alhua TECHNOLOGY

4MP Enhanced Starlight Network PTZ Camera (45x)
WizSense Analytics and Auto-tracking

Wiz Sense

WizSense Series devices combine Dahua's powerful Analytics+ with an intuitive and easy to use interface. WizSense devices offer Smart Motion Detection and Perimeter Protection functions that focus on human and vehicular images and ignore irrelevant images to capture important video while reducing false alarms. WizSense Series devices provide powerful general security for small to medium size businesses at a sensible price.

System Overview

Featuring powerful optical zoom and accurate pan/tilt/zoom performance, this camera provides an all-in-one solution for capturing long distance video security for outdoor applications. Together with infrared illumination and Enhanced 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 and and True WDR for locations with direct sunlight and glare.

Functions

Enhanced Starlight Technology
For challenging low-light applications, Dahua's Starlight Ultra-low light Technology offers best-in-class light sensitivity, capturing details in low light applications down to 0.005 lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

Perimeter Protection
Dahua Analytics+ includes Tripwire and Intrusion functions that offer custom tripwires based on object type for automation in limited access areas. Perimeter Protection requires fewer pixels to detect an object to deliver improved accuracy and decreased false alarms due to lights, weather, trees, or animals.

Face Detection
Face Detection technology captures a human face in a digital image and then selects the best image and outputs a snapshot of the face.

Smart Motion Detection
Smart Motion Detection, a component of Dahua's Analytics+ technology, improves alarm accuracy and decreases the number of false alarms. The advanced SMD algorithm analyzes a scene for human or vehicle motion, while filtering out other motion due to trees, leaves, animals, weather, and triggers an alarm when detected.

- 1/2.8-in. STARVIS™ CMOS Sensor
- Powerful 45x Optical Zoom Lens
- AI Coding, Smart H.265+ and Smart H.264+ Dual Codec
- Enhanced Starlight Technology for Low-light Applications
- 4MP (2560 × 1440) at 30 fps
- Maximum IR LED Distance of 250 m (820.21 ft)
- Analytics+ Functions: Perimeter Protection, Face Detection, Smart Motion Detection
- IP67 Ingress Protection, IK10 Vandal Resistance, TVS 8000 V Surge Protection

Auto-tracking
This feature controls the pan/tilt/zoom actions of the camera to automatically track an object in motion and to keep it in the scene. The tracking action can be triggered manually or automatically by defined rules. Once a rule is triggered, the camera can zoom in and track the defined target automatically.

Smart H.265+ and Smart H.264+
Smart H.265+ is the optimized implementation of the H.265 codec that uses a scene-adaptive encoding strategy, dynamic GOP, dynamic ROI, flexible multi-frame reference structure and intelligent noise reduction to deliver high-quality video without straining the network. Smart H.265+ technology reduces bit rate and storage requirements by up to 70% when compared to standard H.265 video compression.

Delivering high quality video without straining the network, Smart H.264+ is the optimized implementation of H.264. The Smart H.264+ encoding platform includes a scene adaptive encoding strategy, dynamic GOP, dynamic ROI, flexible multi-frame reference structure and intelligent noise reduction, providing a savings of up to 70% of bandwidth and storage when compared with standard H.264.

Environmental
Subjected to rigorous dust and water immersion tests and certified to the IP67 Ingress Protection rating makes it suitable for demanding outdoor applications.

Supporting dual voltage input (12 VDC or 24 VAC) and a ±25% input voltage tolerance, this camera suits even the most unstable power supply conditions. Its TVS 8000 V lightning rating protects the camera and its structure from the effects of lightning.

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Technical Specification

Camera

Image Sensor		1/2.8-in. CMOS
Effective Pixels		2560 (H) × 1440 (V)
RAM/ROM		1 GB/4 GB
Scanning System		Progressive
Electronic Shutter Speed		1/1 s to 1/30,000 s
Minimum Illumination	Color	0.005 lux at F1.6
	B/W	0.0005 lux at F1.6
	IR Light On	0 lux at F1.6
IR Distance		250 m (820.21 ft)
IR On/Off Control		Zoom Priority, Manual, Smart IR, Off
Illuminator Number		Six (6) IR LEDs

