ELCOT Adding Value through IT	**Electronics Corporation of Tamil Nadu Limited**
Rate Contract Tender	**S u p p l y , I n s t a l l a t i o n a n d C o m m i s s i o n i n g o f** **IP Camera & related items** **Tender Ref.** **ELCOT/Proc/OT/33258/IP Camera/RC/2019-20**
	Revised Tender Document

Table of Contents

Acronyms and Definitions	
AMC/CAMC	Annual Maintenance Contract / Comprehensive Annual Maintenance Contract
CST	Central Sales Tax
DSC	Digital Signature Certificate
EMD	Earnest Money Deposit
ERTL	Electronic Regional Test Laboratories
ETDC	Electronics Test & Development Centre
FOR	Free On Road / Rail
HR	Human Resources
HRMS	Human Resources Management System
ICT	Information and Communication Technology
IPR	Intellectual Property Rights
ISO	International Organisation for Standardisation
IT	Information Technology
LD	Liquidated Damage
LOA	Letter of Acceptance
MIS	Management Information System
NABL	National Accreditation Board for Testing and Calibration Laboratories
OEM	Original Equipment Manufacturer
PC-OEM	Personal Computer – Original Equipment Manufacturer
RFP	Request for Proposal
ROHS	Restriction Of Use of Hazardous Substances
SAMEER	Society for Applied Microwave Electronics Engineering & Research.
SD	Security Deposit
SDK	Software Development Kit
SNR	Site Not Ready
SPOC	Single Point of Contact
SRS	Software Requirements Specification
ST/VAT	Service Tax/ Value Added Tax
GST	Goods and Services Tax

Know Your Rights

1. ALL TENDERS WILL BE OPENED ONLY IN THE PRESENCE OF THE BIDDERS.

2. THE BIDDERS HAVE A RIGHT TO INSIST ON PROCESSING OF TECHNICAL BIDS IN THE BIDDERS PRESENCE ONLY.

3. PRICE BID OPENING AND PRICE COMPARISON WILL BE DONE ONLY IN THE PRESENCE OF THE BIDDERS.

4. BIDDERS / BIDDERS ARE ELIGIBLE FOR A BIDDER SIGNED COPY OF THE PRICE BID COMPARISON STATEMENT ON THE SPOT.

5. PLEASE INSIST ON YOUR RIGHTS AND AVAIL THE SAME.

MANAGING DIRECTOR
ELCOT

Letter of Undertaking

To
The Managing Director
Electronics Corporation of Tamil Nadu Limited
692 Anna Salai, Nandanam
Chennai-600035

Sir,

Sub: Undertaking for participating in ELCOT's Procurement Tender - Reg.

Ref: **Tender No. ELCOT/Proc/OT/33258/IP Camera/RC/2019-20**

I/We ---------------------- have gone through the Terms and Conditions, Scope of Work and Specification and will abide by them as laid down (Tender Documents, Technical bid and Price Bid)

I/We ----------------------- hereby confirm that our Company was not blacklisted by any State Government/ Central Government/ Public Sector Undertakings during the last three years. We also hereby confirm that our EMD/SD was not forfeited by any State Government / Central Government / Public Sector Undertakings during the last three years due to our non-performance, non-compliance with the tender conditions etc.

I/We -- hereby declare that all the particulars furnished by us in this Tender are true to the best of my/our knowledge and we understand and accept that if at any stage, the information furnished is found to be incorrect or false, we are liable for disqualification from this tender and also are liable for any penal action that may arise due to the above.

I/We -------------------------------------- certify that no refurbished components are used in the manufacturing and supply of IP Camera & related items / tendered items. The licences for the operating systems and other software to be installed under this contract are certified as genuine and valid.

I/We _____ certify that we are liable and responsible for any disputes arising out of Intellectual Property Rights.

In case of violation of any of the conditions above, I/We .... understand that I/ We are liable to be blacklisted by ELCOT for a period of three years.

<div style="text-align:right">

Yours faithfully
for _____
Name, Signature
Designation
Seal

</div>

Note:

1)   Declaration in the company's letter head should be submitted as per format given above

2)   If the bidding firm has been blacklisted by any State Government/ Central Government/ Public Sector Undertakings earlier, then the details should be provided.

1. Preamble

Electronics Corporation of Tamil Nadu Limited (ELCOT), a wholly owned Government of Tamil Nadu Undertaking is the Optional Procurement Agency of the Government of Tamil Nadu for procurement of IT related products like Computers, Printers, other peripherals and software as per G.O.Ms.No.58 of Finance (BPE) Department dated 16.2.1999 with latest amendments. ELCOT is procuring various IT related products and services for all the State Government Departments / Boards / Autonomous Bodies, etc. As part of the procurement activities, ELCOT inviting bids under **RATE CONTRACT** for the procurement of **IP Camera and related items** for various Government Departments/Organisations.

Short Titles used in the Tender Document:

1) **Bidder:** Bidder means the party who makes a formal offer in pursuance of the tender floated.
2) **Successful Bidder:** Successful Bidder means the Bidder who becomes successful through the tender process.
3) **Day:** A day means a calendar day.
4) **Service Centre:** Service Centre means the centre or place, wherein the Bidder, interalia undertakes and performs the service activities relating to the tendered items indicated in the tender and shall include a <u>Direct service centre or Authorised dealer or Franchisee service centre of the bidder/OEM</u>

5) **Details about the Regions and Districts:**

Region	Districts to be Covered under each Region
North	(Chennai), Chengalpattu, Kancheepuram, Kallakuruchi, Ranipet, Tirupattur Tiruvallur, Tiruvannamalai, Vellore & Villupuram.
East	Ariyalur, Cuddalore, Nagapattinam, Perambalur, Pudukkottai, Thanjavur, (Tiruchirapalli) & Thiruvarur
South	Dindigul, Kanyakumari, (Madurai), Ramanathapuram, Sivagangai, Tenkasi, Theni, Tirunelveli, Thoothukudi & Virudhunagar.
West	(Coimbatore), Dharmapuri, Erode, Karur, Krishnagiri, Namakkal, Nilgiris, Salem & Tiruppur,

6) **Life Cycle Cost:** Life Cycle Cost under this tender/contract means the total cost to be incurred by the Purchaser towards the purchase of tendered items and also charges to be incurred by the Purchaser towards maintenance of **IP Camera & related items** for the whole period including Standard warranty period of 3 years and CAMC period of 2 years or any extended period mutually agreed by the Successful Bidder and the Purchaser.
7) **Purchaser:** Purchaser means the end-user for whom the procurement is indented through the tender.

	2. e-Tender Schedule	
	ELECTRONICS CORPORATION OF TAMILNADU LIMITED (ELCOT)	
1.	Tender Inviting Authority Designation and Address	Manager (Procurement), ELCOT, II Floor MHU Complex 692 Anna Salai, Nandanam, Chennai-600035. e-mail: gmproc@elcot.in and procurement@elcot.in URL: www.elcot.in
2.	Tender Accepting Authority	The Managing Director, ELCOT, Chennai
3.	A) Name of the Work	Supply, Installation and Commissioning of IP Camera & related items
	B) Tender reference	**ELCOT/Proc/OT/33258/IP Camera/RC/2019-20**
	C) Installation	At the Purchaser premises throughout the State of Tamil Nadu
4.	Tender documents available place	Tender documents can be freely downloaded from https://tenders.elcot.in, www.elcot.in and www.tenders.tn.gov.in till closing date and time of the Tender. The tender document fee is waived for downloading the Tender.
5.	e-Tender Portal Charges	For every Tender submitted through e-Tender, a portal charge of **Rs.10,000/- (Rupees Ten Thousands only)** should be payable by way of Demand Draft only
6.	Earnest Money Deposit (EMD)	**Rs. 10,00,000/- (Rupees Ten Lakhs Only)** should be paid by way of Demand Draft or Banker's Cheque drawn in favour of Electronics Corporation of Tamil Nadu Limited and payable at Chennai only.
7.	Tender submission	Two Part Tender comprising of Technical Bid and Price Bid should be submitted electronically through e-Tender Portal https://tenders.elcot.in
8.	Bid signing	Bidders should possess valid Class 2/Class 3 - Signing and Encryption Digital Signature Certificates for signing the Bids
9.	Help manuals for e-Tender	Bidders may download the help documents and user manuals from https://tenders.elcot.in
10.	Date and Place of e-Portal Training and Pre-Bid Meeting	**Prebid meeting was conducted on 22.01.2020.**
11.	Due Date, Time and Place of submission of Tender	**07/08/2020 @ 03.00 PM** at the address mentioned in Column (7) above.
12.	Date, Time and Place of opening of the Technical Bids	**07/08/2020 @ 03.15 PM** at the address mentioned in Column (7) above.
13.	Date, Time and Place of opening of Price Bids	Will be intimated only to the Technically Qualified Bidders.

3. General Instructions

3.1 General

a) The Bidders are requested to examine the instructions, terms and conditions and specifications given in the Tender. Failure to furnish all required information in every aspect will be at the Bidder's risk and may result in the rejection of bid.

b) It will be imperative for each Bidder(s) to familiarise itself with the prevailing legal situations for the execution of contract. ELCOT shall not entertain any request for clarification from the Bidder regarding such legal aspects of submission of the Bids.

c) It will be the responsibility of the Bidder that all factors have been investigated and considered while submitting the Bids and no claim whatsoever including those of financial adjustments to the contract awarded under this tender will be entertained by ELCOT. Neither any time schedule nor financial adjustments arising thereof shall be permitted on account of failure by the Bidder to appraise themselves.

d) The Bidder shall be deemed to have satisfied itself fully before Bidding as to the correctness and sufficiency of its Bids for the contract and price quoted in the Bid to cover all obligations under this Tender.

e) It must be clearly understood that the Terms and Conditions and specifications are intended to be strictly enforced. No escalation of cost in the Tender by the Bidder will be permitted throughout the period of Agreement or throughout the period of completion of contract whichever is later on account of any reasons whatsoever.

f) The Bidder shall make all arrangements as part of the contract to supply, commission and train the beneficiaries at various locations at their own cost and transport.

g) The Bidder should be fully and completely responsible to ELCOT and State Government for all the deliveries and deliverables.

h) Any bidder who is blacklisted in ELCOT will not be eligible to bid for Tenders in ELCOT, as per the conditions of blacklisting.

i) In case show cause notice has been issued by ELCOT for poor performance, then ELCOT reserves the right to disqualify the bid submitted by such Bidder.

3.2	Clarifications in the Tender

a) A prospective Bidder requiring any clarification in the Tender may notify ELCOT by letter or by Fax or by E-mail to gmproc@elcot.in with a copy to procurement@elcot.in. We encourage paper free e-mail communication.

b) The responses to the clarifications will be notified in the websites by means of Corrigendum to the Tender Document. It would be advantageous to commence e-mail contact with procurement@elcot.in to register your e-mail id.

3.3	Amendments to the Tender

a) Before closing of the Tender, clarifications and amendments if any will be notified in the websites mentioned in the Tender Schedule. The Bidders periodically check for the amendments or corrigendum or information in the websites till the closing date of this Tender. ELCOT will not make any individual communication and will in no way be responsible for any ignorance pleaded by the Bidders.

b) No clarifications would be offered by ELCOT within 48 hours prior to the due date and time for opening of the Tender.

c) Before the closing of the Tender, ELCOT may amend the Tender document as per requirements or wherever ELCOT feels that such amendments are absolutely necessary.

d) Amendments also may be given in response to the queries by the prospective Bidders.

e) Such amendments will be notified in the websites mentioned in the Tender schedule.

f) ELCOT at its discretion may or may not extend the due date and time for the submission of bids on account of amendments.

g) ELCOT is not responsible for any misinterpretation of the provisions of this tender document on account of the Bidders failure to update the Bid documents on changes announced through the website.

3.4 Language of the Bid

The bid prepared by the Bidder as well as all correspondence and documents relating to the bid shall be in English only. The supporting documents and printed literature furnished by the bidder may be in another language provided they are accompanied by an accurate translation in English duly notarised, in which case, for all purposes of the bid, the translation shall govern. Bids received without such translation copy are liable to be rejected.

3.5 Bid Currency

Price should be quoted in Indian Rupees (INR) only and Payment shall be made in Indian Rupees only.

3.6 Contacting Tender Inviting Authority

a) Bidders shall not make attempts to establish unsolicited and unauthorised contact with the Tender Accepting Authority, Tender Inviting Authority or Tender Scrutiny Committee after the opening of the Tender and prior to the notification of the Award and any attempt by any Bidder to bring to bear extraneous pressures on the Tender Accepting Authority shall be sufficient reason to disqualify the Bidder.

b) Notwithstanding anything mentioned above, the Tender Inviting Authority or the Tender Accepting Authority may seek bonafide clarifications from Bidders relating to the tenders submitted by them during the evaluation of tenders.

3.7 Force Majeure

Neither the Purchaser / ELCOT nor the Successful Bidder shall be liable to the other for any delay or failure in the performance of their respective obligations due to causes or contingencies beyond their reasonable control such as:

- Natural phenomena including but not limited to earthquakes, floods and epidemics.
- Acts of any Government authority domestic or foreign including but not limited to war declared or undeclared, priorities and quarantine

restrictions.

- Accidents or disruptions including, but not limited to fire, explosions, breakdown of essential machinery or equipment, power and water shortages.

- In such claim of Force Majeure clause, the bidder should submit the written claim, explaining the cause within 7 days of such occurrence and should be accepted by ELCOT/ Purchaser.

3.8   Dispute and Jurisdiction

"Any dispute or difference, whatsoever, arising between the parties to this contract arising out of or in relation to the terms of this contract shall be resolved by the parties mutually by acting in good faith towards fulfilling the contract and for this purpose the parties mutually agree to furnish or exchange all relevant documents, information and any other material within their special knowledge and thereby conclude their discussions between them / their representatives or officers within a period of time as may be mutually agreed to say the time of commencement of the move to resolve the dispute.

In case, there is a failure in resolving the dispute within the time agreed and in the manner stated supra, the parties shall be at liberty to approach only the Courts in Chennai City which has jurisdiction in the matter."

4. Eligibility Criteria

The Bidders should have the following Eligibility for participating in the Tender. The Bidders should enclose documentary evidence for fulfilling the Eligibility in the Technical Bid. If a bidder fails to enclose the documentary proof for eligibility, their bid will be summarily rejected.

4.1   Eligibility

S. No	Eligibility Conditions	Documentary Proof to be submitted
1	The Bidder shall be a Company registered in India under the Companies Act 1956 / Partnership Firm / Sole Proprietorship Firm and existing for the past 3 years as on 31.12.2019.	The Bidder shall provide the Certificate of Incorporation for Registered Companies, Partnership Deed for Partnership Firms / VAT and Service Tax Registration Certificate for Sole Proprietorship Firms.
2	OEM shall be a Company registered in India under the Companies Act 1956 and existing for the past 3 years as on 31.12.2019.	OEM shall provide the Certificate of Incorporation.
3	IP Camera - OEMs or their authorized Dealers/Distributors are only eligible to Bid.	a) In case of OEM bidder copy of Manufacturing License for IP Camera shall have to be submitted OR b) In case of Dealer/Distributor, Letter of Authorization from the manufacturer of IP Camera to represent their product for this Tender in the format prescribed format and Copy of Manufacturing License of the IP Camera OEM shall have to be submitted by the Authorized Dealer / Distributor of the OEMs.
4	The Bidder shall have 3 years of existence in the IP Camera business as on 31.12.2019.	Copy of Purchase Order issued in the name of Bidder dated prior to 31.12.2016 and Copy of Completion / Performance Certificate for the above Purchase Order shall be submitted.

S. No	Eligibility Conditions	Documentary Proof to be submitted
5	The Bidder shall have an Annual Turnover of Rs.50 Crores and above in the last three consecutive Audited Financial Years, (2016-17, 2017-18 & 2018-19).	Copies of the Audited Annual Reports containing the Balance sheets and Profit and Loss account for the last 3 Audited Financial years (2016-17, 2017-18 & 2018-19).
6	The Bidder should have positive Net Worth for a minimum of Rs. 10 Crores as on 31.12.2019.	Positive Net Worth Certificate should be obtained from the Company's chartered accountant to this Effect. The document certified by Chartered Accountant should Mandatorily contain unique Document Identification Number.
7	The Bidder shall have executed a Single order for supply, installation and commissioning of IP Camera systems for a value of at least **Rs. 25 Lakhs** and above for any Government Departments / Organizations / Public Sector Undertakings in India in the last 3 years.	Copy of the Purchase Order issued in the name of the bidder and copy of the completion/ performance certificate obtained from the customers for the above purchase order shall have to be submitted. OEM bidder can submit the copies of the single order obtained directly in their name or in favour of their representatives / authorized dealers.
8	The bidder should have atleast one service centre in each region (North, East, South and West as given in the Tender Document) with a total of minimum 10 service centres in the State. The service centre may be run by Manufacturer or Franchise or authorized distributors / dealers.	In case of Bidder's Own Service Centre, copies of the land-line telephone bills or valid rental agreement dated before 31.12.2019 shall be submitted as a proof for availability of the service centres. In case of OEM's / Bidder's Franchisee Service centre copy of the valid agreement entered into between the Franchisee and the OEM / Bidder shall be submitted.
9	ISO 9001:2008 or latest Certificate issued in the name of OEM for Manufacturing Process and ISO 14001:2008 or latest Certificate issued in the name of OEM for handling of hazardous items in the manufacturing process.	Copies of valid ISO 9001:2008 or latest and ISO 14001:2008 or latest Certificates shall have to be submitted.

S. No	Eligibility Conditions	Documentary Proof to be submitted
10	OEM / Bidder should have office in Chennai.	Copies of the land-line telephone bills / rental agreement dated before 31.12.2019 shall be submitted as a proof for availability of the office in Chennai.
11	OEM / Bidder shall have their own Website.	The URL of the Website Name and Copy of Home Page Print out shall be submitted.
12	**IP Camera OEM Criteria** The IP Camera OEM should have a. a direct service centre / presence in Tamil Nadu. b. a toll free Number c. a warehouse in India d. Indian based operation at least for a period of three years as on 31.12.2019.	**IP Camera OEM Proof as on 31.12.2019** a. Rental Agreement / Landline Telephone Bill of Service Centre. b. Copy of telephone bill for the last six months. c. Warehouse certificate / Rental Agreement copy.

5. SPECIFICATIONS

Important Note: The bidders can offer reputed products of IP Camera & related items. The components should be of latest model/specification/generation and equivalent can be offered without compromising the specification.

Code	Item Description	Make	Approx Qty
33258-001	2 MP Fixed Lens Dome Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better
2	Lens	3.6 mm Fixed Lens or better
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 20 Mtr or better
5	WDR	D-WDR or better
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/10000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Dual Streaming
10	Video Compression	H.264, H. 265 or better
11	Intelligent Video	Atleast Motion Detection
12	Resolutions and frame rates	Min: 25/30 fps at 1920x1080 (1080p)
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces, Internal MIC should be available.
16	Interface	Minimum 1 RJ45 Port
17	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
18	POE	Internal 802.3af POE Support

19	Environment Protection	IP 67 Proof, IK10 Vandal Proof Housing with vandal proof Bubble
20	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
21	Operating Temperature	-10 to 60°C, or better
22	Surge Protection	Minimum 2KVA surge protection should be included with each camera
23	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
24	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-002	2 MP Fixed Lens Bullet Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better
2	Lens	3.6 mm Fixed Lens or better
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 30 Mtr or better
5	WDR	D-WDR or better
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/10000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Dual Streaming
10	Video Compression	H.264, H. 265 or better
11	Intelligent Video	Atleast Motion Detection
12	Resolutions and frame rates	Min: 25/30 fps at 1920x1080 (1080p)
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP

14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Environment Protection	IP 67 Proof
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
19	Operating Temperature	-10°C to 60°C, or better
20	Surge Protection	Minimum 2KVA surge protection should be included with each camera
21	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
22	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-003	3 MP Fixed Lens Dome Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 3 MP or better
2	Lens	3.6 mm Fixed Lens or better
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 30 Mtr or better
5	WDR	D-WDR or better
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/10000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Triple Streaming

10	Video Compression	H.264, H. 265 or better
11	Intelligent Video	Atleast Motion Detection
12	Resolutions and frame rates	Min: 15 fps at 2048x1536, 25/30 fps at 1920x1080, 25/30 fps at 1280x720 Min : 25/30 fps at 720x480, 25/30 fps at 352x288
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Environment Protection	IP 67 Proof, IK10 Vandal Proof Housing with vandal proof Bubble
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
19	Operating Temperature	-10 to 60°C, or better
20	Surge Protection	Minimum 2KVA surge protection should be included with each camera
21	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
22	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-004	3 MP Fixed Lens Bullet Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 3 MP or better
2	Lens	3.6 mm Fixed Lens or better
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 30 Mtr or better

5	WDR	D-WDR or better
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/10000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Triple Streaming
10	Video Compression	H.264, H. 265 or better
11	Intelligent Video	Atleast Motion Detection
12	Resolutions and frame rates	Min: 15 fps at 2048x1536, 25/30 fps at 1920x1080, 25/30 fps at 1280x720 Min : 25/30 fps at 720x480, 25/30 fps at 352x288
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Environment Protection	IP 67 Proof
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
19	Operating Temperature	-10 to 60°C, or better
20	Surge Protection	Minimum 2KVA surge protection should be included with each camera
21	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
22	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-005	5 MP Fixed Lens Bullet Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 5 MP or better
2	Lens	Should support 3.6 mm and 4 mm and 6mm Fixed Lens (Selection of size is based on customer preference)
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 30 Mtr or better
5	WDR	D-WDR or better
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/10000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Triple Streaming
10	Video Compression	H.264, H. 265 or better
11	Intelligent Video	Atleast Motion Detection
12	Resolutions and frame rates	Min: 2592x1944(1~18fps), 2560x1920(1~20fps), 2952x1520(1~25fps), 2560x1440(1~25fps), 1080P(1~25/30fps)
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Environment Protection	IP 67 Proof
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
19	Operating Temperature	-10 to 60°C, or better

20	Surge Protection	Minimum 2KVA surge protection should be included with each camera
21	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
22	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-006	2 MP VF Dome Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better
2	Lens	Min 2.8~12 mm Varifocal Lens or better, DC-iris or P-iris
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 40 Mtr or better
5	WDR	100 db or better
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25 - 1/10000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Video Compression	H.264, H.265 or better
10	Streaming Support	Dual Streaming
11	Resolutions and frame rates	Min: 25/30 fps at 1920x1080 (1080p)
12	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
13	Intelligent Video	Motion Detection, Camera Tampering detection
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows

15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.
18	Privacy Mask	Support Minimum 2 areas / Zones
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness
20	Environment Protection	IP 67 Proof, IK10 Vandal Proof Housing with vandal proof Bubble
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
22	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces
23	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
24	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
25	Operating Temperature	-10 to 60 °C, or better
26	Surge Protection	Minimum 2KVA surge protection should be included with each camera
27	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
28	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-007	2 MP VF Bullet Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better
2	Lens	Min 2.8~12 mm Varifocal Lens or better, DC-iris or P-iris

3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 40 Mtr or better
5	WDR	100 db or better
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/10000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Dual Streaming
10	Video Compression	H.264, H. 265 or better
11	Intelligent Video	Motion Detection, Camera Tampering detection
12	Resolutions and frame rates	Min: 25/30 fps at 1920x1080 (1080p)
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.
18	Privacy Mask	Support Minimum 2 areas / Zones
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness
20	Environment Protection	IP 67 Proof
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
22	Sun shield	Should have Sunshield
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces

24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
26	Operating Temperature	-10 to 60°C, or better
27	Surge Protection	Minimum 2KVA surge protection should be included with each camera
28	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
29	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-008	2 MP MVF Dome Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better
2	Lens	Min 2.8 ~ 12 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto Focus
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 30 Mtr or better
5	WDR	120 db or better
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/100000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Triple Streaming
10	Video Compression	H.264, H. 265 or better

11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
12	Resolutions and frame rates	Min : 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.
18	Privacy Mask	Support Minimum 2 areas / Zones
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness
20	Environment Protection	IP 67 Proof, IK10 Vandal Proof Housing with vandal proof Bubble
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
22	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces, Internal MIC should be available.
23	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
24	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
25	HLC	Required
26	Operating Temperature	-10 to 60°C, or better
27	Surge Protection	Minimum 2KVA surge protection should be included with each camera

28	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
29	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-009	2 MP MVF Bullet Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better
2	Lens	Min 2.8~12 mm Motorized Varifocal Lens or better, DC-iris or P-iris,Auto Focus
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 50 Mtr or better
5	WDR	120 db or better
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/100000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Triple Streaming
10	Video Compression	H.264, H.265 or better
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
12	Resolutions and frame rates	Min : 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.
18	Privacy Mask	Support Minimum 2 areas / Zones

19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness
20	Environment Protection	IP 67 Proof
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
22	Sun shield	Should have Sunshield
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
26	HLC	Required
27	Operating Temperature	-10 to 60 °C, or better
28	Surge Protection	Minimum 2KVA surge protection should be included with each camera
29	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
30	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-010	2 MP MVF Bullet Camera with Analytics	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better
2	Lens	Min 2.8~12 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto Focus
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 50 Mtr or better
5	WDR	120 db or better
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/100000s or better

8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Triple Streaming
10	Video Compression	MJPEG,H.264, H.265 or better
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
12	Behaviour Analytics	Object/People counting, Missing object Detection, Loitering, Face detection, Perimeter Intrusion Detection, Crowd detection
13	Resolutions and frame rates	Min: 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288
14	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
15	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
16	Interface	Minimum 1 RJ45 Port
17	POE	Internal 802.3af POE Support
18	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.
19	Privacy Mask	Support Minimum 2 areas / Zones
20	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness
21	Environment Protection	IP 67 Proof
22	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
23	Sun shield	Should have Sunshield
24	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces
25	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
26	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
27	HLC	Required
28	Operating Temperature	-10 to 60 °C, or better
29	Surge Protection	Minimum 2KVA surge protection should be included with each camera

30	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
31	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-011	2MP Box Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/3" Progressive Scan CMOS 2MP or better
2	Lens	C/CS Mount Detachable type lens with 5~50 mm, DC-iris,
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Internal or external IR 50 Mtr or better
5	WDR	120 db or better
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/100000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Triple Streaming
10	Video Compression	H.264, H. 265 or better
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
12	Resolutions and frame rates	Min: 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720, Min : 25/30 fps at 480x240
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.
18	Privacy Mask	Support Minimum 2 areas / Zones
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast,

		Sharpness
20	Environment Protection	IP 67 Proof
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
22	Sun shield	Should have Sunshield
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
26	HLC	Required
27	Operating Temperature	-10 to 60°C, or better
28	Surge Protection	Minimum 2KVA surge protection should be included with each camera
29	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
30	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-012	5 MP Box Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/3" Progressive Scan CMOS 5 MP or better
2	Lens	C/CS Mount Detachable type lens with 5~50 mm, DC-iris
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Internal or external IR 50 Mtr or better
5	WDR	120 db or better
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/100000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc

9	Streaming Support	Triple Streaming
10	Video Compression	H.264, H. 265 or better
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
12	Resolutions and frame rates	Min : 30 fps at 2592x1944, 25/30 fps at 2592X1520, 25/30 fps at 2560x1440, 50/60 fps at 1920x1080, 50/60 fps at 1280x960, 50/60 fps at 1280x720
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.
18	Privacy Mask	Support Minimum 2 areas / Zones
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness
20	Environment Protection	IP 67 Proof
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
22	Sun shield	Should have Sunshield
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
26	HLC	Required
27	Operating Temperature	-10 to 60°C, or better
28	Surge Protection	Minimum 2KVA surge protection should be included with each camera
29	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
30	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-013	5 MP MVF Dome Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 5 MP or better
2	Lens	Min 2.8~12 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto Focus
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 30 Mtr or better
5	WDR	120 db or better
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/100000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Triple Streaming
10	Video Compression	H.264, H.265 or better
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
12	Resolutions and frame rates	Min: 30 fps at 2592x1944, 25/30 fps at 2592X1520, 25/30 fps at 2560x1440, 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 480x240
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.
18	Privacy Mask	Support Minimum 2 areas / Zones
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark
20	Environment	IP 67 Proof, IK10 Vandal Proof Housing with vandal

	Protection	proof Bubble
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
22	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces, Internal MIC should be available.
23	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
24	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
25	HLC	Required
26	Behaviour Analytics	Object/People counting, Missing object Detection, Face detection, Perimeter Intrusion Detection
27	Operating Temperature	-10 to 60 °C, or better
28	Surge Protection	Minimum 2KVA surge protection should be included with each camera
29	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
30	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-014	5 MP MVF Bullet Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 5 MP or better
2	Lens	Min 2.8~12 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto Focus
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 50 Mtr or better
5	WDR	120 db or better
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/100000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Triple Streaming
10	Video Compression	H.264, H. 265 or better

11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
12	Resolutions and frame rates	Min: 30 fps at 2592x1944, 25/30 fps at 2592X1520, 25/30 fps at 2560x1440, 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720, Min : 25/30 fps at 480x240
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.
18	Privacy Mask	Support Minimum 2 areas / Zones
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR,Saturation, Brightness, Contrast, Sharpness, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark
20	Environment Protection	IP 67 Proof
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
22	Sun shield	Should have Sunshield
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
26	HLC	Required
27	Behaviour analytics	Object/People counting, Missing object Detection, Face detection, Perimeter Intrusion Detection
28	Operating Temperature	-10 to 60 °C, or better
29	Surge Protection	Minimum 2KVA surge protection should be included with each camera
30	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable

		should directly terminate inside the Camera.
31	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code		Make	Approx Qty
33258-015	8 MP MVF Dome Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 8 MP or better
2	Lens	Min 2.8~12 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto Focus
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 30 Mtr or better
5	WDR	120 db or better
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/100000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Triple Streaming
10	Video Compression	H.264, H. 265 or better
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
12	Resolutions and frame rates	Min: 25/30 fps at 3840 × 2160, 25/30 fps at 2592x1944, 25/30 fps at 2592X1520, 25/30 fps at 2560x1440, 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 480x240
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.
18	Privacy Mask	Support Minimum 2 areas / Zones

19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark
20	Environment Protection	IP 67 Proof, IK10 Vandal Proof Housing with vandal proof Bubble
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
22	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces
23	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
24	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
25	Operating Temperature	-10 to 60 °C, or better
26	Surge Protection	Minimum 2KVA surge protection should be included with each camera
27	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
28	HLC	Required
29	Behaviour Analytics	Object/People counting, Missing object Detection, Face detection, Perimeter Intrusion Detection
30	General Certification	CE, FCC, UL/cUL, ROHS, BIS

ode	Item Description	Make	Approx Qty
33258-016	**8 MP MVF Bullet Camera**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 8 MP or better
2	Lens	Min 2.8~12 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto Focus
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 50 Mtr or better
5	WDR	120 db or better
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@

		0.01 lux or better
7	Electronic Shutter	1/25-1/100000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Triple Streaming
10	Video Compression	MJPEG,H.264, H.265 or better
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
12	Resolutions and frame rates	Min: 30 fps at 3840 × 2160, 25/30 fps at 2560x1440, 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720, Min, 25/30 fps at 480x240
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.
18	Privacy Mask	Support Minimum 2 areas / Zones
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark
20	Environment Protection	IP 67 Proof
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
22	Sun shield	Should have Sunshield
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
26	Operating Temperature	-10 to 60 °C, or better
27	Surge Protection	Minimum 2KVA surge protection should be included with each camera

28	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
29	HLC	Required
30	Behaviour Analytics	Object/People counting, Missing object Detection, Face detection, Perimeter Intrusion Detection
31	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-017	12MP MVF Bullet Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/1.7" Progressive Scan CMOS 12 MP or better
2	Lens	Min 4.1~11 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto Focus
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)
4	IR Range	Min 40 Mtr or better
5	WDR	120 db or better
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better
7	Electronic Shutter	1/25-1/100000s or better
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc
9	Streaming Support	Triple Streaming
10	Video Compression	MJPEG,H.264, H.265 or better
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
12	Resolutions and frame rates	Min: 15 fps at 4000x3000 25/30fps 3840 × 2160, 25/30 fps at 2560x1440, 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720, Min, 25/30 fps at 480x240
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
15	Interface	Minimum 1 RJ45 Port
16	POE	Internal 802.3af POE Support
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways

		or aisles.
18	Privacy Mask	Support Minimum 2 areas / Zones
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness , Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark
20	Environment Protection	IP 67 Proof
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
22	Sun shield	Should have Sunshield
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management
26	Operating Temperature	-10 to 60°C, or better
27	Surge Protection	Minimum 2KVA surge protection should be included with each camera
28	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
29	HLC	Required
30	Behaviour Analytics	Object/People counting, Missing object Detection, Face detection, Perimeter Intrusion Detection
31	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-018	2 MP 20x PTZ Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better
2	Zoom	20x Optical Zoom and 12x Digital Zoom or better
3	Lens	Focal Length Min 5.2 to 104 mm or higher, Auto Focus, Remote optical zoom, Support Manual focus and IRIS Control
4	Pan/Tilt Range	Pan: 0° ~ 360° endless; Tilt: 0° ~ 90°, auto flip 180°

5	Manual Control Speed	Pan: 0.1° ~200° /s; Tilt: 0.1° ~200° /s or better
6	Preset Speed	Pan: 240° /s; Tilt: 240° /s or better
7	Presets	Minimum 250 Preset Points
8	Day and Night	Automatic/manual/scheduled
9	IR Range	Min 120 Mtr or better
10	WDR	120 db or better
11	HLC	Required
12	Min. Illumination	Color mode: F1.2 @ 0.002 lux and B&W mode: F1.2@ 0.001 lux or better
13	Electronic Shutter	1/25-1/100000s or better, Auto/Manual Adjustment
14	Video Compression	H.264, H. 265 or better
15	Streaming Support	Individually configurable 3 video streams (H.264/H.265), Unicast/ Multicast
16	Resolutions and frame rates	Min: 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288
17	Protocol Support	Ipv4, Ipv6, HTTP, HTTPS, 802.1X, QoS, FTP, SMTP, UpnP, SNMP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
18	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
19	Privacy Mask	Support Minimum 24 areas / Zones, Support Dynamic Privacy Mask
20	OSD	Should support OSD of Camera Name, Time, Date, Location, etc
21	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark
22	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
23	Interface	10/100BaseT or better RJ45 Port
24	Power	Internal PoE /PoE+(802.3 af/at) and AC 24V/ DC12V/ 100- 230VAC
25	Environment Protection	IP 67 Proof
26	Housing	Full Metal housing with Mounting bracket included for Wall/Pole Mount
27	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
28	Operating Temperature	-10 to 60°C, or better
29	Surge Protection	Minimum 2KVA surge protection should be included

		with each camera
30	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
31	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-019	2 MP 25x PTZ Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better
2	Zoom	25x Optical Zoom and 12x Digital Zoom or better
3	Lens	Focal Length Min 4.8mm-120mm or higher, Auto Focus, Remote optical zoom, Support Manual focus and IRIS Control
4	Pan/Tilt Range	Pan: 0° ~ 360° endless; Tilt: 0° ~ 90°, auto flip 180°
5	Manual Control Speed	Pan: 0.1° ~ 200° /s; Tilt: 0.1° ~200° /s or better
6	Preset Speed	Pan: 240° /s; Tilt: 240° /s or better
7	Presets	Minimum 250 Preset Points
8	IR Range	Min 150 Mtr or better
9	WDR	Real/True WDR 120 db or better
10	HLC	Required
11	Min. Illumination	Color mode: F1.2 @ 0.002 lux and B&W mode: F1.2@ 0.001 lux or better
12	Electronic Shutter	1/25-1/100000s or better, Auto/Manual Adjustment
13	Video Compression	H.264, H. 265 or better
14	Streaming Support	Individually configurable 3 video streams (H.264/H.265), Unicast/ Multicast
15	Resolutions and frame rates	Min: 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288
16	Protocol Support	Ipv4, IPv6, HTTP, HTTPS, 802.1X, QoS, FTP, SMTP, UPnP, SNMP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
17	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
18	Privacy Mask	Support Minimum 24 areas / Zones, Support Dynamic Privacy Mask
19	OSD	Should support OSD of Camera Name, Time, Date, Location, etc

20	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark
21	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
22	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces
23	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free disk management
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
25	Interface	10/100BaseT or better RJ45 Port
26	Power	Internal PoE /PoE+(802.3 af/at) and AC 24V/ DC12V/ 100-230VAC
27	Environment Protection	IP 67 Proof
28	Housing	Full Metal housing with Mounting bracket included for Wall/Pole Mount
29	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
30	Operating Temperature	-10 to 60°C, or better
31	Surge Protection	Minimum 2KVA surge protection should be included with each camera
32	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
33	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-020	2 MP 32x Auto Tracking PTZ Camera	Any reputed make	1 No

S.No.	Parameter	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better
2	Zoom	32x Optical Zoom and 12x Digital Zoom or better
3	Lens	Focal Length Min 4.7 to 150 mm or higher, Auto Focus, Remote optical zoom, Support Manual focus and IRIS Control
4	Pan/Tilt Range	Pan: 0° ~ 360° endless; Tilt: 0° ~ 90°, auto flip 180°

5	Manual Control Speed	Pan: 0.1° ~200° /s; Tilt: 0.1° ~200° /s or better
6	Preset Speed	Pan: 240° /s; Tilt: 240° /s or better
7	Presets	Minimum 250 Preset Points
8	IR Range	Min 180 Mtr or better
9	WDR	Real/True WDR 120 db or better
10	HLC	Required
11	Min. Illumination	Color mode: F1.2 @ 0.002 lux and B&W mode: F1.2@ 0.001 lux or better
12	Electronic Shutter	1/25-1/100000s or better, Auto/Manual Adjustment
13	Video Compression	MJPEG,H.264, H.265 or better
14	Streaming Support	Individually configurable 3 video streams (H.264/H.265), Unicast/ Multicast
15	Resolutions and frame rates	Min: 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288
16	Protocol Support	Ipv4, IPv6, HTTP, HTTPS, 802.1X, QoS, FTP, SMTP, UpnP, SNMP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
17	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
18	Behaviour Analytics	Missing object Detection, Face detection, Perimeter Intrusion Detection
19	Auto Tracking	Support Auto Tracking, activate the alarm with continuous tracking of an object
20	image stabilization	should support electronic image stabilization
21	Privacy Mask	Support Minimum 24 areas / Zones, Support Dynamic Privacy Mask
22	OSD	Should support OSD of Camera Name, Time, Date, Location, etc
23	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark
24	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
25	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces
26	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free disk management

27	Edge Storage Auto Backup	Camera should record automatically when NVR not reachable and support automatic Synchronization of backup recording form SD Card to NVR when connection resume
28	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
29	Interface	10/100BaseT or better RJ45 Port
30	Power	Internal PoE /PoE+(802.3 af/at) and AC 24V/ DC12V/ 100- 230VAC
31	Environment Protection	IP 67 Proof
32	Housing	Full Metal housing with Mounting bracket included for Wall/Pole Mount
33	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
34	Time and Date	When camera reboots or powered ON after long time, the time and date of camera should remain same as per last configured without any update or synchronization required using NVR or internet
35	Operating Temperature	-10 to 60°C, or better
36	Surge Protection	Minimum 2KVA surge protection should be included with each camera
37	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
38	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-021	5 MP 30x PTZ Camera	Any reputed make	1 No

S.No.	Parameters	Specification
1	Image sensor	1/2.8" Progressive Scan CMOS 5 MP or better
2	Zoom	30x Optical Zoom and 12x Digital Zoom or better
3	Lens	Focal Length Min 4.7 to 141 mm or higher, Auto Focus, Remote optical zoom, Support Manual focus and IRIS Control
4	Pan/Tilt Range	Pan: 200° /s; Tilt: 200° /s or better
5	Manual Control Speed	Pan: 0.1° ~200° /s; Tilt: 0.1° ~200° /s or better
6	Preset Speed	Pan: 200° /s; Tilt: 200° /s or better
7	Presets	Minimum 250 Preset Points
8	IR Range	Min 200 Mtr or better
9	WDR	Real/True WDR 120 db or better

10	HLC	Required
11	Min. Illumination	Color mode: F1.2 @ 0.002 lux and B&W mode: F1.2@ 0.001 lux or better
12	Electronic Shutter	1/25-1/100000s or better, Auto/Manual Adjustment
13	Video Compression	MJPEG,H.264, H.265 or better
14	Streaming Support	Individually configurable 3 video streams (H.264/H.265), Unicast/ Multicast
15	Resolutions and frame rates	Min: 18 fps at 2592x1944, 25 fps at 2592X1520, 25 fps at 2560x1440, 25/30 fps 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288
16	Protocol Support	Ipv4, Ipv6, HTTP, HTTPS, 802.1X, QoS, FTP, SMTP, UPnP, SNMP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP
17	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing
18	Behaviour Analytics	Missing object Detection, Face detection, Perimeter Intrusion Detection
20	image stabilization	should support electronic image stabilization
21	Privacy Mask	Support Minimum 24 areas / Zones, Support Dynamic Privacy Mask
22	OSD	Should support OSD of Camera Name, Time, Date, Location, etc
23	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark
24	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows
25	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces
26	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free disk management
27	Edge Storage Auto Backup	Camera should record automatically when NVR not reachable and support automatic Synchronization of backup recording form SD Card to NVR when connection resume
28	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out
29	Interface	10/100BaseT or better RJ45 Port
30	Power	Internal PoE /PoE+(802.3 af/at) Or AC 24V/ DC12V/

		100- 230VAC
31	Environment Protection	IP 67 Proof
32	Housing	Full Metal housing with Mounting bracket included for Wall/Pole Mount
33	Integration tools	SDK, CGI, API or other integration related files to be provided
34	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
35	Time and Date	When camera reboots or powered ON after long time, the time and date of camera should remain same as per last configured without any update or synchronization required using NVR or internet
36	Operating Temperature	-10 to 60°C, or better
37	Surge Protection	Minimum 2KVA surge protection should be included with each camera
38	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.
39	General Certification	CE, FCC, UL/cUL, ROHS, BIS

Code	Item Description	Make	Approx Qty
33258-022	Network Video Recorder 4 Channels 1 HDD	Any reputed make	1 No

S.No.	Parameter	Specification
1	Channels	4 Channels or better
2	Storage	1 SATA hard drive support up to 6 TB
3	Bandwidth	Should support 40 mbps or better Bandwidth
4	Resolution	Support 4 Channel each up to 5 MP Resolution
5	Video compression	H.264, H. 265 or better
6	Interface	1# RJ45 Port, 1# VGA and 1# HDMI, HDMI: 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72

1 Channel Audio Output, 4 channel Alarm in and 1 channel Alarm out or better, 2 nos. of USB port |
| 7 | OSD | Camera title, Time, Motion detection, Recording |
| 8 | Record Interval | User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~120 sec |

9	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion
10	Monitoring and Playback	Should support 4 Channels streaming in Single screen, 4 Channels 1080P synchronous Playback
11	Search Mode	Time /Date, Motion detection, record type, record time, Exact Search, etc
12	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen
13	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
14	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent
15	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device
16	Operating Temperature	0 to 55°C, or better
17	Power Supply	Internal/External Power supply
18	Certification	CE, FCC, UL, ROHS.
19	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided

Code	Item Description	Make	Approx Qty
33258-023	Network Video Recorder 8 Channels 1 HDD	Any reputed make	1 No

S.No.	Parameter	Specification
1	Channels	8 Channels or better
2	Storage	1 SATA hard drives support up to 6 TB
3	Bandwidth	Should support 80 mbps or better Bandwidth
4	Resolution	Support 8 Channel each up to 5 MP Resolution
5	Video compression	H.264, H. 265 or better
6	Interface	1# RJ45 Port, 1# VGA and 1# HDMI, HDMI: 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 1 Channel Audio Output, 4 channel Alarm in and 1 channel Alarm out or better, 2 nos. of USB port
7	OSD	Camera title, Time, Motion detection, Recording
8	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~120 sec

9	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion
10	Monitoring and Playback	Should support 8 Channels streaming in Single screen, 4 Channels 1080P synchronous Playback
11	Search Mode	Time /Date, Motion detection, record type, record time, Exact Search, etc
12	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen
13	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
14	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent
15	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device
16	Operating Temperature	0 to 55°C, or better
17	Power Supply	Internal/External Power supply
18	Certification	CE, FCC, UL, ROHS.
19	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided

Code	Item Description	Make	Approx Qty
33258-024	Network Video Recorder 16 Channels 4 HDD	Any reputed make	1 No

S.No.	Parameter	Specification
1	Channels	16 Channels or better
2	Storage	4 SATA hard drives each support up to 8 TB
3	Bandwidth	Should support 120 mbps or better Bandwidth
4	Resolution	Should support 16 Channel each up to 8MP (3840*2160) Resolution
5	Video compression	H.264, H. 265 or better
6	Interface	1# RJ45 Port, 1# VGA and 1# HDMI, HDMI: 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 1 Channel Audio Output, 4 channel Alarm in and 1 channel Alarm out or better, 2 nos. of USB port
7	OSD	Camera title, Time, Motion detection, Recording

