

Application Brochure

Laboratory Gas Detection



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About IGD

The story of International Gas Detectors (IGD) began in 1917, when Henry Ringrose incorporated the world's first gas detection company. Over 100 years later our goal remains the same: to keep you safe by continuously improving our pioneering technology. From our first flammable gas detector to our groundbreaking Sentinel+™ Addressable gas detection technology, more than a century of expertise and innovation has kept us at the forefront of an industry that began right here, at IGD.

Today we manufacture fixed gas detection systems for over 700 gases and vapours at our purpose-built facility in Stockport. From our controllers to our detectors, accessories and PCB components, everything is manufactured in-house so that we can guarantee you the level of quality that our customers have come to expect of us, taking care of the entire process from consultation to installation to aftercare.

We also offer a huge range of portable gas detectors through our partnerships with GDI, Senko and mPower. All of our technologies, both fixed and portable, are backed by over 100 years of commitment to the development, design and manufacturing of industry-leading gas detection solutions.

With our 10-year warranty on electronics and unparalleled experience in the world of gas detection, you can rely on IGD to find the right solution for you.



International Gas Detectors Gas Detection for Laboratories



What is the Application?

Toxic, flammable, and asphyxiant gases are among the most common and serious hazards found in lab environments. At IGD, we're committed to protecting the vital work carried out in these critical workplaces by mitigating gas hazards, and the best way to do that is with a gas detection system that is tailored to the specific needs of your lab.

IGD provide scalable solutions for labs of any size or type, from single-room educational suites to huge multilevel research facilities.

Our Sentinel+™ range of fixed gas detection products offers unparalleled reliability, ultimate safety and full regulatory compliance on an intuitive addressable system that's backed by over a century of innovation. **See Page 5 to find out more.**

We didn't just pioneer the last century of electronic gas detection—we invented it.

What are the Gas Hazards?

No two lab environments are alike—differences in size, purpose and configuration often exist within the same facility. Each lab may present a unique set of gas hazards depending entirely on the processes and materials in use. That's why it's important to choose gas detection equipment that's tailored to the specific risks in your lab. There's no such thing as a "one-size-fits-all" solution. That's why we've developed a range of sensors capable of detecting more than 700 gases and vapours. Our sensor technologies offer increased operational lifetimes and industry-leading detection ranges, enabling us to design custom gas detection solutions for even the most complex laboratory environments.

No matter how diverse your gas hazards may be, we can help you safeguard your people, processes, and property with precision—with one adaptable system for any lab.

Accreditations



Getting gas detection isn't a choice. Who you get it from is.

What is the Government Legislation?

Providing appropriate gas detection measures in your lab isn't just best practice; it's a legal obligation. Failure to meet all relevant standards can lead to serious penalties. At IGD, we have been managing gas threats for longer than anyone else. Experience matters. IGD leads the way in gas safety with third-party accredited systems built to meet every regulation. The proper management of gas threats in laboratories is governed by the following regulations:

In the UK, the Health and Safety at Work Act 1974 serves as the primary legislation governing all workplaces. Under this act, various supporting documents outline requirements for monitoring hazardous gases, including toxic, flammable, and asphyxiant substances. These documents include the following:

COSHH

The Control of Substances Hazardous to Health (COSHH) Regulations require employers to assess the risks associated with using hazardous substances. This assessment must include procedures for dealing with accidents, incidents, or emergencies, such as significant spillages. The EH40 list provides an outline for the monitoring of toxic gases.

Guidance Notes and Approved Codes of Practice (ACOPS)

Approved Codes of Practice (ACOPs) and Guidance Notes are documents issued or approved by the UK Health and Safety Executive (HSE) that outline best practice for industry. For example, the British Compressed Gas Association (BCGA) provides guidance on oxygen depletion monitoring.

