

Fan Aspirated Radiation Shield

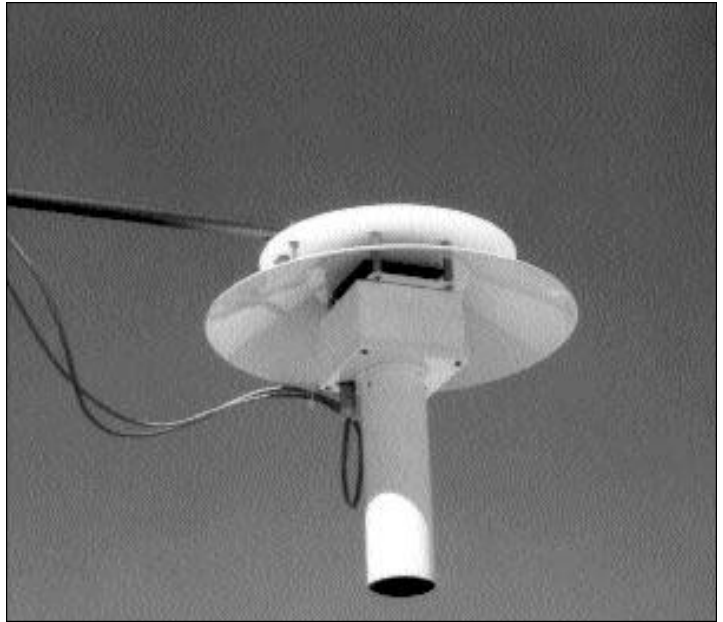
076B

Radiation Shields are an important component of accurate air temperature and humidity measurements. The function of the radiation shield is to protect the sensor from direct and indirect radiant energy, which could cause unknown and uncontrolled errors. The Met One Instruments Model 076B is suitable for the most stringent applications.

Features

- Errors reduced to $< 0.05^{\circ}\text{F}$
- Accommodate several sensors for Delta T measurements
- Radiation errors independent of outside emissivity
- Low-conductive interconnects
- DC or AC power operation
- Gloss white finish
- Corrosion resistant materials throughout
- Easy mounting and tower servicing

The Model 076B Fan Aspirated Radiation Shield virtually eliminates errors caused by solar or terrestrial radiation, as well as secondary errors caused by convective heat transfer from the outer shield surfaces. It is designed to continuously sample ambient air for high accuracy temperature, differential temperature, relative humidity and dewpoint measurements. Actual test results showed errors of less than 0.05°F (Test Report available).



Model 076B fan Aspirated Radiation Shield

The Model 076B is designed for easy maintenance and sensor calibration. The lower section, containing the sensors, can be easily removed from the shield/fan assembly. Individual sensors, connected to the system through a sealed junction box, are easily replaced, serviced, or calibrated from ground level.

Operation

Air is drawn into the bottom of the sensor housing through two concentric ports. High velocity air through the outer port scrubs the outer surfaces and is exhausted. The inner port draws in the air sample, enabling a true gas temperature measure-

ment to be made. This air flow system prevents convective heat transfer to the sampling stream.

Construction

The shield is constructed of aluminum and other corrosion-resistant materials. All outer surfaces have been painted with high-gloss epoxy enamel for maximum reflectivity. All interconnecting materials have been selected to minimize conductive heat transfer. The combination of air flow, symmetrical shield design, and surface finish provides a shield that virtually eliminates all errors caused by radiation.



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Specifications

Operating Characteristics

Aspiration:	Electric Fan	
Flow Rate:	1000 CFM Scrubbing 500 CFM Sample	
Temperature Range:	Standard	-50°C to +85°C
	Optional	-50°C to +100°C
Power Required:	115 VAC	20 watts
	12 VDC	250 mA
	220 VAC	18 watts

Physical Characteristics

Material:	Aluminum
Finish:	White Epoxy
Dimensions:	20 in (51 cm) h x 20 in (51 cm) diam.
Weight, less sensor(s):	9.3 lbs (4.2 kg)

Sensors

Maximum Number:	4
Models:	060/062/066/083
Maximum Diameter:	.75 in (1.9 cm)
Maximum Length:	10 in (25 cm)
Transducer Sensing Zone:	8 in (20 cm)

Mounting

Shield mounts to 3/4 in. IPS horizontal pipe

Ordering Information

Model 076B-1:	115 VAC
Model 076B-4:	12 VDC
Model 076B-11:	220 VAC

Order model number corresponding to voltage requirement.

Consult factory for installations requiring dew point measurements utilizing the Model 078 sensor.

Cable:	Signal	PN 2144-xx (xx = length in ft)
	Power	PN 1954-xx (AC) PN 2423-xx (DC)

(Diag)
