IPEL-E40V-W2-LED
4MP Full-Color LED AI Varifocal Eyeball Network Camera

IC REALTIME

- 4MP 1/1.8" CMOS image sensor, low illuminance, high image definition
- H.265 & H.264 triple-stream encoding
- 2.7-12mm Varifocal lens, 4MP (2688 × 1520)@30 fps
- IVS, Intelligent Motion Detect, Perimeter Protection, Face Detect, Heat Map, Metadata Support
- Built-in Mic & Speakers, 2 input/1 output Alarm
- Warm light LEDs, up to 164ft of full color Illumination
- 512GB Micro SD Support, IP67, PoE, ePOE support

System Overview

Experience full color video from day to night with IC Realtime's IPEL-B40V-W2-LED! This Elite Eyeball camera is equipped with a high-performance sensor and large aperture lens enabling clear, colorful image in ultra low illuminance environments. The camera provides 30FPS@ 4MP (2688 × 1520) with H.265 support and features a 1/2.7" low illuminance, high image definition CMOS image sensor on top of a 2.7-12mm motorized varifocal lens. Boasting up to 229 feet of full color illumination and 140dB WDR, the camera provides a colorful, vibrant image under the most demanding lighting conditions.

The camera also comes equipped with Intelligent Motion Detect (iMD) and Perimeter Protection technology, which filters moving objects as vehicle or person on motion detect or when setting up virtual tripwire and intrusion zones. It also comes with Heat Map, Face Detect, Metadata and Smart Object Detection.

Functions

Smart (H.265+ & H.264+)
Deliver high quality video without straining the network, Smart H.265+ is the optimized implementation of H.265. The Smart H.265+ encoding technology includes a scene adaptive encoding strategy, dynamic GOP, dynamic ROI, flexible multi-frame reference structure and intelligent noise reduction, providing saving of up to 70% of bandwidth and storage when compared with standard H.265

Starlight Technology
Featuring Starlight Technology, this camera is ideal for applications with challenging lighting conditions. Its low-light performance delivers usable video with minimal ambient light. Even in extreme low-light conditions, Starlight Technology is capable of delivering color images in near complete darkness (0.0005 lux).

Perimeter Protection
IC Realtime's Perimeter Protection features significantly improve detection accuracy. The benefits of Perimeter Protection include up to a 90% reduction in false alarms. Other advantages include a decrease in pixel count requirement for object detection, which translates into more efficiency with less strain on the system. Perimeter Protection options let you customize tripwires based on the object type and allow intelligent automation within a limited area of access such as pedestrian or vehicle-only zones. The combination of advanced AI analytics and real-time alerts maximizes efficiency & balance of the total systems capacity and resources resulting in greater surveillance system efficiency.

Full Color at Night
Utilizing a high-performance sensor and large aperture lens, IC Realtime's Full-color LED technology can display clear colorful image in the environment of ultra low illuminance. With this photosensitivity technology, the camera can capture more available light, and display more colorful image details.

iMD (Intelligent Motion Detect)
This is an upgraded version of motion detection currently known as Intelligent Motion Detection (iMD). The upgraded Plus version greatly improves alarm accuracy by pre-loading a deep learning algorithm that recognizes people and vehicles. Motion detection alerts containing a human and/or vehicle intrusion event are now possible with up to 95% accuracy. Eliminate false alarms, save time and keep stress levels low knowing you're protected.

Protection
The camera's outstanding reliability is unsurpassed due to its rugged design. The camera is protected against water and dust with IP67 rating, making it suitable for indoor or outdoor environments.

Technical Specification

Camera

Image Sensor	1/1.8" CMOS
Effective Pixels	2688 (H) ×1520 (V)
RAM/ROM	1GB / 256MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Minimum Illumination	0.0005 Lux@F1.0
S/N Ratio	> 56 dB
Illumination Distance	Distance up to 164ft (50 m)
LED On/Off Control	Auto / Manual/ Zoom Priority
Full color LEDs	4 (Warm White)

Lens

Lens Type	Motorized vari-focal
Mount Type	Module
Focal Length	2.7 mm–12 mm
Max. Aperture	F1.0
Iris Type	Auto
Angle of View	Horizontal: 104.7°–56.1° Vertical: 54.9°–31.4°
Close Focus Distance	4.9 ft (1.5 m)

	Lens	Detect	Observe	Recognize	Identify
DORI Distance	W	213 ft	85 ft	42 ft	21 ft
	T	365 ft	146 ft	73 ft	36 ft

Pan/Tilt/Rotation

Pan/Tilt/Rotation Range	Pan: 0°–360° Tilt: 0°–90° Rotation:0°–360°

Video

Compression	H.265; H.264; H.264H; H.264B; MJPEG (sub stream only)
AI Coding	AI H.265; AI H.264
Streaming Capability	3 Streams
Resolution	4M (2688 × 1520); 3M (2304 × 1296); 1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)
Frame Rate	Main Stream: 2688 × 1520 (1 fps–25/30 fps)
	Sub Stream: D1 (1 fps–25/30 fps)
	Third Stream: 1080p (1 fps–25/30 fps)
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 32 kbps–16384 kbps H.265: 12 kbps–16384 kbps
Day/Night	Color/B/W
BLC Mode	BLC / HLC / WDR (140dB)
White Balance	Auto/Natural/Street Lamp/Outdoor/Manual
Gain Control	Auto / Manual
Noise Reduction	3D DNR
SSA	Supported
Region of Interest	Off / On (4 Zone)
LDC	Support

