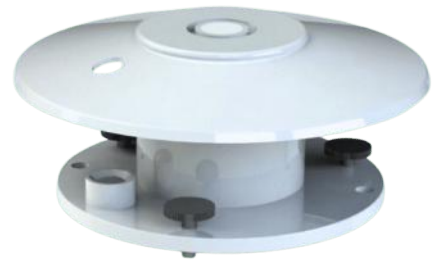


SEM228PC Photosynthetically active radiation (PAR) sensor

MAIN FEATURES

- Utilizing high-precision photoelectric sensing elements, it features high absorption within the spectral range and excellent stability.
- Compact and aesthetically pleasing in design, it occupies minimal installation space.
- Equipped with a built-in level, it allows for on-site adjustments for greater convenience.



OVERVIEW

SEM228PC photosynthetically active radiation sensor is a high-tech product specifically designed for plant growth and photosynthesis research. It accurately measures and displays the contribution of different spectral bands to plant photosynthesis, helping researchers and horticultural enthusiasts gain a deeper understanding of plant responses to light. With notable features, it boasts a high-precision spectrometer and a real-time data recording system, enabling rapid capture and analysis of the impact of light variations on plant growth. Its wide range of applications supports both plant physiological research in scientific institutions and precise light management in greenhouses, providing robust assistance for more efficient and scientific plant growth regulation.

WORKING PRINCIPLE

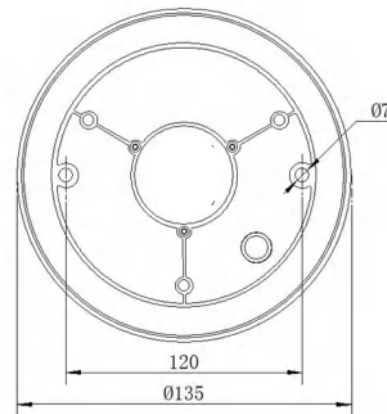
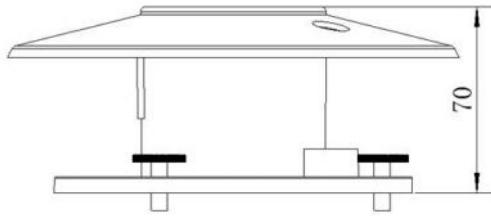
The SEM228PC Photosynthetically Active Radiation Meter uses a silicon photodetector and a 400~700nm optical filter. When light is present, it generates a voltage signal proportional to the intensity of the incident radiation, with sensitivity proportional to the cosine of the angle of incidence. Each meter provides its own sensitivity and the measurement value, expressed in $\mu\text{mol}/\text{m}^2 \cdot \text{s}$.

SPECIFICATION

Spectral coverage	370nm~700nm
Measuring range	0~2500 $\mu\text{mol}/\text{m}^2 \cdot \text{s}$
Power supply	6V~30V DC
Definition	$\pm 5\% \text{rdg} + 10 \text{dgt}$ s
Degree of linearity	$\pm 3\%$
Sensitivity	5~50 $\mu\text{V}/\mu\text{mol} \cdot \text{s}^{-1}$
Response time	≤ 10 seconds (99% response)
Cosine response	$\leq 10\%$
Working environment	Temperature: -40°C 65°C ; humidity : 0% 100%RH
Internal resistance	10~30 Ω
Output signal	RS485(Modbus)
Definition of wiring	Pin 1 is positive and pin 2 is negative
Cable length	3 meter default

DIMENSION

Unit:mm



ORDER CODE

Code:	A	—	B	—	C
SEM	228PC	—	A	—	R

Model	Code A
PAR sensor	228PC
Range	Code B
Aluminum housing	A

Signal output	Code C
485 output (standard Modbus-RTU)	R
4~20mA current output	S4
0~5V voltage output	S5
0~10V voltage output	S1

INSTALLTION

- 1.The installation site for the photosynthetically active radiation meter should be chosen where there are no obstructions above the plane of the sensor , ensuring that there are no obstacles with an elevation angle exceeding 5 degrees at sunrise and sunset , and avoiding shadows falling on the sensor surface. The meter should not be placed near light-colored buildings or other objects that reflect sunlight , nor near artificial radiation sources.
- 2 .When installing , the plug of the meter should be placed northward , first adjust the level and then fix it.