



CCTV equipment specifications

Bullet IP camera, 2MP Specifications

- Image Sensor: 1/2.8" Progressive Scan CMOS
- Min. Illumination Color: 0.01 Lux @ (F1.2, AGC ON), 0.028Lux @(F2.0, AGC ON); B/W: 0.001 Lux @(F1.2, AGC ON), 0.0028 Lux @(F2.0, AGC ON)
- Shutter Speed: 1/3 s to 1/100,000 s
- Slow Shutter: Yes
- Day & Night: IR Cut Filter
- Digital Noise Reduction: 3D DNR
- WDR: 120 dB
- Focal Length 4/6 mm
- Aperture F2.0
- Focus Fixed
- FOV 4 mm: horizontal FOV: 86°, vertical FOV: 47°, diagonal FOV: 103° 6 mm: horizontal FOV: 55°, vertical FOV: 31°, diagonal FOV: 62°
- Lens Mount M12
- IR Range 30 m Wavelength 850n
- IR Range 30 m
- Wavelength 850nm
- Video Compression Main stream: H.265/H.264 Sub-stream: H.265/H.264/MJPEG
- H.264 Type Baseline Profile/Main Profile/High Profile
- H.264+ Main stream supports
- H.265 Type Main Profile
- H.265+ Main stream supports
- Video Bit Rate 32 Kbps to 8 Mbps
- Audio Compression (-S) G.711/G.722.1/G.726/MP2L2/PCM
- Audio Bit Rate (-S) 64Kbps(G.711)/16Kbps(G.722.1)/16Kbps(G.726)/32-192Kbps(MP2L2)
- Behavior Analysis Line crossing detection, intrusion detection
- Region of Interest 1 fixed region for main stream
- Max. Resolution 1920 × 1080
- Main Stream 50Hz: 25fps (1920 × 1080, 1280 × 960, 1280 × 720) 60Hz: 30fps (1920 × 1080, 1280 × 960, 1280 × 720)
- Sub-Stream 50Hz: 25fps (704 × 576, 640 × 480, 352 × 288, 320 × 240) 60Hz: 30fps (704 × 480, 640 × 480, 352 × 240, 320 × 240)
- Image Settings Rotate mode, saturation, brightness, contrast, sharpness adjustable by client software or web browser
- Day/Night Switch Day/Night/Auto/Schedule/Triggered by alarm in (-S)
- Network Storage Support Micro SD/SDHC/SDXC card (128G), local storage and NAS (NFS,SMB/CIFS), ANR
- Alarm Trigger Motion detection, video tampering, network disconnected, IP address conflict, illegal login, HDD full, HDD error
- Protocols TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP™, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6, Bonjour
- General Function Anti-flicker, heartbeat, mirror, password protection, privacy mask, watermark, IP address filter
- Simultaneous Live View Up to 6 channels



- Web Browser IE8+, Chrome 31.0-44, Firefox 30.0-51, Safari 8.0+
- Audio (-S) 1 input (line in), 1 output (line out), mono sound
- Communication Interface 1 RJ45 10M/100M self-adaptive Ethernet port
- Alarm (-S) 1 input, 1 output
- On-board Storage Built-in micro SD/SDHC/SDXC slot, up to 128 GB
- Reset Button Yes
- Operating Conditions -30 °C to +60 °C (-22 °F to +140 °F), humidity 95% or less (non-condensing)
- Power Supply 12 VDC \pm 25% PoE (802.3af, class 3)
- Power Consumption and Current PoE: (802.3af, 36 V to 57 V), 0.2 A to 0.1 A, max: 6.5 W 12 VDC, 0.4 A, max. 5.0 W
- Protection Level IP67
- Material Front cover: metal, camera body: plastic