DSEAR

The Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) require the assessment and control of potential risks to personnel from fires or explosions caused by hazardous substances in the workplace. These risks must be reduced or managed as far as is reasonably practicable. DSEAR includes the monitoring of flammable gases and oxygen enrichment.

International Legislation

While this guidance focuses on UK legislation, each country has its own regulations for gas monitoring and exposure control. For example, in the USA, the relevant authorities are OSHA and NIOSH.

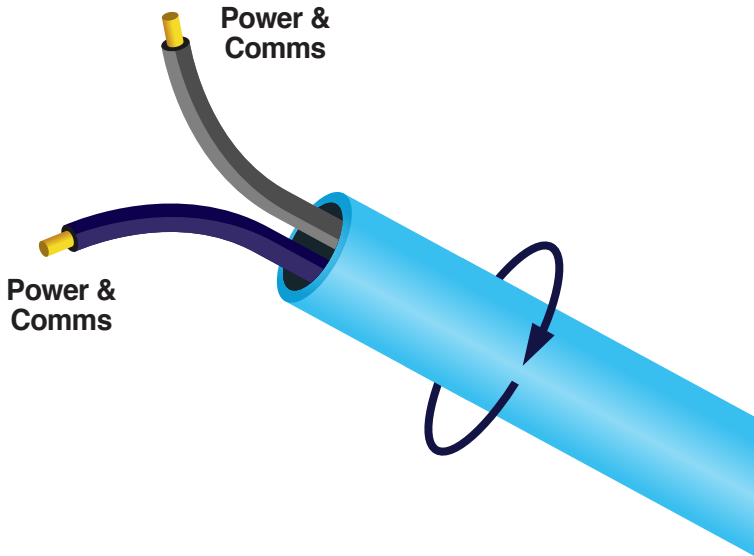


SENTINEL+ The Future of Gas Detection – Now



Sentinel+™ is IGD's exclusive gas detection system. The concept is simple: power and communications are both handled by a **single polarity-independent 2-wire cable**, utilising the only communications protocol specifically designed and optimised for gas detection. Everyone else uses at least 4 wires to run their systems. By doing a better job with just 2 we can offer ultimate protection for a fraction of the cost.
Swift. Simple. Safe.

The future of gas detection is digital.



Key Features

- + Polarity-independent 2-wire cables eliminate the potential for human error and significantly reduce installation time and costs
- + Explore sensor diagnostics and obtain detailed insights into faults, and alarms with advanced digital data
- + Link detectors and accessories in series to the nearest controller. Reducing wiring leads to lower costs and improved reliability
- + GasNet™ remote monitoring functionality enables you to receive SMS & email alerts and address your whole system from anywhere via a mobile phone, tablet or laptop
- + Upgrade and repurpose existing wiring to provide further cost savings on installation
- + Connect up to 350 devices and integrate into existing 3rd party systems
- + Plug-and-Play sensors come pre-calibrated
- + Embedded WiFi for event log downloads and maintenance. This allows for one-person calibrations and detailed logs and reports
- + Automatic system setup—Our controllers will automatically find all the detectors on the highway and recognise all gas types
- + Our systems are 3rd party-tested and approved to the following standards:
 - BS EN 60079-29-1
 - EN 50271
 - EN 50270
 - EN/UL61010-1
 - EN 60529

Scan the QR code to
watch our Sentinel+™
Addressable animation:

