

KIT/DH-PFM378-B60-W/DH-IPC-HFW3241DF-AS-4G/DH-PFA150

Integrated Solar Monitoring System(Without Lithium Battery)



System Overview

Integrated solar monitoring system (without lithium battery), all in one design, using 4G to transfer monitoring data and solar to power, which is easy/quick to install and can save wiring to the greatest extent, includes three parts: 4G network camera, integrated solar power system and camera's mounting bracket, which is more convenient for sale, order and transportation.

The integrated solar power system, integrating solar panels, maximum power point tracking (MPPT) charging controller and mounting brackets, provides stable power supply for the front-end data acquisition system—4G network camera through high conversion charging device. It is compact, portable, easy to install, disassemble and maintain compared with conventional system.

With advanced deep learning algorithm, Dahua WizSense 3 Series network camera supports intelligent functions, such as perimeter protection and smart motion detection. With starlight technology, this series camera provides a better image effect in the condition of low illuminance.

Camera supports multi-angle flexible adjustment.

Features

Integrated sheet metal bracket

The bracket is built of a Q235 steel that makes it both strong and durable. It is ideal for installing solar panels, lithium batteries and cameras, and is designed to make installation and maintenance of the solar system more convenient.

Monocrystalline Solar Panel

Adopts monocrystalline solar panel to greatly improve optical absorbance efficiency and power generation performance with dusky light.

• Solar Power System

- Integrated design, easy to install
- Supports wall mount and pole mount with PFA150 bracket
- Flexible angle adjustment of the solar panel and the camera
- 60 W monocrystalline solar panel
- Built sturdy to resist storms with sustained winds up to 117 km/h
- (Note: The following four functions are only supported when battery power is used)
- Remote monitoring available through the mobile app
- Maximum Power Point Tracking (MPPT) charging controller
- RS-485 communication
- Electric protection

• 4G Network Camera

- 2MP 1/2.8" CMOS image sensor, low luminance, and high definition image
- Outputs max. 2MP (1920 × 1080)@25/30 fps
- H.265 codec, high compression rate, ultra-low bit rate
- Built-in IR LED, and the max. illumination distance is 50 m
- ROI, SMART H.264+/H.265+, AI H.264/H.265, flexible coding, applicable to various bandwidth and storage environments
- Rotation mode, WDR, 3D NR, HLC, BLC, digital watermarking, applicable to various monitoring scenes
- Intelligent detection: Intrusion, tripwire (support the classification and accurate detection of vehicle and human)
- Abnormality detection: Motion detection, privacy masking, no SD card, SD card full, SD card error, network disconnection, IP conflict, and illegal access
- Support low power push alarm function; support the integration of solar energy
- Support the camera to get the power information through 485 link, and OSD overlay display
- Alarm: 2 in, 2 out; audio: 1 in, 1 out; 1 RS-485; supports max. 256 G Micro SD card
- 12 VDC power supply
- IP67 protection
- SMD 3.0



(Note: The following four functions are only supported when battery power is used.)

Remote Monitoring with APP

With Dahua cameras, it supports real-time remote monitoring of the system operation status and alarm prompts of battery with APP.

Maximum Power Point Tracking Charging Controller

MPPT controller helps significantly improve the energy utilization efficiency of the System, and raise the charging efficiency by 10%–30% compared with conventional PWM controller.

RS-485 Port

RS-485 port and standard Modbus protocol, meeting communication requirements in various scenarios.

Electronic Protection

Comprehensive electronic protection: Current limiting, short circuit, and reverse current protection of solar panel; reverse connection, overvoltage, over-discharge, and over-temperature protection of lithium battery; overload and short circuit protection of load.

Smart H.265+ & Smart H.264+

With advanced scene-adaptive rate control algorithm, Dahua smart encoding technology realizes the higher encoding efficiency than H.265 and H.264, provides high-quality video, and reduces the cost of storage and transmission.

SMD

With intelligent algorithm, Dahua Smart Motion Detection technology can categorize the targets that trigger motion detection and filter the motion detection alarm triggered by non-concerned targets to realize effective and accurate alarm.

