alhua TECHNOLOGY

DH-PFR5QI-E60-PV
60 m Sound & Light Visual Radar

- Radar and video integration.
- 60 GHz high frequency radar is not affected by severe weather. Extremely low rate of false alarms and no missing alarms.
- 4MP 1/1.8" CMOS image sensor, low illuminance, high image definition.
- Easy to calibrate: One-click auto calibration and manul calibration.
- Supports drawing protection zone on live view which can be transformed to radar protection zone automatically; applicable to various scenes.
- Target filtering of human and vehicles.
- Speed filtering of target with a speed of 0–40 km/h, achieving accurate and efficient detection.
- Outputs max. 4MP (2560 × 1440) @30 fps.
- H.265 codec, high compression rate, ultra-low bit rate.
- Built-in IR illuminator, and the max. illumination distance is 35 m.
- Built-in warning white light and speaker links alarm to performs sound and light alarm.

System Overview

Equipped with a 60 GHz radar chip and a 4MP wide-angle lens, the visual radar realizes all-weather and high-precision detection. The visual radar supports speed filtering, automatic calibration, changing live view protection zone into radar protection zone. With the intelligent algorithm, the visual radar achieves extremely low rate of false alarms and no missing alarms, which greatly improves the video quality in severe environment. The visual radar supports alarm linkage with sound and light, and integrates radar detection and video playback.

Functions

60 GHz Radar & 4MP Video Integration
The Self-developed Dahua 60 GHz radar algorithm combines high-quality video display, improving perimeter/area intrusion protection and realizing wide-range, 7/24 all-weather and high-precision detection.

One-click Calibration
Dahua intelligent algorithm realizes one-click auto/manual calibration which is easy to operate and applicable to various scenes.

Multi-level Perimeter Protection
Support region setting with different alarm priority, external alarm linkage, human and vehicle filtering, vehicle detection with low and medium speed, and intrusion/tripwire rules.

Radar and Video Integration	Speed Filtering	Active Deterrence	24/7 All-Weather	Large Detection Area	High Accuracy
Target Filtering	4Mp	CE RED	IP66		

Intelligent Algorithm of Radar
Intelligent algorithm is used to identify complex scenes and achieve high accuracy in different scenarios. Support human and vehicle recognition and speed filtering of moving targets.

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

Protection and Certifications
Meet IP66 and CE RED standards.

Scene
Applicable to various perimeter intrusion scenes, such as villa, warehouse and parking lot. It provides a safer and more comprehensive solution for protection.

Technical Specification

Radar

Max. Target Number	64
Distance	60 m (196.85 ft)
Angle	Horizontal: 120° Pitch angle: 26°
Distance Accuracy	±0.5 m (1.64 ft)
Angle Accuracy	±1°
Max. Detection Speed	80 km/h, continuous trace
Min. Detection Speed	0.72 km/h, continuous trace
Modulation Method	FMCW
Scan Frequency	20 Hz
Working Frequency	60 GHz–61 GHz
Supported Target Type	Human; vehicle
Transmission Power	< 20 dBm (100mW)

Camera

Image Sensor	1/1.8" CMOS
Pixel	4MP
Max. Resolution	2560 (H) × 1440 (V)
Electronic Shutter Speed	1/3 s–1/100000 s
Min. Illumination	0.0036 Lux @F1.6 (Color); 0.0036 Lux @F1.6 (B/W); 0 Lux (IR on)
S/N Ratio	> 56 dB
Illumination Distance	35 m (114.83 ft) (0°, visible human body shape)
Illuminator Number	4

Lens

Lens Type	Fixed-focal
Lens Mount	M16
Focal Length	2.8 mm (equivalent focal distance of 1/2.7")
Max. Aperture	F1.6
Field of View	Horizontal: 104°; Vertical: 55°; Diagonal: 121°
Iris Control	Fixed
Close Focus Distance	0.2 m

