

Explosion-proof Speed Dome camera

Instruction Manual

DC-S3283EX



DC-S3283EX Explosion-proof Speed Dome Camera

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Thank you for choosing IDIS Ex products!

Please read this Instruction Manual carefully before installation and operation of this product, following the instructions and keep this instruction manual properly.

Documents version

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Product name	DC-S3283EX explosion-proof speed dome camera			
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Copyright Statement

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Quality Guarantee

For DC-S3283EX Explosion-proof Speed Dome Camera, we provide free maintain service in the guarantee period but we will ask the user to pay for the cost of labor and component in the follow conditions:

- Damage caused by improper operation that against the Instruction Manual.
- Damage caused by unauthorized disassembly.
- Thunder or other force majeure natural disasters.

If any other contracts between clients and us exist, we will follow the promise or regulation strictly.

Security Assurance

Operation of this product complies with the following requirements:

- No adverse interference in operation;
- The operation of this product cannot be interfered by external factors even adverse interference in a certain degree.

Notice

- The user shall not disassemble this product optionally, such as removal of top cover or bolts may cause leakage of water or creepage. Please operate the product according to the requirements in this Instruction Manual;
- Ensure this product is always used in environment with atmosphere pressure, ambient temperature and relative humidity specified in Chapter 1.6;
- To be sure the power supply complies with the requirement indicated in the nameplate;
- The internal and external grounding shall be reliable;
- Ensure the installation is firm and reliable, to avoid
- unexpected damage of the camera;
- It's not allowed to do any modification on qualified products, otherwise
 Explosion-proof performance may be affected

Safety Requirements

Please read this Instruction Manual carefully before installation and operation of this product. The safe service period is 1 years after date of manufacture, see nameplate of the date of manufacture.

Please read and understand associate knowledge, safety notices and cautions before put into service.

1. Safety cautions in installation

- Cut off the power supply before any maintenance or repair of the product. DO NOT OPEN WHEN ENERGIZED!
- Avoid opening of this product in environment where oil smoke, heavy dust, high temperature or dewing may exist. These will cause the decrease of the image definition.
- Connect the cables according to the requirement indicated in the Instruction Manual, otherwise fault may happen.
- Protect the flame proof joint in maintenance; avoid any metal fragment or other substances get access in the internal chamber.
- No disassembly or modification allowed.

2. Construction Safety

- The protective regulations on construction spot shall be followed strictly.
- Measurement shall be carried out immediately when any security risks found to eliminate the risks, stop construction if necessary.
- All kinds of safety facilities shall be inspected, calibrated or repaired in the event of severe weather.
- The ice, fog, rain and snow shall be removed clearly.
- Alert area shall be set and a person shall be specified to protect the area when protective casing and other safety facilities are constructed or dismantled.
- Work high above the ground may require in installation of this product, the operating personnel shall be qualified.

3. Power supply requirements

- Local electrical safety standard shall be followed in installation and service of this product.
- Convenient de-energizing device shall be adopted for emergency cutting off.
- Check if the power supply is suitable for operation before start.
- Protect the power cable from trample or compressing, especially for the plug, socket and joint out from devices.

Service condition requirements

- Please do not focus the camera to hard light (such as lamp or sunlight), which will cause too bright of the image, it's not malfunction but it does will affect the duration of the CCD (or CMOS).
- Transport, operate and store this product in applicable temperature and humidity range. Do not locate it in wet, overheated (over +60°C), extreme cold (less than -40°C) environment or area with strong electromagnetic radiation or unstable lighting conditions.
- The product shall be protected from any entry of water or other conductive fluid, which may damage the internal electrical element.
- Avoid overheated, the product shall be well ventilated.
- Avoid damage caused by compressing or violent vibration in transmission, storage or operation.
- The product shall be well packaged as new product or equivalent in transmission.
- We suggest using this product with Lightning Protection Devices.
- Internal and external grounding shall be reliable and the cross-sectional area shall be no less than 4mm².