8	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~120 sec
9	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion
10	Monitoring and Playback	Should support 16 Channels streaming in Single screen, 8 Channels 1080P synchronous Playback
11	Search Mode	Time /Date, Motion detection, record type, record time, Exact Search, etc
12	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen
13	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
14	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent
15	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device
16	Operating Temperature	0 to 55°C, or better
17	Power Supply	Internal/External Power supply
18	Certification	CE, FCC, UL, ROHS.
19	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided

Code	Item Description	Make	Approx Qty
33258-025	**Network Video Recorder 8 Channels 2 HDD**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Channels	8 Channels or better
2	Storage	2 SATA hard drives each support up to 8 TB
3	Bandwidth	Should support 80 mbps or better Bandwidth
4	Resolution	Support 4K streaming, Support 8 Channel each up to (3840*2160) Resolution
5	Video compression	H.264, H. 265 or better
6	Interface	1# RJ45 Port, 1# VGA and 1# 4K HDMI, HDMI: 3840x2160, 2560x1600, 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 Should have audio in and out interfaces, 1 channel Alarm out or better, 2 nos. of USB port

7	Edge Storage Function	NVR should accept Automatic Synchronization of backup recording form SD Card to NVR
8	Intelligent Video	NVR Should support Camera Tampering Detection, Line Crossing and Perimeter Intrusion Detection
9	Audio	Support Audio Recording, Support 2 way audio
10	OSD	Camera title, Time, Motion detection, Recording
11	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~120 sec
12	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion
13	Monitoring and Playback	Should support 8 Channels streaming in Single screen, 4 Channels 1080 P synchronous Playback
14	Search Mode	Time /Date, Motion detection, video analytics, record type, record time, Exact Search, etc
15	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen
16	Encryption	Should support Encrypted recording from IP Camera to NVR
17	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
18	High availability	NVR Should support N+1 High availability for Hardware Backup
19	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent
20	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device
21	Operating Temperature	0 to 55 °C, or better
22	Power Supply	Internal Power supply
23	Certification	CE, FCC, UL, ROHS.
24	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided

Code	Item Description	Make	Approx Qty
33258-026	Network Video Recorder 16 Channels 2 HDD	Any reputed make	1 No

S.No.	Parameter	Specification
1	Channels	16 Channels or better
2	Storage	2 SATA hard drives each support up to 8 TB
3	Bandwidth	Should support 120 mbps or better Bandwidth
4	Resolution	Support 4K streaming, Support 16 Channel each up to (3840*2160) Resolution

5	Video compression	H.264, H. 265 or better
6	Interface	1# RJ45 Port, 1# VGA and 1# 4K HDMI, HDMI: 3840x 2160, 2560x1600, 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 Should have audio in and out interfaces, 1 channel Alarm out or better, 2 nos. of USB port
7	Edge Storage Function	NVR should accept Automatic Synchronization of backup recording form SD Card to NVR
8	Intelligent Video	NVR Should support Camera Tampering Detection, Line Crossing and Perimeter Intrusion Detection
9	Audio	Support Audio Recording, Support 2 way audio
10	OSD	Camera title, Time, Motion detection, Recording
11	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~120 sec
12	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion
13	Monitoring and Playback	Should support 16 Channels streaming in Single screen, 8 Channels 1080 P synchronous Playback
14	Search Mode	Time /Date, Motion detection, video analytics, record type, record time, Exact Search, etc
15	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen
16	Encryption	Should support Encrypted recording from IP Camera to NVR
17	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
18	High availability	NVR Should support N+1 High availability for Hardware Backup
19	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent
20	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device
21	Operating Temperature	0 to 55 °C, or better
22	Power Supply	Internal Power supply
23	Certification	CE, FCC, UL, ROHS.
24	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided

Code	Item Description	Make	Approx Qty
33258-027	Network Video Recorder 32 Channels 8 HDD	Any reputed make	1 No

S.No.	Parameter	Specification
1	Channels	32 Channels or better
2	Storage	8 SATA hard drives each support up to 8 TB
3	Raid	Should support Raid 0,1,5,6,10
4	Bandwidth	Should support 300 mbps or better Bandwidth
5	Resolution	Support 4K streaming, Support 32 Channel each up to (3840*2160) Resolution
6	Video compression	H.264, H. 265 or better
7	Interface	2# of Gigabit port with load balancing and failover, 1# VGA and 2# 4K HDMI, HDMI: 3840x 2160, 2560x1600, 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 Should have audio in and out interfaces, 1# RS-485, 1# RS-232, 16 channel Alarm in and 4 channel Alarm out or better, 3 nos. of USB port
8	Edge Storage Function	NVR should accept Automatic Synchronization of backup recording form SD Card to NVR
9	Intelligent Video	NVR Should support Camera Tampering Detection, Line Crossing and Perimeter Intrusion Detection
10	Audio	Support Audio Recording, Support 2 way audio
11	OSD	Camera title, Time, Motion detection, Recording
12	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~600 sec
13	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion
14	Monitoring and Playback	Should support 32 Channels streaming in Single screen, 16 Channels 1080P synchronous Playback
15	Search Mode	Time /Date, Motion detection, video analytics, record type, record time, Exact Search, etc
16	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen
17	Encryption	Should support Encrypted recording from IP Camera to NVR
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
19	High availability	NVR Should support N+1 High availability for Hardware Backup

20	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent
21	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device
22	Operating Temperature	0 to 55 °C, or better
23	Power Supply	Internal Power supply
24	Certification	CE, FCC, UL, ROHS.
25	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided

Code	Item Description	Make	Approx Qty
33258-028	Network Video Recorder 64 Channels 8 HDD	Any reputed make	1 No

S.No.	Parameter	Specification
1	Channels	64 Channels or better support
2	Storage	8 SATA hard drives each support up to 8 TB
3	Raid	Should support Raid 0,1,5,6,10
4	Bandwidth	Should support 300 mbps or better Bandwidth
5	Resolution	Support 4K streaming, Support 64 Channel each up to (3840*2160) Resolution
6	Video compression	H.264, H.265 or better
7	Interface	2# of Gigabit port with load balancing and failover,1# VGA and 2# 4K HDMI, HDMI: 3840x 2160, 2560x1600, 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 Should have audio in and out interfaces, 1# RS-485, 1# RS-232, 16 channel Alarm in and 4 channel Alarm out or better, 3 nos. of USB port
8	Edge Storage Function	NVR should accept Automatic Synchronization of backup recording form SD Card to NVR
9	Intelligent Video	NVR Should support Camera Tampering Detection, Line Crossing, Object/People counting, Missing object Detection, Loitering, Face detection, Perimeter Intrusion Detection, Crowd detection
10	Audio	Support Audio Recording, Support 2 way audio
11	OSD	Camera title, Time, Motion detection, Recording
12	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-

		record: 10~600 sec
13	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion
14	Monitoring and Playback	Should support 64 Channels streaming in Single screen, 32 Channels 1080P synchronous Playback
15	Search Mode	Time /Date, Motion detection, video analytics, record type, record time, Exact Search, etc
16	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen
17	Encryption	Should support Encrypted recording from IP Camera to NVR
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
19	High availability	NVR Should support N+1 High availability for Hardware Backup
20	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent
21	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device
22	Operating Temperature	0 to 55°C, or better
23	Power Supply	Internal Power supply
24	Certification	CE, FCC, UL, ROHS.
25	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided

Code	Item Description	Make	Approx Qty
33258-029	**Network Video Recorder 64 Channels 16 HDD**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Channels	64 Channels or better support,
2	Storage	16 SATA Hot swappable hard drives each support up to 8 TB
3	Raid	Should support Raid 0,1,5,6,10
4	Bandwidth	Should support 300 mbps or better Bandwidth
5	Resolution	Support 4K streaming, Support 64 Channel each up to (3840*2160) Resolution
6	Video compression	MJPEG,H.264, H.265 or better

7	Interface	2# of Gigabit port with load balancing and failover, 1# VGA and 2# 4K HDMI, HDMI: 3840x 2160, 2560x1600, 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 Should have audio in and out interfaces, 1# RS-485, 1# RS-232, 16 channel Alarm in and 4 channel Alarm out or better, 3 nos. of USB port
8	Edge Storage Function	NVR should accept Automatic Synchronization of backup recording form SD Card to NVR
9	Intelligent Video	NVR Should support Camera Tampering Detection, Line Crossing, Object/People counting, Missing object Detection, Loitering, Face detection, Perimeter Intrusion Detection, Crowd detection
10	Audio	Support Audio Recording, Support 2 way audio
11	OSD	Camera title, Time, Motion detection, Recording
12	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~600 sec
13	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion
14	Monitoring and Playback	Should support 64 Channels streaming in Single screen, 32 Channels 1080P synchronous Playback
15	Search Mode	Time /Date, Motion detection, video analytics, record type, record time, Exact Search, etc
16	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen
17	Encryption	Should support Encrypted recording from IP Camera to NVR
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant
19	High availability	NVR Should support N+1 High availability for Hardware Backup
20	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device
21	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent
22	Operating Temperature	0 to 55°C, or better
23	Power Supply	Internal Power supply
24	Certification	CE, FCC, UL, ROHS.
25	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided

Code	Item Description	Make	Approx Qty
33258-030	Network Video Recorder 128 Channels 16 HDD	Any reputed make	1 No

S.No.	Parameter	Specification
1	Channels	128 Channels or better support
2	Storage	16 SATA Hot swappable hard drives each support up to 8 TB
3	Raid	Should support Raid 0,1,5,6,10
4	Bandwidth	Should support 300 mbps or better Bandwidth
5	Resolution	Support 4K streaming, Support 128 Channel each up to (3840*2160) Resolution
6	Video compression	MJPEG,H.264, H.265 or better
7	Interface	2# of Gigabit port with load balancing and failover,1# VGA and 2# 4K HDMI, HDMI: 3840x 2160, 2560x1600, 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 Should have audio in and out interfaces, 1# RS-485, 1# RS-232, 16 channel Alarm in and 4 channel Alarm out or better, 3 nos. of USB port
8	Edge Storage Function	NVR should accept Automatic Synchronization of backup recording form SD Card to NVR
9	Intelligent Video	NVR Should support Camera Tampering Detection, Line Crossing, Object/People counting, Missing object Detection, Loitering, Face detection, Perimeter Intrusion Detection, Crowd detection
10	Audio	Support Audio Recording, Support 2 way audio
11	OSD	Camera title, Time, Motion detection, Recording
12	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~600 sec
13	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion
14	Monitoring and Playback	Should support 64 Channels streaming in Single screen, 32 Channels 1080P synchronous Playback
15	Search Mode	Time /Date, Motion detection, video analytics, record type, record time, Exact Search, etc
16	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen
17	Encryption	Should support Encrypted recording from IP Camera to NVR
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant

19	High availability	NVR Should support N+1 High availability for Hardware Backup
20	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device
21	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent
22	Operating Temperature	0 to 55°C, or better
23	Power Supply	Internal Power supply
24	Certification	CE, FCC, UL, ROHS.
25	Mounting	NVR should be rack mountable with suitable rack mounting bracket to be provided

Code	Item Description	Make	Approx Qty
33258-031	Network Video Recorder 16 Bay HDD and Scalable up to 128 Bays	Any reputed make	1 No

S.No.	Parameter	Specification
1	Processor	Intel® Xeon® E3 Quad-core or better
2	System Memory	8GB Default Memory and min. Upgradable upto 16GB
3	Storage	Should have 16 Hot swappable bays Support min 128 HDDs through iSCSI and multiple JBOD expansion enclosures 16# of 4TB Surveillance Hard disk must be loaded
4	RAID	Support Multiple RAID levels of 0, 1, 1E, 3, 5, 6, 10 (0+1), 30, 50
5	Raid Controller	Inbuilt Embedded Raid controller
6	Supported OS	Windows Embedded Standard 7 Runtime, Windows Server 2008/2012 R2 Standard, Windows Storage Server 2012R2 Standard
7	High availability	3# hot swappable redundant Power supply unit(N+1 design)
8	Networking	4# 1000Mbps Ethernet Ports
9	Interfaces	1# VGA and HDMI, 4x USB 3.0, 2x RS-232C (D-sub 9-pin)
10	Form Factor	19" 3U Rack Mountable
11	Drive Support	SATA (6Gb/s or 3Gb/s), NCQ, TCQ
12	Power Supply	500W (Three redundant 250W N+1 design), 1288 BTU/hr

13	Management	Graphical UI/SNMP via Ethernet, CLI/CLU via Ethernet or Graphics, OPAS Service via USB, SDK or API for Integration
14	Event Notification	Email, SNMP, Buzzer, LEDs
15	Accessories	USB DVD Drive – 1# USB Mouse – 1# USB Keyboard – 1#
16	Certification	CE, FCC, UL, ROHS

Code	Item Description	Make	Approx Qty
33258-032	Network Attached Storage 4 Bays - Tower Type	Any reputed make	1 No

S.No.	Parameter	Specification
1	Processor	Intel Celeron 1.6 GHz Quad-Core Processor or better
2	Memory	4GB DDR4, Expandable up to 8 GB
3	Flash Memory	Min 512MB
4	Drive Bays	4 hot swappable bays - LFF/SFF SATA HDD. Each drive should support minimum 14 TB capacity.
5	Gigabit LAN Ports	Min 2 ports
6	USB	Min 3 Ports
7	Backup Management	Should support Remote server syncing with CIFS/SMB, FTP, Rsync, RTRR and backup versioning. Should support Encryption, compression, file filters and centralized management for backup restorations sync jobs. Should support one touch copy from external drives connected to NAS automatically
8	File Sharing	Should support file sharing through email links and policy settings for conflicting file and file type filter. Virtualization-Should support to run multiple OS on the NAS,VM creation, VM backup and restoration Should support Containers station to support directly view, edit and store files of various types anytime on your NAS, including office documents, images and text files on the NAS.
9	RAID Management	Should support RAID 10+hot spare,10, 6+hot spare, 6,5+spare,5,1, JBOD, Single Disk, Global hot spare for data redundancy and Online RAID capacity expansion, Online RAID level migration. Storage Pool-The supply of NAS should support SSD caching , iSSCI target, iSCSI LUN Snapshot/backup,

10	AD And LDAP Authentication	Thin provisioned volume, Block level iSCSI LUN (iSCSI/CIFS). Domain Controller-The Supply of NAS Should support Windows AD and LDAP server/client authentication.
11	E-SATA Port	Min 1 Port
12	Form Factor	Tower
13	Certification	CE, UL, FCC, ROHS

Code	Item Description	Make	Approx Qty
33258-033	**Network Attached Storage Bays-16 with dual controller**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Form Factor	Rack mountable
2	Processor	Intel Xeon 6 Core @ 1.1 GHz Processor or better, per controller
3	Memory	8 GB per controller, scalable up to 16GB
4	Drive Bays	16 hot swappable bays - Each drive should support 12 TB or more capacity. Supports SAS, NLSAS and SATA Hard drives simultaneously.
5	Operating System	Linux OS
6	Storage Expansion	The storage should able to expand to 112 drives in single system
7	Raid Management	System should support Hardware RAID levels 0,1,10,5,6,50,60, Hot Spare Support online Raid level migration/reconfiguration, online volume copy
8	High availability	High availability design with dual hot swappable controller cards 3# hot swappable redundant Power supply unit 2# redundant hot swappable Fans
9	Virtualization features	Should support VMware, Citrix, Hyper-V and Data Core Features
10	Interface	2# 10G SFP+ & 4# 1G Base T per controller Support Port Trunking, load balancing, fail over, 802.3ad, DHCP server
11	Protocols	Protocol support for TCP/IP, SMB/CIFS, NFS, SNMP v1/v2c/v3, FTP, HTTP, HTTPS, Telnet, SSH, AFP, WebDAV. Support OS for Windows, Linux and Mac.

12	User accounts	Windows AD Authentication, Network Information Service, Batch creation of users/group, user quota management, share level and file level security with access control list setting. Up to 100K domain account support, up to 1K concurrent sessions support
13	Data Protection	Battery Backup Unit Support for power shortage NVRAM Check and log errors, Hard Disk Power input Control Write-hole Table Protection for video footage and Read/write check
14	Device Management	Web client support: IE 7 or above, Mozilla Firefox, safari, Google Chrome. Buzzer, LED, Mute Button, Power Button
15	File system and backup	Apple Time Machine support Backup Server, Share Disk Clone, Remote Replication, Online Recovery, File Backup/Restore
16	Application Mode	Surveillance Buffer Management support and benefit for more cameras supported, Less Frame Drop and Sequential Design Recording
17	Data Protection Features	Faultless Rebuild to reduces Raid rebuilding time, online LUN clone to have multiple data copies
18	Management Operation and software	Support multiple paths, zero downtime during the firmware update Automatic error log backup if USB plug in front panel for trouble shooting Supports SNMP/email notification
19	Power Management	Power Saving Mode and Schedule Power Off 80 plus certified power supply Power requirement of AC 100V~240V in full range
20	Certifications	CE, UL, FCC, ROHS

Code	Item Description	Make	Approx Qty
33258-034	Video Management Software	Any reputed make	1 No

S.No.	Specifications
	Recordings
1	Should record H265, H.264, MPEG4 or MJPEG in at minimum 5 fps to 30 FPS at minimum Full HD (1080p), 4K resolution.
2	Supports RTP over UDP, RTP over TCP and http streaming
3	Should support multiple brand IP cameras and encoders.

4	Should support dual streaming and recording at min 2 MP and Max 8 MP resolutions
5	Option to do recordings on NAS, iSCSi, DAS, local or network drive. Defining different drive for each individual camera.
6	Should have ability to record audio along with video in same recording file.
7	Option to define multiple recording paths
8	Pre-buffer and Post buffer recordings up to 10 minutes.
9	Calculate storage size based on number of cameras, days and drives available in the system
10	Option to record at min 15 FPS and max 30 FPS on Motion
11	Export the desired portion of video in mp4, avi and asf formats in DVD/USB or any external device. Viewing of this recording must be playable on authorized player which shall be provided by software manufacturer or in generic media player on OS Windows, Linux/Unix or Apple Mac.
12	Export of recording is possible in client software and remote PC with proper authentication.
13	Option for Window-Pop up, Email and sound alarm on video loss during recording
14	Storage and Bandwidth calculation: Recording size estimation for each hard disk attached to the server. Option to check disk size of individual camera.
15	Image Enhancement on recorded videos. The image enhancement should be able enhance videos of fog, rain and low light conditions.
16	The option of email and Video Pop up on Low disk space event should be available. The system should alert user on low disk space event.
17	Automatic archiving after set number of days and automatic recording deletion after disk full.
18	Encryption (56 to 256 bit) of recordings while export for safe evidence
19	Adaptive Streaming. Option to switch stream to lower to higher or vice-versa based on full screen
	Live, Playback & PTZ
1	Live View possible for minimum 64 cameras simultaneously on 1 screen or multiple monitors using software video wall
2	Configurable Matrix views with size and number of cameras. Pre-defined views from full screen, 1x1 to 8x8
3	View sequencing with user driven time interval
4	Dual Streaming and Automatic Switching from Low to High Quality on Full screen mode.
5	Option to change Live View directly from cameras or from VMS server using RTSP and HTTP options should be available
6	It should support live view and Playback by minimum 10 clients- Both local and remote
7	It should support event based playback.

8	Ability to search based on Date/Time/Camera, Name, ID and Location for more than one camera simultaneously.
	Customized camera views based on :
1	User input number of cameras.
2	User chosen shape and size
	Digital Zoom
1	Both complete live picture and Zoomed picture should be visible simultaneously while zooming.
2	Should be available On Live and Playback Videos.
3	Zoom should be available on snapshots too.
	PTZ
1	PTZ option should be operable through mouse and joystick
2	PTZ joystick options should be available
3	On screen PTZ control with Click and Zoom facility should be available
4	PTZ presets and tours setting should be available
5	Software should allow creation of multiple camera sequences. It should be possible to set the dwell time for the cameras within the sequence.
6	Software should allow sequences control (pause/play, skip forwards, skip backwards).
7	Live view and Playback should be available at the same time with Playback window on top of live view window.
8	Instant Playbacks should be available as window pop up on click of an event from Event Screen.
9	Image Enhancement Analytic should be available in Playback. Option to sharpen the video image through scrollbar should be available.
10	Playback Navigation Tree View with Recording server, camera list, year/months list and the date wise play list should be available.
11	Playback option for frame-by-frame should be available.
12	Playback should have Video lock feature should be available.
13	Ability to make bookmark of any portion of video and view list of all bookmarks should be available.
14	Instant Playback and Quick Search of event based recordings should be available.
15	Playlist with files listed for each date and time should be available. User can click on any file to play recording.
16	E-map client should show icon blink and voice alert of the event. Should be able to take snapshots from Google Map if connected to internet. It should be possible to click on icon in a map to initiate PTZ camera preset, run PTZ pattern, view camera
17	Two-way audio communication between camera and VMS and option to send/broadcast Audio to multiple cameras should be available.

18	Encryption: Ability to encrypt video while exporting and options of 56 bit, 128 bit and 256 bit encryption should be available
	Mobile Surveillance & Remote Viewing
1	Ability to view live video on iOS and Android phones or devices with or without installing proprietary Apps.
2	Ability to receive alerts on Mobile phones without SMS using XMPP/MQTT technology should be available.
3	PTZ Control on Mobile App and Remote Locations should be available.
4	VMS and Mobile App support for multiple sites spread across WAN to be controlled and viewed from central location.
5	Remote Administration over internet should be available.
	Streaming
1	Option for RTSP, HTTP, RTSP over HTTP streaming or both simultaneously should be available at individual camera level should be available.
2	Option to Transcode to lower bit rate stream at recording server level should be available.. The lower bit rate should be done for any individual camera and options of resolution at 640x480, 320x240 and Frame rate at 20 fps, 10 fps should be available.. This helps in viewing video at low bandwidth
3	Authentication Parameters (username, password) for streaming to remote clients should be available.
	Administration & Failover
1	Automatic discovery of devices using UPnP and/or ONVIF should be available.
2	No software limit on number of cameras supported in single recording server
3	Feature to add all cameras with single click should be available. Apply settings to multiple cameras of same model with single click.
4	Should be able to generate logs & reports in Graphical & Tabular form and export in pdf, excel or more formats
5	Failover- Automatic switch of user selected cameras to back-up server in case of failure should be available.
6	Automatic Health check-up should be available and activation of optimization modules once CPU reached more than 85%.
7	Add multiple recording servers under same management server.
8	User role based cameras and feature access. Define users with passwords and access to only specific cameras
9	Complete server logs including login access, system settings change, archiving events, video or recording loss and all activity done by administrator or any other user in the system.
10	VMS control of cameras and monitoring on client workstations shall be done through the administrator interface.
11	System watchdog feature should be available to alert in case of failure of cameras and servers.

	Failover:
1	System should support N: 1 or N: N failover. Failover time should not be more than 30 seconds. In case of failover recording lost should less than 30 seconds
2	The VMS licensing shall require MAC Id of Server/ Recorder only, not of camera devices
	Camera Support
1	Should support multiple brand IP cameras (ONVIF Compliant), encoders and DVRs. No restriction on camera hardware.
2	Should support ONVIF protocol including Profile-S, G.

Code	Item Description	Make	Approx Qty
33258-035	Video Analytics Software with ANPR features	Any reputed make	1 No

S.No.	Specifications
	Automatic Number Plate Recognition (ANPR) system should enable monitoring of vehicle flow at strategic locations. The system should support real-time detection of vehicles at the deployed locations, recording each vehicle, reading its number plate, database lookup from central server and triggering of alarms/alerts based on the vehicle status and category as specified by the database. The system usage shall be privilege driven using password authentication. System should have following requirements:
1	The System should automatically detect a vehicle in the camera view using video detection and activate number plate recognition
2	The system should be designed to work for 24x7 unattended operations
3	The System should automatically detect the number plate in the captured video feed in real-time.
4	The system should perform OCR (optical character recognition) of the number plate characters (English alpha-numeric characters in standard fonts).
5	The System should store JPEG image of vehicle and number plate and enter the number plate number into DBMS like MySql etc. database along with date time stamp and site location details.
6	The system should be able to handle multiple vehicles simultaneously i.e. if there are more than one vehicle in the camera view the system should be able to detect all of them, extract their number plate numbers and perform OCR on the number plate characters
7	System should be able to detect and recognize the English alphanumeric number plate in standard fonts and formats of all vehicles including cars, HCV, LCV and two wheelers.
8	System should able to detect single row, double row, multi row, square and rectangular plates as well

9	The system should be robust to variation in number Plates in terms of font, size, contrast and color and should work with good accuracy.
10	The success rate should be minimum 80%+ in Day and Night
	Alert Generation
11	The system should have option to input certain number plates according to the hot listed categories like "Wanted", "Suspicious", "Stolen" unauthorized, VIP etc. by authorized personnel.
	Vehicle Detection and Video Capture Module
12	The system should be able to generate automatic alarms to alert the control room personnel for further action, in the event of detection of any vehicle falling in the Hot listed categories
	Graphical User Interface
13	The system Graphical User Interface should be bi-lingual. It should support both English & Graphical User interface (GUI) should provide following information: -
	a. Image of the vehicle
	b. Image of the number plate
	c. Text conversion of number plate after using OCR (Optical Character Recognition) technology
	d. Date, Time and location of offending vehicle
	e. Event/images/chart of ANPR
	Report
14	System should be able to give camera ID / Camera Location etc on report page
15	System should be able to give vehicle image with number plate image
16	System should be able to give OCR Image/number plate Image
17	System should able to give Watch list ("Wanted", "Suspicious", "Stolen" ,"Authorized", "Lost") on report page
	Vehicle Status Alarm Module
18	On successful recognition of the number plate, system should be able generate automatic alarm to alert the control room for vehicles which have been marked as "Wanted", "Suspicious", "Stolen", "Expired". (System should have provision/expansion option to add more categories for future need).
19	The Instantaneous and automatic generation of alarms. In case of identity of vehicle in any category which is define by user.
	Vehicle Log Module
20	The system should enable easy and quick retrieval of snapshots and other data for post incident analysis and investigations. For example a database could be searched using criteria like date, time, location and vehicle number
21	The system should be able to generate suitable MIS reports that will provide meaningful data to concerned authorities and facilitate optimum utilization of resources. These reports should include.
	i. Report of vehicle flow at each of the installed locations for Last Day, Last Week and Last Month.

	ii. Report of vehicles in the detected categories at each of the installed locations for Last Day, Last Week and Last Month.
	Vehicle Detection and Video Capture Module
22	The system should have Search option to tune the reports based on number plate number, date and time, site location as per the need of the authorities.
23	The system should have option to save custom reports for subsequent use. The system should have option to export report being viewed to common format for use outside of the ANPR Software or exporting into other systems.
24	The system should provide advanced and smart searching facility of number plates from the database. There should be an option of searching number plates almost matching with the specific number entered (up to 1 and 2 character distance).

Code	Item Description	Make	Approx Qty
33258-036	**Video Analytics Software with Face Recognition features**	**Any reputed make**	**1 No**

S.No.	Specifications
1	Facial Recognition Software should be able to work in real time
2	System should be capable of capturing face images from live feed
3	The system should be able to track a subject through it's appearance in front of the camera so as to generate alarm
4	The system should be capable of working on partial occlusion of face like glasses, changes of facial expression. The system should able to detect similarity ratio
5	The system should permit tracking of multiple faces
6	The FR system should be able to be used for various applications like Face detection/recognition based on Black/white list, Attendance using FR, access control using FR, Etc.
7	The system should permit enrolment of subjects from Images or live Video
8	The system should allow multiple users to be created within the system with custom privileges/groups
9	The system should have client server architecture with support for multiple clients who can be simultaneously logged either locally or remotely.
10	The system should support diverse image formats like JPEG, PNG etc.
11	The system should have the capability to have face image
12	The system should comprise a health monitoring dashboard
13	The system should allow generation of reports based on detection and identification of alarms with relevant filters like date and time / category etc. The system should permit reports to be exported in txt or xls formats for storage /review.

14	The FR system should be able to identify the face and give alerts/outputs within 3 to 5 meter distance
15	The FR software system should support to integrate with 3rd party camera (ONVIF Compliant)
16	The FR system should be capable of integration with various 3rd party applications and Hardware
17	The FRS algorithm components should be upgraded without extra cost
18	The FR System should be supplied with suitable Local Processing unit or server as per the number of License required. The costing of the local processing unit should be included with software itself.
19	The Local Processing unit should have interfaces to have content backup, 3rd party integration for alarms, etc.
20	Should be able to change/replace IP Camera linked with FR software without requiring additional license.

Code	Item Description	Make	Approx Qty
33258-037	**2U Rack (Wall Mounting) Depth (450MM) with 4 power Sockets and cable Manager**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Height	2U 550x450mm
2	Type	Wall mounting rack – Rigid frame that can be fixed to the wall
3	General	Rubber Closure for cable entry holes
		19"Adjustable rails in the front and rear, Front section with glass door and lock, Top and bottom cable entry facility
		Hardware Screw pocket included

Code	Item Description	Make	Approx Qty
33258-038	**6U Rack (Wall Mounting) Depth (450MM) with 4 power Sockets and cable Manager**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Height	6U 600x450mm
2	Type	Wall mounting rack – Rigid frame that can be fixed to the wall,
3	General	Rubber Closure for cable entry holes
		19"Adjustable rails in the front and rear, Front section with glass door and lock, Top and bottom cable entry facility
		Hardware Screw pocket included

Code	Item Description	Make	Approx Qty
33258-039	9U Outdoor Rack (Wall Mounting) Depth (450MM) with 3 power Sockets	Any reputed make	1 No

S.No.	Parameter	Specification
1	Installation Type	Outdoor
2	Height	9U 600x450mm
3	Type	Wall mounting rack – Rigid frame that can be fixed to the wall,
4	Protection	IP55
5	General	Rubber Closure for cable entry holes
		19"Adjustable rails in the front and rear, Front section with glass door and lock, Top and bottom cable entry facility
		Hardware Screw pocket included

Code	Item Description	Make	Approx Qty
33258-040	9U Rack (Wall Mounting) Depth (550MM) with 4 power Sockets and cable Manager	Any reputed make	1 No

S.No.	Parameter	Specification
1	Height	9U 600x550mm
2	Type	Wall mounting rack – Rigid frame that can be fixed to the wall,
3	General	Rubber Closure for cable entry holes
		19"Adjustable rails in the front and rear, Front section with glass door and lock, Top and bottom cable entry facility
		Hardware Screw pocket included

Code	Item Description	Make	Approx Qty
33258-041	24U Rack (Floor Standing) Depth (1000MM) with 6 power Sockets and cable Manager	Any reputed make	1 No

S.No.	Parameter	Specification
1	Height	24U 600x1000mm
2	Type	Wall mounting rack – Rigid frame that can be fixed to the wall,
3	General	Rubber Closure for cable entry holes

		19"Adjustable rails in the front and rear, Front section with glass door and lock, Top and bottom cable entry facility
		Hardware Screw pocket included

Code	Item Description	Make	Approx Qty
33258-042	2 Port with 2 port SFP Uplink L2 Managed Industrial POE Switch, 60W POE Budget	Any reputed make	1 No

S.No.	Parameter	Specification
1	Ports	2x 10/100/1000Base-T + 2 x 1000Base-X (SFP), 2 Ports POE
2	Performance	Shall support 8Gbps Switch Capacity Shall support 11.9 Mbps forwarding rate
3	Power Supply	Dual Redundant DC Power Supply Input, Industrial Terminal pins
4	Mount	Din Rail Mount
5	IP Rating	IP30 Rating
6	Ring protection	G.8032 ERPS, <50ms ring protection
7	ACL & VLan Table	Shall support 2048 ACL Table & 4K Vlan Table
8	Jumbo Frame	9K or More
9	Mac address	8K or more
10	Vlan	Port Based Vlan, IEEE802.1Q, Protocol Based Vlan, Voice Vlan, Mac Vlan
11	Multicast Functions	IGMP v1/v2/v3 snooping, IGMP Fast Leave, MLD v1/v2 snooping,
12	Security Features	Mac Based ACL, IP based ACL, MAC-IP ACL, User-Defined ACL, Time range ACL, VLAN ACL, Port Security, Mac Limit on Vlan and Port, Ani-arp scan and snooping, ARP Binding, AAA, IEEE 802.1x, TACACS+, Radius
13	DHCP Management	DHCP Client, DHCP Snooping
14	Qos	8 Queues Per Port, COS, TOS, DSCP, 802.1p, Precedence, SP, WRR, SWRR, DWRR
15	Spanning Tree	802.1D STP, 802.1W RSTP, 802.1S MSTP Root Guard, BPDU Guard, BPDU Forwarding
16	LACP	16 groups / 8 ports
17	Management Port	Must have console port. Should supply with console cable.
18	L2 Ring Protection	ITU-T G.8032, Loopback Detection

19	Maintenance and Operation Management	TFTP/FTP CLI, Telnet, RJ45 Console, Web/SSL (IPv4/IPv6), SSH, SNMPv1/v2c/v3, SNMP Trap Public & Private MIB interface, Ping, Trace Route Radius Authentication Syslog (IPv4/IPv6) SNTP/NTP, Dual IMG, Multiple Configuration Files Port Mirror, LLDP/LLDP MED
20	IPv6 Features	Support IPv4/v6 Dual stack
21	POE Protocols	IEEE 802.3af POE(15.4W) and IEEE 802.3at POE+ (30W) support on all ports Support POE Management on Switch GUI Support Power time scheduling , power limit configuration, power priority configuration, etc.
22	POE Budget	60 Watts or better
23	EMC Safety	CE/FCC,ROHS
24	Temperature	Working 0°C~70°C, Storage -40°C~70°C

Code	Item Description	Make	Approx Qty
33258-043	4 Port with 2 uplink port L2 Unmanaged POE switch	Any reputed make	1 No

S.No.	Parameter	Specification
1	Ports	Shall support 4# 10/100/1000BaseT +2 x 100/1000Base-T 4 POE Ports &2 uplink ports
2	Performance	Shall support Non-blocking 12 Gbps back plane bandwidth Shall support 14.8 Mbps forwarding rate
3	Power Supply	Support external or built in power supply
4	Data Transfer	Shall support Auto detection of Full duplex / Half Duplex on all ports
5	Media	Shall support Auto MDI/ MDIX on all ports EEE 802.3, 802.3u, 802.3x
6	MAC address Table	4K entries
7	POE Budget	60W or More
8	POE Protocols	IEEE 802.3af POE(15.4W) and IEEE 802.3at POE+ (30W) support on all ports
9	Operating Temperature	0 to 40°C
10	Certificates	CE/FCC,ROHS

Code	Item Description	Make	Approx Qty
33258-044	**4 Port with 2 port SFP Uplink L2 Managed Industrial POE Switch, 120W POE Budget**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Ports	4x 10/100/1000Base-T + 2 x 1000Base-X (SFP), 4 Ports POE
2	Performance	Shall support 16Gbps Switch Capacity Shall support 11.9 Mbps forwarding rate
3	Power Supply	Dual Redundant DC Power Supply Input, Industrial Terminal pins
4	Mount	Din Rail Mount
5	IP Rating	IP30 Rating
6	Ring protection	G.8032 ERPS, <50ms ring protection
7	ACL & VLan Table	Shall support 2048 ACL Table & 4K Vlan Table
8	Jumbo Frame	9K or More
9	Mac address	8K or more
10	Vlan	Port Based Vlan, IEEE802.1Q, Protocol Based Vlan, Voice Vlan, Mac Vlan
11	Multicast Functions	IGMP v1/v2/v3 snooping, IGMP Fast Leave, MLD v1/v2 snooping
12	Security Features	Mac Based ACL, IP based ACL, MAC-IP ACL, User-Defined ACL, Time range ACL, VLAN ACL, Port Security, Mac Limit on Vlan and Port, Ani-arp scan and snooping, ARP Binding, AAA, IEEE 802.1x, TACACS+, Radius
13	DHCP Management	DHCP Client, DHCP Snooping
14	Qos	8 Queues Per Port, COS, TOS, DSCP, 802.1p, Precedence, SP, WRR, SWRR, DWRR
15	Spanning Tree	802.1D STP, 802.1W RSTP, 802.1S MSTP Root Guard, BPDU Guard, BPDU Forwarding
16	LACP	16 groups / 8 ports
17	Management Port	Must have console port. Should supply with console cable.
18	L2 Ring Protection	ITU-T G.8032, Loopback Detection
19	Maintenance and Operation Management	TFTP/FTP CLI, Telnet, RJ45 Console, Web/SSL (IPv4/IPv6), SSH, SNMPv1/v2c/v3, SNMP Trap Public & Private MIB interface, Ping, Trace Route Radius Authentication Syslog (IPv4/IPv6) SNTP/NTP, Dual IMG, Multiple Configuration Files Port Mirror, LLDP/LLDP MED
20	IPv6 Features	Support IPv4/v6 Dual stack

21	POE Protocols	IEEE 802.3af POE(15.4W) and IEEE 802.3at POE+ (30W) support on all ports Support POE Management on Switch GUI Support Power time scheduling , power limit configuration, power priority configuration , etc.
22	POE Budget	120 Watts or better
23	EMC Safety	CE/FCC,ROHS
24	Temperature	Working 0°C~70°C, Storage -40°C~70°C

Code	Item Description	Make	Approx Qty
33258-045	8 Port with 2 uplink port L2 Unmanaged POE switch	Any reputed make	1 No

S.No.	Parameter	Specification
1	Ports	Shall support 8# 10/100/1000BaseT +2 x 100/1000Base-T 8 POE Ports 2 uplink ports
2	Performance	Shall support Non-blocking 20 Gbps back plane bandwidth Shall support 14.8 Mbps forwarding rate
3	Power Supply	Support external or built in power supply
4	Data Transfer	Shall support Auto detection of Full duplex / Half Duplex on all ports
5	Media	Shall support Auto MDI/ MDIX on all ports EEE 802.3, 802.3u, 802.3x
6	MAC address Table	4K entries
7	POE Budget	120W or More
8	POE Protocols	IEEE 802.3af POE(15.4W) and IEEE 802.3at POE+ (30W) support on all ports
9	Operating Temperature	0 to 40˚C
10	Certificates	CE/FCC,ROHS

Code	Item Description	Make	Approx Qty
33258-046	8 Port with 2 port SFP Uplink L2 Managed POE Switch, 120W POE Budget	Any reputed make	1 No

S.No.	Parameter	Specification
1	Ports	8 x 10/100/1000Base-T + 2 x 100/1000Base-X (SFP)
2	Performance	Shall support 20 Gbps Switching Capacity and 14.88 Mbps

		forwarding rate
3	Power Supply	Support built in power supply
4	Management Port	RJ45 or Mini USB Console port (Out of Band Management)
5	POE Protocols	IEEE 802.3af POE (15.4W) and IEEE 802.3at POE+ (30W) support on all ports Support POE Management function Support POE Energy saving mode
6	POE Budget	120 Watts or better
7	Vlan	Port-based VLAN, IEEE802.1Q, Voice VLAN, Port Isolation
8	ACL & VLan Table	Shall support 1K ACL Table & 4K Vlan Table Support Standard and extended ACL Table
9	Spanning Tree	802.1D STP, 802.1W RSTP, 802.1S MSTP Root Guard, BPDU Guard, BPDU Forwarding, STP Trap
10	LACP	8 groups / 8 ports Mac Load balancing Support
11	QOS & DHCP	Support port based rate limit, 802.1P, SP, WRR, DSCP, IGMP Snooping, MLD Should support DHCP Server
12	Security	Storm Control based on packets and bytes Port Security, Loop Detection, IEEE 802.1x Authentication, AAA
13	Maintenance and Management	TFTP/FTP CLI, Telnet, Console Web/SSL, SSH, SNMPv1/v2c/v3, SNMP Trap, Public & Private MIB interface Ping, Trace Route, Radius Authentication, Single/Multiple Port Mirror, LLDP/LLDP MED
14	MAC address Table	8K entries
15	Temperature	Working 0°C~45°C Storage -40°C~70°C
16	Surge Protection	Should support 2 KVA Surge Protection on each POE Port
17	EMC Safety	CE/FCC,ROHS

Code	Item Description	Make	Approx Qty
33258-047	16 Port with 2 port SFP Uplink L2 Managed POE Switch, 180W POE Budget	Any reputed make	1 No

S.No.	Parameter	Specification
1	Ports	16 x 10/100/1000Base-T + 2 x 100/1000Base-X (SFP)
2	Performance	Shall support 36Gbps Switching Capacity and 23Mbps forwarding rate

3	Power Supply	Support built in power supply
4	Management Port	RJ45 or Mini USB Console port (Out of Band Management)
5	POE Protocols	IEEE 802.3af POE (15.4W) and IEEE 802.3at POE+ (30W) support on all ports Support POE Management function Support POE Energy saving mode
6	POE Budget	180 Watts or better
7	Vlan	Port-based VLAN, IEEE802.1Q, Voice VLAN, Port Isolation
8	ACL & VLan Table	Shall support 1K ACL Table & 4K Vlan Table Support Standard and extended ACL Table
9	Spanning Tree	802.1D STP, 802.1W RSTP, 802.1S MSTP Root Guard, BPDU Guard, BPDU Forwarding, STP Trap
10	LACP	8 groups / 8 ports Mac Load balancing Support
11	QOS & DHCP	Support port based rate limit, 802.1P, SP, WRR, DSCP, IGMP Snooping, MLD Should support DHCP Server
12	Security	Storm Control based on packets and bytes Port Security, Loop Detection, IEEE 802.1x Authentication, AAA
13	Maintenance and Management	TFTP/FTP CLI, Telnet, Console Web/SSL, SSH, SNMPv1/v2c/v3, SNMP Trap, Public & Private MIB interface Ping, Trace Route, Radius Authentication, Single/Multiple Port Mirror, LLDP/LLDP MED
14	MAC address Table	8K entries
15	Temperature	Working 0°C~45°C, Storage -40°C~70°C
16	Surge Protection	Should support 2KVA Surge Protection on each POE Port
17	EMC Safety	CE/FCC,ROHS

Code	Item Description	Make	Approx Qty
33258-048	**24 Port with 2 port SFP Uplink L2 Managed POE Switch, 250W POE Budget**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Ports	24 x 10/100/1000Base-T + 2 x 100/1000Base-X (SFP)
2	Performance	Shall support 52 Gbps Switching Capacity and 38 Mbps forwarding rate
3	Power Supply	Support built in power supply
4	Management Port	RJ45 or Mini USB Console port (Out of Band Management)

5	POE Protocols	IEEE 802.3af POE (15.4W) and IEEE 802.3at POE+ (30W) support on all ports Support POE Management function Support POE Energy saving mode
6	POE Budget	250 Watts or better
7	Vlan	Port-based VLAN, IEEE802.1Q, Voice VLAN, Port Isolation
8	ACL & VLan Table	Shall support 1K ACL Table & 4K Vlan Table Support Standard and extended ACL Table
9	Spanning Tree	802.1D STP, 802.1W RSTP, 802.1S MSTP Root Guard, BPDU Guard, BPDU Forwarding, STP Trap
10	LACP	8 groups / 8 ports Mac Load balancing Support
12	QOS & DHCP	Support port based rate limit, 802.1P, SP, WRR, DSCP, IGMP Snooping, MLD Should support DHCP Server
12	Security	Storm Control based on packets and bytes Port Security, Loop Detection, IEEE 802.1x Authentication, AAA
13	Maintenance and Management	TFTP/FTP CLI, Telnet, Console Web/SSL, SSH, SNMPv1/v2c/v3, SNMP Trap, Public & Private MIB interface Ping, Trace Route, Radius Authentication, Single/Multiple Port Mirror, LLDP/LLDP MED
14	MAC address Table	8K entries
15	Temperature	Working 0°C ~ 45°C Storage -40°C ~ 70°C
16	Surge Protection	Should support 2KVA Surge Protection on each POE Port
17	EMC Safety	CE/FCC,ROHS

Code	Item Description	Make	Approx Qty
33258-049	24 Port SFP L3 Managed Switch with 10G Uplink	Any reputed make	1 No

S.No.	Parameter	Specification
1	Switching ports	Shall support 24# 1G SFP Ports, 4# 10/100/1000 Mbps Base-T Combo ports , 4# SFP+ 10G Fiber Ports
2	Management Ports	RJ45 Console port, USB/SD Card Port
3	Switching Capacity Per Physical Switch	128Gbps
4	Throughput Per Physical Switch	95Mbps
5	Jumbo Frame	9K

6	IPv4/IPv6 Routing Table	3K or more
7	Vlan	802.1Q, 4K VLAN, MAC VLAN, Voice VLAN, PVLAN, Protocol VLAN, Multicast VLAN.
8	Spanning Tree	STP, RSTP, MSTP
9	Qos	8 Queues Per Port and should support SWRR, SP, WRR and WRED
10	ACL	IP ACL, MAC ACL, MAC-IP ACL
11	IPv6 Features	Should support ICMPv6, DNSv6, IPv6 PBR, IPv6 VRRPv3, OSPFv3 and BGP4+
		Should support IPv6 Multicast VLAN, PIM-SM/DM for IPv6, IPv6 ACL and IPv6 QOS
		DHCP Server/Client for IPv6
		Should support IPv6 Management Features
12	IPv4 L3 Routing Features (All Routing Features should be available form Day1)	Static Routing, RIPv1/v2, OSPFv2, OSPFv3, BGP4, BGP4+, PBR, LPM Routing, ECMP, VRRP
13	IPv6 L3 Routing Features (All Routing Features should be available form Day1)	6 to 4 Tunnel / Dual stack , VRRPv3, OSPFv3, BGP4+, IPv6 PBR
14	Multicast Routing	Multicast routing, PIM-SM, PIM-DM, IGMP v1/v2/v3.
15	DHCP Features	DHCP Client, DHCP Relay, DHCP Snooping, Option-82 and DHCP Server
16	Power Supply	Support built in Dual AC Power Supply Should be loaded from Day1 power supply
17	Management Features	Web, CLI, Telnet and Console access TFTP/FTP and SSH v1/v2
		SNMPv1/v2c/v3
		RMON 1,2,3,9 and Radius Authentication
		Syslog (Internal & External) and SNTP/NTP
		Dual Firmware Images and Configuration Files, sFlow, RSPAN
18	OAM Support	802.3ah and 802.1ag
19	Environment	Operating Temperature: 0°C~45°C
		Storage Temperature: -40°C~75°C
		Relative Humidity: 10%~90% non-condensing
		Green Energy: IEEE 802.3az (Energy Efficient Ethernet)
20	Certificates	CE/FCC,ROHS
21	General Conditions	All the software features and Hardware ports should be available from Day1 of purchase

Code	Item Description	Make	Approx Qty
33258-050	Transceiver Single mode SFP (1G) – 20 KM support	Any reputed make	1 No

S.No.	Parameter	Specification
1	Fiber Type	Single Mode
2	Bandwidth	1G, Gigabit
3	Connector Type	LC Duplex
4	Distance	20KM or Better
5	Wavelength	Min 1310nm

Code	Item Description	Make	Approx Qty
33258-051	Transceiver Single mode SFP+(10G) – 20 KM support	Any reputed make	1 No

S.No.	Parameter	Specification
1	Fiber Type	Single Mode
2	Bandwidth	10G, Gigabit
3	Connector Type	LC Duplex
4	Distance	20KM or Better
5	Wavelength	Min 1310nm

Code	Item Description	Make	Approx Qty
33258-052	Single Mode Gigabit Media Converter- 20KM Support	Any reputed make	1 No

S.No.	Parameter	Specification
1	Fiber Type	Single Mode
2	Bandwidth	1G, Gigabit
3	Connector Type	SC Duplex
4	Distance	20KM or Better
5	Wavelength	Min 1310nm
6	Lan Port	1*RJ45 10/100/1000 Mbps

Code	Item Description	Make	Approx Qty
33258-053	CAT6 UTP Cable	Any reputed make	1 Mtr.

