Hanwha Vision

5MP NETWORK NUMBER PLATE IDENTIFICATION CAMERA

User Manual

XNO-8070RH

CE

5MP Network Number Plate Identification Camera

User Manual

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❖ **Design and specifications are subject to change without prior notice.**

❖ **The initial administrator ID is "admin" and the password should be set when logging in for the first time.**
Please change your password every three months to safely protect personal information and to prevent the damage of the information theft.
Please, take note that it's a user's responsibility for the security and any other problems caused by mismanaging a password.

IMPORTANT SAFETY INSTRUCTIONS

1. Before installation, read all manuals thoroughly and proceed with the installation according to the directions.
2. When connecting a power cable or signal line, check the external connection port first. Incorrectly connecting the power supply may cause fire, electric shock or damage to the product.
3. If you notice any unusual smells or smoke coming from the unit, stop using the product. If this occurs, immediately disconnect the power source and contact the service center. Continued use may cause fire or electric shock.
4. Do not disassemble while the power is on.
5. Before the power is supplied, confirm that all power cords have been properly connected. An insecure connection may result in fire.
6. If the product has been in a high or low temperature environment, you may be injured by high heat or low chill of the surface.
7. Before turning the power on, confirm that the power supply supports 12Vdc/5A. Power in excess of the rated voltage may cause a fire.
8. Lightning or thunder may cause damage to the device. When installing the product, consider taking measures that will minimize damage to the product in the event of lightning.
9. When the product is installed, it should be tightly anchored sufficiently to sustain its weight against any strong wind. The fixing method and material used must be able to sustain at least 4 times the product's weight.
10. Do not attach anything to the product.
11. When installing in a dangerous environment, remove the product from the power supply to reduce the possibility of ignition.
12. Do not install near a heater or motor. Install the product in a place with good ventilation.
13. You can receive installation support from engineers who are qualified to handle technical services.
14. Do not install the product in a location that is humid, or where the product will be exposed to dust or soot.
15. Do not drop objects on the product, or apply strong impact to it. Keep away from locations where there is excessive vibration or magnetic interference.

16. Do not install in an operating environment with extreme temperatures. The product will operate at temperatures of -20°C ~ +55°C.
17. Keep out of direct sunlight, and away from heat radiation sources.
18. If you want to relocate a product that has already been installed, be sure to turn off the power and then move or reinstall it. Failure to turn off the power may result in fire or electric shock.
19. Install the product in a location with good ventilation. When connecting a power cable or signal line, check the external connection port first.
20. Before cleaning the product, disconnect it from the power supply.
21. Do not touch the front window (be careful not to leave any fingerprints or scratches).
22. Please lock the cable gland prevent water leakage.
23. Camera setup value is specifically set to identify car plates. However, you can change the setup value to suit your installation environment.

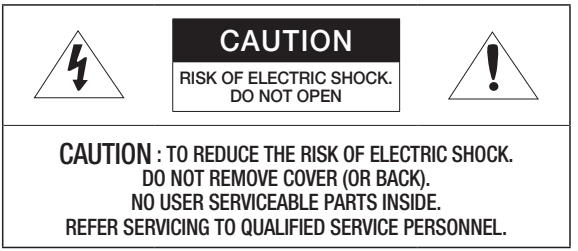
WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

To prevent injury, this apparatus must be securely attached to the Wall/ceiling in accordance with the installation instructions.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Class I construction

An apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

Battery

Batteries(battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

Disconnection Device

Disconnect the main plug from the apparatus, if it's defected. And please call a repair man in your location.

When used outside of the U.S., it may be used HAR code with fittings of an approved agency is employed.

CAUTION

- The product must be installed by an authorized technician. Installation by unqualified personnel is strictly prohibited.
  As installation requires a certain level of technical skill, installing the product yourself may create the risk of fire of electrical shock. Please contact your dealer regarding installation.
- If you notice smoke or abnormal heat coming from the inside of the housing, stop using it immediately. Continued use may cause a fire.
- Do not install the product in a location with excessive humidity or that is exposed to oil or gas. Do not install wires with wet hands. This may cause failure of the product, electrical shock or fire.
- Do not install the product in a location with insufficient strength.This may cause the risk of the product falling.
- Do not allow a non-professional to disassemble the product. Furthermore, do not allow any foreign substances to enter the product. This may cause a failure, electrical shock or fire.
- Do not install the product in a location with a high or low ambient temperature (the product may not work properly).
- Do not drop the product, or apply severe impact or vibration to it, as this may cause a failure.

