dahua TECHNOLOGY

4MP Starlight+ Dual Illuminators License Plate Recognition Camera

ANPR Camera with IR LEDs and Warm Light LEDs

- 1/1.8-in 4MP CMOS Sensor
- License Plate Recognition Distance Distance up to 20 m (65.62 ft)
- Capture and Recognize License Plates from Vehicles Traveling up to 120 kph (75 mph)
- Starlight+ Technology for Low-light Applications
- H.265 and H.264 Dual Codec
- 4MP (2688 x 1520) at 30 fps Maximum Resolution
- 8 mm to 32 mm Motorized Vari-focal Lens
- Supports Signal, Data, and Communication Interfaces and Connection to External Devices
- Dual Illuminators: 730 nm IR LED and warm LED lights
- Maximum Illumination Distance for ANPR 20 m (65.62 ft)
- Maximum Illumination Distance for Video Monitoring 60 m (196.85 ft)
- Supports Intrusion and Loitering Detection
- Built-in Microphone and Built-in Speaker
- Active Alarm with Red/Blue Lights and Siren or Voice Prompt
- IP67 Ingress Protection, IK10 Vandal Protection
- Five-year Warranty*

System Overview

The ITC413-PW4D-Z3 is a license plate recognition camera with a recording resolution of 2688 x 1520 (4MP) at 30 frames per second with a 1/1.8-in. CMOS sensor. The camera includes a 8 mm to 32 mm vari-focal lens that lets the installer adjust the zoom angle of the picture, providing a 39.9° to 15.1° horizontal angle of view. The camera can capture and recognize license plates of vehicles traveling up to 120 kph (75 mph). The camera can be mounted between 8 m and 20 m (26.25 ft and 65.62 ft) from where the vehicles will be traveling. The ITC413-PW4D-Z3 coupled with a Dahua NVR or DSS Video Management System offers a complete traffic management and parking soluton.

Functions

License Plate Recognition

The License Plate Recogniton camera automatcally captures vehicle license plate images and recognizes license plate numbers and letters. During playback, an operator can perform a license plate search by Time and Date to view thumbnail images of all plates captured during the specified time period or can enter a license plate number to search for vehicles recorded with that plate. License plate recognition technology offers effective entrance/exit management, traffic security, and parking lot monitoring.

High Efficiency Video Coding (H.265)

The H.265 (ITU-T VCEG) video compression standard offers double the data compression ratio at the same level of video quality, or substantially improved video quality at the same bit rate, as compared to older video compression technologies. H.265 offers such impressive compression by expanding the pattern comparison and difference-coding, improving motion vector prediction and motion region merging, and incorporating an additional filtering step called sample-adaptive offset filtering.

Active Alarm

The camera features active alarm functionality to respond automatically to a triggered alarm. The configurable automatic responses include activation of the red/blue lights and the broadcast of a built-in message or siren.

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. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

Cybersecurity

Dahua network cameras are equipped with a series of key cybersecurity technologies including security authentication and authorization, access control, trusted protection, encrypted transmission, and encrypted storage. These technologies improve the camera's ability to prevent malicious access and to protect data.

Environmental

The camera complies with the IK10 Vandal Resistance impact rating making it capable of withstanding the equivalent of 5 kg (11.02 lbs) of force dropped from a height of 40 cm (15.75 in.). Subjected to rigorous dust and water immersion tests and certified to the IP67 Ingress Protection rating makes it suitable for demanding outdoor applications.

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*Warranty applies to products sold through an authorized Dahua Dealer.

Technical Specification

Camera

Image Sensor	1/1.8-in. 4MP CMOS
Image Resolution	2688 × 1520
Electronic Shutter Speed	1/25 s to 1/100,000 s
Maximum Detection Speed	120 kph (75 mph)
RAM/ROM	1 GB/4 GB
S/N Ratio	> 56 dB
Scanning System	Progressive

Minimum Illumination	Color (30 IRE)	0.001 lux at F1.6
	B/W (30 IRE)	0.0002 lux at F1.6
	Illuminator On	0 lux

Illuminator Number	Four (4)
Illuminator On/Off Control	Auto, Manual
Illuminator Type	730 nm IR, Warm Light

Illumination Distance	ANPR	20 m (65.62 ft)
	Video Monitoring	60 m (196.85 ft)

Infrared Wavelength	730 nm
Capture Distance	8 m to 20 m (26.25 ft to 65.62 ft)
Detection Width	6 m to 8 m (19.69 ft to 26.25 ft)
Maximum Number of Passed Vehicles	10,000
Maximum Number of Connections	10

Lens

Focal Length	8 mm to 32 mm

Field of View	Horizontal	39.9° to 15.1°
	Vertical	21.8° to 8.5°
	Diagonal	46.6° to 17.4°

Focus Control	Auto, Area Focus, Manual
Number of Lens	One (1)
Lens Type	Motorized Vari-focal
Maximum Aperture	F1.6
Iris Control	P-Iris

DORI[1] Distance	Lens	Detect	Observe	Recognize	Identify
	W:	160.0 m (524.93 ft)	64.0 m (209.97 ft)	32.0 m (104.99 ft)	16.0 m (52.49 ft)
	T:	406.9 m (1334.97 ft)	162.8 m (534.12 ft)	81.4 m (267.06 ft)	40.7 m (133.53 ft)

Video

Streaming Capability	Two (2) Streams

Video Resolution	Main Stream	4MP (2688 × 1520), 1080p (1920 × 1080), 720p (1280 × 720)
	Sub Stream	720p (1280 × 720), 960H (960 × 480), D1 (704 × 480), CIF (352× 240)

