



Mesotech's Motor Aspirated Radiation Shield (ARS) provides forced aspiration of a temperature sensor to

increase its measurement accuracy in an outdoor environment. Unique in its small size and exceptional performance, this ARS reduces radiation errors to less than 0.2°C RMS with the shield exposed to solar radiation of 1000 W/m².

The shield employs a triple-walled intake tube and multiple canopy shades to isolate the sensor from precipitation and solar radiation. A continuous duty blower draws ambient air through intake tubes and across the sensor, minimizing radiation errors. The temperature sensor mounts vertically in the center of the intake tubes. The blower housing and shield assembly are made from reflective white UV-stable plastic.

Temperature sensors can be RTD, thermocouples, or thermistor types with sheath diameters up to 6 mm (0.25 in.) and 150 mm (6.0 in.) long. Longer probes may be used with the optional shield extender tube. This ARS can also accommodate other types of sensors up to 24 mm in diameter.

The small shield size reduces the surface area exposed to incoming radiation during the day, significantly reducing the amount of heat that needs to be washed away from the intake tubes. Errors from outgoing radiation at night are similarly reduced. A continuous-duty (up to 80,000 hours), brushless DC blower pulls ambient air into the shield and across the temperature sensors. Flow rate at the sensor is 3 to 7 m/s, depending upon the sensor size.

The universal mounting brackets, which use tough UV-stable plastic and corrosion resistant stainless steel U-bolts, accommodate a wide range of tower sizes.

Technical Specifications

Sensor Types:	Accommodates temperature and humidity probes up to 24 mm (.94") in diameter
Radiation Error:	0.2°C RMS at 1000 W/m ²
Aspiration Rate:	5 to 11 m/s, depending on sensor size
Material:	UV stabilized white thermoplastic shield and blower housing. Aluminum mounting bracket, white coated, Stainless Steel U-bolt clamp.
Size:	33 cm (13 in) H x 20 cm (8 in) D
Mounting:	Adjustable V-blocks and U-bolts fit vertical tower members.
Power:	12 - 14 VDC @ 500 mA for blower, AC adapter included
Weight:	1.1 kg (2.5 lbs)
Shipping Weight:	2.7 kg (6 lbs)

Ordering Options

- Aspirated Radiation Shield
- Aspirated Radiation Shield, 230 VAC, 50-60 Hz
- Custom probe adapter for diameters to 26 mm

The Motor Aspirated Radiation Shield is an excellent choice for aviation use.

