380-280 Radiation Shield

The **Model 380-280 Solar Radiation Shield** is a low cost solution for protecting temperature and relative humidity probes. It consists of four molded plastic plates and a powder coated aluminum mounting arm. The wedge-shaped plates provide maximum airflow around the probe while at the same time minimizing direct exposure of the probe tip to sunlight. The shield is shaped to allow natural air convection around the probe so that the air being measured inside the shield is a good representation of the outside air. The shield also provides protection from rain and snow. The 380-280 can be used with sensors from 0.25" diameter up to 0.75" diameter. The lower protective shroud provides added protection for sensors up to 8" in length.

Specifications

Capacity: 1 probe (temperature, humidity, or temperature/humidity)
Radiation error: 2°F (1°C) @ WS > 3 mph
Material: UV stabilized ABS plates, PVC top cap,
white powdercoated aluminum mounting bracket
Mounting: 1.25" o.d. U-bolt
Size: 4" Dia x 10" H (102 mm x 254 mm)
mounting arm 6" L (152 mm)
Weight/shipping: 1 lb/2 lbs

Ordering Information

380-280	Self-Aspirated Solar Radiation Shield

380-280 Solar Radiation Shield

380-281 Radiation Shield

The **Model 380-281 Solar Radiation Shield** is designed with a highly reflective white surface to reflect the sun's direct radiation. It is constructed of powder coated aluminum and consists of a flat deflection plate, three wedge-shaped plates, and a mounting arm. The wedge-shaped plates provide maximum airflow around the probe while at the same time minimizing direct exposure of the probe tip to sunlight. The use of multiple plates with openings in the top of each promotes a rising flow of air through the shield. The shield provides protection from scattered as well as direct radiation. The 380-281 is often used at weather stations where no ac power is available to run a motor aspirated shield.

The **Model 380-283 Fan Aspirated Solar Radiation Shield** includes a solar powered fan mounted on top of the shield.

Specifications

Capacity: 1 probe (temperature, humidity, or temperature/humidity)
Radiation error: 2°F (1°C) @ WS > 3 mph
Material: Aluminum
Finish: Gloss white powder coat
Mounting: 1.25" o.d. U-bolt
Size: 6" Dia x 12.5" H (152 mm x 318 mm)
mounting arm 6" L (152 mm)
Weight/shipping: 2.5 lbs/4 lbs (1.1 kg/1.8 kg)

Ordering Information

380-281	Self-Aspirated Solar Radiation Shield
380-283	Fan-Aspirated Solar Radiation Shield, solar powered

380-281 Solar Radiation Shield

380-41003 Radiation Shield

The **Model 380-41003 Multi-Plate Radiation Shield** protects temperature and relative humidity sensors from error-producing solar radiation and precipitation. Compact size and light weight make this shield useful for many applications. The multiple discs have a unique profile that blocks direct and radiated solar radiation, yet permits easy passage of air. The disc material is specially formulated for high reflectivity, low thermal conductivity, and maximum weatherability. The rugged U-bolt mounting clamp attaches easily to any vertical pipe up to 2" diameter.

Specifications

Sensor types: Accommodates temperature and humidity sensors up to 26 mm (1") diameter
Radiation error: @ 1080 W/m^2 intensity, dependent on wind speed
- 0.4°C (0.7°F) RMS @ 3 m/s (6.7 mph)
- 0.7°C (1.3°F) RMS @ 2 m/s (4.5 mph)
- 1.5°C (2.7°F) RMS @ 1 m/s (2.2 mph)

Construction:
- UV stabilized white thermoplastic plates
- Aluminum mounting bracket, white
- Stainless steel U-bolt clamp

Dimensions: 12 cm (4.7") diameter x 27 cm (10.6") high
Mounting fits vertical pipe 25-50 mm (1-2") diameter
Weight/shipping: 0.7 kg (1.5 lb)/1.4 kg (3 lb)