Dome IP Camera Specifications

- Image Sensor 1/2.7" Progressive Scan CMOS
- Max. Resolution 1920 \times 1080
- Min. Illumination Color: 0.005 Lux @ (F1.6, AGC ON), B/W: 0 Lux with IR
- Shutter Time 1/3 s to 1/100,000 s
- Day & Night IR Cut Filter
- Angle Adjustment Pan: 0° to 355°, tilt: 0° to 75°, rotate: 0° to 355°
- Focal Length & FOV: 2.8 mm: horizontal FOV 111.6°, vertical FOV 59.1°, diagonal FOV 133.9°; 4 mm: horizontal FOV 91.5°, vertical FOV 46.1°, diagonal FOV 109.8°; 6 mm: horizontal FOV 56°, vertical FOV 29.8°, diagonal FOV 65.3°
- Focus Fixed
- Aperture F1.6
- Supplement Light Range Up to 30 m
- IR Wavelength 850 nm
- Main Stream: 50 Hz: 25 fps (1920 \times 1080, 1280 \times 720); 60 Hz: 30 fps (1920 \times 1080, 1280 \times 720)
- Sub-Stream: 50 Hz: 25 fps (640 \times 480, 640 \times 360); 60 Hz: 30 fps (640 \times 480, 640 \times 360)
- Main stream: H.265+/H.265//H.264+/H.264
- Sub-stream: H.265/H.264/MJPEG
- Video Bit Rate 32 Kbps to 8 Mbps
- H.264 Type Baseline Profile/Main Profile/High Profile
- H.265 Type Main Profile
- Region of Interest (ROI) Support 1 fixed region for main stream
- Network Protocols: TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6, Bonjour, IPv4, UDP, SSL/TLS
- Simultaneous Live View Up to 6 channels
- API Open Network Video Interface, ISAPI
- Network Storage: Support Micro SD/SDHC/SDXC card (256 GB), local storage and NAS (NFS, SMB/CIFS),
- Web Browser: Plug-in required live view: IE 10+, Local service: Chrome 57.0+, Firefox 52.0+



- Image Settings: Rotate mode, saturation, brightness, contrast, sharpness and white balance adjustable by client software or web browser
- Day/Night Switch Day, Night, Auto, Schedule
- Wide Dynamic Range (WDR) 120 dB
- Ethernet Interface 1 RJ45 10 M/100 M self-adaptive Ethernet port
- On-Board Storage Built-in Micro SD slot, up to 256 GB
- Audio -S: 1 input (line in), 1 output (line out)
- Alarm -S: 1 input, 1 output (max. 12 VDC, 30 mA)
- Reset Key Yes
- Smart Event Line crossing detection, intrusion detection
- Upload to FTP/NAS/memory card, notify surveillance center, send email, trigger, recording, trigger capture
- Power: 12 VDC \pm 25%, 0.4 A, max. 5 W, \varnothing 5.5 mm coaxial power plug, PoE: 802.3af, Class 3, 36 V to 57 V, 0.20 A to 0.15 A, max. 6.5 W
- Conditions
- Conditions: -30 °C to 60 °C (-22 °F to 140 °F). Humidity: 95% or less (non-condensing)
- Storage Conditions -30 °C to 60 °C (-22 °F to 140 °F). Humidity: 95% or less (non-condensing)
- One-key reset, anti-flicker, heartbeat, mirror, password protection, privacy mask, watermark, IP address filter
- FCC (47 CFR Part 15, Subpart B)
- CE-EMC (EN 55032: 2015, EN 61000-3-2: 2019, EN 61000-3-3: 2013+A1: 2019, EN 50130-4: 2011+A1: 2014)
- RCM (AS/NZS CISPR 32: 2015)
- IC (ICES-003: Issue 7)
- KC (KN32: 2015, KN35: 2015)
- UL (UL 62368-1)
- CB (IEC 62368-1: 2014+A11)
- CE-LVD (EN 62368-1: 2014/A11: 2017)
- LOA (IEC/EN 60950-1)
- BIS (IS 13252 (Part 1): 2010/IEC 60950-1: 2005)
- Environment
- CE-RoHS (2011/65/EU); WEEE (2012/19/EU);
- Reach (Regulation (EC) No 1907/2006)
- Protection
- IP67 (IEC 60529-2013)
- IK10 (IEC 62262: 2002)

Panoramic IP Camera, 8MP

- Image Sensor 1/1.8" Progressive Scan CMOS
- Min. Illumination Color: 0.003 Lux @ (F1.2, AGC ON); B/W: 0.0018 Lux @ (F1.6, AGC ON), 0 Lux with IR
- Shutter Speed 1/25 s to 1/100,000 s
- Day & Night IR cut filter. Blue glass module to reduce ghost phenomenon
- Angle Adjustment Pan: 0° to 355°, tilt: 0° to 90°
- WDR Digital WDR



