

# Advanced Environmental Instrumentation

Harnessing Leading-Edge Sensor and Mobile Computing Technology



✓ Surveyed

✓ Documented

✓ Reported



Live (AdvancedSense)

**WolfSense**

File Log Probe View

Air Speed	208 ft/m
Temperature	68 °F
Volume Flow	1021 cfm

Notes Log Locs Graph Tips

Example Screens

Min/Max/Avg

**WolfSense**

File Log Probe View

Parameter	Average	Min
Air Speed m/s	0.38	0.22
Temperature °C	20	20
Volume Flow m3/h	327.5	188
ΔP Pa	-3.5	-4.1

Manual Mode: Samples taken 10

Clear Add Manual Log

Menu Live Live: Southwest Duct

Live (Tablet)

**WolfSense**

File Log Probe View

Air Speed	1.42 m/s
Temperature	22 °C
Volume Flow	1003.7 m3/h

Volume Flow

ADD1 ID=2

Area: 0 Diameter: 0 Unit

Calculate as: 15 secs

Sample Time: 15 secs

Enter values, then press CALCULATE while moving the Air Velocity sensor slowly over the sample area.

Calculate

Audio Note

**Audio Note**

Audio Note: Southwest Duct

ERASE Play Stop Record

Available Memory: WolfSense\Research Bldg= 25.34GB

OK

▲ Attach Audio, Text and other notes in the field



The AdvancedSense AIR and DirectSense AIR integrate precision thermal “hotwire” anemometer sensor technology and GrayWolf’s comprehensive software with the power and performance of mobile PC computing. Intuitive and Easy-To-Use. Airspeed measurement has evolved to an advanced new level.

- Measures Air Velocity, Volume Flow & °C/°F (with options for more parameters)
- Patented telescoping hotwire probe design eliminates internal cabling, avoids cable kinking and chafing
- Large, tactile color display of measurements (alternatively display a graph)
- Versatile Averaging function
- **Best-of-Class Accuracy**
- Optional fumehood face velocity and duct traverse calculation software
- Stores measurements along with date, time, text, audio, drawings and more
- Optional 90 degree articulating probe
- Graduated markings (cm & inches)
- Optional auto-zeroing Differential Pressure & pitot tubes (AdvancedSense only)
- Extremely Easy-To-Use

# ADVANCEDSENSE<sup>®</sup> AIR DIRECTSENSE<sup>®</sup>

Air Velocity Meters



GRAYWOLF<sup>®</sup>  
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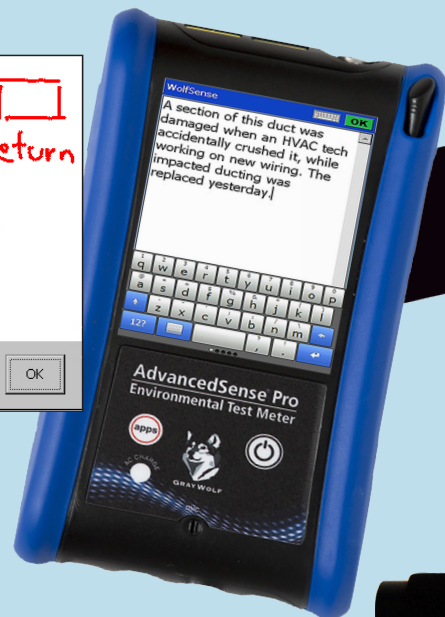
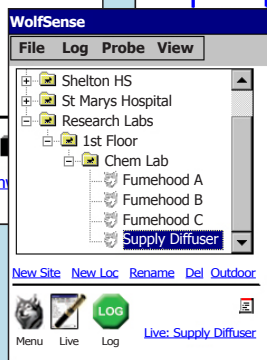
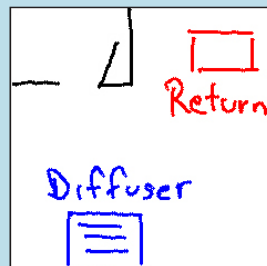
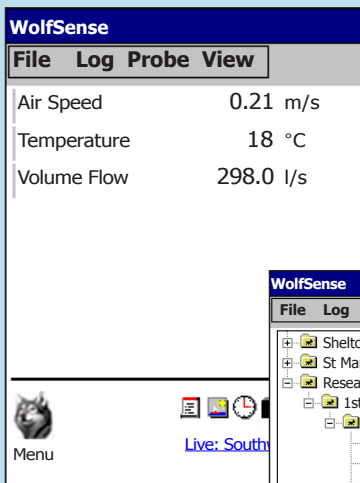
Website:  
www.GrayWolfSensing.com

# Superior Technology for Enhanced Airspeed Testing

Connect probes to your choice of Platforms

Example Screens (AdvancedSense)

**AdvancedSense BE Rugged, Multifunction Data-logger**



Air Velocity and Volume Flow readings are displayed on the color tactile screen. An average can be simultaneously displayed; calculated from a choice of manually input readings or measurements auto-updated at one-second intervals.