Ordering Information

380-41003	Solar Radiation Shield, includes universal adapter for sensors up to 12.5 mm diameter
380-41003P	Solar Radiation Shield, includes custom sensor adapter, specify diameter from 12.5 to 26 mm
380-41390	Junction Box, specify sensor diameter (6 mm max)

380-43408 Radiation Shield

The **Model 380-43408 Motor Aspirated Radiation Shield** provides maximum sensor protection from incoming short wave solar radiation and outgoing long wave radiation. The shield employs concentric downward facing intake tubes and a small canopy shade to isolate the sensor from direct and indirect radiation. A continuous duty blower draws ambient air through the intake tubes and across the sensor minimizing heat transfer to the sensor. Compact shield components reduce radiation absorption and improve aspiration efficiency. Specially selected plastic materials provide high reflectivity, low conductivity, and maximum weatherability. The versatile DC blower is designed for continuous duty of 80,000 hours at 25° C. Brushless electronic commutation is achieved using dependable solid state circuitry.

Specifications

Sensor types: Accommodates temperature and humidity sensors
up to .75" (19 mm) diameter
Radiation error: @ 1000 W/m^2 intensity
Ambient temperature: 0.4°F (0.2°C) RMS
Delta T: 0.1°F (0.05°C) RMS with like shields equally exposed
Aspiration rate: 11 to 25 fps (3.4 to 7.6 m/s) depending on sensor size
Power requirement: 12 Vdc @ 500 mA for blower, AC adapter included
Construction:
UV stabilized thermoplastic shield, white
Aluminum cross tube & mounting brackets, white painted
Stainless steel u-bolt clamp
Dimensions:
Length: 43-75" (110-190 cm) adjustable
Shield: 1.3" (34 mm) dia x 4" (10 cm) length
Blower housing: 5.9" (15 cm) dia x 3.5" (9 cm) length
Mounting: Adjustable V-blocks and u-bolts fit vertical, horizontal, or diagonal tower members 1-2" (25-50 mm) dia
Weight/shipping: 5.3 lbs/13 lbs (2.4 kg/5.9 kg)

Ordering Information

380-43408	Motor Aspirated Shield, 110V/60Hz AC adapter
380-43408H	Motor Aspirated Shield, 230V/50-60Hz AC adapter
380-43482	Probe Top Cover
380-41390	Accessory Junction Box, specify sensor diameter (10 mm max)

380-43502 Radiation Shield

The **Model 380-43502 Aspirated Radiation Shield** provides maximum sensor protection from incoming short wave solar radiation and outgoing long wave radiation. 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 the intake tubes and across the sensor, minimizing radiation errors. Compact shield components reduce radiation absorption and improve aspiration efficiency. Specially selected plastic materials provide high reflectivity, low conductivity, and maximum weatherability. The versatile DC blower is designed for cntinuous duty of more than 80,000 hours (9 years) at 77°F (25°C). Brushless electronic commutation is achieved using dependable solid state circuitry.

Specifications

Sensor types: Accomodates temperature and humitidy sensors
up to .94" (24mm) in diameter
Radiation error: @ 1000 W/m^2 intensity
Ambient temperature: 0.4°F (0.2°C) RMS
Delta T: 0.1°F (0.05°C) RMS with like shields equally exposed
Aspiration rate: 16 to 35 fps (5 to 11 m/s) depending on sensor size
Power requirement: 12-14 Vdc @ 500 mA for blower, AC adapter included
Construction:
UV stabilized white thermplastic shield and blower housing
Aluminum mounting bracket, white coated
Stainless steel u-bolt clamp
Dimensions:
Overall: 13" high x 8" dia (33 cm x 20 cm)
Shield: 2.8" dia x 4.7" length (70 mm x 12 cm)
Blower housing: 6.7" dia x 4.3" (17 cm x 11 cm)
Mounting: V-block and u-bolt fits vertical post or tower members 1-2" (25-50 mm) diameter
Weight/Shipping: 2.5 lb/6 lb (1.1 kg/2.7 kg)

Ordering Information

380-43502	Aspirated Radiation Shield