4G

With a built-in high-performance 4G mobile network module, the camera can be directly registered to cloud platforms after a 4G SIM card has been inserted into it. It can be installed anywhere without the hassle of network cables. Users can perform real-time monitoring and remote control of the camera from a mobile client through 4G network.

WDR

With advanced Wide Dynamic Range (WDR) technology, Dahua network camera provides clear details in the environment of strong brightness contrast. The bright and dark area can get clear video even in high brightness environment or with backlight shadow.

Protection (IP67, wide voltage)

IP67: The camera passes a series of strict test on dust and soak. It has dust-proof function, and the enclosure can works normal after soaking in 1 m deep water for 30 minutes.

Wide voltage: The camera allows $\pm 30\%$ (for some power supplies) input voltage tolerance (wide voltage range), and it is widely applied to outdoor environment with instable voltage.

Cyber Security

Dahua network camera is equipped with a series of key security technologies, such as security authentication and authorization, access control, trusted protection, encrypted transmission, and encrypted storage, which improve its security defense and data protection, and prevent malicious programs from invading the device.

Technical Specification

Integrated Solar Power System (Without Lithium Battery)

Model	DH-PFM378-B60-W
Solar Panel	
Type	Monocrystalline silicon
Max. Power	60 W
Output Voltage	18.8 VDC
Solar Cell Efficiency	21%
Max. Mechanical Load	5400 Pa
Port	
Output Port	CSA authorized M15 2-core waterproof connector (connected to lithium battery)
General	
Main Body Material	Q235
IP Rating	IP65
Installation	Supports wall mount or pole mount with PFA150 bracket
Adjustable Angle	Solar panel: H: 360°, V: 10°/20°/30°/40°/50° Camera: H: 360°, V: 0°–75°
Product Dimensions	710.0 mm × 603 mm × 666 mm (27.95" × 23.74" × 26.22")
Packaging Dimensions	785 mm × 565 mm × 200 mm (30.91" × 22.24" × 7.87")
Packaging Method	1 pc in each carton
Net Weight	11.9 kg (26.24 lb)
Gross Weight	12.3 kg (27.12 lb)

Environment

Operating Altitude	< 3000 m (9842.5 ft)
Applicable Area	Areas with daily exposure to solar radiation for more than 3.5 hours
Operating Temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Operating Humidity	< 95% (RH)
Storage Temperature	0 °C to +40 °C (+32 °F to +104 °F)
Storage Humidity	< 95% (RH)

Certifications

Certifications	CE: EN IEC61000-6-4, EN IEC61000-6-2 FCC: 47 CFR Part 15, Subpart B UKCA: EN IEC61000-6-4, EN IEC61000-6-2
----------------	--

2MP IR Fixed focal Bullet WizSense 4G Network Camera

Model	DH-IPC-HFW3241DF-AS-4G
-------	------------------------

Camera

Image Sensor	1/2.8" CMOS
Effective Pixels	1920 (H) × 1080 (V)
RAM/ROM	512 MB/128 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Min. Illumination	0.002 lux@F1.6 (Color, 30 IRE) 0.0002 lux@F1.6 (B/W, 30 IRE) 0 lux (Illuminator on)
S/N Ratio	> 56 dB
Illumination Distance	50 m (273 ft) (IR)
Illuminator On/Off Control	Auto; Manual
Illuminator Number	2 (IR LED)
Pan/Tilt/Rotation Range	Pan: 0°–360° Tilt: -60°–0° Rotation: 0°–360°

Lens

Lens Type	Fixed-focal
Mount Type	M12
Focal Length	2.8 mm; 3.6 mm; 6 mm
Max. Aperture	2.8 mm: F1.6 3.6 mm: F1.6 6 mm: F1.6
Field of View	2.8 mm: Horizontal 107° × Vertical 56° × Diagonal 127° 3.6 mm: Horizontal 88° × Vertical 44° × Diagonal 105° 6 mm: Horizontal 54° × Vertical 29° × Diagonal 63°
Iris Type	Fixed
Close Focus Distance	2.8 mm: 0.7 m (2.5 ft) 3.6 mm: 1.3 m (4.25 ft) 6 mm: 2.8 m (9.15 ft)