Lens

Focal Length		3.95 mm to 177.75 mm			
Maximum Aperature		F1.6 to F4.95			
Angle of View	Horizontal	65.7° to 1.9°			
	Vertical	39.4° to 1.1°			
	Diagonal	73.1° to 2.1°			
Optical Zoom		45x			
Focus Control		Automatic, Semi-automatic, Manual			
Iris Control		Auto, Manual			
Close Focus Distance		0.1 m to 1 m (0.33 ft to 3.28 ft)			
DORI¹ Distance		Detect	Observe	Recognize	Identify
		2451.7 m (8043.64 ft)	972.9 m (3191.93 ft)	490.3 m (1608.60 ft)	245.2 m (804.46 ft)

PTZ

Pan/Tilt Range	Pan	0° to 360° endless
	Tilt	−20° to +90°, Automatic Flip 180°
Manual Control Speed	Pan	0.1° to 300°/s
	Tilt	0.1° to 200°/s
Preset Speed	Pan	400°/s
	Tilt	300°/s
Presets		300
PTZ Mode		5 Patterns, 8 Tours (Up to 32 Presets per Tour), 5 Scans
Power Up Action		Auto restore to previous PTZ and lens status after power failure
Idle Motion		Activate Preset/Scan/Tour/Pattern if there is no command in the specified period
PTZ Protocol		DH-SD Pelco-P/D(Auto recognition)

Video

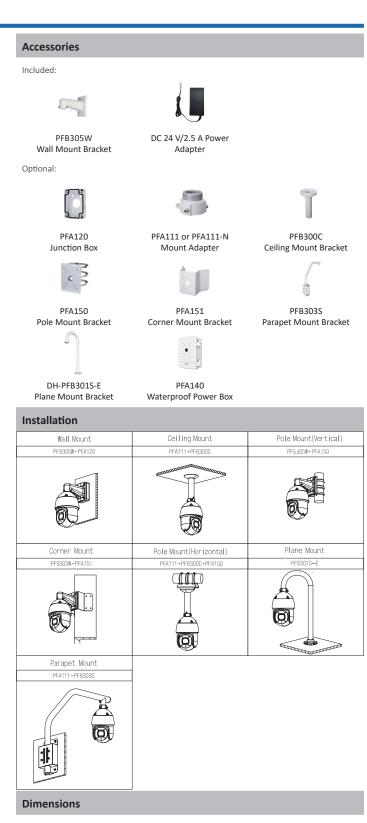|		
Video Compression		AI Coding, H.264H, H.264B, Smart H.265+, H.264, H.265, MJPEG(Sub Stream), Smart H.264+
Streaming Capability		Three (3) Streams
Resolution		4MP (2560 × 1440), 3MP (2048 × 1536), 2304 × 1296, 1080p (1920 × 1080), 720p (1280 × 720), D1 (704 × 576/704 × 480), CIF (352 × 288/352 × 240)
Frame Rate	Main Stream	4MP/3MP/1080p/1.3MP/720p at 1 to 30 fps
	Sub Stream 1	D1/CIF at 1 to 30 fps
	Sub Stream 2	1080p/1.3M/720p at 1 to 30 fps
Bit Rate Control		CBR/VBR
Bit Rate	H.264	96 to 14,848 Kbps
	H.265	38 to 8,960 Kbps
Day/Night		Auto (ICR), Color, B/W
Backlight Compensation		BLC, True WDR (120 dB), HLC
White Balance		Auto, Indoor, Outdoor, Tracking, Manual, Sodium Lamp, Natural Light, Street Lamp
Gain Control		Auto, Manual
Noise Reduction		2D, 3D

Advanced Features		Region of Interest (RoI), Electronic Image Stabilization (EIS), Electronic Defog
Digital Zoom		16x
Image Rotation		180°
Privacy Masking		Up to 24 areas (8 areas allowed per view)
S/N Ratio		≥ 55 dB

Audio

Compression	PCM, G.711a, G.711Mu, G.726, MPEG2-Layer2, G722.1, G729, G723, AAC

Network

Ethernet	One (1) RJ-45 Port (10/100 Base-T)
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	RTMP, CGI, SDK, ONVIF (Profile S, G, T), P2P
Streaming Method	Unicast/Multicast
Maximum User Access	20 Users (Total Bandwidth 64 Mbps)
Edge Storage	Micro SD Slot (Max. 512 GB), FTP/SFTP, NAS
Browser	Safari (iOS 10 or Later), Microsoft Edge, Google Chrome 41 or Later, Firefox 50 or Later
Management Software	DSS, DMSS
Mobile Client	iOS, Android

