

राज्य ग्राहक तक्रार निवारण आयोग, महाराष्ट्र, मुंबई.

जुने प्रशासकीय महाविद्यालय आवर, रूम नं.१,२,५ व ६ हजारीमल सोमाणी मार्ग, छत्रपती शिवाजी टर्मिनस समोर, मुंबई- ४०० ००९.

E-mail : mah-sforum@nic.in	दुरध्वनी क्र . २२०५७४०९	दुरध्वनी क्र . २२०७२०९७
जा.क्र.राआ/लेखा २०/सी.सी.टी.व्ही. दरपत्रक/२०२२/३६३	दिनांक	27 JAN 2022

नोटीस

राज्य ग्राहक तक्रार निवारण आयोग, महाराष्ट्र मुंबई या कार्यालयाच्या सी.एस.टी. व काळा घोडा कार्यालयामध्ये तसेच कोर्ट रूम मध्ये सी.सी.टी.व्ही. कॅमेरा (CCTV Cameras) आणि ऑडीओ रेकॉर्डिंग सिस्टम (audio recording System). बसविण्यात येणार आहेत.

तरी राष्ट्रीय ग्राहक तक्रार निवारण आयोग, नवी दिल्ली यांच्या संकेतस्थळावरील दि. २१/०९/२०२१ रोजीच्या नोटीसमध्ये नमुद केलेल्या Specifications नुसार दरपत्रके माविण्यात येत आहे. तरी सी.सी.टी.व्ही. कॅमेरा (CCTV Cameras) आणि ऑडीओ रेकॉर्डिंग सिस्टम (audio recording System)चा पुरवठा करणा-या पुरवठादारांकडून दरपत्रके मगविण्यात येत आहेत.

तरी सी.सी.टी.व्ही. कॅमेरा (CCTV Cameras) आणि ऑडीओ रेकॉर्डिंग सिस्टम (audio recording System) चा पुरवठा करणा-या पुरवठादारांनी नोटीस प्रसिध्द केल्याच्या दिनांकापासून कार्यालयीन वेळेमध्ये दि. ०७/०२/२०२२ रोजी पर्यंत सायंकाळी ५ वाजेपर्यंत दरपत्रके सादर करावी.

सोबत- राष्ट्रीय ग्राहक तक्रार निवारण आयोग,
नवी दिल्ली यांचे दि. २१/०९/२०२१ रोजीचे
नोटीस.


27/1/2022
(भागवत तु. झिरपे)

प्रबंधक(प्रशासन)
राज्य ग्राहक तक्रार निवारण आयोग,
महाराष्ट्र, मुंबई.



**NATIONAL CONSUMER DISPUTES REDRESSAL COMMISSION
GOVERNMENT OF INDIA**

Tele No.24608715
Fax No.24651505

Upbhokta Nyay Bhawan,
'F' Block, GPO Complex,
INA, NEW DELHI-110023

NCDRC/CCTV/2021-2022

21st September 2021

CALLING QUOTATION FOR CCTV CAMERAS

Sealed quotations are invited by the National Consumer Disputes Redressal Commission, Upbhokta Nyay Bhawan, "F"-Block, GPO Complex, INA, New Delhi-110023 for the expansion of CCTV cameras in the office of National Commission. The quantity & specifications for the said CCTV cameras are as under:-

S. No.	Items Description	Quantity	Specification
1.	Dome Camera	52	Enclosed as annexure "I"
2.	Bullet Camera	06	Enclosed as annexure "II"
3.	PTZ Camera	04	Enclosed as annexure "III"
4.	NVR (Network Video Recorder)	01	Enclosed as annexure "IV"
5.	Additional Components		Enclosed as annexure "V"
*Note: - The agency will be responsible for supply and installation of the above said items along with the laying of CAT-6 cable/ fiber cables for networking. The agency has to setup a monitoring cell for the CCTV cameras. The quantity of CCTV cameras may vary at later stage.			

