



APOGEE ASPIRATED RADIATION SHIELD | TS-100 & TS-110

Features

Aerodynamic Shape

The 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 to the fan.

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.

Typical Applications

Applications include air temperature and humidity measurement in weather networks, often for weather forecasting. Fan-aspirated shields are also important in the precise measurement of air temperature and humidity gradients above the land surface and in climate change monitoring.

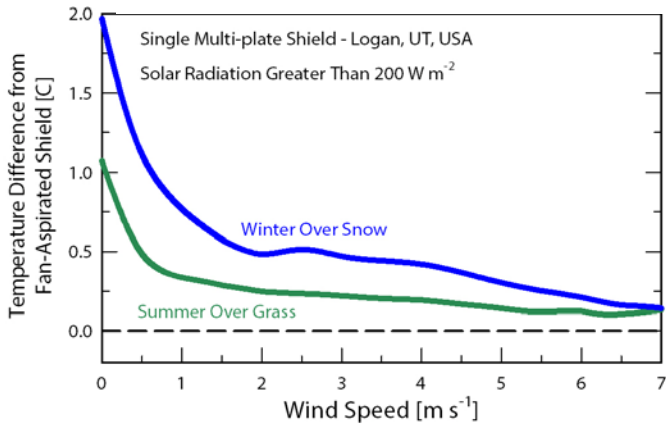
Accurate measurement of air temperature with minimal power draw



Product Specifications

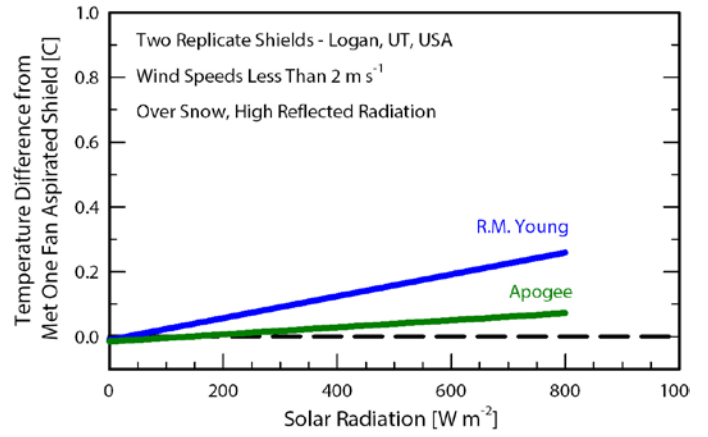
	TS-100
Difference Among Individual Replicate Shields	Less than 0.1 C
Aspiration Rate	6 m s ⁻¹ at full-speed; 3 m s ⁻¹ at half-speed
Fan Input Voltage Requirement	10.8 to 13.2 V DC
Fan Current Draw	80 mA at full-speed; 25 mA at half-speed
IP Rating	IP55
Dimensions	220 mm height, 270 mm diameter
Mass	840 g
Cable	5 m of shielded, twisted-pair wire for fan and air temperature sensors; additional cable available in multiples of 5 m; TPR jacket (high water resistance, high UV stability, flexibility in cold conditions); pigtail lead wires
Warranty	4 years against defects in materials and workmanship

Effect of Wind Speed on Multi-plate Shields



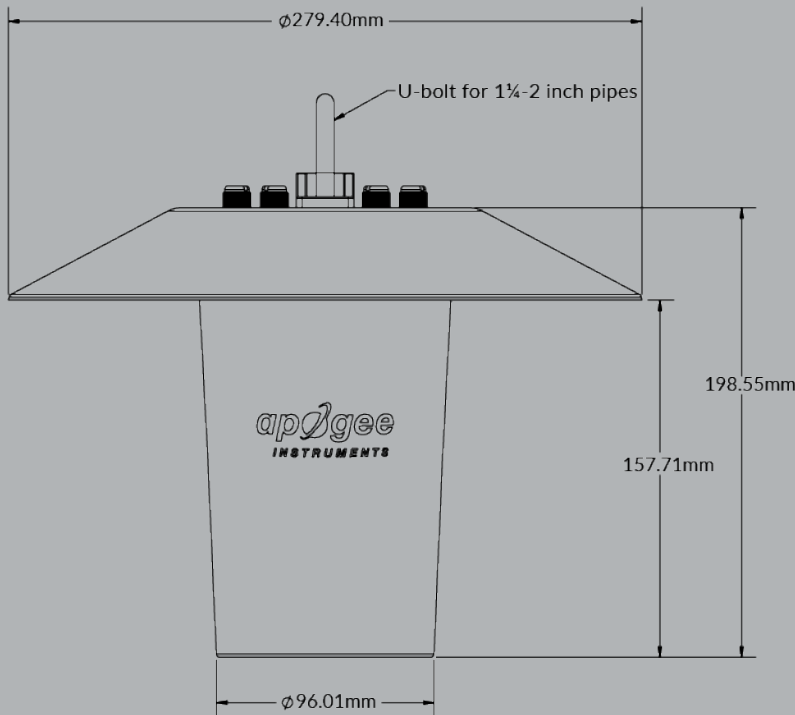
Left: Naturally-aspirated shields are subject to significant measurement errors when wind speeds are less than 3 m s^{-1} . Errors increase when snow covers ground surface.

Wintertime Performance of Fan-aspirated Radiation Shields



Right: 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