Certifications

CE	EN55032, EN55024, EN50130-4
FCC	47 CFR FCC Part15, Subpart B, NSI C63.4

Interface

Analog Output		One (1) Channel (CVBS Output, BNC)
RS-485		One (1) Channel (Bit Range: 1200 bps to 9600 bps)
Audio	Input	One (1) Channel
	Output	One (1) Channel
Alarm	Input	Seven (7) Channels
	Output	Two (2) Channels
Alarm Linkage		Capture, Recording, Send Email, Preset, Tour, Pattern, Alarm Digital Input
Alarm Event		Motion/Tampering Detection, Audio Detection, Network Disconnection Detection, IP Conflict Detection, Memory Card State Detection, Memory Space Detection

Electrical

Power Supply		24 VDC, 2.5 A ± 25%, PoE+ (802.3at)
Power Consumption	Basic	13 W
	Maximum	25 W

Environmental

Operating Temperature	−40 °C to +70 °C (−40 °F to +158 °F), ≤ 95% RH
Storage Temperature	−40 °C to +70 °C (−40 °F to +158 °F), ≤ 95% RH
Ingress Protection	IP67
Vandal Resistance	IK10
Surge Protection	TVS 8000 V

Construction

Product Dimensions	337.4 mm × 209 mm (13.28 in. × 8.23 in.)
Net Weight	5.9 kg (13.00 lb)
Gross Weight	9.6 kg (21.16 lb)

Analytics+ Functions

Face Detection+	• Detects and captures a snapshot of a human face in a defined area within a scene.
Smart Motion Detection	• Differentiates between and classifies human and vehicle objects. • Filters false alarms due to leaves, lights, animals, and other inconsequential objects. • Extracts human or vehicle objects from recorded video for quick target search and retrieval.

Perimeter Protection	• Detects human violations using the following methods: **Tripwire**: a target crosses a defined line. **Intrusion**: a target enters or exits a defined perimeter. • Monitors a combination of detection methods.

Intelligent Video System (IVS) Functions

IVS triggers an alarm and takes a defined action for the following events:

Standard Features	Tampering with the camera. Error writing to an onboard Micro SD card. Error sending or receiving data over the network. Unauthorized access to the camera.
Premium Features	
Tripwire	A target crosses a user-defined line.
Intrusion	A target enters or exits a defined perimeter.
Abandoned/Missing Object	A target leaves an object in designated area, or a target removes an object from the same designated area.
Advanced Features	
Loitering Detection	Target is in motion inside a defined area longer than a specified amount of time.
Fast Moving	Target exceeds a set speed when exiting a defined area.
Parking Detection	Vehicle remains in a defined area without motion for a set period of time.
Crowd Gathering	Specified number of people remain inside a defined area for a set time.
Human/Vehicle Classification	Detects human or vehicle violations using Tripwire or Intrusion detection methods.
Auto-tracking	Controls the pan/tilt/zoom actions of the camera to automatically track an object in motion and to keep it in the scene.

Ordering Information

Type	Part Number	Description
Network Camera	6CE445GBNR	4MP 45x Starlight IR Network PTZ Camera
Accessories (Included)	PFB305W	Wall Mount Bracket
	N/A	DC 24 V/2.5 A Power Adapter
Accessories (Optional)	PFA120	Junction Box
	PFA111 or PFA111-N	Mount Adapter
	PFB300C	Ceiling Mount Bracket
	PFA150	Pole Mount Bracket
	PFA151	Corner Mount Bracket
	PFB303S	Parapet Mount Bracket
	DH-PFB301S-E	Plane Mount Bracket
	PFA140	Waterproof Power Box

Accessories

Included:

PFB305W
Wall Mount Bracket

DC 24 V/2.5 A Power Adapter

Optional:

PFA120
Junction Box

PFA111 or PFA111-N
Mount Adapter

PFB300C
Ceiling Mount Bracket

PFA150
Pole Mount Bracket

PFA151
Corner Mount Bracket

PFB303S
Parapet Mount Bracket

DH-PFB301S-E
Plane Mount Bracket

PFA140
Waterproof Power Box

Installation

Wall Mount	Ceiling Mount	Pole Mount(Vertical)
PFB305W+PFA120	PFA111+PFB300C	PFB305W+PFA150

Corner Mount	Pole Mount(Horizontal)	Plane Mount
PFB305W+PFA151	PFA111+PFB300C+PFA150	PFB301S-E

Parapet Mount
PFA111+PFB303S

Dimensions

mm [in.]

Φ46.8 [Φ1.84]

337.4 [13.28]

Φ209.1 [Φ8.23]

Φ170.8 [Φ6.72]