Advanced Environmental Instrumentation
Harnessing the Power of Mobile Computing

✓ Surveyed ✓ Documented ✓ Reported

Example Screens

Realtime

File	Log	Probe	View

TVOC	256 ppb
Carbon Dioxide	945 ppm
Carbon Monoxide	1.3 ppm
Ozone	0.04 ppm
Temperature	18.9 °C
Relative Humidity	17.3 %RH

Menu   Snap   Live: Bldg 6\General Office

Photo(s) attached
Time Tagged Event Note attached
Audio Note attached
Text Note attached
Drawing attached

Snap-Shot Log

File	Log	Probe	View

TVOC	530 µg/m3
Carbon Dioxide	534 ppm
Ammonia	0.4 ppm
Carbon Monoxide	0.4 ppm
Temperature	21.4 °C
Relative Humidity	17.9 %RH

Menu   Snap   Live: Bldg 6\General Office

Click the SNAP icon to record measurements, time, date and detailed location name

Trend Log Graph

File	Log	Probe	View

Logging: Carbon Dioxide ppm

Options   Full Screen   Select
Carbon Dioxide ppm

Menu   Live   Log 'memorial hall' 30 secs

Log at intervals of your choice. Optionally display trend graphs on meter

Audio Note

WolfSense 2013

Audio Note: Hospital\Nurses Stn

ERASE   ► Play   ■ Stop   ● Rec

Available Memory: 4015MB or approx 388 minutes of recording at 11KHz

UK

TVOC	283 ppb
Carbon Dioxide	546 ppm
Carbon Monoxide	0.3 ppm
Ozone	0.14 ppm
Temperature	71.2 °F
Relative Humidity	19.4 %RH

AdvancedSense™ Environmental Test Meter

INDOOR AIR QUALITY PROBE IQ-610

ADVANCEDSENSE® / DIRECTSENSE® IAQ
Indoor Air Quality Meters

GrayWolf is transforming the way that environmental measurements are taken. GrayWolf's IAQ kits harness leading edge sensor technology with the power and performance of mobile computing. Efficiently display, document, access educational info (on-site) and report on IAQ parameters.

- An essential component of any professional IAQ program
- Organizes ALL survey info; data, text, calibration history and more...
- Measures VOCs, CO_2, CO, %RH, Dewpoint, Temperature and more... accurate *and* fast
- Options for Toxic Gases, Differential Pressure, Particulates, Airspeed and more... up to 32 parameters simultaneously
- On-board help files, including advanced product help videos and IAQ industry videos (view *in situ*)

- Comes with numerous IAQ field forms (Mold Checklist, etc.) and auto-data fill reports for on-site input (or create your own)
- WolfSense® PC desktop software is included for data review, graph creation, cut & paste report generation
- Optional Advanced Report Generator software for automated, ultra-efficient, detailed IAQ reports
- Tap the screen for educational info: sensor tips, IAQ documents and guidelines
- Intuitive and extremely Easy-To-Use

GRAYWOLF® SENSING SOLUTIONS
Ph. 1-203-402-0477
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Email:
Salesteam@GrayWolfSensing.com

Website:
www.GrayWolfSensing.com

Choose Your Platform:

AdvancedSense Handheld Embedded PC Meter

WolfPack® Modular Area Monitor

GrayWolf Supplied Tablet
Entry level platform with great standard features (built-in camera, WiFi)

Or Use Your Own Windows PC as the instrument platform
Remote Data Access to, and email/text alerts from, any WiFi enabled platforms via optional **GrayWolfLive**™

Example AdvancedSense/WolfPack® Screens

Field Form

Word Mobile   10:14 ok

Checklist for Mold Remediation

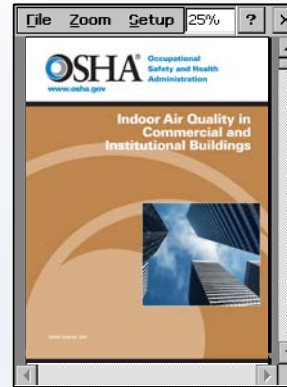**Investigate and evaluate moisture and mold problems**