S.No.	Parameter	Specification
1	Cable Type and support	4 Pair Twisted Cable, Support for Fast and Gigabit Ethernet, IEEE 802.3/5/12, Voice, ISDN, ATM 155 & 622Mbps. Should be Tested up to 550Mhz
2	Conductor	23 AWG Annealed bare solid copper
3	Insulation	High Density Polyethylene
4	Core Colour	Pair 1 : White – Blue Pair 2 : White – Orange Pair 3 : White – Green Pair 4 : White – Brown
5	Sheath	Fire Retardant PVC Compound (FRPVC)
6	Pair Separator	4 twisted pairs separated by internal X shaped, 4 channel, polymer spine / full separator. Half shall not be accepted.
7	Sheath Colour	Grey / Blue
8	Approx. Cable OD	6.2 mm
9	Flame Rating	60 deg.C As per UL 1685 CM
10	Operating Environment	Indoor
11	Electrical Specification	at 250 MHz
12	Standards	TIA / EIA 568 C.2
13	Impedance	100Ohms +/- 15%
14	(NVP) Velocity of Propagation	69% or more @ 250 MHz Approx.
15	Delay Skew	45 ns /100 mtrs. max. @ 20 deg. C, for 1 MHz~250 MHz Approx.
16	Propagation Delay	<=536 ns / 100 mtrs. max. @ 20 deg. C, @ 250 MHz
17	DC Resistance	<= 9.38 ohm / 100 mtrs. max. @ 20 deg. C
18	Mutual Capacitance	5.60 nF / 100 mtrs. max. Approx.
19	Safety	UL Listed

Code	Item Description	Make	Approx Qty
33258-054	CAT6 SFTP Cable	Any reputed make	1 Mtr.

S.No.	Parameter	Specification
1	Cable Type and support	4 Pair Shielded Foil Twisted Pair Cable, Support for Fast and Gigabit Ethernet, IEEE 802.3/5/12, Voice, ISDN, ATM 155 & 622Mbps. Should be Tested up to 550Mhz
2	Conductor	23 AWG Annealed bare solid copper
3	Insulation	High Density Polyethylene
4	Core Colour	Pair 1 : White – Blue Pair 2 : White – Orange Pair 3 : White – Green Pair 4 : White – Brown
5	Sheath	Fire Retardant PVC Compound (FRPVC)
6	Pair Separator	4 twisted pairs separated by internal X shaped, 4 channel, polymer spine / full separator. Half shall not be accepted.
7	Sheath Colour	Grey / Blue
8	Approx. Cable OD	6.2 mm
9	Flame Rating	60 deg.C As per UL 1685 CM
10	Operating Environment	Indoor
11	Electrical Specification	at 250 MHz
12	Standards	TIA / EIA 568 C.2
13	Impedance	100Ohms +/- 15%
14	(NVP) Velocity of Propagation	69% or more @ 250 MHz Approx.
15	Delay Skew	45 ns /100 mtrs. max. @ 20 deg. C, for 1 MHz~250 MHz Approx.
16	Propagation Delay	<=536 ns / 100 mtrs. max. @ 20 deg. C, @ 250 MHz
17	DC Resistance	<= 9.38 ohm / 100 mtrs. max. @ 20 deg. C
18	Mutual Capacitance	5.60 nF / 100 mtrs. max. Approx.
19	Safety	UL Listed

Code	Item Description	Make	Approx Qty
33258-055	CAT6 Outdoor Armoured SFTP Cable	Any reputed make	1 Mtr

S.No	Tender Specification	Specification
1	Cable Type and support	4 Pair Shielded Foil Twisted Pair Cable, Support for Fast and Gigabit Ethernet, IEEE 802.3/5/12, Voice, ISDN, ATM 155 & 622Mbps. Should be Tested up to 550Mhz
2	Conductor	23 AWG Annealed bare solid copper
3	Insulation	High Density Polyethylene
4	Core Colour	Pair 1 : White – Blue Pair 2 : White – Orange Pair 3 : White – Green Pair 4 : White – Brown
5	Sheath	Fire Retardant PVC Compound (FRPVC)
6	Pair Separator	4 twisted pairs separated by internal X shaped, 4 channel, polymer spine / full separator. Half shall not be accepted.
7	Sheath Colour	Grey / Blue
8	Approx. Cable OD	6.2 mm
9	Flame Rating	60 deg.C As per UL 1685 CM
10	Operating Environment	Outdoor, Armored, Black colour
11	Electrical Specification	at 250 MHz
12	Standards	TIA / EIA 568 C.2
13	Impedance	100Ohms +/- 15%
14	(NVP) Velocity of Propagation	69% or more @ 250 MHz Approx.
15	Delay Skew	45 ns /100 mtrs. max. @ 20 deg. C, for 1 MHz~250 MHz Approx.
16	Propagation Delay	<=536 ns / 100 mtrs. max. @ 20 deg. C, @ 250 MHz
17	DC Resistance	<= 9.38 ohm / 100 mtrs. max. @ 20 deg. C
18	Mutual Capacitance	5.60 nF / 100 mtrs. max. Approx.
19	Safety	UL Listed

Code	Item Description	Make	Approx Qty
33258-056	Cat 6 - 24 Port unloaded Patch Panel	Any reputed make	1 No

S.No	Tender Specification	Specification
1	Mount	1U Rack Mount 24 Port Patch Panel
2	Type	110 wiring block at rear end & RJ 45 jack on front panel
3	Cable Manager	19" rack mountable and shuttered with cable manager
4	General	Metallic high strength & 1U height, should have routing rings, ties, labeling strips for identification

Code	Item Description	Make	Approx Qty
33258-057	Cat 6 - 24 Port fully loaded Patch Panel	Any reputed make	1 No

S.No	Tender Specification	Specification
1	Mount	1U Rack Mount 24 Port Patch Panel
2	Type	110 wiring block at rear end & RJ 45 jack on front panel
3	Quality	The modules should have high quality PCB
4	General	The IDC should have 45 degree/ V shape contact
5	Cable Manager	19" rack mountable and shuttered with cable manager
6	Standards	Should conform or exceed the EIA/TIA 568 standards for CAT6
7	General	Metallic high strength, routing rings, ties, labeling strips for identification

Code	Item Description	Make	Approx Qty
33258-058	CAT6 UTP – 1M Patch Cord	Any reputed make	1 No

S.No.	Parameter	Specification
1	Type	Factory Crimped Cat6 UTP Patch cord with 24 AWG 7/32 Round stranded copper wire.
2	Length	1 Meter
3	Insulation	Polyethylene
4	Cable sheath	CM grade PVC Plug insertion
5	Durability	1000 mating cycles
6	Plug tensile strength	89 N, Plug insulation

7	resistance	>500MW
8	contact resistance	10 mW

Code	Item Description	Make	Approx Qty
33258-059	**CAT6 STP – 1M Patch Cord**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Type	Factory Crimped Cat6 STP Patch cord with 24 AWG 7/32 Round stranded copper wire.
2	Length	1 Meter
3	Insulation	Polyethylene
4	Cable sheath	CM grade PVC Plug insertion
5	Durability	1000 mating cycles
6	Plug tensile strength	89 N, Plug insulation
7	resistance	>500MW
8	contact resistance	10 mW

Code	Item Description	Make	Approx Qty
33258-060	**6 Core Fiber Cable – SM - 9/125 micron (Outdoor, Armored)**	**Any reputed make**	**1 Mtr**

S.No.	Parameter	Specification
1	Cable Type	6 Core Fiber Cable SM 9/125 micron, graded index, anti rodent. The Single Mode Fiber cores should be Low Water Peak.
2	wavelengths,	1310 nm & 1550 nm
3	Standards	Should conform EIA/TIA 455, EIA/TIA 568 , ISO 11801
4	Strength	Fiber should be protected inside jelly filled loose tube armoring with acrylic coated good quality steel
5	tube colour	Each tube should be different color for easy identification
6	Armour	ECCS armour followed by a jacket of polyethylene. Over the armour, water blocking powder applied for water tight cable.
7	Core	The fiber core should be ITU 651 /652.D specification, should support Gigabit.
8	Tube Type	Should have HDPE jacket with UV compliant. 6F/12F with UniTube and 24F Multitube (8Fx3 Tubes, 3 Fillers)

9	Attenuation :	Not more than 0.38 dB/km at 1310 nm and 0.25 dB/km at 1550 nm using ITU 652D fiber core
10	Optical characteristics - Parameter / Unit / specification	Optical characteristics - Parameter / Unit / specification
		Cladding Diameter / μm / 125.0 ± 1.0
		Cladding Non-Circularity / % / ≤ 1.0%
		Coated Fiber Diameter / μm / 235 to 255
		Core/Cladding Concentricity Error / μm / ≤ 0.8
		Mode Field Diameter / μm / 9.3 ± 0.5 @ 1310 nm
		Coating/cladding concentricity error / μm / ≤ 12
		Minimum Proof Strength Strain / GPa% / 0.70 (100 kpsi)
		Fiber Curl / M / > 4
		Zero-Dispersion Wavelength / Nm / 1300 to 1324
		Zero-Dispersion Slope / ps/nm2-km / ≤ 0.092
		Maximum Dispersion / ps/nm-km - 1285-1330 / ≤ 3.5 - 1550 nm / ≤ 18
		Polarization Mode / ps/√km / ≤ 0.2
		Fiber Macrobend / dB / ≤ 0.05@ 1310 nm
		(100 turns. 60 mm dia.) / ≤ 0.10@ 1550 nm
		Fiber Macrobend / dB / ≤ 0.5 @ @ 1550 nm
		(1 turn @ 32 mm diameter)"
		Coating Strip Force / N / 1.3 ≤ F ≤ 8.9
		Dynamic Tensile Strength / Kpsi / Unaged :>550 (3.8 GPa)
		Aged :>440 (3.0 GPa)"

Code	Item Description	Make	Approx Qty
33258-061	12 Core Fiber Cable – SM - 9/125 micron (Outdoor, Armored)	Any reputed make	1 Mtr

S.No.	Parameter	Specification
1	Cable Type	12 Core Fiber Cable SM 9/125 micron, graded index, anti rodent. The Single Mode Fiber cores should be Low Water Peak.
2	wavelengths,	1310 nm & 1550 nm
3	Standards	Should conform EIA/TIA 455, EIA/TIA 568 , ISO 11801
4	Strength	Fiber should be protected inside jelly filled loose tube armoring with acrylic coated good quality steel
5	Tube colour	Each tube should be different color for easy identification

6	Armour	ECCS armour followed by a jacket of polyethylene. Over the armour, water blocking powder applied for water tight cable.
7	Core	The fiber core should be ITU 651 /652.D specification, should support Gigabit.
8	Tube Type	Should have HDPE jacket with UV compliant.6F/12F with UniTube and 24F Multitube (8Fx3 Tubes, 3 Fillers)
9	Attenuation :	Not more than 0.38 dB/km at 1310 nm and 0.25 dB/km at 1550 nm using ITU 652D fiber core
10	Optical characteristics - Parameter / Unit / specification	Optical characteristics - Parameter / Unit / specification
		Cladding Diameter / μm / 125.0 ± 1.0
		Cladding Non-Circularity / % / ≤ 1.0%
		Coated Fiber Diameter / μm / 235 to 255
		Core/Cladding Concentricity Error / μm / ≤ 0.8
		Mode Field Diameter / μm / 9.3 ± 0.5 @ 1310 nm
		Coating/cladding concentricity error / μm / ≤ 12
		Minimum Proof Strength Strain / GPa% / 0.70 (100 kpsi)
		Fiber Curl / M / > 4
		Zero-Dispersion Wavelength / Nm / 1300 to 1324
		Zero-Dispersion Slope / ps/nm2-km / ≤ 0.092
		Maximum Dispersion / ps/nm-km - 1285-1330 / ≤ 3.5 - 1550 nm / ≤ 18
		Polarization Mode / ps/√km / ≤ 0.2
		Fiber Macrobend / dB / ≤ 0.05@ 1310 nm
		(100 turns. 60 mm dia.) / ≤ 0.10@ 1550 nm
		Fiber Macrobend / dB / ≤ 0.5 @ @ 1550 nm
		(1 turn @ 32 mm diameter)"
		Coating Strip Force / N / 1.3 ≤ F ≤ 8.9
		Dynamic Tensile Strength / Kpsi / Unaged :>550 (3.8 GPa)
		Aged :>440 (3.0 GPa)"

Code	Item Description	Make	Approx Qty
33258-062	24 Core Fiber Cable – SM - 9/125 micron (Outdoor, Armored)	Any reputed make	1 Mtr

S.No.	Parameter	Specification
1	Cable Type	24 Core Fiber Cable SM 9/125 micron, graded index, anti rodent. The Single Mode Fiber cores should be Low Water Peak.

2	wavelengths,	1310 nm & 1550 nm
3	Standards	Should conform EIA/TIA 455, EIA/TIA 568 , ISO 11801
4	Strength	Fiber should be protected inside jelly filled loose tube armoring with acrylic coated good quality steel
5	tube colour	Each tube should be different color for easy identification
6	Armour	ECCS armour followed by a jacket of polyethylene. Over the armour, water blocking powder applied for water tight cable.
7	Core	The fiber core should be ITU 651 /652.D specification, should support Gigabit.
8	Tube Type	Should have HDPE jacket with UV compliant.6F/12F with UniTube and 24F Multitube (8Fx3 Tubes, 3 Fillers)
9	Attenuation :	Not more than 0.38 dB/km at 1310 nm and 0.25 dB/km at 1550 nm using ITU 652D fiber core
10	Optical characteristics - Parameter / Unit / specification	Optical characteristics - Parameter / Unit / specification
		Cladding Diameter / μm / 125.0 ± 1.0
		Cladding Non-Circularity / % / $\leq 1.0\%$
		Coated Fiber Diameter / μm / 235 to 255
		Core/Cladding Concentricity Error / μm / ≤ 0.8
		Mode Field Diameter / μm / 9.3 ± 0.5 @ 1310 nm
		Coating/cladding concentricity error / μm / ≤ 12
		Minimum Proof Strength Strain / GPa% / 0.70 (100 kpsi)
		Fiber Curl / M / > 4
		Zero-Dispersion Wavelength / Nm / 1300 to 1324
		Zero-Dispersion Slope / ps/nm2-km / ≤ 0.092
		Maximum Dispersion / ps/nm-km - 1285-1330 / ≤ 3.5 - 1550 nm / ≤ 18
		Polarization Mode / ps/$\sqrt{}$km / ≤ 0.2
		Fiber Macrobend / dB / ≤ 0.05@ 1310 nm
		(100 turns. 60 mm dia.) / ≤ 0.10@ 1550 nm
		Fiber Macrobend / dB / ≤ 0.5 @ @ 1550 nm
		(1 turn @ 32 mm diameter)"
		Coating Strip Force / N / $1.3 \leq F \leq 8.9$
		Dynamic Tensile Strength / Kpsi / Unaged :>550 (3.8 GPa)
		Aged :>440 (3.0 GPa)"

Code	Item Description	Make	Approx Qty
33258-063	Fiber Patch Panel 6 Port Rack Mount Unloaded LIU	Any reputed make	1 No

S.No.	Parameter	Specification
1	Mount	1U Rack Mount
2	Cable Entry/Exit	Should have at least one cable entry and one exit
3	Splice tray	Should be fitted with 6 port Splice tray
4	Adaptor plate	Should be fitted with 6 Core support Adaptor plate

Code	Item Description	Make	Approx Qty
33258-064	Fiber Patch Panel 12 Port Rack Mount Unloaded LIU	Any reputed make	1 No

S.No.	Parameter	Specification
1	Mount	1U Rack Mount
2	Cable Entry/Exit	Should have at least one cable entry and one exit
3	Splice tray	Should be fitted with 12 port Splice tray
4	Adaptor plate	Should be fitted with 12 Core support Adaptor plate

Code	Item Description	Make	Approx Qty
33258-065	Fiber Patch Panel 24 Port Rack Mount Unloaded LIU	Any reputed make	1 No

S.No.	Parameter	Specification
1	Mount	1U Rack Mount
2	Cable Entry/Exit	Should have at least one cable entry and one exit
3	Splice tray	Should be fitted with 24 port Splice tray
4	Adaptor plate	Should be fitted with 24 Core support Adaptor plate

Code	Item Description	Make	Approx Qty
33258-066	Fiber Patch Panel 6 Port Rack Mount Fully Loaded LIU	Any reputed make	1 No

S.No.	Parameter	Specification
1	Mount	1U Rack Mount
2	Cable Entry/Exit	Should have at least one cable entry and one exit
3	Splice tray	Should be fitted with 6 port Splice tray

| 4 | Adaptor plate | Should be fitted with 6 core support Adaptor plate |
| 5 | SC/LC Adaptors | Should be Fitted with 6 core suport SC/LC Adaptors |

Code	Item Description	Make	Approx Qty
33258-067	**Fiber Patch Panel 12 Port Rack Mount Fully Loaded LIU**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Mount	1U Rack Mount
2	Cable Entry/Exit	Should have at least one cable entry and one exit
3	Splice tray	Should be fitted with 12 port Splice tray
4	Adaptor plate	Should be fitted with 12 Core support Adaptor plate
5	SC/LC Adaptors	Should be Fitted with 12 core support SC/LC Adaptors

Code	Item Description	Make	Approx Qty
33258-068	**Fiber Patch Panel 24 Port Rack Mount Fully Loaded LIU**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Mount	1U Rack Mount
2	Cable Entry/Exit	Should have at least one cable entry and one exit
3	Splice tray	Should be fitted with 24 port Splice tray
4	Adaptor plate	Should be fitted with 24 Core support Adaptor plate
5	SC/LC Adaptors	Should be Fitted with 24 core support SC/LC Adaptors

Code	Item Description	Make	Approx Qty
33258-069	**Fiber Adapter SC SM**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Compatibility	To be fitted in the Supplied LIU, Should have auto Lock and Screw
2	Color	Should able to differentiate SM, should use standard color
3	Sleeve	Duplex SC Adaptor with Zirconia Sleeve

Code	Item Description	Make	Approx Qty
33258-070	Fiber Adapter LC SM	Any reputed make	1 No

S.No.	Parameter	Specification
1	Compatibility	To be fitted in the Supplied LIU, Should have auto Lock and Screw
2	Color	Should able to differentiate SM, should use standard color
3	Sleeve	Duplex LC Adaptor with Zirconia Sleeve

Code	Item Description	Make	Approx Qty
33258-071	Fiber Pig Tail SC SM 1.5 Mtr	Any reputed make	1 No

S.No.	Parameter	Specification
1	Connector Type	SC Simplex
2	Fiber Type	9/125 micron SM fiber
3	Length	1.5 meter in length
4	Thickness	Thickness of Patch cord should be 0.9 mm nominal.
5	Ferrules	Pre-radiused Ceramic Ferrules
6	Insertion Loss	$\leq$0.3dB
7	Return Loss	>=20dB

Code	Item Description	Make	Approx Qty
33258-072	Fiber Pig Tail LC SM 1.5 Mtr	Any reputed make	1 No

S.No.	Parameter	Specification
1	Connector Type	LC Simplex
2	Fiber Type	9/125 micron SM fiber
3	Length	1.5 meter in length
4	Thickness	Thickness of Patch cord should be 0.9 mm nominal.
5	Ferrules	Pre-radiused Ceramic Ferrules
6	Insertion Loss	$\leq$0.3dB
7	Return Loss	>=20dB

Code	Item Description	Make	Approx Qty
33258-073	**Fiber Patch Cord SC-SC SM 3 Mtr**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Connector Type	SC to SC, Duplex
2	Fiber Type	9 /125 micron SM fiber
3	Length	3 meter in length
4	Thickness	Thickness of Patch cord should be 3 mm nominal.
5	Ferrules	Pre-radiused Ceramic Ferrules
6	Insertion Loss	≤0.3dB
7	Return Loss	>=20dB

Code	Item Description	Make	Approx Qty
33258-074	**Fiber Patch Cord LC-LC SM 3 Mtr**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Connector Type	LC to LC, Duplex
2	Fiber Type	9 /125 micron SM fiber
3	Length	3 meter in length
4	Thickness	Thickness of Patch cord should be 3 mm nominal.
5	Ferrules	Pre-radiused Ceramic Ferrules
6	Insertion Loss	≤0.3dB
7	Return Loss	>=20dB

Code	Item Description	Make	Approx Qty
33258-075	**Fiber Patch Cord SC-LC SM 3 Mtr**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Connector Type	SC to LC, Duplex
2	Fiber Type	9 /125 micron SM fiber
3	Length	3 meter in length
4	Thickness	Thickness of Patch cord should be 3 mm nominal.
5	Ferrules	Pre-radiused Ceramic Ferrules
6	Insertion Loss	≤0.3dB
7	Return Loss	>=20dB

Code	Item Description	Make	Approx Qty
33258-076	Tower Workstation (i7 Processor)	Any reputed make	1 No

S.No.	Parameter	Specification
1	Processor	Intel Core i7-9700 processor (3 GHz upto 4.7 Ghz, 12 MB cache) or Higher
2	Memory	8 GB DDR4 RAM @ 2133 MHz or higher with ECC, upgradable upto 16GB or Higher
3	Mother Board (Intel/Gigabyte/ ASUS/MSI/ OEM)	1. Min 4 PCI / PCIe express slots and at least one of them should be PCIex16, Integrated Graphics Controller, 10/100/1000 Mbps Network Card with remote booting facility & Min 6 USB Ports with at least two with 3.0, 2 PS 2 Port or 2 Additional USB Ports, 1 serial port, VGA / Display port, HDMI, RJ45, Audio 3.5mm. 2. Support external speakers - Min 2 Watts Chipset has to support 9th generation processor
4	Graphics Card	Integrated Intel HD Graphics to be provided. Option for Graphics card should be available with the system and system manufacturer should provide ISV certified graphics drivers for all operating systems supported. Support for upto 8 GB NVIDIA and Radeon Graphics Card.
5	Monitor	22" (± 0.5 inch) TFT/ Wide LED Backlit LCD Color Monitor. Resolution 1366 X 768.
6	Hard Disk Drive	Min 2 x 1 TB SATA
7	DVD Drive	DVD Writer
8	Keyboard	USB / PS2 – Membrane Keyboard
9	Mouse	USB / PS2 – Optical Mouse
10	Bays	Min 2 x Internal and Min 3 x External bays
11	General Certification	Hazardous - RoHS, Energy efficient - Energy star, Safety - CE / UL, Environment – EPEAT and TCO Certification for Monitor (Copies should be enclosed)
12	Cabinet type	Tower
13	OS Compliance	Windows & Linux
14	OS Certification	Windows & Linux. Boss Linux should run freely. If any issues Boss Linux certification should be obtained.
15	Preloaded OS	Windows Professional OS (Latest)
16	Power Consumption and SMPS capacity with standard configuration	Bidder to specify

Code	Item Description	Make	Approx Qty
33258-077	**Tower Server (Xeon Processor)**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification
1	Processor	Intel Xeon Processor E – 2224 at 3.4 GHz (8 MB cache) or higher
2	Memory	8 GB DDR4 RAM @ 2133 MHz or higher with ECC, upgradeable upto 16 GB or higher with minimum 2 free DIMM
3	Mother Board (Intel/ Gigabyte/ASUS/MSI/OEM)	Min 2 PCI / PCI Express, LAN (10/100/1000) Network card with 1 Serial Port, 4 USB Port, VGA / Display port, HDMI, RJ45, Int Speakers, Audio 3.5mm jack to support external Stereo Speakers of min 2 Watts.
4	Monitor	19 inch (± 0.5 inch) TFT / Wide LCD Color Monitor Resolution 1366 X 768
5	Hard Disk Drive	Min 2 X 1 TB or higher SATA
6	DVD Drive	DVD Writer
7	Keyboard	USB / PS2 – Membrane Keyboard
8	Mouse	USB / PS2 – Optical Mouse
9	Bays	4 bays or more
10	General Certification	Hazardous - RoHS, Energy efficient - Energy star, Safety - CE / UL, Environment – EPEAT and TCO Certification for Monitor (Copies should be enclosed)
11	Cabinet type	Mini Tower / Tower
12	OS Compliance	Windows & Linux
13	OS Certification	MS Windows & Linux
14	Preloaded OS	DOS
15	Power Consumption and SMPS capacity with standard configuration	Bidders to specify

Code	Item Description	Make	Approx Qty
33258-078	Rack Server (1U)	Any reputed make	1 No

S.No.	Parameter	Specification
1	Processor	1 x Intel Bronze 3104 (6-core) Processor or above, upgradable upto two processors
2	Memory	1 x 16 GB DDR4 RDIMM scalable up to 768 GB using RDIMM or 1.5 TB using LRDIMM with 2 Processors. Proposed memory should have ECC support. Selection of RDIMM or LRDIMM is based on customer preference.
3	Chipset	Intel C62X Chipset
4	Raid Controller	Onboard SATA controller which supports RAID: 0/1/5/10
5	Hard Disk Drive	1 x 1 TB 6G SATA 7.2K SFF or higher, Hot Plug expandable upto 6 nos or Higher
6	Form Factor / Cabinet Type	1U Rack Mountable
7	System Fans	Redundant & Hot Plug Fans
8	CD/DVD Drive	DVD-RW
9	Interfaces/PCI Slots	Minimum 2 PCI slots
10	Network Interface	1Gbps Quad Port Network Adapter.
11	Ports	USB – min 4 nos
12	Power Supply	hot-pluggable 1 + 1 redundancy
13	Manageability	The Server Management Software should be of the same brand as of the server supplier.Virtual KVM / Graphical Console / Virtual Folders, Virtual Media (floppy, CD, USB flash drive and image)
14	OS Support	Latest Microsoft Windows Server , Red Hat Enterprise Linux & SUSE Linux Enterprise Server, Vmware
15	Pre-Failure Notification	Failure – Failure notification on HDD, Processor & Memory
16	Industry Standard Compliance	PCIe3.0 Compliant, PXE Support, USB 3.0 Support
17	Security	Power-on password / Keyboard password / Administrator's password, Hardware-based system security feature that can securely store information, such as passwords and encryption keys, which can be used to authenticate the platform.
18	Benchmarks	SPEC int benchmark for the quoted processor models should be submitted either along with the bid or shall be submitted within 15 days from the date of submission of Bid.

Code	Item Description	Make	Approx Qty
33258-079	18.5 - Inch HD Monitor	Any reputed make	1 No

S.No.	Parameter	Specification
1	Display Size	Panel Size – 18.5", Monitor, LED type
2	Brightness	Brightness: 200cd/m2, Contrast Ratio 600:1, Response Time 7ms
3	Resolution	Support 1366 x 768 HD resolution
4	The longest service time	Support Minimum 12/7 continuous operations
5	Physical Interface	DVI or VGA with HD resolution support
6	Accessories	VGA Cable and Power cord
7	Operating Temperature Operating Humidity	10°C to 40° 20% to 80%
8	Power Supply	100 – 240 v - 50/60 Hz
9	General Certification	CE/FCC,ROHS

Code	Item Description	Make	Approx Qty
33258-080	23-Inch Monitor	Any reputed make	1 No

S.No.	Parameter	Specification
1	Display Size	Panel Size – Minimum 23-Inch Monitor, LED type with Thin Bezel front cover
2	Brightness	Brightness: 250cd/m2, Contrast Ratio 1000:1, Response Time 5ms
3	Resolution	Support 1920 x 1080 Full HD resolution
4	The longest service time	Support Minimum 12/7 continuous operations
5	Physical Interface	DVI or VGA and HDMI with Full HD resolution support
6	Accessories	HDMI Cable and Power cord
7	Viewing Angle	178°/178° or Better
8	Display functions	Anti glare, On screen controls, in plane switching etc.
9	Mount	Standard VESA mounting support
10	Operating Temperature Operating Humidity	10°C to 40° 20% to 80%
11	Power Supply	100 – 240 v - 50/60 Hz
12	General Certification	CE/FCC,ROHS

Code	Item Description	Make	Approx Qty
33258-081	32-Inch 16/7 Full HD Monitor	Any reputed make	1 No

S.No.	Parameter	Specification
1	Display Size	Panel Size – Minimum 32", Monitor, LED type with Thin Bezel front cover
2	Brightness	Brightness: 300cd/m2, Contrast Ratio 1000:1, Response Time 6ms
3	Resolution	Support 1920 x 1080 Full HD resolution
4	The longest service time	Support Minimum 16/7 continuous operations
5	Physical Interface	Support HDMI ×2, VGA ×1, AV ×1, Audio in, Audio out, USB ×2
6	Accessories	Table Stand, Remote Control and Power cord
7	Viewing Angle	178°/178° or Better
8	Display functions	Anti glare, On screen controls, in plane switching etc.
9	Built-in speakers	Dual Stereo speakers , 16W or better
10	Mount	Standard VESA mounting support
11	Power Supply	100 – 240 v - 50/60 Hz
12	Operating Temperature Operating Humidity	10°C to 40° 20% to 80%
13	General Certification	CE/FCC,ROHS

Code	Item Description	Make	Approx Qty
33258-082	43-Inch 24/7 Professional Industrial LED Display	Any reputed make	1 No

S.No.	Parameter	Specification
1	Display Size	Panel Size – 43", Industrial grade surveillance Monitor, DLED type
2	LED panel	Should have industrial grade LED Panel for 24/7 usage.
3	Operations	Support 24/7 continuous operations, Metal frame & rear cover.
4	Brightness	Brightness: 350cd/m2, Contrast Ratio 1000:1, Response Time 8ms
5	Resolution	Support 1920 × 1080 Full HD resolution, Viewing Angle 178°/178°

6	Physical Interface	Should have minimum 2# HDMI, 1# DVI port, 2# AUDIO, 1# USB port, 1# DP port, 1# RS232 in, 1#VGA. If VGA port is not given, VGA converter to be provided
7	Operating Temperature Operating Humidity	10°C to 40° 20% to 80%
8	Power Supply	100 – 240 v - 50/60 Hz
9	General Certification	CE/FCC,ROHS

Code	Item Description	Make	Approx Qty
33258-083	55-Inch 24/7 Professional Industrial LED Display	Any reputed make	1 No

S.No.	Parameter	Specification
1	Display Size	Panel Size – 55", Industrial grade surveillance Monitor, DLED type
2	LED panel	Should have industrial grade LED Panel for 24/7 usage.
3	The longest service time	Support 24/7 continuous operations, Metal frame & rear cover.
4	Brightness	Brightness: 350cd/m2, Contrast Ratio 1000:1, Response Time 8ms
5	Resolution	Support 1920 × 1080 Full HD resolution, Viewing Angle 178°/178°
6	Physical Interface	Should have minimum 2# HDMI, 1# DVI port, 2# AUDIO, 1# USB port, 1# DP port, 1# RS232 in, 1#VGA. If VGA port is not given, VGA converter to be provided
7	Operating Temperature Operating Humidity	10°C to 40° 20% to 80%
8	Power Supply	100 – 240 v - 50/60 Hz
9	General Certification	CE/FCC,ROHS

Code	Item Description	Make	Approx Qty
33258-084	49" 3.5mm joint bezel LCD Display for Video wall	Any reputed make	1 No

S.No.	Parameter	Specification
1	Screen Size (Diagonal)	Screen Size 49 inch +/- 3" screen - Industrial type panel
2	Aspect Ratio	16:9
3	Viewing Angle	(H/V) - 178 (H) / 178 (V)
4	Resolution (H X V)	1920 X 1080 or better
5	Brightness & Contrast	450cd/m² nits, Contrast - 1300:1 or better
6	Response time	8 ms
7	Panel Surface Treatment	Anti-Glare
8	HDMI In	HDMI X 2
9	DVI-D In	DVI-D 24-Pin X 1
10	DVI-D Out	DVI-D 24-Pin X 1
11	Display Port In	Display Port X 1
12	Display Port Out	Display Port X 1
13	USB	USB X 1
14	Serial In (RS232)	D-Sub 9-Pin X 1
15	Serial Out (RS232)	D-Sub 9-Pin X 1
16	Audio Out	3.5mm Audio Out Jack
17	Power Requirement	100V ~ 240V, 50-60 Hz
18	Power Consumption	100W or Lesser
19	Stand-by Condition	≤0.5 W or better
20	Bezel Width (Bezel to Bezel)	3.5 mm or lesser
21	Operation	24/7 Continuous working, Life time - 50,000 hrs (min.)
22	Casing	Full Metal Rear Cover
23	Orientation	Landscape / Portrait
24	Operating Temperature	0˚C ~ 45˚C
25	Operating Humidity	20% ~ 85% RH Non-Condensing
26	Accessories	Equipped with all accessories including wall mount bracket, video wall matrix / decoders / software, hardware fittings, cables, etc.

Code	Item Description	Make	Approx Qty
33258-085	55" 1.8mm joint bezel LCD Display for Video wall	Any reputed make	1 No

S.No.	Parameter	Specification
1	Screen Size (Diagonal)	Screen Size – 55" screen - Industrial type panel
2	Aspect Ratio	16:9
3	Viewing Angle	(H/V) - 178 (H) / 178 (V)
4	Resolution (H X V)	1920 X 1080 or better
5	Brightness & Contrast	500cd/m² nits, Contrast - 1400:1
6	Response time	8 ms
7	Panel Surface Treatment	Anti-Glare
8	HDMI In	HDMI X 2
9	DVI-D In	DVI-D 24-Pin X 1
10	DVI-D Out	DVI-D 24-Pin X 1
11	Display Port In	Display Port X 1
12	Display Port Out	Display Port X 1
13	USB	USB X 1
14	Serial In (RS232)	D-Sub 9-Pin X 1
15	Serial Out (RS232)	D-Sub 9-Pin X 1
16	Audio Out	3.5mm Audio Out Jack
17	Power Requirement	100V ~ 240V, 50-60 Hz
18	Power Consumption	180W or Lesser
19	Stand-by Condition	≤0.5 W or better
20	Bezel Width (Bezel to Bezel)	1.8 mm or lesser
21	Operation	24/7 Continuous working Life time - 50,000 hrs (min.)
22	Casing	Full Metal Rear Cover
23	Orientation	Landscape / Portrait
24	Operating Temperature	0˚C ~ 45˚C
25	Operating Humidity	20% ~ 85% RH Non-Condensing
26	Accessories	Equipped with all accessories including wall mount bracket, video wall matrix / decoders / software, hardware fittings, cables, etc.

Code	Item Description	Make	Approx Qty
33258-086	Video wall Hardware 16 x 16 Matrix controller	Any reputed make	1 No

S.No.	Parameter	Specification
1	General Specification	High-performance matrix Controller for HDMI signals. It reclocks and equalizes the signal and can route any input to any or all outputs Simultaneously. 16 X 16. Data Rate — 6.75Gbps (2.25Gbps per graphic Channel). 4K 3840 x 2160 @30Hz (4:4:4) Configuration of the complete system via a graphical Interface, Administrative Control, Deliver the screen wall management software as described before including all required Licenses and install it ready for Operation on the server of the large Screen wall, Control of the windows on the large screen wall from Control and observation computers.
2	Video wall controller with Digital Video wall Scalar and Relay Controller Facility	High-performance matrix switcher for HDMI signals. It reclocks and equalizes the signal and can route any input to any or all outputs simultaneously. 16 x 16. Data Rate - 6.75 GBPS. (2.25 Gbps per graphic channel), HDTV Compatible. HDCP compliant. HDMI support - deep color, x.v. color, Dolby true HD, Dolby Digital plus, DTS-HD, and linear PCM 7.1 surround sound. 3D pass-through 16-port master room controller with 4 RS-232, 4 IR, 4 GPI/O, 4 Relay, 1 Ethernet, 1 USB - A, 1 USB - Micro, Relay Controller - 08 Ch. 220V AC, 16-Port Master Room Controller with 4 RS -232, 4 IR, 4 GPI/O, 4 relay, 1 Ethernet, 1 USB-A, 1 USB-Micro

Code	Item Description	Make	Approx Qty
33258-087	Video Wall Software	Any reputed make	1 No

S.No.	Parameter	Specification
1	General Specification	Configuration of the complete system via a graphical Interface, Administrative Control, Deliver the screen wall management software as described before including all required. Licenses and install it ready for Operation on the server of the large Screen wall, Control of the windows on the large screen wall from Control and observation computers.

Code	Item Description	Make	Approx Qty
33258-088	HDMI Splitter 1 in and 2 Out	Any reputed make	1 No

S.No.	Parameter	Specification
1	AV Input	HDMI
2	AV Output	HDMI
3	Cabling	HDMI
4	Ports	2ports
5	Minimum Cable Length support	30 ft
6	Supported Resolutions	1080p (1920 x 1080) / VGA (640 x 480) / SXGA (1280 x 1024) / UXGA (1600 x 1200) / WUXGA (1920 x 1200)
7	Power Source	Internal /External AC Adapter Included
8	Operating Temperature	0°C to 40°C
9	Humidity	0% ~ 80%

Code	Item Description	Make	Approx Qty
33258-089	HDMI Splitter 1 in and 4 Out	Any reputed make	1 No

S.No.	Parameter	Specification
1	AV Input	HDMI
2	AV Output	HDMI
3	Cabling	HDMI
4	Ports	4ports
5	Minimum Cable Length	50 ft

	support	
6	Supported Resolutions	1080p (1920 x 1080) / VGA (640 x 480) / SXGA (1280 x 1024) / UXGA (1600 x 1200) / WUXGA (1920 x 1200)
7	Power Source	internal /external AC Adapter Included
8	Operating Temperature	0°C to 40°C
9	Humidity	0% ~ 80%

Code	Item Description	Make	Approx Qty
33258-090	Indoor Microphone	Any reputed make	1 No

S.No.	Parameter	Specification
1	Type	Permanent indoor-noise monitoring
2	Frequency	100 ~ 6000HZ
3	Work Area	100m^2
4	Interface	Audio input - RCA or Stereo or BNC

Code	Item Description	Make	Approx Qty
33258-091	Outdoor Microphone	Any reputed make	1 No

S.No.	Parameter	Specification
1	Type	Permanent outdoor-noise monitoring
2	Frequency	100 ~ 6000HZ
3	Work Area	100m^2
4	interface	Audio input - RCA or Stereo or BNC
5	Protection	IP65/IP66

Code	Item Description	Make	Approx Qty
33258-092	10 Feet Pole	Any reputed make	1 No

S.No.	Parameter	Specification
1	Diameter	6 INCH, concrete filled, with provision for laying camera cable inside pole
2	Height	Height - 10 feet above ground , 2 feet below ground . Material of pole : GI (For Cameras) with Provisioning of Electrical Power
3	Earthing	Suitable earthing should be provided

Code	Item Description	Make	Approx Qty
33258-093	15 Feet Pole	Any reputed make	1 No

S.No.	Parameter	Specification
1	Diameter	6 INCH, concrete filled, with provision for laying camera cable inside pole
2	Height	Height - 15 feet above ground, 3 feet below ground . Material of pole : GI (For Cameras) with Provisioning of Electrical Power
3	Earthing	Suitable earthing should be provided

Code	Item Description	Make	Approx Qty
33258-094	1 KVA Online UPS with 30 Mins Backup	Any reputed make	1 No

S.No.	Parameter	Specification
1	Capacity	1 KVA ONLINE UPS
2	Back-up Time	30 minutes
3	Inverter Type	IGBT (Make and current capacity to be specified by the bidder)
	INPUT	
4	Mains Voltage Regulation	150 - 270V AC, SINGLE PHASE
5	Input power factor	> 0.9
6	Frequency with Tolerance	50 Hz, ± 3 Hz
7	Battery (Secondary Source)	Sealed maintenance free(SMF) type-AH and no. of Batteries shall be suitably selected for the respective minimum backup time of 70% Resistive Load. Minimum VAH rating of battery bank should be as given below:- 30 Minutes – 790 VAH Sealed maintenance free (SMF) type – AH and No. of Batteries shall be suitable selected for required backup time.
8	DC Bus voltage	To be specified by the bidder
9	Make of the Battery	Specify the Manufacturer Make, Model and enclose the technical sheet. The make and AH of the battery submitted for evaluation only will be accepted
10	Battery Storage Box	External Storage Box / MS-Rack for housing the Batteries.

	OUTPUT	
11	Nominal Voltage	230 AC, Single Phase (±1%)
12	Frequency	50 Hz, ±(0.2) Hz
13	Waveform	Pure Sine wave
14	Load power factor	0.7 lag to unity
	OTHER / GENERAL DATA	
15	Overload Capacity	Overload Capacity – Withstand for 5 minutes at 110% load (1100Watts Resistive Load / 770 Watts Combinational Load)
16	Total Harmonic Distortion	< 4% for Linear load and 5% for non linear load
17	Efficiency	> 80%
18	Ambient Temperature	To be specified by the bidder (Preferable upto 50 Degree Celsius)
19	Duty Cycle	Continuous
20	Cooling	Forced air cooling
21	Protections	1) Input, Output – Low and High 2) Battery low and high voltage 3) Input, output – Fuse 4) Battery - MCB/Fuse 5) Short circuit 6) Over load 7) Lightening
22	Controls	Manual By-pass Switch and static bypass switch to be provided with Indications
23	Power sockets	3 Nos. of 5A Sockets.
24	Trip Conditions	Over load, Over, Under voltage, Short Circuit Indications Mains ON, Inverter ON, Battery Low, Overload.
25	Alarms (Audio)	For extreme battery low voltage.
26	Meters	Meters – AC Volt Meter for input and output. DC Volt Meter, Frequency Meter for output in Analog / Digital Mode.
27	Manuals	Operating and User manual to be Provided
28	Name Plate in the UPS	Name plate in UPS-Riveted metal plates / Stickers
29	Isolation Transformer	Isolation Transformer must be provided internally / externally at input.
30	Software	Software for automatic shutdown of the system compatible with Linux (mandatory) and windows.

