

Advanced Environmental Instrumentation

With the right sensors for the application



✓ Surveyed

✓ Documented

✓ Reported

Choice of Platforms

User Swappable Smart Sensors



Desktop Charging Stand/
Wall-Mount Included

DIRECTSENSE® II

Advanced Environmental Probes



Parameter	Value
TVOC	84 ppb
Carbon Dioxide	469 ppm
Carbon Monoxide	1.1 ppm
Ozone	0.04 ppm
Temperature	22.3 °C
Relative Humidity	39.5 %RH
Ammonia	0.8 ppm
Nitrogen Dioxide	0.05 ppm

For 20+ years, GrayWolf has been transforming the way that environmental measurements are taken. Acting on the feedback from our many worldwide IAQ, HVAC, IH and Green Building customers, in 2019 we introduced a range of patented* smart probes. We've been adding even more highly advanced DSII probe features ever since.

- Up to eight (8) sensors per probe; %RH, temperature plus up to six gas sensors.
- Sensors are truly plug & play, easily swapped by the user. Calibration and other info is stored on each sensor.
- 25+ available sensors; TVOCs, CO₂, CO, O₃, NO₂, NH₃, O₂, H₂S, NO, SO₂, Cl₂, HCN, HF, HCl, H₂, F₂, ClO₂, EtO and other parameters.
- Connect to GrayWolf AdvancedSense meters or to Windows tablets/laptops; via cable or Bluetooth wireless. Your choice (both included as standard).



- Connect one or multiple probes for up to 32 parameters simultaneously.
- Wi-Fi built into the probe enables connection to remote smartphones, etc., via the GrayWolfLive® Cloud app. Or connect locally via BLE direct to iOS, Android devices.
- Internal fan increases sensor response and eliminates sensor generated heat.
- Rechargeable (or powered via cable connected meter/tablet). Charging cradle also operates as a stand or wall-mount fixture.



GRAYWOLF®
SENSING SOLUTIONS

*US Patent 10,348,834 SELF CONFIGURING SMART PROBE



DIRECTSENSE® II

Advanced Environmental Probes

SPECIFICATIONS:

General:

Dimensions:	Probe: 83mm (3.3in.) w. x 295mm (11.6in.) h. x 55mm (2.2in) d. Cradle: 93mm (3.7in.) w. x 80mm (3.2in.) h. x 93mm (3.7in) d.
Construction:	Probe: Rugged polycarbonate plastic with rubberized handle grip. Cradle: Rugged polycarbonate plastic.
Weight:	Probe: not including sensors which are ~10 gr each; 460gr (1lb) Cradle: not including AC adapter; 180 gr (6.4 oz.)
Wireless:	Bluetooth Classic, Bluetooth Low Energy (BLE) & IEEE 802.11 b/g/n Wi-Fi WolfRadio™ module standard. BLE connects to iOS & Android; Classic connects to AdvSPro, WIN tablets; Wi-Fi relays probe readings to the Cloud via GrayWolfLive.
Mounting:	1/4" - 20 tpi brass thread for belt clip, etc. (& for included mini tripod/stand). Also M3 brass thread for security thumb-screw.
Operating Range:	-10°C to 50°C (15°F to 122°F), 0 to 100 %RH non-condensing (certain specific sensors have a more limited range).

Connectors:

Probe: 1 x 10 pin Lemo socket for cable connection to AdvancedSense meter or tablet/laptop.
Cradle: 1 x 10 pin Lemo socket and 1 x 2.5mm 12VDC power socket.

Power:

Battery:	6600 mAh Lithium Ion rechargeable
Battery Life:	12+ hours typical with PID & NDIR sensors installed, no wireless. 36+ hours w/o PID, NDIR. BT Classic or WiFi ON reduces battery life ~20%. Probes may be continuously powered from meter, tablet, PC.
Recharge time:	3 hours typical (in cradle). Red/green front cradle LED displays charging/fully charged status.

Power supply: 100/240VAC, 50-60Hz external charger. Specify local plug.

All specifications are subject to change without further notice.

Model	Basic Description
DSII-3	DirectSense II probe with smart °C/°F, %RH sensors and 1 available socket for smart PID, NDIR or EC sensor.
DSII-5	DirectSense II probe with smart °C/°F, %RH sensors and 3 available sockets for smart PID, NDIR or EC sensors.
DSII-7	DSII probe with °C/°F, %RH and 5 sockets for smart PID or EC sensors.
DSII-8	DirectSense II probe with smart °C/°F, %RH sensors and 6 available sockets for smart PID, NDIR or EC sensors.
DSII-3/5/7/8-KIT	The kits include the relevant probe, charging cradle, AC adapter, mini-tripod, sensor insertion tool, hex screwdriver, and (unless specified for exclusion) a WiFi/Bluetooth radio card.

