



# AreaRAE Steel Z2

## Rapidly Deployable, Wireless Multi-gas Monitor

The AreaRAE Steel Z2 is a one- to five-gas wireless monitor that delivers ATEX Zone 2 certification in an extremely rugged stainless-steel enclosure designed for applications in harsh environments. The weather-resistant AreaRAE Steel Z2 is the benchmark against which portable wireless gas monitors are judged.

AreaRAE Steel Z2 combines a photoionization detector (PID) for parts-per-million measurement of volatile organic compounds (VOCs) with lower explosive limit (LEL) and oxygen sensor, plus up to two electrochemical toxic sensors for measuring specific substances such as hydrogen sulfide or chlorine. The AreaRAE Steel Z2 can also integrate a gamma radiation sensor in place of one of the electrochemical toxic sensors or the oxygen sensor. An integrated wireless modem allows the AreaRAE Steel Z2 to transmit real-time sensor readings to a ProRAE Remote base station located up to 3 kilometers away.

The base station is a standard Windows-based PC running ProRAE Remote software connected to a RAELink Host Modem. The base station can communicate with up to 12 AreaRAE Steel Z2s (or other AreaRAE-compatible monitors), providing a multi-threat detection network that can monitor a wide geographic area.

AreaRAE Steel Z2 monitors are powered by rechargeable Lithium-ion batteries that deliver up to 18 hours of continuous operation and can be powered by external 12-volt DC sources or from AC line power. They can also be powered by standard alkaline batteries with an optional alkaline battery adapter.

AreaRAE Steel Z2 options include the ability to track and display readings from remotely located detectors on a GPS map.

The AreaRAE Steel Z2 is ideal for HazMat and other emergency response monitoring programs. AreaRAE Steel Z2 detectors can be used to quickly establish an emergency perimeter by setting out multiple monitors at strategic locations, then backing off to a position of safety to monitor readings over the wireless link.

The AreaRAE Steel Z2 is available individually or as part of the Rapid Deployment Kit (RDK) system package.

### Key Features

- Up to five sensors (PID, LEL, O<sub>2</sub> and two toxic gas electrochemical)
- Loud buzzer and large, extra-bright warning light
- Large LCD display and keypad
- Rugged, weather-resistant stainless-steel housing
- Built-in sampling pump
- Interchangeable Lithium-ion or alkaline battery pack
- Continuous operation via AC source

### Additional Advantages

- Real-time wireless data transmission with built-in RF modem
- View real-time sensor data and alarm status at headquarters or command center
- ProRAE Remote software simultaneously controls and displays readings for up to 12 remote detectors
- License-free, ISM wireless transmission with communication range up to 3 kilometers.
- Optional GPS provides ability to track and display readings from remote detectors

### Applications

- HazMat and Emergency Response
- Refineries and Petrochemical Plants
- Power Plants
- Pulp and Paper Industry
- Plant and Mill Turnarounds
- Marine and Offshore Wells