The price quoted by the agencies for the above said equipment must be indicated in a proper tabular format along with consolidate proposal pricing (including the services indicated at foot note i.e. installation, cabling charges & setting up of CCTV monitoring cell etc.). If any kind of survey is required by the agencies, they may conduct the same during Monday to Friday between 10:00 AM to 05:00 PM.

The quotations may be sent in a sealed cover addressed to the Registrar, National Consumer Disputes Redressal Commission, Upbhokta Nyay Bhawan, "F"-Block, GPO Complex, INA, New Delhi- 110023 on or before 11th October 2021.

Yours faithfully,


(S.HANUMANTHA RAO)
JOINT REGISTRAR

Dome Camera Specifications	
Image Sensor	1/2.9" Progressive Scan CMOS
Min. Illumination	Color: 0.028 Lux @ (F2.0, AGC ON), 0 Lux with IR
Shutter Speed	1/3 s to 1/100,000 s
Slow Shutter	Yes
Day & Night	IR Cut Filter
WDR	120 dB
Angle Adjustment	Pan: 0° to 355°, tilt: 0° to 75°, rotate: 0° to 355°
Lens	
Lens Type	Fixed lens, 2.8/4/6 mm
Aperture	F2.0
FOV	2.8 mm: horizontal FOV: 97°, vertical FOV: 63°, diagonal FOV: 120° 4 mm: horizontal FOV: 78°, vertical FOV: 50°, diagonal FOV: 97° 6 mm: horizontal FOV: 60°, vertical FOV: 39°, diagonal FOV: 75°
Lens Mount	M12
Illuminator	
IR Range	Up to 30 m
Wavelength	850 nm
Video	
Max. Resolution	3840*2160 (6MP or Higher)
Main Stream	50Hz: 20fps (3072 × 2048, 3072 × 1728, 2944 × 1656), 25fps (2560 × 1440, 1920 × 1080, 1280 × 720) 60Hz: 20fps (3072 × 2048, 3072 × 1728, 2944 × 1656), 30fps (2560 × 1440, 1920 × 1080, 1280 × 720)
Sub Stream	50Hz: 25fps (640 × 480, 640 × 360, 320 × 240) 60Hz: 30fps (640 × 480, 640 × 360, 320 × 240)
Third Stream	50Hz: 25fps (1280 × 720, 640 × 360, 352 × 288) 60Hz: 30fps (1280 × 720, 640 × 360, 352 × 240)
Video Compression	Main stream/third stream: H.265/H.264 Sub-stream: H.265/H.264/MJPEG
H.264 Type	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 16 Mbps
Scalable Video Coding (SVC)	H.264 and H.265 encoding support
* When the main stream resolution is 2944 × 1656 and above, max frame rate is 20 fps for all streams.	
Audio	
Audio Compression	G.711/G.722.1/G.726/MP2L2/PCM/MP3
Audio Bit Rate	64Kbps(G.711)/16Kbps(G.722.1)/16Kbps(G.726)/32-192Kbps(MP2L2)/8Kbps-320Kbps(MP3)
Environment Noise Filtering	Yes
Audio Sampling Rate	8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz
Smart Feature-Set	
Smart Event	Line crossing detection, intrusion detection and face detection
Basic Event	Motion detection, video tampering alarm, exception (network disconnected, IP address conflict, illegal login, HDD full, HDD error)
Linkage Method	Trigger recording: memory card, network storage, pre-record and post-record Trigger captured pictures uploading: FTP, HTTP, NAS, Email Trigger notification: HTTP, ISAPI, Email
Region of Interest	1 fixed region for main stream and sub-stream
Image	
Image Enhancement	BLC, HLC, 3D DNR
Image Setting	Rotate mode, saturation, brightness, contrast, sharpness, AGC and white balance adjustable by client software or web browser
Day/Night Switch	Day/Night/Auto/Schedule
Network	
Network Storage	microSD/SDHC/SDXC card (128 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, SSL/TLS

