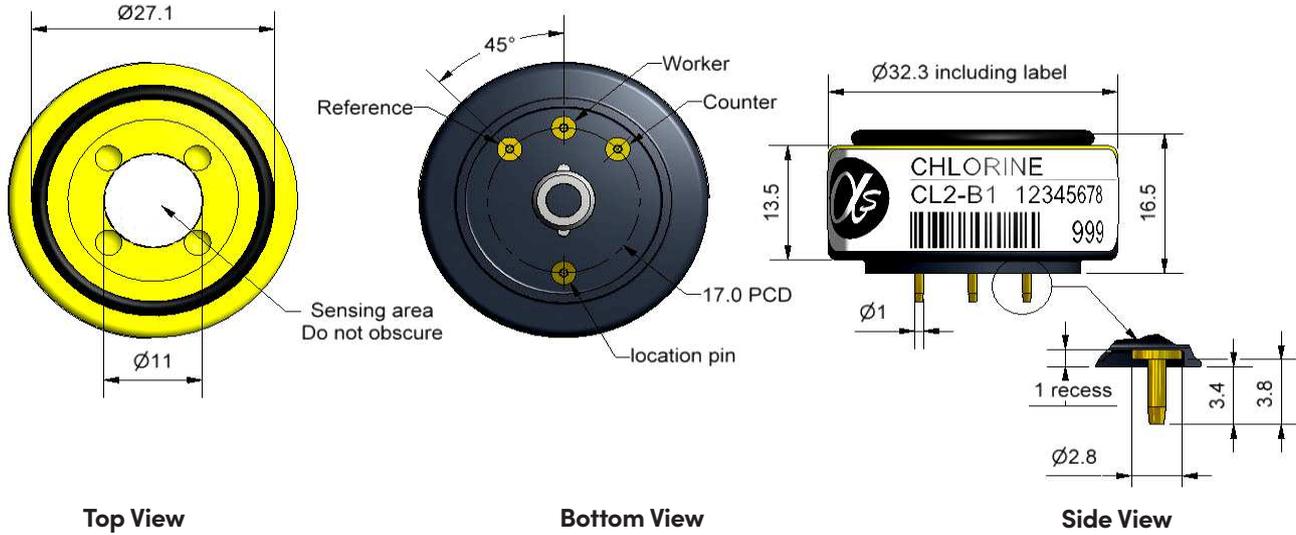




Technical specifications Version 1.0

## CL2-B1 Chlorine Sensor


 Dimensions are in millimetres ( $\pm 0.1$  mm).

### Performance

Sensitivity	nA/ppm in 10ppm Cl <sub>2</sub>	-600 to -1150
Response time	t90 (s) from zero to 10ppm Cl <sub>2</sub> (33 $\Omega$ load resistor)	< 60
Zero current	ppm equivalent in zero air	$\pm 0.4$
Resolution	RMS noise (ppm equivalent) (33 $\Omega$ load resistor)	< 0.02
Range	ppm limit of performance warranty	20
Linearity	ppm error at full scale, linear at zero and 10ppm Cl <sub>2</sub>	< $\pm 0.2$
Overgas limit	maximum ppm for stable response to gas pulse	60

### Lifetime

Zero drift	ppm equivalent change/year in lab air	< 0.03
Sensitivity drift	% change/year in lab air, monthly test	< 6
Operating life	months until 80% original signal (24-month warranted)	> 24

### Environmental

Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 10ppm	70 to 90
Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 10ppm	90 to 105
Zero @ -20°C	ppm equivalent change from 20°C	< 0 to 0.1
Zero @ 50°C	ppm equivalent change from 20°C	< 0 to -1

### Cross Sensitivity

H <sub>2</sub> S sensitivity	% measured gas @ 20ppm	H <sub>2</sub> S	< -300
NO <sub>2</sub> sensitivity	% measured gas @ 10ppm	NO <sub>2</sub>	< 120
NO sensitivity	% measured gas @ 50ppm	NO	< 1
SO <sub>2</sub> sensitivity	% measured gas @ 20ppm	SO <sub>2</sub>	< -1
CO sensitivity	% measured gas @ 400ppm	CO	< 0.1
H <sub>2</sub> sensitivity	% measured gas @ 400ppm	H <sub>2</sub>	< 0.1
C <sub>2</sub> H <sub>4</sub> sensitivity	% measured gas @ 400ppm	C <sub>2</sub> H <sub>4</sub>	< 0.1
NH <sub>3</sub> sensitivity	% measured gas @ 20ppm	NH <sub>3</sub>	< 0.1
CO <sub>2</sub> sensitivity	% measured gas @ 5% (Vol)	CO <sub>2</sub>	0