4. Operation & maintenance requirements

5.

- Do not dismantle this product; there is no user serviceable part inside.
- Do not touch the CCD (or COMS) directly; a proper way is to blow away the
 dust with a blower on the lens. If it is necessary to clean it, use soft cloth with a
 little alcohol to wipe the lens gently. Replace the cover when not use to protect
 the CCD (or COMS).
- Soft, dry cloth can be used for camera body cleaning. For dirt not easy to clean, some neutral detergent can be used, clear the dirt away then dry the camera body. Corrosive agent, abrasive cleaner cannot be used for camera cleaning, they may damage the surface or even decrease the service performance.
- This product shall be installed and repaired by authorized personnel, please do not dismantle or repair it by yourself. Only manufacturer indicated components / accessories can be used when replacement is necessary.
- The CCD (or COMS) may be damaged by laser beam, it's better to avoid the camera suffering radiation of laser beam.

6. Environmental protection

For components of the products made by our company may pollute the environment, such as PCB, electrical elements, plastic and lubricant, collection and control measurement shall be taken in maintenance and scrapping of the products. These pollution sources shall be delivered to the government for further treatment, no casually discard allowed, avoid any adversative effect to the environment.

7. Special announcement

- Pictures in this manual is a diagram for reference only.
- We remain the right to modify the content and technical specifications of the product in this Instruction Manual without any form of notification when the product updates, there may exist
- little differences after updating.
- You can get the latest software and description document by consulting the customer service department.
- Any problem in operation of this product, please contact the distributor or customer service department.
- We always tried to make this instruction manual as perfect as we can, but there still may be some de-tolerance between the real data and the data we provide, if you have any questions or disputes, please refer to our company for finally explanation.
- The operator or user shall be responsible for damages or losses caused by misuse or operations do not comply with this manual.

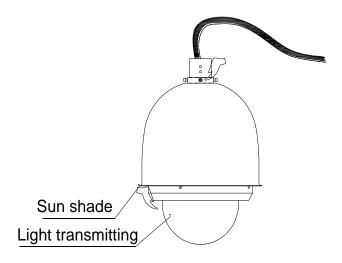
Ex structure instruction

- We have made adequate consideration in flameproof enclosure design of the explosion-proof camera to prevent explosive gases getting into the inner volume, the explosion inside the enclosure cannot cause the explosion of the external explosive gases. We ensure the explosion-proof performance by strengthen enclosure the strength, adjust the length and gap of the joint of associate components and limit the maximum surface temperature.
- The enclosure is able to subject to static pressure test (1.5 times for at least 10s) specified in EN60079-1/IEC60079-1, no leakage or deformation allowed after test.
- The maximum surface temperature will no more than 80°C in normal operation.
- Tempering glass is adopted in observation port, the tempering glass shall pass the impact and thermal shock test.
- Ingress protection level: IP66, IP68(2m/2h).
- Protection the flameproof surface in maintaining of this product, otherwise the damaged flameproof surface will affect the Explosion-proof performance.
- When the product needs anti-corrosion treatment (especially carbon steel), the surface of the product will be sprayed. In this case, please wipe the non-metallic layer with a damp cotton cloth during maintenance. Pay attention to the protective coating. Do not use liquids with strong corrosion.
- The light-transmitting parts of this product have static electricity risk. When wiping lens parts of this product, it is necessary to ensure that it is carried out in a safe environment. Do not wipe with dry cloth.

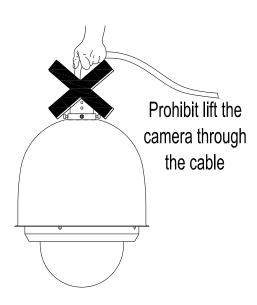


How to move this product

De-energize the product, holding the upper cover to move it; no dragging or knocking allowed.



When the product is energized: it's NOT allowed to open, move, knock or drag this product.



