Datasheet

TEMPERATURE HUMIDITY LIGHT INTENSITY AND PRESSURE SENSOR

The Radiation Shield is a naturally aspirated enclosure designed to house environmental sensors such as the BME680 and VEML7700. Its series of white concentric plates protect the sensors from direct solar and terrestrial radiation while allowing free air circulation. This design minimizes measurement errors caused by solar heating, ensuring accurate monitoring of temperature, humidity, and light in outdoor meteorological applications. Built from durable, weather-resistant materials, the shield is suitable for long-term outdoor use. Its lightweight construction and simple mounting options make it easy to install on poles or walls, providing reliable performance for weather stations, agricultural monitoring, and environmental research.

Key Features

- **Comprehensive Environmental Monitoring**: Simultaneous measurement of temperature, humidity, barometric pressure, and light intensity
- **Advanced Radiation Protection**: Multi-plate design minimizes solar heating effects
- **Maintenance-Free Operation**: Designed for long-term deployment without requiring service
- **Energy Efficient**: Passive operation requires no power for ventilation
- **Environmental Durability**: IP66-rated protection against harsh weather conditions
- **Optimized Airflow**: Natural aspiration ensures accurate sensor response times
- **Universal Compatibility**: Designed for seamless integration with industry-standard sensors

Performance Specifications

Parameter	Specification
Compatible Sensors	BME680 (T/RH/Pressure), VEML7700 (Ambient Light)
Temperature Range	-40 °C to +85 °C
Temperature Accuracy	±1.0 °C
Humidity Range	0–100% RH
Humidity Accuracy	±3.0% RH
Pressure Range	300–1100 hPa

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Parameter	Specification
Pressure Accuracy	±1.0 hPa
Illuminance Range	0.003–140,000 lux
Lux Accuracy	±3%
Response Time	Optimized for natural ventilation conditions

Enclosure Specifications

Characteristic	Specification
Shield Type	Multi-plate radiation shield (Stevenson-style)
Construction Material	UV-stabilized ABS polymer
Surface Finish	High-reflectivity white coating
Plate Configuration	9 optimally spaced louvered plates
Physical Dimensions	122 mm diameter × 188 mm height
Total Weight	0.45 kg
Protection Rating	Natural ventilation design (non-sealed)
Operating Temperature	-40 °C to +85 °C
Humidity Tolerance	0–100% RH (non-condensing)
Mounting System	Mild steel U-bolt pole mounting kit
Ventilation Design	Passive airflow optimization
UV Resistance	>5 years outdoor service life
Environmental Resistance	Rain, dust, snow, and solar radiation protection

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Applications

- **Meteorological Stations**: Professional weather observation and monitoring networks
- **Environmental Research**: Climate change studies and atmospheric research
- **Renewable Energy**: Solar farm performance monitoring and wind site assessment
- **Smart Infrastructure**: Urban IoT deployments and smart city applications
- **Agricultural Technology**: Precision farming and microclimate monitoring
- **Industrial Monitoring**: HVAC performance, clean rooms, and pharmaceutical storage

Installation & Maintenance

- Simple pole mounting with included hardware
- No maintenance required for ventilation system
- Easy sensor access for calibration and service
- Corrosion-resistant materials for long-term reliability
- Stable performance across seasonal variations

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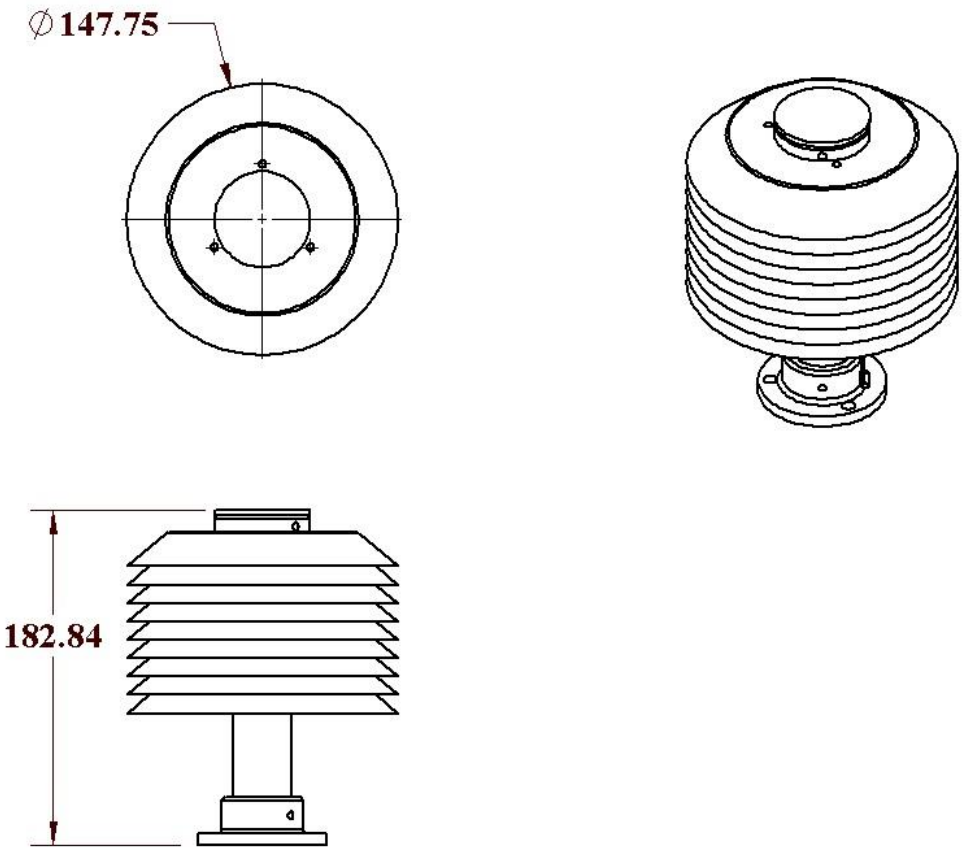

Radiation Shield

(All The dimensions are in mm)