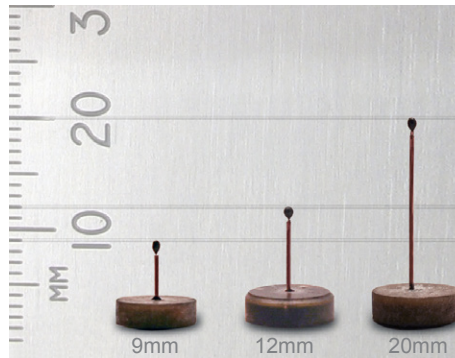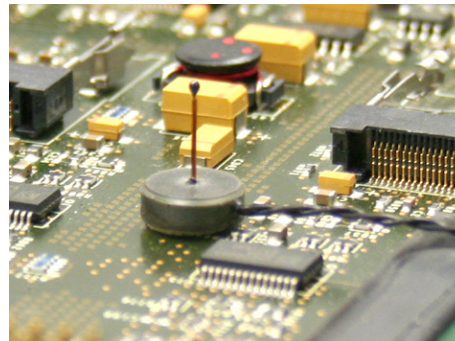# Candlestick Sensor

MEASURE TEMPERATURE AND AIR VELOCITY WITH MINIMAL FLOW DISTURBANCE

The Candlestick Sensor (CS) from Advanced Thermal Solutions, Inc. (ATS), is a robust, base-and-stem design sensor that measures both air temperature and velocity for thermal characterization of electronic systems.

The low profile of the CS sensor introduces the least disturbance in the test domain. It features a polyimide-sleeved stem, which facilitates installation and repositioning during the test set-up.

Sensors are calibrated for low (natural convection) and high velocity flows. They are capable of air temperature measurements ranging from -10° to +120°C ±1°C. Velocity measurements range from 0 to 50 m/s (10,000 LFM) ±2%, depending on the particular sensor model.

The use of a single sensor to measure both air temperature and velocity at the same location eliminates errors that can occur when airflow is non-isothermal. Multiple Candlestick Sensors can be easily installed to provide a detailed map of a system's thermal and airflow conditions. Their robust and flexible nature allow for continuous repositioning of the sensor in the test domain.

9mm   12mm   20mm

OVERALL HEIGHT
9,12 and 20 mm

BASE DIAMETER
9.5mm

SENSOR STEM DIAMETER
0.5mm

SENSOR BEAD DIAMETER
1.1mm

TEMPERATURE RANGE
-10° to +120°C ±1°C

VELOCITY RANGE
0 to 50 m/s (10,000 LFM) ±2%

FEATURES:

» **One Sensor**
One sensor measures from 0 to 50 m/s. No need to change sensor for different flow.

» **Highly Accurate**
Offers the most accurate reading in Hot Wire Anemometry in electronics cooling.

» **Rapid Measurement**
Ideal for conditions where rapid measurement or flow control is required.

» **Versatile**
Available in 9, 12, and 20mm heights. Candlestick sensors can be placed anywhere in the test domain.

» **Single-Sensor Technology**
Measures both air temperature and velocity by a single sensor at the same point.

» **High & Low Speed Calibration**
Sensors are pre-calibrated for both low (natural convection) and high velocity flows from 0 to 50 m/s (10,000 LFM).

» **Easy Mounting & Removal**
Double sided adhesive makes sensors easy to mount on any surface. All-plastic design prevents shorting of electronics.

» **Compatability**
Compatible with all ATS measurement instruments including: iQ-200, ATVS-2020, eATVS-4/8, ATVS-NxT, WTC-100.