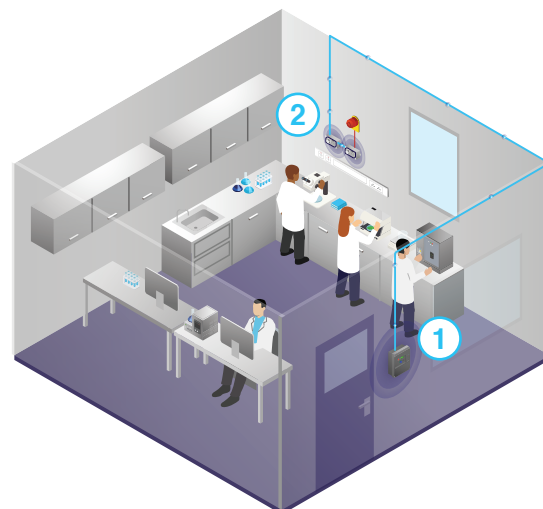


Scale Up Your Lab Safety with Sentinel+™ One System for Every Lab

Differences in size, function, and complexity demand a reliable, adaptable system that caters to the distinct requirements of every lab. The Sentinel+ modular system is designed to meet these unique needs, offering flexible, effective solutions.

Small/Single-Room Laboratory

1. One TOC-635 Control Panel can provide Sentinel+ Addressable monitoring for up to 99 external devices. 1-click auto-setup and a jog-wheel interface offer a simple solution for a small lab.
2. With a detection coverage of 75m² a single TOC-750 Safe Area Detector can provide targeted monitoring for an entire room. Another TOC-750 Safe Area Detector can be added for each distinct gas hazard.



Special Environments - Clean Rooms

1. Clean rooms are controlled environments that minimise airborne contaminants. TOC-750S Sampler Detectors can utilise end-of-line units and filters to draw air samples through walls from outside, enabling access without breaching the clean zone and ensuring ISO compliance.
2. Room status indicators are placed outside monitored environments to provide you with a clear indication of the room's gas status before you enter it.



Scan the QR code to
watch our Sentinel+™
Addressable animation:



Special Environments - Cryogenics Suites

1. Our control panels can be integrated into existing third-party systems to interface with temperature control and ventilation; systems of critical importance in temperature-controlled environments. Automatically regulating temperature control and ventilation will help to maintain a controlled environment and cut energy costs.
2. Our TOC-750 Safe Area Detectors can be equipped with our 5-year O₂ polymer sensors (twice the industry standard operational lifetime) to monitor O₂ depletion. We offer sensor options for other inert gases typically encountered in cryogenics suites. Our custom labyrinth design prevents ingress and ensures maximum sensor lifetime.
3. Our TOC-750X provides an ATEX option for Zone 1 & 2 ATEX environments. These can be utilised in cryogenics suites that use flammable gases such as liquid hydrogen or in other potentially explosive environments. For environments exposed to external conditions, the TOC-750X is rated IP67/68, providing optimal protection across a wide range of environmental scenarios.

Large-Scale/Complex Labs

1. One TOC-750 Control Panel can provide Sentinel+ Addressable power to your entire complex, interfacing with up to 350 external devices across a 1km distance. The 7" HMI interface makes for easy operation, and GasNet™ remote monitoring options keep you in control of your system wherever you are. Perform cloud-based data acquisition, download event logs and interrogate the system via the control panel or any phone, tablet or laptop.
2. TOC-750S Samplers provide reliable, parts-per-million, targeted detection in non-ATEX zones.
3. Both Safe Area and ATEX detectors can be equipped with collector cones for enhanced monitoring of lighter-than-air gases.
4. Beacon Sounders provide clear, visible, and audible alarms to alert you to a problem before it becomes a problem.



International Gas Detectors

Product Catalogue



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Fixed Gas Detection

Fixed gas detection provides 24/7 monitoring of a designated environment. All fixed systems are powered by Sentinel+™ Addressable technology and backed by our 10-year warranty on electronics (see terms and conditions).

TOC-750 Safe Area Detector

Sensor options for over 700 gases and vapours, and our long life sensor technology, combine to deliver the gold standard in accurate detection.



TOC-750X ATEX Detector

A versatile addressable ATEX/IECEx gas detector, with sensor options for over 300 gases. A robust design delivers high performance in harsh environments.



TOC-750S Sampling Detector

The ultimate problem solver. Utilise a range of end-of-line units and filters to monitor awkward spaces, hard-to-reach areas or sterile environments.



