



## V Series

# FD9389-EHTV-V3

5MP Outdoor Dome Camera



## Technical Specifications

### System Information

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

### Camera Specifications

|                         |                                                                                    |
|-------------------------|------------------------------------------------------------------------------------|
| Image Sensor            | 1/2.8" Progressive CMOS                                                            |
| Max. Resolution         | 2560x1920 (5MP)                                                                    |
| Lens Type               | Motorized, Vari-focal, Remote Focus                                                |
| Focal Length            | f = 2.8~12 mm                                                                      |
| Aperture                | F1.6 ~ F3.3                                                                        |
| Iris Type               | P-iris                                                                             |
| Field of View           | 95.4° ~ 28.7° (Horizontal)<br>68.8° ~ 21.5° (Vertical)<br>129.6° ~ 35.9°(Diagonal) |
| Shutter Time            | 1/5 sec. to 1/32,000 sec.                                                          |
| WDR Technology          | WDR Pro                                                                            |
| Day/Night               | Yes                                                                                |
| Removable IR-cut filter | Yes                                                                                |
| Illuminators            | Built-in IR illuminators, effective up to 40 meters with Smart IR, IR LED*4        |
| Minimum Illumination    | 0.04 lux @ F1.6 (Color)<br>0.005 lux @ F1.6 (B/W)<br>0 lux with IR illumination on |
| Pan Range               | 350°                                                                               |
| Tilt Range              | 80°                                                                                |

|                               |                                                                                                                       |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Rotation Range                | 350°                                                                                                                  |
| Pan/Tilt/Zoom Functionalities | ePTZ: 48x digital zoom (4x on IE plug-in, 12x built-in)                                                               |
| 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, pixel calculator                                                                           |

| Video              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Compression        | H.265, H.264, MJPEG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Maximum Frame Rate | 30 fps @ 2560x1920 (5MP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Maximum Streams    | 3 video streams (Up to 8 configurable profiles)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Main Stream        | 30fps @ 2560x1920, 2048x1536, 1920x1440, 1600x1200, 1280x960, 800x600, 640x480 (4:3)<br>30fps @ 2560x1440, 1920x1080, 1600x904, 1360x768, 1280x720, 640x360 (16:9)<br>60 fps @ 1920x1080, 1600x904, 1360x768, 1280x720, 640x360 (16:9)                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2nd Stream         | 30fps @ 1920x1440, 1600x1200, 1280x960, 800x600, 640x480 (4:3);<br>30fps @ 1920x1080, 1600x904, 1360x768, 1280x720, 640x360 (16:9)<br>60 fps @ 1280x720, 640x360 (16:9)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 3rd Stream         | 30fps @ 1280x960, 800x600, 640x480 (4:3);<br>30 fps @ 1280x720, 640x360 (16:9);<br>60 fps @ 1280x720, 640x360 (16:9)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| S/N Ratio          | 55 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Dynamic Range      | 120 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Video Streaming    | Adjustable resolution, quality and constant bit rate control, Smart Stream III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Image Settings     | <p>General settings<br/>video title and time stamp overlay, video orientation (flip, mirror, rotation), day/night settings</p> <p>Illuminators<br/>illuminators, anti-overexposure, VCA-based Smart IR III</p> <p>Image settings<br/>white balance, image adjustment (brightness, contrast, saturation, sharpness, gamma curve), defog, 3DNR, EIS (built-in gyro sensor), scene mode (auto, deblur)</p> <p>Exposure<br/>BLC, HLC, 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)*<br>* Requires AO-015 cable                                               |
| Compression      | G.711, G.726, MPEG-2 AAC-LC                                                                           |
| Interface        | Built-in microphone<br>External microphone Input*<br>External line output*<br>* Requires AO-015 cable |
| Effective Range  | 5 meters                                                                                              |