- Do not allow the camera to face the sunlight or intense light. (This may cause serious damage to the CMOS element or internal circuit.)
- Do not touch the front window (be careful not to leave any fingerprints or scratches).
- The product is configured to specific settings to enable the recognition of number plates. (If a problem occurs, do not operate it arbitrarily - contact our customer service.)

The ITE is to be connected only to PoE networks without routing to the outside plant.

Please read the following recommended safety precautions carefully.

- Do not place this apparatus on an uneven surface.
- Do not install on a surface where it is exposed to direct sunlight, near heating equipment or heavy cold area.
- Do not place this apparatus near conductive material.
- Do not attempt to service this apparatus yourself.
- Do not place a glass of water on the product.
- Do not install near any magnetic sources.
- Do not block any ventilation openings.
- Do not place heavy items on the product.

User's Manual is a guidance book for how to use the products.

The meaning of the symbols are shown below.

- Reference : In case of providing information for helping of product's usages
- Notice : If there's any possibility to occur any damages for the goods and human caused by not following the instruction

※ Please read this manual for the safety before using of goods and keep it in the safe place.

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PRODUCT FEATURES

- Camera-linked high efficiency lighting using a power-IR LED enables photography of the number plate of an entering vehicle, even during nights with no illumination.
- The camera power supply and the driver are embedded in the housing.
- As the camera features a built-in circuit to charge a large capacity capacitor, the camera and its lighting device do not work until charging is completed at the time of the initial supply of power.
  (The camera and the lighting device will work normally approximately 20 to 30 seconds after the initial supply of power.)
- As the product is released with optimized settings, it is easy to install.
- As the ambient light sensor automatically changes between day and night mode depending on the ambient lighting, the camera records images in color mode in the day time and in monochrome mode at night to achieve optimized images.
- Thanks to the electronic shutter inter-operation, the camera consumes only a tenth of the power and provides 10 times more brightness compared to a continuous illumination control type camera.
- The camera can be installed in difficult external environments, and has outstanding dustproof and waterproof functions certified for IP 66, which is the housing protection grade according to KS C IEC 60529 Ed. 2.2: 2013.
- The camera can be operated both in vehicle number identification mode and in security surveillance mode. While operating in surveillance (long distance) mode, the camera can identify an object at a distance of up to 100 meters.

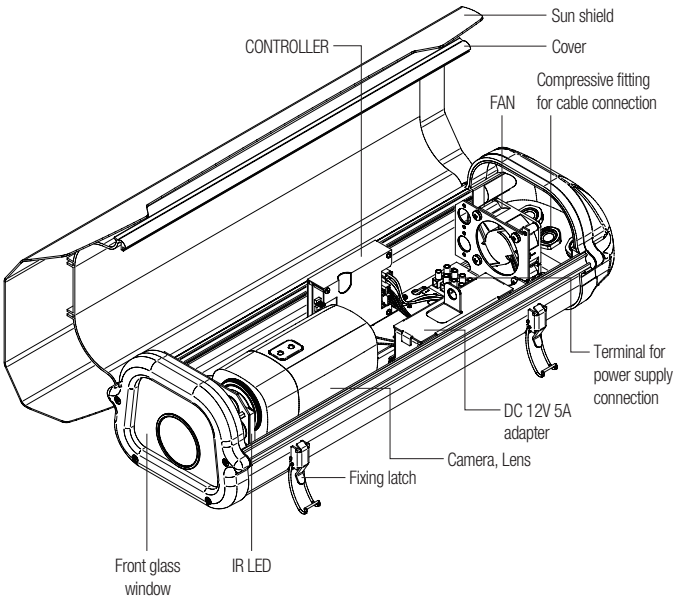
WHAT'S INCLUDED

Please check if your camera and accessories are all included in the product package.

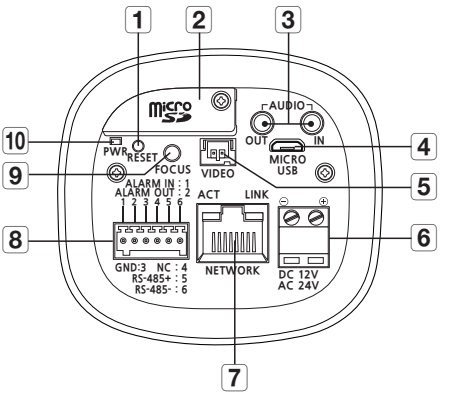
Appearance	Item Name	Quantity	Description
	Screw	2	Product installation fixture
	Washer spring	2	Product installation fixture
	Washer	2	Product installation fixture
	Monitor cable for testing	1	Used to test the camera connection to a portable display device
	XNO-8070RH User Manual	1	
	XNB-8000 Quick Guide	1	