Frame Rate	Main Stream	2688 × 1520/1920 × 1080/1280 × 720 at 30 fps
	Sub Stream	1280 × 720/960 × 480/704 × 480/352 × 240 at 30 fps

Video Compression	H.264H, H.264B, H.264M, H.265, MJPEG

Video Bit Rate	H.264B	2,179 kbps to 13,074 kbps
	H.264M	2,179 kbps to 13,074 kbps
	H.264H	2,179 kbps to 13,074 kbps
	H.265	2,179 kbps to 13,074 kbps
	MJPEG	6,537 kbps to 39,223 kbps

Scene Self-adaptation (SSA)	Supported
Gain Control	Manual, Auto
Noise Reduction	3DNR
Region of Interest	Three (3)
Image Tampering Prevention	Supported (Verified watermarks can be added to video.)
Bit Rate Control	CBR, VBR

Image

Image Encoding Format	JPEG
Image Settings	Brightness, Contrast, Saturation, Gamma, Sharpness, Gain, White Balance
Day/Night	IR Filter, Auto, Color, B/W
Security	Username and password, MAC address, HTTPS, IEEE 802.1x, network access control
White Balance	Auto, Regional Custom, Manual, Outdoor, Natural, Street Lamp
Digital Detail Enhancement (DDE)	Supported
OSD Overlay	Supported (Time and Plate)

Network

Network Protocol	HTTP, HTTPS, 802.1x, TCP, ARP, RTSP, RTP, UDP, RTCP, SMTP, FTP, DHCP, DNS, IPv4/v6, NTP, SFTP,DDNS, SNMP, PPPoE
Interoperability	ONVIF (Profile S/Profile G/Profile T), CGI, ITSAPI, P2P API, SDK
Management Software	DSS Pro, DSS Express
Security	Username and Password, MAC address, HTTPS, IEEE 802.1x, Network Access Control
Browser	Chrome 92 or Later
List Capacity	110,000 (Allow List and Block List)
BLC Mode	BLC, HLC, Ultra WDR (140 dB)

Interface

Audio	Input	Built-in Microphone (Pick-up Distance of 3 m (9.84 ft), Sampling Rate of 48 k)
	Output	One (1) RCA Channel, Built-in Speaker (2 W Power Consumption)

Alarm	Input	Two (2) Optocoupler Input (Wet Node On-off Value: 5 V)
	Output	Two (2) Relay output (2A 30 VDC/0.5A 125 VAC)

RS-485	Two (2) (Half Duplex, Transparent, DHRS,Push Data via Serial Port)
Network	RJ-45 (10/100/1000 self-adaptive Ethernet Port)
Reset Button	One (1)
Storage	256 GB

Electrical

Power Supply	12 VDC, 2 A and POE:802.3at,Type 2,Class 4,(44V to 57V), 0.455A to 0.351A,max.20W

Power Consumption	No Lightning	< 6 W
	Lightning	<12 W
	Maximum	< 17 W (Speaker + Red/Blue Warning Lights On)

Environmental

Ingress Protection	IP67
Vandal Resistance	IK10
Operating Temperature	−30 °C to +65 °C (−22 °F to +149 °F)
Operating Humidity	10% to 90% (non-condensing)
Storage Temperature	−40 °C to +70 °C (−40 °F to +158 °F)
Storage Humidity	≤ 95% (non-condensing)

Environmental

Material	Aluminum Alloy (Body) + Plastic
Product Dimensions (L × W × H)	396.0 mm × 120.8 mm × 127.8 mm (15.59 in. × 4.76 in. × 5.03 in.)
Package Dimensions (L × W × H)	445.0 mm × 238.0 mm × 229.0 mm (17.52 in. × 9.37 in. × 9.02 in.)
Net Weight	2.3 kg (5.07 lb)
Gross Weight	3.2 kg (7.05 lb)

Certifications

Safety	IEC 62368-1:2014 (Second Edition)
Electromagnetic Compatability (EMC)	47 CFR FCC Part 15 SubpartB, Class B EN 55032:2015, Class B EN61000-3-2:2014 EN 61000-3-3:2013 EN 55024:2010+A1:2015 EN55035:2017 EN 50130-4:2011+A1:2014

Analytics+ Functions

Loitering Detection	Target is in motion inside a defined area longer than a specified amount of time.

Intelligent Video System 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. • IP Address Conflict
Premium Features	
Intrusion	A target enters or exits a defined perimeter.

Ordering Information

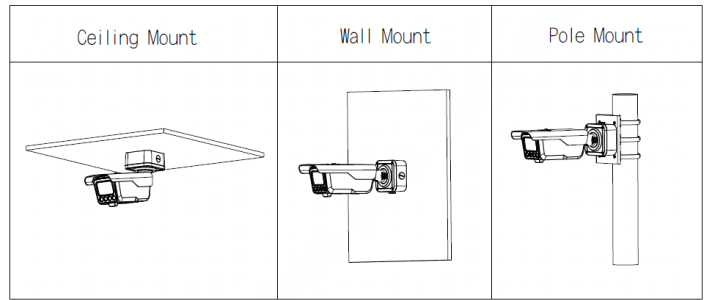| Type	Part Number	Description
ANPR Camera	ITC413-PW4D-Z3	4MP Smart ANPR Camera (Dual Illuminators, 8 mm to 32 mm)
Accessories (Optional)	PFA150	Pole Mount
	DH-PFA143	Outdoor Security Box

Accessories

Optional:

PFA150
Pole Mount

DH-PFA143
Outdoor Security Box

Installation

Ceiling Mount	Wall Mount	Pole Mount

Dimensions

mm [in.]