The AreaRAE Steel is a one- to five-gas wireless monitor that delivers the same features and performance as the industry-leading AreaRAE monitor, in an extremely rugged stainless-steel enclosure designed for applications in harsh environments. The weather-resistant AreaRAE Steel is the benchmark against which portable wireless gas monitors are judged.

AreaRAE Steel combines a photoionization detector (PID) for parts-per-million measurement of volatile organic compounds (VOCs) with lower explosive limit (LEL) and oxygen sensors, plus two electrochemical toxic sensors for measuring specific substances such as hydrogen sulfide or chlorine. An integrated wireless modem allows the AreaRAE Steel to transmit real-time gas measurement data to a ProRAE Remote base station located up to 2 miles (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 64 AreaRAE Steels (or other AreaRAE-compatible monitors), providing a multi-threat detection network that can monitor a wide geographic area.

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

The AreaRAE Steel is ideal for HazMat and other emergency response monitoring programs. AreaRAE Steel 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 is available individually or as part of the Rapid Deployment Kit (RDK) system package.

### Key Features
- Up to five sensors (PID, LEL, O₂ 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

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

### 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 eight remote detectors
- License-free, ISM wireless transmission with communication range up to 2 mi (3km), extendable with RAELink Repeaters
- Fully hardware and software compatible with standard AreaRAE network components
- Optional GPS provides ability to track and display readings from remote detectors

www.raesystems.com
AreaRAE Steel

Specifications*

Detector Specifications

Size
9.25” L x 5.0” W x 9.25” D (235mm L x 127mm W x 235mm D) without handle

Weight
13.85 lbs (6.3 kg) with battery pack

Sensors
Up to five sensors (O₂, combustible, two toxic and VOC), electrochemical sensors for toxic gases and oxygen, photoionization sensor for VOC, catalytic combustion sensor for combustible gases

Battery
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

Operating Hours
Up to 18 hours continuous operation

Display
2-line, 16-digit LCD with manually activated LED back light

Keypads
3 operation and 4 programming keys

Direct Readout
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

Alarm
Flashing red LED cluster to indicate exceeded preset limits, low battery or sensor failure

Alarm Setting
Separate alarm limit settings for TWA, STEL, Low and High alarm

Audible Alarm
Buzzer, 110dB buzzer at 10cm (typical)

Visual Alarm
Flashing red LED cluster

Alarm Mode
Latching/automatic reset

Datalogging
4,000 points for each sensor with time stamp, serial number, user ID, site ID

Data Storage
20,000 readings (64 hours, 5 channels at 1 minute intervals) in non-volatile memory

Datalog Interval
Programmable 1 to 3,600 sec

Communication
Upload data to PC and Download monitor setup from PC through RS-232 link to serial port on PC

EM Immunity
No effect when exposed to 0.43 mW/cm² RF interference (5-watt transmitter at 30cm)

Safety Certification
CSA Classified for use in Class I, Division 2, Groups A, B, C, and D (w/900 MHz modem)

Frequency
902 to 928 MHz (License-free)

RF Range
Up to 2 miles (900 MHz), extendable with RAELink2 Repeaters

Error Detection
32 bit CRC, resend on error

Calibration
Two-point field calibration for fresh air and standard reference gas

Sampling pump
Internal integrated diaphragm pump with programmable High (400cc/min) and Low (300cc/min) flow rate settings

Low Flow Alarm
Auto shutoff pump at low-flow condition

Temperature
-20° to 45° C (-4° to 113° F)

Humidity
0% to 95% relative humidity (non-condensing)

Attachment
Shoulder strap, optional tripod/wall mounting bracket

Optional
Integrated GPS receiver

*Specifications are subject to change

Sensor Specifications

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

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/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

** Specifications are subject to change

DISTRIBUTED BY:

RAE Systems Inc.
3775 North First Street
San Jose, CA 95134 USA
raesales@raesystems.com

www.raesystems.com

DS-1004-02