AT A GLANCE

Main body



Camera



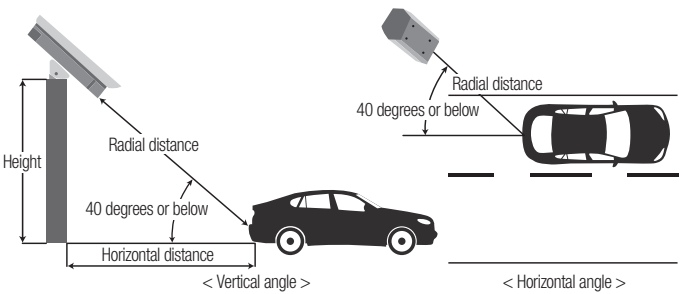
Item	Description	
1 Reset Button	The button restores all camera settings to the factory default. Press and hold for about 5 seconds to reboot the system. ! If you reset the camera, the network settings will be adjusted so that DHCP can be enabled. If there is no DHCP server in the network, you must run the IP Installer program to change the basic network settings such as IP address, Subnet mask, Gateway, etc., before you can connect to the network.	
2 Micro SD Memory Card Compartment	Compartment for the Micro SD memory card.	
3 Audio terminal	AUDIO OUT	Used to connect to speakers.
	AUDIO IN	Used to connect to a microphone.
4 MICRO USB Port	Port to connect the Wi-Fi dongle. You can check the installation video through the applications installed in the smartphone. Refer to "**Connect to WiFi dongle**" in the XNB-8000 manual. ▪ Wifi dongle and OTG gender are sold separately.	

Item		Description	
5	Test Monitor Out	Output port for test monitoring the video output. Use the test monitor cable to connect to a mobile display and check the test video.	
6	Power Port	Used to plug the power cable.	
7	Network Port	Used to connect the PoE or Ethernet cable for network connection.	
8	Alarm I/O Port	ALARM IN	Used to connect the alarm input sensor or external day/night sensor.
		ALARM OUT	Used to connect the alarm output signal.
		GND	Used for earth-grounding.
		RS-485+	RS-485 Data line
		RS-485-	RS-485 Data line
9	Focus Adjustment Button	The button adjusts the focus of image automatically.	
10	Power Indicators	ON : While the power is on OFF : If the power is off	

- RS-485 port only supports direct connection with pan/tilt driver and external connections of the RS-485 controller is not supported.

HOW TO INSTALL A CAMERA FOR VEHICLE NUMBER IDENTIFICATION

Install the camera with an angle, horizontal distance and height that ensure the maximum LED radial distance of 20m is not exceeded (vertical angle: 40 degrees or below, horizontal angle: 40 degrees or below)



Recomended distance

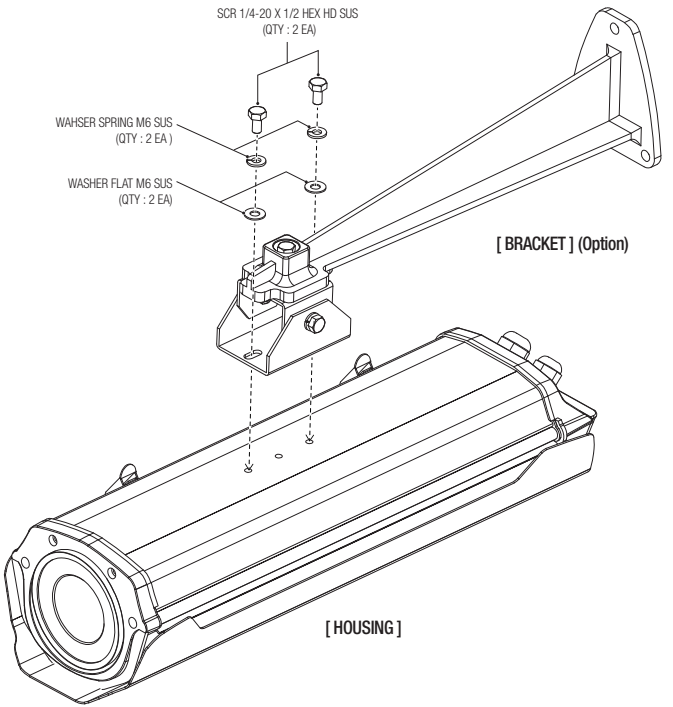
Pole Height: 4-6 m, Horizontal distance : 14-19 m

- Fasten the camera with at least 2 bolts when mounting it.