31	Certification	SAMEER / ETDC / NTH / ERTL / NABL's or any other Government authorized Testing Lab Certification for any back up of each UPS Category Mandatory for this Specification (issued within last 6 years)
32	Other Features	1.SNMP Card - Provisions should be available 2.Diesel Generator – Compatible

Code	Item Description	Make	Approx Qty
33258-095	1 KVA Online UPS with 60 Mins Backup	Any reputed make	1 No

S.No.	Parameter	Specification
1	Capacity	1 KVA ONLINE UPS
2	Back-up Time	60 minutes
3	Inverter Type	IGBT (Make and current capacity to be specified by the bidder)
	INPUT	
4	Mains Voltage Regulation	150 - 270V AC, SINGLE PHASE
5	Input power factor	> 0.9
6	Frequency with Tolerance	50 Hz, ± 3 Hz
7	Battery (Secondary Source)	Sealed maintenance free (SMF) type-AH and no. of Batteries shall be suitably selected for the respective minimum backup time of 70% Resistive Load. Minimum VAH rating of battery bank should be as given below:- 60 Minutes – 1500 VAH Sealed maintenance free (SMF) type – AH and No. of Batteries shall be suitable selected for required backup time.
8	DC Bus voltage	To be specified by the bidder
9	Make of the Battery	Specify the Manufacturer Make, Model and enclose the technical sheet. The make and AH of the battery submitted for evaluation only will be accepted
10	Battery Storage Box	External Storage Box / MS-Rack for housing the Batteries.
	OUTPUT	
11	Nominal Voltage	230 AC, Single Phase (±1%)
12	Frequency	50 Hz, ±(0.2) Hz
13	Waveform	Pure Sine wave
14	Load power factor	0.7 lag to unity

	OTHER / GENERAL DATA	
15	Overload Capacity	Overload Capacity – Withstand for 5 minutes at 110% load (1100Watts Resistive Load / 770 Watts Combinational Load)
16	Total Harmonic Distortion	< 4% for Linear load and 5% for non linear load
17	Efficiency	> 80%
18	Ambient Temperature	To be specified by the bidder (Preferable upto 50 Degree Celsius)
19	Duty Cycle	Continuous
20	Cooling	Forced air cooling
21	Protections	1) Input, Output – Low and High 2) Battery low and high voltage 3) Input, output – Fuse 4) Battery - MCB/Fuse 5) Short circuit 6) Over load 7) Lightening
22	Controls	Manual By-pass Switch and static bypass switch to be provided with Indications
23	Power sockets	3 Nos. of 5A Sockets.
24	Trip Conditions	Over load, Over, Under voltage, Short Circuit Indications Mains ON, Inverter ON, Battery Low, Overload.
25	Alarms (Audio)	For extreme battery low voltage.
26	Meters	Meters – AC Volt Meter for input and output. DC Volt Meter, Frequency Meter for output in Analog / Digital Mode.
27	Manuals	Operating and User manual to be Provided
28	Name Plate in the UPS	Name plate in UPS-Riveted metal plates / Stickers
29	Isolation Transformer	Isolation Transformer must be provided internally / externally at input.
30	Software	Software for automatic shutdown of the system compatible with Linux (mandatory) and windows.
31	Certification	SAMEER / ETDC / NTH / ERTL / NABL's or any other Government authorized Testing Lab Certification for any back up of each UPS Category Mandatory for this Specification (issued within last 6 years)
32	Other Features	1.SNMP Card - Provisions should be available 2.Diesel Generator – Compatible

Code	Item Description	Make	Approx Qty
33258-096	1 KVA Online UPS with 120 Mins Backup	Any reputed make	1 No

S.No.	Parameter	Specification
1	Capacity	1 KVA ONLINE UPS
2	Back-up Time	120 minutes
3	Inverter Type	IGBT (Make and current capacity to be specified by the bidder)
	INPUT	
4	Mains Voltage Regulation	150 - 270V AC, SINGLE PHASE
5	Input power factor	> 0.9
6	Frequency with Tolerance	50 Hz, ± 3 Hz
7	Battery (Secondary Source)	Sealed maintenance free (SMF) type-AH and no. of Batteries shall be suitably selected for the respective minimum backup time of 70% Resistive Load. Minimum VAH rating of battery bank should be as given below:- 120 Minutes – 3000 VAH Sealed maintenance free (SMF) type – AH and No. of Batteries shall be suitable selected for required backup time.
8	DC Bus voltage	To be specified by the bidder
9	Make of the Battery	Specify the Manufacturer Make, Model and enclose the technical sheet. The make and AH of the battery submitted for evaluation only will be accepted
10	Battery Storage Box	External Storage Box / MS-Rack for housing the Batteries.
	OUTPUT	
11	Nominal Voltage	230 AC, Single Phase (±1%)
12	Frequency	50 Hz, ±(0.2) Hz
13	Waveform	Pure Sine wave
14	Load power factor	0.7 lag to unity
	OTHER / GENERAL DATA	
15	Overload Capacity	Overload Capacity – Withstand for 5 minutes at 110% load (1100Watts Resistive Load / 770 Watts Combinational Load)
16	Total Harmonic Distortion	< 4% for Linear load and 5% for non linear load
17	Efficiency	> 80%

18	Ambient Temperature	To be specified by the bidder (Preferable upto 50 Degree Celsius)
19	Duty Cycle	Continuous
20	Cooling	Forced air cooling
21	Protections	1) Input, Output – Low and High 2) Battery low and high voltage 3) Input, output – Fuse 4) Battery - MCB/Fuse 5) Short circuit 6) Over load 7) Lightening
22	Controls	Manual By-pass Switch and static bypass switch to be provided with Indications
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26	Meters	Meters – AC Volt Meter for input and output. DC Volt Meter, Frequency Meter for output in Analog / Digital Mode.
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31	Certification	SAMEER / ETDC / NTH / ERTL / NABL's or any other Government authorized Testing Lab Certification for any back up of each UPS Category Mandatory for this Specification (issued within last 6 years)
32	Other Features	1.SNMP Card - Provisions should be available 2.Diesel Generator – Compatible

6. Bid Preparation and Submission

6.1	Tender Procedure

a)   ELCOT facilitated e-Tender portal https://tenders.elcot.in. The prospective Bidders should register themselves in the e-Tender Portal and submit the Bids electronically through the e-Tender portal. The paper based physical Tender submission is not permitted.

b)   The e-Tender training session will be held on the date and time as mentioned in the Tender Schedule. The Bidders are requested to download the e-Tender help manual and user manuals from the Portal for reference.

c)   It is mandatory for the Bidders to possess a valid **Class-2/Class -3 Signing and Encryption Digital Signature Certificate** in the name of the tender submitting authority to complete the e-Tender Bid process as per the provisions of Government of India IT Act 2000 with latest amendments.

d)   The Technical Bid form and Price Bid form will be available in spreadsheet format for downloading. The registered Bidders can log into the e-Tender system and download the Bid Forms.

e)   The Bid forms should be filled and submitted using the Digital Signature Certificates. The supporting documents should be scanned and uploaded in the e-Tender system.

6.2	Cost of Bidding

The Bidders should bear all costs associated with the preparation and submission of Bids. ELCOT will in no way be responsible or liable for these charges/costs incurred regardless of the conduct or outcome of the bidding process.

6.3	Tender Document Fee

The Tender Documents can be downloaded free of cost from the websites mentioned in the Tender Schedule. The Tender document fee is waived for such downloaded documents.

6.4	Earnest Money Deposit (EMD)

a)   An EMD amount as specified in the Tender Schedule should be paid by way of Demand Draft or Banker's Cheque drawn in favour of "Electronics

Corporation of Tamil Nadu Limited" payable at Chennai. The Demand Draft or Banker's Cheque should be deposited physically at ELCOT before the date and time of opening of the Tender. The EMD in the form of Bank Guarantee is not acceptable.

b) The EMD of the unsuccessful Bidders will be returned at the expense of the Bidders within a reasonable time consistent with the rules and regulations in this regard. The EMD amount held by ELCOT till it is refunded to the unsuccessful Bidders will not earn any interest thereof.

c) The EMD amount of the Successful Bidder can be converted as part of the Security Deposit (SD) for successful execution of the work and will be returned only after the successful fulfilment of the Contract.

d) The EMD amount will be forfeited by ELCOT, if the Bidder withdraws the bid during the period of its validity specified in the tender or if the Successful Bidder fails to sign the contract or the Successful in bidder fails to remit Security Deposit within the respective due dates.

6.5	Portal Charges

a) For each and every Bid submitted, a non-refundable Portal charge as mentioned in the Tender Schedule should be paid by way of Demand Draft or Banker's Cheque drawn in favour of "Electronics Corporation of Tamil Nadu Limited" payable at Chennai. The payment by way of Demand Draft or Banker's Cheque should be deposited physically at ELCOT before the date and time of opening of the Tender.

b) The payment particulars should be entered in the e-Tender Portal. At the time of the Technical Bid opening, the payment committed in the Bid should be factual and should match with the physically submitted payments.

c) Even though the payment particulars are entered in the e-Tender portal, if the Bidder fails to submit the physical instrument, their bid is liable for rejection. If any of the information committed in the e-Tender Bid does not match with physically submitted payment, ELCOT reserves the right to reject the bid summarily.

6.6	Letter of Authorisation

A letter of Authorisation from the Board of Directors / appropriate authority authorising the Tender submitting authority or a Power of Attorney should be submitted in the Technical bid, otherwise the Bids will be summarily rejected.

6.7	Two Part Bidding

Bidders should examine all Instructions, Terms and Conditions and Technical specifications given in the Tender document. Failure to furnish information required by the Bid or submission of a Bid not substantially responsive in every aspect will be at the Bidders risk and may result in rejection of Bids. Bidders should strictly submit the Bid as specified in the Tender, failing which the bids will be considered as non-responsive and will be rejected.

6.7.1 Technical Bid Form

a)   The Technical Bid Form will be in specific format which should be filled and signed using the Digital Signature Certificate (DSC) as guided by the e tender portal.

b)   The Technical Bid Form should not be changed or altered or tampered otherwise the bids are liable for rejection.

c)   The Technical Bid Form should not contain any Price indications strictly, otherwise the Bids will be summarily rejected.

d)   The bidders should submit the details of make and model of the items offered against the tender requirement. The compliance sheet is given in the Annexure -1 (A 1.6)

6.7.2 Price Bid Form

a)   The Price Bid Form will be in specific format which should be filled and signed using the Digital Signature Certificate (DSC) as guided by the e tender portal.

b)   The Price Bid Form should not be changed or altered or tampered otherwise the bids are liable for rejection.

c)   The Price Bid Form should not contain any conditional offers or variation clauses, otherwise the Bids will be summarily rejected.

d)   The Prices quoted shall be in INDIAN RUPEES (INR) only.

e)   The cost quoted by the Bidder shall include cost and expenses on all counts viz., cost of equipment, materials, tools, techniques, methodologies, manpower, supervision,

administration, overheads, travel, lodging, boarding, in-station & outstation expenses, etc., and any other cost involved in the supply.

f)   The cost quoted by the Bidder shall be kept firm for a period specified in the Tender from the date of opening of the tender. The Bidder should keep the Price firm during the period of Contract including during the period of extension of time if any. Escalation of cost will not be permitted during the said periods or during any period while providing services whether extended or not for reasons other than increase of duties / taxes payable to the Governments in India within the stipulated delivery period. The Bidders should particularly take note of this factor before submitting the Bids.

g)   The Prices finalised after negotiations should be kept valid during the Rate Contract period and no escalation in the final price will be entertained including reasons due to Foreign Exchange fluctuations.

h)   Exchange Rate fluctuations (Foreign Currency Rate Exchange) cannot be cited as reason for delay or dishonour of Purchase Order.

6.8   Bid closing date and time

The Bids should be submitted not later than the date and time specified in the Tender Schedule or Corrigendum if published. The e-Tender portal will automatically lock the date and time exactly on the date and time. Even if the Bid submission is in half way through during the closing date and time, submission would not be possible. Hence the Bidders should be cautious to submit the Bids well in advance to avoid disappointments.

7. Tender opening and Evaluation

7.1 Technical Bid Opening

The Technical Bid will be opened on the date and time as specified in the Tender schedule in the presence of those Bidders, who choose to be present against production of an authorisation letter from the Bidding authority. A maximum of two representatives for each Bidder would be allowed to attend the Tender opening.

7.2 Tender Validity

The offer submitted by the Bidders should be valid for a minimum period of 180 days from the date of opening of the Tender. The Rate Contract will be valid for 1 year from the date of signing of the contract or agreement / date of release of the first Purchase order, whichever is later. However ELCOT reserves the right to extend or short close the Tender validity period if situation warrants to benefit the Government.

7.3 Initial Scrutiny

Initial Bid scrutiny will be conducted and incomplete details as given below will be treated as non-responsive.

If Tenders are;

- not submitted in two parts as specified in the Tender
- received without the Letter of Authorisation
- received without EMD amount and e-Portal charges.
- found with suppression of information or incomplete information
- furnished with subjective and conditional offers.
- submitted without supporting documents in compliance to the Eligibility Criteria and Evaluation Criteria
- non-compliance of any of the clauses stipulated in the Tender
- lesser validity period

All responsive Bids will be considered for further evaluation.

The decision of ELCOT will be final in this regard.

7.4	Clarifications by ELCOT

When deemed necessary, ELCOT may seek bonafide clarifications on any aspect from the Bidder. However, that would not entitle the Bidder to change or cause any change in the substance of the Bid or price quoted. During the course of Technical Bid evaluation, ELCOT may seek additional information or historical documents for verification to facilitate decision making. In case the Bidder failed to comply with the requirements of ELCOT as stated above, such Bids may at the discretion of ELCOT, shall be rejected as technically non-responsive.

7.5	Tender Evaluation

7.5.1   Suppression of facts and misleading information

a.   During the Bid evaluation, if any suppression or misrepresentation or any of its kind, is brought to the notice of ELCOT, then ELCOT shall have the right to reject the Bid and if after selection, ELCOT would terminate the contract, as the case may be, will be without any compensation to the Bidder and the EMD / SD, as the case may be, shall be forfeited.

b.   Bidders should note that any figures in the proof documents submitted by the Bidders for proving their eligibility is found suppressed or erased, ELCOT shall have the right to seek the correct facts and figures or reject such Bids.

c.   It is up to the Bidders to submit the full copies of the proof documents to meet out the criteria. Otherwise, ELCOT at its discretion may or may not consider such documents.

d.   The Tender calls for full copies of documents to prove the Bidder's experience and capacity to undertake the project.

7.5.2   Technical Bid Evaluation

a)   A Technical Committee will examine the Technical Bids against the Eligibility Criteria and Evaluation Criteria given in the Tender document. The evaluation will be conducted based on the support documents submitted by the Bidders. The documents which did not meet the

eligibility criteria will be rejected and further evaluation will not be carried out for such bidders. The eligible Bidders alone will be considered for further evaluation.

b) The sample submitted will be evaluated for the tendered specification as given in the Scope of work to select the technically qualified bidder.

c) The bidders have to submit their samples as per the terms specified in "9.2 Sample Submission Clause". Bids without submission of samples are liable to be rejected.

d) For those Bidders who have already worked or working with ELCOT, their previous performance in ELCOT would be the mandatory criteria for selection. If any unsatisfactory performances of those Bidders are found, their Bids will be straight away rejected.

The Unsatisfactory performance is defined as

1. Non responsiveness after getting the LOA or Purchase order
2. Delay in supply, installation of the ordered items etc.
3. Lack of communication about the delay in deliveries, Installation etc.
4. Poor warranty and CAMC period support.
5. Delay in providing services citing reasons of OEM's support issues.

7.5.3 Price Bid Evaluation

a) The Price Bids of the Technically Qualified Bidders alone will be opened and evaluated. The Price Bid should include all expenses towards this Tender. The Price Bids will be opened in the presence of the Bidders at ELCOT. The Bidders or their authorised representatives will be allowed to take part in the Price Bid Opening.

b) Price Bid evaluation will be done as per the Tamil Nadu Transparency in Tender Rules 2000 with latest amendments.

c) As this is a Rate Contract, the following method of price evaluation will be adopted.

- The Price Bid Evaluation shall include State Goods and Services Tax, Central Goods and Services Tax, Integrated Goods and Services Tax, and all central duties such as Customs Duty as part of the price. The GST rates

quoted should comply with the statutory guidelines and will be paid as applicable at the time of billing.

- In evaluation of the price of an imported item, the price shall be determined inclusive of the Customs duty.

- **Partial bid is allowed. Bidder shall quote for relevant items.**

- The prices will be evaluated as follows and the decision of ELCOT will be the final.

  The total cost including applicable GST and including all other duties and charges (Such as Excise Duty, Customs Duty, Installation Charges etc., as per the guidelines stated above) of individual line items, add on items will be taken for the price bid evaluation. The bidder who quotes lowest cost/rate for any item will be called as L1 bidder for that item. **Though the 4th and 5th year comprehensive annual maintenance charges (CAMC) are not included in the price bid evaluation, CAMC charges should not exceed 10% of the item's basic rate (exclusive of taxes) and should be quoted without fail**.

d) The Technically Qualified Bidders will be negotiated to match individual L1 Price and the lowest CAMC Charges offered in the tender. If more than one Bidder matches the L1 Price, then order will be placed more than one Bidder, who matches the L1 Price. However, preference will be given to the L1 Bidder. The L1 Bidder will be given an order value more than the other Bidders, who match the L1 Price. However, L1 bidder will be given preference. The decision of ELCOT will be the final.

e) **It is purely ELCOT's discretion to ask the willingness of L2, L3 etc to match the L1 price and they cannot claim as their right.** The decision of ELCOT will be the final.

f) All the Bidders, who are selected after the Price Bid evaluation will be called as Successful Bidders.

g) ELCOT reserves the right to cancel the tender and retender to invite the competitive offers / quotes after a thorough analysis of the tender specification terms and conditions.

h)   The Successful Bidder should not sell the Tendered items to any other Purchaser at price which is lower than the final negotiated price offered to ELCOT. If it is found that it has been sold at lower rate, then that lower price will be fixed by ELCOT for that item in future and also for the already supplied quantities under this tender.

i)   The successful bidder should supply, install and maintain the ordered items only as per the approved specification and as per the OEM's MAF conditions, until otherwise approved by ELCOT for change (improvement) in specification. If found otherwise or violating condition, then the tender / contract is liable for cancellation and penal action will be initiated against the erring bidder / bidder or OEM including blacklisting of them.

7.6   Negotiations

Negotiations will be conducted with all the Successful Bidders for improvement in the further reduction in price and advancement of delivery schedule.

7.7   Award of Contract

a) Total quantity will be apportioned among the L1 Bidder and other Bidders who have agreed to match L1 rate, as per the provisions of Tamil Nadu Transparency in Tenders Act, 1998 and the Tamil Nadu Transparency in Tenders Rules, 2000 and Terms and Conditions of the Tender. In general L1 bidder will be given preference for supply. If the Purchaser / Customer desires specific make, then orders will be issued as per the discretion of the department

b) No dispute can be raised by any Bidder whose Bid has been rejected and no claims will be entertained or paid on this account.

7.8   ELCOT reserves the right to:

7.8.1 Negotiate with the Bidder whose offer is the lowest evaluated price for further reduction of prices.

7.8.2 Insist on quality / specification of materials to be supplied.

7.8.3 Modify, reduce or increase the quantity requirements to an extent of the tendered quantity as per the provisions of Tamil Nadu Transparency in Tenders Act 1998 and Tamil Nadu Transparency in Tenders Rules, 2000.

7.8.4 Change the list of areas of supply locations from time to time based upon the requirement of the purchase.

7.8.5 Ask other qualified Bidders to match the L1 price as this is a rate contract tender.

7.8.6 If delivery performance of the Bidder is not as per the Schedule or not as per the tender terms and conditions, then ELCOT reserves the right to reallocate the quantity to other Bidder(s).

7.8.7 ELCOT reserves its right to inspect the bidder's factory before or after placement of Orders and based on the inspection, ELCOT reserves its right to modify the quantity ordered.

7.8.8 ELCOT reserves its right to withhold any amount for the deficiency in the service aspect of the ordered items supplied to the Purchasers anytime during the contract period.

8. Execution of Work

8.1   Acceptance of Tender and Withdrawals

The final acceptance of the tender is entirely vested with ELCOT who reserves the right to accept or reject, any or all of the tenders in full or in parts without assigning any reason whatsoever. The Tender Accepting Authority may also reject all the tenders for reasons such as change in Scope, Specification, lack of anticipated financial resources, court orders, calamities or any other unforeseen circumstances. After acceptance of the Tender by ELCOT, the Successful Bidder shall have no right to withdraw their tender or claim higher price.

8.2   Letter of Acceptance (LOA)

After acceptance of the Tender by ELCOT, a Letter of Acceptance (LOA) will be issued to the Successful Bidder(s) by ELCOT. Under this rate contract, ELCOT has the right to issue LOA to more than one bidder.

8.3   Payment of Security Deposit (SD)

The successful Bidder will be required to remit a Security Deposit (SD) equivalent to five percent of the value of the order, inclusive of EMD by way of Demand Draft payable at Chennai or in the form of unconditional irrevocable Bank Guarantee from scheduled banks (except Yes bank) valid for a period of 15 months from the date of issue of letter of acceptance and confirmation from ELCOT. The SD shall be paid within 10 days from the date of letter of acceptance (LOA) issued by ELCOT. The SD furnished by the Successful Bidder in respect of the tender will be returned to them after successful fulfilment of contract i.e only after successful completion of the Purchase Orders issued under this contract. The Security Deposit held by ELCOT till it is refunded to the Successful Bidder will not earn any interest thereof.

The Security Deposit will be forfeited if the Successful Bidder withdraws the Bid during the period of Bid validity specified in the Tender or if the Bidder fails to sign the contract or the bidder fails to supply/ deliver the items as per purchase / work order within the stipulated delivery / time schedule.

8.4	Execution of Contract

  a)   The Successful Bidder should execute a Contract in the INR 100 non-judicial Stamp Paper bought in Tamil Nadu only in the name of the Bidder within one week from the date of Letter of Acceptance issued by ELCOT with such changes / modifications as may be indicated by ELCOT at the time of execution on receipt of confirmation from ELCOT.

  b)   The Successful Bidder shall not assign or make over the contract, the benefit or burden thereof to any other person or persons or body corporate for the execution of the contract or any part thereof without the prior written consent of ELCOT. ELCOT reserves its right to cancel the purchase order either in part or full, if this condition is violated. If the Successful Bidder fails to execute the agreement, the SD of the Successful Bidder will be forfeited and their offer/bid will be held as non-responsive.

  c)   The expenses incidental to the execution of the agreement should be borne by the Successful Bidder.

  d)   The conditions stipulated in the agreement should be strictly adhered to and violation of any of the conditions will entail termination of the contract without prejudice to the rights of ELCOT and ELCOT also have the right to recover any consequential losses from the Successful Bidder.

8.5	Release of Purchase Order

After execution of the Contract and payment of Security Deposit, "Firm Purchase Order" for the supply and commissioning of Tendered items will be issued to the Successful Bidder by ELCOT. The supply and payment will be based on the Purchase Order(s) issued from time to time. However in certain specific cases, the supply of items shall be based on LOA or any specific instructions by letter or email or fax etc. for which regularisation purchase / work order will be issued to regularise the transactions.

8.6	Refund of EMD

The EMD amount paid by the Successful Bidder(s) will be adjusted towards Security Deposit payable by them. If the Successful Bidder submits Security

Deposit for the stipulated value in full by way of Bank Guarantee, the EMD will be refunded.

8.7	Release of SD

The Security Deposit will be refunded to the Successful Bidder on completion of entire supply subject to satisfaction of ELCOT. Such completion would be arrived at when the entire quantity is supplied by the Bidder as per the Contract Agreement and as per the LOA or order including Purchase Order(s) issued by ELCOT from time to time.

8.8	Forfeiture of EMD and SD

a) If the successful Bidder fails to act according to the tender conditions or backs out, after the tender has been accepted, the EMD will be forfeited by ELCOT.

b) If the Successful Bidder fails to remit the SD, the EMD remitted by them will be forfeited by ELCOT and the tender will be held void. If the successful bidder fails to sign the contract within the stipulated time, then the SD remitted will be forfeited and the tender will be held void.

c) If the Successful Bidder fails to act up on to the tender conditions or backs out from the contract, the SD mentioned above will also be forfeited by ELCOT.

8.9	Termination of Contract

8.9.1 Termination for default

a) ELCOT may without prejudice to any other remedy for breach of contract, by written notice of default with a notice period of 7 days, sent to the Successful Bidder, terminate the contract in whole or part, (i) if the Successful Bidder fails to deliver any or all of the goods within the time period(s) specified in the Contract, or fails to supply the items as per the Delivery Schedule or within any extension thereof granted by ELCOT; or (ii) if the Successful Bidder fails to perform any of the obligation(s) under the contract; or (iii) if the Successful Bidder, in the judgement of ELCOT, has engaged in fraudulent and corrupt practices in competing for or in

executing the Contract or (iv) supplies the items inferior to the ordered / accepted specifications ; or (v) not procured and supplied the item from the OEM from whom the MAF was obtained and not submitted as per tender conditions unless and otherwise taking written approval from ELCOT for alternate OEM source.

b)   In the event ELCOT terminates the Contract in whole or in part, ELCOT may procure, upon terms and in such manner as it deems appropriate, the goods and services similar to those and delivered and the Successful Bidder shall be liable to ELCOT for any additional costs for such similar goods. However, the Successful Bidder shall continue the performance of the contract to the extent not terminated.

8.9.2 Termination for Insolvency

ELCOT may at any time terminate the Contract by giving written notice with a notice period of 7 days to the Successful Bidder, if the Successful Bidder becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Successful Bidder, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to ELCOT.

8.9.3 Termination for Convenience

ELCOT may by written notice, with a notice period of seven days sent to the Successful Bidder, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for ELCOT's convenience, the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective. On termination, the successful Bidder is not entitled to any compensation whatsoever.

8.10   Execution of Work Order

The Successful Bidder should nominate and intimate ELCOT, an Account Manager for Single Point of Contact (SPOC), who should be responsible for effective delivery of work complying with all the terms and conditions. The

Successful Bidder should ensure that the Account Manager fully familiarises with the Tender Conditions, Scope of Work and deliverables.

8.11	Assigning of Tender whole or in part

The successful Bidder shall not assign or make over the contract, the benefit or burden thereof to any other person or persons or body corporate. The Bidder should not under-let or sublet to any person(s) or body corporate for the execution of the contract or any part thereof without the written consent of ELCOT.

8.12	Liquidated Damages (LD)

Liquidated damage will be levied at the rate of 0.25% per day on the un-delivered portion of the material, if the delivery has not been completed in full within the stipulated period. The delivery period will effect from the next date of receipt of Purchaser Order. If the Successful Bidder fails to supply even after the lapse of one month after the stipulated date of delivery, then the orders/contracts are liable for cancellation and the EMD/ Security Deposit will be forfeited in addition to ELCOT reserving the right to blacklist the successful bidders for a period of three years from participating in ELCOT's tenders. This alone will not relieve the Bidder and the difference in cost of the items purchased through other technically qualified Bidders or any other alternative sources will be recovered from the successful Bidder.

8.13	Penalty for Non-Fulfilment of Tender

A Penalty will be levied at 5% of the total value of the Purchase Order, for non-fulfilment or non-observance of any of the conditions stipulated in the Agreement, Terms and Conditions and Work Order / contract.

8.14	Other Conditions

a) The final decision would be based on the technical capacity and pricing of the Bidder.

b) ELCOT reserves the right to reject any or all the tenders without assigning any reason, to relax or waive any of the conditions stipulated in the terms and conditions of tender as deemed necessary in the best interest of ELCOT for good and sufficient reasons.

c) ELCOT reserves the right to extend this contract rates, supply and provide relevant services under special offer to Students / Government Employees / Government Education Institutions /Trust/ Government schemes/ Government Departments /PSUs/ units etc. The successful bidder should not raise any dispute related with the supply of the IP Camera & related items under any of the scheme adopted by ELCOT. Non cooperation by the bidder may lead to termination of the contract and ELCOT reserves the right to Black list the successful bidder for a period of 3 years from participating ELCOT or any other Government Tenders.

8.15   Dispute and Jurisdiction

"Any dispute or difference, whatsoever, arising between the parties to this contract arising out of or in relation to the terms of this contract shall be resolved by the parties mutually by acting in good faith towards fulfilling the contract and for this purpose the parties mutually agree to furnish or exchange all relevant documents, information and any other material within their special knowledge and thereby conclude their discussions between them / their representatives or officers within a period of time as may be mutually agreed to say the time of commencement of the move to resolve the dispute.

In case, there is a failure in resolving the dispute within the time agreed and in the manner stated supra, the parties shall be at liberty to approach only the Courts in Chennai City which has jurisdiction in the matter."

9. Scope of Work

9.1   Scope of work

Scope for the Successful Bidder:-

1. **Camera and NVR quoted should be from same OEM i.e the make should be same.**

2. Supply and install the ordered items in time.

3. It is the responsibility of the bidder, to arrange for site survey, giving the exact quantum of IP Cameras and related items required for the installation of CCTV Surveillance, LAN components required and to ensure the successful completion of the work.

4. No incompatible or refurbished items shall be supplied under this tender. The supplied item should be as per the approved specification of the sample submitted and the OEM concerned.

5. It is the responsibility of the Successful Bidder to provide Warranty and CAMC Services for the item/s supplied by them.

9.2   Sample Submission

a)   For each item quoted in the Tender, the samples should be submitted indicating the make, model number and brochures / specification of the items for testing by ELCOT as per Appendix-3 (Sample Submission Form) of the Tender.

b)   The bidders have to submit the samples within 7 days from the date of submission of Bids unless any specific time given by ELCOT in writing.

c)   Such samples should be delivered to ELCOT's QA team along with the INTERNAL TEST REPORT carried out by the OEM / Bidder as per this Tender specifications duly certified by the OEM / Bidder's Quality Inspection Officer with signature and designation.

d)   If the samples are not delivered within the time limit specified in the Tender, it would be treated as non-responsive and the Bid is liable for rejection.

e)   Sample evaluation is part of technical bid evaluation.

9.3	Special Concession for ELCOT approved products

a) If the samples of the tender specification has already been tested and approved by ELCOT in earlier tenders, then the Bidder need not submit those products for sample evaluation. The bidder shall provide the reference of the tender number and test reports.

b) ELCOT reserves the right to call for samples again if need arises and to call for any other sample of any other item at any point of time.

9.4	Compliance with Technical Specification

All the Bidders should submit the items, which are asked for testing. The whole evaluation exercise would be done in the presence of the bidders in a transparent manner.

a) If the equipment supplied for evaluation meets the tender specifications, it would be treated that the equipment had passed the "specifications test". If the specifications are below or do not meet the tender specifications, then the equipment would be treated as "failed" in the "specifications test" and ELCOT reserves the right to reject a sample. The bidders should take utmost care to bring in the samples which should be equal to or better than the specifications given in the tender documents. The results and compliance statement would be prepared and evaluated.

b) For any improved specification/any model change of the tendered items during the contract period ,the samples of those items should be submitted for evaluation and has to be accepted by ELCOT. If any deviation found during the contract period, the penal action will be initiated including blacklisting of the successful bidder.

9.4.1 Linux compliance

a) For the tendered items wherever the Linux compliance is asked, those items will be tested for Linux compliance as per the Tender Specifications. Bidder must provide the necessary drivers.

b) All such operations would be carried out using GUI/X Windows procedures only. If the Peripherals work without any hitches, then it would be treated as "passed" in the Linux compatibility test. Otherwise, it would be treated as "failed".

c) The Bidder or OEM shall provide tested results for Suse Linux and Red Hat.

9.5	**Software to be pre loaded**

- The Operating System, device drivers and other productivity applications will be decided by ELCOT at the time of releasing the Work Order and the same shall be pre-loaded in the hardware.

- The licensed / supported version of the software shall be pre-loaded and the license shall be in the name of Purchaser/s. The Original License shall be submitted to the Purchaser/s at the time of delivery. ELCOT or its Purchaser/s Departments will not be liable or responsible for any disputes arising out of Intellectual Property Rights. It is at the risk of the Successful Bidder when such dispute arises.

9.6	**Supply, installation and maintenance**

a) **Delivery Schedule**:

For Locations:-

1 to 25 locations - Within 28 days from the date of purchase order.

26 to 50 locations – Within 42 days from the date of Purchase Order.

51 to 100 locations – Within 49 days from the date of Purchase Order.

101 to 200 locations – Within 56 days from the date of Purchase Order.

201 and above locations – Within 72 days from the date of Purchase Order.

For Quantity:-

1 to 50 Nos. - Within 28 days from the date of Purchase Order.

51 to 100 Nos. - Within 42 days from the date of Purchase Order.

101 to 500 Nos. - Within 49 days from the date of Purchase Order.

501 to 1000 Nos. - Within 56 days from the date of Purchase Order.

1001 and above Nos. - Within 72 days from the date of Purchase Order.

The Delivery Schedule shall be taken from Location/Quantity whichever is higher.

In general the delivery schedule is taken from the next date of purchase order and on specific instructions from ELCOT the delivery schedule is taken from the date of LOA or any written instruction through email or Fax etc.

b)   Based on any urgent requirement of Government Departments, Delivery Schedule may be reduced by ELCOT after the discussions with the Successful Bidders. In such cases, preference will be given to the bidder(s) / successful bidders who have sufficient stock and meet the delivery schedule of the intending departments, without violation of any rules, acts etc. In such specific cases, if the L1 bidder is not ready to supply the required urgent quantity, then the items will be procured from the other successful bidders, who is ready to supply the items and the decision of ELCOT will be final in this regard.

c)   The Successful Bidders after obtaining the Purchaser address shall visit the sites to assess the readiness of the site for installation. A report in this aspect shall be submitted to ELCOT within 10 days. ELCOT may advise the Purchaser to prepare the site ready for installation. ELCOT advises the successful bidders not to supply the items for the sites which are not ready and in this connection, the successful bidder on receipt of supply instructions from ELCOT shall get the information on site readiness from the respective purchaser.

 d)   However the Purchaser is responsible for the site preparation before the scheduled installation dates.

e)   The Successful Bidder is responsible for all unpacking, assemblies, wiring, installations, cabling between hardware units and connecting to power supplies. The Successful Bidder will test all hardware operations and accomplish all adjustments necessary for successful and continuous operation of the hardware at all the installation sites.

f)   The Successful Bidder selected for various equipments to be installed at single user premises shall co-ordinate with each other and prepare a list where delivery is planned by all the parties, so that installation and handing over can be carried out to the purchasers suitably / simultaneously by all the parties. The Successful Bidder must send the proposed delivery schedule to each purchaser and to ELCOT well in advance.

g)   **The Successful Bidder shall be responsible for commissioning of the tendered items supplied by preparing, interfacing / integrating with purchaser's equipment / accessories / software supplied by other bidders.**

h)   After successful Installation, commissioning and handing over of the ordered items to the purchasers the Successful Bidder must obtain signed installation certificate / Installation Report (IR) in the Installation Certificate Format prescribed by ELCOT along with Sample test results duly certified by the respective purchaser on the installed items. The IR should carry the full specification and OEM description as per tender / contract / purchase / work order. The system generated report should be submitted duly certified by the purchaser

i)   The Successful Bidder shall send status report in the format prescribed in such intervals as may be required by ELCOT from time to time till the execution of the entire order. Such status report should accompany with each claim for payment.

j)   The Successful Bidder shall undertake to supply spares for the maintenance of the supplied items for period of minimum FIVE years or extended period mutually accepted.

k)   The details of the service centre representatives responsible for attending the installation, warranty services at each purchaser site, name and designation of the contact person and centre in–charge, higher level in-charge who is responsible to oversee the service centres, person to whom complaints can be made in case the service provided by any centre is not satisfactory, phone, fax, mobile numbers & email address must be provided well in advance to each purchaser and to ELCOT. The above shall be complied by the Successful Bidders. Service Centre details shall be made available in the Websites of the OEM / Bidder and ELCOT.

l)   In the rare event of non-acceptance of delivery items by the user, the successful bidder shall immediately report ELCOT for suitable directions.

9.7	Minimum Stock Maintenance

a) Some occasions may arise that IP Camera & related items may be required to be delivered within a short period of 24 hours to the Purchasers. In such occasions, it may be very difficult to arrange shipment of the items from the bidder premises due to the routine formalities. To tackle such conditions, the successful Bidder should maintain an ex-stock of about 10 units of all items at their premises. Upon issuance of notice from ELCOT, the successful Bidder should supply, install and commission the ex-stock at the Purchaser premises.

b) No financial commitment will be given by ELCOT for maintaining the ex-stock items.

c) At any point of time, the successful Bidder should ensure the minimum ex-stock level. The successful bidder should also ensure that the short fall of 10 numbers should be replenished within 7 days from the date of delivery of the items from the minimum stock.

d) ELCOT reserves the right to inspect the Minimum stock level at any point of time and may impose a penalty. If the bidder fails to maintain the minimum stock level in three instances during the Rate contract period, ELCOT reserves the right to terminate the Contract with the successful bidder and the bidder will be declared as non performer which may not permit the bidder in participating tenders floated by ELCOT in future, for the next three years.

9.8	Warranty Clause

The warranty clause during the Standard warranty period of 3 years and CAMC period of 4th and 5th year would be applicable as follows.

a) All the Tendered items should be supplied to the Purchaser site free from breakages, malfunctions, breakdowns or manufacturing defects. If any of the items are found defective due to manufacturing defect or design fault or transit damage occurred at the time of supply or within one month from the date of installation, the items in full should be replaced.

b) All the materials and components of the Tendered items should be covered with a replacement warranty during the **Standard warranty and CAMC period** from the date of signing of installation report of the ordered items. The successful Bidder shall be liable to make good the loss by replacing the items or other accessories found defective during the warranty period.

c) The successful Bidder should give an undertaking to maintain the spares of all the hardware items of 2% of the total quantity ordered. Service Level Agreement (SLA) during maintenance support period (warranty or CAMC).

d) During the warranty and CAMC support period, the complaints received from the Purchasers should be attended as below.

1) If the complaint is received during the forenoon (up to 2 PM), the complaint should be attended on the same day.

2) If the complaint is received during the afternoon (after 2 PM), the complaint should be attended on the next day. If next day is the declared Holiday, the complaint

should be attended in the next working day under normal circumstances. In emergency situations or urgent requirement of the Purchaser, the complaint should be attended within 2 hours on the same day.

3)   All the complaints should be attended from the nearest service centres.

4)   All the complaints should be rectified within 2 working days excluding the date of complaint.

5) **Penalty for nonadherence of the above SLA (Service Level Agreement)**

If the complaints are not rectified within the stipulated period as mentioned in clause 9.8.d.4, an equivalent standby shall be supplied till rectification. A penalty of 0.25% on the value of the item will be charged per day till the equipment is put on working condition, in case the standby item is not supplied. 0.25% per day subject to Maximum of 30 days on value of the ITEM, thereafter ELCOT holds the options for cancellation of the order and re-procures the same from any other bidder at the cost of successful bidder and forfeits the EMD/SD / Performance Security of the bidder.

6) Weekly breakdowns maintenance report shall be sent to ELCOT with details of RECTIFICATION.

7)   After expiry of warranty, the purchaser/ELCOT has option to enter into Comprehensive Annual Maintenance Contract (CAMC) with successful bidder/Bidder for Post Warranty Maintenance of the items.

10.1   100% of the total cost of ordered items will be paid by ELCOT on behalf of the Purchaser, after receipt of funds from the Purchaser, on installation, commissioning and handing over of the ordered items to the Purchaser, after testing all the software and fulfilling the technical specifications on submission of an irrevocable Bank Guarantee from scheduled banks (except Yes bank) for 5% of the cost of the ordered value valid for 40 months during the warranty period. (OR)

95% of the total cost of ordered items will be paid by ELCOT on behalf of the Purchaser, after receipt of funds from the Purchaser, on installation, commissioning and handing over of the ordered items to the Purchaser, after testing all the software and fulfilling the technical specifications and the balance 5% will be released to the successful bidder after completion of 3 years warranty period.

10.2   1.   ELCOT advises the successful bidder to supply the items only if the site is ready. On receipt of the purchaser details, the concerned authority may be contacted for issue of Site Ready Certificate and then arrange for supplies only to the sites, which are ready.

2.   However if the site is not ready within 15 days of delivery, on submission of proof of delivery and SNR certificate from the Purchaser / if the site is not ready within 30 days of delivery and the purchaser is not issuing the SNR certificate, on submission of proof of delivery and after checking with purchaser, 75% of total cost will be paid, after receipt of funds from the Purchaser and balance 25% of the total cost will be paid on installation, commissioning and handing over of the systems on submission of an irrevocable Bank Guarantee from schedules banks (except Yes bank) for 5% of the cost of the ordered value valid for period of 40 months during the warranty period.

10.3   Bills will be honoured within 30 working days after submission of bills along with all supporting documents in complete shape and accepted by ELCOT. The Successful Bidder should file relevant invoices online using the web based

procurement software in operation at ELCOT.

10.4   The Successful Bidder hereby agrees to get the refund of incentive, excise duty and proportionate sales tax from authorities concerned and pass it on to Purchaser(s) if the Government or any other appropriate agency reduces the Excise duty or Sales tax or give incentive of any type retrospectively after supplying the Ordered items failing which action will be taken to recover the balance amount from the Successful Bidder under the Revenue Recovery Act or any other relevant act. If any purchaser (Government Department/ Institutions/ Unit/ PSU etc) request/claim for exemption from ED or Tax, then the successful bidder before accepting the order should produce the relevant documentation and accordingly the PO / Work order will be issued.

10.5   Penalty amount if any, will be adjusted in the payment due to the Successful Bidder.

10.6   All taxes and other levies imposed by Governments in India will be paid at actual as applicable.

10.7   If any purchaser department have obtained exemption from payment of any duty or taxes or any concessional rate of duty or taxes, then the bidder / successful bidder / contractor should extend the concession to the department / purchaser and bill the purchaser/ purchaser accordingly.

Appendix-1 Model Form of Contract

(To be executed on a Rs. 100/- Non-Judicial Stamp Paper bought in Tamil Nadu by the Successful Bidder for the supply and commissioning of IP Camera & related items)

(NO FIGURES IN NUMERALS OR WORDS SHALL BE FILLED UP IN THIS SAMPLE FORM AT THE TIME OF SUBMISSION OF TENDER)

This CONTRACT is entered into at Chennai on the .... day of .... (Year) between Electronics Corporation of Tamil Nadu Limited, a wholly owned Government of Tamil Nadu Undertaking, a Company registered under the Companies Act, 1956 and having its Registered office at 692, Anna Salai, Nandanam, Chennai- 600 035 herein after referred to as "ELCOT" (which term shall mean and include its Successors and permitted assigns) on behalf of Purchaser (s) to be communicated by ELCOT from time to time (herein after referred to as "Purchaser (s)") and .... a Company registered under the Companies Act, 1956 and having its Registered Office at .... hereinafter referred to as the "Successful Bidder" (which term shall mean and include its Successors and permitted assigns)

Whereas, ELCOT had floated a Rate Contract Tender vide Tender No. **ELCOT/Proc/OT/33258/IP Camera/RC/2019-20** for the supply, installation and maintenance of IP Camera & related items and the Successful Bidder has been selected as one of the successful bidders in the Tender as per the following terms and conditions:-

1. This document on having been signed by both the parties shall constitute a binding contract between the parties and shall remain in force for a period of 12 months. But in the event of any breach of agreement at any time on the part of the Successful Bidder, the contract shall be determinable by ELCOT without compensation to the Successful Bidder. The contract may also be put to an end at any time by ELCOT upon giving seven days notice to the Successful Bidder.

2. The Successful Bidder agrees that in the event of failure of 10% or more of the vital components of the equipments occurring during the first three year warranty period, ELCOT would have a right to blacklist them for any procurement through

ELCOT for a period of three years from that date.

3. The Successful Bidder agrees to supply, install, commission and maintain the Bill of Materials detailed in ELCOT Tender **ELCOT/Proc/OT/33258/IP Camera/RC /2019-20** after carrying out successfully all tests prescribed by the Purchaser(s) at an unit price plus applicable Taxes as indicated in Annexure to this Contract to the Purchaser(s) before the specified date. The price offered is firm and is not subject to enhancement on any ground.

4. **Delivery Schedule**:

    For Locations:-

    1 to 25 locations- Within 28 days from the date of purchase order.

    26 to 50 locations – Within 42 days from the date of Purchase Order.

    51 to 100 locations – Within 49 days from the date of Purchase Order.

    101 to 200 locations – Within 56 days from the date of Purchase Order.

    201 and above locations – Within 72 days from the date of Purchase Order.

    For Quantity:-

    1 to 50 Nos.- Within 28 days from the date of Purchase Order.

    51 to 100 Nos. - Within 42 days from the date of Purchase Order.

    101 to 500 Nos. - Within 49 days from the date of Purchase Order.

    501 to 1000 Nos. - Within 56 days from the date of Purchase Order.

    1001 and above Nos. - Within 72 days from the date of Purchase Order.

    The Delivery Schedule shall be taken from Location/Quantity whichever is higher.

    In general the delivery schedule is taken from the next date of purchase order and on specific instructions from ELCOT the delivery schedule is taken from the date of LOA or any written instruction through email or Fax etc.

    NOTE: Based on any urgent requirement of Government Departments, Delivery Schedule may be reduced by ELCOT after the discussions and concurrence from the Successful Bidders.

5. The price of the ordered items as per the Tender includes excise duty, Surcharges, Freight, Octroi, insurance, commissioning, and such other levies that

may be applicable. Any concessional tax or Duty claimed by purchaser shall be considered based on documentation.

6. The goods or materials to be supplied under this contract are to be of the quality and of the sort mentioned in the ELCOT Tender document.

7. The goods or materials are to be delivered on F.O.R destination indicated by ELCOT/Purchaser(s) without any extra cost in such quantities or numbers contained in the purchase order to be issued by ELCOT from time to time. Any amendments to the orders in terms of quantities or delivery period etc., may be incorporated on a mutually agreed basis. The delivery of goods to the destination is the responsibility of the Successful Bidder only. The goods supplied under the contract shall be covered for comprehensive insurance by the Successful Bidder till delivery and acceptance by the authority concerned.

8. ELCOT is entitled to change the list of purchaser address from time to time based on the requirement of the Purchaser(s). In this situation, the successful bidder shall not claim any additional charges except for any major amount involved which will be resolved mutually.

9. The goods sold under this agreement shall not be taken back. However any replacement necessitated, as part of the warranty commitments shall be carried out by the Successful Bidder and faulty parts/materials that arise out of such replacements shall be taken back by the Successful Bidder within a reasonable time.

