# MiniRAE 2000

## Portable Handheld VOC Monitor

The rugged **MiniRAE 2000** is the smallest pumped handheld volatile organic compound (VOC) monitor on the market. Its Photoionization Detector's (PID) extended range of 0-10,000 ppm makes it an ideal instrument for applications from environmental site surveying to HazMat/Homeland Security.

### Key Features

**Proven PID technology** The patented 3D sensor provides a 3-second response up to 10,000 ppm and sets a new standard for resistance to moisture and dirt.

**Self-cleaning lamp and sensor** Our patented self-cleaning lamp and sensor minimize the need for maintenance and calibration.

**The MiniRAE 2000 lamp and sensor can be taken apart in seconds for easy maintenance without any tools!**

**Measure more chemicals than with any other PID** With over 100 Correction Factors built into the **MiniRAE 2000** memory and the largest printed list of Correction Factors in the world (300+), RAE Systems offers the ability to accurately measure more ionizable chemicals than any other PID. When a gas is selected from the MiniRAE 2000's library, the alarm points are automatically loaded into the meter.

**User friendly** screens make it easy to use for simple applications and flexible enough for sophisticated operations.

**Drop-in battery** When work schedules require putting in more than the 10 hours supplied by the standard NiMH battery, the drop-in alkaline pack supplied with every MiniRAE 2000 lets you finish the job.

**Rugged Rubber Boot** The standard rubber boot helps assure that the MiniRAE 2000 survives the bumps and knocks of tough field use.

**Strong, built-in sample pump** draws up to 100 feet (30m) horizontally or vertically.

**Tough flexible inlet probe**

**Large keys** operable with 3 layers of gloves.

**Easy-to-read display** with backlight.

**Stores up to 267 hours of data** at one minute intervals for downloading to PC (with the datalogging option).

**3-year 10.6 eV lamp warranty**

### Applications

#### HazMat/Homeland Security

- Initial PPE (personal protective equipment) assessment
- Leak detection
- Perimeter establishment and maintenance
- Spill delineation
- Decontamination
- Remediation

#### Industrial Hygiene/Safety

- Confined Space Entry (CSE)
- Indoor Air Quality (IAQ)
- Worker exposure studies

#### Environmental

- Soil and water headspace analysis
- Leaking underground storage tanks
- Perimeter fenceline monitoring
- Fugitive emissions (EPA Method 21)
- Vapor recovery breakthrough
- Landfill monitoring

# Specifications*

## Default Sensor Settings**

| Gas Monitor (ppm) | Range (ppm) | Resolution Time (T90) | Response |
|---|---|---|---|
| VOCs | 0 - 999 ppm | 0.1 ppm | < 3 sec |
| | 100 - 10,000 ppm | 1 ppm | < 3 sec |

## Detector Specifications

| | |
|---|---|
| **Size** | 8.2"L x 3.0"W x 2.0"H (21.8 x 7.62 x 5.0 cm) |
| **Weight** | 20 oz with battery pack (553g) w/o rubber boot |
| **Sensor** | Photoionization sensor with standard 10.6 eV or optional 9.8eV or 11.7 eV UV lamp |
| **Battery** | • Rechargeable, external, field replaceable Nickel-Metal-Hydride (NiMH) battery pack<br>• Alkaline battery holder (for 4 AA batteries) |
| **Operating Period** | 10 hours continuous operation |
| **Display** | Large LCD, backlight activated manually, with alarms or darkness |
| **Keypad** | 1 operation and 2 programming keys |
| **Direct Readout** | • VOCs as ppm by volume<br>• High and low values<br>• STEL and TWA (in hygiene mode)<br>• Battery and shut down voltage |
| **Alarms** | 90 dB buzzer and flashing red LED to indicate exceeded preset limits<br>• High: 3 beeps and flashes per second<br>• Low: 2 beeps and flashes per second<br>• STEL and TWA: 1 beep and flash per second<br>• Alarms automatic reset or latching with manual override<br>• Optional plug-in pen size vibration alarm<br>• User adjustable alarm limits |
| **Calibration** | Two point field calibration of zero and standard reference gas. Calibration memory of 8 calibration gases, alarm limits, span values and calibration date |
| **Datalogging** | Optional 267 hours (at one minute intervals) with date/time. Header information includes monitor serial number, user ID, site ID, date and time |
| **Sampling Pump** | • Internal, integrated flow rate 400 cc/min<br>• Sample from 100' (30m) horizontally or vertically |
| **Low Flow Alarm** | Auto shut-off pump at low flow condition |
| **Communication** | Download data and upload instrument set-up from PC through RS-232 link to serial port |
| **Temperature** | 14° to 104°F (-10° to 40°C) |
| **Humidity** | 0% to 95% relative humidity (non-condensing) |
| **EM/RFI** | Highly resistant to EMI /RFI. Compliant with EMC Directive 89/336/EEC |
| **IP-rating** | IP-55: protected against dust, protected against low pressure jets of water from all directions |
| **Hazardous Area Approval** | • US and Canada: UL and cUL, Classified for use in Class I, Division 1, Groups A, B, C and D hazardous locations<br>• Europe: ATEX II IG EEx ia IIC T4 |
| **Attachment** | Durable bright yellow rubber boot w/belt clip & wrist strap |
| **Warranty** | Lifetime on non-consumable components (per RAE Systems Standard Warranty), 3 years for 10.6.V PID lamp, 1 year for pump and battery |

\* On going projects to enhance our products means that these specifications are subject to change

\** Performance based on isobutylene calibration

## MiniRAE 2000 and Accessories

**Monitor only includes:**
- 10.6eV, 9.8eV or 11.7eV as specified
- RAE Systems UV lamp: 10.6eV, 9.8eV or 11.7eV as specified
- 5-inch Flex-I-Probe
- External filter
- Rubber boot with belt clip
- Alkaline battery adapter
- Tool kit
- Lamp cleaning kit
- Nickel-Metal-Hydride battery
- 120/230 V AC/DC wall adapter (if specified)
- Operation and maintenance manual

**Monitor with accessories kit adds:**
- Hard transport case with pre-cut foam
- 5 porous metal filters and O-rings
- Organic vapor zeroing adapter
- Gas outlet port and tubing

**Optional calibration kit adds:**
- 100 ppm isobutylene calibration gas, 34L
- Calibration regulator and flow controller

**Datalogging monitor adds:**
- ProRAE Suite software package for Windows 98, NT, 2000 and XP
- Computer interface cable

**Optional Guaranteed Cost of Ownership Program:**
- 4-year repair and replacement guarantee
- Annual maintenance service

DISTRIBUTED BY:

*MiniRAE 2000*

RAE SYSTEMS