



APOGEE ASPIRATED RADIATION SHIELD | TS-100 Series

Features

Aerodynamic Shape

A curved inlet redirects air into the shield and funnels it past the sensing area, which allows for a lower power requirement than other fan-aspirated shields on the market.

Rugged, Low-power Fan

The fan has an ingress protection rating of IP55, which minimizes moisture and dust ingress. Fan speed and power can be further reduced when environmental conditions warrant. If the fan is continuously operated at full-speed, its lifetime is rated at 50,000 hours (5.7 years). The fan includes a tachometer, which allows RPM to be monitored to detect obstruction.

Typical Applications

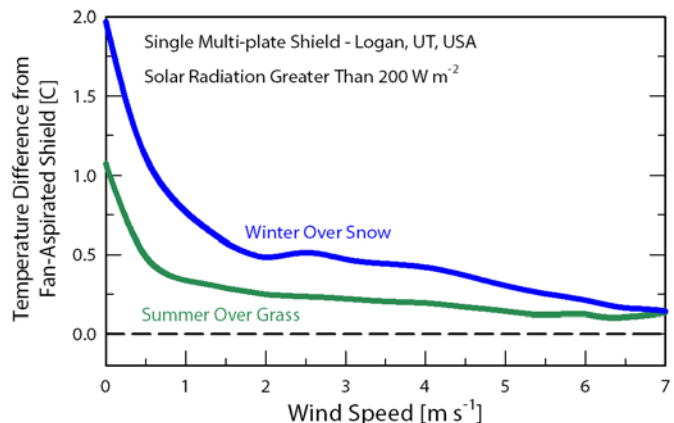
- Air temperature and humidity measurement in weather networks, often for weather forecasting
- The precise measurement of air temperature and humidity gradients above the land surface
- Climate change monitoring

Purchasing Options

The TS-100 is a shield only model. The TS-110 comes with a discounted, pre-installed ST-110 precision thermistor that provides ± 0.1 C uncertainty right out of the box. Also available with EE08-SS relative humidity probe (TS-120, TS-130).

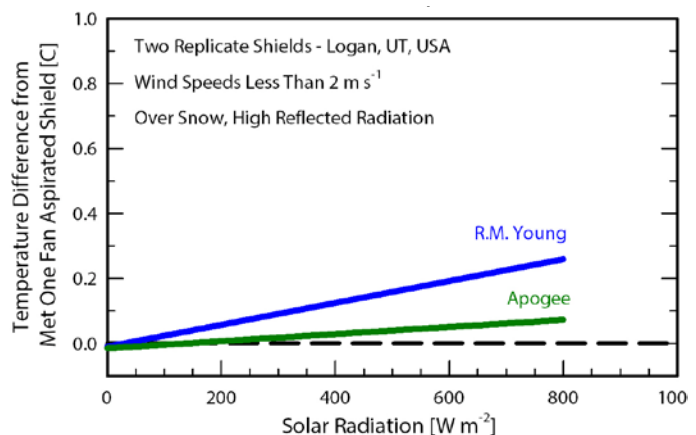
Research grade measurement of air temperature with minimal power draw