- Aperture F1.4
- Focus Manual, semi-auto
- FOV 2.8 mm: horizontal FOV 180°, vertical FOV 90° 6 mm: horizontal FOV 180°, vertical FOV 25°
- Lens Type Fixed lens, 2.8 mm/6 mm, four lenses
- IR Range Four IR LEDs, up to 20 m
- Wavelength 850 nm
- Max. Resolution 2.8 mm Panorama+ePTZ mode: panorama channel: 1920 × 1080; ePTZ channel: 1920 × 1080 Panorama mode: 3840 × 2160 Original mode: 1920 × 1080 6 mm Panorama+ePTZ mode: panorama channel: 2400 × 400; ePTZ channel: 1920 × 1080 Panorama mode: 6480 × 1080 Original mode: 1920 × 1080
- Main Stream 2.8 mm Panorama+ePTZ mode: panorama channel: 50Hz: 25fps (1920 × 1080, 1280 × 720), 60Hz: 30fps (1920 × 1080, 1280 × 720); ePTZ channel: 50Hz: 25fps (1920 × 1080, 1280 × 720), 60Hz: 30fps (1920 × 1080, 1280 × 720) Panorama mode: 50Hz: 25fps (3840 × 2160, 2560 × 1440, 1920 × 1080), 60Hz: 30fps (3840 × 2160, 2560 × 1440, 1920 × 1080) Original mode: 50Hz: 25fps (1920 × 1080), 60Hz: 30fps (1920 × 1080) 6 mm Panorama+ePTZ mode: panorama channel: 50Hz: 25fps (2400 × 400), 60Hz: 30fps (2400 × 400); ePTZ channel: 50Hz: 25fps (1920 × 1080, 1280 × 720), 60Hz: 30fps (1920 × 1080, 1280 × 720) Panorama mode: 50Hz: 25fps (6480 × 1080, 4800 × 800, 3600 × 600), 60Hz: 30fps (6480 × 1080, 4800 × 800, 3600 × 600) Original mode: 50Hz: 25fps (1920 × 1080), 60Hz: 30fps (1920 × 1080)
- Sub Stream 2.8 mm Panorama mode: 50Hz: 25fps (1280 × 720, 640 × 360), 60Hz: 30fps (1280 × 720, 640 × 360) 6 mm Panorama mode: 50Hz: 25fps (2400 × 400, 1920 × 320, 1440 × 240), 60Hz: 30fps (2400 × 400, 1920 × 320, 1440 × 240)
- Video Compression Main stream: H.265/H.264 Sub-stream: H.265/H.264/MJPEG
- H.264 Type Baseline Profile/ Main Profile/ High Profile
- H.265 Type Main Profile
- Video Bit Rate 32 Kbps to 65 Mbps
- SVC H.264 and H.265 encoding
- H.264+ Main stream support
- Audio Compression G.711/G.722.1/G.726/MP2L2/PCM
- Audio Bit Rate 64Kbps(G.711)/16Kbps(G.722.1)/16Kbps(G.726)/32-192Kbps(MP2L2)/32Kbps(PCM)
- Environment Noise Filtering Yes
- Audio Sampling Rate 8 kHz/16 kHz/32 kHz/48 kHz
- Basic Event Motion detection (only panorama and original modes support), exception (network disconnected, IP address conflict, illegal login, HDD full, HDD error)
- People Density Yes (only panorama mode supports)
- Linkage Method Upload to FTP/NAS/memory card, notify surveillance center, send email, trigger alarm output, trigger recording, trigger capture
- Image Enhancement BLC, HLC, 3D DNR, Defog, EIS (only the original mode supports)
- Image Setting Rotate mode (only the original mode supports), saturation, brightness, contrast, sharpness, AGC, and white balance are adjustable by client software or web browser
- Target Cropping Yes (only panorama mode supports)
- Day/Night Switch Day/Night/Auto/Schedule/Triggered by Alarm In
- Network Storage microSD/SDHC/SDXC card (256 GB), local storage and NAS (NFS,SMB/CIFS), ANR