APPLICATIONS:
» **Telecommunications**
» **Automotive**
» **Medical Instrumentation**
» **Thermal Management**
» **Pharmaceuticals**
» **Chemical**
» **University Research**

For further technical information, please contact Advanced Thermal Solutions, Inc. at **1-781-769-2800** or **www.qats.com**

TEMPERATURE & VELOCITY MEASUREMENT

PRODUCT SPECIFICATIONS FOR CANDLESTICK SENSORS

Air Temp for Velocity
A = 20° to 65°C
B = 20° to 80°C

Velocity Range
C = 0-6 m/s (1,200 LFM)
D = 0- to 50 m/s (10,000 LFM)

Part Number	Sensor Height (mm)			Lead Wire Length	Air Temp for Velocity Measurement		Velocity Range	
	9	12	20		A	B	C	D
CS-9SHHS-A	✓			1.5m		✓		✓
CS-9S6SS-A	✓			1.5m	✓		✓	
CS-9S6HS-A	✓			1.5m		✓	✓	
CS-93SHS-A	✓			3m		✓	✓	
CS-93SSS-A	✓			3m	✓		✓	
CS-93HHS-A	✓			3m		✓		✓
CS-93HSS-A	✓			3m	✓			✓
CS-95SHS-A	✓			5m		✓	✓	
CS-95HHS-A	✓			5m		✓		✓
CS-95SSS-A	✓			5m	✓		✓	
CS-95HSS-A	✓			5m	✓			✓
CS-96HSS-A	✓			6m	✓			✓
CS-96HHS-A	✓			6m		✓		✓
CS-97HHS-A	✓			7m		✓		✓
CS-98HSS-A	✓			8m	✓			✓
CS-910HHS-A	✓			10m		✓		✓
CS-910HSS-A	✓			10m	✓			✓
CS-915HSS-A	✓			15m	✓			✓
CS-915HHS-A	✓			15m		✓		✓
CS-917HHS-A	✓			17m		✓		✓
CS-930HHS-A	✓			30m		✓		✓
CS-966SS-A	✓			6m	✓		✓	
CS-9106SS-A	✓			10m	✓		✓	
CS-926SS-A	✓			2m	✓		✓	
CS-1210SHS-A		✓		10m		✓	✓	
CS-1212HSS-A		✓		12m	✓			✓
CS-12156SS-A		✓		15m			✓	
CS-1220HHS-A		✓		20m		✓		✓
CS-1220SSS-A		✓		20m	✓		✓	
CS-128SSS-A		✓		8m			✓	
CS-1230HSS-A		✓		30m	✓			✓
CS-123HHS-A		✓		3m		✓		✓
CS-123HSS-A		✓		3m	✓			✓
CS-123SSS-A		✓		3m	✓		✓	
CS-124HSS-A		✓		4m	✓			✓
CS-124SSS-A		✓		4m	✓		✓	
CS-125SHS-A		✓		5m		✓	✓	
CS-125SSS-A		✓		5m	✓		✓	
CS-126HSS-A		✓		6m	✓			✓
CS-126SSS-A		✓		6m	✓		✓	
CS-127SSS-A		✓		7m	✓		✓	
CS-1286SS-A		✓		8m	✓		✓	
CS-1296SS-A		✓		9m	✓		✓	
CS-12S6SS-A		✓		1.5m	✓		✓	
CS-12SHHS-A		✓		1.5m		✓		✓
CS-12SHSS-A		✓		1.5m	✓			✓
CS-12SSHS-A		✓		1.5m		✓	✓	
CS-20106SS-A			✓	10m	✓		✓	
CS-2010HHS-A			✓	10m		✓		✓
CS-2010HSS-A			✓	10m	✓			✓
CS-203HHS-A			✓	3m		✓		✓
CS-203HSS-A			✓	3m	✓			✓
CS-203SSS-A			✓	3m	✓		✓	
CS-205HSS-A			✓	5m	✓			✓
CS-205SSS-A			✓	5m	✓		✓	
CS-2076SS-A			✓	7m	✓		✓	
CS-2096SS-A			✓	9m	✓		✓	
CS-20S6SS-A			✓	1.5m	✓		✓	
CS-20SHHS-A			✓	1.5m		✓		✓
CS-20SHSS-A			✓	1.5m	✓			✓
CS-20SSHS-A			✓	1.5m		✓	✓	

Surface or Air Temp Range for ALL Sensors -10° To +120°C ±1°C

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