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1. General

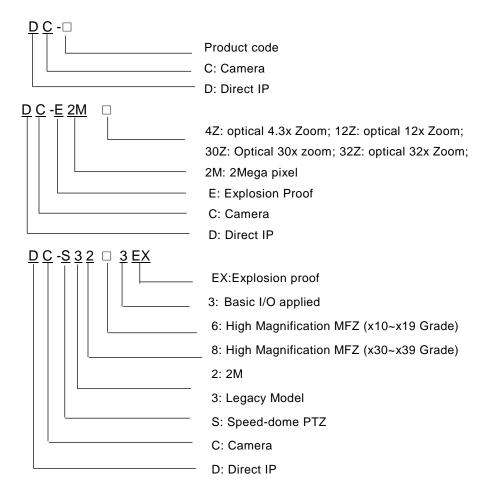
DC
Explosion-proof Speed Dome Camera (hereinafter referred to as camera) is a new generation of Explosion-proof monitoring device, it adopts advanced manufacturing process, with a mature quality management system as a guarantee, the quality, performance and appearance are in leading position. The product can be used in flammable and explosive gas or flammable dust environment, to achieve the purpose of monitoring the hazardous area.

The camera is designed and manufactured according to EN IEC60079-0:2018, EN60079-1: 2014, EN60079-31: 2014, IEC60079-0: 2017, IEC60079-1: 2014, IEC60079-31: 2013. The compact structure, small size make it convenient for installation and maintenance. It's applicable for petrol industry, chemical industry, wharf, harbor, non-coal mine, aerospace industry, aircraft industry, military industry, food processing industry and so on.

ATEX certification: C€2877 DNV 21 ATEX 93321X,

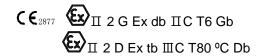
IECEx certification: IECEx DNV 21.0062X.

1.1. Specification



Model: DC-E2M4Z, DC-E2M12Z, DC-E2M30Z, DC-E2M32Z, DC-S3263EX, DC-S3283EX.

Ingress Protection Level: IP66,IP68(2m/2h) Ex marking:



1.2. Characters

This camera integrated a variety of communication protocols and speed, it plays an important role in security systems.

This camera can work at wide voltage range and its self-adaptation function will satisfy most brands of the video camera. The surge protection device provided with the camera will make it safer and more reliable.

1.3. Scope

This product is applicable for Zone 1 and Zone 2 hazardous areas that explosive mixture of group IIA, IIB, IIC, T1~T6 gases, vapors and air may exists, Zone 21 and Zone 22 hazardous areas that explosive dust may exist

1.4. Mechanical parameters

Material:	Stainless steel 304, 316 or 316L
Automatic heating(optional):	Heating automatically below -10 °C
Vertical rotating angle	-20 °_90 °(depend on camera module)
Horizontal rotating angle	0~360° continuous, (depend on camera module)
Vertical rotating speed	0~120º/s (depend on camera module)
Horizontal rotation speed	0~200°/s (depend on camera module)
Vertical rotating angle and speed	(depend on camera module)
Weight(net):	16.5Kg
Weight(gross)	18Kg
Cable entry size	M27×1.25
Gland nut Tightening torque	20.0N.m ~24.0N.m



Figure 1.4.1 Dimensions of DC-□ Explosion-proof Speed Dome Camera

1.5. Electrical parameters

Voltage and current	100-240V(36W)a.c. or 24V a.c. 50/60Hz or 24V d.c.
	or 12V d.c. or
	PoE++(48V d.c.) ≤3A
Consumption	≤20W(without heater and fan)
Electrical connection	Composite cable
Communication type	RS-485
Control communication speed:	2400~19200bps adjustable
Control communication Protocol	PELCO-D/PELCO-P
Fast Ethernet electrical signal	full duplex TCP/IP Protocol Ethernet interface
interface(optional):	transmission
Fiber(optional)	1Xport(1310nm Tx/1550nM Rx)
Video signal (optional)	1-way video output
Audio(optional):	1-way input, 1-way output
Alarm(optional)	7-way alarm input, 2-way alarm output
Address code	0/1
Default button	Optional