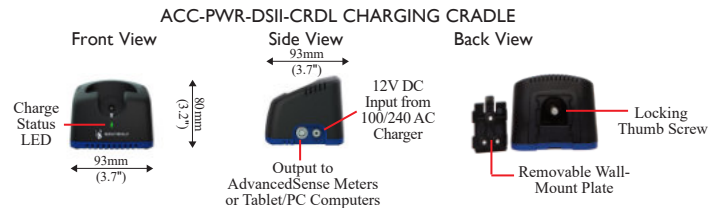
Accessories

ACC-BELTCL-2	Rigid belt clip with custom vertical fitting for DSII probes.
ACC-BELTCL-3	Rotating belt clip with easy clip/detach function.
ACC-DSII-FLANGE	Flange and bracket to secure DSII probes into ducts, test chambers, etc.
AD-DSIIL8-1M	1m cable for DSII probes to connect to AdvancedSense meters.
AD-DSIUSB-1M	1m cable for DSII probes to connect to Tablets/Laptops/PCs.
CA-HD4-A1	A1 series smart sensor (DirectSense II) calibration cap.
GWLive-ST	GrayWolfLive cloud application. Allows remote, interactive WiFi access (via PCs, iPads, Android devices, smartphones, etc.). View data as tables, graphs, gauges, live readings and more (from one or virtually an unlimited number of DSII probes).
PCC-20A/T	Hard-shell Security case with foam cutouts for AdvancedSense or tablet and sensor exposure for 1x DSII probe.
PCC-25A/T	Hard-shell Security case with foam cutouts for AdvancedSense or tablet and sensor exposure for 2x DSII probes.
PCC-35P/36P	Hard-shell Security case with foam cutouts for AdvancedSense or tablet and sensor exposure for 1x DSII probe plus a particulate meter.

Measure Smart



Report Efficiently



25+ Available Plug-and-Play Sensors:

TVOCs (5 PID ranges), CO₂ (NDIR), Electrochemicals; O₃, CO, NO₂, NH₃, Cl₂, SO₂, O₂, NO, H₂S, HCl, HCN, H₂, plus exotics; AsH₃, ClO₂, B₂H₆, EtO, F₂, HF, COCl₂, PH₃, SiH₄. And more coming. Some are available as B series (1 max. per probe). Sensor specifications are detailed on a separate data sheet. A smart °C/°F, %RH combo sensor (Pt100 and capacitive) is included as standard.



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Advanced Environmental Instrumentation

Harnessing the Power of Mobile Computing



☑ Surveyed

☑ Documented

☑ Reported



Realtime

File	Log	Probe	View
Hydrogen Chloride			0.2 ppm
Chlorine			0.64 ppm
Oxygen			20.8 %
Sulfur Dioxide			0.1 ppm
Hydrogen			0 ppm
Temperature			24.4 °C

Attached Audio Note

Attached Photo(s)

Attached Text Note

Probe Calibration Info

Live: Fabrication Floor

Menu Snap

Example Screens

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

Log at intervals of your choice. Display real-time trend graphs on handheld and/or remote devices.

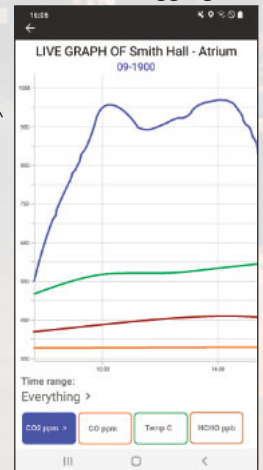
Snap-Shot Log

File	Log	Probe	View
Ozone			0.54 mg/m3
Ammonia			1.3 mg/m3
Sulfur Dioxide			1.3 mg/m3
Nitric Oxide			2.0 mg/m3
Hydrogen Sulfide			0.15 mg/m3
Temperature			22.9 °C
Barometric			754.2 mmHg

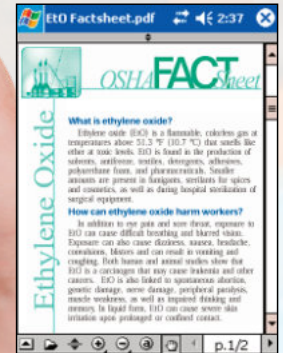
Menu Snap

Snap Shot log to 'Lab 4'

Trend Logging



On-Board Docs



DIRECTSENSE® TOX

Toxic Gas Test Meters



GrayWolf is transforming how to Measure, Data-log and Document worker exposure levels and indoor air quality parameters.

