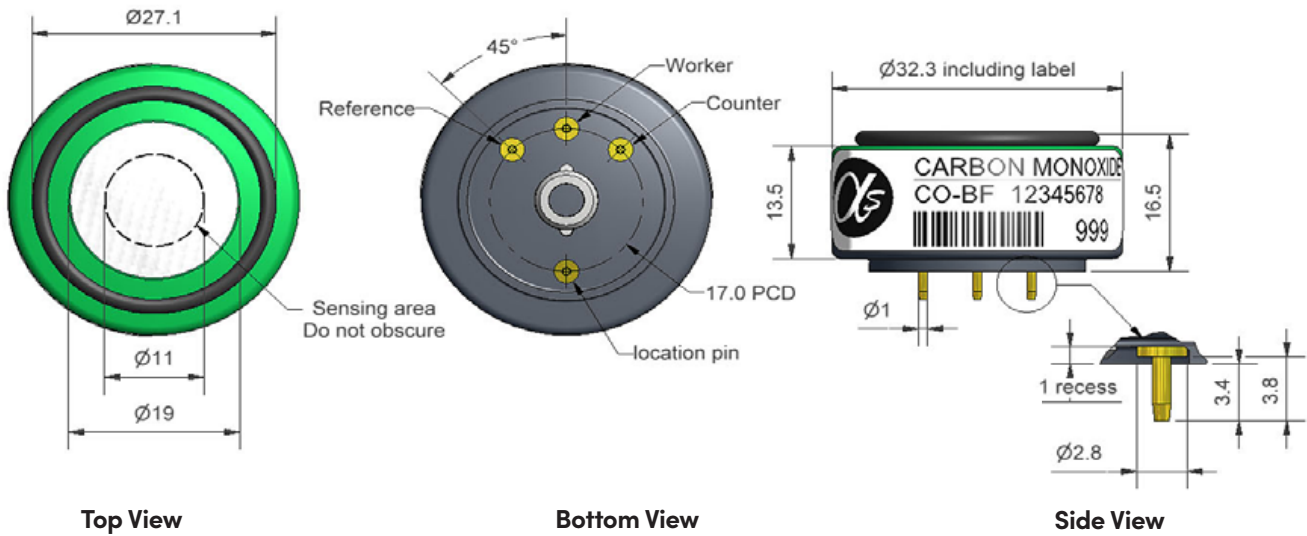


## CO-BF Carbon Monoxide Sensor



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

| Performance   |  |  |            |
|---------------|--|--|------------|
| Sensitivity   | nA/ppm in 400ppm CO                                    |  | 80 to 130  |
| Response time | t90 (s) from zero to 400ppm CO                         |  | < 25       |
| Zero current  | ppm equivalent in zero air                             |  | < $\pm 4$  |
| Resolution    | RMS noise (ppm equivalent)                             |  | < 0.5      |
| Range         | ppm limit of performance warranty                      |  | 5,000      |
| Linearity     | ppm CO error at full scale, linear at zero, 1000ppm CO |  | < $\pm 30$ |
| Overgas limit | maximum ppm for stable response to gas pulse           |  | 10,000     |

| Lifetime          |   |  |       |
|-------------------|---|--|-------|
| Zero drift        | ppm equivalent change/year in lab air                 |  | < 0.1 |
| Sensitivity drift | % change/year in lab air, monthly test                |  | < 3   |
| Operating life    | months until 80% original signal (24-month warranted) |  | > 24  |

| Environmental       |  |  |             |
|---------------------|--|--|-------------|
| Sensitivity @ -20°C | % (output @ -20°C/output @ 20°C) @ 400ppm CO |  | 70 to 88    |
| Sensitivity @ 50°C  | % (output @ 50°C/output @ 20°C) @ 400ppm CO  |  | 102 to 115  |
| Zero @ -20°C        | ppm equivalent change from 20°C              |  | < -1 to + 4 |
| Zero @ 50°C         | ppm equivalent change from 20°C              |  | < $\pm 6$   |

| Cross Sensitivity                         |                         |                               |  |         |
|---|-------------------------|-------------------------------|--|---------|
| Filter capacity                           | ppm-hrs                 | H <sub>2</sub> S              |  | 250,000 |
| Filter capacity                           | ppm-hrs                 | NO <sub>2</sub>               |  | 120,000 |
| Filter capacity                           | ppm-hrs                 | NO                            |  | 120,000 |
| Filter capacity                           | ppm-hrs                 | SO <sub>2</sub>               |  | 160,000 |
| H <sub>2</sub> S sensitivity              | % measured gas @ 20ppm  | H <sub>2</sub> S              |  | < 0.1   |
| NO <sub>2</sub> sensitivity               | % measured gas @ 10ppm  | NO <sub>2</sub>               |  | < 0.1   |
| Cl <sub>2</sub> sensitivity               | % measured gas @ 10ppm  | Cl <sub>2</sub>               |  | < 0.1   |
| NO sensitivity                            | % measured gas @ 50ppm  | NO                            |  | < 25    |
| SO <sub>2</sub> sensitivity               | % measured gas @ 20ppm  | SO <sub>2</sub>               |  | < 0.1   |
| H <sub>2</sub> sensitivity                | % measured gas @ 400ppm | H <sub>2</sub> at 20°C        |  | < 65    |
| C <sub>2</sub> H <sub>4</sub> sensitivity | % measured gas @ 400ppm | C <sub>2</sub> H <sub>4</sub> |  | < 65    |
| NH <sub>3</sub> sensitivity               | % measured gas @ 20ppm  | NH <sub>3</sub>               |  | < 0.1   |