Zoom lens focusing

- Move the zoom to the Tele position as far as possible.
- Focus the camera on the object.
- Move the zoom to the maximum wide and find an appropriate image composition.
- Zoom in and focus the camera so that the vehicle takes up 60% of the screen.

HOW TO INSTALL THE BRACKET

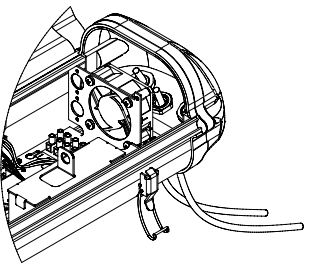


- For stable installation, you must use the provided accessories. If you use any other accessories not provided by us, the features/performance/safety of the product cannot be guaranteed.
- When installing the product, you should use a bracket and a surface that can support at least four times the weight of the product.

HOW TO CONNECT THE POWER SUPPLY AND NETWORK

The camera is designed to connect the cable to the port (compressive fitting) on the bottom side at the rear of the housing.

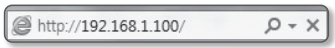
Unfasten the nut of the compressive fitting at the rear of the housing and insert the power cable and the network cable from the outside of the housing inside of it according to the size of each hole.



- In vehicle number identification mode, it is recommended to set the NVR recording option to MJPEG (transmission image quality: maximum).

CONNECTING TO THE CAMERA

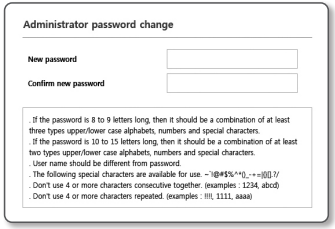
1. Enter the network camera address into the Internet browser (Explorer browser) address bar to connect to the camera.



   - The camera is set to receive an IP address that is automatically assigned from the DHCP server when it is released from the factory.
     If there is no DHCP server, the IP address is set to 192.168.1.100.
     To change the IP address, use the IP installer.
     Instructions for using the IP installer are provided in the XNB-8000 manual.

2. At the initial access, a dialogue window appears that asks you to install a viewer (Please click Yes to install Web Viewer).

3. When you access the product for the first time, you must register the login password.
   When the "**Password change**" window appears, enter the new password.



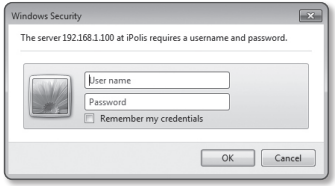
   - For a new password with 8 to 9 digits, you must use at least 3 of the following: uppercase/lowercase letters, numbers and special characters. For a password with 10 to 15 digits, you must use at least 2 types of those mentioned.

     - Special characters that are allowed. : ~`!@#$%^*()_-+={}[].?/

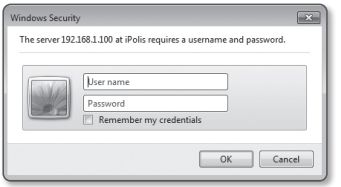
   - For higher security, you are not recommended to repeat the same characters or consecutive keyboard inputs for your passwords.

   - If you lost your password, you can press the [**RESET**] button to initialize the product. So, don't lose your password by using a memo pad or memorizing it.

4. After setting a password, enter a user ID/ password using the screen shown on the right.
   - User ID: admin
     Password: the password you have set



5. Whenever you access the camera, the login window appears.
Enter the User ID and password to access the camera.



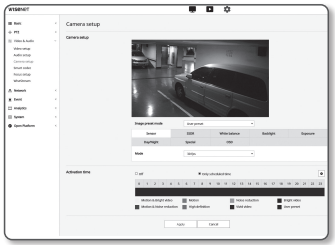
1) Enter "**admin**" in the <**User name**> input box. The administrator ID, "**admin**", is fixed and can not be changed.
2) Enter the password in the <**Password**> input field.
3) Click [**OK**].
If you have logged in successfully, you will the Live Viewer screen.

- When you access the camera web viewer, pay special attention to the security by checking whether the image data is encrypted.

- If you check the "**Remember my credentials**" option when your input is done, in future you will be logged in automatically without being prompted to enter the login information.
- You will experience the best video quality if the screen size is 100%. Reducing the ratio may cut the image on the borders.

