

# Triple Plus+ & Triple Plus+ IR

## Portable Gas Detection Equipment



- Clear and unambiguous
- Simple to customise
- Durable
- Easy to maintain
- IR option available



# Triple Plus+ & Triple Plus+ IR

## Oxygen, toxic and flammable gases detector

**When lives and property are at risk and you need gas detection equipment that is totally reliable, you need Crowcon. For over 40 years Crowcon has been developing and manufacturing high quality products with a reputation for reliability and technical innovation.**

**Crowcon provide both single gas and multigas monitors for personal monitoring and portable safety applications providing protection against a wide range of industrial gas hazards.**



## Choosing the portable gas detector for your needs

**Triple Plus+ is a market leading multigas detector providing triple protection, against toxic, oxygen and flammable gas hazards.**

Intrinsically safe, the Triple Plus+ provides enhanced capabilities for safety and detector fleet managers including selection of flammable gas correction factors (so one unit can be used in several locations across a site) and annotation of the data file with user names and site names selected from pre-configured files in the unit.

## Triple Plus+

Triple Plus+ is the third generation of the respected "Triple" family of toxic, oxygen and flammable gas detectors. With units used in oil and gas, chemical, utility and manufacturing companies worldwide, their combination of ruggedness, reliability, ease of use and sensor flexibility has set the standard for multigas portables.

Today's TriplePlus+ builds on this pedigree by inclusion of unique LIBRA lithium-ion battery technology and the option of infra-red (IR) sensors for the measurement of flammable hydrocarbons or carbon dioxide.



## Triple Plus+ IR

Incorporating infrared detection technology, the Triple Plus+ IR extends the capability of the Triple Plus+ allowing extended life detection of hydrocarbons and carbon dioxide.

IR sensors have high resistance to interference or inhibition by other gases and are suitable for both high gas concentrations and use in inert (oxygen free) backgrounds.

The unique design of the Crowcon IR sensor module used in Triple Plus+ IR allows measurement of hydrocarbons at both % LEL and % vol. ranges making this instrument ideal for tank and line purging applications within oil and gas and industrial applications.



## Clear and unambiguous

Piercing 85dB at 1m	Gives you confidence in the status of your Triple Plus+, and the environment you're working in
Vivid LED alarms with top visibility	
Confidence blip, low battery and TWA warnings	
Timed datalogging with 100 hour capacity	

## Simple to customise

Wide range of electrochemical oxygen and toxic gas sensors	Allows you to create your optimum 4 gas Triple Plus+
Available for diffusion, manual aspiration or pumped sampling	
Interchangeable sensor modules	
Comprehensive datalogging with site and user names	

## Durable

Triax™ casing will not crack or shatter when dropped	System integrity and operation assured
Unique internal design will resist the harshest treatment	
Full buoyancy	Makes recovery from water possible

## Easy to maintain

Simple Windows™ Software interface	User menus allow calibration with or without connecting to a PC
QuickCal, rapid calibration	

## IR Option

No poisoning effects	Works well where catalytic pellistors would perform poorly
Long life sensor and no burnout	Reduced cost of ownership
% vol. measurement for purging applications	Offers flexibility
% LEL measurement in air or inert backgrounds	
Single or dual range measurement	
IR CO <sub>2</sub> detection, 0–5%	