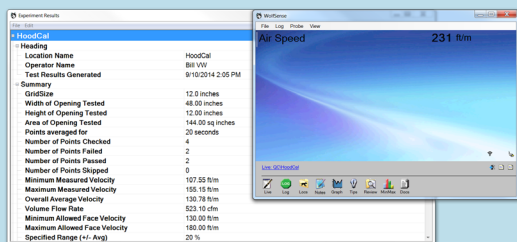
“Snapshot” measurements can be logged at the push of a button or a tap of the screen. Enter a description of the measurement location plus text notes, Word field forms, graphic files, audio memos, statistics, calibration data and more. Save time, improve efficiency and enhance documentation.

## DuctCal®



GrayWolf's DuctCal software add-on module for accurate Volume Flow measurement calculates and displays measurement points, walking the user through a choice of Log-Tchebycheff or Equal Area duct traverses.

Example Windows PC Screen (fumehood report and real time air velocity window)

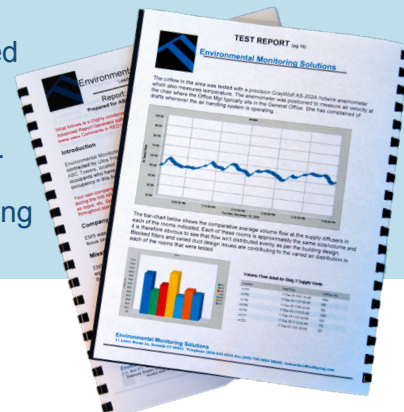


Low cost **WIN 10 Tablets** are available from GrayWolf, with application appropriate accessories



Or connect probes to your own Windows PC

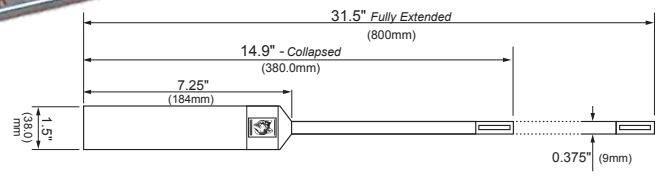
The DirectSense AIR is supplied with WolfSense® PC software for desktop data transfer, analysis and graph generation. Optional WolfSense ARG software automates the reporting process.



# AIR VELOCITY VOLUME FLOW



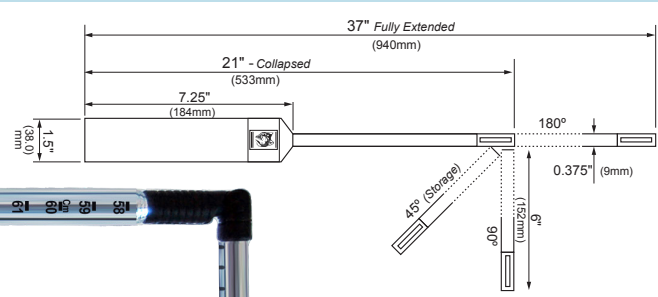
## AS-201



The AS-201 and AS-202A hotwire anemometer probes measure air velocity over a wide range, yet have exceptional low velocity accuracy and repeatability. Both probes telescope, while the AS-202A also has an articulating tip (excellent for reaching ceiling diffusers/filters and for fumehood face velocity balancing). The probes are ideally suited for applications ranging from IAQ (thermal comfort), to cleanrooms, to general HVAC testing.

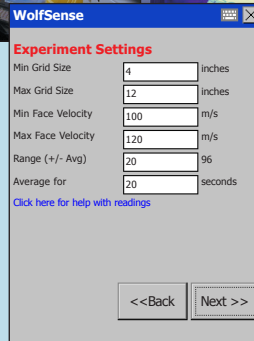
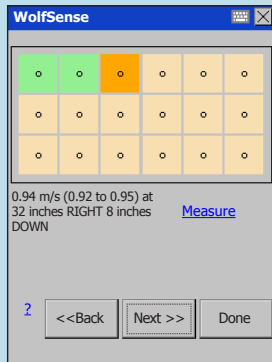
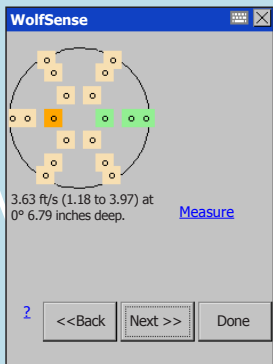


## AS-202A



# HoodCal®

Fumehood face velocity software guides the user step-by-step from air velocity sensor positioning on through to a detailed report that prints each measurement point and PASS/FAILs the test based on user selected criteria.