# AreaRAE Steel Z2

## Specifications\*

### Detector Specifications

<b>Size</b>	9.25" L x 5.0" W x 9.25" D (235mm L x 127mm W x 235mm D) without handle
<b>Weight</b>	13.85 lbs (6.3 kg) with battery pack
<b>Sensors</b>	Up to five sensors (PID, LEL, Gamma, and two selectable toxics; or PID, LEL, Gamma, O <sub>2</sub> , and one selectable toxic)
<b>Battery</b>	Rechargeable, 7.4V/4.5Ah, Lithium-ion battery pack with built-in charger (less than 10 hours charge time) or a 6 C-size alkaline battery pack
<b>Operating Hours</b>	Up to 18 hours continuous operation
<b>Display</b>	2-line, 16-digit LCD with manually activated LED back light
<b>Keypads</b>	3 operation and 4 programming keys
<b>Direct Readout</b>	Instantaneous values, sensor name, high and low values for all detectors, TWA and STEL values for toxic gases and VOCs, battery voltage and elapsed time
<b>Alarm</b>	Flashing red LED cluster to indicate exceeded preset limits, low battery or sensor failure
<b>Alarm Setting</b>	Separate alarm limit settings for TWA, STEL, Low and High alarm
<b>Audible Alarm</b>	Buzzer, 110dB buzzer at 10cm (typical)
<b>Visual Alarm</b>	Flashing red LED cluster
<b>Alarm Mode</b>	Latching/automatic reset
<b>Datalogging</b>	4,000 points for each sensor with time stamp, serial number, user ID, site ID
<b>Data Storage</b>	20,000 readings (64 hours, 5 channels at 1 minute intervals) in non-volatile memory
<b>Datalog Interval</b>	Programmable 1 to 3,600 sec
<b>Communication</b>	Upload data to PC and Download monitor setup from PC through RS-232 link to serial port on PC
<b>EM Immunity</b>	No effect when exposed to 0.43 mW/cm <sup>2</sup> RF interference (5-watt transmitter at 30cm)
<b>Safety Certification</b>	ATEX EX II 3G EEx nAL IIC T6
<b>Frequency</b>	869 MHz (License-free), 2 channels
<b>RF Range</b>	Up to 2 miles (900 MHz), extendable with RAELink Repeaters
<b>Error Detection</b>	32 bit CRC, resend on error
<b>Calibration</b>	Two-point field calibration for fresh air and standard reference gas
<b>Sampling pump</b>	Internal integrated diaphragm pump with programmable High (400cc/min) and Low (300cc/min) flow rate settings
<b>Low Flow Alarm</b>	Auto shutoff pump at low-flow condition
<b>Temperature</b>	-20° to 45° C (-4° to 113° F)
<b>Humidity</b>	0% to 95% relative humidity (non-condensing)
<b>IP Rating</b>	IP-65 (water-proof)
<b>Attachment</b>	Shoulder strap, optional tripod/wall mounting bracket
<b>Optional</b>	Integrated GPS receiver

\*Specifications are subject to change

DISTRIBUTED BY:

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### Sensor Specifications

Radiation	DER Range	Energy Range	Sensitivity
Gamma	1 to 4000 µR/h (0.01 to 40 µSv/h)	0.060 to 3.0 MeV	>100 cps/µSv/hr

Gas Monitor	Range	Resolution
Oxygen	0 to 30.0%	0.1%
Combustible	1 to 100% LEL	1% LEL
VOCs	0 to 199 ppm 200 to 2,000 ppm	0.1 ppm 1 ppm
Carbon Monoxide	0 to 500 ppm	1 ppm
Carbon Monoxide	10 to 2000 ppm	10ppm
Hydrogen Sulfide	0 to 100 ppm	1 ppm
Sulfur Dioxide	0 to 20.0 ppm	0.1 ppm
Nitric Oxide	0 to 250 ppm	1 ppm
Nitrogen Dioxide	0 to 20.0 ppm	0.1 ppm
Chlorine	0 to 10.0 ppm	0.1 ppm
Hydrogen Cyanide	0 to 100 ppm	1 ppm
Ammonia	0 to 50 ppm	1 ppm
Phosphine	0 to 5.0 ppm	0.1 ppm
Hydrogen Chloride	2 to 15 ppm	1 ppm
Hydrogen Fluoride	2 to 10 ppm	1 ppm

### Monitor only includes:

- Monitor as specified
- Sensors as specified
- Carbon filters (for units with CO)
- Calibration adapter
- Quick reference guide
- Operation and maintenance manual
- Shoulder strap
- Rechargeable Lithium-ion battery pack
- 120/240 VAC AC/DC Adapter
- Spare alkaline battery pack
- 10 spare external filters
- Hard transport case with pre-cut foam padding
- 15' (5m) Teflon® tubing
- Tool kit

### Instrument with calibration kit also includes:

- Calibration gas (kit may contain multiple cylinders, depending on the sensors installed)
- Calibration regulator and tubing (kit may contain a second regulator, depending on the types of calibration gases included)

### Datalogging Monitors also include:

- Software, ProRAE Suite Package for Windows 98, NT, 2000 and XP
- Computer interface cable

### ProRAE Remote Basic Host Software Package includes:

- ProRAE Remote Software for Windows 98, NT, 2000 and XP
- RAELink Modem