1.6. Service condition

Atmosphere pressure:	80 ~ 110kPa		
Ambient temperature:	-40°C ~ +60°C		
Relative humidity:	no more than 95% (+25°C)		

1.7. Electrical safety (in normal atmosphere)

Insulation resistance: the insulation resistance between power terminal and the enclosure shall be no less than 50 M Ω ;

Dielectric strength: dielectric test of 50Hz, AC1500V shall be conducted between power terminal and the enclosure for 1min; no breakdown or flashover allowed.

1.8. Special conditions for safe use

- Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 3 and 4 of IEC/EN 6009-1;
- Engaged length and engaged threads are greater than values in IEC/EN 60079-1;
- ➤ The ambient temperature range is limited to -40° C ~ $+60^{\circ}$ C.
- For group III application of fixed installation, the end user shall follow the guidance in the instruction manual to minimize the risk of electrostatic discharge for the products with non-metallic coating.
- ➤ Before application, separate ATEX/IECEx certified Ex db II C Gb or/and Ex tb IIIC Db IP66/IP68 cable gland should be incorporated.
- The PC light-transmitting part can only be subjected to a shock corresponding to an energy of a low risk.
- For application of fixed installation, the end user shall follow the guidance in the instruction manual to minimize the risk of electrostatic discharge for the products.

2. Installation & debugging

2.1. Cautions before installation

- > It's Prohibit customer to disassemble the camera. Otherwise dangerous;
- > Check whether it has the explosion proof certificate;
- Check whether it has the explosion proof marking, it should fit the explosion proof environment;
- All explosion-proof parts have no cracks and defects affecting explosion-proof performance;

Cautions before installation

Accessories in packaged product:

- 1.DC-□ main set, 1pcs;
- 2. Wall mounting bracket/ceiling mounting bracket, 1pcs;
- 3.M5×12 screws with flat washers and spring washers; (fix camera and mounting bracket),5 sets;
- 4.M8×20 Outer hexagonal bolt(with spring washers, flat washers and nuts),4 sets;
- 5.M5 inner hexagon spanner,1pcs;
- Gasket, sealing ring,1set (for bracket cable entry);
- 7.M5X10 hexagon socket cap screws(with spring washer),3sets;
- 8.CoC, instruction manual (with ATEX/IECEx cert.), 1pcs for each;
- 9. Arc type wrench, optional□;
- 10. Explosion-proof flexible pipe, optional□;
- 11. Safety rope

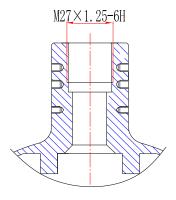
Cautions in service:

- It's not suggested for users to dismantle this product at will, please follow the Instruction for operation.
- The power must comply with requirements specified in 1.5.
- Please use this product in conditions (atmosphere pressure, temperature and humidity) specified in chapter 1.6.
- Since Ex product is very special, debugging with power before installation if available.
- No extra load on the camera, extra load may cause malfunction or damage!
- After the inspection of the factory products are not allowed to change the part which has impact on explosion-proof performance.
- Internal and external grounding shall be reliable .The grounding wire resistance should be less than 1 Ω . The ground resistance should less than 1 Ω .

2.2 Cable entry

There are one cable entries in the horizontal shaft in packaged product, thread spec. is M27×1.25.please use with ATEX/IECEx certified cable glands with sealing compound, the Ex marking shall be Ex db IIC Gb or/and Ex tb IIIC Db IP66,IP68 or higher protection level.

Follow the instruction of the cable gland for correct installation.



2.3 Preparation of brackets before installation

Since Ex product is very special, we suggest that it is better to do debugging with power before installation if available. After you are familiar with Ex product's operation, then do the site installation. The debugging is done before package, only installation in the intended location is

required. We strongly suggest you select brackets from IDIS , it will ease your installation

process significantly.