## Network

|           |                                                                                                                                                                                                                                                                                                                                      |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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, Built-in FIPS 140-2 Level 2 certified Trusted Platform Module (TPM) |
| Protocols | 802.1X, ARP, Bonjour, CIFS/SMB, DDNS, DHCP, DNS, FTP/SFTP, HTTP, HTTPS, ICMP, IGMPv3, IPv4, IPv6, , 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 Motion Detection, Smart VCA)<br/>Smart VCA - Group 1<br/>Smart Motion Detection (Five-window video motion detection, People detection, Vehicle detection, Time filter), Smart VCA (Intrusion detection, Loitering detection, Line crossing detection, face detection)</p> <p>Smart VCA - Group 2<br/>Unattended object detection, Missing object detection, Crowd detection</p> |
| Application available with license | <p>Smart VCA - Group 3<br/>Running detection, Parking Violation Detection, Restricted Zone Detection</p> <p>*Support for more analytic applications and free trial, please visit VIVOTEK website.</p>                                                                                                                                                                                                       |
| RealSight Engine                   | Smart IR III, Deblur, WDR, White Balance, Exposure Control                                                                                                                                                                                                                                                                                                                                                  |

## Solution Integration

|                        |                                                       |
|------------------------|-------------------------------------------------------|
| VADP Package           | Trend Micro (Default, 3-year free trial)              |
| Video Motion Detection | Motion Detection (Five-window video motion detection) |

## 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, shock detection, system boot</p> <p>* Requires AO-015 cable</p> |
| Event Action  | <p>Event notification via audio clip*, camera link, digital output*, email, HTTP, FTP/SFTP, NAS server, SD card</p> <p>File upload via email, HTTP, FTP/SFTP, NAS server, SD card</p> <p>*Requires AO-015 cable</p>                                                                                                           |

## General

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectors            | RJ-45 cable connector for 10/100 Mbps Network/PoE connection<br>Audio line input*<br>Audio line output*<br>Digital input: 1*<br>Digital output *1 (DO+: 12V, 50mA; DO-: 30V, Open Drain, 1A)*<br>* Requires AO-015 cable                                                                                                                                                                                                                                                           |
| LED Indicator         | System power and status indicator                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Power Input           | IEEE 802.3af PoE Class 3                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Power Consumption     | Max. 12.4W/ 9.6W (IR on/off)                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Dimensions            | ø 134 x 116 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Weight                | 990 g                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Certifications        | EMC<br>CE (EN55032, EN55035 Class A), UKCA (BS EN 55032/BS EN 55035 Class A), FCC (FCC Part 15 Subpart B Class A), RCM (AS/NZS CISPR32 Class A), VCCI (VCCI-CISPR 32 Class A)<br><br>IC (ICES-003 Issue 7, Class A) Safety<br>UL (UL62368-1), CB (IEC/EN 62368-1, IEC/EN 62368-1, IEC/EN 62471)<br><br>UKCA (BS EN IEC 62368-1) Environment<br>NEMA (NEMA 250 Type 4X), IK10 (IEC 62262), IP66 (IEC 60529)<br><br>IA<br>BIS (IS 13252), BSMI (EMC: CNS 13438, Safety: CNS 14336-1) |
| Operating Temperature | Starting Temperature:<br>-20°C ~ 50°C (-4°F ~ 122°F)<br>Working Temperature:<br>-35°C ~ 60°C (-31°F ~ 140°F) (IR off)<br>-35°C ~ 50°C (-31°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 | Quick installation guide, alignment sticker, screw pack, L-shaped wrench |
|------------------|--------------------------------------------------------------------------|

## DORI (EN 62676-4 Standard)

|                                |                                                     |
|--------------------------------|-----------------------------------------------------|
| Detection (25PPM/ 8PPF)        | Wide: 67.0 m (219.9 ft)<br>Tele: 205.7 m (674.8 ft) |
| Observation (63PPM/ 19PPF)     | Wide: 26.7 m (87.5 ft)<br>Tele: 81.6 m (267.8 ft)   |
| Recognition (125PPM/ 38PPF)    | Wide: 13.3 m (43.7 ft)<br>Tele: 41.0 m (134.4 ft)   |
| Identification (250PPM/ 76PPF) | Wide: 6.6 m (21.7 ft)<br>Tele: 20.5 m (67.1 ft)     |