The DirectSense TOX probes, connecting to your choice of platforms, are powerful environmental data collection tools; intuitive and Easy-To-Use.

- Choose from SO₂, NO₂, NO, CO, H₂S, HCN, EtO, Cl₂, O₂, O₃, NH₃, HCl, H₂, SiH₄, AsH₃, PH₃, PID (TVOCs) ...and more
- Remotely access readings, log to the cloud via secure Microsoft Azure servers with optional GrayWolfLive™
- Up to 6 gas sensors (plus TRH) per probe
- Password protect access or other high-security options available
- Connect multiple probes simultaneously
- Stores measured data along with calibration history, associated photos, videos, text notes, audio notes ...and more
- “Snap-Shot” instantaneous data capture and long-term data trending
- OEM option for alternative data connection
- On-board measurement tips, industry guidelines and help files



GRAYWOLF® SENSING SOLUTIONS

Choose Your Platform:

AdvancedSense®
Purpose-built GrayWolf Meters



GrayWolf Supplied Windows Tablets



Apple iOS and Android Devices
(use your own or GrayWolf supplied)



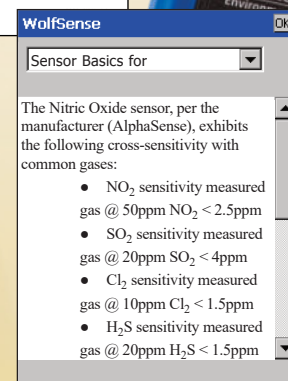
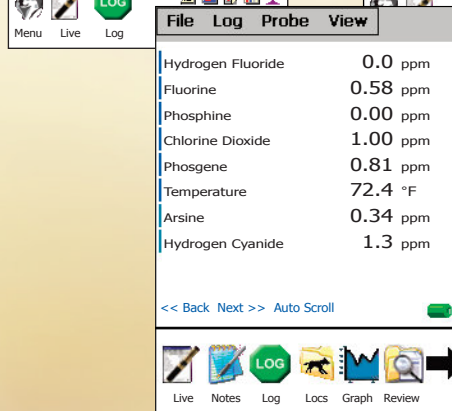
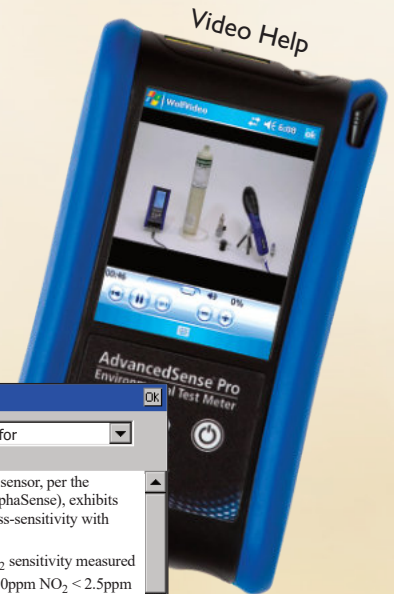
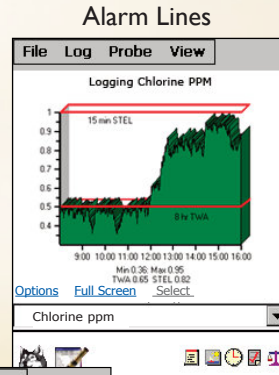
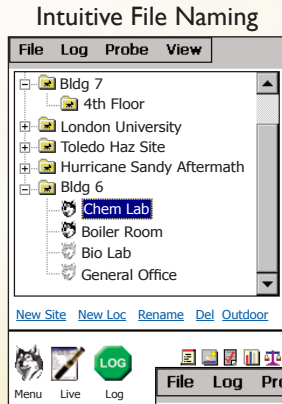
GrayWolfLive™ Cloud App



Or use your device as the instrument platform **Remote Data Access** to, and email/text alerts from, any WiFi enabled platforms via optional **GrayWolfLive**

