



# Over a decade of making solid-state CO2 sensors

GSS designs and manufactures a range of award winning CO2 sensors from its base in Scotland, UK. The company makes its own mid-range infrared LEDs, which are used as the core technology platform to enable fastest response times, lowest power consumption and longest product lifetime.

GSS sensors are used in diverse markets, including healthcare, industrial safety, food packaging, air quality and transportation. From typical everyday applications, to the most niche and unusual – GSS sensors have just about done it all, so the possibilities are endless.

## Why use LED-based sensors?

- High speed
- Low power
- Robust



**Instant on / off** — Uses very little energy to take a reading, so makes low power and wireless systems possible



**Fast power up** — Takes under 2 seconds to start up, so gives fast response and captures instant changes in CO2 levels



**Long lasting** — Sensors last for over 15 years in some applications



**No moving parts** — Not affected by bumps / vibrations so sensors are reliable in unstable conditions

## Custom Solutions

GSS has over a decade worth of experience in solid-state CO2 sensor development. The company's in-house engineering team has the knowledge and expertise to adapt sensors, and also create custom solutions according to customer requirements.

## Pioneers in LED Sensing Technology

- 2006** • GSS founded and gained investments from TRICAP & Scottish Enterprise.
- 2008** • Launched ground breaking mid-infrared LED-based CO2 sensors.
- 2011** • Launched CozIR® low power brand – up to 50× lower power than other sensors
- 2012** • Invested in semi-conductor facility to manufacture LEDs in-house.
- 2013** • Launched SprintIR® high speed brand, and ExplorIR® robust range for tough applications.
- 2017** • Launched CozIR®-LP miniature and even lower power sensor, and SprintIR®-6S with a 6× faster response than the original sensor.

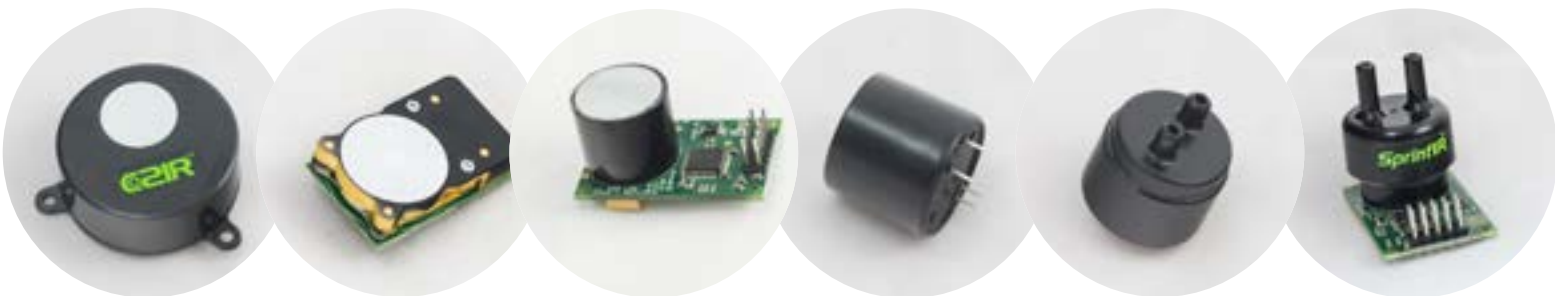
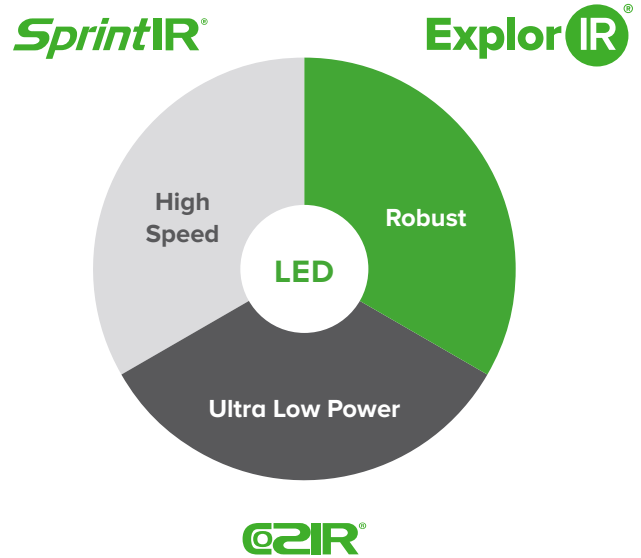
# CO2 sensors for land, sea and space – and everything in-between!

