









Technical Specifications

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

Max. Resolution 2560x1920 (5MP) Lens Type Fixed-focal Focal Length f = 2.8 mm Aperture F2.0 Iris Type Fixed iris Field of View 75.3° (Vertical) 135.2° (Ologonal) Shutter Time 1/5 sec. to 1/32,000 sec. WDR Technology WDR Pro Day/Night Yes Removable IR-cut filter Yes Minimum Illumination 20,005 lux @ F2.0 (EVM) 0 lux with IR illumination on Pan Range 350° Rotation Range 80° Rotation Range 350° Pan/Tilt/Zoom Functionalities ePTZ: 48x digital zoom (4x on IE plug-in, 12x built-in) Segmelass Recording to Marce D/SDMC (SDMC card (1TE capacity supported) and rescording to Marce Pan In Instrument and rescording to Marce Pan Inst	Camera Specifications	
Lens Type Fixed-focal Focal Length f = 2.8 mm Aperture F2.0 Iris Type Fixed iris Field of View 103.4° (Horizontal) 75.3° (Vertical) 135.2° (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 30 meters with Smart IR, IR LED*2 Minimum Illumination 0.055 lux @ F2.0 (E)/W) 0.0 lux with IR illumination on Pan Range 350° Rotation Range 80° Rotation Range 80° 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)	Image Sensor	1/2.8" Progressive CMOS
Focal Length f = 2.8 mm Aperture F2.0 Iris Type Fixed iris Field of View 10,34° (Horizontal) 75,3° (Vertical) 135.2° (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 30 meters with Smart IR, IR LED*2 Minimum Illumination 0,0055 lux @ F2.0 (Color) 0,005 lux @ F2.0 (B/W) 0 lux with IR illumination on Pan Range 350° Rotation Range 80° Rotation Range 9TZ: 48x digital zoom (4x on IE plug-in, 12x built-in) Storage Semiless Recording to MicroSD/SDHC/SDXC card (1TB capacity supported) and recording to network-attached storage (NAS)	Max. Resolution	2560x1920 (5MP)
Aperture F2.0 Iris Type Fixed iris Field of View 1/5.3° (Vertical) 1/5.3° (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 30 meters with Smart IR, IR LED*2 Minimum Illumination 0.0055 lux @ F2.0 (Color) 0005 lux @ F2.0 (B/W) 01 ux with IR illumination on Pan Range 350° Rotation Range 80° Rotation Range 80° 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)	Lens Type	Fixed-focal
Field of View 103.4° (Horizontal) 15.3° (Vertical) 15.3° (Vertical) 15.2° (Diagonal) 15.2°	Focal Length	f = 2.8 mm
Field of View 103.4° (Horizontal) 75.3° (Vertical) 135.2° (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 30 meters with Smart IR, IR LED*2 Minimum Illumination 0,055 lux @ F2.0 (Color) 0,005 lux @ F2.0 (B/W) 0 lux with IR illumination on Pan Range 350° Titl Range 80° Rotation Range 350° Rotation Range 9+TZ: 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)	Aperture	F2.0
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WDR Technology WDR Pro Pay/Night Yes Removable IR-cut filter Wes Built-in IR illuminators, effective up to 30 meters with Smart IR, IR LED*2 Minimum Illumination O.055 lux @ F2.0 (Color) O.005 lux @ F2.0 (B/W) O lux with IR illumination on Pan Range Tilt Range 80° Rotation Range 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)	Field of View	75.3° (Vertical)
Day/Night Removable IR-cut filter Yes Built-in IR illuminators, effective up to 30 meters with Smart IR, IR LED*2 Minimum Illumination O.055 lux @ F2.0 (Color) O.005 lux @ F2.0 (B/W) O 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)	Shutter Time	1/5 sec. to 1/32,000 sec.
Removable IR-cut filter Yes Illuminators Built-in IR illuminators, effective up to 30 meters with Smart IR, IR LED*2 Minimum Illumination O.055 lux @ F2.0 (Color) 0.005 lux @ F2.0 (B/W) 0 lux with IR illumination on Pan Range 350° Rotation 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)	WDR Technology	WDR Pro
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Minimum Illumination 0.005 lux @ F2.0 (B/W) 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)	Illuminators	Built-in IR illuminators, effective up to 30 meters with Smart IR, IR LED*2
Tilt Range 80° Rotation Range 350° Pan/Tilt/Zoom Functionalities ePTZ: 48x digital zoom (4x on IE plug-in, 12x built-in) Storage Seconding to MicroSD/SDHC/SDXC card (1TB capacity supported) and recording to network-attached storage (NAS)	Minimum Illumination	0.005 lux @ F2.0 (B/W)
Rotation Range 350° Pan/Tilt/Zoom Functionalities ePTZ: 48x digital zoom (4x on IE plug-in, 12x built-in) Storage Secording to MicroSD/SDHC/SDXC card (1TB capacity supported) and recording to network-attached storage (NAS)	Pan 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)	Tilt Range	80°
Storage Seamless Recording to MicroSD/SDHC/SDXC card (1TB capacity supported) and recording to network-attached storage (NAS)	Rotation Range	350°
Storage network-attached storage (NAS)	Pan/Tilt/Zoom Functionalities	ePTZ: 48x digital zoom (4x on IE plug-in, 12x built-in)
Built-in Installation Aids Pixel calculator	Storage	
	Built-in Installation Aids	Pixel calculator

