



वाडिया हिमालय भूविज्ञान संस्थान  
**WADIA INSTITUTE OF HIMALAYAN GEOLOGY**  
(भारत सरकार के विज्ञान और प्रौद्योगिकी विभाग का एक स्वायत्तशासी संस्थान)  
(An Autonomous Institution of Department of Science &  
Technology)  
**GOVERNMENT OF INDIA**  
33, जनरल महादेव सिंह मार्ग  
**33, GENERAL MAHADEO SINGH ROAD,**  
देहरादून - 248001 (उत्तराखण्ड) भारत  
**DEHRA DUN - 248001 (INDIA)**

फोन/Phone : 0135-2525500, 2525501  
फैक्स/Fax : 0135-2625212, 2525200  
ई मेल/E-Mail : www.stores@wihg.res.in  
वेब/Website: www.wihg.res.in

त्वरित डाक / Speed post  
खोले जाने की अपेक्षित तिथि : 10.09.2020  
**DUE TO OPEN ON: 10.09.2020**

संख्या: एस-2/199-पी/(सीसीटीवी)/वा0हि0भू0सं0/2020-21  
No: S- 2/199-P(CCTV)WIHG/2020-21

दिनांक : 21.08.2020  
Dated: 21-08-2020

विषय : निविदा के लिए आमंत्रण  
Sub : INVITATION OF TENDER

प्रिय महोदय,  
Dear Sirs,

निम्नलिखित व पृष्ठ के दूसरी ओर वर्णित नियम एवं शर्तों के अनुसार हम अधोवर्णित मद/मदें खरीदना चाहते हैं। आपसे अनुरोध है कि इसके लिए आप अपनी मुहरबन्द निविदा/भाव-सूची कृपया अपने पत्र-शीर्ष पर ही प्रस्तुत करें:

We intend to purchase the under mentioned item(s) as per terms and conditions mentioned overleaf. You are requested to submit your sealed tender/quotation for the same on your own letterhead :-

Sl. No.	Description of material(s)	Quantity	EMD Amt. (Rs.)
1.	CCTV Solution for the Institute Specification As per Annexure '1'	01 Job	9000.00

- आपके प्रस्ताव में, प्रस्तावित मद/मदों की निर्मित मेक का वर्णन अवश्य किया जाए।  
Make(s) of offered item(s) MUST be mentioned in your offer.
- वर्णित मूल्य, वाडिया हिमालय भूविज्ञान संस्थान, देहरादून परिसर तक सुपुर्दगी के आधार पर ही हो। केवल जी0एस0टी0 जो लागू हो अतिरिक्त रूप से देय होगा। आपके प्रस्ताव में जी0एस0टी0 की दर का वर्णन अवश्य किया जाए।  
For Indigenous supply, Rates MUST be for delivery on FOR WIHG, Dehradun Premises basis. Only G.S.T. as applicable will be paid extra. Rate of G.S.T. MUST be mentioned in your offer.
- संस्थान द्वारा ओवरसीज निविदाकारों को भुगतान का 100% वायर ट्रांसफर से भेजा जायेगा। जिसमें से कि 80% भुगतान सामान की सुपुर्दगी के पश्चात एवं 20% भुगतान तभी हो पायेगा जब कि वा0हि0भू0सं0 संस्थान में सामान की संस्थापना एवं सफलतापूर्वक स्वीकृति हो जायेगी।  
100% payment to overseas suppliers will be made by us through wire transfer. 80% will be released immediately on receipt of the consignment in our Institute and remaining 20% will be released on successful installation and acceptance of supply.

Continued on page '2'



4. ओवरसीज निविदाकारों के द्वारा व्यापारिक प्रस्ताव आवश्यक रूप से जमा किया जाना चाहिए जो कि अधोवर्णित पंक्तियों में एफ0ओ10बी10 से सम्बन्धित निहित है।  
Commercial offer from overseas manufacturers/suppliers MUST be submitted on the following lines and must be for supply on f.o.b. basis:  
Ex-works cost  
d) (-) Less Indian Agent's Commission, if any, payable in Indian currency after satisfactory installation and acceptance of supply.  
e) Net ex-works cost  
f) Net f.o.b cost.
5. आपूर्ति की प्राप्ति, संस्थापना तथा स्वीकृति के बाद, केवल कास किए गए बैंक/एन0ई0एफ0टी0/आर0टी0जी0एस0 से ही भुगतान किया जाना चाहिए। अन्य भुगतान नियमों वाले प्रस्तावों को नजरअन्दाज कर दिया जाएगा।

Payment will be made after receipt, installation and acceptance of supply by a crossed cheque/NEFT/RTGS only. Offers with other payment terms will be liable to be ignored.

