Datasheet: iCAM-Solar365 P50WT V1.1 02112023

# „iCAM-Solar365 P50WT”

## Professional, year-round solar power system for CCTV cameras with continuous power of 50W in winter and 120W in summer.

The highly efficient iCAM-Solar365 system has been specifically designed to power professional CCTV video monitoring in areas without access to other energy sources. It provides power for CCTV cameras and wireless accessories, even during the challenging autumn-winter period, ensuring a two-day system autonomy. The iCAM-Solar365 P50WT is designed for year-round power supply for cameras with a power consumption of up to 50W. During the summer months (March-September), the system's performance is significantly higher, allowing for continuous power supply to cameras with a power consumption of 120W.



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**The iCAM-Solar365 P50WT** is a complete and pre-configured set of electronics, wiring, and batteries required for the operation of a solar power plant. **The iCAM-Solar365 P50WT** kit includes all the electronic components needed for power supply, such as panels, external enclosure-mounted controllers, wiring, batteries, underground battery enclosures, connectors, and distributors. The pole and mounting structure, allowing the installation of the power plant on a pole, wall, or roof, **are not included** in the kit and must be selected separately.

**Purpose:**

- Powering CCTV devices in video surveillance in areas without access to conventional power sources.
- Fixed CCTV video monitoring points (not mobile or portable), for example:
  - City and municipal surveillance ,
  - Monitoring of avenues and parks ,
  - Forest monitoring,
  - Surveillance of facilities without power infrastructure,
  - National parks and protected areas monitoring,
  - Monitoring of remote pump stations and gas valves, etc.

**Key Parameters:**

- Year-round operation for 365 days a year .
- Performance: throughout the year, 24 hours a day, with CCTV cameras, transmitters, and other accessories with a total power consumption of up to **50W**.
- During the summer season, power reserve and capacity for energy receivers up to **120W**.
- Energy efficiency in Wh: **> 4800Wh.**
- Available power output: 12V DC <5A (option for 24V DC, 48V DC, PoE).
- Battery capacity: 2x200Ah / 12V.
- The entire system is mounted on a tall pole, eliminating the need for fencing and monitoring.
- Multiple mounting options: on the side of the pole, on a wall, on the roof, or on the ground.
- The battery is housed in a special underground IP67-rated box for burial under the pole. This box provides protection and optimal temperature conditions for the batteries.
- The kit includes all the necessary electronics to start the power plant.

**Guidelines for Designers :**

- Ensure an installation location without shading throughout the entire working day. According to the solar panel production technology, even partial shading of one panel will result in a similar decrease in performance in the remaining panels.
- Provide a pole or other load-bearing structure with the appropriate load-bearing capacity and wind resistance.
- Determine the mounting height, taking into account the load-bearing capacity of the pole and wind resistance.
- In accordance with building regulations, consider the soil quality and the foundation of the pole based on the parameters of the entire structure.
- It is recommended to run a conduit with a minimum diameter of 40mm from the access door to the battery box inside the pole.

**Dedicated Accessories:**

- **Reinforced pole with a supporting structure** for solar panels and wind turbine:
  *Model: P50WT-PylonF; Index 7716*
- **Prefabricated foundation** with spikes. A special prefabricated foundation designed for very large reinforced poles with high load capacity. Intended for P50WT-PylonF and P40W-PylonF poles.
  *Model: Foot-P50WT; Index 7728*



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The kit is designed for permanent installation near the video monitoring point. CAMSAT also offers mobile solar power systems designed for frequent location changes.

**Very important:** The solar system's mounting point should be selected to ensure full sunlight throughout the working day. Even partial shading of solar panels will result in a significant decrease in the system's performance.

Sample photos of the solar system. The appearance of the delivered system may vary.