	Lens	Detect	Observe	Recognize	Identify
DORI Distance	2.8 mm	43.9 m (144 ft)	17.5 m (57.4 ft)	8.8 m (28.8 ft)	4.4 m (14.4 ft)
	3.6 mm	58.9 m (193 ft)	23.6 m (77.4 ft)	11.8 m (38.4 ft)	5.9 m (19.4 ft)
	6 mm	88.3 m (289.6 ft)	35.3 m (115.8 ft)	17.7 m (58 ft)	8.8 m (28.8 ft)

Professional, Intelligent

Intelligent Search	Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos
SMD 3.0	Less false alarm, longer detection distance
IVS (Perimeter Protection)	Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human)
Smart Search	Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos

Video

Video Compression	H.265; H.264; H.264H; H.264B; MJPEG (Only supported by the sub stream)
Smart Codec	Smart H.265+; Smart H.264+
AI Coding	AI Coding AI H.265; AI H.264
Video Frame Rate	Main stream: 1920 × 1080@(1 fps–30 fps) Sub stream: 704 × 576@(1 fps–25 fps)/704 × 480@(1 fps–30 fps) Third stream: 1920 × 1080@(1 fps–30 fps) *The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity.
Stream Capability	3 streams
Resolution	1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288)
Bit Rate Control	CBR; VBR
Video Bit Rate	H.264: 512 kbps -8192 kbps H.265: 256 kbps -7424 kbps
Day/Night	Auto (ICR)/Color/B/W
BLC	Yes
HLC	Yes
WDR	120 dB
White Balance	Auto; natural; street lamp; outdoor; manual; regional custom
Gain Control	Auto; manual
Noise Reduction	3D NR
Motion Detection	OFF/ON (4 areas, rectangular)
Region of Interest (RoI)	Yes (4 areas)
Image Rotation	0°/90°/180°/270° (Support 90°/270° with 1920 × 1080 resolution and lower)
Mirror	Yes
Privacy Masking	8 areas

Audio

Audio Compression	PCM; G.711a; G.711Mu; G.726; G.723
Built-in MIC	Yes

Alarm

Alarm Event	No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; video tampering; tripwire; intrusion; scene changing; audio detection; voltage detection; external alarm; SMD; security exception
-------------	--

Network

Network	RJ-45 (10/100 Base-T)
SDK and API	Yes
Cyber Security	Video encryption; firmware encryption; configuration encryption; Digest; WSSE; account lockout; security logs; IP/MAC filtering; generation and importing of X.509 certification; syslog; HTTPS; 802.1x; trusted boot; trusted execution; trusted upgrade
Network Protocol	IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; QoS; UPnP; NTP; Multicast; ICMP; IGMP; NFS; SAMBA; PPPoE; SNMP
Interoperability	ONVIF (Profile S/Profile G/Profile T); CGI; P2P; Milestone
User/Host	20 (Total bandwidth: 64 M)
Storage	FTP;SFTP; Micro SD card (support max. 256 GB); NAS
Browser	IE: IE8/9/11 Chrome Firefox
Management Software	Smart PSS; DSS; DMSS
Mobile Client	iOS; Android
4G	4G_LTE: B1/B3/B5/B7/B8/B20/B28/B38/B40/B41 3G_WCDMA: B1/B5/B8 2G_GSM: B3/B5/B8

Certification

Certifications	CE-LVD: EN62368-1 CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU FCC: 47 CFR FCC Part 15, Subpart B
----------------	---

Port

RS-485	1 (baud rate range: 1200 bps–115200 bps)
Audio Input	1 channel (RCA port)
Audio Output	1 channel (RCA port)
Alarm Input	2 channels in: 5 mA 3 V–5 VDC
Alarm Output	2 channels out: 300 mA 12 VDC

Power

Power Supply	12 VDC
Power Consumption	Basic: 3.3 W (12 VDC); Max. (WDR+H.265+IR+4G): 5.9 W (12 VDC)

Environment

Operating Temperature	–30 °C to +60 °C (–22 °F to +140 °F)
Operating Humidity	≤ 95%
Storage Temperature	–30 °C to +70 °C (–22 °F to +163 °F)
Protection	IP67

