

CO<sub>2</sub>  
H<sub>2</sub>S  
Cl<sub>2</sub>  
NH<sub>3</sub>  
O<sub>3</sub>  
CO  
CH<sub>4</sub>  
SO<sub>2</sub>  
HCN  
NO<sub>2</sub>

# Detective+

## Transportable Multi-Gas Area Monitor



### Detective+

Detective+ is based on the highly successful Triple Plus+ multi-gas monitor. For use in utility, oil and gas applications. Singly or linked together, Detective+ gives a loud and clear alarm providing effecting warning of gas hazards. The rugged, water and impact resistant design and clear display make Detective+ the ideal choice for your transportable gas detection needs.

- Loud & bright alarms
- Rugged & reliable
- Wide sensor options including infra-red
- Built-in pump option
- Robust tripod design
- Raised sensor apertures

#### Versatile & user friendly

- Infra-red sensors available:
  - allows sampling of highly flammable gas levels and CO<sub>2</sub>
  - unaffected by poisoning
- Built-in pump option provides fast response and extra sensor protection
- Display provides clear information, allows identification of gas hazard
- Easy tracking of multiple hazards
- Up to 60 hour battery operation
- Wide range of toxic gas sensors

#### Uniquely rugged, tripod design

- Sensors are fully protected, even if overturned
- Raised sensor apertures to prevent water ingress
- Simple and quick to set up
- Folding or fixed leg options provide easy storage and transportation

#### Loud & clear alarms

- Wailing omni-direction siren, 104 dBA at 1 metre
- High intensity red LED clusters for visual alarm
- All linked Detective+ units indicate an alarm sensed by any one unit
- Units sensing alarm flash faster
- Audible and visible confidence blip
- Time weighted average alarms for 8 hours and 15 minutes

# Detective+

## Specification

Weight	7.5kg (19lb)
Dimensions	640h x 455w x 455d (mm) 25.2h x 17.9w x 17.9d (inches)

### Typical measuring ranges and alarm settings (up to four gas measurement channels)\*

	Standard Range	Typical Alarm Levels
Flammable gas	0-100% LEL	20% LEL
Oxygen	0-25%	10% & 23%
Hydrogen sulphide	0-50ppm	10ppm
Carbon monoxide <sup>xx</sup> (H <sub>2</sub> compensated)	0-500ppm	35ppm
Sulphur dioxide	0-10ppm	2ppm
Chlorine <sup>+</sup>	0-5ppm	0.5ppm
Nitrogen dioxide <sup>+</sup>	0-10ppm	2ppm
Phosphine <sup>+</sup>	0-5ppm	0.5ppm
Ammonia	0-50ppm	25ppm
Ammonia	0-1000ppm	n/a
Hydrogen (non-flammable levels)	0-2000ppm	n/a
Hydrogen cyanide	0-25ppm	10ppm
Hydrogen chloride <sup>+/xx</sup>	0-10ppm	5ppm
Chlorine dioxide <sup>+</sup>	0-1ppm	0.1ppm
Hydrogen fluoride <sup>+</sup>	0-10ppm	1ppm
Ethylene oxide <sup>xx</sup>	0-10ppm	5ppm
Volatile organic <sup>xx/+</sup>	0-100ppm	n/a

### Infrared Sensors

Infrared sensors for flammable gas can be supplied as a single range, 0-100% LEL, utilising a single display channel, or as a dual range, 0-100% LEL/0-100% volume, which then occupies two display channels.

CO<sub>2</sub> sensors are supplied as 0-5% volume. Only one IR sensor can be fitted, and IR sensors can only be used in combination with oxygen and toxic sensors.

	Standard Range	Typical Alarm
Flammable gas	0-100% LEL	20% LEL
Flammable gas	0-100% v/v	None
Available for methane, propane, butane or ethylene		
CO <sub>2</sub>	0-5% v/v	0-5/1.5% v/v

Typical response times	Methane 20s, Oxygen 10s, typical toxic gas 20s, IR 30s
Expected Sensor life	Flammable 5 years, Toxic 3 years, Oxygen 2 year minimum, IR >5 years
Audible alarms	Wailing, omni-direction siren, 104 dBA @ 1 metre

\* Required ranges and alarms may vary by country and application and these can be configured as required

<sup>xx</sup> One biased sensor per Detective+

<sup>+</sup> Reactive gas, care required during sampling, contact Euro-Gas for details.

Visible alarms	Three large, top-mounted red LED clusters and single red LED on control panel. In alarm mode LED clusters flash in quick succession. LED clusters of linked Detectives repeating the alarm, flash more slowly than LED lights on those Detectives sensing the hazard. Slow flashing green LED indicates normal working Rapid flashing green LED indicates low battery
Display	High contrast LCD with back light. Values and units for up to 4 gases displayed simultaneously at current, TWA or peak levels, low battery, real time and elapsed time calibration and configuration data also displayed
Battery	Standard 6V, 7.2Ah, sealed lead acid battery pack Optional 6V, 12Ah high capacity pack
Battery life	Up to 36 hours assuming flammable/CO <sub>2</sub> sensor fitted with 7.2Ah battery. Up to 60 hours with optional 12Ah battery pack.
Operating Temperature Range	-20°C to +50°C (-4°F to 122°F) Toxic and Oxygen sensors are not rated for continuous operation at high temperatures. Consult Euro-Gas if operating temperatures are likely to exceed 40°C (104°F) for extended periods
Humidity	0-95% RH non condensing
Approvals	Europe: ATEX II 2G EEx ib d IIC T4 International: IECEx EEx ib d IIC T4
Standards	EN50014, EN50018, EN50020, EN50104, EN45544, IEC60079-0/-1 IEC60079-11
Ingress Protection	IP65
EMC	EN 50270, FCC CFR47 Part 15
PC Interface	Via RS232 lead. Portables PC software can be used to set alarms, clock, datalogging interval and password. Portables PC also manages datalogging, giving graphical display of instrument log file and allows file export to spreadsheet
Calibration	Quick calibration using internal menu command, Portables PC or the CheckBox IMH management system
Accessories	Baffle plate Interconnecting leads RS232 Communication lead
Sampling	Internal electric sampling pump option Manual aspiration
Linked Detectives	Up to 12 units can be linked to provide perimeter or area monitoring