6. आपके प्रस्ताव में, प्रस्तावित मद (मदों) के लिए उपलब्ध तीन साल की कम्प्रेहेंसिव ओनसाईट ओईएम वारंटी का स्पष्ट उल्लेख किया जाना चाहिए।

Three Years comprehensive onsite OEMWarranty available on the offered item(s) MUST be clearly mentioned in your offer.

7. अनुपालन कथन के अनुसार जैसा कि एनक्चर ए म वर्णित है आपकी निविदा में अवश्य वर्णित किया जाना चाहिए। अन्यथा निविदा पर विचार नहीं किया जायेगा।

Compliance statement as per enclosed Annexure A must be enclosed. Failing which your offer may not be considered further.

#### नियम एवं शर्तें

### TERMS AND CONDITIONS

1. आपकी मुहरबंद निविदा/भाव सूची, हमारे पास ऊपरवर्णित नियत तिथि को अपराह्न 1.00 बजे तक अवश्य पहुँच जानी चाहिए।  
Your sealed tender/quotation MUST reach us by 01.00 P.M. on the due date mentioned above.
3. निविदाएं/भाव-सूचियाँ नियत तिथि को अपराह्न 3.00 बजे खोली जाएँगी। यदि किसी कारणवश कार्यालय, उस नियत तिथि को बंद रहता है या इस तिथि को किसी कारणवश भाव-सूचियाँ खोलना सम्भव नहीं होता तो भाव-सूचियाँ अगले कार्य दिवस को अपराह्न 3.00 बजे खोली जाएँगी।  
Tenders/quotations will be opened at 3.00 p.m. on ON THE DUE DATE. In case the office is closed on this date due to any of the reasons or it is not possible for us to open the quotations on this date because of any of the reasons, the quotations will be opened at 3.00 p.m. on the next working day.
3. निविदाकर्ताओं को निदेशक, वाडिया हिमालय भूविज्ञान संस्थान, देहरादून के नाम पर रूपय 9,000 का बयाना (अर्नेस्ट मनी) एफ0डी0आर0/बैंक गारंटी के रूप में जमा करानी आवश्यक है। बिना अर्नेस्ट मनी की निविदाएं स्वीकृत नहीं की जाएँगी। एफ0डी0आर0/बैंक गारंटी की वैधता/निविदा की वैधता के 45 दिनों के बाद तक ही होनी चाहिए।  
The bid should be accompanied by FDR/Bank Guarantee towards **Earnest Money for Rs. 9,000/ (Rupees Nine Thousand Only) in the name of the Director, Wadia Institute of Himalayan Geology, Dehra Dun (India), failing which the offer will not be considered.**  
The Bank Guarantee shall remain in force up to and including forty five (45) days after the period of bid validity.  
जिन फर्मों के द्वारा इस निविदा के लिए क्वोट किया गया है और ये फर्मों बयाना/सिक्योरिटी डिपोजिट में छूट चाहते हैं तो उन्हें एन0एस0आई0सी0 या फिर अन्य ऐसी सरकारी संस्था के पठनीय तिलिपि का वैध प्रमाणत्र सलगन करना आवश्यक है तभी निविदा मान्य होगी।  
Firms quoting against this tender and seeking exemption for EMD/SD, being registered with NSIC or any such govt. Body, must enclose the legible copy of valid Certificate issued by such authorities, failing which their bid is liable to be rejected.