Maximum Frame Rate 30	265, H.264, MJPEG) fps @ 2560x1920 (5MP)
) fps @ 2560x1920 (5MP)
Maximum Streams 3 v	
	video streams (Up to 8 configurable profiles)
Main Stream 30	Ofps @2560x1920,2048x1536,1920x1440,1600x1200,1280x960,800x600,640x480 (4:3) Ofps @ 2560x1440, 1920x1080, 1600x904, 1360x768,1280x720, 640x360 (16:9) Ofps @ 1920x1080, 1600x904, 1360x768, 1280x720, 640x360 (16:9)
2nd Stream 30	Ofps @ 1920x1440, 1600x1200, 1280x960, 800x600, 640x480 (4:3); Ofps @ 1920x1080, 1600x904, 1360x768, 1280x720, 640x360 (16:9) Ofps @ 1280x720, 640x360 (16:9)
3rd Stream 30	Ofps @ 1280x960, 800x600, 640x480 (4:3); Ofps @ 1280x720, 640x360 (16:9); Ofps @ 1280x720, 640x360 (16:9)
S/N Ratio 55	5 dB
Dynamic Range 12	20 dB
Video Streaming Ad	djustable resolution, quality and constant bit rate control, Smart Stream III
	eneral settings deo title and time stamp overlay, video orientation (flip, mirror, rotation), day/night settings
	uminators uminators, anti-overexposure, VCA-based Smart IR III
wh	nage settings hite balance, image adjustment (brightness, contrast, saturation, sharpness, gamma curve), defog, DNR, EIS (built-in gyro sensor), scene mode (auto, deblur)
BL	posure LC, HLC, exposure control (exposure level, iris adjustment, exposure time, gain control, iris mode), AE leed adjustment, WDR
	ocus oom, focus
pix	ivacy mask xel calculator rheduled profile settings
Display Mode HD	DMI output (type D; 1080p/720p @30/25fps(60/50Hz))

Audio	
Audio Capability	Two-way audio (Full duplex)* * Requires AO-014 cable
Compression	G.711, G.726, MPEG-2 AAC-LC
Interface	Built-in microphone External microphone Input* External line output* * Requires AO-014 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) *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 www.onvif.org

Al Analytics	
Compute Capability	SoC with built-in hardware deep learning accelerator
	Object Detection People, Vehicle (4-wheeled, 2-wheeled)
Vision Object Analytics	Attribute Extraction People (gender, clothing 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 vivotek.com/video-analytics
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	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 * Requires AO-014 cable
Event Action	Event notification via audio clip*, camera link, digital output*, email, HTTP, FTP/SFTP, NAS server, SD card File upload via email, HTTP, FTP/SFTP, NAS server, SD card * Requires AO-014 cable

General	
Connectors	RJ-45 cable connector for 10/100 Mbps Network/PoE connection HDMI Output (Type D) Audio line input* Audio line output* Digital input: 1* Digital output: 1* * Requires AO-014 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 120 x 89.6 mm
Weight	370 g
Certifications	EMC 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) IC (ICES-003 Issue 7, Class A) Safety UL (UL62368-1), CB (IEC/EN 62368-1, IEC/EN 62368-1, IEC/EN 62471) UKCA (BS EN IEC 62368-1) Environment IA: BIS (IS 13252), BSMI (EMC: CNS 15936, Safety: CNS 15598-1)
Operating Temperature	Starting Temperature: $0^{\circ}\text{C} \sim 40^{\circ}\text{C} (32^{\circ}\text{F} \sim 104^{\circ}\text{F})$ Working Temperature: $0^{\circ}\text{C} \sim 45^{\circ}\text{C} (32^{\circ}\text{F} \sim 113^{\circ}\text{F})$ (IR off) $0^{\circ}\text{C} \sim 40^{\circ}\text{C} (32^{\circ}\text{F} \sim 104^{\circ}\text{F})$ (IR on)
Humidity	90% RH (non-condensing)

System Requirements	
Operating System	Microsoft Windows 10/8/7 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)	60.4 m (198.1 ft)
Observation (63PPM/ 19PPF)	24.1 m (79.2 ft)
Recognition (125PPM/ 38PPF)	12 m (39.5 ft)
Identification (250PPM/ 76PPF)	6.0 m (19.6 ft)