Effect of Wind Speed on Multi-plate Shields



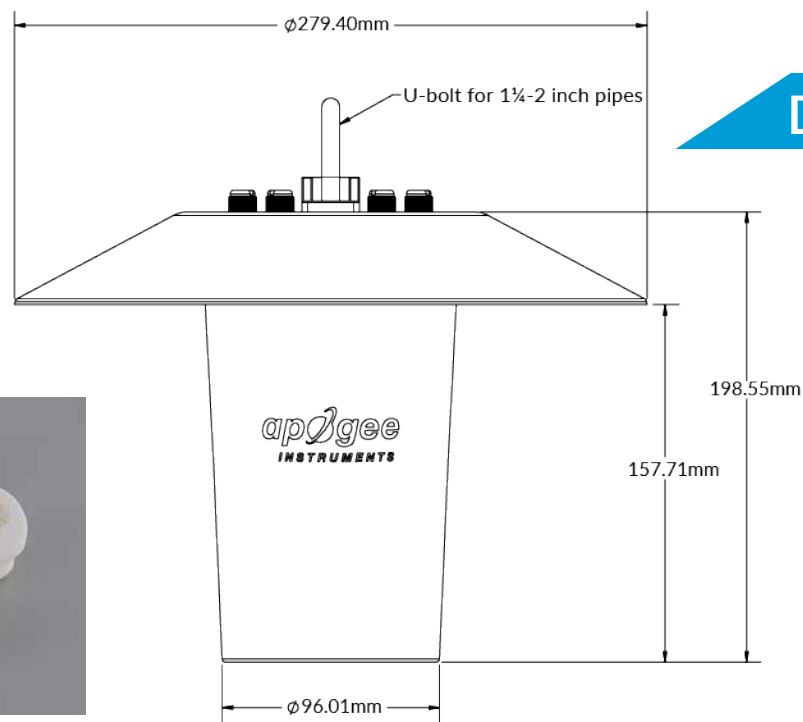
Naturally-aspirated shields are subject to significant measurement errors when wind speeds are less than 3 m s^{-1} . Errors increase when snow covers ground surface.

Wintertime Performance of Fan-aspirated Radiation Shields

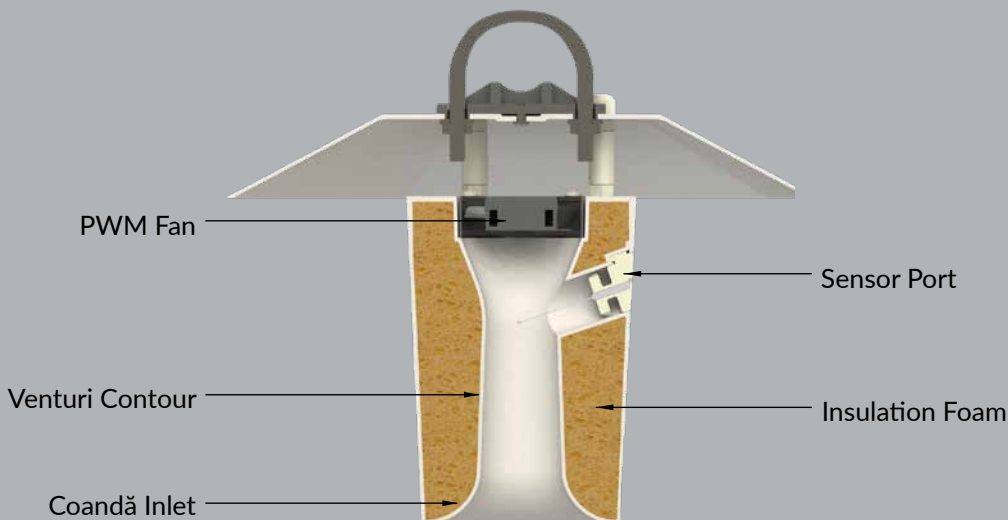


The performance of Apogee (model TS-100) and R.M. Young (model 43502) fan-aspirated shields relative to a Met One (model 076B) fan-aspirated shield.

Dimensions



Cross Section



Case Study



Case Study

The **Virginia Tech Department of Geography** has begun the development of regional mountaintop mesonets in the **Appalachian Mountains** of Virginia and West Virginia. The **TS-100** is being used to house temperature sensors for each installation.

Sensor Compatibility

The shield accommodates multiple sensor options: air temperature sensors, air temperature/relative humidity probes, or combinations of both categories. For maximum accuracy we recommend redundant measurements of air temperature.

Product Specifications

	TS-100
Difference Among Individual Replicate Shields	Less than 0.1 C
Aspiration Rate	6 m s ⁻¹ at full-speed; 3 m s ⁻¹ at half-speed
Fan Input Voltage Requirement	10.8 to 13.2 V DC
Fan Current Draw	80 mA at full-speed; 25 mA at half-speed
IP Rating	IP55
Dimensions	220 mm height, 270 mm diameter
Mass	840 g
Warranty	4 years against defects in materials and workmanship