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# TECHNICAL SPECIFICATION

| | |
|---|---|
| **Efficiency** | |
| Winter | 50W - total power consumption of all energy receivers in the winter period for the Polish geographical latitude |
| Summer | 120W - total power consumption of all energy receivers in the summer period for the Polish geographical latitude |
| Autonomy | 4 days |
| Efficiency | > 4800Wh |
| Technology | MPPT with power tracking |
| Charging Efficiency | >97% |
| Panel Power Linearity | >80% for first 25 years |
| Panel Efficiency | >20% |
| Maximum Panel Current | 32,4A (3x 10,8A ) |
| Solar Panel Charging Current | 40A |
| Wind Turbine Power | 300W |
| Wind Turbine Charging Current | 15A |
| **Power Output Parameters** | |
| Voltage for Receivers | 12V DC Option: 24V DC, 48V DC, PoE |
| Maximum Load | 5A |
| Battery | AGM, gel |
| Battery Capacity | Minimum 400Ah /12V |
| **Mounting** | |
| Mounting Structure (P50WT-PylonF) | Dedicated mounting structure for 3 panels and a wind turbine with a pole. |
| Foundation for the Structure (Foot-P50WT) | Foundation (Foot-P50WT) adapted for the structure (P50WT-PylonF) |
| **Other** | |
| Panel Warranty | 12 years |
| Battery Warranty | 12 month |
| Other Warranty | 24 months |
| Weight of Electronics without Batteries | <65kg |
| Battery Weight | <136kg |
| Panel Dimensions | 2120x1100x45 [mm] x 3 pcs. |
| Solar Panel Surface Area | >7m2 |
| Structure Weight with Pole | 160kg |
| Foundation Weight | Approximately 244kg |
| Controller Dimensions | 400X500X210 [mm] |
| Dust and Water Protection | IP65 |
| Operating Temperature | -30°C ~ +70°C , <H85% |
| External Battery Box Dimensions / Material / Sealing / Weight | 610x590x270mm / Polipropylen / IP67 / 5,4kg |
| **Included in the Kit** | |
| iCAM-Solar365 P50WT | 3x Panels, 2x 200Ah Batteries, Wind Turbine, Wiring, Electronics Box, Underground Battery Box, Instruction Manual, CE Declaration. (Note: The kit does not include the mounting structure, pole, or foundation.) |
| **Additional Options** | |
| Reinforced Pole with Basket | P50WT-PylonF |
| Prefabricated Foundation | Foot-P50WT (weight approximately 240kg ) |
| Low-current 5.6GHz radio transmitter for CCTV cameras | CDS-6IP eco Solar+ |
| Low-current GSM/LTE router for CCTV cameras | GlobalCAM-4.5G |
| Low-current GSM/LTE router with VPN for CCTV cameras | iCAM-LTE Solar+ |