CAMERA SETTINGS - FOR VEHICLE NUMBER IDENTIFICATION

1. The camera is released from the factory optimized for vehicle number identification.
2. If you encounter any problems when installing or using a product dedicated to the identification of vehicle number plates, initialize the camera and set only the following 3 options.
3. Camera setup
   1) From the Setup menu, select the <**Video & Audio**> tab.
   2) Click <**Camera setup**>.
   3) Configure settings for SSDR, Exposure and Day/Night mode.



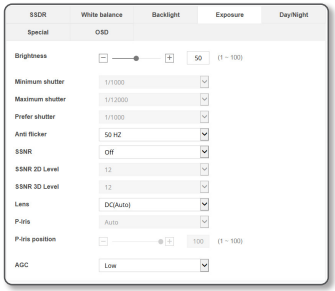
Vehicle number identification camera settings

■ Adjust the camera setup value to suit your installation environment.

1. Select <**SSDR**>.
2. Set the SSDR use option to disable.
   ■ Uncheck the ◯ box to disable SSDR function.

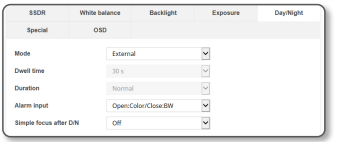


3. Select <**Exposure**>.
   1) Minimum shutter : 1/1000
   2) Maximum shutter : 1/12000
   3) Prefer shutter : 1/1000
   4) Anti flicker : 50 Hz
   5) SSNR : Off
   6) Lens : DC(Auto)
   7) AGC : Low



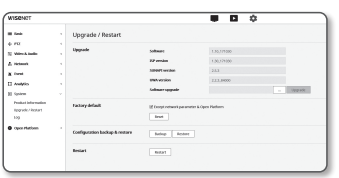
4. Select <**Day/Night**>.
   1) Mode : External
   2) Alarm Input : Open:Color/Close:BW
   3) Duration : Normal

- Settings other than those specified above are given the default value.



CAMERA SETTINGS - FOR SECURITY

1. As the camera is set to vehicle number identification mode when it is released, you need to initialize the camera and set it to the default values to use it in security mode. In security mode, the camera can identify an object at a distance of up to 100 meters.
2. For detailed camera settings, please refer to the enclosed “Network Camera User Manual”.
3. How to initialize
   1) From the Setup menu, select the <**System ( )**> tab.
   2) Click <**Upgrade / Reboot**>.
   3) Select a desired item and set it appropriately.



- Upgrade : Performs upgrading the system.
  When reconnecting, the web viewer will not run normally if the browser cache is not completely clear.
- Factory default : Initializes all setting information including the camera settings to the factory reset state. (however, logs are not initialized)
  - Select the <Except network parameter & Open Platform> check box and settings other than network settings and open platform settings will be reset.
  - The IP addressing system will be defaulted to DHCP if you reset the camera. If no DHCP server is found, the previous settings will be restored automatically.
- Configuration backup & Restore : Backs up the current system settings before performing the restoration process. The system is automatically restarts after backup or restoration.
- Restart : Restarts the system.

If you need further adjustments depending on the installation location, please contact our customer service.

SPECIFICATION

Items		Description
Video	Imaging Device	1/1.8" 6MP CMOS
	Effective Pixels	2616(H) x 1976(V)
	Min. Illumination	Color: 0.2Lux(F1.6, 1/30sec) BW: 0Lux(IR LED on)
	Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation
Lens	Focal Length (Zoom Ratio)	12~50mm(4.1x) manual varifocal
	Max. Aperture Ratio	F1.6
	Angular Field of View	H: 29.7°(Wide)~7.22°(Tele) / V: 21.9°(Wide) ~5.42°(Tele)
	Min. Object Distance	2m(6.56ft)
	Focus Control	Manual
	Lens Type	DC auto iris
	Mount Type	C mount, CS mount
Operational	IR Viewable Length	Automatic Plate Recognition : 25m(82ft), Within 120Km/h of vehicle speed For security : 100m(328 ft)
	IR Radiation Angle	25°
	IR LED	15 pcs, High-power LED
	IR Wavelength	850 nm
	IR Operation	Auto On/Off
	Camera Title	Displayed up to 85 characters
	Day & Night	Auto (ICR)
	Backlight Compensation	BLC, HLC, WDR, SSDR
	Wide Dynamic Range	120dB