API	ONVIF (PROFILE S, PROFILE G, PROFILE T), ISAPI, SDK
Security	Password protection, complicated password, HTTPS encryption, 802.1X authentication (EAP-TLS 1.2, EAP-LEAP, EAP-MD5), watermark, IP address filter, basic and digest authentication for HTTP/HTTPS, WSSE and digest authentication for ONVIF, TLS1.2
Simultaneous Live View	Up to 6 channels
User/Host	Up to 32 users, 3 levels: administrator, operator and user
Client	iVMS-4200, Hik-Connect, Hik-Central
Web Browser	Plug-in required live view: IE8+ Plug-in free live view: Chrome 57.0+, Firefox 52.0+, Safari 11+ Local Service: Chrome 41.0+, Firefox 30.0+
Interface	
Communication Interface	1 RJ45 100M self-adaptive Ethernet port
Audio	1 audio input (built-in microphone)
On-board storage	Built-in micro SD/SDHC/SDXC slot, up to 128 GB
General	
Web Client Language	32 languages English, Russian, Estonian, Bulgarian, Hungarian, Greek, German, Italian, Czech, Slovak, French, Polish, Dutch, Portuguese, Spanish, Romanian, Danish, Swedish, Norwegian, Finnish, Croatian, Slovenian, Serbian, Turkish, Korean, Traditional Chinese, Thai, Vietnamese, Japanese, Latvian, Lithuanian, Portuguese (Brazil)
General Function	Anti-flicker, three streams, heartbeat, mirror, privacy masks, password reset via e-mail, pixel counter, HTTP listening

Bullet Camera Specification	
Image Sensor	1/2.9" Progressive Scan CMOS
Min. Illumination	Color: 0.01 lux @(F1.2, AGC ON), 0.028 lux @(F2.0, AGC ON), 0 lux with IR
Shutter Speed	1/3 s to 1/100,000 s
Slow Shutter	Yes
Day & Night	IR Cut Filter
Digital Noise Reduction	3D DNR
WDR	120dB
3-Axis Adjustment	Pan: 0° to 360°, tilt: 0° to 90°, rotate: 0° to 360°
Lens	
Focal Length	2.8/4/6/8 mm
Aperture	F2.0
Focus	Fixed
FOV	2.8 mm, horizontal FOV: 97°, vertical FOV: 63°, diagonal FOV: 120° 4 mm, horizontal FOV: 78°, vertical FOV: 50°, diagonal FOV: 97° 6 mm, horizontal FOV: 60°, vertical FOV: 39°, diagonal FOV: 75° 8 mm, horizontal FOV: 39.5°, vertical FOV: 26°, diagonal FOV: 48°
Lens Mount	M12
IR	
IR Range	Up to 30 m
Wavelength	850nm
Compression Standard	
Video Compression	Main stream: H.265/H.264 Sub-stream: H.265/H.264/MJPEG Third stream: H.265/H.264
H.264 Type	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 16 Mbps
Smart Feature-set	
Smart Event	Line crossing detection, intrusion detection, face detection
Basic Event	Motion detection, video tampering alarm, exception (network disconnected, IP address conflict, illegal login, HDD full, HDD error)
Linkage Method	Trigger recording: memory card, network storage, pre-record and post-record Trigger captured pictures uploading: FTP, HTTP, NAS, Email Trigger notification: HTTP, ISAPI, Email
Region of Interest	Support 1 fixed region for main stream and sub-stream
Image	
Max. Resolution	3840 * 2160 (6MP or Higher)
Main Stream	50Hz: 20 fps (3072 × 2048, 3072 × 1728, 2944 × 1656), 25 fps (2560 × 1440, 1920 × 1080, 1280 × 720) 60Hz: 20 fps (3072 × 2048, 3072 × 1728, 2944 × 1656), 30 fps (2560 × 1440, 1920 × 1080, 1280 × 720)
Sub-Stream	50Hz: 25 fps (640 × 480, 640 × 360, 320 × 240) 60Hz: 30 fps (640 × 480, 640 × 360, 320 × 240)
Third Stream	50Hz: 25 fps (1280 × 720, 640 × 360, 352 × 288) 60Hz: 30 fps (1280 × 720, 640 × 360, 352 × 240)
Image Enhancement	BLC/3D DNR/HLC
Image Setting	Rotate mode, saturation, brightness, contrast, sharpness, AGC, and white balance are adjustable by client software or web browser
Target Cropping	No
Day/Night Switch	Day/Night/Auto/Schedule

*Note: When the main stream resolution is 2944 × 1656 and above, max frame rate is 20 fps for all streams.

