MoviSight

MS7951U2 Series

4K

## 4K IP RUGGED PTZ IR POSITIONING DNN EDGE ANALYTICS CAMERA

▶ Deep Neural Network Accelerated Engine

▶ Seamless 360° pan rotation and full vertical tilt angle

▶ IR LED Illumination built in

▶ LiDAR and Wiper support*

▶ Vandal Proof and Weatherproof

▶ Servo Feedback

▶ Glass Windows Nanothechnology*
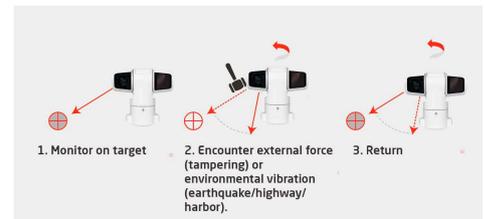
*optional

DNN Edge Analytics

The latest computer vision technology makes DNN accelerated video processing engine efficient at the edge. This engine provides high accuracy, real-time object tracking and human face detection. Moreover, it allows simultaneous detection on multiple objects.
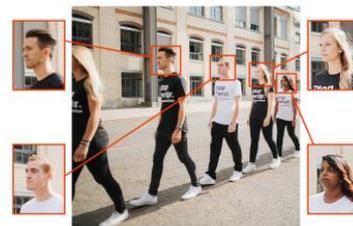
Servo Feedback

IR Positioning Camera features Servo Feedback technology. When encountering external force, such as vandalism, or environmental vibration, the IR Positioning Camera can immediately return to its original position.

1. Monitor on target   2. Encounter external force (tampering) or environmental vibration (earthquake/highway/harbor).   3. Return

Features

▶ Sony Progressive Scan CMOS Sensor 4K

▶ 8M, 31X Optical Zoom available

▶ LiDAR & Wiper support*

▶ Multi Exposure HDR (Visible)

▶ Electrical Image Stabilizer (EIS) Support

▶ 3D Motion Compensated Noise Reduction (MCTF)

▶ Servo Feedback - Zero Drifting

▶ Dual power support

▶ ONVIF Profile S/G/T/M support

▶

▶ Deep Neural Network Accelerated Engine
  ▶ Detection and Recognition – Human / Vehicle
  ▶ Behavior Analytics – Human / Vehicle / Object

▶ Smart Event function
  ▶ External Input/ Motion Detection
  ▶ Network Failure Detection/ Tampering Alarm
  ▶ Periodical Event/ Manual Trigger/ Audio Detection

▶ Weatherproof (IP66)

▶ Vandal proof (IK10 Rating)

▶ IR LED Illumination

* optional

Onvif®

Custom Specification (Default)

Image Sensor		
Image Sensor	Sony 2M 1/2" Progressive CMOS	
Effective Pixels	HxV = 1945x1097 (2M)	
Pixel Size	3.75 μm	
Frame Rate (Maximum)	H.265 HDR 2M @30fps + 2M @30fps	
	H.264 HDR 2M @30fps + 2M @30fps	
	MJPEG 2M @30fps	

Lens		
Minimum Illumination	Color	0.049 lux
	B/W	0.001 lux
Lens	Type	31x Zoom Lens, P-Iris, Auto-Iris, F1.35
	Focal Length	6.9-214.6 mm
	Horizontal FOV	58.3° (wide), 2.1° (tele)
	Vertical FOV	33.8° (wide), 1.2° (tele)

Camera Features	
Day and Night	Removable IR-cut filter
Shutter Time	1~1/10K sec.
HDR	Gen3 Engine
EIS	Yes
Digital Zoom	10x
Lidar	Yes*
Wiper	Yes*
Image Settings	Exposure, White Balance, Brightness, Sharpness, Contrast, Saturation, Hue, IR Threshold, Noise Reduction, Backlight Compensation, Text Overlay, Privacy Mask

* optional

Common Specification

Pan/Tilt		
Pan/Tilt Range	Pan : 0~360° endless	Tilt : -90~90°
Manual Speed	Pan : 0.1~90°/s	Tilt : 0.1~55°/s
Preset Speed	Pan : 200°/s	Tilt : 200°/s
Preset	256	
PTZ Mode	8 Sequence, 8 cruise, 4 auto pan	