Video

Video Compression	H.265; H.264; H.264H; H.264B
Smart Codec	H.264/H.265
Video Frame Rate	Main stream: 50 Hz: 25 fps (2560 × 1440); 25 fps (2048 × 1536); 25 fps (1920 × 1080); 25 fps (1280 × 960); 25 fps (1280 × 720) 60 Hz: 30 fps (2560 × 1440); 30 fps (2048 × 1536); 30 fps (1920 × 1080); 30 fps (1280 × 960); 30 fps (1280 × 720)
	50 Hz: 25 fps (704 × 576); 25 fps (352 × 288) 60 Hz: 30 fps (704 × 480); 30 fps (352 × 240) Third stream: 50 Hz: 25 fps (1920 × 1080); 25 fps (1280 × 960); 25 fps (1280 × 720) 60 Hz: 30 fps (1920 × 1080); 30 fps (1280 × 960); 30 fps (1280 × 720)
Video Bit Rate	H.264: 3 Kbps–8192 Kbps; H.265: 3 Kbps–8192 Kbps
Day/Night	Color/B/W
BLC	Yes
HLC	Yes
WDR	102 dB
White Balance	Auto/manual/natural/street lamp/outdoor
Gain Control	Auto/manual
Noise Reduction	2D NR/3D NR
Default Bit Rate with Default Resolution	6144 Kbps (2560 × 1440)
Defog	Yes
Image Stabilization	Yes
LDC	Yes

Alarm

Alarm Event	Network disconnection; IP conflict; illegal access; intrusion; tripwire
Alarm Input	3
Alarm Output	2, support alarm linkage
Alarm Linkage	Snapshot/SD card recording/email

Network

Network Port	1 (RJ-45; support 10 M/100 M network data)
Network Protocol	IPv4/IPv6; HTTP; HTTPS; SSL; TCP/IP; UDP; UPnP; ICMP; IGMP; SNMP; RTSP; RTP; SMTP; NTP; DHCP; DNS; PPPOE; DDNS; FTP; IP Filter; QoS; Bonjour; 802.1x
Interoperability	ONVIF (Profile S); CGI; Imou
Storage	NAS; FTP; Micro SD card (128 G)
Browser	IE 7 and later Chrome 45 and earlier Firefox 46 and earlier
User/Host	20 (total bandwidth: 64 M)
SDK and API	Yes
Management Software	DSS

Sound and Light Alarm

Number of Warning Light	2
Warning Light Mode	Yes, flashing mode, solid on mode
Warning Light Delay	Yes, 5 s–30 s
Max. Distance of Warning Speaker	10 m (32.81 ft) (outdoor open space, 60 dB)

Warning Speaker Mode	1–3 times
Alarm Audio Upload & Record	Yes, up to 10 audios
Alarm Audio Import & Output	Yes

Function

Image Setting	Brightness; Contrast; Sharpness; Saturation; Gamma
OSD Overlay	Time; channel; location; custom
Record Mode	Manual record; scheduled record; alarm record; Record priority: Manual > external > schedule
Default	Support one-click restoring
User Management	Up to 20
Security	Username and password; MAC address; HTTPS; IEEE 802.1x ; network access control
Region Management	Pre-warning zone; alarm zone; shield zone
Target Filtering	Yes, human/vehicle
Speed Filtering	Yes, 1–80 km/h (Objects whose speeds are not within the target speed range will not trigger alarms)
Recognition Sensitivity	Yes, human, vehicle recognition sensitivity configurable
Radar Structuring	Yes, target track displayed on live view, including distance, angle, speed and type
Radar OSD Detection Overlay	Yes, 8 positions
Device Attitude	Yes, display pitch angle and roll angle
Protection Zone Mapping	Yes, draw on live view to define actual radar protection zone
Auto Calibration	Yes, automatically calibrate radar and image
Manual Calibration	Yes, manually calibrate radar and image
Sound and Light Linkage	Yes

Power

Operating Voltage	12V DC (±30%); PoE (802.3at)
Power Supply	12V DC/POE
Power Consumption	Basic power consumption: 10W; Max. power consumption: 22W
Port	Terminal block

Port

SD Card	Yes
Indicator Light	Yes. Network indicator (yellow); operation indicator (red and green); power indicator (green)
Audio Input	1 × 3.5 mm port
Audio Output	1 × 3.5 mm port
RS-485	1 (baud rate range: 1200 bps–115200 bps)

Environment

Operating Temperature	−40°C to +70°C (−40°F to +158°F)
Operating Humidity	≤ 95%
Protection	IP66

