



CDG-12B PAR Sensor

For weather automation applications



Features

- Designed on silicon-cell principle
- No moving parts, no maintenance, can work in any altitude
- Strong corrosion resistant ability
- High sensitivity
- Low power consumption
- Light weight, long service life
- Cosine corrector is used to ensure the accuracy of measuring the incident light at different angles

The CDG-12B PAR Sensor is mainly used for measuring solar radiation within 400~700nm wavelength. It is easy installation and can work continuously in all weathers. When there is sunlight, voltage output proportional to incident light intensity will be generated by the silicon-photo detector in the sensor. Its sensitivity is proportional to the cosine of incident light direct angle. Each product is with one sensitivity coefficient respectively. It can directly output radiation value in unit of $\mu\text{mol}/\text{m}^2\cdot\text{s}$.

Typical installation locations

- Top of building
- Solar energy
- Open areas
- Outdoor locations

Design structure

The photoelectric sensor with high precision can accurately measure photosynthetically active radiation in the wavelength range of 400 ~ 700nm. The cosine corrector is used to ensure the accuracy of measuring the incident light at different angles, and the luminous flux density is proportional to the cosine of the direct Angle of the incident light.

Easy installation

Choose a location that receives enough light to avoid being blocked by buildings, trees, or other objects. Usually installed in open areas, such as farmland, greenhouse tops, field monitoring stations, etc. Ensure that the sensor is mounted on a horizontal surface to ensure measurement accuracy.

Reliable operation

Usually made of high-strength materials, such as aluminum alloy, can withstand a variety of harsh environmental conditions, such as wind and rain, sand, high temperature, low temperature and so on. The housing is well sealed to prevent moisture, dust and other impurities from entering the interior of the sensor, affecting its performance and life. PAR sensor active sensors have low maintenance costs and generally do not require frequent maintenance and calibration. The structure of the sensor is simple, easy to install and disassemble, and convenient for users to maintain and maintain.

Dimensions & installing

CDG-12B connector dimension



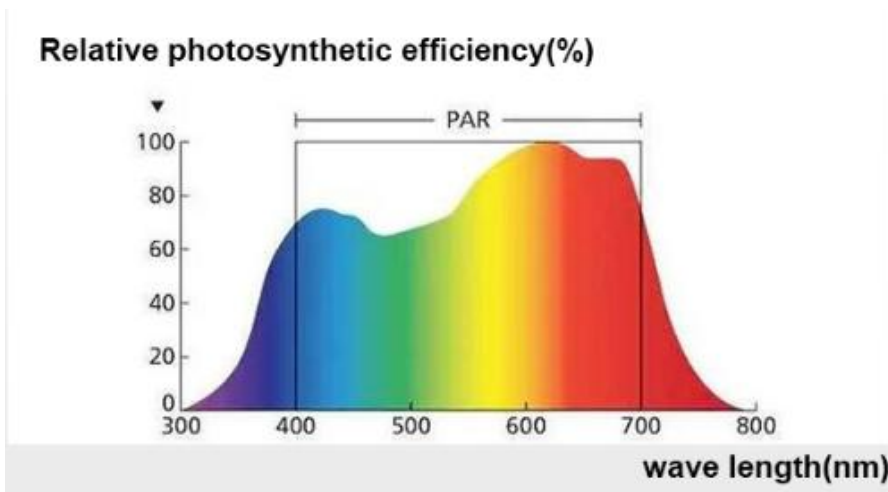
Movable pole bracket



2 -M4*20 outer hex screws

2 -M4 nuts,2-M4 flat mat,2-M4 Spring washers

Spectral response



Technical data

Measurement performance, models CDG - 12 B

| Item | Specifications |
|-----------------------|---|
| Spectral range | 0-5000 μ *mol/m ² *s 400~700nm |
| Supply | 0-1500W/m ² 5VDC,9V-30VDC |
| Accuracy | \pm 5% rdg |
| Range | 0-5000 μ *mol/m ² *s,0-1500W/m ² |
| Output | 0-5V 4-20mA RS485 |
| Sensitivity | 0-5000 μ *mol/m ² *s 800 μ V/ μ *mol*m ² *s 6.4 μ A/ μ *mol*m ² *s |
| | 0-1500W/m ² 1000 μ V/W/m ² 8 μ A/W/m ² |
| Response time | <1s (99%) |
| Temperature effect | <0.05%/°C |
| Cosine correction | <10% (until 80°) |
| Non-linearity | < \pm 2% |
| Operating temperature | -40-+80°C |
| Shell material | Aluminum alloy |
| Storage Condition | 10°C-60°C@20%-90%RH |

| Model number | Type | Output | Special features |
|--------------|--|--|---|
| CDF-10A | Wind speed | Pulses(PNP) RS485 4-20MA 0-5V | Three cup plastic wind speed |
| CDF-11A | Wind direction | RS485 4-20MA 0-5V | Plastic wind direction sensor |
| CDF-20B | Combined Wind Speed & Direction | RS485 4-20MA 0-5V 0-10V | Integrated wind speed and direction |
| CDF-21A | Ultrasonic Wind Speed & Direction | RS232/RS485(Modbus/NMEA-0183), Voltage(0-5V),Current(4-20mA) optional | Ultrasonic principle |
| CDW-33A | Atmospheric Temperature, Humidity & Pressure | RS485 | Shelter installation |
| CDQ-T6A | Miniature Ultrasonic Automatic Weather | RS485 | Wind speed & direction temp & humidity & pressure |
| CDY-12A | Economical Tipping Bucket Rainfall | Pulses(@10k Ω &0.01 μ F),RS485 | Diameter : ϕ 200mm, height: 271mm |
| CDG-10B | Solar Radiation | 0-5V,4-20mA,RS485 | Spectral range:300~1100nm |
| CDG-11B | Pyranometer | 0-20mV,RS485 | Spectral range:300~3000nm Class one |
| CDG-12B | PAR sensor | 0-5V 4-20mA RS485 | Spectral range:400~700nm |
| CDG-13B | Ultraviolet(UV) Radiation | 0-5V 0-10V 4-20mA RS485 | Spectral range:280~400nm |
| CDG-14A | Illuminance Sensor | 0-5V 0-10V 4-20mA RS485 | Spectral range:380~780nm |
| CDG-17B | Scattering Radiometer | RS485 | Spectral range:280~3000nm |

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Hunan Coda Electronic Tech Co.,Ltd

T: +86-0731-85117089

W: www.codasensor.com

E: Molly@codasensor.com