10. If the supply, installation, commissioning and maintenance of the Ordered items are not effected as specified in the purchase order, Purchaser(s) /ELCOT shall have the full authority to cancel the order and to take any such action that will be deemed fit in the circumstances.

11. In case of failure by the Successful Bidder to deliver goods or materials demanded from them, within the period specified for delivery or in case of goods or materials delivered by them, not being of the stipulated quality and specifications or in the case of goods or materials being delivered without a correct invoice in duplicate, ELCOT or anyone duly authorized by ELCOT shall have the power to reject any such goods or materials and to purchase from others instead of any goods or

materials so rejected or not delivered. Unless the successful Bidder shall themselves forthwith supply that shall be sufficient and satisfactory any excess of cost so incurred by the Purchaser(s) over the contract price together with all charges and expenses attending the purchase shall be recoverable by ELCOT / Purchaser(s) from the Successful Bidder.

12. Liquidated damage will be levied at the rate of 0.25% per day on the un-delivered portion of the material, if the delivery has not been completed in full within the stipulated period. The delivery period will effect from the next date of receipt of Purchaser Order. If the Successful Bidder fails to supply even after the lapse of one month after the stipulated date of delivery, then the orders/contracts are liable for cancellation and the EMD/ Security Deposit will be forfeited in addition to ELCOT reserving the right to blacklist the successful bidders for a period of three years from participating in ELCOT's tenders. This alone will not relieve the Bidder and the difference in cost of the items purchased through other technically qualified Bidders or any other alternative sources will be recovered from the successful Bidder.

13. The Successful Bidder agrees that in the event of non-fulfillment or non-observance of any of the conditions stipulated in the tender Terms & Conditions and work order, the Successful Bidder shall pay as penalty an amount equivalent to 5% of total value of Contract or an amount equal to the actual loss incurred by the Purchaser(s) whichever is higher subject to the condition that the loss amount would not exceed the value of the goods supplied / to be supplied.

14. Notwithstanding anything contained in the penalty clause, ELCOT reserves the right to blacklist the bidder from taking part in any of the procurement operations of ELCOT for a minimum period of three years from the date of blacklisting for failure to carry out supply in time or according to the quality and quantity prescribed or any such similar reasons. This penalty shall be over and above all other penalties.

15. **WARRANTY**:-

    i) The materials or goods are to be given Standard warranty of 3 years with CAMC period of 2 years, after installation and commissioning against any manufacturing

defect and bad workmanship solely by the Successful Bidder irrespective of whether the same have been manufactured by them or not. The warranty period of 3 years will commence from the date of installation and commissioning of the ordered items after carrying out successfully the tests prescribed by Purchaser/(s) and installation in good working condition. A report of services attended on monthly basis must be submitted to ELCOT for each order during the warranty period.

ii) The Successful Bidder shall undertake to supply the spares for the Standard warranty and CAMC period of the offered items for the period of five years. If any manufacturing or other technical defects is found within 5 years from the date of installation, commissioning and handing over of the ordered items to Purchaser (s), they will have to be rectified or replaced free of cost by the Successful Bidder in good working condition.

(iii) If the complaints are not rectified within the stipulated period as mentioned in the tender conditions, an equivalent standby shall be supplied till rectification. A penalty of 0.25% on the value of the item will be charged per day till the equipment is put on working condition, in case the standby item is not supplied.

(iv) The Successful Bidder agrees to provide comprehensive maintenance of the ordered items, which shall include preventive maintenance and corrective maintenance at the location specified by the Purchaser(s). The maintenance shall include replacement of all parts. The Ordered items, which are down, shall be restored in good working condition within 48 hours. Otherwise, the Successful Bidder shall be liable for a penalty of 10% per week of breakdown period on the costs of only those machineries, which are non- functional. The Purchaser(s) reserves the right to terminate the maintenance contract in the event of unsatisfactory maintenance and claim damages for non-fulfillment of contract.

16. **PAYMENT TERMS:**

a) 100% of the total cost of ordered items will be paid by ELCOT on behalf of the Purchaser, after receipt of funds from the Purchaser, on installation, commissioning and handing over of the ordered items to the Purchaser, after testing all the software and fulfilling the technical specifications on submission of

an irrevocable Bank Guarantee from scheduled banks (except Yes bank) for 5% of the cost of the ordered value valid for 40 months during the warranty period. (OR)

b) 95% of the total cost of ordered items will be paid by ELCOT on behalf of the Purchaser, after receipt of funds from the Purchaser, on installation, commissioning and handing over of the ordered items to the Purchaser, after testing all the software and fulfilling the technical specifications and the balance 5% will be released to the successful bidder after completion of 3 years warranty period.

c) However if the site is not ready within 15 days of delivery, on submission of proof of delivery and SNR certificate from the Purchaser / if the site is not ready within 30 days of delivery and the purchaser is not issuing the SNR certificate, on submission of proof of delivery and after checking with purchaser, 75% of total cost will be paid, after receipt of funds from the Purchaser and balance 25% of the total cost will be paid on installation, commissioning and handing over of the systems on submission of an irrevocable Bank Guarantee from schedules banks (except Yes bank) for 5% of the cost of the ordered value valid for period of 40 months during the warranty period.

d) Bills will be honoured within 30 working days after submission of bills along with all supporting documents in complete shape. The Successful Bidder shall file relevant invoices online using the web based procurement software in operation at ELCOT.

e) The Successful Bidder hereby agrees to get the refund of incentive, excise duty and proportionate sales tax from authorities concerned and pass it on to Purchaser(s) if the Government or any other appropriate agency reduces the Excise duty or Sales tax or give incentive of any type retrospectively after supplying the Ordered items failing which action will be taken to recover the balance amount from the Successful Bidder under the Revenue Recovery Act or any other relevant act.

f) Penalty amount if any, will be adjusted in the payment due to the Successful Bidder.

g) All taxes and other levies imposed by Governments in India will be paid at actual as applicable.

17. The contract or any part share of interest in it is not be transferred or assigned by the Successful Bidder directly or indirectly to any person or persons whomsoever without the prior written consent of the Purchaser(s).

18. Neither the Purchaser(s)/ELCOT nor the Successful Bidder shall be liable to the other for any delay or failure in the performance of their respective obligations due to causes or contingencies beyond their reasonable control such as

i) Natural phenomena including but not limited to earthquakes, floods and epidemics.

ii) Acts of any Government authority domestic or foreign including but not limited to war declared or undeclared, priorities and quarantine restrictions.

iii) Accidents or disruptions including, but not limited to fire, explosions, break down of essential machinery or equipment, power and water shortages.

19. The following documents shall be deemed to form and be read and construed as part of this Contract.

a) Technical Specifications

b) Tender Terms and Conditions

c) Amendments issued by ELCOT for the Tender document

d) Corrigendum / Clarifications issued by ELCOT for the Tender Document

e) Detailed final offer of the Successful Bidder

f) Purchase Order(s) issued by ELCOT from time to time

g) Correspondence made by ELCOT to the Successful Bidder from time to time during the period of the contract.

h) Wherever the offer conditions furnished by the Successful Bidder are at variance with conditions of this contract or conditions stipulated in the purchase order, the latter shall prevail over the offer conditions furnished by the Successful Bidder.

20. (a) Unless otherwise provided in the agreement, any notice, request, consent or other communication given or required to be given hereunder shall be given by

mailing the same by registered mail, postage prepaid, return receipt requested in the case of the Successful Bidder to the Purchaser(s) at their respective addresses and set forth above or with other addresses and to the attention of such other person or persons as may hereafter be designated by like notice hereunder and any such notice sent by post shall be deemed to have been served on the date when in the ordinary course of post, it would have been delivered at the address to which it was sent.

(b) Any notice to the Successful Bidder shall be deemed to be sufficiently served, if given or left in writing at their usual or last known place of abode or business.

21. Termination of Contract:

21.1 Termination for default:-

(a) ELCOT may without prejudice to any other remedy for breach of contract, by written notice of default with a notice period of seven days, sent to the Successful Bidder, terminate the contract in whole or part,

   (i) if the Successful Bidder fails to deliver any or all of the goods within the time period(s) specified in the Contract, or fails to supply the items as per the Delivery Schedule or within any extension thereof granted by ELCOT; or

   (ii) if the Successful Bidder fails to perform any of the obligation(s) under the contract; or

   (iii) if the Successful Bidder, in the judgement of ELCOT, has engaged in fraudulent and corrupt practices in competing for or in executing the Contract.

(b) In the event of ELCOT terminating the Contract in whole or in part, ELCOT may procure, upon terms and in such manner as it deems appropriate, the goods and services similar to those and delivered and the Successful Bidder shall be liable to ELCOT for any additional costs for such similar goods. However, the Successful Bidder shall continue the performance of the contract to the extent not terminated.

21.2 Termination for Insolvency:-

ELCOT may at any time terminate the Contract by giving written notice with a notice period of 7 days to the Successful Bidder, if the Successful Bidder becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Successful Bidder, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to ELCOT.

21.3 Termination for Convenience:-

ELCOT may by written notice, with a notice period of seven days sent to the Successful Bidder, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for ELCOT's convenience, the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective. On termination, the successful Bidder is not entitled to any compensation whatsoever.

22. ELCOT reserves the right to cancel the order(s) and to terminate the contract in the event of short performance or non performance of the Successful Bidder.

23. **Dispute and Jurisdiction:**

"Any dispute or difference, whatsoever, arising between the parties to this contract arising out of or in relation to the terms of this contract shall be resolved by the parties mutually by acting in good faith towards fulfilling the contract and for this purpose the parties mutually agree to furnish or exchange all relevant documents, information and any other material within their special knowledge and thereby conclude their discussions between them / their representatives or officers within a period of time as may be mutually agreed to say the time of commencement of the move to resolve the dispute.

In case, there is a failure in resolving the dispute within the time agreed and in the manner stated supra, the parties shall be at liberty to approach only the Courts in Chennai City which has jurisdiction in the matter."

In Witness whereof the parties hereto have signed on the day, month and year above written in the presence

For and or behalf of
Successful Bidder

For and on behalf of
Electronics Corporation of
Tamil Nadu Limited

Witnesses:
1.
2.

Witnesses:
1.
2.

Appendix-2 Bank Guarantee Format

(To be executed in Rs.100/- Stamp Paper)

To
The Managing Director
Electronics Corporation of Tamil Nadu Limited
MHU Complex II Floor
692 Anna Salai, Nandanam
Chennai - 600035

Bank Guarantee No:
Amount of Guarantee:
Guarantee covers from:
Last date for lodgement of claim:

This Deed of Guarantee executed by ……………….. (Banker's Name & Address) having our Head Office at …………………..(address) (hereinafter referred to as "the Bank") in favour of The Managing Director, Electronics Corporation of Tamil Nadu Limited, MHU Complex II Floor, 692 Anna Salai, Nandanam, Chennai - 600035 (hereinafter referred to as "the Beneficiary") for an amount not exceeding Rs._____/- (Rupees _____ Only) as per the request of M/s. _____ having its office address at _____ (hereinafter referred to as "Successful bidder") against Letter of Acceptance reference _____ dated __/__/____ of M/s. Electronics Corporation of Tamil Nadu Limited. This guarantee is issued subject to the condition that the liability of the Bank under this guarantee is limited to a maximum Rs._____/- (Rupees _____ Only) and the guarantee shall remain in full force up to ___ months from the date of Bank Guarantee and cannot be invoked otherwise by a written demand or claim by the beneficiary under the Guarantee served on the Bank before ___ months from the date of Bank Guarantee.

AND WHEREAS it has been stipulated by you in the said ORDER that the Successful bidder shall furnish you with a Bank Guarantee by a Scheduled/Nationalised Bank for the sum specified therein as security for compliance with the Contractor's performance obligations for a period in accordance with the contract.

AND WHEREAS we have agreed to give the Successful bidder a Guarantee.

THEREFORE, we (Bankers address)……………., hereby affirm that we are Guarantors and responsible to you on behalf of the Successful bidder up to a total of

Rs._____/- (Rupees _____ Only) and we undertake to pay you, upon your first written demand declaring the Successful bidder to be in default under the contract and without any demur, cavil or argument, any sum or sums within the limit of Rs._____/- (Rupees _____ Only) as aforesaid, without your needing to prove or show grounds or reasons for your demand or the sum specified therein. We will pay the guaranteed amount notwithstanding any objection or dispute whatsoever raised by the Successful bidder.

This Guarantee is valid until _____ months from the date of Bank Guarantee.

Notwithstanding, anything contained herein

Our liability under this guarantee shall not be exceed Rs._____/- (Rupees _____ Only). This bank guarantee shall be valid up to __ months from the date of Bank Guarantee and we are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before _____

In witness whereof the Bank, through its authorised Officer, has set its, hand and stamp on this …………………………………. at _____.

Witness: (Signature)

(Name in Block Letters)

Appendix-3 Sample Submission Form

Date of submission: __/___/____

Bidder Name   :

Bidder Address   :

Tender No.   :

Sample Submitted On   :

Tender Product Sl No.   :

Sl. No.	Item No. in the Tender	Item Description	Make	Model	Sl. No of the Item

BIDDER   **ELCOT**

Bidding Company Name:	Name & Designation of the Person Receives the Sample:
Signature of the Representative:	Store I/C Name & Designation:
Name:	Signature:
Designation:	
Contact No.	

Appendix-4 Manufacturer's Letter of Guarantee (Manufacturer Authorisation Form)

To
The Managing Director,
Electronics Corporation of Tamil Nadu Ltd.,
MHU Complex, II Floor,
692, Anna Salai,
Nandanam, Chennai – 600 035.

Sir,

We hereby authorise M/s ....to undertake to submit a Bid, and subsequently negotiate and sign the contract with the purchaser against Tender No: ELCOT/Proc/OT/33258/IP Camera/RC/2019-20 for the (type the Description of goods) developed by us. We hereby extend our full warranty for the goods offered for supply by the above firm against this tender.

We also undertake to provide timely supplies as per terms of tender and as agreed mutually and also to provide a trouble free and continuous support either directly or through our authorised partners under our supervision during the Warranty and CAMC period and Extended Warranty Period. We will provide the necessary spares support in the event of replacement of any spare parts is necessitated while providing Warranty and CAMC period and Extended Warranty Period and if the spares are not available then we will arrange for complete replacement of the item(s) with an equivalent / higher model.

For this tender we authorise M/s. _____ (Complete address and full contact details of the partner) to be our sales and service partner. In the event of discontinuation of supply and service by our partner viz., M/s. _____ or any problem arises during provision of supply and services, the entire responsibility to provide trouble free and continuous supply and services to the end user / purchaser rests with us and we undertake to provide supply and services directly or through our alternative sales / service partners.

In case of violation of any of the conditions above, I/We .... understand that I/ We are liable to be blacklisted by ELCOT for a period of three years.

(Signature for and on behalf of Principal)

Signature with date:
Name of the signatory:
Designation:

Note: (1) Competent authority of the Manufacturer / Principal should issue the letter of authority.

(2) If the Bidder submits the Manufacturer's Letter of Guarantee other than the specimen provided above will not be considered as valid and hence will lead to rejection of the Bid itself.

Appendix-5 Letter of Guarantee for Maintaining Minimum Stock

To
The Managing Director,
Electronics Corporation of Tamil Nadu Ltd.,
MHU Complex, II Floor,
692, Anna Salai, Nandanam, Chennai – 600 035.
Sir,

We, M/s .... hereby undertake and ensure that as per the Tender clause **9.7 Minimum Stock Maintenance and 9.8 C Warranty Clause** for the tender reference **ELCOT/Proc/OT/33258/IP Camera/RC/2019-20** floated by ELCOT for the supply of IP Camera & related items, will maintain the minimum stock for the tendered items and strictly follow the instructions of ELCOT for the immediate delivery of the IP Camera & related items as per the conditions stipulated in the Tender.

1. Minimum ex-stock of about 10 units of all items will be kept in the premises as confirmed by ELCOT. Upon issuance of notice from ELCOT, we will deliver and install the items within 24 hours for the Chennai Purchasers and 48 hours for the Purchasers outside Chennai.

2. No financial commitment will be claimed by us for maintaining the ex-stock items.

3. We ensure that at any point of time the minimum ex-stock level will be maintained. The short fall of 10 numbers will be replenished within 7 days from the date of delivery of the items from the minimum stock.

4. ELCOT can inspect the Minimum stock level at any point of time and may impose a penalty of 20% of the cost of the equipments which are shortage of the specified qty.

If we fail to maintain the minimum stock level in three instances during the Rate Contract period, ELCOT reserves the right to terminate the RC contract with us and we may be declared as non performer which may not permit us in participating tenders floated by ELCOT in future, for the next three years.

In case of violation of any of the conditions above, I/We .... understand that I/ We are liable to be blacklisted by ELCOT for a period of three years.

(Signature for and on behalf of Principal)

Appendix-6 Format for Clarifications / Amendments

FORMAT FOR
QUERIES ON TENDER CONDITIONS AND TECHNICAL SPECIFICATIONS

FOR COMMERCIAL CONDITIONS:

Sl. No.	Page No.	Clause No.	Title of the Clause	Description of the Clauses as per Tender Document	Amendment requested	Reasons for requesting the amendment

FOR TECHNICAL SPECIFICATIONS:

Sl. No.	Page No.	Product Code	Item Name	Existing Specification as per Tender Document	Technical Parameter as per Tender Document	Amendment requested	Reasons for requesting the amendment

Annexure-1 Technical Bid

A1.1   Check-list for Enclosures

Documents to be submitted	Fill (YES or NO)
Filled Tender Technical Bid Form and Price Bid Form	
Payment of Portal Charges and EMD amount	
Two Part Bid submission	
Letter of Authorisation for signing the Tender document	
Eligibility Criteria	
1. Certificate of Incorporation of Bidder	
2. Certificate of Incorporation of OEM	
3. Manufacturing License for IP Camera	
4. Manufacturer should submit undertaking to do servicing directly or through their authorised service partners under their supervision. (MAF)	
5. Copy of Purchase Order and performance / Order completion certificate for three years existence as on 31.12.2016.	
6. Copies of the Audited Balance sheets and (2018-2019 and two preceding financial years)	
7. Positive Net Worth Certificate for a value of Rs. 10 Crore obtained from the Company's chartered accountant	
8. Copy of Purchase Order and performance / Order completion certificate for executing single order for a value of Rs. 25 Lakhs.	
9. **Service Centre Facilities** **OEM/ Bidder's Own Service Centre:** Copies of the land-line telephone bills / valid rental agreement date before 30.05.2019/any legal proof **OEM's /Bidder's Franchisee Service centre:** Copies of the valid agreement entered between the Franchisee and the OEM / Bidder	
10. Copies of ISO 9001:2008 or latest and ISO 14001:2008 or latest	
11. Proof of availability of office in Chennai	
12. The URL of the Website Name and Copy of Home Page Print out	
13. Proof for IP Camera OEM criterion	
14. Language of the supporting documents only in English	

A1.2   Profile of the Bidder

1.	Name of the Company	Principal Bidder
2.	Year of Incorporation	
3.	Nature of the Company	

	(Registered Company or Partnership or Proprietary)	
4.	**Registered office (In India) or the office covering the Business transaction in India**	
	Telegraphic Address	
	Office Telephone Number	
	Fax Number	
	Contact Person	
	Name	
	Personal Telephone Number	
	Email Address	
5.	**Local presence at Tamil Nadu**	
	Telegraphic Address	
	Office Telephone Number	
	Fax Number	
	Contact Person	
	Name	
	Personal Telephone Number	
	Email Address	
6.	**Registration Details**	
	Permanent Account Number	
	GST Registration Number	
7.	Banker's Name, Address and Account Number	

A1.3	Details in support of Eligibility Criteria

Sl. No.	Description	Please give details along with proof
1.	Certificate of Incorporation of Bidder and OEM	
2.	Manufacturing license for IP Camera	
3.	Details of the Purchase order executed for supply of IP Camera before 31.03.2020, for three years existence.	
3.	Annual Turn over (INR)	
	2018-19	
	2017-18	

	2016-17	
4.	Manufacturer should submit undertaking to do servicing directly or through their authorised service partners under their supervision. (MAF)	
5.	Copy of Single Purchase order for a value of Rs.25 lakhs, for supply of IP Camera executed in any Government Departments/ Organizations/ Public Sector Undertakings in Tamil Nadu in the last 3 years.	
6.	Copy of Purchase Order and performance / Order completion certificate for three years existence	
7.	Proof of availability of service centres in Tamil Nadu	
8.	Proof of availability of office in Chennai	
9.	ISO 9001:2008 or latest certified manufacturing facility and ISO 14001:2008 or latest certified for handling hazardous products.	
10.	URL Home page of OEM	
11.	Positive Net Worth Certificate for a value of Rs. 10 Crore obtained from the Company's chartered accountant	
12.	Proof for IP Camera OEM criterion	
13.	Language of the supporting documents only in English	

A1.4 Details in support of Evaluation Criteria

1. List of Service Centres

S. No	District	Name of the Bidder, who established the centre and address of the centre	Details about the facilities and no. of service persons	Documents attached for supporting the claim

A1.5	Hardware Compliance

The Bidders should submit the details of the make and model of each item offered against the tender requirement and samples for the same need to be submitted for evaluation.

S.No	Item Code	ITEM DESCRIPTION	Item Quoted details along with Make & Model
1	33258-001	2 MP Fixed Lens Dome Camera	
2	33258-002	2 MP Fixed Lens Bullet Camera	
3	33258-003	3 MP Fixed Lens Dome Camera	
4	33258-004	3 MP Fixed Lens Bullet Camera	
5	33258-005	5 MP Fixed Lens Bullet Camera	
6	33258-006	2 MP VF Dome Camera	
7	33258-007	2 MP VF Bullet Camera	
8	33258-008	2 MP MVF Dome Camera	
9	33258-009	2 MP MVF Bullet Camera	
10	33258-010	2 MP MVF Bullet Camera with Analytics	
11	33258-011	2 MP Box Camera	
12	33258-012	5 MP Box Camera	
13	33258-013	5 MP MVF Dome Camera	
14	33258-014	5 MP MVF Bullet Camera	
15	33258-015	8 MP MVF Dome Camera	
16	33258-016	8 MP MVF Bullet Camera	
17	33258-017	12MP MVF Bullet Camera	
18	33258-018	2 MP 20x PTZ Camera	
19	33258-019	2 MP 25x PTZ Camera	
20	33258-020	2 MP 32x Auto Tracking PTZ Camera	
21	33258-021	5 MP 30x PTZ Camera	
22	33258-022	Network Video Recorder 4 Channels 1 HDD	
23	33258-023	Network Video Recorder 8 Channels 1 HDD	
24	33258-024	Network Video Recorder 16 Channels 4 HDD	
25	33258-025	Network Video Recorder 8 Channels 2 HDD	
26	33258-026	Network Video Recorder 16 Channels 2 HDD	
27	33258-027	Network Video Recorder 32 Channels 8 HDD	

28	33258-028	Network Video Recorder 64 Channels 8 HDD	
29	33258-029	Network Video Recorder 64 Channels 16 HDD	
30	33258-030	Network Video Recorder 128 Channels 16 HDD	
31	33258-031	Network Video Recorder 16 Bay HDD and Scalable up to 128 Bays	
32	33258-032	Network Attached Storage 4 Bays - Tower Type	
33	33258-033	Network Attached Storage Bays-16 with dual controller	
34	33258-034	Video Management Software	
35	33258-035	Video Analytics Software with ANPR features	
36	33258-036	Video Analytics Software with Face Recognition features	
37	33258-037	2U Rack (Wall Mounting) Depth (450MM) with 4 power Sockets and cable Manager	
38	33258-038	6U Rack (Wall Mounting) Depth (450MM) with 4 power Sockets and cable Manager	
39	33258-039	9U Outdoor Rack (Wall Mounting) Depth (450MM) with 3 power Sockets	
40	33258-040	9U Rack (Wall Mounting) Depth (550MM) with 4 power Sockets and cable Manager	
41	33258-041	24U Rack (Floor Standing) Depth (1000MM) with 6 power Sockets and cable Manager	
42	33258-042	2 Port with 2 port SFP Uplink L2 Managed Industrial POE Switch, 60W POE Budget	
43	33258-043	4 Port with 2 uplink port L2 Unmanaged POE switch	
44	33258-044	4 Port with 2 port SFP Uplink L2 Managed Industrial POE Switch, 120W POE Budget	
45	33258-045	8 Port with 2 uplink port L2 Unmanaged POE switch	
46	33258-046	8 Port with 2 port SFP Uplink L2 Managed POE Switch, 120W POE Budget	
47	33258-047	16 Port with 2 port SFP Uplink L2 Managed POE Switch, 180W POE Budget	
48	33258-048	24 Port with 2 port SFP Uplink L2 Managed POE Switch, 250W POE Budget	
49	33258-049	24 Port SFP L3 Managed Switch with 10G Uplink	
50	33258-050	Transceiver Single mode SFP (1G) – 20 KM support	
51	33258-051	Transceiver Single mode SFP+(10G) – 20 KM support	

52	33258-052	Single Mode Gigabit Media Converter- 20KM Support	
53	33258-053	CAT6 UTP Cable	
54	33258-054	CAT6 SFTP Cable	
55	33258-055	CAT6 Outdoor Armoured SFTP Cable	
56	33258-056	Cat 6 - 24 Port unloaded Patch Panel	
57	33258-057	Cat 6 - 24 Port fully loaded Patch Panel	
58	33258-058	CAT6 UTP – 1M Patch Cord	
59	33258-059	CAT6 STP – 1M Patch Cord	
60	33258-060	6 Core Fiber Cable – SM - 9/125 micron (Outdoor, Armored)	
61	33258-061	12 Core Fiber Cable – SM - 9/125 micron (Outdoor, Armored)	
62	33258-062	24 Core Fiber Cable – SM - 9/125 micron (Outdoor, Armored)	
63	33258-063	Fiber Patch Panel 6 Port Rack Mount Unloaded LIU	
64	33258-064	Fiber Patch Panel 12 Port Rack Mount Unloaded LIU	
65	33258-065	Fiber Patch Panel 24 Port Rack Mount Unloaded LIU	
66	33258-066	Fiber Patch Panel 6 Port Rack Mount Fully Loaded LIU	
67	33258-067	Fiber Patch Panel 12 Port Rack Mount Fully Loaded LIU	
68	33258-068	Fiber Patch Panel 24 Port Rack Mount Fully Loaded LIU	
69	33258-069	Fiber Adapter SC SM	
70	33258-070	Fiber Adapter LC SM	
71	33258-071	Fiber Pig Tail SC SM	
72	33258-072	Fiber Pig Tail LC SM	
73	33258-073	Fiber Patch Cord SC-SC SM	
74	33258-074	Fiber Patch Cord LC-LC SM	
75	33258-075	Fiber Patch Cord SC-LC SM	
76	33258-076	Tower Workstation (i7 Processor)	
77	33258-077	Tower Server (Xeon Processor)	
78	33258-078	Rack Server (1U)	
79	33258-079	18.5 - Inch HD Monitor	

80	33258-080	23-Inch Monitor	
81	33258-081	32-Inch 16/7 Full HD Monitor	
82	33258-082	43-Inch 24/7 Professional Industrial LED Display	
83	33258-083	55-Inch 24/7 Professional Industrial LED Display	
84	33258-084	49" 3.5mm joint bezel LCD Display for Video wall	
85	33258-085	55" 1.8mm joint bezel LCD Display for Video wall	
86	33258-086	Video wall Hardware 16 x 16 Matrix controller	
87	33258-087	Video Wall Software	
88	33258-088	HDMI Splitter 1 in and 2 Out	
89	33258-089	HDMI Splitter 1 in and 4 Out	
90	33258-090	Indoor Microphone	
91	33258-091	Outdoor Microphone	
92	33258-092	10 Feet Pole	
93	33258-093	15 Feet Pole	
94	33258-094	1 KVA Online UPS with 30 Mins Backup	
95	33258-095	1 KVA Online UPS with 60 Mins Backup	
96	33258-096	1 KVA Online UPS with 120 Mins Backup	
	Add on items		
97	33258-ADD- 001	RJ45 Connector – UTP	
98	33258-ADD- 002	RJ45 Connector – STP	
99	33258-ADD- 003	CAT6 UTP – 2M Patch Cable	
100	33258-ADD- 004	CAT6 STP – 2M Patch Cable	
101	33258-ADD- 005	CAT6 UTP – 3M Patch Cable	
102	33258-ADD- 006	CAT6 STP – 3M Patch Cable	
103	33258-ADD- 007	Cat 6 UTP key stone I/O	
104	33258-ADD- 008	Cat 6 STP key stone I/O	
105	33258-ADD- 009	Back Box for single faceplate	

106	33258-ADD- 010	Fiber Adaptor SC SM Simplex	
107	33258-ADD- 011	Fiber Adaptor LC SM Simplex	
108	33258-ADD- 012	Indoor POE extender	
109	33258-ADD- 013	Outdoor POE extender	
110	33258-ADD- 014	Industrial Grade power supply for POE Switch 60W POE Budget	
111	33258-ADD- 015	Industrial Grade power supply for POE Switch 120W POE Budget	
112	33258-ADD- 016	16 Bay single controller JBOD (Part Number to be given)	
113	33258-ADD- 017	16 Bay dual controller JBOD (Part Number to be given)	
114	33258-ADD- 018	USB Joy Stick for PTZ Camera	
115	33258-ADD- 019	Network Joy Stick for PTZ Camera	
116	33258-ADD- 020	Intel Xeon Bronze 3104 (6 core) Processor	
117	33258-ADD- 021	8 GB ECC DDR4 RAM	
118	33258-ADD- 022	16 GB ECC DDR4 RAM	
119	33258-ADD- 023	32 GB ECC DDR4 RAM	
120	33258-ADD- 024	32 GB SD/MicroSD Memory Card (class 10)	
121	33258-ADD- 025	64 GB SD/MicroSD Memory Card (class 10)	
122	33258-ADD- 026	128 GB SD/MicroSD Memory Card (class 10)	
123	33258-ADD- 027	256 GB SD/MicroSD Memory Card (class 10)	
124	33258-ADD- 028	512 GB SD/MicroSD Memory Card (class 10)	
125	33258-ADD- 029	2 TB Surveillance SATA HDD LFF	
126	33258-ADD- 030	4 TB Surveillance SATA HDD LFF	
127	33258-ADD- 031	6 TB Surveillance SATA HDD LFF	
128	33258-	8 TB Surveillance SATA HDD LFF	

	ADD- 032		
129	33258-ADD- 033	10 TB Surveillance SATA HDD LFF	
130	33258-ADD- 034	12 TB Surveillance SATA HDD LFF	
131	33258-ADD- 035	1 TB SATA 6G 7.2K LFF	
132	33258-ADD- 036	2 TB SATA 6G 7.2K LFF	
133	33258-ADD- 037	4 TB SATA 6G 7.2K LFF	
134	33258-ADD- 038	6 TB SATA 6G 7.2K LFF	
135	33258-ADD- 039	8 TB SATA 6G 7.2K LFF	
136	33258-ADD- 040	10 TB SATA 6G 7.2K LFF	
137	33258-ADD- 041	1 TB SATA 6G 7.2K SFF	
138	33258-ADD- 042	2 TB SATA 6G 7.2K SFF	
139	33258-ADD- 043	4 TB SATA 6G 7.2K SFF	
140	33258-ADD- 044	6 TB SATA 6G 7.2K SFF	
141	33258-ADD- 045	8 TB SATA 6G 7.2K SFF	
142	33258-ADD- 046	10 TB SATA 6G 7.2K SFF	
143	33258-ADD- 047	2 TB Enterprise NLSAS HDD LFF	
144	33258-ADD- 048	4 TB Enterprise NLSAS HDD LFF	
145	33258-ADD- 049	6 TB Enterprise NLSAS HDD LFF	
146	33258-ADD- 050	8 TB Enterprise NLSAS HDD LFF	
147	33258-ADD- 051	10 TB Enterprise NLSAS HDD LFF	
148	33258-ADD- 052	12 TB Enterprise NLSAS HDD LFF	
149	33258-ADD- 053	NVIDIA Quadro P620 (2 GB)	
150	33258-ADD- 054	NVIDIA Quadro P1000 (4 GB)	

151	33258-ADD- 055	NVIDIA Quadro P4000 (8 GB)	
152	33258-ADD- 056	NVIDIA Quadro RTX4000 (8 GB)	
153	33258-ADD- 057	AMD Radeon Pro WX 2100 (2 GB)	
154	33258-ADD- 058	AMD Radeon Pro WX 4100 (4 GB)	
155	33258-ADD- 059	AMD Radeon Pro WX 7100 (8 GB)	
156	33258-ADD- 060	Outdoor weather proof Junction Box, IP65 Rated	
157	33258-ADD- 061	Outdoor Aluminium weather proof Junction Box, IP67 Rated and Vandal Proof	
158	33258-ADD- 062	60 M IR Illuminator	
159	33258-ADD- 063	100 M IR Illuminator	
160	33258-ADD- 064	Burglar Alarm/ siren	
161	33258-ADD- 065	Mounting bracket for Video Wall Display	
162	33258-ADD- 066	Industrial Panic Button	
163	33258-ADD- 067	Camera compatible Mike	
164	33258-ADD- 068	Camera compatible Speaker	
165	33258-ADD- 069	IP Horn speaker	
166	33258-ADD- 070	Wall mounting bracket for Monitor	
167	33258-ADD- 071	Front push pull wall mounting bracket for Video wall Display	
168	33258-ADD- 072	CCTV Metal Sign Board	
169	33258-ADD- 073	Route Marker	
170	33258-ADD- 074	Lighting Arrester	
171	33258-ADD- 075	3G SATA/SAS active mux adaptor for Dual controller NAS Storage	
172	33258-ADD- 076	6G SAS Cable	
173	33258-	Power cable (3 core 1 sq mm each)	

	ADD- 077		
174	33258-ADD- 078	HDMI Cable	
175	33258-ADD- 079	VGA Cable	
176	33258-ADD- 080	1 inch HDPE Pipe with Laying Charges	
177	33258-ADD- 081	1 inch PVC Conduit with Laying Charges	
178	33258-ADD- 082	Fan for Rack	
179	33258-ADD- 083	20 Amp Two Pole Miniature Circuit Breaker	
180	33258-ADD- 084	Earthing Kit (Earthling GI PIPE - 4ft, Earthing charcoal powder, Galvanic Strip , 15 Mtr Earthing Wire and other accessories) for the all Racks	
181	33258-ADD- 085	Power Strip 5A Sockets - 6 Nos. with Surge Protector	

A1.6   BIDDER COMPLIANCES

Code	Item Description	Make	Approx Qty
33258-001	2 MP Fixed Lens Dome Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better			
2	Lens	3.6 mm Fixed Lens or better			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 20 Mtr or better			
5	WDR	D-WDR or better			
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/10000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Dual Streaming			
10	Video Compression	H.264, H. 265 or better			
11	Intelligent Video	Atleast Motion Detection			
12	Resolutions and frame rates	Min: 25/30 fps at 1920x1080 (1080p)			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/configuration	Support IE Browser/VMS/NVR and			

		IOS/Android/windows			
15	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces, Internal MIC should be available.			
16	Interface	Minimum 1 RJ45 Port			
17	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
18	POE	Internal 802.3af POE Support			
19	Environment Protection	IP 67 Proof, IK10 Vandal Proof Housing with vandal proof Bubble			
20	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
21	Operating Temperature	-10 to 60°C, or better			
22	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
23	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			

24	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-002	**2 MP Fixed Lens Bullet Camera**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better			
2	Lens	3.6 mm Fixed Lens or better			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 30 Mtr or better			
5	WDR	D-WDR or better			
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/10000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Dual Streaming			
10	Video Compression	H.264, H. 265 or better			
11	Intelligent Video	Atleast Motion Detection			
12	Resolutions and frame rates	Min: 25/30 fps at 1920x1080 (1080p)			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS,			

		NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Environment Protection	IP 67 Proof			
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
19	Operating Temperature	-10°C to 60°C, or better			
20	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
21	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
22	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-003	3 MP Fixed Lens Dome Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 3 MP or better			
2	Lens	3.6 mm Fixed Lens or better			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 30 Mtr or better			
5	WDR	D-WDR or better			
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/10000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Triple Streaming			
10	Video Compression	H.264, H. 265 or better			
11	Intelligent Video	Atleast Motion Detection			
12	Resolutions and frame rates	Min: 15 fps at 2048x1536, 25/30 fps at 1920x1080, 25/30 fps at 1280x720 Min : 25/30 fps at 720x480, 25/30 fps at 352x288			

13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Environment Protection	IP 67 Proof, IK10 Vandal Proof Housing with vandal proof Bubble			
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
19	Operating Temperature	-10 to 60°C, or better			
20	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
21	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
22	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Tender Ref: ELCOT/Proc/OT/33258/IP Camera/RC/2019-20

Code	Item Description	Make	Approx Qty
33258-004	3 MP Fixed Lens Bullet Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 3 MP or better			
2	Lens	3.6 mm Fixed Lens or better			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 30 Mtr or better			
5	WDR	D-WDR or better			
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/10000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Triple Streaming			
10	Video Compression	H.264, H. 265 or better			
11	Intelligent Video	Atleast Motion Detection			
12	Resolutions and frame rates	Min: 15 fps at 2048x1536, 25/30 fps at 1920x1080, 25/30 fps at 1280x720 Min : 25/30 fps at 720x480, 25/30 fps at 352x288			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP,			

		TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Environment Protection	IP 67 Proof			
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
19	Operating Temperature	-10 to 60°C, or better			
20	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
21	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
22	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-005	**5 MP Fixed Lens Bullet Camera**	**Any reputed make**	**1 No**

S. No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 5 MP or better			

2	Lens	Should support 3.6 mm and 4 mm and 6mm Fixed Lens (Selection of size is based on customer preference)			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 30 Mtr or better			
5	WDR	D-WDR or better			
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/10000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Triple Streaming			
10	Video Compression	H.264, H. 265 or better			
11	Intelligent Video	Atleast Motion Detection			
12	Resolutions and frame rates	Min: 2592x1944(1~18fps), 2560x1920(1~20fps), 2952x1520(1~25fps), 2560x1440(1~25fps), 1080P(1~25/30fps)			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows			

15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Environment Protection	IP 67 Proof			
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
19	Operating Temperature	-10 to 60°C, or better			
20	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
21	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
22	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-006	**2 MP VF Dome Camera**	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better			
2	Lens	Min 2.8~12 mm Varifocal Lens or better, DC-iris or P-iris			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to			

		switch day/night mode)			
4	IR Range	Min 40 Mtr or better			
5	WDR	100 db or better			
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25 - 1/10000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Video Compression	H.264, H.265 or better			
10	Streaming Support	Dual Streaming			
11	Resolutions and frame rates	Min: 25/30 fps at 1920x1080 (1080p)			
12	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
13	Intelligent Video	Motion Detection, Camera Tampering detection			
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.			
18	Privacy Mask	Support Minimum 2 areas / Zones			
19	Image setting	Image Defog, ROI, BLC, Flicker Control,			

		White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness			
20	Environment Protection	IP 67 Proof, IK10 Vandal Proof Housing with vandal proof Bubble			
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
22	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces			
23	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
24	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
25	Operating Temperature	-10 to 60 °C, or better			
26	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
27	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			

| 28 | General Certification | CE, FCC, UL/cUL, ROHS, BIS | | | |

Code	Item Description	Make	Approx Qty
33258-007	2 MP VF Bullet Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better			
2	Lens	Min 2.8~12 mm Varifocal Lens or better, DC-iris or P-iris			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 40 Mtr or better			
5	WDR	100 db or better			
6	Min. Illumination	Color mode: F1.2 @ 0.05 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/10000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Dual Streaming			
10	Video Compression	H.264, H. 265 or better			
11	Intelligent Video	Motion Detection, Camera Tampering detection			
12	Resolutions and frame rates	Min: 25/30 fps at 1920x1080 (1080p)			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP,			

		DHCP			
14	Viewing/config uration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.			
18	Privacy Mask	Support Minimum 2 areas / Zones			
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness			
20	Environment Protection	IP 67 Proof			
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
22	Sun shield	Should have Sunshield			
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces			
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
26	Operating Temperature	-10 to 60°C, or better			

27	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
28	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
29	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-008	2 MP MVF Dome Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better			
2	Lens	Min 2.8 ~ 12 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto Focus			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 30 Mtr or better			
5	WDR	120 db or better			
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/100000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			

9	Streaming Support	Triple Streaming			
10	Video Compression	H.264, H. 265 or better			
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing			
12	Resolutions and frame rates	Min : 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/config uration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.			
18	Privacy Mask	Support Minimum 2 areas / Zones			
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness			
20	Environment Protection	IP 67 Proof, IK10 Vandal Proof Housing with vandal proof Bubble			
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
22	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces,			

		Internal MIC should be available.			
23	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
24	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
25	HLC	Required			
26	Operating Temperature	-10 to 60°C, or better			
27	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
28	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
29	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-009	2 MP MVF Bullet Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better			

2	Lens	Min 2.8~12 mm Motorized Varifocal Lens or better, DC-iris or P-iris,Auto Focus			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 50 Mtr or better			
5	WDR	120 db or better			
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/100000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Triple Streaming			
10	Video Compression	H.264, H.265 or better			
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing			
12	Resolutions and frame rates	Min : 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			

16	POE	Internal 802.3af POE Support			
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.			
18	Privacy Mask	Support Minimum 2 areas / Zones			
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness			
20	Environment Protection	IP 67 Proof			
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
22	Sun shield	Should have Sunshield			
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces			
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
26	HLC	Required			
27	Operating Temperature	-10 to 60 °C, or better			
28	Surge Protection	Minimum 2KVA surge protection should be included with each camera			

S.No.	Parameter	Specification			
29	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
30	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-010	2 MP MVF Bullet Camera with Analytics	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better			
2	Lens	Min 2.8~12 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto Focus			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 50 Mtr or better			
5	WDR	120 db or better			
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/100000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date,			

		Location, etc			
9	Streaming Support	Triple Streaming			
10	Video Compression	MJPEG,H.264, H.265 or better			
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing			
12	Behaviour Analytics	Object/People counting, Missing object Detection, Loitering, Face detection, Perimeter Intrusion Detection, Crowd detection			
13	Resolutions and frame rates	Min: 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288			
14	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
15	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
16	Interface	Minimum 1 RJ45 Port			
17	POE	Internal 802.3af POE Support			
18	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.			
19	Privacy Mask	Support Minimum 2 areas / Zones			

20	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness			
21	Environment Protection	IP 67 Proof			
22	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
23	Sun shield	Should have Sunshield			
24	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces			
25	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
26	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
27	HLC	Required			
28	Operating Temperature	-10 to 60 °C, or better			
29	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
30	Mounting	No Cable and connectors should be visible outside. Camera should be			

		mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
31	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-011	2MP Box Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/3" Progressive Scan CMOS 2MP or better			
2	Lens	C/CS Mount Detachable type lens with 5~50 mm, DC-iris,			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Internal or external IR 50 Mtr or better			
5	WDR	120 db or better			
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/100000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Triple Streaming			

10	Video Compression	H.264, H. 265 or better			
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing			
12	Resolutions and frame rates	Min: 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720, Min : 25/30 fps at 480x240			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/configu ration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.			
18	Privacy Mask	Support Minimum 2 areas / Zones			
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness			
20	Environment Protection	IP 67 Proof			
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
22	Sun shield	Should have Sunshield			
23	Audio Function	Camera Should support 2 way audio			

		and should have audio in/out interfaces			
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
26	HLC	Required			
27	Operating Temperature	-10 to 60°C, or better			
28	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
29	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
30	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-012	5 MP Box Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/3" Progressive Scan CMOS 5 MP or better			
2	Lens	C/CS Mount Detachable type lens with 5~50 mm, DC-iris			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Internal or external IR 50 Mtr or better			
5	WDR	120 db or better			
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/100000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Triple Streaming			
10	Video Compression	H.264, H. 265 or better			
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing			
12	Resolutions and frame rates	Min : 30 fps at 2592x1944, 25/30 fps at 2592X1520, 25/30 fps at 2560x1440, 50/60 fps at 1920x1080, 50/60 fps at 1280x960, 50/60 fps at 1280x720			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP,			

		DHCP			
14	Viewing/con figuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.			
18	Privacy Mask	Support Minimum 2 areas / Zones			
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness			
20	Environment Protection	IP 67 Proof			
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
22	Sun shield	Should have Sunshield			
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces			
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
26	HLC	Required			
27	Operating Temperature	-10 to 60°C, or better			
28	Surge Protection	Minimum 2KVA surge protection should be included with each camera			

29	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
30	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-013	5 MP MVF Dome Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 5 MP or better			
2	Lens	Min 2.8~12 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto Focus			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 30 Mtr or better			
5	WDR	120 db or better			
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/100000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Triple Streaming			
10	Video Compression	H.264, H.265 or better			
11	Intelligent	Motion Detection, Camera			

	Video	Tampering detection, Line crossing			
12	Resolutions and frame rates	Min: 30 fps at 2592x1944, 25/30 fps at 2592X1520, 25/30 fps at 2560x1440, 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 480x240			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/con figuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.			
18	Privacy Mask	Support Minimum 2 areas / Zones			
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark			
20	Environment Protection	IP 67 Proof, IK10 Vandal Proof Housing with vandal proof Bubble			
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
22	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces, Internal MIC should be available.			