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4. बिड निविदा दस्तावेज के अनुसार न होने पर अस्वीकार किए जाने के लिए उत्तरदायी होगी।  
Bid not in accordance with tender document is liable to be rejected.
5. आपके प्रस्ताव में, आपूर्ति के विस्तृत नियम एवं शर्तों का स्पष्ट उल्लेख किया जाना चाहिए अन्यथा आपका प्रस्ताव अस्वीकार किया जा सकता है। Detailed terms & conditions of supply must be mentioned in your offer clearly, otherwise the offer will be liable to be rejected.
6. आपकी जी०एस०टी० संख्या का आपके प्रस्ताव में स्पष्ट उल्लेख होना चाहिए। अपने प्रस्ताव में जी०एस०टी० का उल्लेख करने से पहले Govt. Notification No. 47/2017 - Integrated Tax (Rate) dated 14<sup>th</sup> November, 2017 का अवलोकन करें।  
Your G.S.T. Number must be specifically mentioned in your offer. You may take note of Govt. Notification No. 47/2017 Integrated Tax (Rate) dated 14<sup>th</sup> November, 2017 before mentioning GST rates in their offer.
7. कृपया प्रस्तावित सामग्री के विषय में सम्पूर्ण विनिर्देश तथा अन्य जानकारी दें। यदि कोई तकनीकी पन्ने/विस्तृत साहित्य आदि हों तो वह भी आपके प्रस्ताव के साथ भेजे जाने चाहिए। निविदा के खुल जाने के बाद अलग से कुछ भी प्रार्थना स्वीकृत नहीं की जायेगी। कोई भी अधूरी निविदा या फिर वा निविदा जो कि निविदा के कागजात की शर्तों पर लागू नहीं होती या उनके अनुसार पूर्ण नहीं है तो निविदा को कभी भी निरस्त किया जा सकता है।  
Please furnish complete specifications and other informations about the offered materials. Technical leaflets/detailed technical literature etc. if any, must be sent with your offer. No separate request will be made/accepted for supply of these document after tender opening. Incomplete bid or bid which is not in accordance with the relevant tender document will be summarily rejected.
8. आपकी निविदा/भाव-सूची का लिफाफा मुहरबंद होना चाहिए तथा उसके ऊपर स्पष्ट, बड़े अक्षरों में  
.....हेतु निविदा (निविदा संख्या.....)..... को खोली जाने वाली :  
(ऊपरवर्णित) लिखा होना चाहिए।  
**The envelope containing your tender/quotation should be sealed and superscribed in Capital letters "TENDER FOR (TENDER NO.....) DUE TO OPEN ON : MENTIONED ABOVE.**
9. निविदाकारों को उनके अपने हित में सलाह दी जाती है कि वे या तो अपनी निविदाएँ रजिस्टर्ड डाक से भेजें या फिर अपनी निविदाएँ स्वयं आकर भंडार एवं कय अधिकारी के कमरे में रखी गई निविदा – पेटी में डाल दें। यह निविदाकारों की स्वयं की जिम्मेदारी है कि वे यह सुनिश्चित करें कि उनकी निविदाएँ इस कार्यालय में नियत तिथि तक तथा सही समय पर पहुँच जाएँ।  
The tenderers are advised in their own interest to either send their tenders by Registered post or to put their tenders in person in the tender box kept in the room of Stores & Purchase Officer of the Institute. It is the responsibility of the tenderers to see that their tender reaches this office by due date and time.
10. आपके द्वारा क्वोट की गई भाव-सूची, निविदा खोलने की तिथि से कम से कम चार महीनों तक लागू रहनी चाहिए।  
The rates quoted by you should hold good for at least four months from the date of opening the tender.
11. निविदाकार को गारंटी अवधि के पूरा होने तक कय आदेश मूल्य का 5 प्रतिशत से 10 प्रतिशत सुरक्षा (सिक्योरिटी डिपोजिट) के तौर पर एफ०डी०आर० या बैंक गारंटी के रूप में जमा कराना होगा।  
The tenderer will have to submit **security deposit @ 5% to 10%** of order value in the shape of FDR/Bank Guarantee till the completion of warranty period.
12. निविदा में उस तिथि का उल्लेख किया जाए जिस तक शीघ्रतम सुपुर्दगी कार्य पूरा किया जा सकता है। अनुबंदित तिथि तक सुपुर्दगी को कार्यरूप दे पाने की विफलता की स्थिति में निविदाकार(रों) को सरकार द्वारा निर्धारित की गई दरों पर निर्णीत हर्जाना भरना पड़ सकता है।  
The earliest date by which delivery can be completed should be mentioned in the tender. Failure to effect delivery by the stipulated date may render the tenderers liable to pay liquidated damage at the rate prescribed by the Govt.
13. जिन निविदाओं में काट-पीट/लिखे हुए के ऊपर लिखा होगा, उन्हें नजरअन्दाज कर दिया जायेगा।  
Tenders with overwritings/cuttings will be liable to be ignored.

