



## V Series

# SD9394-EHL

8MP Outdoor AI PTZ Camera



## Technical Specifications

### System Information

|       |                                 |
|-------|---------------------------------|
| CPU   | Multimedia SoC (System-on-Chip) |
| Flash | 8 GB                            |
| RAM   | 2 GB                            |

### Camera Specifications

|                         |                                                                                                                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Image Sensor            | 1/1.8" Progressive CMOS                                                                                                      |
| Max. Resolution         | 3840x2160 (8M)                                                                                                               |
| Lens Type               | 32x Optical Zoom, Auto Focus                                                                                                 |
| Focal Length            | 6.5~212mm (32x zoom)                                                                                                         |
| Aperture                | F1.4~4.9                                                                                                                     |
| Iris Type               | P-Iris                                                                                                                       |
| Field of View           | 63.5° ~ 2.0° (Horizontal)<br>37.4° ~ 1.1° (Vertical)<br>70.7° ~ 2.3° (Diagonal)                                              |
| Shutter Time            | 1 sec. to 1/100,000 sec.                                                                                                     |
| WDR Technology          | WDR Pro                                                                                                                      |
| Day/Night               | Yes                                                                                                                          |
| Removable IR-cut filter | Yes                                                                                                                          |
| Illuminators            | Built-in IR illuminators up to 250 meters with Smart IR, IR LED*8                                                            |
| Minimum Illumination    | 0.02 lux @ F1.4 (Color)(30IRE)<br>0.06 lux @ F1.4 (Color)(50IRE)<br><0.005 lux @ F1.4 (B/W)<br>0 lux with IR illumination on |
| Pan Speed               | 0.05° ~ 450°/sec                                                                                                             |
| Pan Range               | 360° endless                                                                                                                 |
| Tilt Speed              | 0.05° ~ 450°/sec                                                                                                             |

|                               |                                                                                                                       |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Tilt Range                    | -20° ~ +90°<br>Effective tilt coverage 220° via auto flip                                                             |
| Preset Location               | 256 preset locations<br>128 presets per tour                                                                          |
| Pan/Tilt/Zoom Functionalities | 8x digital zoom<br>Auto Pan mode<br>Auto Patrol mode<br>Mechanical Auto flip                                          |
| Storage                       | Seamless Recording to MicroSD/SDHC/SDXC card (1TB capacity supported) and recording to network-attached storage (NAS) |
| Built-in Installation Aids    | Remote focus, remote zoom                                                                                             |

| Video              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Compression        | H265, H264, MJPEG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Maximum Frame Rate | 30 fps @ 3840x2160 (WDR on)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Maximum Streams    | 3 video streams (Up to 8 configurable profiles)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| S/N Ratio          | 67 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Dynamic Range      | 120 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Video Streaming    | Adjustable resolution, quality and constrained bit rate control, Smart Stream III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Image Settings     | <p>General settings<br/>video settings, video orientation (flip, mirror), day/night settings</p> <p>Overlay settings<br/>Illuminators<br/>illuminators, anti-overexposure</p> <p>Image settings<br/>white balance, image adjustment (brightness, contrast, saturation, sharpness, gamma curve), defog, 3DNR, HLM, EIS(built-in gyro sensor), scene mode (auto)</p> <p>Exposure<br/>exposure strategy (measurement window, metering mode)</p> <p>exposure control (exposure level, iris adjustment, exposure time, gain control, iris mode), AE speed adjustment, WDR</p> <p>Focus<br/>zoom, focus</p> <p>Privacy mask<br/>Pixel calculator<br/>Scheduled profile settings</p> |

| Audio            |                                             |
|------------------|---------------------------------------------|
| Audio Capability | Two-Way Audio (full duplex)                 |
| Compression      | MPEG-2 AAC-LC, G.711, G.726                 |
| Interface        | External line input<br>External line output |

| Network  |                                                                                                                                                                                                                                                                                                                                                 |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Users    | Live viewing for up to 10 clients                                                                                                                                                                                                                                                                                                               |
| Security | Access list, Account block, Audit log, Configurable password strength protection, CSRF protection, Digest authentication, Dos Protection, HTTPS, IEEE 802.1x, Secure boot, Session timeout, 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/SFTP, HTTP, HTTPS, ICMP, IGMPv3, IPv4, IPv6, NTCIP, NTP, PPPoE, QoS (CoS/DSCP), RTSP/RTP/RTCP, SMTP, SNMP, SSL, TCP/IP, TLS 1.2/1.3, UDP, UPnP |
| Interface | 10 Base-T/100 Base-TX Ethernet (RJ-45)<br>*It is highly recommended to use standard CAT5e & CAT6 cables which are compliant with the 3P/ETL standard.                                               |
| ONVIF     | Profile G, S, T, M supported, specification available at <a href="http://www.onvif.org">www.onvif.org</a>                                                                                           |