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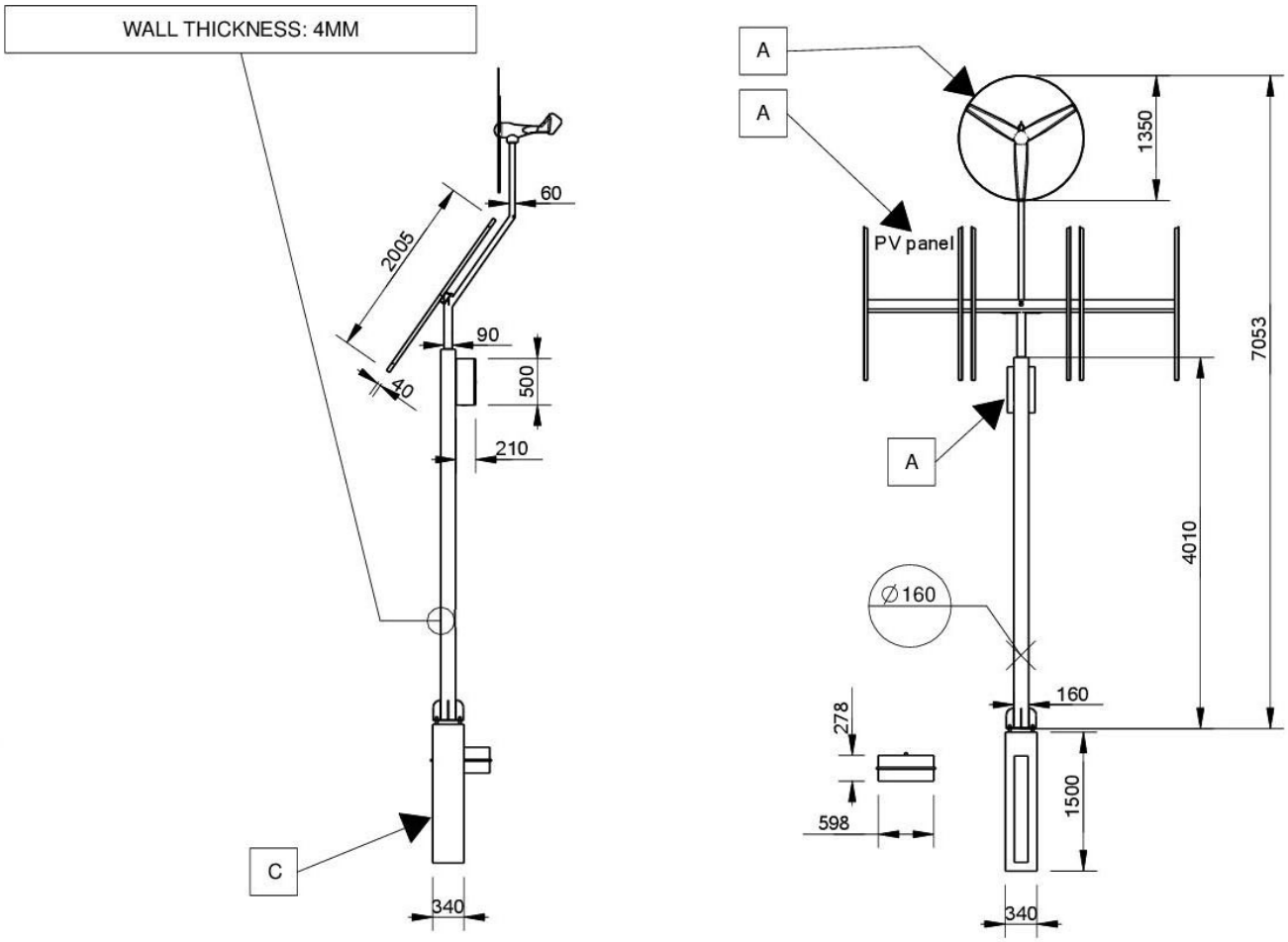
# Dimensions of the kit with the dedicated mounting structure




A → Electronics Kit iCAM-Solar365 P50WT

B → Reinforced pole with mounting structure. Hot-dip galvanised steel: P50WT-PylonF

C → Pre-fabricated foundation Foot-P50WT

UWAGA: Niektóre podane wymiary mogą różnić się w zależności od zastosowanych paneli solarnych oraz aktualnych parametrów turbin i akcesoriów.

NOTE: Some dimensions given may vary depending on the solar panels used and the current performance of the turbines and accessories