14. विवाद की समस्या सभी असहमता, विवाद, मत, अन्तर जो भी वा0हि0भू0सं0 और फर्म/एजेंसी के मध्य उठ सकता है, जो कि आपसी बातचीत से हल नहीं हो सकता, सम्बन्धित राष्ट्रीय या अन्तरराष्ट्रीय कानून के प्रावधान में नियुक्त मध्यस्थता को भेज दिया जायेगा, जैसा भी मामला हो। कार्यवाही और मध्यस्थता का स्थल देहरादून, भारत होगा।

Résolution of Disputes : All disagreements, desputees, difference that may arise between the Wadia Institute of Himalayan Geology and your firm/agency which cannot be resolved through mutual négociations shall be referred to an Arbitrator appointed in accordance with the provisions of relevant Indian or International Law as the case may be. The venue of the proceedings and arbitration shall be Dehradun, INDIA.

14- यदि हिन्दी एवं अंग्रेजी अनुवाद में कोई अन्तर आता है तो अंग्रेजी अनुवाद ही मान्य होगा।


In case of any difference in Hindi & Eneenglish version, the English version will prevail.

15. निदेशक, वाडिया हिमालय भूविज्ञान संस्थान, देहरादून, के पास, बिना कोई कारण बताए, किसी भी अथवा सभी निविदाओं को अस्वीकार करने का अधिकार सुरक्षित है।

The Director, Wadia Institute of Himalayan Geology, Dehra Dun reserves the right to reject any or all tenders without assigning reasons.

भवदीय,

Yours faithfully,



21/8/2020

( एम0के0 बिस्वास )

( M.K. BISWAS )

मंडार एवं कय अधिकारी



**ANNEXURE - 1**  
**(Scope of Supplies and Technical Specifications)**

Wadia Institute intends to get the CCTV at various important positions/locations within the Institute.

**4 Cameras will be installed outdoors at the main gate, parking, etc.**

The specifications and quantity of the items required for the job are as per annexure-1. (However, the vendors must consider the project as turnkey and hence any other item that is required for the successful implementation of the system must also be clearly mentioned and rates quoted for the same in the offer). If any such item is not quoted and at the installation stage, it is seen that the item is required, the same will have to be provided by the vendor at no additional cost.

<b>BOQ of CCTV Camera and required accessories</b>			
<b>S/No.</b>	<b>Item Description</b>	<b>Qty</b>	<b>Unit</b>
1	4 MP IR Fixed Bullet Network Camera	2	Nos
2	4 MP IR Fixed Dome Network Camera	2	Nos
3	4MP 25× Network IR Speed Dome with Pole Mount stand	1	Nos
4	4MP 25× Network IR Speed Dome with Corner Mount stand	1	Nos
5	1G Fiber module	4	Nos
6	8-Port Gigabit PoE Switch with 2 Combo SFP Slots,	4	Nos
7	Rack 6U with 6 Port PDU 5 AMP	1	Nos
8	Cat6 SFTP Cable Box (305) Mtr.	1	Box
9	High Power Gigabit POE Injector	2	Nos
10	PVC Pipe 1" (Length 10 Feet)	50	Nos
11	Transparent Pipe 1 1/2"	2	Mtr.
12	HDPE Pipe 1" with accessories	90	Mtr.
13	Installation including digging in soft/hard soil, fixing of Pipes, cable laying, etc	1 Job	-

<b>Note:</b> Payment will be made on actual after measurement
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*Dr*

