

## Technical Requirement of Camera & NVR

### **AI Functions (All Types)**

Functions	<ul style="list-style-type: none"> <li>- Human &amp; Vehicle classification</li> <li>- Motion detection &amp; intrusion alert</li> <li>- Line crossing/region detection/Loitering</li> <li>- Objecting missing</li> <li>- Face detection &amp; snapshot</li> <li>- People counting and occupancy estimation</li> <li>- License Plate Recognition (optional)</li> <li>- AI metadata tagging for smart search on NVR</li> </ul>
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### **Dome Camera**

Quantity	138
Camera Type	Network/IP, ONVIF
Video Format	H.264, H.264s, H.265, H.265+
Video Output	RJ-45/Ethernet, PoE
Resolution	Minimum 6 Megapixel
Infrared	Up to 30m
Weatherproof	IP66
Lens	View angle minimum 90 degree
Audio	Built-in Mic, 1ch audio input
Style	Vandal-proof Dome Camera
Install	Ceiling or Wall Mount
AI	Face, People Detection
Power	PoE
Features	Vandal-resistant (IK10), compact design

### **Panoramic Camera (180 Degree)**

Quantity	5
Camera Type	Network/IP, ONVIF
Video Format	H.264, H.264s, H.265, H.265+
Connectivity	RJ-45/Ethernet, PoE
Resolution	Minimum 8 megapixel
Infrared	Minimum 15m
Weatherproof	IP67 Housing
Lens	View angle 180 degree
Audio	Built-in Mic, 1ch audio input
Style	Bullet Camera
Install	Ceiling or Wall mount
AI	Face, People detection
Power	PoE

**Bullet Camera (90 Degree)**

Quantity	22
Camera Type	Network/IP, ONVIF
Video Format	H.264, H.264s, H.265, H.265+
Connectivity	RJ-45/Ethernet, PoE
Resolution	Minimum 8 Megapixel
Infrared	Up to 30m
Weatherproof	IP67 Housing
Lens	View angle minimum 90 Degree
Audio	Built-in Mic, 1ch audio input
Style	Bullet Camera
Install	Ceiling or Wall Mount
AI	Face, People Detection
Power	PoE
Features	Weatherproof, extended IR Range, deterrent visible design

**Network Video Recorder (NVR)**

Quantity	3
Features	<ul style="list-style-type: none"> <li>- 64-channel professional IP NVR with embedded AI processing.</li> <li>- Support H.265+/H.265/H.264+/H.264 video compression.</li> <li>- Minimum incoming bandwidth: 384 Mbps.</li> <li>- Support centralized AI analytics and intelligent search.</li> <li>- 16 SATA HDD bays with RAID 0/1/5/6/10 support.</li> <li>- Dual Gigabit Ethernet ports and HDMI output up to 4K.</li> </ul>
AI Video Analytics Functions	<ul style="list-style-type: none"> <li>- CCTV system should support advanced AI-based video analytics.</li> <li>- Human and vehicle classification for accurate event detection</li> <li>- Perimeter protection (line crossing, intrusion, region entry/exit)</li> <li>- Intelligent motion detection with false alarm reduction</li> <li>- Facial detection and facial recognition (camera dependent)</li> <li>- Automatic Number Plate Recognition (ANPR/LPR)</li> <li>- People counting and crowd density analysis</li> <li>- Object left behind / object removal detection</li> <li>- Intelligent video search and filtering by attributes</li> </ul>

	<ul style="list-style-type: none"><li>- Real-time alerts and event notifications</li></ul>
Monitoring, Software & Alerts	<ul style="list-style-type: none"><li>- Centralized live monitoring and playback via NVR interface and client software.</li><li>- AI-based event dashboards and smart search.</li><li>- User-based access control with audit logs</li></ul>
Security & Compliance	<ul style="list-style-type: none"><li>- ONVIF compliance for interoperability.</li></ul>
Warranty & Support	<ul style="list-style-type: none"><li>- Minimum one (1) year comprehensive warranty for equipment.</li><li>- Technical support and maintenance during the warranty period</li></ul>