Video Codec	
Compression	H.265/H.264/MJPEG
Streaming	Up to 4 individually configurable streams/ resolution/frame rate/bandwidth in H.265/H.264/MJPEG LBR/VBR/CBR in H.265/H.264

Audio Codec	
Compression	G.711/G.726/AAC/LPCM
Streaming	2 way
Audio Input	Line in
Audio Output	Line out

Network	
Interface	10/100/1000Mbps Ethernet
Security	User Authentication/HTTPS/IP Filter/IEEE 802.1x
Supported Protocols	ARP, PPPoE, IPv4/v6, ICMP, IGMP, QoS, TCP, UDP, DHCP, UPnP, SNMP, SMTP, RTP, RTSP, HTTP, HTTPS, FTP, NTP, DDNS
ONVIF	Profile S/G/T/M conformant

System Integration	
Event Triggers	External Input, Analytics, Network Failure Detection, Periodical Event, Manual Trigger
Event Actions	External output Activation Video and audio recording to edge storage File Upload : FTP, network share and email Notification : HTTP, FTP, email

Intelligent Video Analytics	
General Analytics	Motion Detection/Tampering/Audio Detection
DNN Analytics	Face Detection/Tracking/Recognition LPR Detection/Recognition People Detection and Tracking Human/Vehicle Classification Object Classification/Recognition

General		
Casing	Metal and Plastic	
Power	IEEE802.3bt, class 8, max 71.00 watt AC24V, max 73.70 watt, max 73.70 VA	
Connectors	RJ45	
	Alarm in x4, Alarm out x2, Terminal Block	
	Audio in, Terminal Block	
	Audio out, Terminal Block	
	RS485 Terminal Block	
	CVBS Terminal Block	
IR LED Illumination Distance	100m	
Storage	Support for microSD/microSDHC/microSDXC card Support for recording to NAS	
Operating Conditions	-40°C~50°C with heater 10%~90%, No Condensation	
Storage Conditions	-20°C~70°C	
Approvals	EMC	CE/FCC
	Safety	RoHS
	Environment	IP66/IK10
Dimensions	412.6x207.5x403.2 mm	
Weight	19 kg	

Models* :

| P/N	
MS7951U2-4k	Camera PTZ with 4K Resolution, Zoom 6.9-214.6 mm
MS7951U2-2M	Camera PTZ with 2MP Resolution, Zoom 6.9-214.6 mm

*Ex CS5033-7951U2

Custom Specification

Sony 8M		
Image Sensor	Sony 8M 1/1.8" Progressive CMOS	
Effective Pixels	HxV = 3864 x 2180	
Video Resolution	3840 x 2160	
Pixel Size	2.00 µm	
Frame Rate (Maximum)	H.265	HDR 8M @30fps + 2M @30fps
	H.264	HDR 8M @30fps + 2M @30fps
	MJPEG	HDR 2M @30fps
Lens		
Minimum Illumination	Color	0.009 lux
	B/W	0.006 lux
Lens	Type	31x Zoom Lens, P-Iris, Auto-Iris, F1.35
	Focal Length	6.9-214.6 mm
	Horizontal FOV	61.8° (wide), 2.2° (tele)
	Vertical FOV	35.9° (wide), 1.3° (tele)

| Sony 2M		
Image Sensor	Sony 2M 1/2.0" Progressive CMOS	
Effective Pixels	HxV = 1945 x 1097	
Video Resolution	1920 x 1080	
Pixel Size	3.75 µm	
Frame Rate (Maximum)	H.265	HDR 2M @30fps + 2M @30fps
	H.264	HDR 2M @30fps + 2M @30fps
	MJPEG	HDR 2M @30fps
Lens		
Minimum Illumination	Color	0.049 lux
	B/W	0.001 lux
Lens	Type	31x Zoom Lens, P-Iris, Auto-Iris, F1.35
	Focal Length	6.9-214.6 mm
	Horizontal FOV	58.3° (wide), 2.1° (tele)
	Vertical FOV	33.8° (wide), 1.2° (tele)