## Award winning solid-state CO2 sensors

The GSS range comprises 3 sensor brands. The CozIR® brand of ambient air sensors are very low power – up to 50× lower power than typical infrared CO2 sensors. This makes them ideal for battery and low power systems, including IoT applications.

SprintIR® sensors measure up to 100% CO2 levels in high speed applications. The sensors take ultra-fast readings and capture rapidly changing CO2 levels.

The ExplorIR® brand of sensors measure up to 100% CO2 and are built to perform in tough conditions – including extremes in pressure, temperature, and Relative Humidity (RH). The sensors are resistant to shocks and vibrations, and provide accurate readings in unstable applications.



CozIR®-A

CozIR®-LP

ExplorIR®-W

ExplorIR®-M

SprintIR®-6S

SprintIR®-W

| Sensor       | Range                   | Typical Applications  | Power consumption | Start up time | Can add Temp & RH% + analogue output? | Approx dimensions (mm) & weight            | Accuracy   |
|--------------|-------------------------|---|-------------------|---------------|---------------------------------------|--|--|
| SprintIR®-W  | 0-5%<br>0-20%<br>0-100% | <ul style="list-style-type: none"> <li>Healthcare</li> <li>IoT</li> <li>Food packaging</li> </ul>   | 35mW              | <30 secs      | ✓                                     | 40L × 25W × 36.6H<br>15g<br>(inc flow cap) | ± (70ppm+5% of reading)<br>(100% range ±<br>(300ppm+5% of reading) |
| SprintIR®-6S |                         | <ul style="list-style-type: none"> <li>Transportation</li> <li>Academia</li> </ul>  | 35mW              | <30 secs      | Available as a custom solution        | 23.8Dia × 24H<br>10g                       | ± (70ppm+5% of reading)<br>(100% range ±<br>(300ppm+5% of reading) |
| ExplorIR®-M  | 0-5%<br>0-20%<br>0-100% | <ul style="list-style-type: none"> <li>Agriculture</li> <li>IoT</li> <li>Diving</li> <li>Safety</li> <li>Aerospace</li> <li>Refrigeration</li> </ul>      | 3.5mW             | 1.2 secs      | Available as a custom solution        | 20.9Dia × 18.05H<br>5g                     | ± (70ppm+5% of reading)<br>(100% range ±<br>(300ppm+5% of reading) |
| ExplorIR®-W  |                         | <ul style="list-style-type: none"> <li>Food packaging</li> <li>Food storage</li> <li>Transportation</li> <li>Healthcare</li> <li>Incubators</li> </ul>    | 3.5mW             | 1.2 secs      | ✓                                     | 40L × 25W × 21.45H<br>15g                  | ± (70ppm+5% of reading)<br>(100% range ±<br>(300ppm+5% of reading) |
| CozIR®-A     | 0-2000ppm<br>0-5000ppm  | <ul style="list-style-type: none"> <li>Safety</li> <li>Building control</li> <li>Food packaging</li> <li>HVAC</li> <li>Horticulture</li> </ul>            | 3.5mW             | 1.2 secs      | ✓                                     | 43Dia × 17.25H<br>20g (cased)              | ± (50ppm+3% of reading)  |
| CozIR®-LP    | 0-1%                    | <ul style="list-style-type: none"> <li>Instrumentation</li> <li>Automotive</li> <li>Aerospace</li> <li>Indoor air quality</li> <li>Agriculture</li> </ul> | 3mW               | 1.2 secs      | Available as a custom solution        | 31L × 19.5W × 8H<br>5g                     | ± (45ppm+3% of reading)  |

Sensors run from 3.3 to 5.5V and have a digital serial UART output