TOC-635 Control Panel (Micro/Plus)

Interface with up to 99 external devices. Deliver Sentinel+ Addressable power to your entire system. 1-click auto-setup, LED screen, Jog Wheel interface and optional GasNet™.



TOC-750 Control Panel

The central hub of a system that's made to scale. Interface with up to 350 external devices via the 7" colour touch screen HMI, and deliver Sentinel+ to your entire complex.



Portable Gas Detection

Portable gas detectors provide a vital line of personal defence against gas hazards, and we almost always suggest a combined solution of both fixed and portable gas detectors. All electronics are backed by our 2-year warranty (see terms and conditions).

BELLMINI Single-Gas Portable

Advanced personal protection in a lightweight ergonomic package. With sensor options for up to 18 different gases, user-friendly one-button operation, an LCD screen and BELLCONNECT bluetooth app connectivity.



UNI Single-Gas Portable

A powerful, ergonomic single gas detector with a huge range of sensor types, including options for exotic gases. Designed to be simple to use with minimal training, no charging required with up to 3 year battery life.



POLI Multi-Gas Portable Detector

Simultaneously monitor up to 5 distinct gas hazards with options for over 30 gas types with this powerful, portable multi-gas detector. The built-in pump allows for sampling detection and pre-entry checks.



iGAS CO₂ Portable Detector

The iGAS Personal CO₂ Monitor is designed to detect the presence of carbon dioxide in confined spaces providing immediate detection for the user, with a battery run time of up to 14 days on a single charge.



BELL LITE (Coming Soon)

The BELL LITE is a compact, ergonomic mutli-gas portable with the capability to simultaneously monitor up to four distinct gas hazards. Manage your entire team with the BELLCONNECT bluetooth app.



International Gas Detectors Product Catalogue



Accessories

As each individual site will have its own layout and site specific needs, standard gas detectors will require accessories to provide the most reliable monitoring solution.

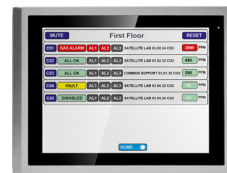
Room Status Indicator (RSI)

RSIs allows you to view live readings of up to 8 detectors/devices in specified rooms, providing a visual and audible indication of the room's current gas status.



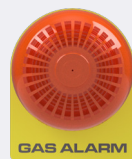
HMI Display

Connect up to 64 IGD gas detection controllers at a centralised location. The integrated HMI dashboard provides an at-a-glance overview and enables users to monitor and interrogate each connected gas detection system in detail.



Beacon Sounder

Our beacon sounders feature both audible and visual alarms, and are supplied with a laser-engraved warning sign that can be customised to your requirements.



Gas Collector Cone

Collector cones help to collect gas samples of lighter-than-air gases, funnelling these gases directly towards the attached gas detector to provide more accurate monitoring of a designated area.



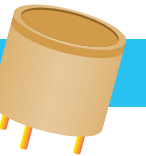
International Gas Detectors Sensor Technology

MK8 Pellistor



- Ideal for detecting flammable gases (0–100% LEL range)
- Non-gas-specific provides overall flammable gas readings
- Extremely reliable with a typical 5-year lifespan
- Low cost of ownership

NDIR (Infrared)



- Gas-specific detection for flammables, CO₂, N₂O, refrigerants, and SF₆
- Operates reliably in oxygen-depleted environments
- Failsafe design with temperature compensation
- Typical 5-year sensor life

Electrochemical Sensors



- Targeted detection of toxic gases
- Sensitive to low parts per million (ppm) levels
- 2–5 year sensor lifespan (dependent on gas type)
- Temperature compensated for stable performance

Lead-Free Solid Polymer O₂ Sensors



- Non-depleting sensor with 5-year lifespan
- Simultaneous monitoring of oxygen enrichment and depletion
- RoHS compliant
- Temperature compensated