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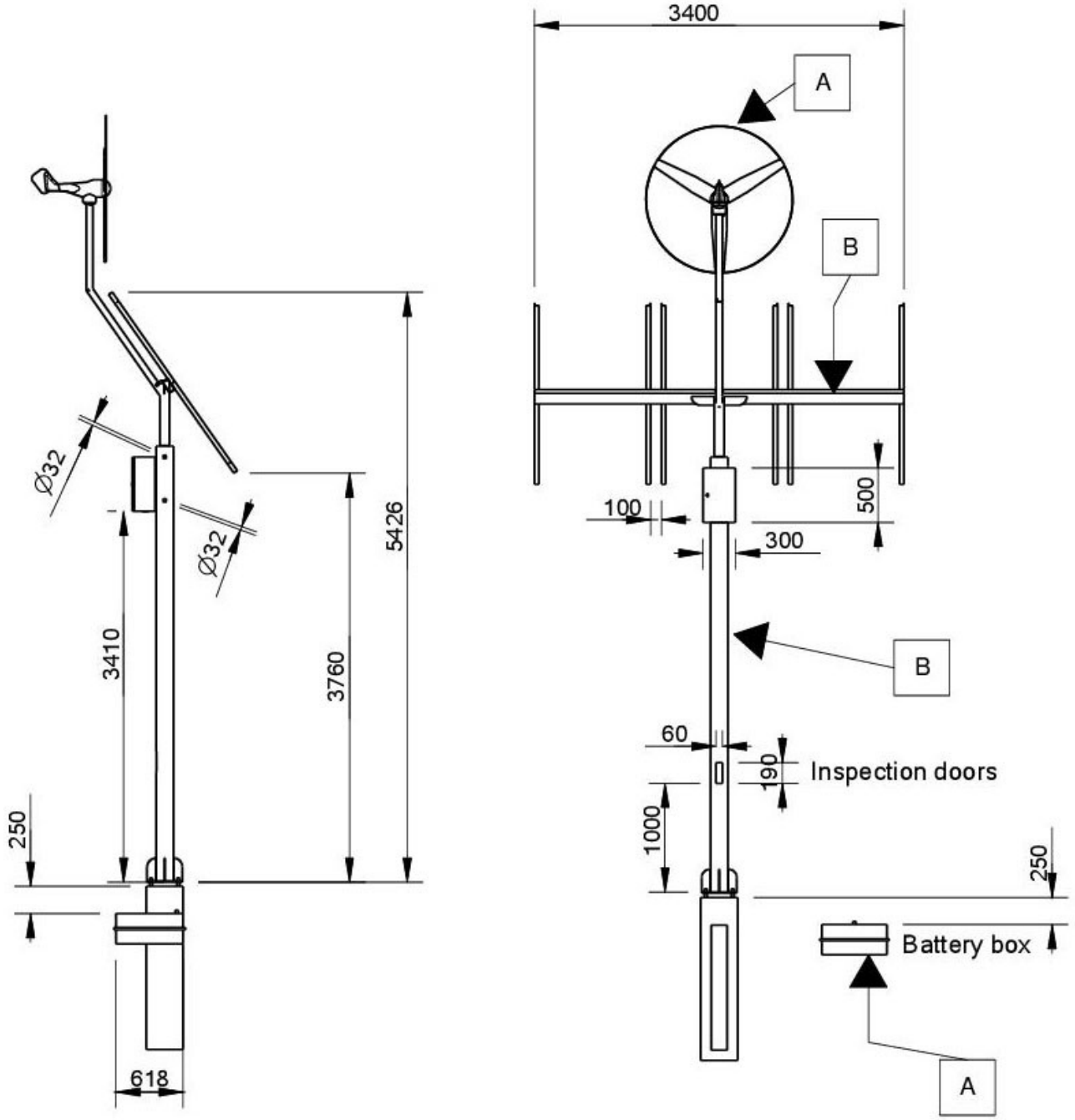