Smart Low Bitrate

Smart low bitrate technology significantly reduces bandwidth and storage consumption system-wide, while keeping great image quality both in H.264 and H.265 codec.
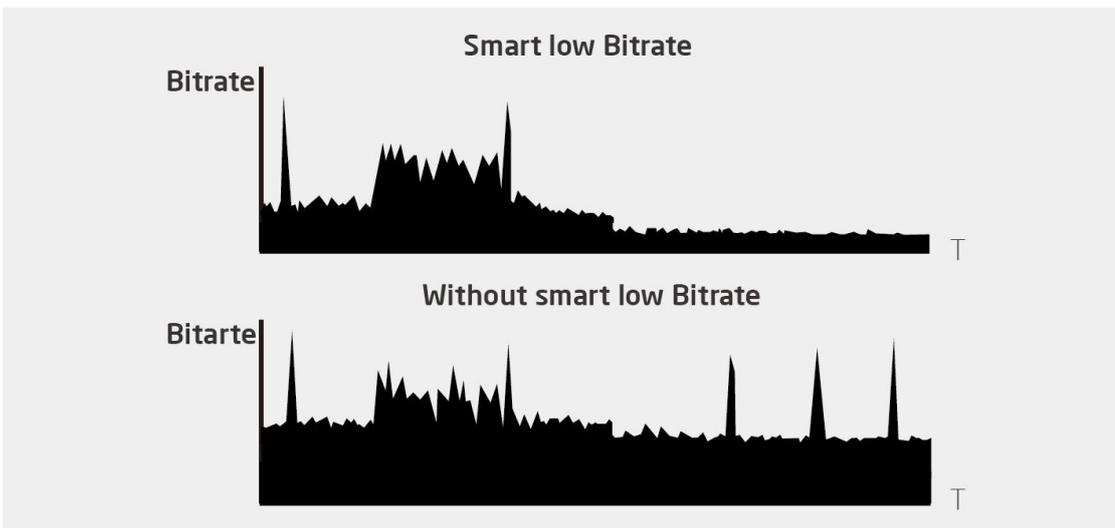
Dual Iris Support

Through proprietary system and lens design, IP cameras realize P-Iris and DC-Iris functions in one lens, without changing lens.

User can choose between DC iris, and P Iris mode to adapt to different scenarios. Enable DC-iris to deliver good performance on color rolling suppression, and enable P iris to achieve maximum resolution.
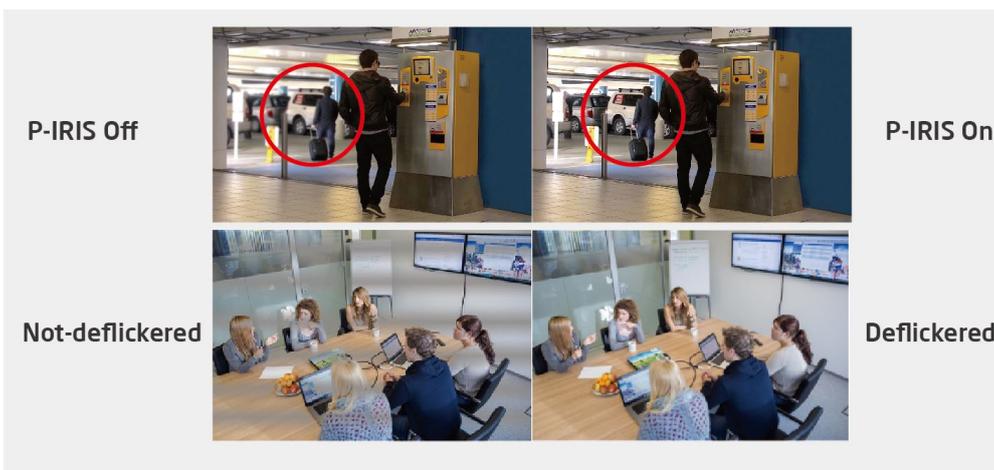
Adaptive IR

Adaptive IR technology can detect and minimize overexposed area of interest, such as human faces under low-light conditions, to ensure important detail is captured