## PIT-504

Unique Pitot Tube with screw-in extensions 13" (33cm) up to 55" (140cm) standard, or up to 81" (205cm) with optional extensions



## DirectSense II

%RH, Carbon Dioxide, TVOCs, CO, °F/°C and more (O<sub>3</sub>, NH<sub>3</sub>, NO<sub>2</sub>, NO, H<sub>2</sub>S or others). Up to 8 sensors in one probe (for IAQ and toxic gas applications).



## PC-3016A

6-Channel Particulate Meter

## TC-3011/305S

K-type °F/°C probes for immersion/surface & other apps



Expand your measurement capabilities with additional parameters available from GrayWolf; and more are on their way!



# ADVANCEDSENSE<sup>®</sup> DIRECTSENSE<sup>®</sup> AIR

## Air Velocity Meter

### SPECIFICATIONS: AS-201/AS-202A

**Air Velocity (hotwire):** Range: 0–6,000 ft/min (0.00–30.00 m/s)

**Accuracy:**  $\pm 2\%$  of reading or  $\pm 3$  ft/min (0.015 m/s), whichever is greater

**Temperature:** Range: 15° to 160°F (-10° to +70°C)  
Accuracy:  $\pm 2^\circ\text{F}$  (1.1°C)

Stated temperature accuracy is in a minimum 50 ft/min (0.25 m/s) airflow.  
This probe has significantly reduced temperature accuracy in still air due to heat generated by the "hotwire".

**Probe Dimensions AS-201:** 31.5" (800mm) L extended  
14.9" (380mm) L collapsed  
0.375" (9mm) diam. tip, 0.4375" (11mm) telescope base  
1.5" (38mm) diameter handle, 7.25" (185mm) L

**Probe Dimensions AS-202A:** 37" (940mm) L extended  
21" (530mm) L collapsed  
6" (150mm) L tip articulates to 180°, 90°, or 45°  
0.375" (9mm) diam. tip, 0.4375" (11mm) telescope base  
1.5" (38mm) diameter handle, 7.25" (185mm) L

**Weight (probe):** w/batteries 13 oz (375 gm)

**Power (probe):** 2 x AA cells; typical battery life 50 hrs.

Probes may be powered by the AdvancedSense or Tablet, bypassing internal batteries.

**PC Software Requirements:** Windows 7/8/10  
30MB hard disc (min.) space

GRAYWOLF SOFTWARE IS 21 CFR PART11 COMPLIANT  
SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT FURTHER NOTICE

- The DirectSense AIR TAB is a complete kit that includes an **MN-10** 10" tablet computer, AS-201 airspeed probe, WolfSense LAP application software, WolfSense PC data transfer/reporting software, PCC-MN-10 tablet pouch, PCC-22AS hardshell case and more.

The AdvancedSense BE AIR Kit is the same as above, but includes an **AdvancedSense BE** meter, in place of the Tablet PC, and a **PCC-AS01** meter pouch in place of the **PCC-MN-10**.

- Alternative kits (with or without Mobile PC or AdvancedSense) can be ordered to meet your specific needs. Contact GrayWolf for details.
- All factory calibrations are performed with NIST traceable equipment. Certificates of traceability are available.



## GRAYWOLF<sup>®</sup> SENSING SOLUTIONS

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✓ Measure Smart

✓ Report Efficiently

**PCC-22AS** Hard-shell carrying case for AdvancedSense or Tablet PCs



**PIT-229MS** standard pitot tube (operates w/optional **DP-702LH  $\Delta P$**  sensor in AdvancedSense)



**AS-202A** on **ACC-TPD1** tripod with **ACC-TPD-AS** fitting



**ACC-TPD-AS**

**AS-201** on **ACC-XT-ROD** extension rod, **ACC-EX4-L8** 4m (14 ft) extension cable and **ACC-TPD-AS** fitting



**PCC-AS01** pouch for AdvancedSense (comes w/belt loop and neck strap)



Protective nylon pouch with hand strap for secure grasp of Tablet PCs. Also includes neck strap and built-in stand. Specify **PCC-MN-8** (8") or **PCC-MN-10** (10") tablet versions.

## GRAYWOLF<sup>®</sup> SENSING SOLUTIONS

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