__ Assess size of moldy area
_____ (_sq ft or _sq m)

__ Consider the possibility of hidden mold. Comments: __

__ Clean up small mold problems and fix moisture before they become large problems.

B *I* U   View   Menu

On-Board Docs

File Zoom Setup 25% ? X

OSHA Occupational Safety and Health Administration
www.osha.gov

Indoor Air Quality in Commercial and Institutional Buildings

Video Help

WolfVideo   6:00 ok

00:46   0%

AdvancedSense™
Environmental Test Meter

aux

Realtime (multi-probe)

File	Log	Probe	View

TVOC	**1364**	µg/m3
Carbon Dioxide	**766**	ppm
Carbon Monoxide	**3.2**	ppm
Hydrogen Sulfide	**0.34**	ppm
Temperature	**23.2**	°C
Relative Humidity	**28.7**	%RH
Formaldehyde	**18**	ppb
Particulate	**49.4**	µg/m3
Barometric	**760**	mmHg

Menu   Live: Bldg 6\Teacher Lounge

- Video attached
- Text template Attached
- Interactive Data template attached
- Probe Cal Info attached

WolfSense   X

Outdoor Air readings are generally very important to compare to readings collected indoors. Select the 'Locations' icon or Locations from the Log Menu, then click on the 'Outdoor' link when you have the main site open, and a Location file specific to the outdoor air will be automatically created.

Next Tip
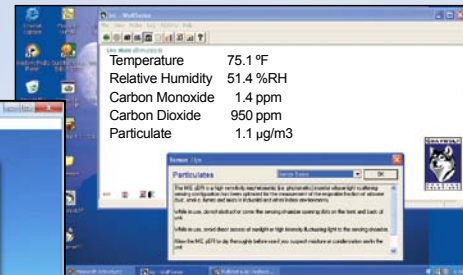
☐ Snooze Messages   Close
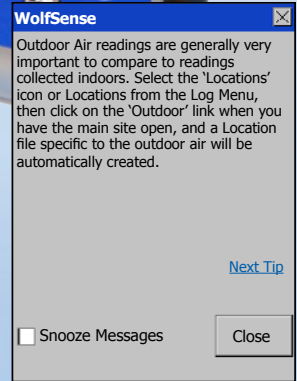
Operational Tips
(extensive on-board meter and sensor info)

Display measurements in realtime. Access "sensor tips", IAQ documents and guidelines on-screen. Store "snapshot" readings. "Trend" log over hours/days/weeks. Document each measurement location with text, graphic, even audio notes. Also attach photos, Word field forms, time-stamped event notes, calibration history and other info to data files.

- Optimize the balance between ventilation energy efficiency and occupant performance (and health)
- Easily establish baseline data & respond immediately to complaints
- Test conditions before and after building modifications
- Screen for additional testing requirements
- Track down (bloodhound) pollutant sources

Example Tablet/Laptop Screens

Realtime (IQ-410 w/ PM10 Particulate Concentration)

Temperature	75.1 ºF
Relative Humidity	51.4 %RH
Carbon Monoxide	1.4 ppm
Carbon Dioxide	950 ppm
Particulate	1.1 µg/m3

Realtime (IQ-610 w/Particulate & Formaldehyde)

WolfSense
File Log Probe View

TVOC	**317**	ppb
Carbon Dioxide	**793**	ppm
Carbon Monoxide	**2.1**	ppm
Ozone	**0.05**	ppm
Temperature	**23.8**	°C
Relative Humidity	**25.0**	%RH
PM 0.5	**2.71**	µg/m3
PM 1.0	**6.19**	µg/m3
PM 2.5	**7.93**	µg/m3
PM 5.0	**12.22**	µg/m3
PM 10.0	**24.67**	µg/m3
TPM	**37.62**	µg/m3
Formaldehyde	**18**	ppb

Feature Info

Tap on any reading on the screen to get a Pop-Up menu of options available for that parameter such as changing units and sensor tips.