It's the user's responsibility to ensure the bracket for the camera is strong enough, and the fasteners comply with associate load and anti-rust requirements. Installation of the camera shall ensure that it's out of reach by human beings and there is no other subject may affect the rotation of the camera; otherwise, falling or damage may happen, even personnel safety may be harmed.

2.3.1 bracket installation

After open package, select installation holes in proper positions for wall/ceiling mount bracket. The first step is to ensure the direction of the camera is correct, and then fasten the wall mounting bracket with hexagonal bolt.

Junction box is always installed in positions that easy for installation and maintenance, as per Figure 2.3.1.1. The cable is connected to junction box by wire casings or bridges.

Specification of the bracket see Figure 2.3.1.2, 2.3.1.3.

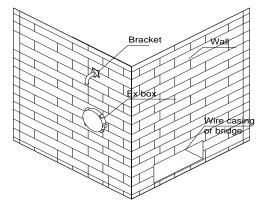
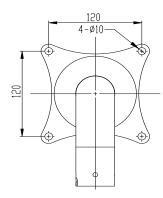


Figure 2.3.1.1 Installation of bracket



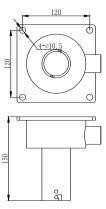


Figure 2.3.1.2 wall mounting bracket fix holes

Figure 2.3.1.3 ceiling mounting bracket fix holes

2.4. On-spot installation and fixing

Since Ex product is very special, adjust with power indoors before installation in the intended locations if available.

2.4.1 Instruction for installation of camera and wall mounting bracket

Reference 2.4.1.1 for the mounting of the camera and the mounting bracket.

- 1) Put the tail cable reserved by the camera through the cable hole on the mounting bracket:
- 2) The camera is connected with the bracket so that the waist hole is hung at the screw.
- 3) Four M5*10 internal hexagonal cylindrical head screw fixing brackets and camera;
- 4) fasten the M6 lifting bolt on the bottom mounting hole of bracket.
- 5) The bracket is connected with the hoist hole of the installation floor. The installed device is connected with the installation floor with safety rope. The safety rope lock should be tightened.

The safety rope is detailed in 2.4.1.2. Finally, tear off the protective film on the transparent cover, details in figure 2.4.1.3.

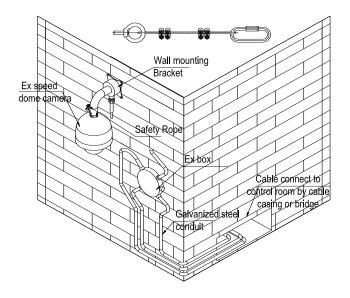


Figure 2.4.1.2 camera and safety rope

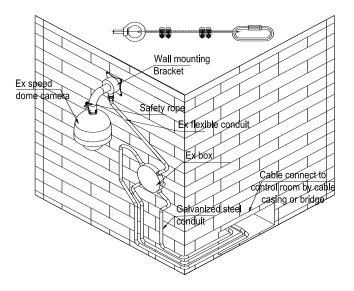


Figure 2.4.1.3 installation diagram

2.4.2 Instruction for installation of camera and ceiling mounting bracket

The cable of the camera is pulled into the inner cavity of the hanger, and the bracket rotates clockwise so that the hole is placed on the screw. Finally, the hanger and the camera are fixed with four M5*12 inner hexagonal combination screws. As shown in Figure 2.4.2.1.