Adaptive IR off   Adaptive IR on

High Dynamic Range

Implemented with either line-by-line, or frame-based 2 shutter HDR technology, cameras perform better image combination, lifting up HDR function to a higher level. With such function, overexposed area can be seen clearly.
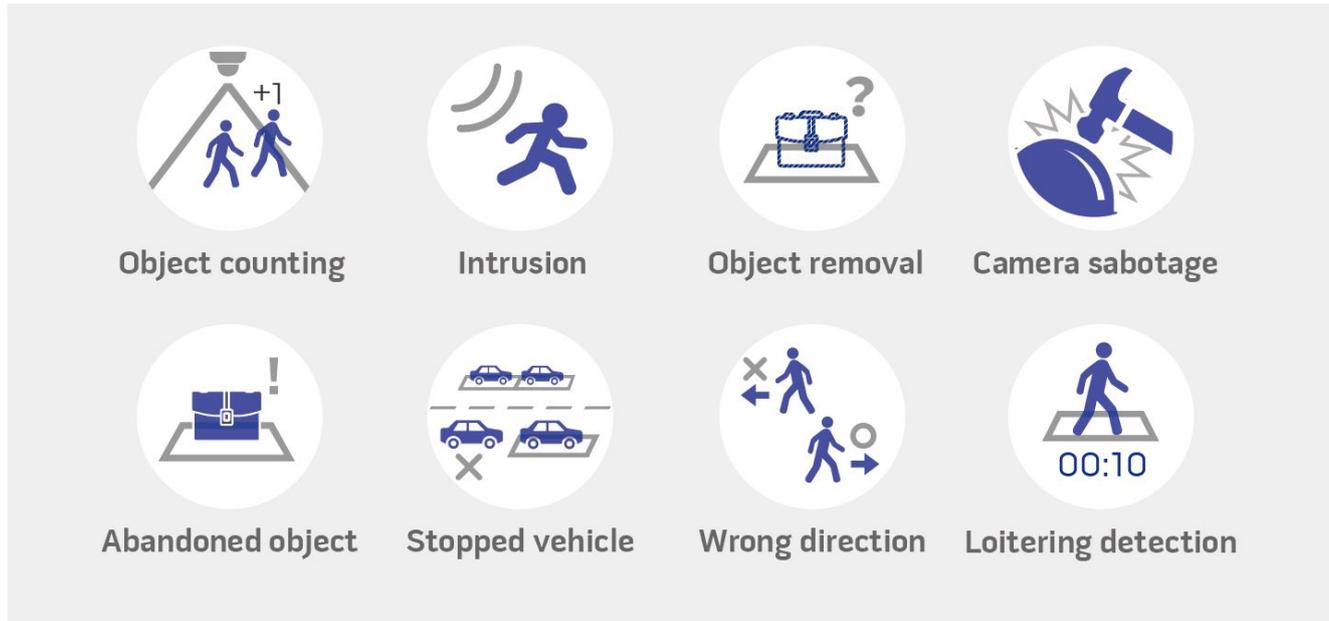

Shutter HDR   Shutter HDR

Video Analytics

Advanced video analytics feature is offered on selected models, unlocking value adding features such as people/vehicle counting, object based recognition and tracking. Combined with proprietary algorithms, all video analytics can function precisely and smoothly.

Object counting	Intrusion	Object removal	Camera sabotage
Abandoned object	**Stopped vehicle**	**Wrong direction**	**Loitering detection**

Nanotechnology

The Nanotechnology is used to avoid any contamination in the windows glass of the camera and deliver a clear video in dust , ice, rain and industrial applications. Allows for precise control over the arrangement of glass molecules at the nanoscale. can provide exceptional transparency and clarity due to its nanoscale engineering, making it suitable for optical applications. can be designed with hydrophobic and oleophobic properties, reducing the adherence of dirt and making it easier to clean and windows wiper action.
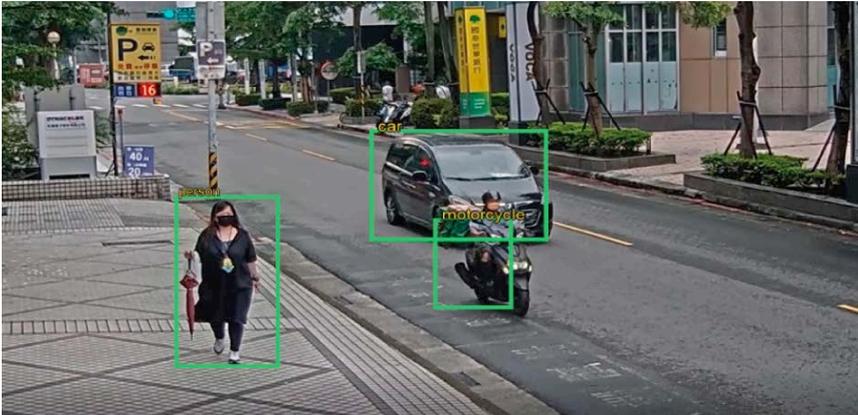
**Without Nanotechnology**   **With Nanotechnology**