### Key Specifications

Temperature range	°C	-20 to 50
Pressure range	kPa	80 to 120
Humidity range	% rh continuous (see note below)	15 to 90
Storage period	months @ 3 to 20°C (stored in sealed pot)	6
Load resistor	$\Omega$ (for optimum performance)	33
Weight	g	< 13



**Figure 1 Sensitivity Temperature Dependence**

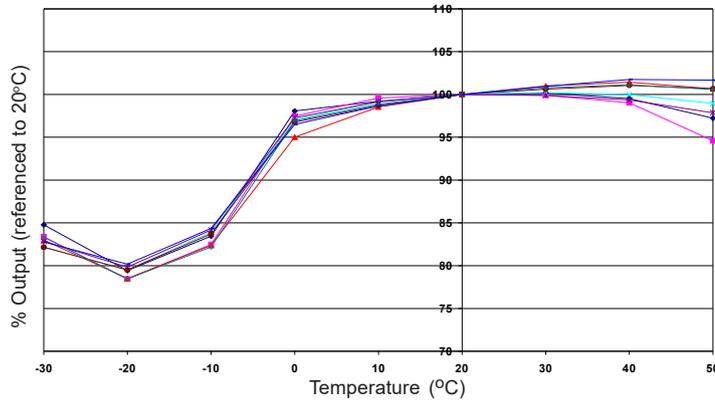


Figure 1 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors. The mean and  $\pm 95\%$  confidence intervals are shown.

Chlorine gas tests can be difficult and non-repeatable, especially at high temperatures.

**Figure 2 Zero Temperature Dependence**

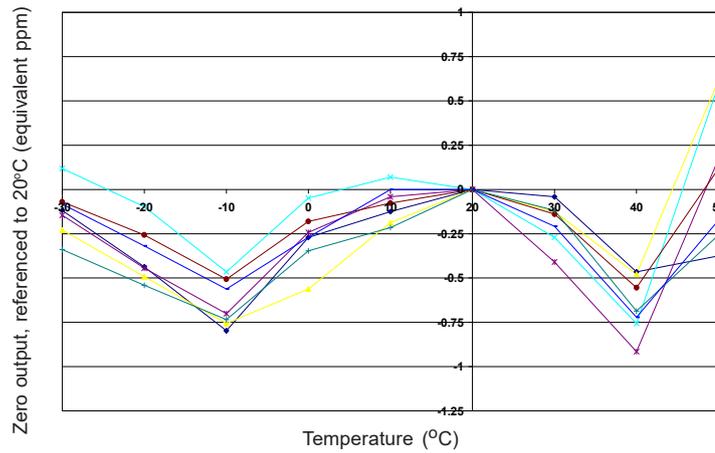


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

**Figure 3 Response to high gas concentrations**

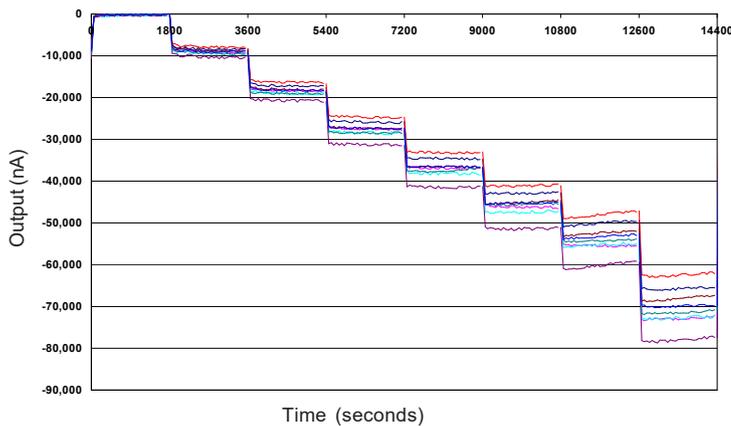


Figure 3 shows the CL<sub>2</sub>-B1 stable response to chlorine gas, up to 80ppm. Sensors recover without any performance change when exposed to high gas concentrations for short periods.

Note: Above 85% rh and 40°C a maximum continuous exposure period of 10 days is warranted. Where such exposure occurs the sensor will recover normal electrolyte volumes when allowed to rest at lower % rh and temperature levels for several days.

At the end of the product's life, do not dispose of any electronic sensor, component or instrument in the domestic waste, but contact the instrument manufacturer, Alphasense or its distributor for disposal instructions. NOTE: all sensors are tested at ambient environmental conditions 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.

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