Structure

Casing	Metal + plastic
Product Dimensions	160.0 mm × 194.4 mm × 160.0 mm (6.30" × 7.65" × 6.30") (L × W × H)
Packaging Dimensions	277.0 mm × 274.0 mm × 224.0 mm (10.91" × 10.79" × 8.82") (L × W × H)
Packaging Method	4 in one package
Net Weight	2.51 kg (5.53 lb)
Gross Weight	2.80 kg (6.17 lb)
Installation	Pole mount; wall mount
Bracket	PFA154
Power Adapter	Optional

Certifications

Certifications	CE: EN 50385; EN 55032; EN 55024; EN 55035; EN 50130-4; ETSI EN 301 489-1; ETSI EN 301 489-3; EN 62368-1

Ordering Information
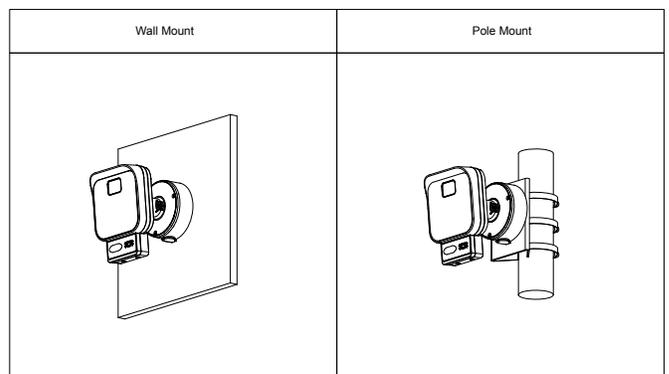
Type	Model	Description
Visual Radar	DH-PFR5QI-E60-PV	4MP IR 60 m Sound & Light Visual Radar
Accessory	PFA154	Pole mount bracket

Accessory

PFA154
Pole mount bracket

Wall Mount	Pole Mount

Dimensions (mm [inch])

160.0 [6.30]

194.4 [7.66]

210.0 [8.27]

105.0 [4.13]

Ø134.0 [Ø5.27]
Ø118.0 [4.65] 3-Ø4.4

Range Coverage Diagram

Human / Vehicle

0°
15°
30°
45°
60°
75°
90°

0   20   40   60   80   100   120
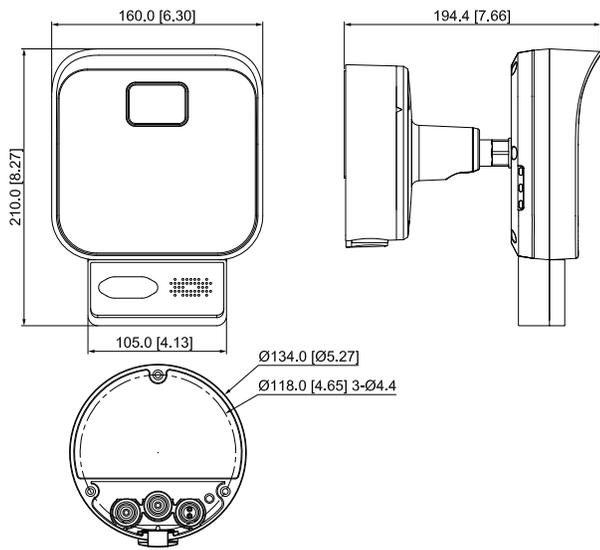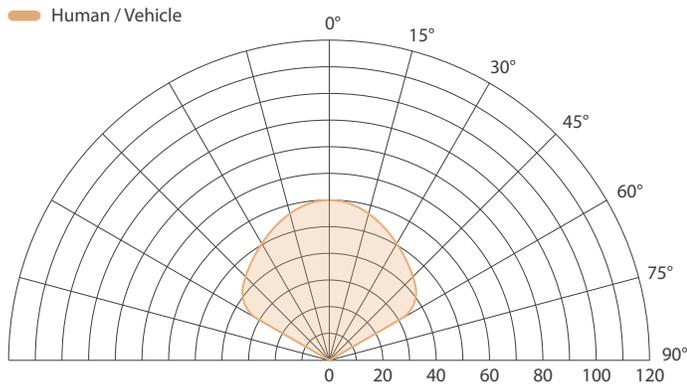
* This diagram is for reference only, the detection distance depends on the actual environment.