- Protocols TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6, UDP, Bonjour
- API ONVIF (PROFILE S, PROFILE G), ISAPI, SDK, Ehome
- Security Password protection, complicated password, HTTPS encryption, 802.1X authentication (EAP-TLS, EAP-LEAP, EAP-MD5), watermark, IP address filter, basic and digest authentication for HTTP/HTTPS, WSSE and digest authentication for ONVIF, RTP/RTSP over HTTPS, control timeout settings, TLS 1.2, TLS1.0, TLS1.1
- Simultaneous Live View Up to 20 channels
- Web Browser: Chrome, Firefox
- Communication Interface 1 RJ45 10M/100M/1000M Ethernet port; 1 RS-485 interface (half duplex, HIKVISION, Pelco-P, Pelco-D, self-adaptive)
- Audio 1 input (line in), 3.5 mm 3-section connector, max. input amplitude: 1 vpp, input impedance: 4.7 K Ω , interface type: non-equilibrium; 1 output (line out), 3.5 mm 3-section connector, max. output amplitude: 1 vpp, output impedance: 100 Ω , interface type: non-equilibrium
- Alarm 2 inputs, 2 outputs (max. 24 VDC, 1 A)
- On-board Storage Built-in microSD/SDHC/SDXC slot, up to 256GB
- General Function Anti-flicker, heartbeat, mirror (only original mode supports), privacy masks (only original mode supports), password protection, watermark, IP address filter, pixel counter
- Reset Reset via reset button on camera body, web browser and client software
- Startup and Operating Conditions -40 °C to +60 °C (-40 °F to +140 °F), humidity 95% or less (non-condensing)
- Power Supply 12 VDC, three-core terminal block, PoE (802.3at)
- Power Consumption and Current 12 VDC, 1.6 A, max. 24 W, PoE (802.3at, 42.5 V to 57 V), 0.5 to 0.4 A
- Material Aluminum alloy
- EMC FCC (47 CFR Part 15, Subpart B); CE-EMC (EN 55032: 2015, EN 61000-3-2: 2014, EN 61000-3-3: 2013, EN 50130-4); RCM (AS/NZS CISPR 32:2015); IC (ICES-003: Issue 6, 2016); KC (KN 32: 2015, KN 35: 2015);
- Safety UL (UL 60950-1); CB (IEC 60950-1:2005 + Am 1:2009 + Am 2:2013); BIS (IS 13252 (Part 1): 2010+A1:2013+A2:2015); CE-LVD (EN 60950-1:2005 + Am 1:2009 + Am 2:2013);
- Chemistry CE-ROHS (2011/65/EU); REACH (Regulation (EC) No 1907/2006); WEEE (2012/19/EU);
- Protection Ingress protection: IK10 (IEC 62262:2002), IP67 (IEC 60529-2013)
- Interface Type /NFC: FC interface
- Interface Type /NFC: FC interface
- Input/output Wavelength /NFC: Tx1310nm/1.25G, Rx1550nm/1.25G
- Transmission Distance /NFC: Up to 20 km

16-channel Network Video Recorder Specifications

- IP video input: Up to 12 MP resolution
- Incoming bandwidth 160 Mbps
- Outgoing bandwidth 256 Mbps
- HDMI output: 4K (3840 × 2160)/60Hz, 4K (3840 × 2160)/30Hz, 1920 × 1080/60Hz, 1600 × 1200/60Hz, 1280 × 1024/60Hz, 1280 × 720/60Hz, 1024 × 768/60Hz
- VGA output 1920 × 1080/60Hz, 1280 × 1024/60Hz, 1280 × 720/60Hz, 1024 × 768/60Hz
- Video output mode HDMI/VGA independent output