**Please see the back page for full technical specifications.**

## Triple Plus+ & Triple Plus+ IR Specification:

<b>Size</b>	118 x 200 x 73mm (4.65 x 7.8 x 2.9ins)
<b>Weight</b>	880g (31oz)
<b>Approval codes</b>	Europe: ATEX II 2G: Ex ib d IIC T4 Gb North America: Class I Division 1, Groups A, B, C and D
<b>Safety standards</b>	Europe: EN50014, EN50020, 94/9/EC, EN50081-2, EN50270, EN50082-2 North America: UL 913, CSA 22.2 No.157 (SFA3009 Triple Plus+)
<b>Ingress protection</b>	IP65
<b>Typical response times</b>	Methane 20s (Triple Plus+) IR 20s (Triple Plus+IR), Oxygen 10s, typical Toxic Gas 20s
<b>Expected sensor life</b>	Flammable: 5 years (Triple Plus+), IR: 5 years (Triple Plus+ IR) Toxic: 3 years, Oxygen: 2 years
<b>Audible alarms</b>	Piercing, rapid intermittent, piezo-electric tone 85 dB at 1 m Confidence blip (selectable) Distinctive double blip for low battery with user accept
<b>Visible alarms</b>	Gas hazard: vivid flashing red LED Instrument is working: slow flashing green LED Low battery: distinctive double flash of green LED
<b>Display</b>	2 lines of 24 characters, dot matrix high contrast LCD with back light operating for 30 minutes Values and units for up to 4 gases displayed simultaneously at current, TWA or peak levels Low battery, pump failure, real time and elapsed time, calibration and configuration data also displayed
<b>Datalogging</b>	Adjustable sample rate, 100 hours at 1 minute sample rate (maximum 6000 data points per channel), logging of events, user and site
<b>LIBRA</b>	Li-Ion rechargeable battery pack Battery Life: standard instrument >12 hours Battery Life: pumped instrument >10 hours
<b>Battery Charging</b>	Dual rate drop-in charger Dual rate charger/PC interface
<b>Electric pump</b>	Optional internal pump with on/off button
<b>Operating temperature range</b>	-20°C to +50°C (-4°F to 122°F)
<b>Humidity</b>	20-90% RH non-condensing
<b>PC interface</b>	RS232 connection via the interface charger RS232/USB converter available Portables PC also controls datalogging, giving the user a choice of direct graphical output or a datafile compatible with all leading spreadsheets
<b>Calibration</b>	Triple Plus+ can be routinely calibrated using Portables PC software or Crowcon Checkbox IMH
<b>Standard accessories</b>	Manual, shoulder strap and allen keys (pumped units include additional flow plate, 2m hose and pouch)
<b>Optional accessories</b>	Leather carry case, straight and telescopic probes, water trap, baffle plate, aspirator, calibration flow adaptor and hose

Gas	Range	Typical Alarm (UK)
<b>Triple Plus+ &amp; Triple Plus+ IR</b>		
<b>Flammable</b>	0-100% LEL	20% LEL
<b>Oxygen (O<sub>2</sub>)</b>	0-25% vol.	19/23.5%
<b>Hydrogen sulphide (H<sub>2</sub>S)</b>	0-50ppm	5ppm
<b>Carbon monoxide (CO)</b>	0-500ppm	30ppm
<b>Sulphur dioxide (SO<sub>2</sub>)</b>	0-10ppm	1ppm
<b>Chlorine (CL<sub>2</sub>)*</b>	0-5ppm	0.5ppm
<b>Nitrogen dioxide (NO<sub>2</sub>)</b>	0-10ppm	1ppm
<b>Phosphine (PH<sub>3</sub>)</b>	0-2ppm	0.1ppm
<b>Ammonia (NH<sub>3</sub>)</b>	0-50ppm	25ppm
<b>Non-flammable hydrogen (H<sub>2</sub>)</b>	0-2000ppm	N/A
<b>Hydrogen cyanide (HCN)</b>	0-25ppm	10ppm
<b>Hydrogen chloride (HCL)</b>	0-10ppm	1ppm
<b>Triple Plus+</b>		
<b>Electrochem hydrogen (H<sub>2</sub>)</b>	0-100% LEL	20% LEL
<b>Methane (CH<sub>4</sub>)</b>	0-100% vol.	N/A
<b>Flourine (F<sub>2</sub>)</b>	0-10ppm	1ppm
<b>Hydrogen flouride (HF)</b>	0-10ppm	2ppm
<b>Ethylene oxide (ETO)</b>	0-10ppm	5ppm
<b>Chlorine dioxide (CLO<sub>2</sub>)</b>	0-1ppm	0.1ppm
<b>Nitric oxide (NO)</b>	0-100ppm	25ppm
<b>Triple Plus+ IR</b>		
<b>Flammable</b>	0-100% vol.	No alarm
<b>Carbon dioxide (CO<sub>2</sub>)</b>	0-5%	0.5/ 1.5%

\* Unpumped units only

The Triple Plus+ has two dual rate charging solutions supplied with UK, EU, US plug and without plug configurations. A vehicle adapter for in-vehicle charging is also available.

- Standard drop-in charging cradle
- PC interface charger

Crowcon reserves the right to change the design or specification of the product without notice. Check [www.crowcon.com](http://www.crowcon.com) for updates.

**www.crowcon.com**

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Detecting Gas Saving Lives