

# KIT/DH-PFM378-B125-CB/DH-SD49425DB-HNY-GQ-EAU

## 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 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. Featuring powerful optical zoom and accurate pan/tilt/zoom performance, this camera provides an all-in-one solution for capturing long distance video surveillance for outdoor applications. Together with infrared illumination and Starlight Technology, the camera is the perfect solution for dark, lowlight applications. The series combines a day/night mechanical IR cut filter for the highest image quality in variable lighting conditions during the day. 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
- Pole mount
- Angle flexible adjustment of solar panel and camera mount
- 125W monocrystalline solar panel
- Aluminum alloy frame
- 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 PTZ Camera

- 1/2.8" 4Megapixel STARVIS™ CMOS
- 25x optical zoom
- Starlight technology
- Max. 25/30fps@4M
- IR distance up to 100 m
- Perimeter protection
- Face detection
- SMD 3.0
- IP66
- 4G

**(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.

**Starlight Technology**

With advanced image processing technology and optical technology, Dahua Starlight technology can provide clear colorful video in the environment of low illuminance. It widely applies to various environments of low illuminance.

**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.

**IVS**

With advanced video algorithm, Dahua IVS technology supports intelligent functions, such as tripwire and intrusion.

**Face Detection**

Dahua Face Detection technology can detect the face in the image. With deep learning algorithm, the technology supports detecting, tracking, capturing and selecting the best face image, and then outputs face snapshot.

**Protection (IP66, TVS 6000 V)**

IP66, TVS 6000 V lightning proof, surge protection, and voltage transient protection.

**PFA Technology**

PFA technology has introduced new methods of judgment that ensure the accuracy and predictability of the direction of subject distance adjustment. The result is a set of advanced focusing algorithms that ensure image clarity when zooming and that shorten focus time. This makes the camera highly advanced in its functions, substantially improving the quality of your experience.

**4G Transmission**

The camera supports 4G signal transmission and the following network types: LTE/WCDMA/GSM. And it supports the following frequency band respectively:

LTE-TDD: Dual-band Band 38/40

LTE-FDD: Hepta-band Band 1/3/5/7/8/20/28

WCDMA: Tri-band Band 1/5/8

GSM: Tri-band Band 850/900/1800

**SMD**

Empowered by Deep-Learning Algorithms, Dahua SMD filters out motion detection alarms triggered by targets that are not a concern. It quickly recognizes humans and vehicles, triggering alarms when an intrusion occurs.

**Technical Specification****Integrated Solar Power System ( Without Lithium Battery)**

Model	DH-PFM378-B125-CB
-------	-------------------

**Solar Panel**

Type	Monocrystalline silicon
Max. Power	125 W
Output Voltage	18.8 VDC
Solar Cell Efficiency	21%
Max. Mechanical Load	5400 Pa

**Controller**

Type	MPPT
Operating Voltage	12 VDC
Rated Charging Current	10 A
Rated Discharge Current	10 A
MPPT Tracking Efficiency	≥ 99%
Communication Mode	RS485
Over-discharge Protection Voltage	11.1 VDC

**Port**

Power Output	Φ5.5 mm × Φ2.1 mm × 12 mm (Φ0.22" × Φ0.08" × 0.47")
RS-485	Red: RS-485-A Black: RS-485-B
Output Port	CSA authorized M15 2-core waterproof connector (connected to lithium battery)

**General**

Main Body Material	Q235 steel/aluminum
IP Rating	IP65
Installation	Pole mount, Φ80 mm–Φ150 mm
Adjustable Angle	Solar panel: H: 360°, V: 10°/20°/30°/40°/50°
Product Dimensions	875 mm × 761.9 mm × 951.9 mm (34.45" × 30.00" × 37.48")
Packaging Dimensions	930 mm × 825 mm × 275 mm (36.61" × 32.48" × 10.83")
Packaging Method	1 pc in each carton
Net Weight	20.1 kg (44.31 lb)
Gross Weight	26 kg (57.32 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 55032:2015+A11:2020, EN 55030-4:2011+A1:2014, EN 55024:2010+A1:2015, EN 55035:2017+A11:2020 FCC: 47 CFR Part 15, Subpart B UKCA: EN 55032:2015+A11:2020, EN 55030-4:2011+A1:2014, EN 55024:2010+A1:2015, EN 55035:2017+A11:2020
----------------	--

**4MP 25x Starlight IR 4G Network PTZ Camera**

Model	DH-SD49425DB-HNY-GQ-EAU
-------	-------------------------

**Camera**

Image Sensor	1/2.8" CMOS
Pixels	4 MP
Max. Resolution	2560 (H) × 1440 (V)
ROM	256 MB
RAM	512 MB
Electronic Shutter Speed	1/1 s–1/30,000 s
Scanning System	Progressive
Min. Illumination	Color: 0.005 lux@F1.6 B/W: 0.0005 lux@F1.6 0 lux (illuminator on)
Illumination Distance	100 m (328.08 ft) (IR)
Illuminator On/Off Control	Zoom Prio; Manual; Auto; Off
Illuminator Number	3 (IR)

**Lens**

Lens Type	5 mm–125 mm			
Max. Aperture	F1.6–F3.6			
Field of View	H: 51.9°–3.0°; V: 39.7°–2.2°; D: 63.1°–3.7°			
Optical Zoom	25×			
Focus Control	Auto; semi-auto; manual			
Close Focus Distance	0.1 m–0.5 m (0.33 ft–1.64 ft)			
Iris Control	Auto; manual			
DORI Distance	Detect	Observe	Recognize	Identify
	2500 m (8208.10 ft)	987.5 m (3239.83 ft)	500 m (1640.42 ft)	250 m (820.21 ft)