23	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
24	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
25	HLC	Required			
26	Behaviour Analytics	Object/People counting, Missing object Detection, Face detection, Perimeter Intrusion Detection			
27	Operating Temperature	-10 to 60 °C, or better			
28	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
29	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
30	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-014	**5 MP MVF Bullet Camera**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 5 MP or better			
2	Lens	Min 2.8~12 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto			

		Focus			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 50 Mtr or better			
5	WDR	120 db or better			
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/100000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Triple Streaming			
10	Video Compression	H.264, H. 265 or better			
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing			
12	Resolutions and frame rates	Min: 30 fps at 2592x1944, 25/30 fps at 2592X1520, 25/30 fps at 2560x1440, 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720, Min : 25/30 fps at 480x240			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.			

18	Privacy Mask	Support Minimum 2 areas / Zones			
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR,Saturation, Brightness, Contrast, Sharpness, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark			
20	Environment Protection	IP 67 Proof			
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
22	Sun shield	Should have Sunshield			
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces			
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
26	HLC	Required			
27	Behaviour analytics	Object/People counting, Missing object Detection, Face detection, Perimeter Intrusion Detection			
28	Operating Temperature	-10 to 60 °C, or better			
29	Surge Protection	Minimum 2KVA surge protection should be included with each camera			

30	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
31	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code		Make	Approx Qty
33258-015	8 MP MVF Dome Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 8 MP or better			
2	Lens	Min 2.8~12 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto Focus			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 30 Mtr or better			
5	WDR	120 db or better			
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/100000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Triple Streaming			
10	Video Compression	H.264, H. 265 or better			
11	Intelligent	Motion Detection, Camera			

	Video	Tampering detection, Line crossing			
12	Resolutions and frame rates	Min: 25/30 fps at 3840 × 2160, 25/30 fps at 2592x1944, 25/30 fps at 2592X1520, 25/30 fps at 2560x1440, 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 480x240			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.			
18	Privacy Mask	Support Minimum 2 areas / Zones			
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark			
20	Environment Protection	IP 67 Proof, IK10 Vandal Proof Housing with vandal proof Bubble			
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
22	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces			

23	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
24	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
25	Operating Temperature	-10 to 60 °C, or better			
26	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
27	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
28	HLC	Required			
29	Behaviour Analytics	Object/People counting, Missing object Detection, Face detection, Perimeter Intrusion Detection			
30	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

ode	Item Description	Make	Approx Qty
33258-016	8 MP MVF Bullet Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 8 MP or better			
2	Lens	Min 2.8~12 mm Motorized Varifocal Lens or better,			

		DC-iris or P-iris, Auto Focus			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 50 Mtr or better			
5	WDR	120 db or better			
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/100000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Triple Streaming			
10	Video Compression	MJPEG,H.264, H.265 or better			
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing			
12	Resolutions and frame rates	Min: 30 fps at 3840 × 2160, 25/30 fps at 2560x1440, 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720, Min, 25/30 fps at 480x240			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/con figuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.			
18	Privacy	Support Minimum 2 areas /			

	Mask	Zones			
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark			
20	Environment Protection	IP 67 Proof			
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
22	Sun shield	Should have Sunshield			
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces			
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
26	Operating Temperature	-10 to 60 °C, or better			
27	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
28	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			

29	HLC	Required			
30	Behaviour Analytics	Object/People counting, Missing object Detection, Face detection, Perimeter Intrusion Detection			
31	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-017	**12MP MVF Bullet Camera**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/1.7" Progressive Scan CMOS 12 MP or better			
2	Lens	Min 4.1~11 mm Motorized Varifocal Lens or better, DC-iris or P-iris, Auto Focus			
3	Day and Night	Automatic/manual/scheduled (Senses the level of ambient light to determine when to switch day/night mode)			
4	IR Range	Min 40 Mtr or better			
5	WDR	120 db or better			
6	Min. Illumination	Color mode: F1.2 @ 0.02 lux and B&W mode: F1.2@ 0.01 lux or better			
7	Electronic Shutter	1/25-1/100000s or better			
8	On Screen Display	Should support OSD of Camera Name, Time, Date, Location, etc			
9	Streaming Support	Triple Streaming			
10	Video Compression	MJPEG,H.264, H.265 or better			
11	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing			

12	Resolutions and frame rates	Min: 15 fps at 4000x3000 25/30fps 3840 × 2160, 25/30 fps at 2560x1440, 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720, Min, 25/30 fps at 480x240			
13	Protocol Support	IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
14	Viewing/con figuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
15	Interface	Minimum 1 RJ45 Port			
16	POE	Internal 802.3af POE Support			
17	Corridor Mode	Support 9:16 aspect ratio for narrow corridors, hallways or aisles.			
18	Privacy Mask	Support Minimum 2 areas / Zones			
19	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Saturation, Brightness, Contrast, Sharpness , Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark			
20	Environment Protection	IP 67 Proof			
21	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
22	Sun shield	Should have Sunshield			
23	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces			
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			

S.No.	Parameter	Specification			
25	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free SD card management			
26	Operating Temperature	-10 to 60°C, or better			
27	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
28	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
29	HLC	Required			
30	Behaviour Analytics	Object/People counting, Missing object Detection, Face detection, Perimeter Intrusion Detection			
31	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-018	2 MP 20x PTZ Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better			
2	Zoom	20x Optical Zoom and 12x Digital Zoom or better			
3	Lens	Focal Length Min 5.2 to 104 mm or higher, Auto Focus, Remote optical zoom,			

		Support Manual focus and IRIS Control			
4	Pan/Tilt Range	Pan: 0° ~ 360° endless; Tilt: 0° ~ 90°, auto flip 180°			
5	Manual Control Speed	Pan: 0.1° ~200° /s; Tilt: 0.1° ~200° /s or better			
6	Preset Speed	Pan: 240° /s; Tilt: 240° /s or better			
7	Presets	Minimum 250 Preset Points			
8	Day and Night	Automatic/manual/scheduled			
9	IR Range	Min 120 Mtr or better			
10	WDR	120 db or better			
11	HLC	Required			
12	Min. Illumination	Color mode: F1.2 @ 0.002 lux and B&W mode: F1.2@ 0.001 lux or better			
13	Electronic Shutter	1/25-1/100000s or better, Auto/Manual Adjustment			
14	Video Compression	H.264, H. 265 or better			
15	Streaming Support	Individually configurable 3 video streams (H.264/H.265), Unicast/ Multicast			
16	Resolutions and frame rates	Min: 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288			
17	Protocol Support	Ipv4, Ipv6, HTTP, HTTPS, 802.1X, QoS, FTP, SMTP, UpnP, SNMP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
18	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing			
19	Privacy Mask	Support Minimum 24 areas / Zones, Support Dynamic Privacy Mask			
20	OSD	Should support OSD of			

		Camera Name, Time, Date, Location, etc			
21	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark			
22	Viewing/con figuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
23	Interface	10/100BaseT or better RJ45 Port			
24	Power	Internal PoE /PoE+(802.3 af/at) and AC 24V/ DC12V/ 100- 230VAC			
25	Environment Protection	IP 67 Proof			
26	Housing	Full Metal housing with Mounting bracket included for Wall/Pole Mount			
27	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
28	Operating Temperature	-10 to 60°C, or better			
29	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
30	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
31	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-019	2 MP 25x PTZ Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better			
2	Zoom	25x Optical Zoom and 12x Digital Zoom or better			
3	Lens	Focal Length Min 4.8mm-120mm or higher, Auto Focus, Remote optical zoom, Support Manual focus and IRIS Control			
4	Pan/Tilt Range	Pan: 0° ~ 360° endless; Tilt: 0° ~ 90°, auto flip 180°			
5	Manual Control Speed	Pan: 0.1° ~ 200° /s; Tilt: 0.1° ~200° /s or better			
6	Preset Speed	Pan: 240° /s; Tilt: 240° /s or better			
7	Presets	Minimum 250 Preset Points			
8	IR Range	Min 150 Mtr or better			
9	WDR	Real/True WDR 120 db or better			
10	HLC	Required			
11	Min. Illumination	Color mode: F1.2 @ 0.002 lux and B&W mode: F1.2@ 0.001 lux or better			
12	Electronic Shutter	1/25-1/100000s or better, Auto/Manual Adjustment			
13	Video Compression	H.264, H. 265 or better			
14	Streaming Support	Individually configurable 3 video streams (H.264/H.265), Unicast/ Multicast			
15	Resolutions and frame rates	Min: 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288			
16	Protocol Support	Ipv4, IPv6, HTTP, HTTPS, 802.1X, QoS, FTP, SMTP, UPnP, SNMP, DNS,			

		DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
17	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing			
18	Privacy Mask	Support Minimum 24 areas / Zones, Support Dynamic Privacy Mask			
19	OSD	Should support OSD of Camera Name, Time, Date, Location, etc			
20	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark			
21	Viewing/configu ration	Support IE Browser/VMS/NVR and IOS/Android/windows			
22	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces			
23	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free disk management			
24	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
25	Interface	10/100BaseT or better RJ45 Port			
26	Power	Internal PoE /PoE+(802.3 af/at) and AC 24V/ DC12V/ 100- 230VAC			
27	Environment Protection	IP 67 Proof			
28	Housing	Full Metal housing with			

		Mounting bracket included for Wall/Pole Mount			
29	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
30	Operating Temperature	-10 to 60°C, or better			
31	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
32	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
33	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-020	2 MP 32x Auto Tracking PTZ Camera	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 2 MP or better			
2	Zoom	32x Optical Zoom and 12x Digital Zoom or better			
3	Lens	Focal Length Min 4.7 to 150 mm or higher, Auto Focus, Remote optical zoom, Support Manual focus and IRIS Control			
4	Pan/Tilt Range	Pan: 0° ~ 360° endless; Tilt: 0° ~ 90°, auto flip 180°			
5	Manual Control Speed	Pan: 0.1° ~200° /s; Tilt: 0.1° ~200° /s or better			
6	Preset Speed	Pan: 240° /s; Tilt: 240° /s or better			

7	Presets	Minimum 250 Preset Points			
8	IR Range	Min 180 Mtr or better			
9	WDR	Real/True WDR 120 db or better			
10	HLC	Required			
11	Min. Illumination	Color mode: F1.2 @ 0.002 lux and B&W mode: F1.2@ 0.001 lux or better			
12	Electronic Shutter	1/25-1/100000s or better, Auto/Manual Adjustment			
13	Video Compression	MJPEG,H.264, H.265 or better			
14	Streaming Support	Individually configurable 3 video streams (H.264/H.265), Unicast/ Multicast			
15	Resolutions and frame rates	Min: 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288			
16	Protocol Support	Ipv4, IPv6, HTTP, HTTPS, 802.1X, QoS, FTP, SMTP, UpnP, SNMP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
17	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing			
18	Behaviour Analytics	Missing object Detection, Face detection, Perimeter Intrusion Detection			
19	Auto Tracking	Support Auto Tracking, activate the alarm with continuous tracking of an object			
20	image stabilization	should support electronic image stabilization			
21	Privacy Mask	Support Minimum 24 areas / Zones, Support Dynamic Privacy Mask			
22	OSD	Should support OSD of Camera Name, Time, Date,			

		Location, etc			
23	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark			
24	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
25	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces			
26	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free disk management			
27	Edge Storage Auto Backup	Camera should record automatically when NVR not reachable and support automatic Synchronization of backup recording form SD Card to NVR when connection resume			
28	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
29	Interface	10/100BaseT or better RJ45 Port			
30	Power	Internal PoE /PoE+(802.3 af/at) and AC 24V/ DC12V/ 100- 230VAC			
31	Environment Protection	IP 67 Proof			
32	Housing	Full Metal housing with Mounting bracket included for Wall/Pole Mount			
33	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S			

S.No.	Parameters	Specification			
		compliant			
34	Time and Date	When camera reboots or powered ON after long time, the time and date of camera should remain same as per last configured without any update or synchronization required using NVR or internet			
35	Operating Temperature	-10 to 60°C, or better			
36	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
37	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
38	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-021	5 MP 30x PTZ Camera	Any reputed make	1 No

S.No.	Parameters	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Image sensor	1/2.8" Progressive Scan CMOS 5 MP or better			
2	Zoom	30x Optical Zoom and 12x Digital Zoom or better			
3	Lens	Focal Length Min 4.7 to 141 mm or higher, Auto Focus, Remote optical zoom, Support Manual focus and IRIS Control			
4	Pan/Tilt Range	Pan: 200° /s; Tilt: 200° /s or better			
5	Manual	Pan: 0.1° ~200° /s; Tilt: 0.1°			

	Control Speed	~200° /s or better			
6	Preset Speed	Pan: 200° /s; Tilt: 200° /s or better			
7	Presets	Minimum 250 Preset Points			
8	IR Range	Min 200 Mtr or better			
9	WDR	Real/True WDR 120 db or better			
10	HLC	Required			
11	Min. Illumination	Color mode: F1.2 @ 0.002 lux and B&W mode: F1.2@ 0.001 lux or better			
12	Electronic Shutter	1/25-1/100000s or better, Auto/Manual Adjustment			
13	Video Compression	MJPEG,H.264, H.265 or better			
14	Streaming Support	Individually configurable 3 video streams (H.264/H.265), Unicast/ Multicast			
15	Resolutions and frame rates	Min: 18 fps at 2592x1944, 25 fps at 2592X1520, 25 fps at 2560x1440, 25/30 fps 25/30 fps at 1920x1080, 25/30 fps at 1280x960, 25/30 fps at 1280x720 Min : 25/30 fps at 704x576, 25/30 fps at 352x288			
16	Protocol Support	Ipv4, Ipv6, HTTP, HTTPS, 802.1X, QoS, FTP, SMTP, UPnP, SNMP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP			
17	Intelligent Video	Motion Detection, Camera Tampering detection, Line crossing			
18	Behaviour Analytics	Missing object Detection, Face detection, Perimeter Intrusion Detection			
20	image stabilization	should support electronic image stabilization			
21	Privacy Mask	Support Minimum 24 areas / Zones, Support Dynamic Privacy Mask			
22	OSD	Should support OSD of Camera Name, Time, Date, Location, etc			

23	Image setting	Image Defog, ROI, BLC, Flicker Control, White Balance, 3DNR, Image enhancement, lens correction, Auto Exposure control, Automatic gain control, Hue, automatic noise reduction, Watermark			
24	Viewing/configuration	Support IE Browser/VMS/NVR and IOS/Android/windows			
25	Audio Function	Camera Should support 2 way audio and should have audio in/out interfaces			
26	Internal Edge Storage	Camera should support Micro SD/SDHC/SDXC memory card for edge recording and support up to 128GB Capacity, Schedule and Event Recording, Support pre-post alarm buffer recording, configurable free disk management			
27	Edge Storage Auto Backup	Camera should record automatically when NVR not reachable and support automatic Synchronization of backup recording form SD Card to NVR when connection resume			
28	Alarm interface	Camera Should support 1ch alarm in and 1ch alarm out			
29	Interface	10/100BaseT or better RJ45 Port			
30	Power	Internal PoE /PoE+(802.3 af/at) Or AC 24V/ DC12V/ 100- 230VAC			
31	Environment Protection	IP 67 Proof			
32	Housing	Full Metal housing with Mounting bracket included for Wall/Pole Mount			
33	Integration tools	SDK, CGI, API or other integration related files to be provided			
34	ONVIF	ONVIF version 2.4 or better			

	compliance	and ONVIF Profile S compliant			
35	Time and Date	When camera reboots or powered ON after long time, the time and date of camera should remain same as per last configured without any update or synchronization required using NVR or internet			
36	Operating Temperature	-10 to 60°C, or better			
37	Surge Protection	Minimum 2KVA surge protection should be included with each camera			
38	Mounting	No Cable and connectors should be visible outside. Camera should be mounted with suitable Mounting box (IP66 Rated) to hide the cables and connectors or Cable should directly terminate inside the Camera.			
39	General Certification	CE, FCC, UL/cUL, ROHS, BIS			

Code	Item Description	Make	Approx Qty
33258-022	**Network Video Recorder 4 Channels 1 HDD**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Channels	4 Channels or better			
2	Storage	1 SATA hard drive support up to 6 TB			
3	Bandwidth	Should support 40 mbps or better Bandwidth			
4	Resolution	Support 4 Channel each up to 5 MP Resolution			
5	Video compression	H.264, H. 265 or better			

6	Interface	1# RJ45 Port, 1# VGA and 1# HDMI, HDMI: 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 1 Channel Audio Output, 4 channel Alarm in and 1 channel Alarm out or better, 2 nos. of USB port			
7	OSD	Camera title, Time, Motion detection, Recording			
8	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~120 sec			
9	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion			
10	Monitoring and Playback	Should support 4 Channels streaming in Single screen, 4 Channels 1080P synchronous Playback			
11	Search Mode	Time /Date, Motion detection, record type, record time, Exact Search, etc			
12	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen			
13	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
14	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent			
15	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device			
16	Operating Temperature	0 to 55°C, or better			
17	Power	Internal/External Power			

	Supply	supply			
18	Certification	CE, FCC, UL, ROHS.			
19	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided			

Code	Item Description	Make	Approx Qty
33258-023	Network Video Recorder 8 Channels 1 HDD	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Channels	8 Channels or better			
2	Storage	1 SATA hard drives support up to 6 TB			
3	Bandwidth	Should support 80 mbps or better Bandwidth			
4	Resolution	Support 8 Channel each up to 5 MP Resolution			
5	Video compression	H.264, H. 265 or better			
6	Interface	1# RJ45 Port, 1# VGA and 1# HDMI, HDMI: 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 1 Channel Audio Output, 4 channel Alarm in and 1 channel Alarm out or better, 2 nos. of USB port			
7	OSD	Camera title, Time, Motion detection, Recording			
8	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~120 sec			
9	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion			

10	Monitoring and Playback	Should support 8 Channels streaming in Single screen, 4 Channels 1080P synchronous Playback			
11	Search Mode	Time /Date, Motion detection, record type, record time, Exact Search, etc			
12	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen			
13	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
14	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent			
15	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device			
16	Operating Temperature	0 to 55°C, or better			
17	Power Supply	Internal/External Power supply			
18	Certification	CE, FCC, UL, ROHS.			
19	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided			

Code	Item Description	Make	Approx Qty
33258-024	Network Video Recorder 16 Channels 4 HDD	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Channels	16 Channels or better			
2	Storage	4 SATA hard drives each support up to 8 TB			

3	Bandwidth	Should support 120 mbps or better Bandwidth			
4	Resolution	Should support 16 Channel each up to 8MP (3840*2160) Resolution			
5	Video compression	H.264, H. 265 or better			
6	Interface	1# RJ45 Port, 1# VGA and 1# HDMI, HDMI: 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 1 Channel Audio Output, 4 channel Alarm in and 1 channel Alarm out or better, 2 nos. of USB port			
7	OSD	Camera title, Time, Motion detection, Recording			
8	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~120 sec			
9	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion			
10	Monitoring and Playback	Should support 16 Channels streaming in Single screen, 8 Channels 1080P synchronous Playback			
11	Search Mode	Time /Date, Motion detection, record type, record time, Exact Search, etc			
12	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen			
13	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
14	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent			
15	Backup Mode	External Hard disk, Network storage, Memory			

		Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device			
16	Operating Temperature	0 to 55°C, or better			
17	Power Supply	Internal/External Power supply			
18	Certification	CE, FCC, UL, ROHS.			
19	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided			

Code	Item Description	Make	Approx Qty
33258-025	**Network Video Recorder 8 Channels 2 HDD**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Channels	8 Channels or better			
2	Storage	2 SATA hard drives each support up to 8 TB			
3	Bandwidth	Should support 80 mbps or better Bandwidth			
4	Resolution	Support 4K streaming, Support 8 Channel each up to (3840*2160) Resolution			
5	Video compression	H.264, H. 265 or better			
6	Interface	1# RJ45 Port, 1# VGA and 1# 4K HDMI, HDMI: 3840x 2160, 2560x1600, 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 Should have audio in and out interfaces, 1 channel Alarm out or better, 2 nos. of USB port			

7	Edge Storage Function	NVR should accept Automatic Synchronization of backup recording form SD Card to NVR			
8	Intelligent Video	NVR Should support Camera Tampering Detection, Line Crossing and Perimeter Intrusion Detection			
9	Audio	Support Audio Recording, Support 2 way audio			
10	OSD	Camera title, Time, Motion detection, Recording			
11	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~120 sec			
12	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion			
13	Monitoring and Playback	Should support 8 Channels streaming in Single screen, 4 Channels 1080 P synchronous Playback			
14	Search Mode	Time /Date, Motion detection, video analytics, record type, record time, Exact Search, etc			
15	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen			
16	Encryption	Should support Encrypted recording from IP Camera to NVR			
17	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
18	High availability	NVR Should support N+1 High availability for Hardware Backup			
19	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent			
20	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB).			

		Should be able to edit and crop the video file to backup device			
21	Operating Temperature	0 to 55 °C, or better			
22	Power Supply	Internal Power supply			
23	Certification	CE, FCC, UL, ROHS.			
24	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided			

Code	Item Description	Make	Approx Qty
33258-026	Network Video Recorder 16 Channels 2 HDD	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Channels	16 Channels or better			
2	Storage	2 SATA hard drives each support up to 8 TB			
3	Bandwidth	Should support 120 mbps or better Bandwidth			
4	Resolution	Support 4K streaming, Support 16 Channel each up to (3840*2160) Resolution			
5	Video compression	H.264, H. 265 or better			
6	Interface	1# RJ45 Port, 1# VGA and 1# 4K HDMI, HDMI: 3840x 2160, 2560x1600, 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 Should have audio in and out interfaces, 1 channel Alarm out or better, 2 nos. of USB port			
7	Edge Storage	NVR should accept Automatic Synchronization			

	Function	of backup recording form SD Card to NVR			
8	Intelligent Video	NVR Should support Camera Tampering Detection, Line Crossing and Perimeter Intrusion Detection			
9	Audio	Support Audio Recording, Support 2 way audio			
10	OSD	Camera title, Time, Motion detection, Recording			
11	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~120 sec			
12	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion			
13	Monitoring and Playback	Should support 16 Channels streaming in Single screen, 8 Channels 1080 P synchronous Playback			
14	Search Mode	Time /Date, Motion detection, video analytics, record type, record time, Exact Search, etc			
15	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen			
16	Encryption	Should support Encrypted recording from IP Camera to NVR			
17	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
18	High availability	NVR Should support N+1 High availability for Hardware Backup			
19	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent			
20	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup			

S.No.	Parameter	Specification			
		device			
21	Operating Temperature	0 to 55 °C, or better			
22	Power Supply	Internal Power supply			
23	Certification	CE, FCC, UL, ROHS.			
24	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided			

Code	Item Description	Make	Approx Qty
33258-027	**Network Video Recorder 32 Channels 8 HDD**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Channels	32 Channels or better			
2	Storage	8 SATA hard drives each support up to 8 TB			
3	Raid	Should support Raid 0,1,5,6,10			
4	Bandwidth	Should support 300 mbps or better Bandwidth			
5	Resolution	Support 4K streaming, Support 32 Channel each up to (3840*2160) Resolution			
6	Video compression	H.264, H. 265 or better			
7	Interface	2# of Gigabit port with load balancing and failover, 1# VGA and 2# 4K HDMI, HDMI: 3840x 2160, 2560x1600, 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 Should have audio in and out interfaces, 1# RS-485, 1# RS-232, 16 channel			

		Alarm in and 4 channel Alarm out or better, 3 nos. of USB port			
8	Edge Storage Function	NVR should accept Automatic Synchronization of backup recording form SD Card to NVR			
9	Intelligent Video	NVR Should support Camera Tampering Detection, Line Crossing and Perimeter Intrusion Detection			
10	Audio	Support Audio Recording, Support 2 way audio			
11	OSD	Camera title, Time, Motion detection, Recording			
12	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~600 sec			
13	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion			
14	Monitoring and Playback	Should support 32 Channels streaming in Single screen, 16 Channels 1080P synchronous Playback			
15	Search Mode	Time /Date, Motion detection, video analytics, record type, record time, Exact Search, etc			
16	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen			
17	Encryption	Should support Encrypted recording from IP Camera to NVR			
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
19	High availability	NVR Should support N+1 High availability for Hardware Backup			
20	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent			

21	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device			
22	Operating Temperature	0 to 55 °C, or better			
23	Power Supply	Internal Power supply			
24	Certification	CE, FCC, UL, ROHS.			
25	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided			

Code	Item Description	Make	Approx Qty
33258-028	Network Video Recorder 64 Channels 8 HDD	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Channels	64 Channels or better support			
2	Storage	8 SATA hard drives each support up to 8 TB			
3	Raid	Should support Raid 0,1,5,6,10			
4	Bandwidth	Should support 300 mbps or better Bandwidth			
5	Resolution	Support 4K streaming, Support 64 Channel each up to (3840*2160) Resolution			
6	Video compression	H.264, H.265 or better			
7	Interface	2# of Gigabit port with load balancing and failover,1# VGA and 2# 4K HDMI, HDMI: 3840x 2160, 2560x1600, 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72			

		Should have audio in and out interfaces, 1# RS-485, 1# RS-232, 16 channel Alarm in and 4 channel Alarm out or better, 3 nos. of USB port			
8	Edge Storage Function	NVR should accept Automatic Synchronization of backup recording form SD Card to NVR			
9	Intelligent Video	NVR Should support Camera Tampering Detection, Line Crossing, Object/People counting, Missing object Detection, Loitering, Face detection, Perimeter Intrusion Detection, Crowd detection			
10	Audio	Support Audio Recording, Support 2 way audio			
11	OSD	Camera title, Time, Motion detection, Recording			
12	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~600 sec			
13	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion			
14	Monitoring and Playback	Should support 64 Channels streaming in Single screen, 32 Channels 1080P synchronous Playback			
15	Search Mode	Time /Date, Motion detection, video analytics, record type, record time, Exact Search, etc			
16	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen			
17	Encryption	Should support Encrypted recording from IP Camera to NVR			
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S			

		compliant			
19	High availability	NVR Should support N+1 High availability for Hardware Backup			
20	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent			
21	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device			
22	Operating Temperature	0 to 55°C, or better			
23	Power Supply	Internal Power supply			
24	Certification	CE, FCC, UL, ROHS.			
25	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided			

Code	Item Description	Make	Approx Qty
33258-029	Network Video Recorder 64 Channels 16 HDD	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Channels	64 Channels or better support,			
2	Storage	16 SATA Hot swappable hard drives each support up to 8 TB			
3	Raid	Should support Raid 0,1,5,6,10			
4	Bandwidth	Should support 300 mbps or better Bandwidth			
5	Resolution	Support 4K streaming, Support 64 Channel each up to (3840*2160) Resolution			
6	Video compression	MJPEG,H.264, H.265 or better			

7	Interface	2# of Gigabit port with load balancing and failover, 1# VGA and 2# 4K HDMI, HDMI: 3840x 2160, 2560x1600, 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 Should have audio in and out interfaces, 1# RS-485, 1# RS-232, 16 channel Alarm in and 4 channel Alarm out or better, 3 nos. of USB port			
8	Edge Storage Function	NVR should accept Automatic Synchronization of backup recording form SD Card to NVR			
9	Intelligent Video	NVR Should support Camera Tampering Detection, Line Crossing, Object/People counting, Missing object Detection, Loitering, Face detection, Perimeter Intrusion Detection, Crowd detection			
10	Audio	Support Audio Recording, Support 2 way audio			
11	OSD	Camera title, Time, Motion detection, Recording			
12	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~600 sec			
13	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion			
14	Monitoring and Playback	Should support 64 Channels streaming in Single screen, 32 Channels 1080P synchronous Playback			
15	Search Mode	Time /Date, Motion detection, video analytics, record type, record time,			

		Exact Search, etc			
16	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen			
17	Encryption	Should support Encrypted recording from IP Camera to NVR			
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
19	High availability	NVR Should support N+1 High availability for Hardware Backup			
20	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device			
21	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent			
22	Operating Temperature	0 to 55°C, or better			
23	Power Supply	Internal Power supply			
24	Certification	CE, FCC, UL, ROHS.			
25	Mounting	NVR should be Rack mountable with suitable rack mounting bracket to be provided			

Code	Item Description	Make	Approx Qty
33258-030	**Network Video Recorder 128 Channels 16 HDD**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Channels	128 Channels or better support			
2	Storage	16 SATA Hot swappable hard drives each support up to 8 TB			

3	Raid	Should support Raid 0,1,5,6,10			
4	Bandwidth	Should support 300 mbps or better Bandwidth			
5	Resolution	Support 4K streaming, Support 128 Channel each up to (3840*2160) Resolution			
6	Video compression	MJPEG,H.264, H.265 or better			
7	Interface	2# of Gigabit port with load balancing and failover,1# VGA and 2# 4K HDMI, HDMI: 3840x 2160, 2560x1600, 1920×1080, 1280×1024, 1280×720 VGA: 1920×1080, 1280×1024, 1440x900, 1280×72 Should have audio in and out interfaces, 1# RS-485, 1# RS-232, 16 channel Alarm in and 4 channel Alarm out or better, 3 nos. of USB port			
8	Edge Storage Function	NVR should accept Automatic Synchronization of backup recording form SD Card to NVR			
9	Intelligent Video	NVR Should support Camera Tampering Detection, Line Crossing, Object/People counting, Missing object Detection, Loitering, Face detection, Perimeter Intrusion Detection, Crowd detection			
10	Audio	Support Audio Recording, Support 2 way audio			
11	OSD	Camera title, Time, Motion detection, Recording			
12	Record Interval	User customizable Interval, Pre-record: 1~60 sec, Post-record: 10~600 sec			

13	Record Mode	Manual, Schedule (Regular/ Continuous), Motion Detection, Line Crossing, Perimeter Intrusion			
14	Monitoring and Playback	Should support 64 Channels streaming in Single screen, 32 Channels 1080P synchronous Playback			
15	Search Mode	Time /Date, Motion detection, video analytics, record type, record time, Exact Search, etc			
16	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Full Screen			
17	Encryption	Should support Encrypted recording from IP Camera to NVR			
18	ONVIF compliance	ONVIF version 2.4 or better and ONVIF Profile S compliant			
19	High availability	NVR Should support N+1 High availability for Hardware Backup			
20	Backup Mode	External Hard disk, Network storage, Memory Stick (Not less than 64 GB). Should be able to edit and crop the video file to backup device			
21	Backup file format	Should be viewable in VLC and Windows Media Player or equivalent			
22	Operating Temperature	0 to 55°C, or better			
23	Power Supply	Internal Power supply			
24	Certification	CE, FCC, UL, ROHS.			
25	Mounting	NVR should be rack mountable with suitable rack mounting bracket to be provided			

Code	Item Description	Make	Approx Qty
33258-031	Network Video Recorder 16 Bay HDD and Scalable up to 128 Bays	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Processor	Intel® Xeon® E3 Quad-core or better			
2	System Memory	8GB Default Memory and min. Upgradable upto 16GB			
3	Storage	Should have 16 Hot swappable bays Support min 128 HDDs through iSCSI and multiple JBOD expansion enclosures 16# of 4TB Surveillance Hard disk must be loaded			
4	RAID	Support Multiple RAID levels of 0, 1, 1E, 3, 5, 6, 10 (0+1), 30, 50			
5	Raid Controller	Inbuilt Embedded Raid controller			
6	Supported OS	Windows Embedded Standard 7 Runtime, Windows Server 2008/2012 R2 Standard, Windows Storage Server 2012R2 Standard			
7	High availability	3# hot swappable redundant Power supply unit(N+1 design)			
8	Networking	4# 1000Mbps Ethernet Ports			
9	Interfaces	1# VGA and HDMI, 4x USB 3.0, 2x RS-232C (D-sub 9-pin)			
10	Form Factor	19" 3U Rack Mountable			
11	Drive Support	SATA (6Gb/s or 3Gb/s), NCQ, TCQ			
12	Power Supply	500W (Three redundant 250W N+1 design), 1288			

		BTU/hr			
13	Management	Graphical UI/SNMP via Ethernet, CLI/CLU via Ethernet or Graphics, OPAS Service via USB, SDK or API for Integration			
14	Event Notification	Email, SNMP, Buzzer, LEDs			
15	Accessories	USB DVD Drive – 1# USB Mouse – 1# USB Keyboard – 1#			
16	Certification	CE, FCC, UL, ROHS			

Code	Item Description	Make	Approx Qty
33258-032	**Network Attached Storage 4 Bays - Tower Type**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Processor	Intel Celeron 1.6 GHz Quad-Core Processor or better			
2	Memory	4GB DDR4, Expandable up to 8 GB			
3	Flash Memory	Min 512MB			
4	Drive Bays	4 hot swappable bays - LFF/SFF SATA HDD. Each drive should support minimum 14 TB capacity.			
5	Gigabit LAN Ports	Min 2 ports			
6	USB	Min 3 Ports			
7	Backup Management	Should support Remote server syncing with CIFS/SMB, FTP, Rsync, RTRR and backup versioning. Should support Encryption, compression, file filters and centralized management for backup			

		restorations sync jobs. Should support one touch copy from external drives connected to NAS automatically			
8	File Sharing	Should support file sharing through email links and policy settings for conflicting file and file type filter. Virtualization-Should support to run multiple OS on the NAS,VM creation, VM backup and restoration Should support Containers station to support directly view, edit and store files of various types anytime on your NAS, including office documents, images and text files on the NAS.			
9	RAID Management	Should support RAID 10+hot spare,10, 6+hot spare, 6,5+spare,5,1, JBOD, Single Disk, Global hot spare for data redundancy and Online RAID capacity expansion, Online RAID level migration. Storage Pool-The supply of NAS should support SSD caching , iSSCI target, iSCSI LUN Snapshot/backup,			
10	AD And LDAP Authentication	Thin provisioned volume, Block level iSCSI LUN (iSCSI/CIFS). Domain Controller-The Supply of NAS Should support Windows AD and LDAP server/client			

		authentication.			
11	E-SATA Port	Min 1 Port			
12	Form Factor	Tower			
13	Certification	CE, UL, FCC, ROHS			

Code	Item Description	Make	Approx Qty
33258-033	Network Attached Storage Bays-16 with dual controller	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Form Factor	Rack mountable			
2	Processor	Intel Xeon 6 Core @ 1.1 GHz Processor or better, per controller			
3	Memory	8 GB per controller, scalable up to 16GB			
4	Drive Bays	16 hot swappable bays - Each drive should support 12 TB or more capacity. Supports SAS, NLSAS and SATA Hard drives simultaneously.			
5	Operating System	Linux OS			
6	Storage Expansion	The storage should able to expand to 112 drives in single system			
7	Raid Management	System should support Hardware RAID levels 0,1,10,5,6,50,60, Hot Spare Support online Raid level migration/reconfiguration, online volume copy			
8	High availability	High availability design with dual hot swappable controller cards 3# hot swappable redundant Power supply			

		unit 2# redundant hot swappable Fans			
9	Virtualizatio n features	Should support VMware, Citrix, Hyper-V and Data Core Features			
10	Interface	2# 10G SFP+ & 4# 1G Base T per controller Support Port Trunking, load balancing, fail over, 802.3ad, DHCP server			
11	Protocols	Protocol support for TCP/IP, SMB/CIFS, NFS, SNMP v1/v2c/v3, FTP, HTTP, HTTPS, Telnet, SSH, AFP, WebDAV. Support OS for Windows, Linux and Mac.			
12	User accounts	Windows AD Authentication, Network Information Service, Batch creation of users/group, user quota management, share level and file level security with access control list setting. Up to 100K domain account support, up to 1K concurrent sessions support			
13	Data Protection	Battery Backup Unit Support for power shortage NVRAM Check and log errors, Hard Disk Power input Control Write-hole Table Protection for video footage and Read/write check			
14	Device Management	Web client support: IE 7 or above, Mozilla Firefox, safari, Google Chrome. Buzzer, LED, Mute Button, Power Button			

15	File system and backup	Apple Time Machine support Backup Server, Share Disk Clone, Remote Replication, Online Recovery, File Backup/Restore			
16	Application Mode	Surveillance Buffer Management support and benefit for more cameras supported, Less Frame Drop and Sequential Design Recording			
17	Data Protection Features	Faultless Rebuild to reduces Raid rebuilding time, online LUN clone to have multiple data copies			
18	Management Operation and software	Support multiple paths, zero downtime during the firmware update Automatic error log backup if USB plug in front panel for trouble shooting Supports SNMP/email notification			
19	Power Management	Power Saving Mode and Schedule Power Off 80 plus certified power supply Power requirement of AC 100V~240V in full range			
20	Certifications	CE, UL, FCC, ROHS			

Code	Item Description	Make	Approx Qty
33258-034	**Video Management Software**	**Any reputed make**	**1 No**

S.No.	Specifications	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
	Recordings			
1	Should record H265, H.264, MPEG4 or MJPEG in at minimum 5 fps to 30 FPS at minimum Full HD (1080p), 4K			

	resolution.			
2	Supports RTP over UDP, RTP over TCP and http streaming			
3	Should support multiple brand IP cameras and encoders.			
4	Should support dual streaming and recording at min 2 MP and Max 8 MP resolutions			
5	Option to do recordings on NAS, iSCSi, DAS, local or network drive. Defining different drive for each individual camera.			
6	Should have ability to record audio along with video in same recording file.			
7	Option to define multiple recording paths			
8	Pre-buffer and Post buffer recordings up to 10 minutes.			
9	Calculate storage size based on number of cameras, days and drives available in the system			
10	Option to record at min 15 FPS and max 30 FPS on Motion			
11	Export the desired portion of video in mp4, avi and asf formats in DVD/USB or any external device. Viewing of this recording must be playable on authorized player which shall be provided by software manufacturer or in generic media player on OS Windows, Linux/Unix or Apple Mac.			
12	Export of recording is possible in client software and remote PC with proper authentication.			
13	Option for Window-Pop up, Email and sound alarm on video loss during recording			
14	Storage and Bandwidth calculation: Recording size estimation for each hard disk attached to the server. Option to check disk size of individual camera.			
15	Image Enhancement on recorded videos. The image enhancement should be able enhance videos of fog, rain and low light conditions.			
16	The option of email and Video Pop up on Low disk space event should be available.			

	The system should alert user on low disk space event.			
17	Automatic archiving after set number of days and automatic recording deletion after disk full.			
18	Encryption (56 to 256 bit) of recordings while export for safe evidence			
19	Adaptive Streaming. Option to switch stream to lower to higher or vice-versa based on full screen			
	Live, Playback & PTZ			
1	Live View possible for minimum 64 cameras simultaneously on 1 screen or multiple monitors using software video wall			
2	Configurable Matrix views with size and number of cameras. Pre-defined views from full screen, 1x1 to 8x8			
3	View sequencing with user driven time interval			
4	Dual Streaming and Automatic Switching from Low to High Quality on Full screen mode.			
5	Option to change Live View directly from cameras or from VMS server using RTSP and HTTP options should be available			
6	It should support live view and Playback by minimum 10 clients- Both local and remote			
7	It should support event based playback.			
8	Ability to search based on Date/Time/Camera, Name, ID and Location for more than one camera simultaneously.			
	Customized camera views based on :			
1	User input number of cameras.			
2	User chosen shape and size			
	Digital Zoom			
1	Both complete live picture and Zoomed picture should be visible simultaneously while zooming.			
2	Should be available On Live and Playback Videos.			

3	Zoom should be available on snapshots too.			
	PTZ			
1	PTZ option should be operable through mouse and joystick			
2	PTZ joystick options should be available			
3	On screen PTZ control with Click and Zoom facility should be available			
4	PTZ presets and tours setting should be available			
5	Software should allow creation of multiple camera sequences. It should be possible to set the dwell time for the cameras within the sequence.			
6	Software should allow sequences control (pause/play, skip forwards, skip backwards).			
7	Live view and Playback should be available at the same time with Playback window on top of live view window.			
8	Instant Playbacks should be available as window pop up on click of an event from Event Screen.			
9	Image Enhancement Analytic should be available in Playback. Option to sharpen the video image through scrollbar should be available.			
10	Playback Navigation Tree View with Recording server, camera list, year/months list and the date wise play list should be available.			
11	Playback option for frame-by-frame should be available.			
12	Playback should have Video lock feature should be available.			
13	Ability to make bookmark of any portion of video and view list of all bookmarks should be available.			
14	Instant Playback and Quick Search of event based recordings should be available.			
15	Playlist with files listed for each date and time should be available. User can click on any file to play recording.			

16	E-map client should show icon blink and voice alert of the event. Should be able to take snapshots from Google Map if connected to internet. It should be possible to click on icon in a map to initiate PTZ camera preset, run PTZ pattern, view camera			
17	Two-way audio communication between camera and VMS and option to send/broadcast Audio to multiple cameras should be available.			
18	Encryption: Ability to encrypt video while exporting and options of 56 bit, 128 bit and 256 bit encryption should be available			
	Mobile Surveillance & Remote Viewing			
1	Ability to view live video on iOS and Android phones or devices with or without installing proprietary Apps.			
2	Ability to receive alerts on Mobile phones without SMS using XMPP/MQTT technology should be available.			
3	PTZ Control on Mobile App and Remote Locations should be available.			
4	VMS and Mobile App support for multiple sites spread across WAN to be controlled and viewed from central location.			
5	Remote Administration over internet should be available.			
	Streaming			
1	Option for RTSP, HTTP, RTSP over HTTP streaming or both simultaneously should be available at individual camera level should be available.			
2	Option to Transcode to lower bit rate stream at recording server level should be available.. The lower bit rate should be done for any individual camera and options of resolution at 640x480, 320x240 and Frame rate at 20 fps, 10 fps should be available.. This helps in viewing video at low bandwidth			
3	Authentication Parameters (username, password) for streaming to remote clients should be available.			

	Administration & Failover			
1	Automatic discovery of devices using UPnP and/or ONVIF should be available.			
2	No software limit on number of cameras supported in single recording server			
3	Feature to add all cameras with single click should be available. Apply settings to multiple cameras of same model with single click.			
4	Should be able to generate logs & reports in Graphical & Tabular form and export in pdf, excel or more formats			
5	Failover- Automatic switch of user selected cameras to back-up server in case of failure should be available.			
6	Automatic Health check-up should be available and activation of optimization modules once CPU reached more than 85%.			
7	Add multiple recording servers under same management server.			
8	User role based cameras and feature access. Define users with passwords and access to only specific cameras			
9	Complete server logs including login access, system settings change, archiving events, video or recording loss and all activity done by administrator or any other user in the system.			
10	VMS control of cameras and monitoring on client workstations shall be done through the administrator interface.			
11	System watchdog feature should be available to alert in case of failure of cameras and servers.			
	Failover:			
1	System should support N: 1 or N: N failover. Failover time should not be more than 30 seconds. In case of failover recording lost should less than 30 seconds			
2	The VMS licensing shall require MAC Id of Server/ Recorder only, not of camera devices			
	Camera Support			

1	Should support multiple brand IP cameras (ONVIF Compliant), encoders and DVRs. No restriction on camera hardware.			
2	Should support ONVIF protocol including Profile-S, G.			

Code	Item Description	Make	Approx Qty
33258-035	Video Analytics Software with ANPR features	Any reputed make	1 No

S.No.	Specifications	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
	Automatic Number Plate Recognition (ANPR) system should enable monitoring of vehicle flow at strategic locations. The system should support real-time detection of vehicles at the deployed locations, recording each vehicle, reading its number plate, database lookup from central server and triggering of alarms/alerts based on the vehicle status and category as specified by the database. The system usage shall be privilege driven using password authentication. System should have following requirements:			
1	The System should automatically detect a vehicle in the camera view using video detection and activate number plate recognition			
2	The system should be designed to work for 24x7 unattended operations			
3	The System should automatically detect the number plate in the captured video feed in real-time.			
4	The system should perform OCR (optical character recognition) of the number plate characters (English alpha-numeric characters in standard fonts).			
5	The System should store JPEG image of vehicle and number plate and enter the number plate number into DBMS like MySql etc. database along with date time stamp and site location details.			
6	The system should be able to handle multiple vehicles simultaneously i.e. if there are more than one vehicle in the camera view the system should be able to detect all of them, extract their number plate numbers and perform OCR on the			

	number plate characters			
7	System should be able to detect and recognize the English alphanumeric number plate in standard fonts and formats of all vehicles including cars, HCV, LCV and two wheelers.			
8	System should able to detect single row, double row, multi row, square and rectangular plates as well			
9	The system should be robust to variation in number Plates in terms of font, size, contrast and color and should work with good accuracy.			
10	The success rate should be minimum 80%+ in Day and Night			
	Alert Generation			
11	The system should have option to input certain number plates according to the hot listed categories like "Wanted", "Suspicious", "Stolen" unauthorized, VIP etc. by authorized personel.			
	Vehicle Detection and Video Capture Module			
12	The system should be able to generate automatic alarms to alert the control room personnel for further action, in the event of detection of any vehicle falling in the Hot listed categories			
	Graphical User Interface			
13	The system Graphical User Interface should be bi-lingual. It should support both English & Graphical User interface (GUI) should provide following information: -			
	a. Image of the vehicle			
	b. Image of the number plate			
	c. Text conversion of number plate after using OCR (Optical Character Recognition) technology			
	d. Date, Time and location of offending vehicle			
	e. Event/images/chart of ANPR			
	Report			
14	System should be able to give camera ID / Camera Location etc on report page			

15	System should be able to give vehicle image with number plate image			
16	System should be able to give OCR Image/number plate Image			
17	System should able to give Watch list ("Wanted", "Suspicious", "Stolen" ,"Authorized", "Lost") on report page			
	Vehicle Status Alarm Module			
18	On successful recognition of the number plate, system should be able generate automatic alarm to alert the control room for vehicles which have been marked as "Wanted", "Suspicious", "Stolen", "Expired". (System should have provision/expansion option to add more categories for future need).			
19	The Instantaneous and automatic generation of alarms. In case of identity of vehicle in any category which is define by user.			
	Vehicle Log Module			
20	The system should enable easy and quick retrieval of snapshots and other data for post incident analysis and investigations. For example a database could be searched using criteria like date, time, location and vehicle number			
21	The system should be able to generate suitable MIS reports that will provide meaningful data to concerned authorities and facilitate optimum utilization of resources. These reports should include.			
	i. Report of vehicle flow at each of the installed locations for Last Day, Last Week and Last Month.			
	ii. Report of vehicles in the detected categories at each of the installed locations for Last Day, Last Week and Last Month.			
	Vehicle Detection and Video Capture Module			
22	The system should have Search option to tune the reports based on number plate number, date and time, site location as per the need of the authorities.			

