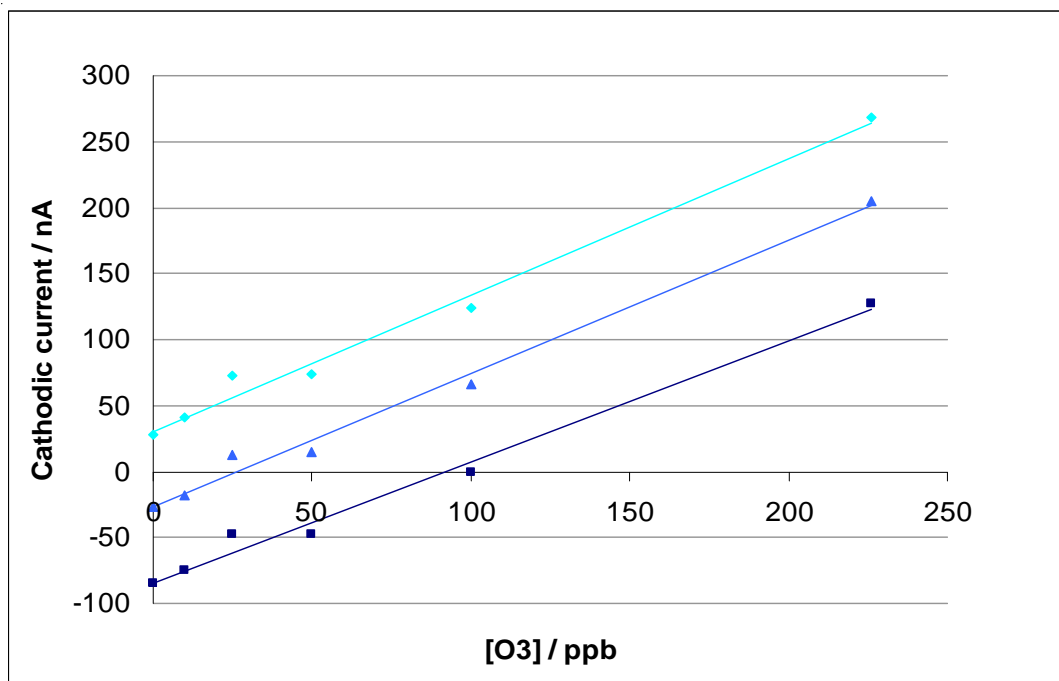


Figure 3 : Linear calibration using the data from figure 2



**NOTE:** all sensors are tested at ambient environmental conditions, with 10 ohm load resistor, unless otherwise stated. As applications of use are outside our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.