Ionic Sensors



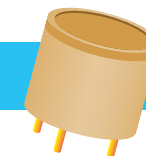
- Non-depleting with 5-year operational life
- Suitable for NH₃, H₂S, and H₂ detection
- Recovers fully from overexposure
- Low cost of ownership
- Temperature compensated

Long-Life PID



- Ideal for detecting toxic volatile organic compounds (VOCs)
- Measures total VOCs at low ppm levels
- Lamp life up to 30,000 hours – 50–200% longer than industry standard
- Stable across temperature and humidity changes
- Enhanced long-term accuracy and reliability

iCO₂ Sensors



- CO₂-specific detection
- Compensated for pressure, temperature, and humidity
- High reliability and stability
- Long life (>5 years) with low cost of ownership

Semiconductor (Refrigerants)



- Designed for blended refrigerant gas detection
- Broad-spectrum sensing (not gas-specific)
- Ideal for environmental monitoring and regulatory compliance
- Up to 5-year sensor lifespan

Aftercare+

IGD+

All gas detection systems, fixed or portable, must be regularly maintained, calibrated and tested to ensure correct operation and compliance.

The services and maintenance we offer are carried out in accordance with BS EN 60079-29 and UK PUWER. IGD offer a wide range of competitive maintenance services that can be tailored to suit your specific requirements:

- Gas detection system installation by our in-house NICEIC-approved and CompEx certified installation teams
- Gas detection system commissioning by our trained & competent engineers
- Flexible, fixed & portable gas detection service contracts

The flexibility of our IGD Aftercare+ team will ensure the fulfilment of all site requirements. This could involve your installation team, the provision of turnkey project solutions, comprehensive training or ongoing maintenance contracts.

Our work doesn't end after installation. We are here to guide you through the project, from start to finish, and beyond.



The IGD Academy

At IGD, we believe it's important to understand the fundamentals of gas detection, why it's needed, and how to safely operate our equipment.

That's why we created a free training academy, which is externally approved by the training body CPD UK. Our training modules are designed to meet the needs of any application or industry. Our adaptability and unparalleled industry knowledge help us to provide you with comprehensive training for all our systems.

Training options include:

- Online courses to understand the basics of gas detection and hazards
- On-site system handover training
- Owner/Operator training
- Portable gas detector training
- IGD Aftercare approved service training

We pair the very best in gas detection products with the very best in gas detection training to ensure that you and your people benefit from the best possible protection against any and all gas hazards.



Safe Monitoring Group

Who We Are



safemonitoring group

At Safe Monitoring Group we are establishing the leading group of gas detector manufacturers, serving a wide range of industries and applications.

We put sustainability at the heart of everything we do.

From the design and production of our products, to the way we manage our operations and interact with our customers, we are committed to building a business that is both environmentally and socially responsible.

 International Gas Detectors Ltd internationalgasdetectors.com	 Samon AB samon.com	 Bieler+Lang GmbH bieler-lang.de
 Eurotron Instruments (UK) Ltd ei-uk.com	 InduPro indupro.se	 CSE-TOOLS cse-tools.com
 CPC (UK) cpcuk.co.uk	 DURAN ELECTRONICA duranelectronica.com	

Let's Start
Something New,
Say Hello!

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"Absolutely awesome bits of kit. Ideal, so straight forward and basic. Even I could understand them. So simple, just plug in and off it goes! Really quick turnaround and delivery, thanks for the assistance IGD! At least one headache has been resolved!"

Ian Davies – Bradford Teaching Hospital

"IGD have supported our project team all the way from product manufacturing through to technical support, becoming an IGD Aftercare partner has been an easy choice to make."

Medical Pipelines Services Ltd

"Personally, I like the BELLMINI. It's functionality and appearance is far superior in my opinion. I am very happy to be using the BELLMINI as opposed to the current single gas monitors we have."

Nigel Gotts - University of Liverpool