Advanced Environmental Instrumentation
Harnessing the Power of Mobile Computing

✓ Surveyed   ✓ Documented   ✓ Reported

Example Screens

Realtime

File	Log	Probe	View	
TVOC			56	ppb
Carbon Dioxide			945	ppm
Carbon Monoxide			0.3	ppm
Ozone			0.01	ppm
Temperature			18.9	°C
Relative Humidity			37.3	%RH
PM 2.5			5.1	µg/m3
PM 10			38.6	µg/m3

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

TVOC	367 µg/m3
CO2	747 ppm
CO	0.0ppm
O3	0.00 ppm
Temp	77.2 °F
RH	24.3 %RH

Click the SNAP icon (or the LOG button on DSII probes) to record measurements, time, date and detailed location name

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

Trend Log Graph

File	Log	Probe	View

Logging: Carbon Dioxide ppm

1100 1000 900 800 700 600
9:00   10:00   11:00   12:00

Options   Full Screen   Select
Carbon Dioxide ppm

Menu   Live   Log 'memorial hall' 30 secs

AdvancedSense Pro Environmental Test Meter

File	Log	Probe	View	
TVOC			283	ppb
Carbon Dioxide			546	ppm
Carbon Monoxide			0.3	ppm
Ozone			0.04	ppm
Nitrogen Dioxide			0.00	ppm
Temperature			71.2	°F
Relative Humidity			19.4	%RH
ΔP			0.3	Pa

Menu   Live: Mfg floor

Audio Note

WolfSense 2013

Audio Note: Hospital\Nurses Stn

ERASE   ► Play   ■ Stop   ● Rec

OK

ADVANCEDSENSE® IAQ
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, CO2, CO, O3, NO2, %RH, Dewpoint, Temperature and more... accurate and fast. Industry leading CO2 accuracy at +/- 35ppm over the IAQ range
- Options for Particulate, other Toxic Gases (e.g. HCHO, Cl2, H2S), Differential Pressure, Airspeed and more... all simultaneously

- 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, on-board help videos, IAQ documents and guidelines
- Intuitive and extremely Easy-To-Use

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Choose Your Platform:

AdvancedSense Handheld Embedded PC Meter

WolfPack® Modular Area Monitor

GrayWolf Supplied Win10 Tablets
Standard or rugged tablets with great standard features (built-in camera, Bluetooth, WiFi). Or use your own.
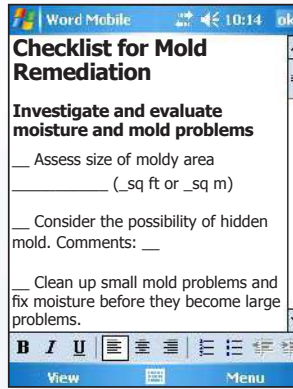
MN10-RT2 Rugged tablet includes durable hand-strap

Remote Data Access to, and email/text alerts from, any WiFi enabled platforms via optional **GrayWolfLive®**

Example AdvancedSense/WolfPack Screens

Field Form

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.

On-Board Docs

OSHA Occupational Safety and Health Administration
www.osha.gov
Indoor Air Quality in Commercial and Institutional Buildings

Video Help

AdvancedSense Pro Environmental Test Meter

Realtime (multi-probe)

File	Log	Probe	View

TVOC	1364	µg/m3
Carbon Dioxide	766	ppm
Carbon Monoxide	0.2	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

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

WolfSense

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
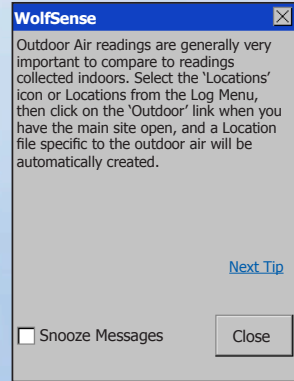
Operational Tips
(extensive on-board meter and sensor info)

Display measurements in realtime. Access "sensor tips", IAQ documents and guidelines on-screen. Store "snapshot" readings. "Trend" log over hours/days/weeks/months. 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, health and wellness.
- 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 °F
Relative Humidity	51.4 %RH
Carbon Monoxide	1.4 ppm
Carbon Dioxide	950 ppm
Particulate	1.1 µg/m3

Realtime (DSII plus 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

Live: Storage Room

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

DirectSense probes can also connect directly to Windows 8/Vista/10 PCs using GrayWolf's WolfSense LAP software app.