1. The vendor should have a registered permanent office in Dehradun which has been operational for at least 5 years with sufficient staff. (ST/VAT/GST registration to be submitted as a proof).
2. Provide Letter from Manufacturer on his letter head authorizing the supplier to quote and provide services related to supply, Installation, and warranty, breaks down maintenance support for the committed warranty period.
3. Bidder must provide Escalation Matrix of Telephone Numbers for Service Support.
4. The bidder should have successfully executed minimum one Surveillance order (Same or Similar) for any Government Organization during the last five years

**Warranty:** Comprehensive onsite warranty of the complete installation will have to be provided by the vendor for 2 years. The vendor must have a local service center at Dehradun so that he can respond to any such problems within the stipulated time.

**Integration:** All the hardware and softwares (including NVR software of min. 32 users) required for the successful implementation will have to be provided by the vendor and installation of the same will also be responsibility of the vendor.

**LED TV**

55" (or higher) LED TV (Sony/Panasonic/LG/Samsung) for displaying of the live camera recording will have to be provided by the vendor. However, the cost of the LED TV will be considered separately, for arriving the lowest vendor.

Demonstration and training	Comply (Y/N)
After the successful installation and integration of all the components of the CCTV solution, the vendor shall demonstrate the same and training will have to be provided by the vendor to the Institute personnel for the operation of the system.	

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Specification of Network Bullet Camera		Comply (Y/N)
<b>Camera</b>		
Image Sensor	1/3" Progressive Scan CMOS	
Min. Illumination	Color: 0.01 Lux @ (F1.2, AGC ON), 0 Lux with IR	
Shutter Speed	1/3 s to 1/100,000 s	
Day & Night	IR Cut Filter	
Digital Noise Reduction	3D DNR	
WDR	should have WDR feature	
3-Axis Adjustment	Pan: 0° to 360°, tilt: 0° to 90°, rotate: 0° to 360°	
<b>Lens</b>		
Focal length	2.8/4/6/8 mm	
Aperture	F1.6	
<b>IR</b>		
IR Range	min. 40 m	
<b>Compression Standard</b>		
Video Compression	Main stream: H.265/H.264 Sub-stream: H.265/H.264/MJPEG	
H.264 Type	Main Profile/High Profile	
Video Bit Rate	256 Kbps to 16 Mbps	
<b>Smart Feature-set</b>		
Exception Detection	Scene change detection	
Face Detection	Yes	
Region of Interest	1 fixed region for main stream and sub-stream	
<b>Image</b>		
Max. Resolution	2688 × 1520	
Main Stream	50Hz: 25fps (2688 × 1520, 2560 × 1440, 2304 × 1296, 1920 × 1080) 60Hz: 30fps (2688 × 1520, 2560 × 1440, 2304 × 1296, 1920 × 1080)	
Sub-Stream	50Hz: 25fps (640 × 480, 640 × 360, 320 × 240) 60Hz: 30fps (640 × 480, 640 × 360, 320 × 240)	
Third Stream	50Hz: 25fps (1280 × 720, 640 × 360, 352 × 288) 60Hz: 30fps (1280 × 720, 640 × 360, 352 × 240)	
Image Enhancement	BLC/3D DNR/HLC	

Image Setting	Rotate mode, saturation, brightness, contrast, sharpness adjustable by client software or web browser	
Day/Night Switch	Day/Night/Auto/Schedule	
<b>Network</b>		
Network Storage	Support Micro SD/SDHC/SDXC card (128G), local storage and NAS (NFS,SMB/CIFS), ANR	
Alarm Trigger	Motion detection, video tampering, network disconnected, IP address conflict, illegal login, HDD full, HDD error	
Protocols	TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP™, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6, Bonjour	
General Function	One-key reset, anti-flicker, three streams, heartbeat, mirror, password protection, privacy mask, watermark, IP address filter	
API	ONVIF (PROFILE S, PROFILE G), ISAPI	
Simultaneous Live View	Up to 6 channels	
User/Host	16 or more users levels: Administrator and Operator	
Web Browser	Should support latest web browsers	
<b>Interface</b>		
Communication Interface	1 RJ45 10M/100M self-adaptive Ethernet port	
On-board storage	Built-in Micro SD/SDHC/SDXC slot, 128 GB or higher	
<b>General</b>		
Operating Conditions	0 °C to 55°C	
Power Consumption	12 VDC and PoE	
Protection Level	IP67	
Material	Metal	