- CVBS output 1-ch, BNC (1.0 Vp-p, 75 Ω), resolution: PAL: 704 × 576, NTSC: 704 × 480
- Audio output 1-ch, RCA (Linear, 1 KΩ)
- Two-way audio input 1-ch, RCA (2.0 Vp-p, 1 KΩ, using the audio input)
- Decoding format H.265+/H.265/H.264+/H.264/MPEG4
- Recording resolution: 32 MP/24 MP/12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA/4CIF/DCIF/2CIF/CIF/QCIF
- Synchronous playback: 16-ch
- Capability 1-ch@32 MP (30 fps)/2-ch@12 MP (20 fps)/4-ch@8 MP (25 fps)/8-ch@4 MP (30fps)/16-ch@1080p (30 fps)
- Dual stream recording Support
- Stream type Video, Video & Audio
- Audio compression G.711ulaw/G.711alaw/G.722/G.726
- Remote connection: 128
- Network protocol: TCP/IP, DHCP, IPv4, IPv6, DNS, DDNS, NTP, RTSP, SADP, SMTP, SNMP, NFS, iSCSI, ISUP, UPnP, HTTP, HTTPS
- Network interface 1, RJ-45 10/100/1000 Mbps self-adaptive Ethernet interface
- SATA 2 SATA interfaces
- Capacity Up to 10 TB capacity for each disk
- Alarm in/out 4/1
- USB interface Front panel: 1 × USB 2.0; Rear panel: 1 × USB 3.0
- Power supply 12 VDC, 3.33 A
- Working temperature -10 °C to 55 °C (14 °F to 131 °F)
- FCC Part 15 Subpart B, ANSI C63.4-2014
- CE EN 55032:2015, EN 61000-3-2, EN 61000-3-3, EN 50130-4

PTZ IP camera, 25X zoom, 2MP specifications

- Image Sensor 1/2.8" progressive scan CMOS
- Min. Illumination Color: 0.005 Lux @ (F1.6, AGC ON); B/W: 0.001 Lux @ (F1.6, AGC ON), 0 Lux with IR
- Shutter Speed 1/1 s to 1/30000 s
- Slow Shutter yes
- Focus semi-auto, manual, auto
- Day & Night ICR
- Day/Night Switch day, night, auto, scheduled-switch
- BLC yes
- WDR 120 dB WDR
- HLC yes
- 3D DNR yes
- Defog yes
- EIS yes
- Regional Exposure yes
- Regional Focus yes
- Image Settings saturation, brightness, contrast, sharpness
- White Balance auto, ATW, sodium lamp, fluorescent lamp, indoor, outdoor, MWB, Locked WB
- Digital Zoom 16 ×
- Optical Zoom 25 ×



- Privacy Mask up to 24 masks, polygon region, mosaic mask, mask color configurable
- SNR >52dB
- Focal Length 4.8 mm to 120 mm, 25× Optical
- Zoom Speed approx. 3.6 s
- FOV Horizontal field of view: 57.6° to 2.5° (wide-tele), Vertical field of view: 34.4° to 1.4° (wide-tele), Diagonal field of view: 64.5° to 2.9° (wide-tele)
- Aperture F1.6
- Movement Range (Pan) 360°
- Movement Range (Tilt) -15° to 90°(auto flip)
- Pan Speed pan speed: configurable from 0.1° to 120°/s; preset speed: 120°/s
- Tilt Speed tilt speed: configurable from 0.1° to 80°/s, preset speed 80°/s
- Proportional Zoom yes
- Presets 300
- Patrol Scan 8 patrols, up to 32 presets for each patrol
- Pattern Scan 4 pattern scans
- Power-off Memory yes
- Park Action preset, pattern scan, patrol scan, auto scan, tilt scan, random scan, frame scan, panorama scan
- 3D Positioning yes
- PTZ Status Display yes
- Preset Freezing yes
- Scheduled Task preset, pattern scan, patrol scan, auto scan, tilt scan, random scan, frame scan, panorama scan, dome reboot, dome adjust, aux output
- Max. Resolution 1920 × 1080
- Stream Type main stream, sub-stream, third stream
- Main Stream 50Hz: 25fps (1920 × 1080, 1280 × 960, 1280 × 720) 60Hz: 30fps (1920 × 1080, 1280 × 960, 1280 × 720)
- Sub-Stream 50Hz: 25fps (704 × 576, 640 × 480, 352 × 288) 60Hz: 30fps (704 × 480, 640 × 480, 352 × 240)
- Third Stream 50Hz: 25fps (1920 × 1080, 1280 × 960, 1280 × 720, 704 × 576, 640 × 480, 352 × 288) 60Hz: 30fps (1920 × 1080, 1280 × 960, 1280 × 720, 704 × 480, 640 × 480, 352 × 240)
- Video Compression H.265, H.264, MJPEG
- Video Bit Rate 32 kbps to 16384 kbps
- H.264 Type baseline profile, main profile, high profile
- H.265 Type main profile
- H.264+ yes
- H.265+ yes
- SVC yes
- ROI dynamic face tracking, fixed region, main stream, sub-stream and third stream respectively support eight fixed areas
- Audio Compression G.711alaw, G.711ulaw, G.722.1, G.726, MP2L2, PCM
- Audio Bit rate MP2L2: 32 kbps, 40 kbps, 48 kbps, 56 kbps, 64 kbps, 80 kbps, 96 kbps, 112 kbps, 128 kbps, 144 kbps, 160 kbps, 192 kbps
- Environment Noise Filtering yes
- Face Capture yes
- Basic Event audio exception, motion detection, video tampering alarm, exception
- Smart Event intrusion detection, line crossing detection, region entrance detection, region exiting detection, unattended baggage detection, object removal detection