TVOCs
Carbon Dioxide
Carbon Monoxide
Relative Humidity
Temperature
+ up to 3
more gases

Highly accurate, extremely fast response sensors. Perfect for walk-through surveys, rapid response to complaints, quick outdoor air comparisons, for long-term IAQ trending and for continuous monitoring (on-board and/or via WiFi).

Track VOCs over time, rapidly blood-hound VOC sources or determine optimum locations and times to take air samples for VOC speciation via lab analysis.

DSII-8

Choose the sensors that you need for IAQ applications, up to 8 total (5 for the DSII-5). Typically TVOCs, CO_2, CO, %RH and C/F. Add O_3, NO_2 and/or other parameters, choosing from:

Ozone
Nitrogen Dioxide
Nitric Oxide
Ammonia
Chlorine
Hydrogen Sulfide
Sulfur Dioxide
Oxygen
And even toxic gases such as:
CH_2O, HCN, HCl, H_2, EtO, SiH_4, AsH_3, ClO_2, HF, F_2 and more...

FM-801
Formaldehyde (ppb HCHO)

IQ-410
CO_2, CO, %RH & °C/°F. The bare basics for IAQ testing.

IQ-610
TVOCs, CO_2, CO, %RH & °C/°F. The IQ-610 also includes a socket for 1 additional EC (specific gas) sensor.

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

PC-3500
Particulate Meter (PM1, PM2.5, PM10, TSP and 2 others Simultaneously)

PM-601
Particulate Concentration (PM1, PM2.5, PM10 or TSP)

AS-202A
Air Velocity probe (telescoping with 90° articulating tip and laser etched cm & inch scales)

Expand your GrayWolf system as your measurement needs grow and as industry and legislative requirements change.

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

GRAYWOLF
SENSING SOLUTIONS

ADVANCEDSENSE®
DIRECTSENSE® IAQ

☑ Measure Smart   ☑ Report Efficiently

Indoor Air Quality Meters

SPECIFICATIONS: IQ-410, IQ-610, DSII-3/5/7*, DSII-8*

*DSII SENSORS CAN BE MIXED AND MATCHED TO BEST SUIT YOUR APPLICATION; TRH + up to 6 SENSORS (8 total) for DSII-8, TRH + 5 (excepting CO2) for DSII-7, TRH +3 for DSII-5, TRH + 1 for DSII-3

Carbon Monoxide: (electrochemical)	Range: 0 to 500ppm
	Accuracy: ±2ppm <50ppm, ±3%rdg >50ppm

Carbon Dioxide: (NDIR)	Range: 0 to 10,000ppm

DSII Accuracy: ± 35ppm over the IAQ range (350ppm-2000ppm)
± 35ppm ±3%rdg >2000ppm
DSI Accuracy: ± 50ppm ±3%rdg over the full range

VOCs: (PID) not for IQ-410	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

DSI Probe Dimensions**:   2in. (5cm) dia. x 12.5in. (30cm) lgth.
Weight (probe):   w/batteries 1lb. 10oz. (0.7kg)
Power (IQ-410) :   2 x D cells; probe battery life 100+ hrs.
    (IQ-610) :   typical probe battery life 50+ hrs.

**Refer to DirectSense II brochure for DSII dimensions and battery life.

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 7/8/10

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT FURTHER NOTICE

- **AdvancedSense IAQ** kits include an AdvancedSense meter. **DirectSense IAQ TAB** kits include a WIN10 tablet PC. These complete kits also come with probe, WolfSense PC desktop data transfer software, hardshell security case, and more. Contact GrayWolf for details.

- Alternative carry cases, pouches, belt clips, extension cables and other accessories are also available from GrayWolf. View them on our website at: **GrayWolfSensing.com/Accessories**.

6.7in 171.0mm   13.5in 343.8mm
26.9in 682.7mm   18.4in 467.3mm
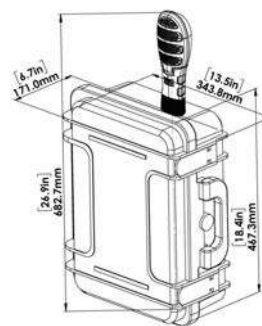
PCC-20 DSII Security Case ▲ (shown above w/optional **ACC-BRK1** brackets for external HCHO or other meters)

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

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

▶ **PCC-15** Dual DSI Probe Security Case (shown with optional **FM-801** formaldehyde meter and **PC-3016** particulate meter)

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

▲ **CA-HD4-A1** Gas Calibration Cap for DSII Probes

◀ **CA-GS25L** TVOC Calibration Kit for DSI (specify CA-GS25L-DSII for DSII). NIST traceable reference gases are also available for CO2, CO and other gases.