Specification of Fixed Dome Camera		Comply (Y/N)
<b>Camera</b>		
Image Sensor	1/3" Progressive Scan CMOS	
Min. Illumination	Color: 0.01 Lux @ (F1.2, AGC ON), 0 Lux with IR	
Shutter Speed	1/3 s to 1/100,000 s	
Day & Night	IR Cut Filter	
Digital Noise Reduction	3D DNR	
WDR	should have WDR feature	
3-Axis Adjustment	Pan: 0° to 355°, tilt: 0° to 75°, rotate: 0° to 355°	
<b>Lens</b>		
Focal length	2.8/4/6/8 mm	
Aperture	F1.6	
<b>IR</b>		
IR Range	40 m or better	
<b>Compression Standard</b>		
Video Compression	Main stream: H.265/H.264 Sub-stream: H.265/H.264/MJPEG	
H.264 Type	Main Profile/High Profile	
Video Bit Rate	256 Kbps to 16 Mbps	
<b>Image</b>		
Max. Resolution	2688 × 1520	
Image Setting	Rotate mode, saturation, brightness, contrast, sharpness adjustable by client software or web browser	
Target Cropping	No	
Day/Night Switch	Day/Night/Auto/Schedule	
<b>Network</b>		
Network Storage	Support Micro SD/SDHC/SDXC card (128G), local storage and NAS (NFS,SMB/CIFS), ANR	
Alarm Trigger	Motion detection, video tampering, network disconnected, IP address conflict, illegal login, HDD full, HDD error	
Protocols	TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP™, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6, Bonjour	
General Function	One-key reset, anti-flicker, three streams, heartbeat, mirror, password protection, privacy mask, watermark, IP address filter	

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Simultaneous Live View	Up to 4 channels	
User/Host	16 or more users levels: Administrator and Operator	
Web Browser	support latest browsers	
<b>Interface</b>		
Communication Interface	1 RJ45 10M/100M self-adaptive Ethernet port	
On-board storage	Built-in Micro SD/SDHC/SDXC slot, up to 128 GB	
Reset Button	Yes	
<b>General</b>		
Operating Conditions	4-30 °C to +55 °C	
Power Consumption and Current	12 VDC and PoE (802.3af)	
Protection Level	IP67	
Material	Metal	

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Specification of PTZ Dome Camera		Comply (Y/N)
<b>Camera Module</b>		
Image Sensor	1/2.5" progressive scan CMOS	
Min. Illumination	Color: 0.05 Lux B/W: 0.01Lux 0 Lux with IR	
White Balance	Auto/Manual/ATW (Auto-tracking White Balance)/Indoor/Outdoor/Fluorescent Lamp/Sodium Lamp	
Gain	Auto/Manual	
Shutter Time	50Hz: 1/1 s to 1/30,000 s 60Hz: 1/1 s to 1/30,000 s	
Day & Night	IR Cut Filter	
Privacy Mask	12 or more programmable privacy masks	
Focus Mode	Auto/Semi-automatic/Manual	
WDR	Should have WDR feature	
<b>Lens</b>		
Focal Length	4.8 mm to 120 mm, 25x optical zoom	
Aperture Range	F1.6 to F3.5	
<b>IR</b>		
IR Distance	80 m	
<b>PTZ</b>		
Movement Range (Pan)	360° endless	
Movement Range (Tilt)	From 0° to 90° (auto-flip)	
Proportional Zoom	Must have Proportional zoom	
Presets	200	
Patrol Scan	Should support patrol scan	
Power-off Memory	must have power-off memory	
PTZ Position Display	must PTZ position display	
<b>Compression Standard</b>		