Structure

Casing	Metal + plastic
Dimensions	227.6 mm × 204.2 mm × 87.2 mm (8.96" × 8.04" × 3.43")
Net Weight	945 g (2.08 lb)
Gross Weight	1440 g (3.17 lb)

Pole Mount Bracket

Model	DH-PFA150
-------	-----------

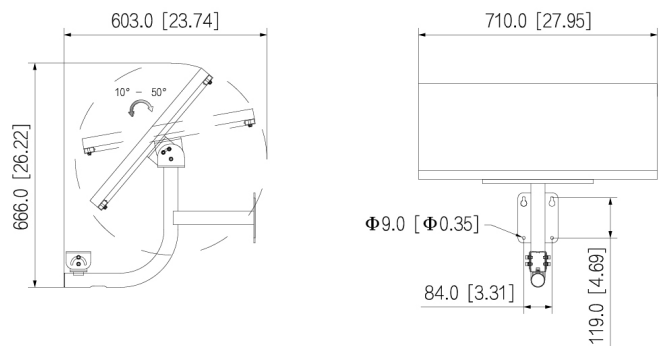
General

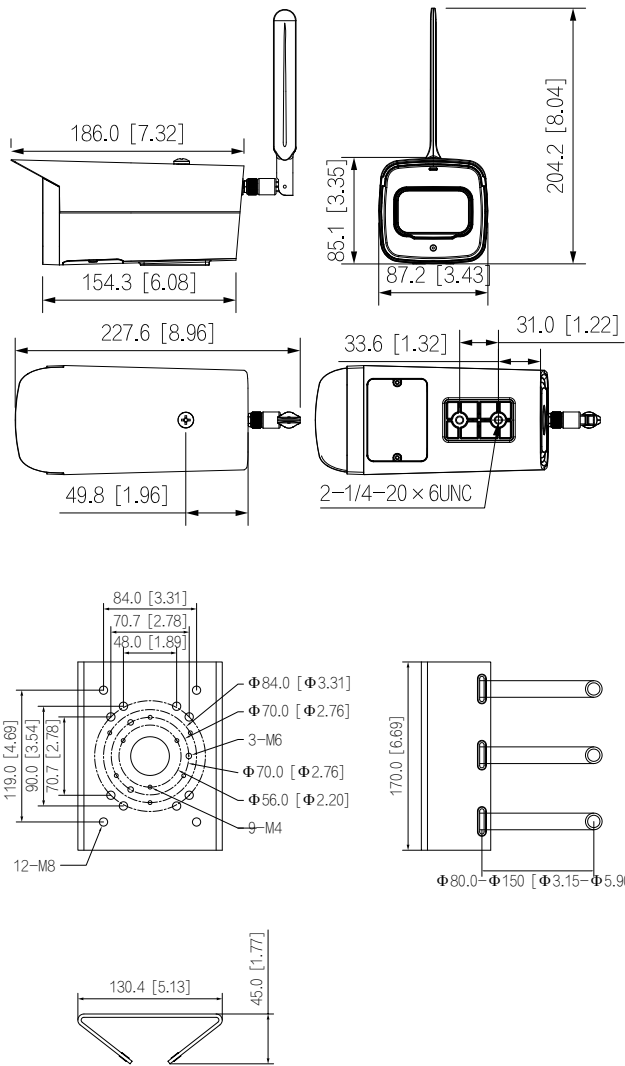
Material	SECC & SUS304
Dimension (W×H×D)	130.4 mm × 170 mm × 45 mm (5.13" × 6.69" × 1.77")
Weight	1.1 kg (2.43 lb)
Load Bearing	10 kg (22.05 lb)

Ordering Information

Type	Model	Description
Solar Series	KIT/DH-PFM378-B60-W/DH-IPC-HFW3241DF-AS-4G/DH-PFA150	KIT: 60 W integrated solar power system (Without Lithium Battery) /4G bullet camera/DH-PFA150
Accessories (Optional)	PFM372-LS20-H	Integrated solar lithium battery

Dimensions (mm[inch])





Accessories

Optional:



PFM372-LS20-H
Integrated Solar
Lithium Battery

Application