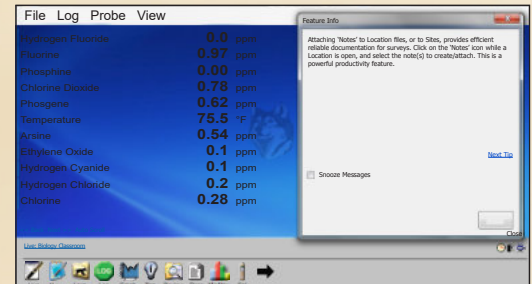
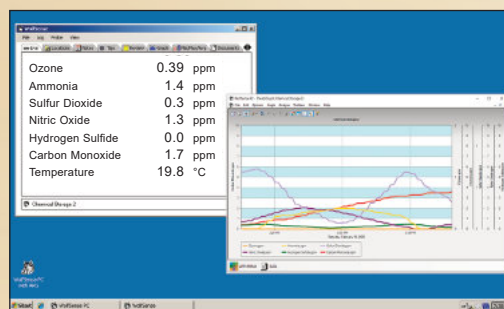
Advanced Toxic Gas Measurement

Example Screens



Documenting and data-logging gas parameters has never been easier. Provide a descriptive name for files using the virtual keyboard. Record your readings as snap-shot data captures, or as trend logs over time. On-board educational info. Efficiently attach notes, in-situ (or after-the-fact) direct to data files:

- Photos
- Videos
- Infrared Images
- Audio
- Text
- Events (time-tagged text)



GrayWolf manufactured meters, WIN tablets, and Android devices that are ideal for the application are available from GrayWolf; or connect probes to your own device.

GrayWolf's TOX kits come with WolfSense® PC software for data transfer, analysis, graph/report generation and/or simple export to Excel.

✓ Display

✓ Notate

✓ Data Log

✓ Organize

✓ Report



Toxic exposure and/or IAQ applications with the appropriate sensors.

DSII-8

- Easy to calibrate all parameters
- Calibration history stored on smart sensor
- Select up to 6 gas sensors in one probe (plus %RH and °F/°C)
- Plus %RH Temperature



Sensors are true plug-and-play, and may be swapped on-site.

- Sulfur Dioxide (SO₂)
- Nitrogen Dioxide (NO₂)
- Nitric Oxide (NO)
- Carbon Monoxide (CO)
- Hydrogen Sulfide (H₂S)
- Hydrogen Cyanide (HCN)
- Hydrogen Chloride (HCl)
- Hydrogen Fluoride (HF)
- Ethylene Oxide (C₂H₄O)
- Chlorine Dioxide (ClO₂)
- Carbon Dioxide (CO₂)
- Diborane (B₂H₆)
- Ozone (O₃)
- Oxygen (O₂)
- Ammonia (NH₃)
- Chlorine (Cl₂)
- Hydrogen (H₂)
- Fluorine (F₂)
- Formaldehyde (HCHO)
- Phosphine (PH₃)
- Arsine (AsH₃)
- Silane (SiH₄)
- Phosgene (COCl₂)
- PID (TVOCs)

Display units as:

- ppb
- µg/m³
- ppm
- mg/m³

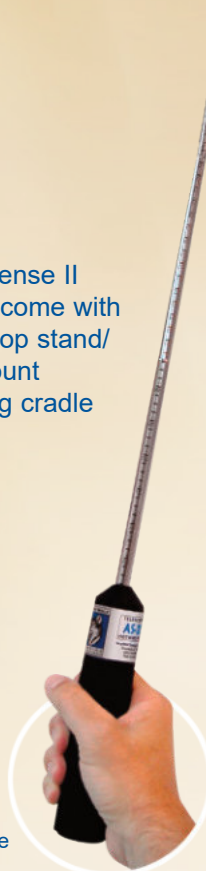
(mass concentration readings are auto-compensated w/optional barometric pressure sensor)

VOCs (PID) plus 5 specific gases, %RH, and temperature



DirectSense II probes come with bench-top stand/wall-mount charging cradle

AS-201/202A
Air Velocity Probe (connects via cable to AdvancedSense or WIN tablets)



ZEPHYR-LDP
Differential Pressure Module (option for barometric)

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



PC-3016A
6-Channel Particle Meter (optional WolfRadio™ XM to transmit data directly to the cloud, iOS or Android)