Items		Description
Operational	Digital Noise Reduction	SSNRV
	Digital Image Stabilization	Support (built-in gyro sensor)
	Defog	Support
	Motion Detection	8ea, 8 point polygonal zones
	Privacy Masking	32ea, polygonal zones - Color: Grey/Green/Red/Blue/Black/White - Mosaic
	Gain Control	Low / Middle / High / Manual
	White Balance	ATW / AWC / Manual / Indoor / Outdoor
	LDC	Support
	Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec)
	Digital PTZ	Support (Preset, Group)
	Video Rotation	Flip, Mirror, Hallway view (90°/270°)
	Analytics	Defocus detection, Directional detection, Fog detection, Face detection, Motion detection, Digital auto tracking, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Sound classification
	Serial Interface	RS-485 (Samsung-T, Pelco-D/P, Panasonic, Bosch, AD, GE, Vicon, Honeywell)
	Alarm I/O	Input 1ea / Output 1ea
	Alarm Triggers	Analytics, Network disconnect, Alarm input
	Alarm Events	• File upload via FTP and e-mail • Notification via e-mail • SD/SDHC/SDXC or NAS recording at event triggers • Alarm output • DPTZ Preset

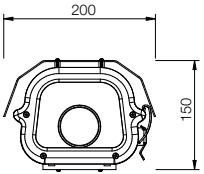
Items		Description
Operational	Audio In	Selectable (mic in / line in / built-in mic) Supply voltage : 2.5VDC (4mA), Input impedance : 2K Ohm
	Audio Out	Line out, Max.output level : 1 Vrms
Network	Ethernet	RJ-45 (10/100BASE-T)
	Video Compression	H.265/H.264: Main/Baseline/High, MJPEG
	Resolution	2560x1920, 2560x1440, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
	Max. Framerate	H.265/H.264 : Max. 30fps MJPEG : Max. 30fps
	Smart Codec	Manual(5ea area), WiseStreamⅡ
	Video Quality Adjustment	H.264/H.265 : Target bitrate level control MJPEG : Target bitrate level control
	Bitrate Control	H.264/H.265 : CBR or VBR MJPEG : VBR
	Streaming	Multiple streaming (Up to 10 profiles)
	Audio Compression	G.711 u-law /G.726 Selectable G.726(ADPCM) 8KHz, G.711 8KHz G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps AAC-LC : 48Kbps at 8/16/32/48KHz
	Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour, SRTP(TCP, UDP Unicast)
	Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access log 802.1X Authentication (EAP-TLS, EAP-LEAP)

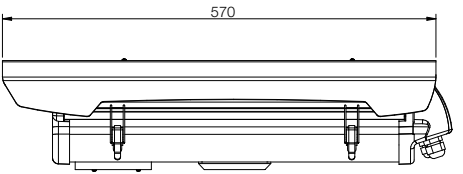
Items		Description
Network	Edge Strorage	Micro SD/SDHC/SDXC 2slot 256GB (Each CH)
	Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet open platform
	Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
	Web Viewer	Supported OS : Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Recommended Browser : Google Chrome Supported Browser : MS Explore11, MS Edge, Mozilla Firefox (Window 64bit only), Apple Safari (Mac OS X only)
	Memory	1024 MB RAM, 512 MB Flash
Environmental	Operating Temperature / Humidity	-20°C ~ +55°C (-4°F ~ +131°F) / Less than 90% RH
	Storage Temperature / Humidity	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH
	Certification	IP66
Electrical	Input Voltage	220 VAC, DC 12 V(Internal)
	Power Consumption	Max 35 W(220 VAC), typical 33 W
Mechanical	Color / Material	Body : Light Gray / Aluminum Front/Rear : Light Gray / Plastic
	Product dimensions / Weight	200(W) x 150(H) x 570(L) mm (7.87 x 5.91 x 22.44"), 4580 g(10.1 lb)

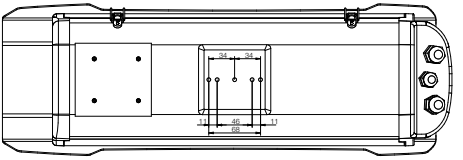
- The product will start to operate 20 to 30 seconds after the initial supply of power.

PRODUCT OVERVIEW

Unit : mm







Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

eco
RoHS compliant

Hanwha Vision cares for the environment at all product manufacturing stages, and is taking measures to provide customers with more environmentally friendly products.
The Eco mark represents Hanwha Vision's devotion to creating environmentally friendly products, and indicates that the product satisfies the EU RoHS Directive.



Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories
(e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.



Correct disposal of batteries in this product

(Applicable in the European Union and other European countries with separate battery return systems.)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.


Hanwha
Vision