



# MS9390-EHV-v2

Multi-Sensor Panoramic Network Camera

8MP 30fps • 180° Panoramic View • 20M IR • WDR Pro • SNV • Smart Stream III  
• IP66 • IK10

## Technical Specifications

### System Information

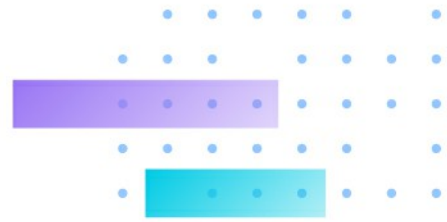
Model	MS9390-EHV-v2
CPU	Multimedia SoC (System-on-Chip)
Flash	eMMC 8GB
RAM	DDR4 2GB

### Camera Features

Image Sensor	1/2.7" Progressive CMOS
Max. Resolution	4864x1632 (8MP)
Lens Type	Fixed-focal
Focal Length	f = 2.8 mm
Aperture	F1.2
Iris Type	Fixed iris
Field of View	180° (Horizontal) 50° (Vertical) 180° (Diagonal)
Shutter Time	1/30 sec. to 1/32,000 sec.
WDR Technology	WDR Pro
Day/Night	Yes
Removable IR-cut Filter	Yes
IR Illuminators	Built-in IR illuminators, effective up to 20 meters with Smart IR , IR LED*8
Minimum Illumination	0.018 lux @ F1.2 (Color), 30IRE <0.01 lux @ F1.2 (B/W) 0 lux with IR illumination on
Tilt Range	20°
Storage	Seamless Recording to MicroSD/SDHC/SDXC card (1TB capacity supported) and recording to network-attached storage (NAS)



Built-in Installation Aids	Pixel calculator
<b>Video</b>	
Video Compression	H.265, H.264, MJPEG
Maximum Frame Rate	30 fps @ 4864x1632
Maximum Streams	3 video streams (Up to 8 configurable profiles)
S/N Ratio	57.9 dB
Dynamic Range	120 dB
Video Streaming	Adjustable resolution, quality and constant bit rate control, Smart Stream III
Image Settings	General settings: video title and time stamp overlay, day/night settings; Illuminators: illuminators, anti-overexposure; Image settings: white balance (auto, panorama, snow), image adjustment (brightness, contrast, saturation, sharpness, gamma curve), defog, 3DNR, HLM, scene mode (auto, deblur); Exposure: BLC, HLC, exposure control (exposure level, iris adjustment, exposure time, gain control, iris mode), AE speed adjustment, WDR; Privacy mask; Pixel calculator; Lens alignment; Scheduled profile settings
<b>Audio</b>	
Audio Capability	One-way Audio
Audio Compression	G.711, G.726, MPEG-2 AAC-LC
Audio Interface	Built-in microphone
Effective Range	5 meters
<b>Network</b>	
Users	Live viewing for up to 10 clients
Security	Access list, CSRF protection, digest authentication, HTTPS, IEEE 802.1x, Password protection, secure boot, signed firmware, Trend Micro IoT Security (brute force attack event, cyberattack event, quarantine event), user access log, user account management
Protocols	802.1X, ARP, Bonjour, CIFS/SMB, DDNS, DHCP, DNS, FTP, HTTP, HTTPS, ICMP, IGMPv3, IPv4, IPv6, NTP, PPPoE, QoS (CoS/DSCP), RTSP/RTP/RTCP, SMTP, SNMP, SSL, TCP/IP, TLS 1.2, UDP, UPnP
Interface	10 Base-T/100 Base-TX Ethernet (RJ-45) *It is highly recommended to use standard CAT5e & CAT6 cables which are compliant with the 3P/ETL standard.
ONVIF	Profile G, S, T supported, specification available at <a href="http://www.onvif.org">www.onvif.org</a>
<b>AI Analytics</b>	
Compute Capability	SoC with built-in hardware deep learning accelerator
Vision Object Analytics	Object Detection: people, vehicle (4-wheeled, 2-wheeled); Attribute Extraction: people (gender, color, bag, hat), vehicle (bike, bus, car, motorcycle, truck, color); Re-Search Extraction; Path Extraction
Application	Deep Learning VCA (Smart Motion Detection, Smart VCA) Smart Motion Detection (Five-window video motion detection, People detection, Vehicle detection, Time filter), Smart VCA (Intrusion detection, Loitering detection, Line crossing detection, Unattended object detection, Missing object detection, Face detection, Crowd detection)
Application available with license	Running detection, Parking Violation Detection, Restricted Zone Detection Support for more analytic applications and free trial, please visit <a href="https://vivotek.com/video-analytics">https://vivotek.com/video-analytics</a>
<b>Solution Integration</b>	
Applications	Trend Micro IoT Security (3-year free trial)
<b>Alarm and Event</b>	
Event Trigger	Audio detection, camera tampering detection, cybersecurity events (brute force attack event, cyberattack event, quarantine event), manual trigger, motion detection, periodical trigger, recording notification, SD card life expectancy, shock detection, system boot
Event Action	Event notification via email, camera link, HTTP, FTP, NAS server, SD card, push notification File upload via email, HTTP, FTP, NAS server, SD card
<b>General</b>	
Connectors	RJ-45 cable connector for 10/100 Mbps Network/PoE connection
LED Indicator	System power and status indicator
Power Input	IEEE 802.3at PoE Class 4
Power Consumption	Max: 20 W / 13.5W (IR on/ IR off)



Dimensions	165 x 112 x 97 mm (w/o sunshield) 165 x 100 x 119 mm (w/ sunshield)
Weight	1.2 kg
Certifications	EMC: CE (EN 55032/EN 55035 Class A), UKCA (BS EN 55032/BS EN 55035 Class A), FCC (FCC Part 15 Subpart B Class A), RCM (AS/NZS CISPR 32 Class A), VCCI (VCCI-CISPR 32 Class A), IC (ICES-003 Issue 7, Class A); Safety: UL (UL 62368-1), CB (IEC/EN 62368-1, IEC/EN 60950-22, IEC/EN 62471), LVD (IEC/EN 62368-1), UKCA (BS EN 62368-1); Environment: IK10 (IEC 62262), IP66(IEC 60529), IA: BIS (IS 13252), BSMI (EMC: CNS 15936, Safety: CNS 15598-1)
Operating Temperature	Starting Temperature: -30°C ~ 55°C (-22°F ~ 131°F) Working Temperature: -40°C ~ 55°C (-40°F ~ 131°F) (IR off) -40°C ~ 50°C (-40°F ~ 122°F) (IR on)
Humidity	90%

### System Requirements

Operating System	Microsoft Windows 10/8/7 Mac 10.12 (Chrome only)
Web Browser	Chrome 58.0 or above Internet Explorer 10/11
Other Players	VLC: 1.1.11 or above

### Included Accessories

Packing Contents	Quick installation guide, alignment sticker, desiccant bag, screw driver, screws pack, sunshield
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### DORI (EN 62676-4 Standard)

Detect (25PPM/ 8PPF)	80.5 m (264.2 ft)
Observe (63PPM/ 19PPF)	32.2 m (105.7 ft)
Recognize (125PPM/ 38PPF)	16.1 m (52.9 ft)
Identify (250PPM/ 76PPF)	7.8 m (25.7 ft)