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**Options**

**Other available models of solar power stations for permanent installation :**

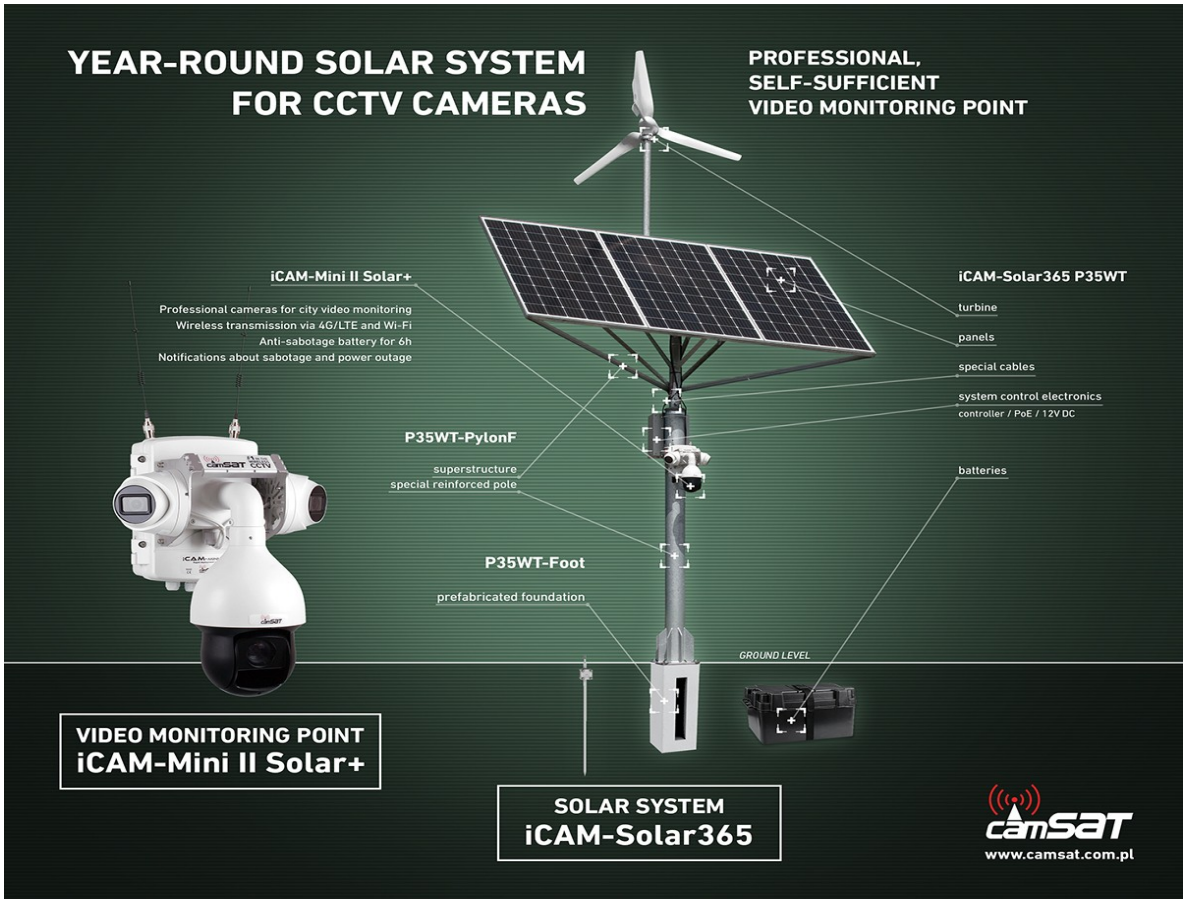
- **iCAM-Solar365 P40W** - Solar power station (year-round) for energy receivers up to 40W, mounted on the top of a pole.
- **iCAM-Solar365 P25W** - Solar power station (year-round) for energy receivers up to 25W, mounted on the side of a pole or on the facade.
- **iCAM-Solar365 P15W** - Solar power station (year-round) for energy receivers up to 15W, mounted on the side of a pole or on the facade.

**Other available models of solar power stations for mobile installation:**

- **iCAM-Solar365 M25W** - Mobile solar power station (year-round) for energy receivers up to 25W.
- **iCAM-Solar365 M15W** - Mobile solar power station (year-round) for energy receivers up to 15W.
- **iCAM-Solar365 Triplex T1350W** - Mobile foldable solar power station (year-round) with panels totaling 1.35kW.

**Special low-power wireless systems designed for solar systems:**

- **iCAM-LTE Solar+** - 4G/LTE router with a power consumption of only 4W.
- **GlobalCAM-4.5G** - 4G/LTE router with a power consumption of only 6.5W.
- **CDS-6IP eco Solar+** – 5.6GHz radio transmitter with a power consumption of only 3.5W.
- **iCAM-Mini X4 Solar+** – Wireless camera with 4G/LTE with a total power consumption of less than 10W.

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