Network	
Network Storage	Support Micro SD/SDHC/SDXC card (128G), local storage and NAS (NFS,SMB/CIFS), ANR
Protocols	TCP/IP, UDP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6, UDP, Bonjour, SSL/TLS
General Function	Anti-flicker, three streams, heartbeat, mirror, privacy masks, password reset via e-mail, pixel counter, HTTP listening
Security	Password protection, complicated password, HTTPS encryption, 802.1X authentication (EAP-TLS 1.2, EAP-LEAP, EAP-MD5), watermark, IP address filter, basic and digest authentication for HTTP/HTTPS, WSSE and digest authentication for ONVIF, TLS1.2
API	ONVIF (PROFILE S, PROFILE G, PROFILE T), ISAPI, SDK
Simultaneous Live View	Up to 6 channels
User/Host	Up to 32 users
Client	3 levels: Administrator, Operator and User
Web Browser	iVMS-4200, Hik-Connect, Hik-Central Plug-in required live view: IE8+ Plug-in free live view: Chrome 57.0+, Firefox 52.0+, Safari 11+ Local Service: Chrome 41.0+, Firefox 30.0+
Interface	
Video Output	No
Communication Interface	1 RJ45 10M/100M self-adaptive Ethernet port
On-board Storage	Built-in microSD/SDHC/SDXC slot, up to 128 GB
SVC	H.264 and H.265 encoding support
Reset Button	Yes
General	
Operating Conditions	-30 °C to +60 °C (-22 °F to +140 °F), Humidity 95% or less (non-condensing)
Web Client Language	32 languages English, Russian, Estonian, Bulgarian, Hungarian, Greek, German, Italian, Czech, Slovak, French, Polish, Dutch, Portuguese, Spanish, Romanian, Danish, Swedish, Norwegian, Finnish, Croatian, Slovenian, Serbian, Turkish, Korean, Traditional Chinese, Thai, Vietnamese, Japanese, Latvian, Lithuanian, Portuguese (Brazil)
Power Supply	12 VDC ± 25%, Φ 5.5mm coaxial power plug PoE(802.3af, class 3)
Power Consumption and Current	12 VDC, 0.4 A, max. 6 W PoE: (802.3af, 36 V to 57 V), 0.2 A to 0.1 A, max. 7.5 W
Protection Level	IP67
Material	Metal
Dimensions	Camera: Φ 70 mm × 155 mm (Φ 2.8" × 6.1") Package: 216 × 121 × 118 mm (8.5" × 4.8" × 4.7")
Weight	Camera: approx. 410 g (0.9 lb.)