Next Tip

☐ Snooze Messages   Close

Live: Storage Room

DirectSense probes can also plug directly into a Windows 8/7/XP PC via a USB port and GrayWolf's WolfSense LAP software.

VOCs
CO_2
CO
%RH
Temperature
+1 more
Toxic Gas

Highly accurate, extremely fast response sensors. Perfect for *both* quick walk-through surveys *and* for long-term IAQ trending.

Track VOCs over time, rapidly bloodhound VOC sources or determine optimum locations and times to take air samples for VOC speciation via lab analysis. A *very* powerful screening tool.
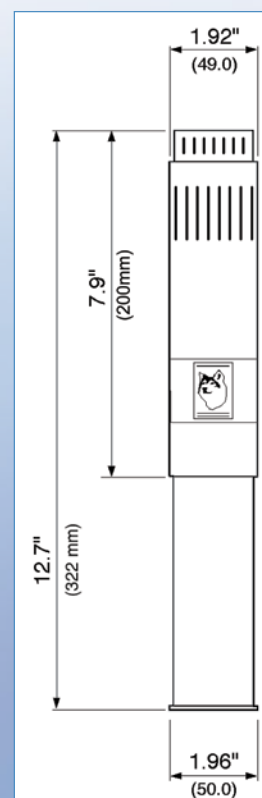
IQ-610

One specific gas sensor slot (*additional* to CO) is available on the IQ-610.
Choose from:

Ozone
Nitrogen Dioxide
Nitric Oxide
Ammonia
Chlorine
Hydrogen Sulfide
Sulfur Dioxide
Oxygen
HCN, HCl, H_2, EtO, SiH_4, AsH_3, PH_3, ClO_2, $COCl_2$, HF or F_2

1.92" (49.0)
7.9" (200mm)
12.7" (322 mm)
1.96" (50.0)

IQ-410/ IQ-604

CO_2, CO, %RH & °C/°F The IQ-604 also includes sockets for 1 PID (VOCs) and 1 EC (specific gas) sensors for future upgrade.

TG-502

VOCs (PID) plus 3 specific gases, %RH & °C/°F. Choose low sensitivity (20ppm), mid (2000ppm) or high range (10,000ppm) PID.

AS-202A

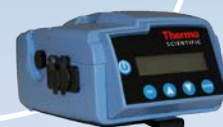Air Velocity probe (telescoping with 90° articulating tip and laser etched cm & inch scale)

FM-801

Formaldehyde (ppb HCHO)

Interface these meters to GrayWolf platforms; and/or use as stand-alones

PC-3016A

6-Channel Particulate Meter

PM-205

Particulate Concentration

A 2nd probe, or even a 3rd probe (+airspeed +DP +BP for AdvancedSense or WolfPack), may be connected simultaneously with the option to also add a particulate and/or formaldehyde meter. All parameters display and log to the same data file.

GRAYWOLF SENSING SOLUTIONS

GrayWolf manufactured instruments, and tablet PCs, ideal for your application, are all available from GrayWolf. Or use your own.

More probes, sensors, display/logging platforms and software features are on the way. Expand your GrayWolf system as your measurement needs grow and as legislative requirements change.