PM-601
Particulate Concentration



DIRECTSENSE[®] TOX

Toxic Gas Test Meters

SPECIFICATIONS: DirectSense II

GAS	Range/Resolution (ppm)	Limit of Detection (ppm)
Ammonia (NH ₃) Standard range sensor	0.0 to 100.0	<1.0
Ammonia (NH ₃) High range sensor	0 to 1000	<5
Carbon Monoxide (CO) Standard range sensor	0.0 to 500	0.1
Carbon Monoxide (CO) High range sensor	0.0 to 5000	1
Chlorine (Cl ₂)	0.00 to 20.00	<0.02
Hydrogen (H ₂)	0 to 1000	<2
Hydrogen Chloride (HCl)	0.0 to 20.0	<0.2
Hydrogen Cyanide (HCN)	0.0 to 100.0	<0.05
Hydrogen Sulfide (H ₂ S)	0.00 to 50.00	<0.03
Formaldehyde (HCHO) <small>(Inquire about higher range standard range:)</small>	0.00 to 1.00	<0.02
Nitric Oxide (NO)	0.0 to 250.0	<0.2
Nitrogen Dioxide (NO ₂)	0.00 to 20.00	<0.02
Oxygen (O ₂)	0.0 to 25.0%	0.2%
Ozone (O ₃)	0.00 to 1.00	<0.02
Sulfur Dioxide (SO ₂)	0.0 to 50.0	<0.1
Arsine (AsH ₃)	0.00 to 1.00	<0.03
Chlorine Dioxide (ClO ₂)	0.00 to 1.00	<0.03
Diborane (B ₂ H ₆)	0.00 to 1.00	<0.03
Ethylene Oxide (C ₂ H ₄ O)	0.0 to 100.0	<0.1
Fluorine (F ₂)	0.00 to 1.00	<0.02
Hydrogen Fluoride (HF)	0.00 to 10.00	<2
Phosgene (COCl ₂)	0.00 to 1.00	<0.02
Phosphine (PH ₃)	0.0 to 10.0	<0.1
Silane (SiH ₄)	0.00 to 50.00	<0.1
Carbon Dioxide (NDIR CO ₂)	0 to 6,000 10,000 or 20,000	1
TVOC (PID)	4 ranges from low ppb to 10,000ppm, suitable for varied IAQ, mfg, and toxic gas exposure applications. Contact GrayWolf for specifications.	

Temperature: (PT100) Accuracy: ±0.3°C
Range: -10.0° to 160.0°F (-25.0° to +70.0°C)

Relative Humidity (capacitive) Accuracy +/- 2%RH
0 to 80%RH, +/-3%RH >80 to 100%RH

Operating Range: 0 to 98%RH (non-condensing), -20° to 50°C

Specific gas sensors may have a reduced operating range

Probe Dimensions (DSII): 3.3" (83mm) W x 2.2" (55mm) H x 11.6" (295mm) L

Weight (probe): without sensors 1lb (0.46kg)

Power (probe): 6600mAh Li-Ion rechargeable
Typical battery life 9 hours to 36+ hours dependent on sensor mix

Meter/Tablet/Smartphone battery life varies by make and model

Typical sensor life, sensor drift and response times vary by sensor

URGE HKE CVIQ UCTG UMDLGE VVQ EJ CPI GY IJ QW HMTVJ GT P QVIE G

• Automated reporting software, and many other accessories are available from GrayWolf. View them on our website at graywolvesensing.com/accessories/

✓ Ogcuwtg Uo ctv

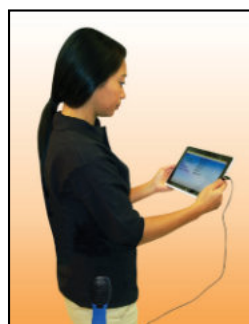
✓ Tgr qtv Ghkkgpvrñ



◀ **PCC-25**
Dual-Probe
Security Case



PCC22-API ▶
Hardshell Case



CA-HD4-AI ▶
Calibration Cap



▲ **ACC-BELTCL-2** or **ACC-BELTCL-3** beltclips for convenient walk-thru measurements or personal protection monitoring.



▲ **CA-GSXX**
Gas Calibration Kits. Specific calibration gases are available in various portable cylinder sizes



▲ **PCC-07T**
Nylon carrying case for ACC-TPDI tripod, mounting hardware, and added accessories



▶ **ACC-TPD-1**
Tripod (with optional mounting hardware)

DirectSense TOX kits are available that include the platforms of your choice. These complete kits also come with WolfSense PC desktop data transfer software, hardshell case, required accessories and much more. Contact GrayWolf for details.



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