PTZ Camera Specifications

Image Sensor	1/2.8" progressive scan CMOS
Min. Illumination	Color: 0.005 Lux @ (F1.2, AGC ON) B/W: 0.001 Lux @ (F1.2, 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	32 ×
Privacy Mask	up to 24 masks, polygon region, mosaic mask, mask color configurable
SNR	> 52dB
Lens	
Focal Length	4.8 mm to 153 mm, 32 × Optical
Zoom Speed	approx. 4.2 s
FOV	Horizontal field of view: 54.3° to 2° (wide-tele), Vertical field of view: 31.8° to 1.1° (wide-tele), Diagonal field of view: 61.1° to 2.3° (wide-tele)
Aperture	F1.2
PTZ	
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
Video	
Max. Resolution	2560 × 1440 (4 MP or Higher)
Stream Type	main stream, sub-stream, third stream
Main Stream	50Hz: 25fps (2560 × 1440, 1920 × 1080, 1280 × 960, 1280 × 720) 60Hz: 30fps (2560 × 1440, 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	
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
Audio Sampling Rate	MP2L2: 16 kHz, 32 kHz, 48 kHz, PCM: 8 kHz, 16 kHz, 32 kHz, 48 kHz
Environment Noise Filtering	yes
Smart Features	
Face Capture	yes
Basic Event	audio exception, motion detection, alarm input, alarm output, video tampering alarm, exception
Smart Event	intrusion detection, line crossing detection, region entrance detection, region exiting detection, unattended baggage detection, object removal detection
Smart Tracking	manual tracking, event tracking, auto-tracking
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, smart tracking
Perimeter Protection	Line crossing, intrusion, region entrance, region exiting Support alarm triggering by specified target types (human and vehicle)
Network	
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
API	ISAPI, Hikvision SDK, Hik-Connect, ONVIF (Profile S, Profile G, Profile T), ISUP
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
Client	iVMS-4200, Hik-Connect, HikCentral
Web Browser	IE 8 to 11, Chrome 57+, Firefox 52+, Safari 12+
Interface	
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
Audio Output	1 audio output, line level, impedance: 600 Ω
Supplement Light	
IR Distance	150 m
General	
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
Reset	yes
Material	ADC 12, PC+10% GF
Dimensions	Φ 208 mm × 345 mm (Φ 8.19" × 13.58")
Weight	Approx. 3.3 kg (7.28 lb)
Approval	
Protection	IP66 Standard, 6000V Lightning Protection, Surge Protection and Voltage Transient Protection

Annexure "IV"

NVR Features and Functions

- New logical and visualized GUI design.
- Adopts professional embedded hardware and software, and pioneering dual-OS design to ensure the reliability of system running.
- Supports redundant power supply to improve the system stability.
- Supports HDD hot swap with RAID0, RAID1, RAID5, RAID 6, and RAID10 storage scheme configurable.
- Either normal or hot spare working mode is configurable to constitute an N+1 hot spare system.

Video Input and Transmission

- Up to 128/256 IP cameras can be connected.
- Support live view, storage, and playback of the connected camera at up to 12 megapixels resolution.
- H.265+ compression effectively reduces the storage space by up to 75%.
- 4 self-adaptive 10M/100M/1000M network interfaces.
- Adopt stream over TLS encryption technology (enhanced SDK service and RTP over HTTPS protocol)
- Connectable to the third-party network cameras like ACTI, Arecont, AXIS, Bosch, Brickcom, Canon, ONVIF, PANASONIC, Pelco, SAMSUNG, SANYO, SONY, Vivotek and ZAVIO.

HD Output

- Simultaneous HDMI 1/VGA output as the main output and the HDMI 2 works as the auxiliary output.
- HDMI and VGA1 simultaneous outputs by default. Asynchronous outputs configurable.
- Video outputs at up to 4K (4096×2160) resolution.
- Supports decoding up to 20 channels at 1080p resolution.

Storage and Playback

- Up to 16 SATA interfaces and 1 eSATA interface provided for HDD connection
- 10 TB capacity for each HDD.
- HDD health monitoring.
- Supports HDD quota and group modes; different capacity can be assigned to different channels.
- Normal/Important/Custom video playback.

Various Applications

- Centralized management of IP cameras is supported, including configuration, information import/export, real-time information display, two-way audio, upgrade, etc.
- Connectable to smart IP cameras from Hikvision and the recording, playing back, and backing up of VCA alarms can be realized.
- VCA detection alarm is supported.
- VCA search for facial detection, behavior analysis, people counting and heat map.
- Supports starting record with one key.
- Realizes instant playback for assigned channel during multi-channel display mode.
- Smart search for the selected area in the video; and smart playback to improve the playback efficiency.