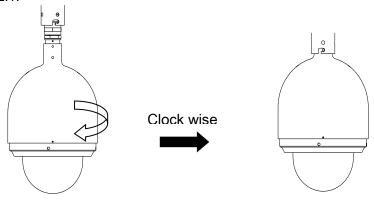


Figure 2.4.2.1 Assembly Diagram of Ceiling mounting bracket and dome camera

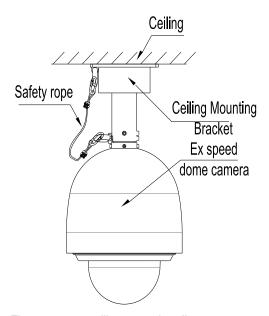


Figure 2.4.2.2 ceiling mounting diagram

Firstly, the safety rope on the camera is hung on the safety hook of the ceiling mounting bracket. Then, the mounting bracket is tightened and fixed by M8X20 bolt, as shown in Figure 2.4.2.3. Finally, the protective film on the transparent cover is torn off.

2.5 Adjusting and operation

2.5.1 System connection

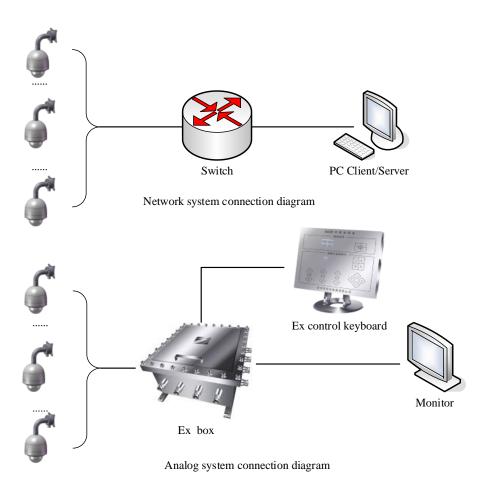


Figure 2.5.1 System connection

Network model device adopts cable network or wireless network as the main network for digital video signal transmission, it's available for users to monitor or record the videos at any time by network, no matter in local area network (LAN) or wide area

network (WAN), such as internet.

Analog system is controlled by Explosion-proof control keyboard and Explosion-proof control box, it's available for user to monitor the scene condition.

2.5.2 Cable specification

A comprehensive cable is provided on packaged product (see Table 2.5.2 for cable specification), the cable is lead out from the side of the base bottom with minimum length of 1m; connect the comprehensive cable to the system bus in the junction box before operation. Only cables/wires suitable for 85° C shall be used.

Table 2.5.2 Cable specification

Part name	Color	Function
	purple	Audio output
	black	Audio grounding
	white-purple	Audio input
	white-blue	Alarm input 1
	Blue(thin)	Alarm input 2
	White-brown	Alarm input 3
	brown(thin)	Alarm input 4
Alarm audio 485 (optional)	White-red	Alarm input 5
Thin wire	red	Alarm input 6
	gray	Alarm input 7
	white-black	Alarm input grounding
	orange	Alarm output COM1
	white-orange	Alarm output OUT1
	green	Alarm output 2 (COM 2)
	White-green	Alarm output 2 (OUT2)
	yellow	485 output A
	white	485 output B
	orange-white	Network cable 1
	orange	Network cable 2
	green-white	Network cable 3
Fast Ethernet	blue	Network cable 4
(PoE++) (twist pair)	blue-white	Network cable 5
	green	Network cable 6
	brown-white	Network cable 7
	brown	Network cable 8
Video (entional)	7F 2 conviol cobin	Video -
Video (optional)	75-3 coaxial cable	Video +

	thick brown	100-240V a.c.	(optional)24V a.c. or 24V+/12V+ d.c.	
Power	thick yellow-green	grounding		
	thick blue	100-240V a.c.	(optional)24V a.c. or 24V-/12V- d.c.	

Tips: The color of the cable depends on the configuration. The actual tail cable label shall prevail. The above colors are for reference only.

2.5.3 Inspection and examination before power on

Check if the power and network cable are connected correctly, if the toggle switch settings are correct before power on.

2.5.4 Service status and inspection in service

The camera will start self-checking automatically after power on.

2.5.5 Settings of camera, IE browser and client software

See camera manufacturer's instruction manual for camera, IE browser and client software setting.