23	The system should have option to save custom reports for subsequent use. The system should have option to export report being viewed to common format for use outside of the ANPR Software or exporting into other systems.			
24	The system should provide advanced and smart searching facility of number plates from the database. There should be an option of searching number plates almost matching with the specific number entered (up to 1 and 2 character distance).			

Code	Item Description	Make	Approx Qty
33258-036	**Video Analytics Software with Face Recognition features**	**Any reputed make**	**1 No**

S.No.	Specifications	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Facial Recognition Software should be able to work in real time			
2	System should be capable of capturing face images from live feed			
3	The system should be able to track a subject through it's appearance in front of the camera so as to generate alarm			
4	The system should be capable of working on partial occlusion of face like glasses, changes of facial expression. The system should able to detect similarity ratio			
5	The system should permit tracking of multiple faces			
6	The FR system should be able to be used for various applications like Face detection/recognition based on Black/white list, Attendance using FR, access control using FR, Etc.			
7	The system should permit enrolment of subjects from Images or live Video			
8	The system should allow multiple users to be created within the system with custom privileges/groups			

9	The system should have client server architecture with support for multiple clients who can be simultaneously logged either locally or remotely.			
10	The system should support diverse image formats like JPEG, PNG etc.			
11	The system should have the capability to have face image			
12	The system should comprise a health monitoring dashboard			
13	The system should allow generation of reports based on detection and identification of alarms with relevant filters like date and time / category etc. The system should permit reports to be exported in txt or xls formats for storage /review.			
14	The FR system should be able to identify the face and give alerts/outputs within 3 to 5 meter distance			
15	The FR software system should support to integrate with 3rd party camera (ONVIF Compliant)			
16	The FR system should be capable of integration with various 3rd party applications and Hardware			
17	The FRS algorithm components should be upgraded without extra cost			
18	The FR System should be supplied with suitable Local Processing unit or server as per the number of License required. The costing of the local processing unit should be included with software itself.			
19	The Local Processing unit should have interfaces to have content backup, 3rd party integration for alarms, etc.			
20	Should be able to change/replace IP Camera linked with FR software without requiring additional license.			

Code	Item Description	Make	Approx Qty
33258-037	**2U Rack (Wall Mounting) Depth (450MM) with 4 power Sockets and cable Manager**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's complia nce (Yes/No)
1	Height	2U 550x450mm			
2	Type	Wall mounting rack – Rigid frame that can be fixed to the wall			
3	General	Rubber Closure for cable entry holes			
		19"Adjustable rails in the front and rear, Front section with glass door and lock, Top and bottom cable entry facility			
		Hardware Screw pocket included			

Code	Item Description	Make	Approx Qty
33258-038	**6U Rack (Wall Mounting) Depth (450MM) with 4 power Sockets and cable Manager**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder 's offer	Bidder's complia nce (Yes/No)
1	Height	6U 600x450mm			
2	Type	Wall mounting rack – Rigid frame that can be fixed to the wall,			
3	General	Rubber Closure for cable entry holes			
		19"Adjustable rails in the front and rear, Front section with glass door and lock, Top and bottom cable entry facility			
		Hardware Screw pocket included			

Code	Item Description	Make	Approx Qty
33258-039	**9U Outdoor Rack (Wall Mounting) Depth (450MM) with 3 power Sockets**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Installation Type	Outdoor			
2	Height	9U 600x450mm			
3	Type	Wall mounting rack – Rigid frame that can be fixed to the wall,			
4	Protection	IP55			
5	General	Rubber Closure for cable entry holes			
		19"Adjustable rails in the front and rear, Front section with glass door and lock, Top and bottom cable entry facility			
		Hardware Screw pocket included			

Code	Item Description	Make	Approx Qty
33258-040	**9U Rack (Wall Mounting) Depth (550MM) with 4 power Sockets and cable Manager**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Height	9U 600x550mm			
2	Type	Wall mounting rack – Rigid frame that can be fixed to the wall,			
3	General	Rubber Closure for cable entry holes			
		19"Adjustable rails in the front and rear, Front section with glass door and lock, Top and bottom cable entry facility			
		Hardware Screw pocket included			

Code	Item Description	Make	Approx Qty
33258-041	24U Rack (Floor Standing) Depth (1000MM) with 6 power Sockets and cable Manager	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Height	24U 600x1000mm			
2	Type	Wall mounting rack – Rigid frame that can be fixed to the wall,			
3	General	Rubber Closure for cable entry holes			
		19"Adjustable rails in the front and rear, Front section with glass door and lock, Top and bottom cable entry facility			
		Hardware Screw pocket included			

Code	Item Description	Make	Approx Qty
33258-042	2 Port with 2 port SFP Uplink L2 Managed Industrial POE Switch, 60W POE Budget	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Ports	2x 10/100/1000Base-T + 2 x 1000Base-X (SFP), 2 Ports POE			
2	Performance	Shall support 8Gbps Switch Capacity Shall support 11.9 Mbps forwarding rate			
3	Power Supply	Dual Redundant DC Power Supply Input, Industrial Terminal pins			
4	Mount	Din Rail Mount			
5	IP Rating	IP30 Rating			
6	Ring protection	G.8032 ERPS, <50ms ring protection			

7	ACL & VLan Table	Shall support 2048 ACL Table & 4K Vlan Table			
8	Jumbo Frame	9K or More			
9	Mac address	8K or more			
10	Vlan	Port Based Vlan, IEEE802.1Q, Protocol Based Vlan, Voice Vlan, Mac Vlan			
11	Multicast Functions	IGMP v1/v2/v3 snooping, IGMP Fast Leave, MLD v1/v2 snooping,			
12	Security Features	Mac Based ACL, IP based ACL, MAC-IP ACL, User-Defined ACL, Time range ACL, VLAN ACL, Port Security, Mac Limit on Vlan and Port, Ani-arp scan and snooping, ARP Binding, AAA, IEEE 802.1x, TACACS+, Radius			
13	DHCP Management	DHCP Client, DHCP Snooping			
14	Qos	8 Queues Per Port, COS, TOS, DSCP, 802.1p, Precedence, SP, WRR, SWRR, DWRR			
15	Spanning Tree	802.1D STP, 802.1W RSTP, 802.1S MSTP Root Guard, BPDU Guard, BPDU Forwarding			
16	LACP	16 groups / 8 ports			
17	Management Port	Must have console port. Should supply with console cable.			
18	L2 Ring Protection	ITU-T G.8032, Loopback Detection			
19	Maintenance and Operation Management	TFTP/FTP CLI, Telnet, RJ45 Console, Web/SSL (IPv4/IPv6), SSH, SNMPv1/v2c/v3, SNMP Trap Public & Private MIB interface, Ping, Trace Route Radius Authentication Syslog			

S.No.	Parameter	Specification			
		(IPv4/IPv6) SNTP/NTP, Dual IMG, Multiple Configuration Files Port Mirror, LLDP/LLDP MED			
20	IPv6 Features	Support IPv4/v6 Dual stack			
21	POE Protocols	IEEE 802.3af POE(15.4W) and IEEE 802.3at POE+ (30W) support on all ports Support POE Management on Switch GUI Support Power time scheduling , power limit configuration, power priority configuration, etc.			
22	POE Budget	60 Watts or better			
23	EMC Safety	CE/FCC,ROHS			
24	Temperature	Working 0°C~70°C, Storage -40°C~70°C			

Code	Item Description	Make	Approx Qty
33258-043	4 Port with 2 uplink port L2 Unmanaged POE switch	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Ports	Shall support 4# 10/100/1000BaseT +2 x 100/1000Base-T 4 POE Ports &2 uplink ports			
2	Performance	Shall support Non-blocking 12 Gbps back plane bandwidth Shall support 14.8 Mbps forwarding rate			
3	Power Supply	Support external or built in power supply			
4	Data Transfer	Shall support Auto detection of Full duplex / Half Duplex on all ports			
5	Media	Shall support Auto MDI/			

		MDIX on all ports EEE 802.3, 802.3u, 802.3x			
6	MAC address Table	4K entries			
7	POE Budget	60W or More			
8	POE Protocols	IEEE 802.3af POE(15.4W) and IEEE 802.3at POE+ (30W) support on all ports			
9	Operating Temperature	0 to 40˚C			
10	Certificates	CE/FCC,ROHS			

Code	Item Description	Make	Approx Qty
33258-044	**4 Port with 2 port SFP Uplink L2 Managed Industrial POE Switch, 120W POE Budget**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Ports	4x 10/100/1000Base-T + 2 x 1000Base-X (SFP), 4 Ports POE			
2	Performance	Shall support 16Gbps Switch Capacity Shall support 11.9 Mbps forwarding rate			
3	Power Supply	Dual Redundant DC Power Supply Input, Industrial Terminal pins			
4	Mount	Din Rail Mount			
5	IP Rating	IP30 Rating			
6	Ring protection	G.8032 ERPS, <50ms ring protection			
7	ACL & VLan Table	Shall support 2048 ACL Table & 4K Vlan Table			
8	Jumbo Frame	9K or More			
9	Mac address	8K or more			
10	Vlan	Port Based Vlan, IEEE802.1Q, Protocol Based Vlan, Voice Vlan,			

		Mac Vlan			
11	Multicast Functions	IGMP v1/v2/v3 snooping, IGMP Fast Leave, MLD v1/v2 snooping			
12	Security Features	Mac Based ACL, IP based ACL, MAC-IP ACL, User-Defined ACL, Time range ACL, VLAN ACL, Port Security, Mac Limit on Vlan and Port, Ani-arp scan and snooping, ARP Binding, AAA, IEEE 802.1x, TACACS+, Radius			
13	DHCP Management	DHCP Client, DHCP Snooping			
14	Qos	8 Queues Per Port, COS, TOS, DSCP, 802.1p, Precedence, SP, WRR, SWRR, DWRR			
15	Spanning Tree	802.1D STP, 802.1W RSTP, 802.1S MSTP Root Guard, BPDU Guard, BPDU Forwarding			
16	LACP	16 groups / 8 ports			
17	Management Port	Must have console port. Should supply with console cable.			
18	L2 Ring Protection	ITU-T G.8032, Loopback Detection			
19	Maintenance and Operation Management	TFTP/FTP CLI, Telnet, RJ45 Console, Web/SSL (IPv4/IPv6), SSH, SNMPv1/v2c/v3, SNMP Trap Public & Private MIB interface, Ping, Trace Route Radius Authentication Syslog (IPv4/IPv6) SNTP/NTP, Dual IMG, Multiple Configuration Files Port Mirror, LLDP/LLDP MED			
20	IPv6 Features	Support IPv4/v6 Dual stack			

21	POE Protocols	IEEE 802.3af POE(15.4W) and IEEE 802.3at POE+ (30W) support on all ports Support POE Management on Switch GUI Support Power time scheduling , power limit configuration, power priority configuration , etc.			
22	POE Budget	120 Watts or better			
23	EMC Safety	CE/FCC,ROHS			
24	Temperature	Working 0°C~70°C, Storage -40°C~70°C			

Code	Item Description	Make	Approx Qty
33258-045	8 Port with 2 uplink port L2 Unmanaged POE switch	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Ports	Shall support 8# 10/100/1000BaseT +2 x 100/1000Base-T 8 POE Ports 2 uplink ports			
2	Performance	Shall support Non-blocking 20 Gbps back plane bandwidth Shall support 14.8 Mbps forwarding rate			
3	Power Supply	Support external or built in power supply			
4	Data Transfer	Shall support Auto detection of Full duplex / Half Duplex on all ports			
5	Media	Shall support Auto MDI/ MDIX on all ports EEE 802.3, 802.3u, 802.3x			
6	MAC address Table	4K entries			
7	POE Budget	120W or More			
8	POE	IEEE 802.3af POE(15.4W)			

	Protocals	and IEEE 802.3at POE+ (30W) support on all ports			
9	Operating Temperature	0 to 40˚C			
10	Certificates	CE/FCC,ROHS			

Code	Item Description	Make	Approx Qty
33258-046	**8 Port with 2 port SFP Uplink L2 Managed POE Switch, 120W POE Budget**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Ports	8 x 10/100/1000Base-T + 2 x 100/1000Base-X (SFP)			
2	Performance	Shall support 20 Gbps Switching Capacity and 14.88 Mbps forwarding rate			
3	Power Supply	Support built in power supply			
4	Management Port	RJ45 or Mini USB Console port (Out of Band Management)			
5	POE Protocols	IEEE 802.3af POE (15.4W) and IEEE 802.3at POE+ (30W) support on all ports Support POE Management function Support POE Energy saving mode			
6	POE Budget	120 Watts or better			
7	Vlan	Port-based VLAN, IEEE802.1Q, Voice VLAN, Port Isolation			
8	ACL & VLan Table	Shall support 1K ACL Table & 4K Vlan Table Support Standard and extended ACL Table			
9	Spanning Tree	802.1D STP, 802.1W RSTP, 802.1S MSTP Root			

		Guard, BPDU Guard, BPDU Forwarding, STP Trap			
10	LACP	8 groups / 8 ports Mac Load balancing Support			
11	QOS & DHCP	Support port based rate limit, 802.1P, SP, WRR, DSCP, IGMP Snooping, MLD Should support DHCP Server			
12	Security	Storm Control based on packets and bytes Port Security, Loop Detection, IEEE 802.1x Authentication, AAA			
13	Maintenance and Management	TFTP/FTP CLI, Telnet, Console Web/SSL, SSH, SNMPv1/v2c/v3, SNMP Trap, Public & Private MIB interface Ping, Trace Route, Radius Authentication, Single/Multiple Port Mirror, LLDP/LLDP MED			
14	MAC address Table	8K entries			
15	Temperature	Working 0°C~45°C Storage -40°C~70°C			
16	Surge Protection	Should support 2 KVA Surge Protection on each POE Port			
17	EMC Safety	CE/FCC,ROHS			

Code	Item Description	Make	Approx Qty
33258-047	**16 Port with 2 port SFP Uplink L2 Managed POE Switch, 180W POE Budget**	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Ports	16 x 10/100/1000Base-T + 2 x 100/1000Base-X (SFP)			
2	Performance	Shall support 36Gbps Switching Capacity and 23Mbps forwarding rate			
3	Power Supply	Support built in power supply			
4	Management Port	RJ45 or Mini USB Console port (Out of Band Management)			
5	POE Protocols	IEEE 802.3af POE (15.4W) and IEEE 802.3at POE+ (30W) support on all ports Support POE Management function Support POE Energy saving mode			
6	POE Budget	180 Watts or better			
7	Vlan	Port-based VLAN, IEEE802.1Q, Voice VLAN, Port Isolation			
8	ACL & VLan Table	Shall support 1K ACL Table & 4K Vlan Table Support Standard and extended ACL Table			
9	Spanning Tree	802.1D STP, 802.1W RSTP, 802.1S MSTP Root Guard, BPDU Guard, BPDU Forwarding, STP Trap			
10	LACP	8 groups / 8 ports Mac Load balancing Support			
11	QOS & DHCP	Support port based rate limit, 802.1P, SP, WRR, DSCP, IGMP Snooping, MLD			

		Should support DHCP Server			
12	Security	Storm Control based on packets and bytes Port Security, Loop Detection, IEEE 802.1x Authentication, AAA			
13	Maintenance and Management	TFTP/FTP CLI, Telnet, Console Web/SSL, SSH, SNMPv1/v2c/v3, SNMP Trap, Public & Private MIB interface Ping, Trace Route, Radius Authentication, Single/Multiple Port Mirror, LLDP/LLDP MED			
14	MAC address Table	8K entries			
15	Temperature	Working 0°C~45°C, Storage -40°C~70°C			
16	Surge Protection	Should support 2KVA Surge Protection on each POE Port			
17	EMC Safety	CE/FCC,ROHS			

Code	Item Description	Make	Approx Qty
33258-048	**24 Port with 2 port SFP Uplink L2 Managed POE Switch, 250W POE Budget**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Ports	24 x 10/100/1000Base-T + 2 x 100/1000Base-X (SFP)			
2	Performance	Shall support 52 Gbps Switching Capacity and 38Mbps forwarding rate			
3	Power Supply	Support built in power supply			
4	Management Port	RJ45 or Mini USB Console port (Out of Band			

		Management)			
5	POE Protocols	IEEE 802.3af POE (15.4W) and IEEE 802.3at POE+ (30W) support on all ports Support POE Management function Support POE Energy saving mode			
6	POE Budget	250 Watts or better			
7	Vlan	Port-based VLAN, IEEE802.1Q, Voice VLAN, Port Isolation			
8	ACL & VLan Table	Shall support 1K ACL Table & 4K Vlan Table Support Standard and extended ACL Table			
9	Spanning Tree	802.1D STP, 802.1W RSTP, 802.1S MSTP Root Guard, BPDU Guard, BPDU Forwarding, STP Trap			
10	LACP	8 groups / 8 ports Mac Load balancing Support			
12	QOS & DHCP	Support port based rate limit, 802.1P, SP, WRR, DSCP, IGMP Snooping, MLD Should support DHCP Server			
12	Security	Storm Control based on packets and bytes Port Security, Loop Detection, IEEE 802.1x Authentication, AAA			
13	Maintenance and Management	TFTP/FTP CLI, Telnet, Console Web/SSL, SSH, SNMPv1/v2c/v3, SNMP Trap, Public & Private MIB interface Ping, Trace Route, Radius Authentication, Single/Multiple Port Mirror, LLDP/LLDP MED			
14	MAC address Table	8K entries			
15	Temperature	Working 0°C ~ 45°C Storage -40°C ~ 70°C			
16	Surge	Should support 2KVA Surge			

	Protection	Protection on each POE Port			
17	EMC Safety	CE/FCC,ROHS			

Code	Item Description	Make	Approx Qty
33258-049	24 Port SFP L3 Managed Switch with 10G Uplink	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Switching ports	Shall support 24# 1G SFP Ports, 4# 10/100/1000 Mbps Base-T Combo ports , 4# SFP+ 10G Fiber Ports			
2	Management Ports	RJ45 Console port, USB/SD Card Port			
3	Switching Capacity Per Physical Switch	128Gbps			
4	Throughput Per Physical Switch	95Mbps			
5	Jumbo Frame	9K			
6	IPv4/IPv6 Routing Table	3K or more			
7	Vlan	802.1Q, 4K VLAN, MAC VLAN, Voice VLAN, PVLAN, Protocol VLAN, Multicast VLAN.			
8	Spanning Tree	STP, RSTP, MSTP			
9	Qos	8 Queues Per Port and should support SWRR, SP, WRR and WRED			
10	ACL	IP ACL, MAC ACL, MAC-IP ACL			
11	IPv6 Features	Should support ICMPv6, DNSv6, IPv6 PBR, IPv6 VRRPv3, OSPFv3 and BGP4+			

		Should support IPv6 Multicast VLAN, PIM-SM/DM for IPv6, IPv6 ACL and IPv6 QOS			
		DHCP Server/Client for IPv6			
		Should support IPv6 Management Features			
12	IPv4 L3 Routing Features (All Routing Features should be available form Day1)	Static Routing, RIPv1/v2, OSPFv2, OSPFv3, BGP4, BGP4+, PBR, LPM Routing, ECMP, VRRP			
13	IPv6 L3 Routing Features (All Routing Features should be available form Day1)	6 to 4 Tunnel / Dual stack , VRRPv3, OSPFv3, BGP4+, IPv6 PBR			
14	Multicast Routing	Multicast routing, PIM-SM, PIM-DM, IGMP v1/v2/v3.			
15	DHCP Features	DHCP Client, DHCP Relay, DHCP Snooping, Option-82 and DHCP Server			
16	Power Supply	Support built in Dual AC Power Supply Should be loaded from Day1 power supply			
17	Management Features	Web, CLI, Telnet and Console access TFTP/FTP and SSH v1/v2			
		SNMPv1/v2c/v3			
		RMON 1,2,3,9 and Radius Authentication			
		Syslog (Internal & External) and SNTP/NTP			
		Dual Firmware Images and Configuration Files, sFlow, RSPAN			

18	OAM Support	802.3ah and 802.1ag			
19	Environment	Operating Temperature: 0°C~45°C			
		Storage Temperature: -40°C~75°C			
		Relative Humidity: 10%~90% non-condensing			
		Green Energy: IEEE 802.3az (Energy Efficient Ethernet)			
20	Certificates	CE/FCC,ROHS			
21	General Conditions	All the software features and Hardware ports should be available from Day1 of purchase			

Code	Item Description	Make	Approx Qty
33258-050	Transceiver Single mode SFP (1G) – 20 KM support	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Fiber Type	Single Mode			
2	Bandwidth	1G, Gigabit			
3	Connector Type	LC Duplex			
4	Distance	20KM or Better			
5	Wavelength	Min 1310nm			

Code	Item Description	Make	Approx Qty
33258-051	Transceiver Single mode SFP+(10G) – 20 KM support	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Fiber Type	Single Mode			
2	Bandwidth	10G, Gigabit			
3	Connector Type	LC Duplex			

| 4 | Distance | 20KM or Better | | | |
| 5 | Wavelength | Min 1310nm | | | |

Code	Item Description	Make	Approx Qty
33258-052	**Single Mode Gigabit Media Converter- 20KM Support**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Fiber Type	Single Mode			
2	Bandwidth	1G, Gigabit			
3	Connector Type	SC Duplex			
4	Distance	20KM or Better			
5	Wavelength	Min 1310nm			
6	Lan Port	1*RJ45 10/100/1000 Mbps			

Code	Item Description	Make	Approx Qty
33258-053	**CAT6 UTP Cable**	**Any reputed make**	**1 Mtr**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Cable Type and support	4 Pair Twisted Cable, Support for Fast and Gigabit Ethernet, IEEE 802.3/5/12, Voice, ISDN, ATM 155 & 622Mbps. Should be Tested up to 550Mhz			
2	Conductor	23 AWG Annealed bare solid copper			
3	Insulation	High Density Polyethylene			

4	Core Colour	Pair 1 : White – Blue Pair 2 : White – Orange Pair 3 : White – Green Pair 4 : White – Brown			
5	Sheath	Fire Retardant PVC Compound (FRPVC)			
6	Pair Separator	4 twisted pairs separated by internal X shaped, 4 channel, polymer spine / full separator. Half shall not be accepted.			
7	Sheath Colour	Grey / Blue			
8	Approx. Cable OD	6.2 mm			
9	Flame Rating	60 deg.C As per UL 1685 CM			
10	Operating Environment	Indoor			
11	Electrical Specification	at 250 MHz			
12	Standards	TIA / EIA 568 C.2			
13	Impedance	100Ohms +/- 15%			
14	(NVP) Velocity of Propagation	69% or more @ 250 MHz Approx.			
15	Delay Skew	45 ns /100 mtrs. max. @ 20 deg. C, for 1 MHz~250 MHz Approx.			
16	Propagation Delay	<=536 ns / 100 mtrs. max. @ 20 deg. C, @ 250 MHz			
17	DC Resistance	<= 9.38 ohm / 100 mtrs. max. @ 20 deg. C			
18	Mutual Capacitance	5.60 nF / 100 mtrs. max. Approx.			
19	Safety	UL Listed			

Code	Item Description	Make	Approx Qty
33258-054	CAT6 SFTP Cable	Any reputed make	1 Mtr

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Cable Type and support	4 Pair Shielded Foil Twisted Pair Cable, Support for Fast and Gigabit Ethernet, IEEE 802.3/5/12, Voice, ISDN, ATM 155 & 622Mbps. Should be Tested up to 550Mhz			
2	Conductor	23 AWG Annealed bare solid copper			
3	Insulation	High Density Polyethylene			
4	Core Colour	Pair 1 : White – Blue Pair 2 : White – Orange Pair 3 : White – Green Pair 4 : White – Brown			
5	Sheath	Fire Retardant PVC Compound (FRPVC)			
6	Pair Separator	4 twisted pairs separated by internal X shaped, 4 channel, polymer spine / full separator. Half shall not be accepted.			
7	Sheath Colour	Grey / Blue			
8	Approx. Cable OD	6.2 mm			
9	Flame Rating	60 deg.C As per UL 1685 CM			
10	Operating Environment	Indoor			
11	Electrical Specification	at 250 MHz			
12	Standards	TIA / EIA 568 C.2			
13	Impedance	100Ohms +/- 15%			
14	(NVP) Velocity of	69% or more @ 250 MHz Approx.			

	Propagation				
15	Delay Skew	45 ns /100 mtrs. max. @ 20 deg. C, for 1 MHz~250 MHz Approx.			
16	Propagation Delay	<=536 ns / 100 mtrs. max. @ 20 deg. C, @ 250 MHz			
17	DC Resistance	<= 9.38 ohm / 100 mtrs. max. @ 20 deg. C			
18	Mutual Capacitance	5.60 nF / 100 mtrs. max. Approx.			
19	Safety	UL Listed			

Code	Item Description	Make	Approx Qty
33258-055	CAT6 Outdoor Armoured SFTP Cable	Any reputed make	1 Mtr

S.No	Tender Specification	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Cable Type and support	4 Pair Shielded Foil Twisted Pair Cable, Support for Fast and Gigabit Ethernet, IEEE 802.3/5/12, Voice, ISDN, ATM 155 & 622Mbps. Should be Tested up to 550Mhz			
2	Conductor	23 AWG Annealed bare solid copper			
3	Insulation	High Density Polyethylene			
4	Core Colour	Pair 1 : White – Blue Pair 2 : White – Orange Pair 3 : White – Green Pair 4 : White – Brown			
5	Sheath	Fire Retardant PVC Compound (FRPVC)			
6	Pair Separator	4 twisted pairs separated by internal X shaped, 4			

		channel, polymer spine / full separator. Half shall not be accepted.			
7	Sheath Colour	Grey / Blue			
8	Approx. Cable OD	6.2 mm			
9	Flame Rating	60 deg.C As per UL 1685 CM			
10	Operating Environment	Outdoor, Armored, Black colour			
11	Electrical Specification	at 250 MHz			
12	Standards	TIA / EIA 568 C.2			
13	Impedance	100Ohms +/- 15%			
14	(NVP) Velocity of Propagation	69% or more @ 250 MHz Approx.			
15	Delay Skew	45 ns /100 mtrs. max. @ 20 deg. C, for 1 MHz~250 MHz Approx.			
16	Propagation Delay	<=536 ns / 100 mtrs. max. @ 20 deg. C, @ 250 MHz			
17	DC Resistance	<= 9.38 ohm / 100 mtrs. max. @ 20 deg. C			
18	Mutual Capacitance	5.60 nF / 100 mtrs. max. Approx.			
19	Safety	UL Listed			

Code	Item Description	Make	Approx Qty
33258-056	Cat 6 - 24 Port unloaded Patch Panel	Any reputed make	1 No

S.No	Tender Specification	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Mount	1U Rack Mount 24 Port Patch Panel			
2	Type	110 wiring block at rear end & RJ 45 jack on front panel			
3	Cable	19" rack mountable and			

	Manager	shuttered with cable manager			
4	General	Metallic high strength & 1U height, should have routing rings, ties, labeling strips for identification			

Code	Item Description	Make	Approx Qty
33258-057	Cat 6 - 24 Port fully loaded Patch Panel	Any reputed make	1 No

S.No	Tender Specification	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Mount	1U Rack Mount 24 Port Patch Panel			
2	Type	110 wiring block at rear end & RJ 45 jack on front panel			
3	Quality	The modules should have high quality PCB			
4	General	The IDC should have 45 degree/ V shape contact			
5	Cable Manager	19" rack mountable and shuttered with cable manager			
6	Standards	Should conform or exceed the EIA/TIA 568 standards for CAT6			
7	General	Metallic high strength, routing rings, ties, labeling strips for identification			

Code	Item Description	Make	Approx Qty
33258-058	CAT6 UTP – 1M Patch Cord	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Type	Factory Crimped Cat6 UTP Patch cord with 24 AWG			

S.No.	Parameter	Specification			
		7/32 Round stranded copper wire.			
2	Length	1 Meter			
3	Insulation	Polyethylene			
4	Cable sheath	CM grade PVC Plug insertion			
5	Durability	1000 mating cycles			
6	Plug tensile strength	89 N, Plug insulation			
7	resistance	>500MW			
8	contact resistance	10 mW			

Code	Item Description	Make	Approx Qty
33258-059	CAT6 STP – 1M Patch Cord	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Type	Factory Crimped Cat6 STP Patch cord with 24 AWG 7/32 Round stranded copper wire.			
2	Length	1 Meter			
3	Insulation	Polyethylene			
4	Cable sheath	CM grade PVC Plug insertion			
5	Durability	1000 mating cycles			
6	Plug tensile strength	89 N, Plug insulation			
7	resistance	>500MW			
8	contact resistance	10 mW			

Code	Item Description	Make	Approx Qty
33258-060	6 Core Fiber Cable – SM - 9/125 micron (Outdoor, Armored)	Any reputed make	1 Mtr

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Cable Type	6 Core Fiber Cable SM 9/125 micron, graded index, anti rodent. The Single Mode Fiber cores should be Low Water Peak.			
2	wavelengths,	1310 nm & 1550 nm			
3	Standards	Should conform EIA/TIA 455, EIA/TIA 568 , ISO 11801			
4	Strength	Fiber should be protected inside jelly filled loose tube armoring with acrylic coated good quality steel			
5	tube colour	Each tube should be different color for easy identification			
6	Armour	ECCS armour followed by a jacket of polyethylene. Over the armour, water blocking powder applied for water tight cable.			
7	Core	The fiber core should be ITU 651 /652.D specification, should support Gigabit.			
8	Tube Type	Should have HDPE jacket with UV compliant. 6F/12F with UniTube and 24F Multitube (8Fx3 Tubes, 3 Fillers)			
9	Attenuation :	Not more than 0.38 dB/km at 1310 nm and 0.25 dB/km at 1550 nm using ITU 652D fiber			

		core			
10	Optical characteristics - Parameter / Unit / specification	Optical characteristics - Parameter / Unit / specification			
		Cladding Diameter / µm / 125.0 ± 1.0			
		Cladding Non-Circularity / % / ≤ 1.0%			
		Coated Fiber Diameter / µm / 235 to 255			
		Core/Cladding Concentricity Error / µm / ≤ 0.8			
		Mode Field Diameter / µm / 9.3 ± 0.5 @ 1310 nm			
		Coating/cladding concentricity error / µm / ≤ 12			
		Minimum Proof Strength Strain / GPa% / 0.70 (100 kpsi)			
		Fiber Curl / M / > 4			
		Zero-Dispersion Wavelength / Nm / 1300 to 1324			
		Zero-Dispersion Slope / ps/nm2-km / ≤ 0.092			
		Maximum Dispersion / ps/nm-km - 1285-1330 / ≤ 3.5 - 1550 nm / ≤ 18			
		Polarization Mode / ps/√km / ≤ 0.2			
		Fiber Macrobend / dB / ≤ 0.05@ 1310 nm			
		(100 turns. 60 mm dia.) / ≤ 0.10@ 1550 nm			
		Fiber Macrobend / dB / ≤ 0.5 @ @ 1550 nm			
		(1 turn @ 32 mm diameter)"			
		Coating Strip Force / N / 1.3 ≤ F ≤ 8.9			
		Dynamic Tensile Strength / Kpsi /			

		Unaged :>550 (3.8 GPa)			
		Aged :>440 (3.0 GPa)"			

Code	Item Description	Make	Approx Qty
33258-061	12 Core Fiber Cable – SM - 9/125 micron (Outdoor, Armored)	Any reputed make	1 Mtr

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Cable Type	12 Core Fiber Cable SM 9/125 micron, graded index, anti rodent. The Single Mode Fiber cores should be Low Water Peak.			
2	wavelengths,	1310 nm & 1550 nm			
3	Standards	Should conform EIA/TIA 455, EIA/TIA 568 , ISO 11801			
4	Strength	Fiber should be protected inside jelly filled loose tube armoring with acrylic coated good quality steel			
5	Tube colour	Each tube should be different color for easy identification			
6	Armour	ECCS armour followed by a jacket of polyethylene. Over the armour, water blocking powder applied for water tight cable.			
7	Core	The fiber core should be ITU 651 /652.D specification, should support Gigabit.			
8	Tube Type	Should have HDPE jacket with UV compliant.6F/12F with UniTube and 24F			

		Multitube (8Fx3 Tubes, 3 Fillers)			
9	Attenuation :	Not more than 0.38 dB/km at 1310 nm and 0.25 dB/km at 1550 nm using ITU 652D fiber core			
10	Optical characteristics - Parameter / Unit / specification	Optical characteristics - Parameter / Unit / specification			
		Cladding Diameter / µm / 125.0 ± 1.0			
		Cladding Non-Circularity / % / ≤ 1.0%			
		Coated Fiber Diameter / µm / 235 to 255			
		Core/Cladding Concentricity Error / µm / ≤ 0.8			
		Mode Field Diameter / µm / 9.3 ± 0.5 @ 1310 nm			
		Coating/cladding concentricity error / µm / ≤ 12			
		Minimum Proof Strength Strain / GPa% / 0.70 (100 kpsi)			
		Fiber Curl / M / > 4			
		Zero-Dispersion Wavelength / Nm / 1300 to 1324			
		Zero-Dispersion Slope / ps/nm2-km / ≤ 0.092			
		Maximum Dispersion / ps/nm-km - 1285-1330 / ≤ 3.5 - 1550 nm / ≤ 18			
		Polarization Mode / ps/√km / ≤ 0.2			
		Fiber Macrobend / dB / ≤ 0.05@ 1310 nm			
		(100 turns. 60 mm dia.) / ≤ 0.10@ 1550 nm			
		Fiber Macrobend / dB / ≤ 0.5 @ @ 1550 nm			

		(1 turn @ 32 mm diameter)"			
		Coating Strip Force / N / $1.3 \leq F \leq 8.9$			
		Dynamic Tensile Strength / Kpsi / Unaged :>550 (3.8 GPa)			
		Aged :>440 (3.0 GPa)"			

Code	Item Description	Make	Approx Qty
33258-062	24 Core Fiber Cable – SM - 9/125 micron (Outdoor, Armored)	Any reputed make	1 Mtr

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Cable Type	24 Core Fiber Cable SM 9/125 micron, graded index, anti rodent. The Single Mode Fiber cores should be Low Water Peak.			
2	wavelengths,	1310 nm & 1550 nm			
3	Standards	Should conform EIA/TIA 455, EIA/TIA 568 , ISO 11801			
4	Strength	Fiber should be protected inside jelly filled loose tube armoring with acrylic coated good quality steel			
5	tube colour	Each tube should be different color for easy identification			
6	Armour	ECCS armour followed by a jacket of polyethylene. Over the armour, water blocking powder applied for water tight cable.			
7	Core	The fiber core should be ITU 651 /652.D			

		specification, should support Gigabit.			
8	Tube Type	Should have HDPE jacket with UV compliant.6F/12F with UniTube and 24F Multitube (8Fx3 Tubes, 3 Fillers)			
9	Attenuation :	Not more than 0.38 dB/km at 1310 nm and 0.25 dB/km at 1550 nm using ITU 652D fiber core			
10	Optical characteristics - Parameter / Unit / specification	Optical characteristics - Parameter / Unit / specification			
		Cladding Diameter / μm / 125.0 ± 1.0			
		Cladding Non-Circularity / % / ≤ 1.0%			
		Coated Fiber Diameter / μm / 235 to 255			
		Core/Cladding Concentricity Error / μm / ≤ 0.8			
		Mode Field Diameter / μm / 9.3 ± 0.5 @ 1310 nm			
		Coating/cladding concentricity error / μm / ≤ 12			
		Minimum Proof Strength Strain / GPa% / 0.70 (100 kpsi)			
		Fiber Curl / M / > 4			
		Zero-Dispersion Wavelength / Nm / 1300 to 1324			
		Zero-Dispersion Slope / ps/nm2-km / ≤ 0.092			
		Maximum Dispersion / ps/nm-km - 1285-1330 / ≤ 3.5 - 1550 nm / ≤ 18			
		Polarization Mode / ps/√km / ≤ 0.2			

		Fiber Macrobend / dB / ≤ 0.05@ 1310 nm			
		(100 turns. 60 mm dia.) / ≤ 0.10@ 1550 nm			
		Fiber Macrobend / dB / ≤ 0.5 @ @ 1550 nm			
		(1 turn @ 32 mm diameter)"			
		Coating Strip Force / N / 1.3 ≤ F ≤ 8.9			
		Dynamic Tensile Strength / Kpsi / Unaged :>550 (3.8 GPa)			
		Aged :>440 (3.0 GPa)"			

Code	Item Description	Make	Approx Qty
33258-063	**Fiber Patch Panel 6 Port Rack Mount Unloaded LIU**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Mount	1U Rack Mount			
2	Cable Entry/Exit	Should have at least one cable entry and one exit			
3	Splice tray	Should be fitted with 6 port Splice tray			
4	Adaptor plate	Should be fitted with 6 Core support Adaptor plate			

Code	Item Description	Make	Approx Qty
33258-064	**Fiber Patch Panel 12 Port Rack Mount Unloaded LIU**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Mount	1U Rack Mount			
2	Cable Entry/Exit	Should have at least one cable entry and one exit			
3	Splice tray	Should be fitted with 12 port			

		Splice tray			
4	Adaptor plate	Should be fitted with 12 Core support Adaptor plate			

Code	Item Description	Make	Approx Qty
33258-065	**Fiber Patch Panel 24 Port Rack Mount Unloaded LIU**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Mount	1U Rack Mount			
2	Cable Entry/Exit	Should have at least one cable entry and one exit			
3	Splice tray	Should be fitted with 24 port Splice tray			
4	Adaptor plate	Should be fitted with 24 Core support Adaptor plate			

Code	Item Description	Make	Approx Qty
33258-066	**Fiber Patch Panel 6 Port Rack Mount Fully Loaded LIU**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Mount	1U Rack Mount			
2	Cable Entry/Exit	Should have at least one cable entry and one exit			
3	Splice tray	Should be fitted with 6 port Splice tray			
4	Adaptor plate	Should be fitted with 6 core support Adaptor plate			
5	SC/LC Adaptors	Should be Fitted with 6 core support SC/LC Adaptors			

Code	Item Description	Make	Approx Qty
33258-067	**Fiber Patch Panel 12 Port Rack Mount Fully Loaded LIU**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Mount	1U Rack Mount			
2	Cable Entry/Exit	Should have at least one cable entry and one exit			
3	Splice tray	Should be fitted with 12 port Splice tray			
4	Adaptor plate	Should be fitted with 12 Core support Adaptor plate			
5	SC/LC Adaptors	Should be Fitted with 12 core support SC/LC Adaptors			

Code	Item Description	Make	Approx Qty
33258-068	**Fiber Patch Panel 24 Port Rack Mount Fully Loaded LIU**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Mount	1U Rack Mount			
2	Cable Entry/Exit	Should have at least one cable entry and one exit			
3	Splice tray	Should be fitted with 24 port Splice tray			
4	Adaptor plate	Should be fitted with 24 Core support Adaptor plate			
5	SC/LC Adaptors	Should be Fitted with 24 core support SC/LC Adaptors			

Code	Item Description	Make	Approx Qty
33258-069	Fiber Adapter SC SM	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Compatibility	To be fitted in the Supplied LIU, Should have auto Lock and Screw			
2	Color	Should able to differentiate SM, should use standard color			
3	Sleeve	Duplex SC Adaptor with Zirconia Sleeve			

Code	Item Description	Make	Approx Qty
33258-070	Fiber Adapter LC SM	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Compatibility	To be fitted in the Supplied LIU, Should have auto Lock and Screw			
2	Color	Should able to differentiate SM, should use standard color			
3	Sleeve	Duplex LC Adaptor with Zirconia Sleeve			

Code	Item Description	Make	Approx Qty
33258-071	Fiber Pig Tail SC SM 1.5 Mtr	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Connector Type	SC Simplex			
2	Fiber Type	9/125 micron SM fiber			

3	Length	1.5 meter in length			
4	Thickness	Thickness of Patch cord should be 0.9 mm nominal.			
5	Ferrules	Pre-radiused Ceramic Ferrules			
6	Insertion Loss	≤0.3dB			
7	Return Loss	>=20dB			

Code	Item Description	Make	Approx Qty
33258-072	Fiber Pig Tail LC SM 1.5 Mtr	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Connector Type	LC Simplex			
2	Fiber Type	9/125 micron SM fiber			
3	Length	1.5 meter in length			
4	Thickness	Thickness of Patch cord should be 0.9 mm nominal.			
5	Ferrules	Pre-radiused Ceramic Ferrules			
6	Insertion Loss	≤0.3dB			
7	Return Loss	>=20dB			

Code	Item Description	Make	Approx Qty
33258-073	Fiber Patch Cord SC-SC SM 3 Mtr	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Connector Type	SC to SC, Duplex			
2	Fiber Type	9 /125 micron SM fiber			
3	Length	3 meter in length			
4	Thickness	Thickness of Patch cord should be 3 mm nominal.			
5	Ferrules	Pre-radiused Ceramic Ferrules			

| 6 | Insertion Loss | ≤0.3dB | | | |
| 7 | Return Loss | >=20dB | | | |

Code	Item Description	Make	Approx Qty
33258-074	**Fiber Patch Cord LC-LC SM 3 Mtr**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Connector Type	LC to LC, Duplex			
2	Fiber Type	9 /125 micron SM fiber			
3	Length	3 meter in length			
4	Thickness	Thickness of Patch cord should be 3 mm nominal.			
5	Ferrules	Pre-radiused Ceramic Ferrules			
6	Insertion Loss	≤0.3dB			
7	Return Loss	>=20dB			

Code	Item Description	Make	Approx Qty
33258-075	**Fiber Patch Cord SC-LC SM 3 Mtr**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Connector Type	SC to LC, Duplex			
2	Fiber Type	9 /125 micron SM fiber			
3	Length	3 meter in length			
4	Thickness	Thickness of Patch cord should be 3 mm nominal.			
5	Ferrules	Pre-radiused Ceramic Ferrules			
6	Insertion Loss	≤0.3dB			
7	Return Loss	>=20dB			

Code	Item Description	Make	Approx Qty
33258-076	Tower Workstation (i7 Processor)	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Processor	Intel Core i7-9700 processor (3 GHz upto 4.7 Ghz, 12 MB cache) or Higher			
2	Memory	8 GB DDR4 RAM @ 2133 MHz or higher with ECC, upgradable upto 16GB or Higher			
3	Mother Board (Intel/Gigabyte/ ASUS/MSI/ OEM)	1. Min 4 PCI / PCIe express slots and at least one of them should be PCIex16, Integrated Graphics Controller, 10/100/1000 Mbps Network Card with remote booting facility & Min 6 USB Ports with at least two with 3.0, 2 PS 2 Port or 2 Additional USB Ports, 1 serial port, VGA / Display port, HDMI, RJ45, Audio 3.5mm. 2. Support external speakers - Min 2 Watts			
		Chipset has to support 9th generation processor			
4	Graphics Card	Integrated Intel HD Graphics to be provided. Option for Graphics card should be available with the system and system manufacturer should provide ISV certified			

		graphics drivers for all operating systems supported. Support for upto 8 GB NVIDIA and Radeon Graphics Card.			
5	Monitor	22" (± 0.5 inch) TFT/ Wide LED Backlit LCD Color Monitor. Resolution 1366 X 768.			
6	Hard Disk Drive	Min 2 x 1 TB SATA			
7	DVD Drive	DVD Writer			
8	Keyboard	USB / PS2 – Membrane Keyboard			
9	Mouse	USB / PS2 – Optical Mouse			
10	Bays	Min 2 x Internal and Min 3 x External bays			
11	General Certification	Hazardous - RoHS, Energy efficient - Energy star, Safety - CE / UL, Environment – EPEAT and TCO Certification for Monitor (Copies should be enclosed)			
12	Cabinet type	Tower			
13	OS Compliance	Windows & Linux			
14	OS Certification	Windows & Linux. Boss Linux should run freely. If any issues Boss Linux certification should be obtained.			
15	Preloaded OS	Windows Professional OS (Latest)			
16	Power Consumption and SMPS capacity with standard configuration	Bidder to specify			

Code	Item Description	Make	Approx Qty
33258-077	Tower Server (Xeon Processor)	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Processor	Intel Xeon Processor E – 2224 at 3.4 GHz (8 MB cache) or higher			
2	Memory	8 GB DDR4 RAM @ 2133 MHz or higher with ECC, upgradeable upto 16 GB or higher with minimum 2 free DIMM			
3	Mother Board (Intel/ Gigabyte/ASUS/MSI/OEM)	Min 2 PCI / PCI Express, LAN (10/100/1000) Network card with 1 Serial Port, 4 USB Port, VGA / Display port, HDMI, RJ45, Int Speakers, Audio 3.5mm jack to support external Stereo Speakers of min 2 Watts.			
4	Monitor	19 inch (± 0.5 inch) TFT / Wide LCD Color Monitor Resolution 1366 X 768			
5	Hard Disk Drive	Min 2 X 1 TB or higher SATA			
6	DVD Drive	DVD Writer			
7	Keyboard	USB / PS2 – Membrane Keyboard			
8	Mouse	USB / PS2 – Optical Mouse			
9	Bays	4 bays or more			
10	General Certification	Hazardous - RoHS, Energy efficient - Energy star, Safety - CE / UL, Environment – EPEAT and TCO Certification for Monitor (Copies should be enclosed)			
11	Cabinet type	Mini Tower / Tower			
12	OS Compliance	Windows & Linux			

13	OS Certification	MS Windows & Linux			
14	Preloaded OS	DOS			
15	Power Consumption and SMPS capacity with standard configuration	Bidders to specify			

Code	Item Description	Make	Approx Qty
33258-078	Rack Server (1U)	Any reputed make	1 No

S. No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Processor	1 x Intel Bronze 3104 (6-core) Processor or above, upgradable upto two processors			
2	Memory	1 x 16 GB DDR4 RDIMM scalable up to 768 GB using RDIMM or 1.5 TB using LRDIMM with 2 Processors. Proposed memory should have ECC support. Selection of RDIMM or LRDIMM is based on customer preference.			
3	Chipset	Intel C62X Chipset			
4	Raid Controller	Onboard SATA controller which supports RAID: 0/1/5/10			
5	Hard Disk Drive	1 x 1 TB 6G SATA 7.2K SFF or higher, Hot Plug expandable upto 6 nos or Higher			
6	Form Factor / Cabinet Type	1U Rack Mountable			
7	System Fans	Redundant & Hot Plug Fans			

8	CD/DVD Drive	DVD-RW			
9	Interfaces/PCI Slots	Minimum 2 PCI slots			
10	Network Interface	1Gbps Quad Port Network Adapter.			
11	Ports	USB – min 4 nos			
12	Power Supply	hot-pluggable 1 + 1 redundancy			
13	Manageability	The Server Management Software should be of the same brand as of the server supplier.Virtual KVM / Graphical Console / Virtual Folders, Virtual Media (floppy, CD, USB flash drive and image)			
14	OS Support	Latest Microsoft Windows Server , Red Hat Enterprise Linux & SUSE Linux Enterprise Server, Vmware			
15	Pre-Failure Notification	Failure – Failure notification on HDD, Processor & Memory			
16	Industry Standard Compliance	PCIe3.0 Compliant, PXE Support,USB 3.0 Support			
17	Security	Power-on password / Keyboard password / Administrator's password, Hardware-based system security feature that can securely store information, such as passwords and encryption keys, which can be used to authenticate the platform.			
18	Benchmarks	SPEC int benchmark for the quoted processor models should be submitted either along with the bid or shall be submitted within 15 days			

		from the date of submission of Bid.			