## AI Analytics

|                                    |                                                                                                                                                                                                                                                                                              |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Compute Capability                 | SoC with built-in hardware deep learning accelerator                                                                                                                                                                                                                                         |
| Vision Object Analytics            | <p>Object Detection<br/>People, Vehicle (4-wheeled, 2-wheeled), Human / Vehicle Bestshot, Path Extraction</p> <p>Attribute Extraction<br/>People (gender, clothing color, bag, hat), Vehicle (bike, bus, car, motorcycle, truck, color)</p> <p>Human face Bestshot, Re-Search Extraction</p> |
| Application                        | <p>Deep Learning VCA (Smart Tracking Advanced)<br/>Smart VCA - Group 1<br/>Smart VCA (Intrusion detection, Loitering detection, Line crossing detection, face detection)</p> <p>Smart VCA - Group 2<br/>Unattended object detection, Missing object detection</p>                            |
| Application available with license | <p>Smart VCA - Group 3<br/>Parking Violation Detection, Restricted Zone Detection</p> <p>*Support for more analytic applications and free trial, please visit VIVOTEK website.</p>                                                                                                           |

## Solution Integration

|              |                                                                               |
|--------------|-------------------------------------------------------------------------------|
| VADP Package | Trend Micro IoT Security (3-year free trial), Event action through Http/Https |
|--------------|-------------------------------------------------------------------------------|

## Alarm and Event

|               |                                                                                                                                                                                                                                                                                                                                                              |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Event Trigger | <p>Audio detection*, camera tampering detection, cybersecurity events (brute force attack event, cyberattack event, quarantine event), digital input*, manual trigger, motion detection, periodical trigger, recording notification, SD card life expectancy, smart tracking advanced trigger, system boot, preset reached</p> <p>*Requires AO-008 cable</p> |
| Event Action  | <p>Event notification via audio clip*, camera link, digital output*, email, HTTP, FTP/SFTP, NAS server, SD card, push notification</p> <p>File upload via email, HTTP, FTP/SFTP, NAS server, SD card</p> <p>*Requires AO-008 cable</p>                                                                                                                       |

## General

|               |                                                                                                                                                                                                                                                                            |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectors    | <p>RJ-45 cable connector for 10/100Mbps Network/PoE connection</p> <p>Audio line input*</p> <p>Audio line output*</p> <p>DC 48V power input</p> <p>AC 24V power input</p> <p>Digital input*2*</p> <p>Digital output*1*</p> <p>RS-485*1*</p> <p>* Requires AO-008 cable</p> |
| LED Indicator | System power and status indicator                                                                                                                                                                                                                                          |
| Power Input   | AC 24V, DC48V, IEEE 802.3 bt Class 6 PoE (Simultaneous Power Redundancy Supported)                                                                                                                                                                                         |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Consumption     | PoE<br>Max: 51W/26W (IR on/off)<br>DC 48V<br>Max: 51W/26W (IR on/off)<br>AC 24V<br>Max: 51W/26W (IR on/off)<br>IR ON: 51W/45W Heater and fan on/off<br>IR OFF: 26/20W Heater and fan on/off                                                                                                                                                                                                                                                                                                  |
| Dimensions            | 256 x 336 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Weight                | 7.3 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Certifications        | EMC<br>CE (EN 55032 Class A, EN55035, EN50121-4), UKCA (BS EN 55032: 2015 +A11: 2020 , BS EN 55035: 2017), FCC (FCC Part 15 Subpart B Class A), IC (ICES-003:2020 Issue7, Class A), RCM (AS/NZS CISPR 32 Class A), VCCI (VCCI-CISPR 32 Class A)<br><br>Safety<br>UKCA (BS EN 62368-1:2014+A11:2017), UL (UL 62368-1), CB (IEC/EN 62368-1, IEC/EN 60950-22, IEC/EN 62471)<br><br>Environment<br>IK10 (IEC 62262), IP66 (IEC 60529), NEMA (NEMA 250 Type 4X)<br><br>IA<br>BIS (IS 13252), BSMI |
| Operating Temperature | Starting Temperature:<br>-40°C ~ 55°C (-40°F ~ 131°F)<br>Working Temperature:<br>-40°C ~ 55°C (-40°F ~ 131°F) (IR off)<br>-40°C ~ 50°C (-40°F ~ 122°F) (IR on)                                                                                                                                                                                                                                                                                                                               |
| Humidity              | 98% RH (non-condensing)                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## System Requirements

|                  |                                                     |
|------------------|-----------------------------------------------------|
| Operating System | Microsoft Windows 10/8/7<br>Mac 10.12 (Chrome only) |
| Web Browser      | Chrome 58.0 or above                                |
| Other Players    | VLC: 1.1.11 or above                                |

## Included Accessories

|                  |                                                                                                                                                                                                   |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Packing Contents | Wall mount bracket, Screw pack, Screws and anchors, T10 and T25 L-wrench, Waterproof round cap, Quick installation guide, Terminal blocks (for DI/DO audio, AC/DC/GND wires, RS485), Ground wire. |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## DORI (EN 62676-4 Standard)

|                                |                                                         |
|--------------------------------|---------------------------------------------------------|
| Detection (25PPM/ 8PPF)        | Wide: 130.2 m (427.2 ft)<br>Tele: 4774.6 m (15664.7 ft) |
| Observation (63PPM/ 19PPF)     | Wide: 51.8 m (170.1ft)<br>Tele: 1527.9 m (5012.7ft)     |
| Recognition (125PPM/ 38PPF)    | Wide: 25.9m (85ft)<br>Tele: 848.8 m (2784.8ft)          |
| Identification (250PPM/ 76PPF) | Wide: 12.9 m (42.4 ft)<br>Tele: 424.4 m (1392.4 ft)     |