IPEL-P2045X-IRW1
2MP 45x Starlight Laser PTZ Network Camera

- 1/2.8” 2 Megapixel STARVIS™ CMOS
- Powerful 45x optical zoom
- Max. 50/60fps@1080P
- Auto tracking and IVS
- Supports Hi-PoE
- IR distance up to 550m
- IP67

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 surveillance for outdoor applications. Together with infrared illumination and Starlight Technology, the camera is the perfect solution for dark, low light applications. The series combines a day/night mechanical IR cut filter for the highest image quality in variable lighting conditions during the day, and True WDR for applications with direct sunlight or glare.

Functions

Starlight Technology
For challenging low-light applications, Starlight Ultra-low Light Technology offers best-in-class light sensitivity, capturing color details in low light 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.

Wide Dynamic Range (WDR)
The camera achieves vivid images, even in the most intense contrast lighting conditions, using industry-leading wide dynamic range (WDR) technology. For applications with both bright and low lighting conditions that change quickly, True WDR (120 dB) optimizes both the bright and dark areas of a scene at the same time to provide usable video.

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+
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.

PFA Technology
PFA technology has innovatively introduced new methods of judgment to ensure the accuracy and predictability of the direction of subject distance adjustment. The result is a set of advanced focusing algorithms. PFA ensures clarity of the image throughout the process of zooming and shortens focus time. The realization of PFA technology substantially improves user experience and increases product value.

Environmental
With a temperature range of -40 °C to +60 °C (-40 °F to +140 °F), the camera is designed for extreme temperature environments. Subjected and certified to rigorous dust and water immersion tests, the IP67 rating makes it suitable for demanding outdoor applications. For environments with rain, sleet, snow and fog, an integrated wiper provides users with clear visibility at all times.

Protection
The camera allows for ±25% input voltage tolerance, suitable for the most unstable conditions for outdoor applications. Its 8KV lightning rating provides effective protection for both the camera and its structure against lightning.

Interoperability
The camera conforms to the ONVIF (Open Network Video Interface Forum) specifications, ensuring interoperability between network video products regardless of manufacturer.
## Technical Specification

### Camera
- **Image Sensor**: 1/2.8" STARVIS™ CMOS
- **Effective Pixels**: 1920(H) x 1080(V), 2 Megapixels
- **RAM/ROM**: 1024M/128M
- **Scanning System**: Progressive
- **Electronic Shutter Speed**: 1/1s~1/30,000s
- **Minimum Illumination**: Color: 0.005Lux@F1.6; B/W: 0.0005Lux@F1.6; 0Lux@F1.6 (IR on)
- **S/N Ratio**: More than 56dB
- **IR Distance**: Distance up to 550m (1804ft)
- **IR On/Off Control**: Auto / Manual
- **IR LEDs**: Laser module
- **Wiper**: Support

### Lens
- **Lens Type**: 3.95mm~177.7mm
- **Max. Aperture**: F1.6~ F4.95
- **Angle of View**: H: 70.3° ~ 1.8°
- **Optical Zoom**: 45x
- **Close Focus Distance**: 100mm~ 1000mm
- **DORI Distance**: Detect 2345m, Observe 938m, Recognize 469m, Identify 234m, 7694ft, 3077ft, 1539ft, 768ft

### PTZ
- **Pan/Tilt Range**: Pan: 0° ~ 360° endless; Tilt: -20° ~ 90°, auto flip 180°
- **Manual Control Speed**: Pan: 0.1° ~ 200° /s; Tilt: 0.1° ~120° /s
- **Presets**: 300
- **PTZ Mode**: 5 Pattern, 8 Tour, Auto Pan, Auto Scan
- **Speed Setup**: Human-oriented focal length/ speed adaptation
- **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
- **Protocol**: ICR-SD, Pelco-P/D (Auto recognition)

### Intelligence
- **Event Trigger**: Motion detection, Video tampering, Scene changing, Network disconnection, IP address conflict, Illegal Access, Storage anomaly
- **Auto Tracking**: Support
- **IVS**: Tripwire, Intrusion, Object Abandoned/Missing
- **Advanced Intelligent Functions**: Face Detection, Heat Map

### Video
- **Compression**: H.265/H.264/H.265/H.264+/H.264
- **Streaming Capability**: 3 Streams
- **Resolution**: 1080P(1920x1080) / 1.3M(1280x960) / 720P(1280x720) / D1(704x576) / 704x480 / CIF(352x288) / 352x240 / 160x120 / QCIF(176x144)
  - Main stream: 1080P1.3M/720P1.0(1~50/60fps)
  - Sub stream: D1/CIF(1~25/30fps)

### Audio
- **Compression**: G.711a/G.711Mu/AAC/G.722/G.726/G.729/MPEG2-L2

### Network
- **Ethernet**: RJ-45 (10Base-T/100Base-TX)
- **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&G, CGI
- **Streaming Method**: Unicast / Multicast
- **Max. User Access**: 20 users
- **Edge Storage**: NAS (Network Attached Storage), Local PC for instant recording, Micro SD card 256GB
- **Web Viewer**: IE, Chrome, Firefox, Safari
- **Management Software**: SmartICRSS, DSS
- **Smart Phone**: iOS, Android

### Certifications
- **Certifications**: CE: EN50362/EN5024/EN50130-4, FCC: Part15 subpartB, ANSI C63.4 -2014

### Interface
- **Video Interface**: 1 port(BNC, 1.0V[p-p], 75Ω)
- **Audio Interface**: 1/1 channel In/Out RS485 1
- **Alarm I/O**: 7/2

### Electrical
- **Power Supply**: DC12V, Hi-PoE
- **Power Consumption**: 20W, 43W (IR on, Heater on)

### Environmental
- **Operating Conditions**: -40° C ~ +60° C (-40° F ~ +140° F) / Less than 95% RH
- **Storage Conditions**: -40° C ~ +60° C (-40° F ~ +140° F) / Less than 95% RH
- **Ingress Protection**: IP67
- **Vandal Resistance**: IK10

### Construction
- **Casing**: Metal
- **Dimensions**: Ø240mm x 357mm(9.45" x 14.06")
- **Net Weight**: 0.41kg (0.91lb)
- **Gross Weight**: 0.53 kg (1.17lb)