- Smart Record ANR, Dual-VCA
- Alarm Linkage preset, patrol scan, pattern scan, memory card video recording, alarm output, sending email, notify surveillance center, upload to FTP
- Perimeter Protection Line crossing, intrusion, region entrance, region exiting Support alarm triggering by specified target types (human and vehicle)
- Network Storage NAS (NFS, SMB/ CIFS), ANR
- Protocols IPv4/IPv6, HTTP, HTTPS, 802.1x, Qos, FTP, SMTP, UPnP, SNMP, DNS, DDNS, NTP, RTSP, RTCP, RTP, TCP/IP, UDP, IGMP, ICMP, DHCP, PPPoE, Bonjour
- Simultaneous Live View 20
- User/Host 32
- Smooth Streaming yes
- Security Measures Authenticated username and password, MAC address binding, HTTPS encryption, 802.1X authenticated access, IP address filter
- Web Browser IE 8 to 11, Chrome 57+, Firefox 52+, Safari 12+
- Communication Interface RJ45, self-adaptive 10M/100M Ethernet port
- On-board Storage support microSD/microSDHC/microSDXC cards, up to 256 GB
- Alarm Input 2 alarm inputs
- Alarm Output 1 alarm output
- Audio Input 1 audio input, 2.0 to 2.4Vp-p, 1k Ohm±10%
- Audio Output 1 audio output, line level, impedance: 600 Ω
- IR Distance 150 m
- Power 24 VAC, Hi-PoE
- Power Consumption and Current Max. 30 W, including max. 10 W for IR
- Operating Conditions -30°C to 65°C (-22°F to 149°F); humidity lower than 90%RH
- Material ADC 12, PC, PC+10% GF
- Protection IP66 Standard, 6000V Lightning Protection, Surge Protection and Voltage Transient Protection

10TB Hard Disk for NVR specifications

- Interface: SATA 6Gb/s
- Drive Bays Supported: 8+
- Cameras Supported: Up to 64
- Max. Sustained Transfer Rate OD (MB/s): 210MB/s
- Cache (MB): 256
- Tarnish Resistant: Yes
- Load/Unload Cycles: 300,000
- Nonrecoverable Read Errors per Bits Read, Max 1: per 10E15
- Power-On Hours per Year (24×7): 8760
- Workload Rate Limit (WRL): 180
- MTBF: 1,000,000hr
- Warranty, Limited (years): 3
- Startup Current, Typical (12V, A): 1.8
- Average Operating Power (W): 6.8W
- Idle Average (W): 4W
- Standby Mode/Sleep Mode, Typical (W): 0.8/0.8
- Voltage Tolerance (5V): ±5%
- Recommended for surveillance video recording



Terms of Reference

Item	Specification	Statement of Compliance
		<p><i>[Bidders must state here either “Comply” or “Not Comply” against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of “Comply” or “Not Comply” must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer’s un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder’s statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]</i></p>
1	<u>Bullet Camera</u> -Must have 1/2.8” image sensor	
	- Must be able to display color images at minimum illumination 0.01 Lux @ (F1.2, AGC ON), 0.028 Lux @ (F2.0, AGC ON); Black and white at minimum illumination 0.001 Lux @ (F1.2, AGC ON), 0.0028 Lux @ (F2.0, AGC ON)	
	- Must have video resolution of 1920 (H) x 1080 (V)	
	- Must have at least 120dB wide dynamic range rating	