DNN Accelerated Engine

The latest Deep Neural Network accelerated engine provides high accuracy, real-time object tracking and human face detection. Moreover, it allows simultaneous detection on multiple objects.

Detection and Recognition Human

DNN engine improves the accuracy of human detection analysis. Additionally, the ability to perform real-time face detection and recognition improves security, convenience, and efficiency for a variety of applications.

Human Detection | Face Recognition
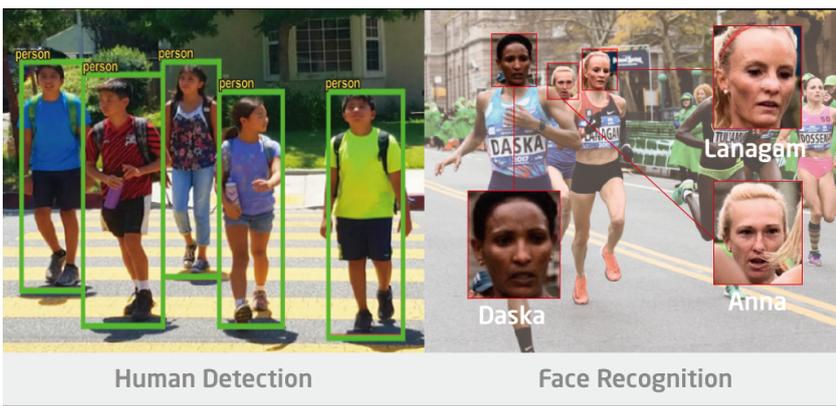
Behavior Analytics Vehicle

DNN accelerated engine helps improve the car detection performance. The accuracy of stop vehicle analytics can be improved greatly as well.

Intrusion | Loitering | Direction Detection

Vehicle Counting | Crowd Detection

Detection and Recognition Vehicle

DNN engine enables the users to detect and recognize the vehicle such as car, truck, and motorcycle. Together with the real-time license plate detection and recognition, it is suitable for government and city planners to make road transportation safe and efficient.


Vehicle Detection   License Plate Recognition

Behavior Analytics Human

Human behavior analytics provided by DNN engine can identify potential security risks, make it easier for security personnel to prevent incidents or criminal activity, thereby making communities safer.

Intrusion   Loitering   Direction Detection

People Counting Crowd Detection

Behavior Analytics Object

Behavior Analytics such as abandoned object detection, object removal, and camera sabotage detection can help improve public safety, for example by detecting suspicious objects.

Abandoned Object   Object Removal   Camera Sabotage
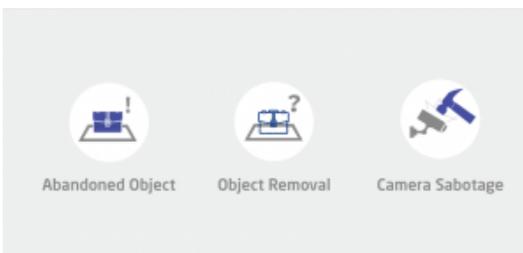
Auto Tracking

AI Accelerated Autotracking function ties in closely with PTZ's specialty in tracking and zooming in on target. This function enables users to identify and closely follow the object in real-time.

Servo Feedback

With delicate mechanism design, MS-7721U/MS-7821U/MS-7831U PTZ features Servo Feedback technology, which makes the PTZ precisely return to the exact position immediately when encountering external force (tampering) or environmental vibration (earthquake, highway or harbor). Such technology ensures the target monitoring region is fully secured.

1. Monitor on target   2. Encounter external force (tampering) or environmental vibration (earthquake/highway/harbor).   3. Return

Electronic Image Stabilization EIS

Unique gyro based EIS technology compensates shaky images caused by environmental vibration such as wind and passing vehicles, and produce stable images.