✓ **M**EASURE **S**MART   ✓ **R**EPORT **E**FFICIENTLY

ADVANCEDSENSE®
DIRECTSENSE® IAQ

Indoor Air Quality Meters

SPECIFICATIONS: IQ-410, IQ-604, IQ-610

Carbon Monoxide: (electrochemical)	Range: 0 to 500ppm
	Accuracy: ±2ppm <50ppm, ±3%rdg >50ppm
Carbon Dioxide: (NDIR)	Range: 0 to 10,000ppm
	Accuracy: ±3%rdg ±50ppm
VOCs: (PID) IQ-610 only	Range: 5 to 20,000ppb

(user selectable units: ppb, ppm, µg/m3, mg/m3)
Resolution 1ppb, L.O.D. <5ppb

10.6 eV PIDs do not respond to VOCs with ionization potentials >10.6, such as ethane, methane or formaldehyde. However, they do respond to the vast majority of VOCs. Standard calibration is to Isobutylene. Users may calibrate to alternative VOCs.

Relative Humidity: (capacitive)	Range: 0 to 100 %RH
	Accuracy: ±2%RH <80%RH (±3%RH>80%RH)
Temperature: (Pt100)	Range: -10° to 160°F (-25° to +70°C)
	Accuracy: ±0.3°C
Response Time:	All sensors exhibit 90% response <1 minute

Probe Dimensions:	2in. (5cm) dia. x 12.5in. (30cm) lgth.
Weight (probe):	w/batteries 1lb. 10oz. (0.7kg)
Power (IQ-410, IQ-604):	2 x D cells; probe battery life 120+ hrs.
(IQ-610):	typical probe battery life 60+ hrs.
	(computer battery life varies by make and model)

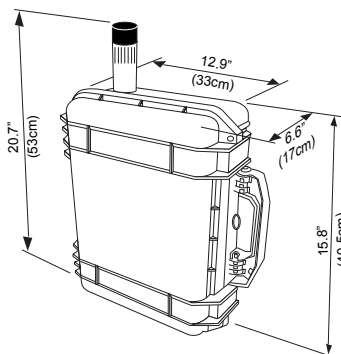| Operating Range	
PID (VOC) sensors:	0 to 90%RH, -15 to 60°C
Probe & other sensors:	0 to 98%RH (non-condensing), -15 to 60°C
PC Software Requirements:	Windows 8/7/XP

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT FURTHER NOTICE

- **AdvancedSense IAQ** kits include an AdvancedSense meter. **DirectSense IAQ TAB** kits include a WIN8 tablet PC. These complete kits also come with probe, WolfSense PC desktop data transfer software, hardshell security case, probe & meter/ mobile PC pouches and more. Contact GrayWolf for details.

- Wall mounting brackets, direct connect cameras, belt carried air pumps, extension cables, USB cable/keys for field data download and other accessories are also available from GrayWolf. View them on our website at: **accessories.graywolfsensing.com**.

12.9" (33cm), 20.7" (53cm), 6.6" (17cm), 15.8" (40.5cm)

▲ **PCC-10** Security Case (shown above w/optional **ACC-BRK1** brackets for external HCHO or other meters)

ACC-TPDL-KIT includes tripod and mounts for various meters/ probes, plus nylon carrying case ▼

▶ **PCC-AS01** AdvancedSense pouch and **PCC-05IQ** probe pouch (shown w/ **FM-801** formaldehyde meter)

▶ **PCC-15** Dual probe Security Case (shown with optional **FM-801** formaldehyde meter and **PM-205** particulate concentration meter)
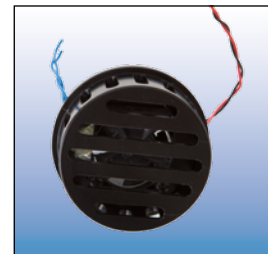

▶ **CA-HD2** Gas Calibration Hood, may also be used for fan/pump air sampling

▲ **ACC-DSPFAN-1** Optional fan built into DirectSense probes. Allows CA-HD2 sample draw from ducts, cabinets, etc. and more

◀ **CA-GS12** (top left) CO2 and CO Gas Cal Kit
CA-RH1 (bottom left) %RH Calibration kit
CA-GS25 (right) TVOC Calibration Kit