Flip	0°/90°/180°/270° (Support 90°/270° with 4MP resolution and lower)
Mirror	Off / On
Privacy Masking	8 areas

Audio

Compression	PCM; G.711a; G.711Mu; G.726; G.723

Network

Ethernet	RJ-45 (10/100Base-T)
Protocol	IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; QoS; UPnP; NTP; Multicast; ICMP; IGMP; NFS; PPPoE; SNMP; P2P
Interoperability	ONVIF(Profile S/ Profile G/ Profile T);CGI;P2P
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
Streaming Method	Unicast / Multicast
Max. User Access	20 Users (Total bandwidth: 80 M)
Edge Storage	FTP; SFTP; Micro SD card (Max. 512 GB); NAS
Web Viewer	IE, Chrome, Firefox, Safari
Management Software	IC Now, DSS
Smart Phone	IOS, Android

Certifications

Certifications	FCC Part 15, Subpart B

Interface

Audio Interface	Built-In Dual Mic and Speakers, 1 Audio In/ Out (RCA ports)
RS485	N/A
Alarm	2 channel in: wet contact, 5mA 3V–5V DC 1 channel out: wet contact, 300mA 12V DC

Electrical

Power Supply	12 VDC/PoE+ (802.3at)/ePoE
Power Redundancy	The device can be powered by PoE and 12V adapter for redundancy (if one of the power sources fails, the camera will still function)
Power Consumption	Basic: 2.7 W (12 VDC); 3.7 W (PoE) Max. (H.265+ warm light+ Intelligence on + three streams): 9.3 W (12 VDC); 11.1 W (PoE)

Environmental

Operating Conditions	−22°F to +140°F (−30°C to +60°C)/less than 95%
Storage Conditions	-40°F to +140°F (-40°C to +60°C)
Ingress Protection	IP67

Construction

Casing	Metal
Dimensions	4.80" × 5.02" (Φ122.0mm × 127.6 mm)
Net Weight	1.95 lb (885 g)
Gross Weight	3.24 lb (1470 g)

AI Functions

IVS

Basic IVS	Tripwire; Intrusion, Fast Moving
Advanced IVS	People Counting, loitering detection, people gathering, and parking detection
Smart Object Detection	Smart abandoned object/ missing object

Perimeter Protection

Capabilities	Tripwire; Intrusion, Fast Moving (These functions support the classification and detection of vehicle and human objects)

Intelligent Motion Detect 2.0

Capabilities	Advanced secondary filtering for human and motor vehicle , reducing false alarms caused by leaves, rain and lighting condition change. Supports **Object Search** with compatible NVRs.

AI Search

Capabilities	Works together with AI enabled NVRs to perform refined intelligent search, event extraction and merging to event videos

Video Metadata

Non-Automobile Vehicle Attributes	Vehicle type (Bicycle, tricycle, unknown) , vehicle color, hat, clothing type, and clothing color (This function is not for cars, trucks, suv etc.)
Personnel Attribute	Clothing type, trousers type, clothing color, trousers color, backpack, hat, gender and umbrella),

Face Detection

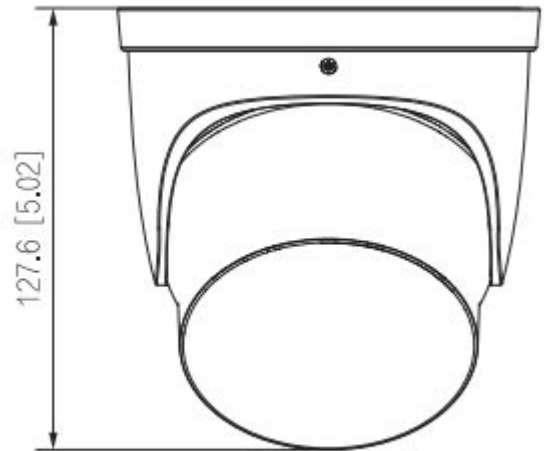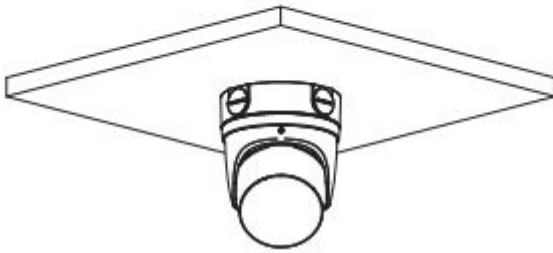|	
Capabilities	Face detection; track; snapshot; snapshot optimization; optimal face snapshot upload; face enhancement; face exposure; face attributes extraction including 6 attributes and 8 expressions; face snapshot set as face or one-inch photo; snapshot strategies (real-time snapshot, quality priority and optimization snapshot); face angle filter; optimization time setting

People Counting

Capabilities	Tripwire: people counting and people counting in area, generating and exporting report (day/month/year); queue management, generating and exporting report (day/month); 4 rules can be set for tripwire, people counting in area and queue management

Accessories

Dimensions (mm/in)

MNT-JUNCTIONBOX-1

127.6 [5.02]

MNT-IPMINIDOME-WALL

⌀122.0 [⌀4.80]

⌀84.0 [⌀3.31]

3-⌀4.5 [⌀0.18]