All Systems (P / T / Z / IP) are Remotely Upgradable

PTZ is remotely upgradable for software systems, including IP system, pan, tilt and zoom block. With this feature, the maintenance costs can be greatly reduced; what's more, the new functions can be added to the cameras instantly.

Remote Software Upgradable

Interne

Upgrade Complete !

100%

System
IP
Pan
Tilt
Zoom
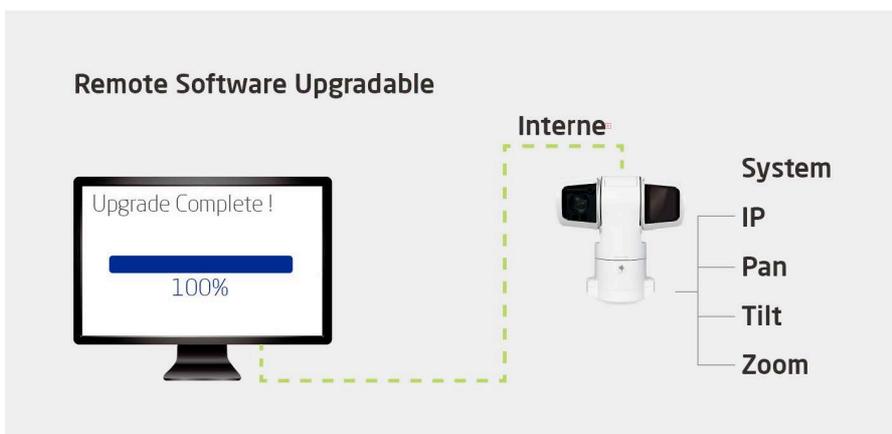
LiDAR AF

Laser focus technology can greatly improve auto focus speed and accuracy, especially under challenging lighting conditions, such as low illumination environment. This feature makes the PTZ an ideal choice for outdoor applications, such as city safety, perimeter defense, and intelligent transport systems.
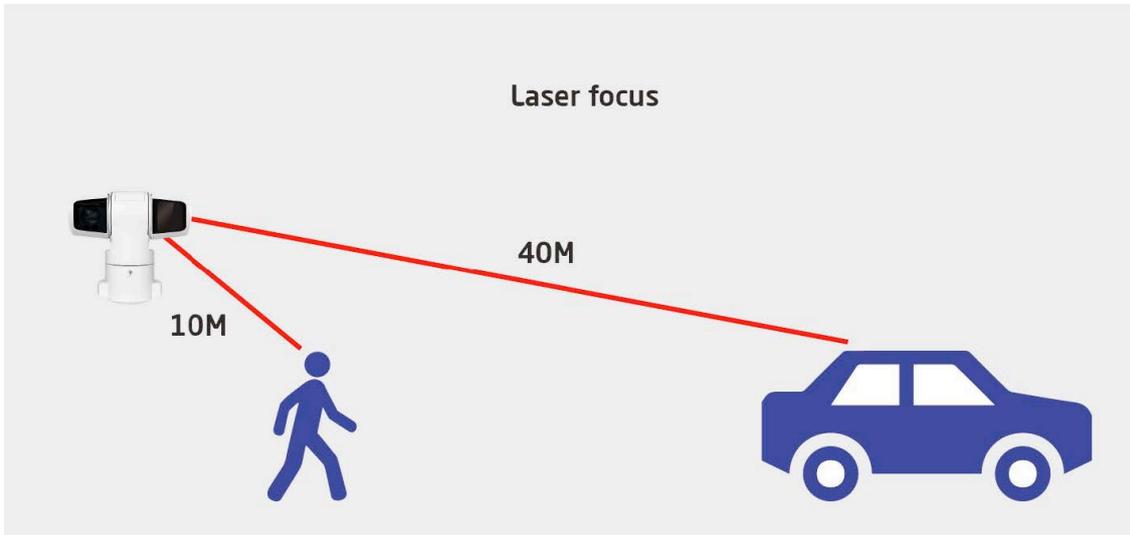
Rapid Auto Focus

Unmatched processing and sensor technology can detect the subjects position in real time to achieve high-speed, high-precision auto focusing. Help you track your subjects throughout the frame, and faithfully capture them every time.