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Video Compression	Main Stream: H.265+/H.265/H.264+/H.264 Sub-stream: H.265/H.264/MJPEG Third Stream: H.265/H.264/MJPEG	
<b>Image</b>		
Max. Resolution	2560 × 1440	
Main Stream	50Hz: 25fps (2560 × 1440, 2048 × 1536, 1920 × 1080, 1280 × 960, 1280 × 720)	
	50fps (1920 × 1080, 1280 × 960, 1280 × 720)	
	60Hz: 30fps (2560 × 1440, 2048 × 1536, 1920 × 1080, 1280 × 960, 1280 × 720)	
	60fps (1920 × 1080, 1280 × 960, 1280 × 720)	
Sub-Stream	50Hz: 25fps (704 × 576, 640 × 480, 352 × 288)	
	60Hz: 30fps (704 × 480, 640 × 480, 352 × 240)	
Image Enhancement	HLC/BLC/3D DNR/Defog/EIS/Regional Exposure/Regional Focus	
<b>Network</b>		
Network Storage	Built-in memory card slot, support Micro SD/SDHC/SDXC, 128 GB or higher; NAS (NFS, SMB/ CIFS)	
Protocols	IPv4/IPv6, HTTP, HTTPS, 802.1x, Qos, FTP, SMTP, UPnP, SNMP, DNS, DDNS, NTP, RTSP, RTCP, RTP, TCP/IP, UDP, IGMP, ICMP, DHCP, PPPoE, Bonjour	
Simultaneous Live View	8 or more channels	
User/Host	16 or more users levels: Administrator and Operator	
Client	iVMS-4200, iVMS-4500, iVMS-5200, Hik-Connect	
Web Browser	Should support latest versions of popular browsers	
<b>Interface</b>		
Network Interface	1 RJ45 10 M/100 M Ethernet, Hi-PoE	
<b>General</b>		
Protection Level	IP66 Standard, TVS 4000V Lightning Protection, Surge Protection and Voltage Transient Protection	
Working Temperature	0 °C to 55 °C	



Specification of NVR		Comply (Y/N)
<b>General</b>		
Chassis	19-inch rack-mounted 2U chassis with RAID for HDD Fault Tolerance	
<b>Network</b>		
Incoming bandwidth	Min 320 Mbps	
Outgoing bandwidth	Min 256 Mbps	
Remote connection	64 or more	
<b>Video/Audio input</b>		
IP video input	64-CH, support for up to 12 MP resolution	
Two-way audio	1-ch, RCA (2.0 Vp-p, 1 k Ω)	
<b>Video/Audio output</b>		
Recording resolution	12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA/4CIF/DCIF/2CIF/CIF/QCIF	
VGA /HDMI output resolution	HDMI: 4K (3840 × 2160)/60Hz, 4K (3840 × 2160)/30Hz, 2K (2560 × 1440)/60Hz, 1920 × 1080p/60Hz, 1600 × 1200/60Hz, 1280 × 1024/60Hz, 1280 × 720/60Hz, 1024 × 768/60Hz VGA: 2K (2560 × 1440)/60Hz, 1920 × 1080p/60Hz, 1600 × 1200/60Hz, 1280 × 1024/60Hz, 1280 × 720/60Hz, 1024 × 768/60Hz	
Audio output	2-ch, RCA (2.0Vp-p, 1 KΩ)	
<b>Decoding</b>		
Decoding format	H.265+/H.265/H.264/H.264+/MPEG4	
Live view/Playback resolution	12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA/4CIF/DCIF/2CIF/CIF/QCIF	
Capability	12-ch @ 12 MP (20fps) / 4-ch @ 8 MP (25fps) / 8-ch @ 4MP (30fps) / 16-ch @1080p (30fps)	
<b>Network management</b>		
Network protocols	TCP/IP, DHCP, DNS, DDNS, NTP, SADP, SMTP, NFS, iSCSI, HTTPS	
<b>Hard disk</b>		
SATA	Min 8 SATA interfaces for 8HDDs	
eSATA	min. 1 eSATA interface	
Capacity Required	6TB capacity for each HDD (24 TB total required)	
<b>External interface</b>		
Serial interface	RS-232; RS-485; Keyboard	
USB interface	2 × USB 2.0; 1 × USB 3.0	
Network interface	Min 2ports, RJ-45 10/100/1000 Mbps	

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