**PTZ**

Pan/Tilt Range	Pan: 0° to 360° endless Tilt: –15° to +90°, auto flip 180°
Manual Control Speed	Pan: 0.1°/s–80°/s Tilt: 0.1°/s–80°/s

Preset Speed	300
Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5
Power-off Memory	Yes
Idle Motion	Pattern; Preset; Scan; Tour
PTZ Protocol	DH-SD Pelco-P/D(Auto recognition)

**Intelligence**

IVS (Perimeter Protection)	Tripwire; intrusion; crossing fence detection; loitering detection; abandoned/missing object; fast moving; parking detection; people gathering; vehicle/human alarm classification
Face Detection	Supports face detection, capturing snapshots, and enhancing face images. Face cutout is also offered, where you can cutout one face at a time and customize the size to be a one-inch photo. The supported methods for capturing snapshots are real-time capturing and quality first.
SMD	Yes

**Video**

Video Compression	H.264H; H.264B; Smart H.265+; H.264; H.265; MJPEG(Sub Stream); Smart H.264+
Stream Capability	3 streams
Resolution	4M (2560 × 1440); 3M (2304 × 1296); 1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288)
Video Frame Rate	Main stream: 4M/3M/1080p/1.3M/720p @ (1–25/30 fps) Sub stream 1: D1/CIF/VGA@ (1–25/30 fps) Sub stream 2: 720p@(1–25/30 fps)
Bit Rate Control	CBR/VBR
Video Bit Rate	H.264: 2816 kbps–13056 kbps H.265: 1024 kbps–7936 kbps
Day/Night	Auto (ICR)/Color/B/W
BLC	Yes
HLC	Yes
WDR	120 dB
White Balance	Auto; indoor; outdoor; tracking; manual; sodium lamp; natural light; street lamp
Gain Control	Auto; manual
Noise Reduction	2D NR; 3D NR
Motion Detection	Yes
Image Stabilization	Electronic (EIS)
Defog	Electronic

Digital Zoom	16x
Image Rotation	180°
Privacy Masking	Up to 24 areas can be set, with up to 8 areas in the same view; multiple colors available
S/N Ratio	≥55 dB
<b>Audio</b>	
Audio Compression	G.711a; G.711Mu; G.726; MPEG2-Layer2; G722.1; PCM
<b>Network</b>	
Network Port	RJ-45 (10/100 Base-T)
Carrier Network System	4G; 3G; 2G
Wireless Carrier Frequency Band	LTE-TDD: Dual-band Band 38/40 LTE-FDD: Hepta -band Band 1/3/5/7/8/20/28 WCDMA: Tri-band Band 1/5/8 GSM: Tri-band Band 850/900/1800
Network Protocol	FTP; RTMP; IPv6; Bonjour; IPv4; DNS; RTCP; PPPoE; NTP; RTP; 802.1x; HTTPS; SNMP; TCP/IP; DDNS; UPnP; NFS; ICMP; UDP; IGMP; HTTP; SSL; DHCP; SMTP; Qos; RTSP; ARP
Interoperability	CGI; SDK; ONVIF (Profile S&G&T)
Streaming Method	Unicast/Multicast
User/Host	20 (total bandwidth: 64 M)
Storage	FTP; Micro SD card (512 GB); NAS
Browser	IE 9 and later versions Chrome 41 and later versions Firefox 50 and later versions Safari 10 and later versions
Management Software	DSS; DMSS; NVR; Smart PSS; IVSS
Mobile Client	iOS; Android
<b>Certification</b>	
Certifications	CE: EN55032/EN55024/EN50130-4 FCC: Part15 subpartB, ANSI C63.4-2014
<b>Port</b>	
RS-485	1 (baud rate: 1200 bps–9600 bps)
Audio Input	1 channel
Audio Output	1 channel
Alarm Linkage	Capture; recording; send email; preset; pattern; tour; alarm digital input
Alarm Event	Motion/tampering detection; audio detection; network disconnection detection; IP conflict detection; memory card state detection; memory space detection
Alarm I/O	2/1
Audio I/O	1/1

**Power**

Power Supply	12 VDC, 3 A (–10% to +25%)
Power Consumption	Deep sleep: 0.05 W light sleep: 2.5 W Basic: 3.75 W (not pulling stream in 4G); 4.54 W (pulling stream in 4G); 7.98 W (illuminator+not pulling stream in 4G); 8.77 W (illuminator+pulling stream in 4G) Max: 15.49 W (illuminator+PTZ+pulling stream in 4G)

**Environment**

Operating Temperature	–40 °C to +65 °C (–40 °F to +149 °F)
Operating Humidity	≤ 95%
Protection	IP66, TVS 6000 V lightning proof; surge protection; voltage transient protection

**Structure**

Product Dimensions	270.4 mm × Φ160 mm (10.65" × Φ6.30")
Net Weight	2.6 kg (5.73 lb)
Gross Weight	4.2 kg (9.26 lb)

**Ordering Information**

Type	Model	Description
Solar Series	KIT/DH-PFM378-B125-CB/DH-SD49425DB-HNY-GQ-EAU	KIT: 125 W integrated solar power system (Without Lithium Battery) /4MP 25x Starlight IR 4G Network PTZ Camera
Accessories (Optional)	PFM372-L45-4S14P	Integrated solar lithium battery

**Accessories**

Optional:



PFM372-L45-4S14P  
Integrated Solar  
Lithium Battery