Video & Audio input	IP video input	128-ch	128-ch	256-ch
	Incoming/outgoing bandwidth	576 Mbps/512 Mbps	576 Mbps/512 Mbps	768 Mbps/768 Mbps
	Incoming/outgoing bandwidth (RAID mode)	576 Mbps/512 Mbps	576 Mbps/512 Mbps	768 Mbps/768 Mbps
	TLS outgoing bandwidth	128 Mbps (when RAID is enabled)		
	Protocol	HIKVISION, ACTi, ARECONT, AXIS, BOSCH, BRICKCOM, CANON, HUNT, ONVIF (Version 2.5), PANASONIC, PELCO, RTSP, SAMSUNG, SONY, VIVOTEK, ZAVIO		
Video & Audio output	HDMI output	Two independent HDMI outputs of 4K resolution. Resolution: 4K (4096 × 2160), 4K (3840 × 2160)/30Hz, 2K (2560 × 1440)/60Hz, 1080p (1920 × 1080)/60Hz, UXGA (1600 × 1200)/60Hz, SXGA (1280 × 1024)/60Hz, 720p (1280 × 720)/60Hz, XGA (1024 × 768)/60Hz		
	VGA output	1-ch. Resolution: 1080p (1920 × 1080)/60Hz, UXGA (1600 × 1200)/60Hz, SXGA (1280 × 1024)/60Hz, 720p (1280 × 720)/60Hz, XGA (1024 × 768)/60Hz		
	LCD output (optional)	One 7 inch LCD		
	Audio output	1-ch. RCA (2.0 Vp-p, 1 KΩ)		
Video & Audio decoding	Decoding format	H.265, H.265+, H.264, H.264+, MPEG4, MJPEG (for Hikvision IP camera only)		
	Video resolution	12 MP/8 MP/7 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA/4CIF/DCIF/2CIF/CIF/QCIF		
	Synchronous playback	Up to 16 channels		
	Capability	3-ch@12 MP (30fps), 5-ch@8 MP (30fps), 6-ch@6 MP (30fps), 10-ch@4 MP (30fps), 20-ch@1080p (30 fps)		
HDD	Interface	16 SATA interfaces supporting hot-plug		
	Capacity	Up to 10 TB for each HDD		
	Storage extension	1 × eSATA interface, 2 × mini SAS interface (optional)		
RAID	RAID Type	RAID0, RAID1, RAID5, RAID 6, and RAID10		
Network management	Protocol	IPv6, HTTPS, UPnP, SNMP, NTP, SADP, SMTP, NFS, iSCSI, PPPoE, DDNS		
	Network interface	4, RJ45 10M/100M/1000M self-adaptive Ethernet interface		
External Interface	Two-way audio input	1-ch, RCA (2.0 Vp-p, 1 KΩ)		
	Serial port	RS-232; RS-485; Keyboard		
	USB interface	Front Panel: 2 × USB 2.0; Rear Panel: 2 × USB 3.0		
	Alarm Input/output	16/8		
	Extension board (optional)	One extension board is supported with four 10M/100M/1000M optical interfaces (1.25 Gbps SFP module), eight RS-485 interfaces, and alarm interface of 32 alarm inputs and 16 alarm outputs.		
General	Power supply	100 to 240 VAC, 550W		
	Fan	Redundant dual ball bearing fan; Speed adjustable; Hot-plug		
	Consumption (without HDD)	≤ 140W		
	Working temperature	0 °C to + 50 °C (32 °F to 122 °F)		
	Working humidity	10% to 90%		
	Dimension (W × D × H)	442 × 494 × 146 mm (17.4 × 19.4 × 5.7 inch)		
	Weight (without HDD)	≤ 16 kg (35.3 lb)		

Annexure – "V"

ADDITIONAL COMPONENTS			
S.No.	Components	Quantity	Remarks
1	PTZ Control & monitoring joystick device	1	Required for monitoring purpose
2	Switches	6	PoE Switches
3	Network Video Recorder(NVR) with Hard Disk	1	To store minimum 3 months CCTV Footage (As per the annexure "IV" attached)
4	Video Management Software(VMS) Licence	1	Required for monitoring cell
5	Erection of LAN ports	70	62 for Cameras + 5 for Backbone + 3 for Monitoring Cell
6	LFD Screen	3	LFD Screen for 24*7 operation
7	Intel NUC PC along with peripherals	3	Configuration should be adequate for monitoring of CCTV cameras (Preferably Intel-I5, 16GB RAM and Minimum 256 GB SSD)