| Key Specifications |   |  |           |
|--------------------|---|--|-----------|
| Temperature range  | °C  |  | -30 to 50 |
| Pressure range     | kPa                                       |  | 80 to 120 |
| Humidity range     | % rh continuous                           |  | 15 to 90  |
| Storage period     | months @ 3 to 20°C (stored in sealed pot) |  | 6         |
| Load resistor      | $\Omega$ (recommended)                    |  | 10 to 47  |
| Weight             | g   |  | < 13      |

Figure 1 Sensitivity Temperature Dependence

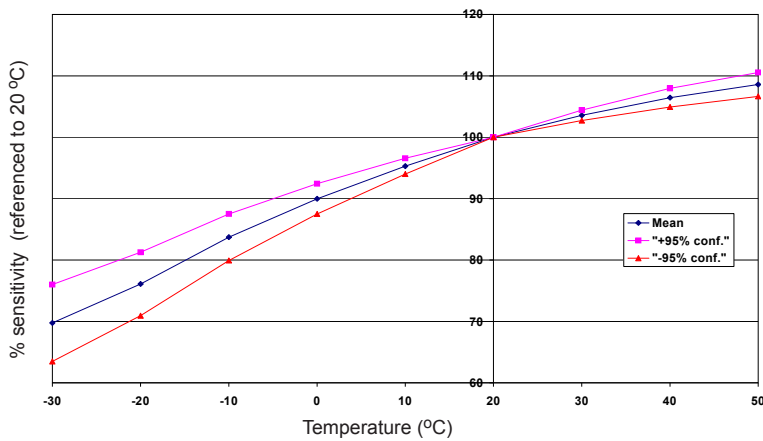
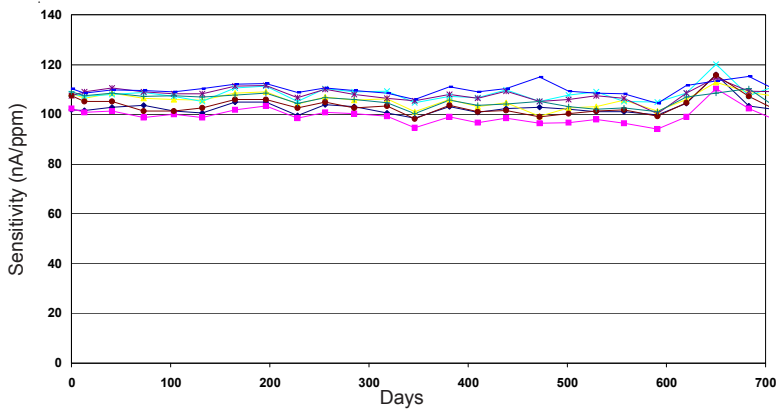


Figure 1 shows the variation in sensitivity caused by changes in temperature.

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

Figure 2 Sensitivity Long-term Stability



When sensors are tested monthly, their very good stability shows that they can be used in fixed sites, where maintenance and recalibration costs are important.

Figure 3 Response to 1% CO

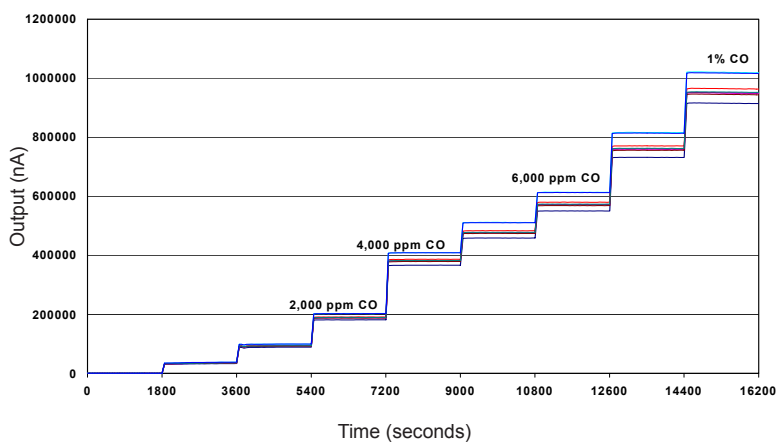


Figure 3 shows the response to step changes in CO concentrations from zero to 1% by volume.

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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