	- Must have at least 30m IR range	
	- Must be capable to provide at least 6 channels for simultaneous live view.	
	- Must be capable of receiving power through PoE (802.3af, class 3)	
	- Must have IP67 environment protection rating.	
	<u>Dome Camera</u>	
	-Must have 1/2.7" image sensor	
	- Must be able to display color images at minimum illumination 0.005 Lux @ (F1.6, AGC ON); Black and white at minimum illumination 0.0 Lux with IR	
	- Must have video resolution of 1920 (H) x 1080 (V)	
	- Must have at least 120dB wide dynamic range rating	
	- Must be capable to provide at least 6 channels for simultaneous live view.	
	- Must be capable of receiving power through PoE (802.3af, class 3)	
	- Must have IP67 environment protection rating.	
	<u>Network Video Recorder (NVR)</u>	
	-Must be able to support 16 channels IP video input up to 12MP resolution.	



	- Must support H.265+, H.265, H.265+, H.265, MPEG4 decoding formats	
	- Must have 1 10/100/1000 Mbps Ethernet interface. PoE ports built-in in the NVR are not required. PoE shall be supplied by existing switches.	
	- Must have at least 2 SATA interfaces and HDD capacity of up to 10TB for each HDD	
	- Must contain one (1) 10TB HDD specifically designed for surveillance use	
	<u>Structured Cabling</u> - Cabling installation must follow installation standards defined by ANSI/TIA-568 and the Philippine Electronics Code related to structured cabling installations.	
	- Category 6 U/UTP installation cables must be used and must have the following minimum compliance parameters: <ul style="list-style-type: none"> - Compliant with ISO/IEC 11801 ED.2.2:2011 - Compliant with ANSI/TIA 568-C.2:2011 - RoHS 	
	- Category 6 U/UTP installation cable must have at AWG 23 bare copper conductor material. Use of copper clad aluminum conductors for CAT6 installation cable will be automatically rejected on inspection.	



	<p>- Cable termination parts must be rated for CAT6 and must be compatible with existing structured cabling system. Terminations at patch panels must follow T568A wiring standard. PSHS-MRC currently uses Premium Line CAT6 cabling system and parts.</p>	
	<p>- CAT6 U/UTP patch cords may use AWG 28 or 30 types. Field-terminated patch cords are not allowed unless approved by PSHS-MRC on special cases.</p>	
	<p>- CAT6 permanent links must be tested at least for continuity, wiring map and length. Test results must be submitted to PSHS-MRC.</p>	
	<p><u><i>Installation Materials</i></u></p> <p>- Cable conduits may use PVC or EMT pipes. All conduits must be properly mounted or suspended using mounting hardware such as, but not limited to, suspension clamps, saddle clamps, anchor bolts, full-thread rods. Mounting or suspension using wires or u-nails/clamps will be rejected on inspection. Pipes must be painted with same color as wall color where it is attached and must have labels every 3m. Use of PVC molding is not recommended. Exceptions for special cases must be approved by PSHS-MRC in writing.</p>	



	<p>- Camera mounts may use brand/model-specific junction boxes, wall brackets, pole mounts or pendant mounts; or fabricated mounts that are similar to their branded equivalents. Generic round or square waterproof CCTV boxes should not be used unless approved in writing by PSHS-MRC. Installation of cameras puts emphasis on aesthetics.</p>	
	<p><u><i>Network Configuration</i></u></p> <p>- Contractor must configure separate IP subnets for CCTV per building using 802.1Q. Existing router is Mikrotik CCR1016-12S-1S+ and existing switches are TP-Link T1600G-28PS. All fiber interfaces are existing. No need to supply additional network hardware or accessories.</p>	
	<p>- Cameras shall be assigned specific IP addresses by PSHS-MRC. Contractor must follow IP address plans provided by PSHS-MRC.</p>	
	<p>- Contractor shall provide as-built diagrams and configurations to PSHS-MRC as part of project completion requirements.</p>	
	<p>- All system level passwords configured by contractor in NVRs and cameras must be turned over to PSHS-MRC after project completion.</p>	