Code	Item Description	Make	Approx Qty
33258-079	18.5 - Inch HD Monitor	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Display Size	Panel Size – 18.5", Monitor, LED type			
2	Brightness	Brightness: 200cd/m2, Contrast Ratio 600:1, Response Time 7ms			
3	Resolution	Support 1366 x 768 HD resolution			
4	The longest service time	Support Minimum 12/7 continuous operations			
5	Physical Interface	DVI or VGA with HD resolution support			
6	Accessories	VGA Cable and Power cord			
7	Operating Temperature Operating Humidity	10°C to 40° 20% to 80%			
8	Power Supply	100 – 240 v - 50/60 Hz			
9	General Certification	CE/FCC,ROHS			

Code	Item Description	Make	Approx Qty
33258-080	23-Inch Monitor	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Display Size	Panel Size – Minimum 23-Inch Monitor, LED type with Thin Bezel front cover			
2	Brightness	Brightness:			

		250cd/m2, Contrast Ratio 1000:1, Response Time 5ms			
3	Resolution	Support 1920 x 1080 Full HD resolution			
4	The longest service time	Support Minimum 12/7 continuous operations			
5	Physical Interface	DVI or VGA and HDMI with Full HD resolution support			
6	Accessories	HDMI Cable and Power cord			
7	Viewing Angle	178°/178° or Better			
8	Display functions	Anti glare, On screen controls, in plane switching etc.			
9	Mount	Standard VESA mounting support			
10	Operating Temperature Operating Humidity	10°C to 40° 20% to 80%			
11	Power Supply	100 – 240 v - 50/60 Hz			
12	General Certification	CE/FCC,ROHS			

Code	Item Description	Make	Approx Qty
33258-081	32-Inch 16/7 Full HD Monitor	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Display Size	Panel Size – Minimum 32", Monitor, LED type with Thin Bezel front cover			
2	Brightness	Brightness: 300cd/m2, Contrast Ratio 1000:1, Response Time 6ms			
3	Resoultion	Support 1920 x 1080 Full HD resolution			
4	The longest	Support Minimum 16/7			

			As per brochure	Bidder's offer	Bidder's compliance
	service time	continuous operations			
5	Physical Interface	Support HDMI ×2, VGA ×1, AV ×1, Audio in, Audio out, USB ×2			
6	Accessories	Table Stand, Remote Control and Power cord			
7	Viewing Angle	178°/178° or Better			
8	Display functions	Anti glare, On screen controls, in plane switching etc.			
9	Built-in speakers	Dual Streo speakers , 16W or better			
10	Mount	Standard VESA mounting support			
11	Power Supply	100 – 240 v - 50/60 Hz			
12	Operating Temperature Operating Humidity	10°C to 40° 20% to 80%			
13	General Certification	CE/FCC,ROHS			

Code	Item Description	Make	Approx Qty
33258-082	**43-Inch 24/7 Professional Industrial LED Display**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Display Size	Panel Size – 43", Industrial grade surveillance Monitor, DLED type			
2	LED panel	Should have industrial grade LED Panel for 24/7 usage.			
3	Operations	Support 24/7 continuous operations, Metal frame & rear cover.			
4	Brightness	Brightness: 350cd/m2, Contrast Ratio 1000:1, Response Time 8ms			
5	Resolution	Support 1920 × 1080 Full HD resolution,			

		Viewing Angle 178°/178°			
6	Physical Interface	Should have minimum 2# HDMI, 1# DVI port, 2# AUDIO, 1# USB port, 1# DP port, 1# RS232 in, 1#VGA. If VGA port is not given, VGA converter to be provided			
7	Operating Temperature Operating Humidity	10°C to 40° 20% to 80%			
8	Power Supply	100 – 240 v - 50/60 Hz			
9	General Certification	CE/FCC,ROHS			

Code	Item Description	Make	Approx Qty
33258-083	55-Inch 24/7 Professional Industrial LED Display	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Display Size	Panel Size – 55", Industrial grade surveillance Monitor, DLED type			
2	LED panel	Should have industrial grade LED Panel for 24/7 usage.			
3	The longest service time	Support 24/7 continuous operations, Metal frame & rear cover.			
4	Brightness	Brightness: 350cd/m2, Contrast Ratio 1000:1, Response Time 8ms			
5	Resolution	Support 1920 × 1080 Full HD resolution, Viewing Angle 178°/178°			

6	Physical Interface	Should have minimum 2# HDMI, 1# DVI port, 2# AUDIO, 1# USB port, 1# DP port, 1# RS232 in, 1#VGA. If VGA port is not given, VGA converter to be provided			
7	Operating Temperature Operating Humidity	10°C to 40° 20% to 80%			
8	Power Supply	100 – 240 v - 50/60 Hz			
9	General Certification	CE/FCC,ROHS			

Code	Item Description	Make	Approx Qty
33258-084	49" 3.5mm joint bezel LCD Display for Video wall	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Screen Size (Diagonal)	Screen Size 49 inch +/- 3" screen - Industrial type panel			
2	Aspect Ratio	16:9			
3	Viewing Angle	(H/V) - 178 (H) / 178 (V)			
4	Resolution (H X V)	1920 X 1080 or better			
5	Brightness & Contrast	450cd/m² nits, Contrast - 1300:1 or better			
6	Response time	8 ms			
7	Panel Surface Treatment	Anti-Glare			
8	HDMI In	HDMI X 2			
9	DVI-D In	DVI-D 24-Pin X 1			
10	DVI-D Out	DVI-D 24-Pin X 1			
11	Display Port In	Display Port X 1			
12	Display Port	Display Port X 1			

	Out				
13	USB	USB X 1			
14	Serial In (RS232)	D-Sub 9-Pin X 1			
15	Serial Out (RS232)	D-Sub 9-Pin X 1			
16	Audio Out	3.5mm Audio Out Jack			
17	Power Requirement	100V ~ 240V, 50-60 Hz			
18	Power Consumption	100W or Lesser			
19	Stand-by Condition	≤0.5 W or better			
20	Bezel Width (Bezel to Bezel)	3.5 mm or lesser			
21	Operation	24/7 Continuous working, Life time - 50,000 hrs (min.)			
22	Casing	Full Metal Rear Cover			
23	Orientation	Landscape / Portrait			
24	Operating Temperature	0˚C ~ 45˚C			
25	Operating Humidity	20% ~ 85% RH Non-Condensing			
26	Accessories	Equipped with all accessories including wall mount bracket, video wall matrix / decoders / software, hardware fittings, cables, etc.			

Code	Item Description	Make	Approx Qty
33258-085	55" 1.8mm joint bezel LCD Display for Video wall	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Screen Size (Diagonal)	Screen Size – 55" screen - Industrial type panel			

2	Aspect Ratio	16:9			
3	Viewing Angle	(H/V) - 178 (H) / 178 (V)			
4	Resolution (H X V)	1920 X 1080 or better			
5	Brightness & Contrast	500cd/m² nits, Contrast - 1400:1			
6	Response time	8 ms			
7	Panel Surface Treatment	Anti-Glare			
8	HDMI In	HDMI X 2			
9	DVI-D In	DVI-D 24-Pin X 1			
10	DVI-D Out	DVI-D 24-Pin X 1			
11	Display Port In	Display Port X 1			
12	Display Port Out	Display Port X 1			
13	USB	USB X 1			
14	Serial In (RS232)	D-Sub 9-Pin X 1			
15	Serial Out (RS232)	D-Sub 9-Pin X 1			
16	Audio Out	3.5mm Audio Out Jack			
17	Power Requirement	100V ~ 240V, 50-60 Hz			
18	Power Consumption	180W or Lesser			
19	Stand-by Condition	≤0.5 W or better			
20	Bezel Width (Bezel to Bezel)	1.8 mm or lesser			
21	Operation	24/7 Continuous working Life time - 50,000 hrs (min.)			
22	Casing	Full Metal Rear Cover			
23	Orientation	Landscape / Portrait			
24	Operating Temperature	0˚C ~ 45˚C			
25	Operating Humidity	20% ~ 85% RH Non-Condensing			
26	Accessories	Equipped with all accessories including wall mount bracket,			

		video wall matrix / decoders / software, hardware fittings, cables, etc.			

Code	Item Description	Make	Approx Qty
33258-086	Video wall Hardware 16 x 16 Matrix controller	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	General Specification	High-performance matrix Controller for HDMI signals. It reclocks and equalizes the signal and can route any input to any or all outputs Simultaneously. 16 X 16. Data Rate — 6.75Gbps (2.25Gbps per graphic Channel). 4K 3840 x 2160 @30Hz (4:4:4) Configuration of the complete system via a graphical Interface, Administrative Control, Deliver the screen wall management software as described before including all required Licenses and install it ready for Operation on the server of the large Screen wall, Control of the windows on the large screen wall from Control and observation computers.			

2	Video wall controller with Digital Video wall Scalar and Relay Controller Facility	High-performance matrix switcher for HDMI signals. It reclocks and equalizes the signal and can route any input to any or all outputs simultaneously. 16 x 16. Data Rate - 6.75 GBPS. (2.25 Gbps per graphic channel), HDTV Compatible. HDCP compliant. HDMI support - deep color, x.v. color, Dolby true HD, Dolby Digital plus, DTS-HD, and linear PCM 7.1 surround sound. 3D pass-through 16-port master room controller with 4 RS-232, 4 IR, 4 GPI/O, 4 Relay, 1 Ethernet, 1 USB - A, 1 USB - Micro, Relay Controller - 08 Ch. 220V AC, 16-Port Master Room Controller with 4 RS -232, 4 IR, 4 GPI/O, 4 relay, 1 Ethernet, 1 USB-A, 1 USB-Micro			

Code	Item Description	Make	Approx Qty
33258-087	Video Wall Software	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	General Specification	Configuration of the complete system via a graphical Interface, Administrative Control, Deliver the screen wall management software as described before including all required. Licenses and install it ready for Operation on the server			

		of the large Screen wall, Control of the windows on the large screen wall from Control and observation computers.			

Code	Item Description	Make	Approx Qty
33258-088	**HDMI Splitter 1 in and 2 Out**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	AV Input	HDMI			
2	AV Output	HDMI			
3	Cabling	HDMI			
4	Ports	2ports			
5	Minimum Cable Length support	30 ft			
6	Supported Resolutions	1080p (1920 x 1080) / VGA (640 x 480) / SXGA (1280 x 1024) / UXGA (1600 x 1200) / WUXGA (1920 x 1200)			
7	Power Source	Internal /External AC Adapter Included			
8	Operating Temperature	0°C to 40°C			
9	Humidity	0% ~ 80%			

Code	Item Description	Make	Approx Qty
33258-089	**HDMI Splitter 1 in and 4 Out**	**Any reputed make**	**1 No**

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	AV Input	HDMI			
2	AV Output	HDMI			
3	Cabling	HDMI			
4	Ports	4ports			

5	Minimum Cable Length support	50 ft			
6	Supported Resolutions	1080p (1920 x 1080) / VGA (640 x 480) / SXGA (1280 x 1024) / UXGA (1600 x 1200) / WUXGA (1920 x 1200)			
7	Power Source	internal /external AC Adapter Included			
8	Operating Temperature	0°C to 40°C			
9	Humidity	0% ~ 80%			

Code	Item Description	Make	Approx Qty
33258-090	Indoor Microphone	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Type	Permanent indoor-noise monitoring			
2	Frequency	100 ~ 6000HZ			
3	Work Area	100m^2			
4	Interface	Audio input - RCA or Sterio or BNC			

Code	Item Description	Make	Approx Qty
33258-091	Outdoor Microphone	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Type	Permanent outdoor-noise			

		monitoring			
2	Frequency	100 ~ 6000HZ			
3	Work Area	100m^2			
4	interface	Audio input - RCA or Stereo or BNC			
5	Protection	IP65/IP66			

Code	Item Description	Make	Approx Qty
33258-092	10 Feet Pole	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Diameter	6 INCH, concrete filled, with provision for laying camera cable inside pole			
2	Height	Height - 10 feet above ground , 2 feet below ground . Material of pole : GI (For Cameras) with Provisioning of Electrical Power			
3	Earthing	Suitable earthing should be provided			

Code	Item Description	Make	Approx Qty
33258-093	15 Feet Pole	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Diameter	6 INCH, concrete filled, with provision for laying camera cable inside pole			
2	Height	Height - 15 feet above ground, 3 feet below ground . Material of pole : GI (For Cameras) with Provisioning of Electrical			

		Power			
3	Earthing	Suitable earthing should be provided			

Code	Item Description	Make	Approx Qty
33258-094	1 KVA Online UPS with 30 Mins Backup	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Capacity	1 KVA ONLINE UPS			
2	Back-up Time	30 minutes			
3	Inverter Type	IGBT (Make and current capacity to be specified by the bidder)			
	INPUT				
4	Mains Voltage Regulation	150 - 270V AC, SINGLE PHASE			
5	Input power factor	> 0.9			
6	Frequency with Tolerance	50 Hz, ± 3 Hz			
7	Battery (Secondary Source)	Sealed maintenance free(SMF) type-AH and no. of Batteries shall be suitably selected for the respective minimum backup time of 70% Resistive Load. Minimum VAH rating of battery bank should be as given below:- 30 Minutes – 790 VAH Sealed maintenance free (SMF) type – AH and No. of Batteries shall be suitable selected for required backup time.			
8	DC Bus	To be specified by the			

	voltage	bidder			
9	Make of the Battery	Specify the Manufacturer Make, Model and enclose the technical sheet. The make and AH of the battery submitted for evaluation only will be accepted			
10	Battery Storage Box	External Storage Box / MS-Rack for housing the Batteries.			
	OUTPUT				
11	Nominal Voltage	230 AC, Single Phase ($\pm$1%)			
12	Frequency	50 Hz, $\pm(0.2)$ Hz			
13	Waveform	Pure Sine wave			
14	Load power factor	0.7 lag to unity			
	OTHER / GENERAL DATA				
15	Overload Capacity	Overload Capacity – Withstand for 5 minutes at 110% load (1100Watts Resistive Load / 770 Watts Combinational Load)			
16	Total Harmonic Distortion	< 4% for Linear load and 5% for non linear load			
17	Efficiency	> 80%			
18	Ambient Temperature	To be specified by the bidder (Preferable upto 50 Degree Celsius)			
19	Duty Cycle	Continuous			
20	Cooling	Forced air cooling			
21	Protections	1) Input, Output – Low and High 2) Battery low and high voltage 3) Input, output – Fuse 4) Battery - MCB/Fuse 5) Short circuit 6) Over load			

		7) Lightening			
22	Controls	Manual By-pass Switch and static bypass switch to be provided with Indications			
23	Power sockets	3 Nos. of 5A Sockets.			
24	Trip Conditions	Over load, Over, Under voltage, Short Circuit Indications Mains ON, Inverter ON, Battery Low, Overload.			
25	Alarms (Audio)	For extreme battery low voltage.			
26	Meters	Meters – AC Volt Meter for input and output. DC Volt Meter, Frequency Meter for output in Analog / Digital Mode.			
27	Manuals	Operating and User manual to be Provided			
28	Name Plate in the UPS	Name plate in UPS-Riveted metal plates / Stickers			
29	Isolation Transformer	Isolation Transformer must be provided internally / externally at input.			
30	Software	Software for automatic shutdown of the system compatible with Linux (mandatory) and windows.			
31	Certification	SAMEER / ETDC / NTH / ERTL / NABL's or any other Government authorized Testing Lab Certification for any back up of each UPS Category Mandatory for this Specification (issued within last 6 years)			

| 32 | Other Features | 1.SNMP Card - Provisions should be available 2.Diesel Generator – Compatible | | | |

Code	Item Description	Make	Approx Qty
33258-095	1 KVA Online UPS with 60 Mins Backup	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Capacity	1 KVA ONLINE UPS			
2	Back-up Time	60 minutes			
3	Inverter Type	IGBT (Make and current capacity to be specified by the bidder)			
	INPUT				
4	Mains Voltage Regulation	150 - 270V AC, SINGLE PHASE			
5	Input power factor	> 0.9			
6	Frequency with Tolerance	50 Hz, ± 3 Hz			
7	Battery (Secondary Source)	Sealed maintenance free (SMF) type-AH and no. of Batteries shall be suitably selected for the respective minimum backup time of 70% Resistive Load. Minimum VAH rating of battery bank should be as given below:- 60 Minutes – 1500 VAH Sealed maintenance free (SMF) type – AH and No. of Batteries shall be suitable selected for required backup time.			
8	DC Bus	To be specified by the			

	voltage	bidder			
9	Make of the Battery	Specify the Manufacturer Make, Model and enclose the technical sheet. The make and AH of the battery submitted for evaluation only will be accepted			
10	Battery Storage Box	External Storage Box / MS-Rack for housing the Batteries.			
	OUTPUT				
11	Nominal Voltage	230 AC, Single Phase (±1%)			
12	Frequency	50 Hz, ±(0.2) Hz			
13	Waveform	Pure Sine wave			
14	Load power factor	0.7 lag to unity			
	OTHER / GENERAL DATA				
15	Overload Capacity	Overload Capacity – Withstand for 5 minutes at 110% load (1100Watts Resistive Load / 770 Watts Combinational Load)			
16	Total Harmonic Distortion	< 4% for Linear load and 5% for non linear load			
17	Efficiency	> 80%			
18	Ambient Temperature	To be specified by the bidder (Preferable upto 50 Degree Celsius)			
19	Duty Cycle	Continuous			
20	Cooling	Forced air cooling			
21	Protections	1) Input, Output – Low and High 2) Battery low and high voltage 3) Input, output – Fuse 4) Battery - MCB/Fuse 5) Short circuit 6) Over load 7) Lightening			

22	Controls	Manual By-pass Switch and static bypass switch to be provided with Indications			
23	Power sockets	3 Nos. of 5A Sockets.			
24	Trip Conditions	Over load, Over, Under voltage, Short Circuit Indications Mains ON, Inverter ON, Battery Low, Overload.			
25	Alarms (Audio)	For extreme battery low voltage.			
26	Meters	Meters – AC Volt Meter for input and output. DC Volt Meter, Frequency Meter for output in Analog / Digital Mode.			
27	Manuals	Operating and User manual to be Provided			
28	Name Plate in the UPS	Name plate in UPS- Riveted metal plates / Stickers			
29	Isolation Transformer	Isolation Transformer must be provided internally / externally at input.			
30	Software	Software for automatic shutdown of the system compatible with Linux (mandatory) and windows.			
31	Certification	SAMEER / ETDC / NTH / ERTL / NABL's or any other Government authorized Testing Lab Certification for any back up of each UPS Category Mandatory for this Specification (issued within last 6 years)			
32	Other Features	1.SNMP Card - Provisions should be available 2.Diesel Generator – Compatible			

Code	Item Description	Make	Approx Qty
33258-096	1 KVA Online UPS with 120 Mins Backup	Any reputed make	1 No

S.No.	Parameter	Specification	As per brochure	Bidder's offer	Bidder's compliance (Yes/No)
1	Capacity	1 KVA ONLINE UPS			
2	Back-up Time	120 minutes			
3	Inverter Type	IGBT (Make and current capacity to be specified by the bidder)			
	INPUT				
4	Mains Voltage Regulation	150 - 270V AC, SINGLE PHASE			
5	Input power factor	> 0.9			
6	Frequency with Tolerance	50 Hz, ± 3 Hz			
7	Battery (Secondary Source)	Sealed maintenance free (SMF) type-AH and no. of Batteries shall be suitably selected for the respective minimum backup time of 70% Resistive Load. Minimum VAH rating of battery bank should be as given below:- 120 Minutes – 3000 VAH Sealed maintenance free (SMF) type – AH and No. of Batteries shall be suitable selected for required backup time.			
8	DC Bus voltage	To be specified by the bidder			
9	Make of the Battery	Specify the Manufacturer Make, Model and enclose the technical			

		sheet. The make and AH of the battery submitted for evaluation only will be accepted			
10	Battery Storage Box	External Storage Box / MS-Rack for housing the Batteries.			
	OUTPUT				
11	Nominal Voltage	230 AC, Single Phase (±1%)			
12	Frequency	50 Hz, ±(0.2) Hz			
13	Waveform	Pure Sine wave			
14	Load power factor	0.7 lag to unity			
	OTHER / GENERAL DATA				
15	Overload Capacity	Overload Capacity – Withstand for 5 minutes at 110% load (1100Watts Resistive Load / 770 Watts Combinational Load)			
16	Total Harmonic Distortion	< 4% for Linear load and 5% for non linear load			
17	Efficiency	> 80%			
18	Ambient Temperature	To be specified by the bidder (Preferable upto 50 Degree Celsius)			
19	Duty Cycle	Continuous			
20	Cooling	Forced air cooling			
21	Protections	1) Input, Output – Low and High 2) Battery low and high voltage 3) Input, output – Fuse 4) Battery - MCB/Fuse 5) Short circuit 6) Over load 7) Lightening			
22	Controls	Manual By-pass Switch and static bypass switch to be provided with Indications			

23	Power sockets	3 Nos. of 5A Sockets.			
24	Trip Conditions	Over load, Over, Under voltage, Short Circuit Indications Mains ON, Inverter ON, Battery Low, Overload.			
25	Alarms (Audio)	For extreme battery low voltage.			
26	Meters	Meters – AC Volt Meter for input and output. DC Volt Meter, Frequency Meter for output in Analog / Digital Mode.			
27	Manuals	Operating and User manual to be Provided			
28	Name Plate in the UPS	Name plate in UPS-Riveted metal plates / Stickers			
29	Isolation Transformer	Isolation Transformer must be provided internally / externally at input.			
30	Software	Software for automatic shutdown of the system compatible with Linux (mandatory) and windows.			
31	Certification	SAMEER / ETDC / NTH / ERTL / NABL's or any other Government authorized Testing Lab Certification for any back up of each UPS Category Mandatory for this Specification (issued within last 6 years)			
32	Other Features	1.SNMP Card - Provisions should be available 2.Diesel Generator – Compatible			

A 1.7   Declaration

I/We agree that the offer shall remain open for acceptance for a minimum period as stipulated in the Tender from the date of opening of the tender and thereafter until it is withdrawn by us by notice in writing duly addressed to the authority of opening the tender and sent by registered post with acknowledgement due or otherwise delivered at the office of the authority. The EMD amount shall not bear any interest and shall be liable to be forfeited to ELCOT should I/We fail to abide by the stipulations to keep the offer open for a period mentioned above or fail to sign and complete the contract document as required by ELCOT and furnish the Security Deposit as specified in the terms and conditions of the contract. The EMD amount may be adjusted towards SD or refunded to me/us unless the same or any part thereof has been forfeited as aforesaid.

I/We agree to adhere with the schedule of implementation and deliver the items as specified in the tender.

I/We declare that the Price bid has been submitted without any conditions and strictly as per the Terms and Conditions of the tender document and I/We am/are aware that the Price bid is liable to be rejected if it contains any other conditions.

I/We declare that the information furnished in the tender is true to the best of my/our knowledge. If any false/fictitious information is found I/We agree to the rejection of the bids and consequence action.

Annexure-2 - PRICE BID – IP Camera **& related items** with 3 years Warranty							

RATE CONTRACT REF NO: ELCOT/Proc/OT/33258/IP Camera/RC/2019-20

S.N	Product Code	Description	Initial Approx. Qty & the future on RC (in Nos.)	Unit Price inclusive of Excise Duty, Packing & Forwarding, Insurance, Installation etc. (Rs.)	GST in (%) for Col no.5	GST Value for Col No.5 in Rs.	Total Unit Price with GST (Rs.) (5 + 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	33258-001	2 MP Fixed Lens Dome Camera	1 No.				
2	33258-002	2 MP Fixed Lens Bullet Camera	1 No.				
3	33258-003	3 MP Fixed Lens Dome Camera	1 No.				
4	33258-004	3 MP Fixed Lens Bullet Camera	1 No.				
5	33258-005	5 MP Fixed Lens Bullet Camera	1 No.				
6	33258-006	2 MP VF Dome Camera	1 No.				
7	33258-007	2 MP VF Bullet Camera	1 No.				
8	33258-008	2 MP MVF Dome Camera	1 No.				
9	33258-009	2 MP MVF Bullet Camera	1 No.				
10	33258-010	2 MP MVF Bullet Camera with Analytics	1 No.				
11	33258-011	2 MP Box Camera	1 No.				

12	33258-012	5 MP Box Camera	1 No.				
13	33258-013	5 MP MVF Dome Camera	1 No.				
14	33258-014	5 MP MVF Bullet Camera	1 No.				
15	33258-015	8 MP MVF Dome Camera	1 No.				
16	33258-016	8 MP MVF Bullet Camera	1 No.				
17	33258-017	12MP MVF Bullet Camera	1 No.				
18	33258-018	2 MP 20x PTZ Camera	1 No.				
19	33258-019	2 MP 25x PTZ Camera	1 No.				
20	33258-020	2 MP 32x Auto Tracking PTZ Camera	1 No.				
21	33258-021	5 MP 30x PTZ Camera	1 No.				
22	33258-022	Network Video Recorder 4 Channels 1 HDD	1 No.				
23	33258-023	Network Video Recorder 8 Channels 1 HDD	1 No.				
24	33258-024	Network Video Recorder 16 Channels 4 HDD	1 No.				
25	33258-025	Network Video Recorder 8 Channels 2 HDD	1 No.				
26	33258-026	Network Video Recorder 16 Channels 2 HDD	1 No.				
27	33258-027	Network Video Recorder 32 Channels 8	1 No.				

		HDD					
28	33258-028	Network Video Recorder 64 Channels 8 HDD	1 No.				
29	33258-029	Network Video Recorder 64 Channels 16 HDD	1 No.				
30	33258-030	Network Video Recorder 128 Channels 16 HDD	1 No.				
31	33258-031	Network Video Recorder 16 Bay HDD and Scalable up to 128 Bays	1 No.				
32	33258-032	Network Attached Storage 4 Bays - Tower Type	1 No.				
33	33258-033	Network Attached Storage Bays-16 with dual controller	1 No.				
34	33258-034	Video Management Software Per channel License	1 No.				
35	33258-034 A	Video Management Software - 4 channel License	1 No.				
36	33258-034 B	Video Management Software - 8 channel License	1 No.				
37	33258-034 C	Video Management Software - 16 channel License	1 No.				
38	33258-034 D	Video Management Software - 32 channel License	1 No.				
39	33258-034 E	Video Management Software - 64 channel License	1 No.				

40	33258-034 F	Video Management Software - 128 channel License	1 No.				
41	33258-034 G	Video Management Software Per Base License	1 No.				
42	33258-035	Video Analytics Software with ANPR features Per channel License	1 No.				
43	33258-035 A	Video Analytics Software with ANPR features - 4 channel License	1 No.				
44	33258-035 B	Video Analytics Software with ANPR features - 8 channel License	1 No.				
45	33258-035 C	Video Analytics Software with ANPR features - 16 channel License	1 No.				
46	33258-035 D	Video Analytics Software with ANPR features - 32 channel License	1 No.				
47	33258-035 E	Video Analytics Software with ANPR features - 64 channel License	1 No.				
48	33258-035 F	Video Analytics Software with ANPR features - 128 channel License	1 No.				
49	33258-035 G	Video Analytics Software with ANPR features Per Base License	1 No.				
50	33258-036	Video Analytics Software with Face Recognition features Per channel License	1 No.				
51	33258-036 A	Video Analytics Software with Face Recognition features- 4 channel License	1 No.				
52	33258-036 B	Video Analytics Software with Face	1 No.				

		Recognition features- 8 channel License					
53	33258-036 C	Video Analytics Software with Face Recognition features- 16 channel License	1 No.				
54	33258-036 D	Video Analytics Software with Face Recognition features- 32 channel License	1 No.				
55	33258-036 E	Video Analytics Software with Face Recognition features- 64 channel License	1 No.				
56	33258-036 F	Video Analytics Software with Face Recognition features- 128 channel License	1 No.				
57	33258-036 G	Video Analytics Software with Face Recognition features Per Base License	1 No.				
58	33258-037	2U Rack (Wall Mounting) Depth (450MM) with 4 power Sockets and cable Manager	1 No.				
59	33258-038	6U Rack (Wall Mounting) Depth (450MM) with 4 power Sockets and cable Manager	1 No.				
60	33258-039	9U Outdoor Rack (Wall Mounting) Depth (450MM) with 3 power Sockets	1 No.				
61	33258-040	9U Rack (Wall Mounting) Depth (550MM) with 4 power Sockets and cable Manager	1 No.				
62	33258-041	24U Rack (Floor Standing) Depth (1000MM) with 6 power Sockets and	1 No.				

		cable Manager						
63	33258-042	2 Port with 2 port SFP Uplink L2 Managed Industrial POE Switch, 60W POE Budget	1 No.					
64	33258-043	4 Port with 2 uplink port L2 Unmanaged POE switch	1 No.					
65	33258-044	4 Port with 2 port SFP Uplink L2 Managed Industrial POE Switch, 120W POE Budget	1 No.					
66	33258-045	8 Port with 2 uplink port L2 Unmanaged POE switch	1 No.					
67	33258-046	8 Port with 2 port SFP Uplink L2 Managed POE Switch, 120W POE Budget	1 No.					
68	33258-047	16 Port with 2 port SFP Uplink L2 Managed POE Switch, 180W POE Budget	1 No.					
69	33258-048	24 Port with 2 port SFP Uplink L2 Managed POE Switch, 250W POE Budget	1 No.					
70	33258-049	24 Port SFP L3 Managed Switch with 10G Uplink	1 No.					
71	33258-050	Transceiver Single mode SFP (1G) – 20 KM support	1 No.					

72	33258-051	Transceiver Single mode SFP+(10G) – 20 KM support	1 No.				
73	33258-052	Single Mode Gigabit Media Converter-20KM Support	1 No.				
74	33258-053	CAT6 UTP Cable	1 mtr.				
75	33258-054	CAT6 SFTP Cable	1 mtr.				
76	33258-055	CAT6 Outdoor Armoured SFTP Cable	1 mtr.				
77	33258-056	Cat 6 - 24 Port unloaded Patch Panel	1 No.				
78	33258-057	Cat 6 - 24 Port fully loaded Patch Panel	1 No.				
79	33258-058	CAT6 UTP – 1M Patch Cord	1 No.				
80	33258-059	CAT6 STP – 1M Patch Cord	1 No.				
81	33258-060	6 Core Fiber Cable – SM - 9/125 micron (Outdoor, Armored)	1 mtr.				
82	33258-061	12 Core Fiber Cable – SM - 9/125 micron (Outdoor, Armored)	1 mtr.				
83	33258-062	24 Core Fiber Cable – SM - 9/125 micron (Outdoor, Armored)	1 mtr.				
84	33258-063	Fiber Patch Panel 6 Port Rack Mount Unloaded LIU	1 No.				
85	33258-064	Fiber Patch Panel 12 Port Rack Mount Unloaded LIU	1 No.				
86	33258-065	Fiber Patch Panel 24 Port Rack Mount	1 No.				

		Unloaded LIU					
87	33258-066	Fiber Patch Panel 6 Port Rack Mount Fully Loaded LIU	1 No.				
88	33258-067	Fiber Patch Panel 12 Port Rack Mount Fully Loaded LIU	1 No.				
89	33258-068	Fiber Patch Panel 24 Port Rack Mount Fully Loaded LIU	1 No.				
90	33258-069	Fiber Adapter SC SM	1 No.				
91	33258-070	Fiber Adapter LC SM	1 No.				
92	33258-071	Fiber Pig Tail SC SM 1.5 Mtr	1 No.				
93	33258-072	Fiber Pig Tail LC SM 1.5 Mtr	1 No.				
94	33258-073	Fiber Patch Cord SC-SC SM 3 Mtr	1 No.				
95	33258-074	Fiber Patch Cord LC-LC SM 3 Mtr	1 No.				
96	33258-075	Fiber Patch Cord SC-LC SM 3 Mtr	1 No.				
97	33258-076	Tower Workstation (i7 Processor)	1 No.				
98	33258-077	Tower Server (Xeon Processor)	1 No.				
99	33258-078	Rack Server (1U)	1 No.				
100	33258-079	18.5 - Inch HD Monitor	1 No.				
101	33258-080	23-Inch Monitor	1 No.				

102	33258-081	32-Inch 16/7 Full HD Monitor	1 No.				
103	33258-082	43-Inch 24/7 Professional Industrial LED Display	1 No.				
104	33258-083	55-Inch 24/7 Professional Industrial LED Display	1 No.				
105	33258-084	49" 3.5mm joint bezel LCD Display for Video wall	1 No.				
106	33258-085	55" 1.8mm joint bezel LCD Display for Video wall	1 No.				
107	33258-086	Video wall Hardware 16 x 16 Matrix controller	1 No.				
108	33258-087	Video Wall Software	1 No.				
109	33258-088	HDMI Splitter 1 in and 2 Out	1 No.				
110	33258-089	HDMI Splitter 1 in and 4 Out	1 No.				
111	33258-090	Indoor Microphone	1 No.				
112	33258-091	Outdoor Microphone	1 No.				
113	33258-092	10 Feet Pole	1 No.				
114	33258-093	15 Feet Pole	1 No.				
115	33258-094	1 KVA Online UPS with 30 Mins Backup	1 No.				
116	33258-095	1 KVA Online UPS with 60 Mins Backup	1 No.				
117	33258-096	1 KVA Online UPS with 120 Mins Backup	1 No.				

	Add on items							
118	33258-ADD-001	RJ45 Connector - UTP	1 No.					
119	33258-ADD-002	RJ45 Connector - STP	1 No.					
120	33258-ADD-003	CAT6 UTP – 2M Patch Cable	1 Mtr					
121	33258-ADD-004	CAT6 STP – 2M Patch Cable	1 Mtr					
122	33258-ADD-005	CAT6 UTP – 3M Patch Cable	1 Mtr					
123	33258-ADD-006	CAT6 STP – 3M Patch Cable	1 Mtr					
124	33258-ADD-007	Cat 6 UTP key stone I/O	1 No.					
125	33258-ADD-008	Cat 6 STP key stone I/O	1 No.					
126	33258-ADD-009	Back Box for single faceplate	1 No.					
127	33258-ADD-010	Fiber Adaptor SC SM Simplex	1 No.					
128	33258-ADD-011	Fiber Adaptor LC SM Simplex	1 No.					
129	33258-ADD-012	Indoor POE extender	1 No.					

130	33258-ADD-013	Outdoor POE extender	1 No.				
131	33258-ADD-014	Industrial Grade power supply for POE Switch 60W POE Budget	1 No.				
132	33258-ADD-015	Industrial Grade power supply for POE Switch 120W POE Budget	1 No.				
133	33258-ADD-016	16 Bay single controller JBOD	1 No.				
134	33258-ADD-017	16 Bay dual controller JBOD	1 No.				
135	33258-ADD-018	USB Joy Stick for PTZ Camera	1 No.				
136	33258-ADD-019	Network Joy Stick for PTZ Camera	1 No.				
137	33258-ADD-020	Intel Xeon Bronze 3104 (6 core) Processor	1 No.				
138	33258-ADD-021	8 GB ECC DDR4 RAM	1 No.				
139	33258-ADD-022	16 GB ECC DDR4 RAM	1 No.				
140	33258-ADD-023	32 GB ECC DDR4 RAM	1 No.				
141	33258-ADD-024	32 GB SD/MicroSD Memory Card (class 10)	1 No.				
142	33258-ADD-	64 GB SD/MicroSD Memory Card	1 No.				

	025	(class 10)					
143	33258-ADD-026	128 GB SD/MicroSD Memory Card (class 10)	1 No.				
144	33258-ADD-027	256 GB SD/MicroSD Memory Card (class 10)	1 No.				
145	33258-ADD-028	512 GB SD/MicroSD Memory Card (class 10)	1 No.				
146	33258-ADD-029	2 TB Surveillance SATA HDD LFF	1 No.				
147	33258-ADD-030	4 TB Surveillance SATA HDD LFF	1 No.				
148	33258-ADD-031	6 TB Surveillance SATA HDD LFF	1 No.				
149	33258-ADD-032	8 TB Surveillance SATA HDD LFF	1 No.				
150	33258-ADD-033	10 TB Surveillance SATA HDD LFF	1 No.				
151	33258-ADD-034	12 TB Surveillance SATA HDD LFF	1 No.				
152	33258-ADD-035	1 TB SATA 6G 7.2K LFF	1 No.				
153	33258-ADD-036	2 TB SATA 6G 7.2K LFF	1 No.				
154	33258-ADD-037	4 TB SATA 6G 7.2K LFF	1 No.				

155	33258-ADD-038	6 TB SATA 6G 7.2K LFF	1 No.				
156	33258-ADD-039	8 TB SATA 6G 7.2K LFF	1 No.				
157	33258-ADD-040	10 TB SATA 6G 7.2K LFF	1 No.				
158	33258-ADD-041	1 TB SATA 6G 7.2K SFF	1 No.				
159	33258-ADD-042	2 TB SATA 6G 7.2K SFF	1 No.				
160	33258-ADD-043	4 TB SATA 6G 7.2K SFF	1 No.				
161	33258-ADD-044	6 TB SATA 6G 7.2K SFF	1 No.				
162	33258-ADD-045	8 TB SATA 6G 7.2K SFF	1 No.				
163	33258-ADD-046	10 TB SATA 6G 7.2K SFF	1 No.				
164	33258-ADD-047	2 TB Enterprise NLSAS HDD LFF	1 No.				
165	33258-ADD-048	4 TB Enterprise NLSAS HDD LFF	1 No.				
166	33258-ADD-049	6 TB Enterprise NLSAS HDD LFF	1 No.				
167	33258-ADD-	8 TB Enterprise NLSAS HDD LFF	1 No.				

	050						
168	33258-ADD-051	10 TB Enterprise NLSAS HDD LFF	1 No.				
169	33258-ADD-052	12 TB Enterprise NLSAS HDD LFF	1 No.				
170	33258-ADD-053	NVIDIA Quadro P620 (2 GB)	1 No.				
171	33258-ADD-054	NVIDIA Quadro P1000 (4 GB)	1 No.				
172	33258-ADD-055	NVIDIA Quadro P4000 (8 GB)	1 No.				
173	33258-ADD-056	NVIDIA Quadro RTX4000 (8 GB)	1 No.				
174	33258-ADD-057	AMD Radeon Pro WX 2100 (2 GB)	1 No.				
175	33258-ADD-058	AMD Radeon Pro WX 4100 (4 GB)	1 No.				
176	33258-ADD-059	AMD Radeon Pro WX 7100 (8 GB)	1 No.				
177	33258-ADD-060	Outdoor weather proof Junction Box, IP65 Rated	1 No.				
178	33258-ADD-061	Outdoor Aluminium weather proof Junction Box, IP67 Rated and Vandal Proof	1 No.				
179	33258-ADD-	60 M IR Illuminator	1 No.				

	062						
180	33258-ADD-063	100 M IR Illuminator	1 No.				
181	33258-ADD-064	Burglar Alarm/ siren	1 No.				
182	33258-ADD-065	Mounting bracket for Video Wall Display	1 No.				
183	33258-ADD-066	Industrial Panic Button	1 No.				
184	33258-ADD-067	Camera compatible Mike	1 No.				
185	33258-ADD-068	Camera compatible Speaker	1 No.				
186	33258-ADD-069	IP Horn speaker	1 No.				
187	33258-ADD-070	Wall mounting bracket for Monitor	1 No.				
188	33258-ADD-071	Front push pull wall mounting bracket for Video wall Display	1 No.				
189	33258-ADD-072	CCTV Metal Sign Board	1 No.				
190	33258-ADD-073	Route Marker	1 No.				
191	33258-ADD-074	Lighting Arrester	1 No.				

192	33258-ADD-075	3G SATA/SAS active mux adaptor for Dual controller NAS Storage	1 No.				
193	33258-ADD-076	6G SAS Cable	1 mtr.				
194	33258-ADD-077	Power cable (3 core 1 sq mm each)	1 mtr.				
195	33258-ADD-078	HDMI Cable	1 mtr.				
196	33258-ADD-079	VGA Cable	1 mtr.				
197	33258-ADD-080	1 inch HDPE Pipe with Laying Charges	1 No.				
198	33258-ADD-081	1 inch PVC Conduit with Laying Charges	1 No.				
199	33258-ADD-082	Fan for Rack	1 No.				
200	33258-ADD-083	20 Amp Two Pole Miniature Circuit Breaker	1 No.				
201	33258-ADD-084	Earthing Kit (Earthling GI PIPE - 4ft, Earthing charcoal powder, Galvanic Strip , 15 Mtr Earthing Wire and other accessories) for the all Racks	1 No.				
202	33258-ADD-085	Power Strip 5A Sockets - 6 Nos. with Surge Protector	1 No.				
203	33258-ADD-	Digging Charges (RC refilling)	1 mtr.				

	086						
204	33258-ADD-087	Digging Charges (Soil refilling)	1mtr				
205	33258-ADD-088	Cost of Site Survey	Per site				
	Total						

Note:
1) **The Bidder shall submit the offer by filling up all the columns against each item. Bidders shall quote for relevant items. Partial quote is allowed.**
2) **Warranty: Three Years**
3) **Rate Contract: 1 year from the date of issue of 1ˢᵗ Purchase Order or from the date of signing the Agreement with ELCOT, Whichever is later.**

Annexure – 3 - Comprehensive CAMC (or Extended Warranty) Cost for 4th & 5th year after the successful completion of 3 years Warranty

RATE CONTRACT REF NO: ELCOT/PROC/OT/33258/IP Camera/RC/2019-20

S.No	Year	CAMC in % (for the quoted products)	GST in %
(1)	(2)	(3)	(4)
1	4th year		
2	5th Year		

Note:
a) **Comprehensive CAMC for 4th & 5th years should be quoted without fail, failing which the Price Bid shall not be considered for further process. Comprehensive CAMC cost means cost toward all the spares, service charge and all taxes.**
b) **CAMC percentage quoted should be less than 10%.**