3. Trouble-shooting

Phenomenon	Analysis	Solution	
	No power supply	Check the power supply	
No image	Poor connection of video signal cable	Check the video signal cable	
Cannot switch to night viewing model	Strong light in optical angle/ in manual night viewing switch model	Remove the strong light Set to auto night viewing switch model	
Unclear image	Camera is in manual focus model/ dust or stain on window	Set to auto model/clear the window	
Unstable image	Poor connection of video signal cable	Check the video signal cable	
	Bad connection of signal cable	Check signal cable connection	
	Signal attenuation caused by long distance	Use repeater to lengthen the communication distance	
	Incorrect address		
	Incorrect protocol	Set according to instruction manual of camera	
	Incorrect baud rate		
	Incorrect model of camera		
Uncontrolled camera	Incorrect setting of control model		

4. Transportation, storage and maintenance

4.1 Transportation

The packaged product can be delivered in all modes of transportation but without direct rain or snow.

4.2 Storage

This product can be stored for one year in such environment: no corrosive substance, no obvious vibration, temperature range: 0°C~+40 °C and humidity no more than 90%.

4.3 Maintenance

- Six months after putting into service:
 - 1. Check all the fasteners;
 - 2. Inspect the cables ensure the protective sheath are not damaged and the cables will not affect other objects during rotation.
- Five years after putting into service: the rubber sealing ring need to be replaced if the camera was installed in severe conditions, please contact the local distributor for this work.

5. Camera/optical parameters

* the following to models are typical options, other models are available after confirmation.

Brand	IDIS		
Model	DC-S3283WHX		
Sensor	1/3" CMOS		
Pixel	2 mega pixels		
Electronic shutter	Auto / Manual (1/30 ~ 1/10000), Anti-Flicker,		
Electronic shutter	Slow Shutter (1~1/5, 1/7.5, 1/15)		
Iris Control	DC auto Iris		
Day-night switch model	IR cut filter with auto switch		
Min. Illumination	Color: 0.16 lux @ F1.6 B/W: 0.01 lux @ F1.6		
Angular Field of View	W:64.7°(H),38.6°(V),72.7°(D)/T: 2.3°(H),1.4°(V),2.6°(D)		
Focal length	F=4.3mm~129.0mm 30X		
Video compression	H.265, H.264 (MP), M-JPEG		
Audio compression	G.726, G.711		
Primary bitstream	4020,4000 4020,700 704,400 250,240		
resolution and FPS	1920x1080, 1280x720, 704x480, 352x240		

6. Declaration

- We always tried to make this instruction manual as perfect as we can, but we cannot include all the possible problems may raise in installation and maintenance, please contact us for detailed information on problems not included in this instruction manual.
- The operator or user shall be responsible for damages or losses caused by misuse or operations do not comply with this manual.
- Annex: Table of poisonous and harmful substances or elements



	《Measures for the Administration of Pollution Control of Electronic Information Products》 Substances or restriction element identification table				nformation	
Part name	Lead (Pb)	Mercury (Hg)	cadmium (Cd)	chromium VI (Cr VI)	Polybromide (PPB)	Polybrominated diphenyl ethers (PBDE)
Metal part	×	0	0	0	0	0
Plastic part	0	0	0	0	0	0
PCB	×	0	0	0	0	0
Glass (if applicable)	0	0	0	0	0	0
power (if applicable)	×	0	0	0	0	0
Accessory (if applicable)	×	0	0	0	0	0

Remark:

- Symbol means the content of the poisonous, harmful substances or elements in the component (homogeneous material) is lower than the limit specified in the standard;
- 2. Symbol x means the content of the poisonous, harmful substances or elements in the component (some certain homogeneous material) is more than the limit specified in the standard SJ/T11363-2006. Leakage or mutation of this poisonous, harmful substances or elements will not happen in the environmental life and will not harm the user's health or properties. Treatment of this poisonous, harmful substances or elements cannot carried out by user selves, please deliver it to the appointed department according to the local laws or regulations



One Solution. One Company.