

## **Thermal Camera System**



**Excise Version 2015-01**  
**Design by Geforss GmbH**

Thank you very much for purchasing our Thermal camera system

Please do read the manual thoroughly before putting this camera into operation. This manual includes all the necessary information such as camera's technical data, operational instructions and precautions.

Please contact our company directly for any unspecified matters in the manual. It's our responsibility to provide our full technical support.

The company reserves the right to modify this manual without prior notification.

### **Warnings to potential dangers!**

- 1, Please read this manual carefully before installation.
- 2, Please note all the warning marks on the camera or specified in the manual.
- 3, Please apply exactly the power supply and voltage listed in this manual.
- 4, For your own safety, please do not connect or disconnect the cable while the camera is still in operation.
- 5, Please ensure the intactness of the power line in case of injury and damage.
- 6, Please install proper anti-lighting device in case of thunderstruck.
- 7, Please mount this camera on a secure platform or bracket to avoid accidental injury.
- 8, Please clear all objects near the camera to prevent it from being damaged while rotating.
- 9, Unauthorized dismantling of this camera may incur injury or damage, so please contact us directly for any malfunction matters.
- 10, To avoid eye injury, do not look directly at the laser window while the camera is in operation

### **Precautions**

- 1, For ensuring the system proper functioning, please do not cover photo resistance in front of the camera.
- 2, To ensure smooth switch between B/W and color, please avoid the interference of strong light.
- 3, In case of water leakage, please don't use organic solvent to clean camera housing.
- 4, Please wait for another 30s before restarting this camera.

**Warning Marks**



**Potential danger to health!**



**Please avoid direct eye contact with laser!**



**Please avoid direct eye contact!**

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## Chapter 1 Specification

### 1, Overview

As a series of camera specially designed for long range surveillance at night, the Leser Long Long Range system is capable of conducting surveillance within 4km in the daytime and 2km at night. It employs cameras of 750mm lens, which makes the camera ideal for long range application.

### 2, Technical specifications

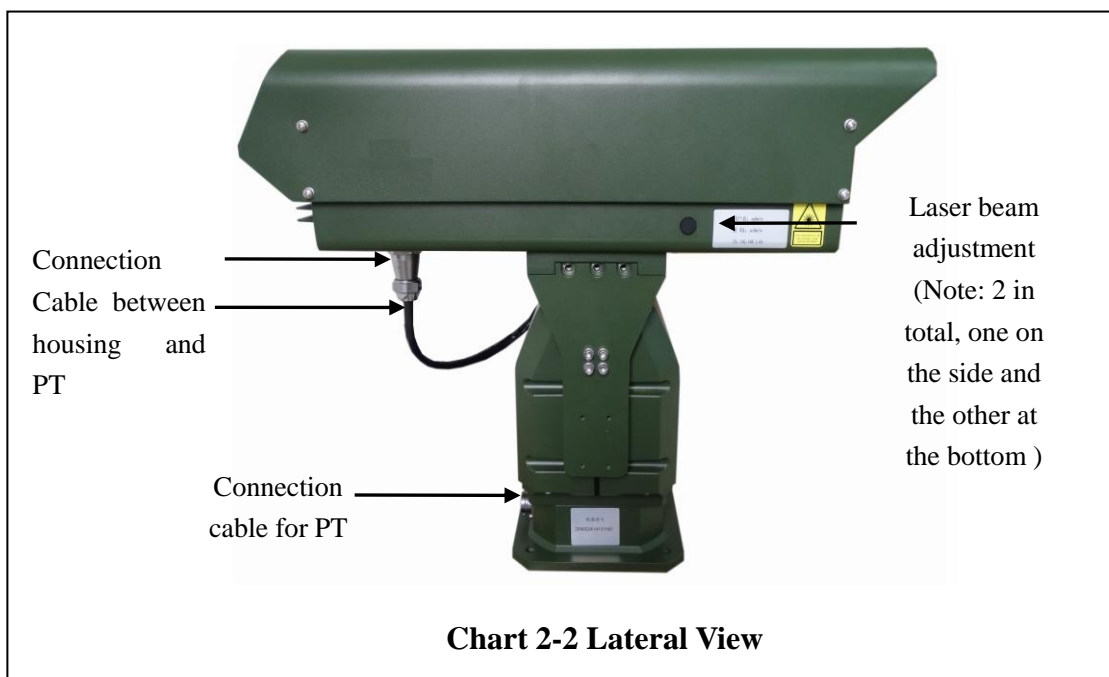
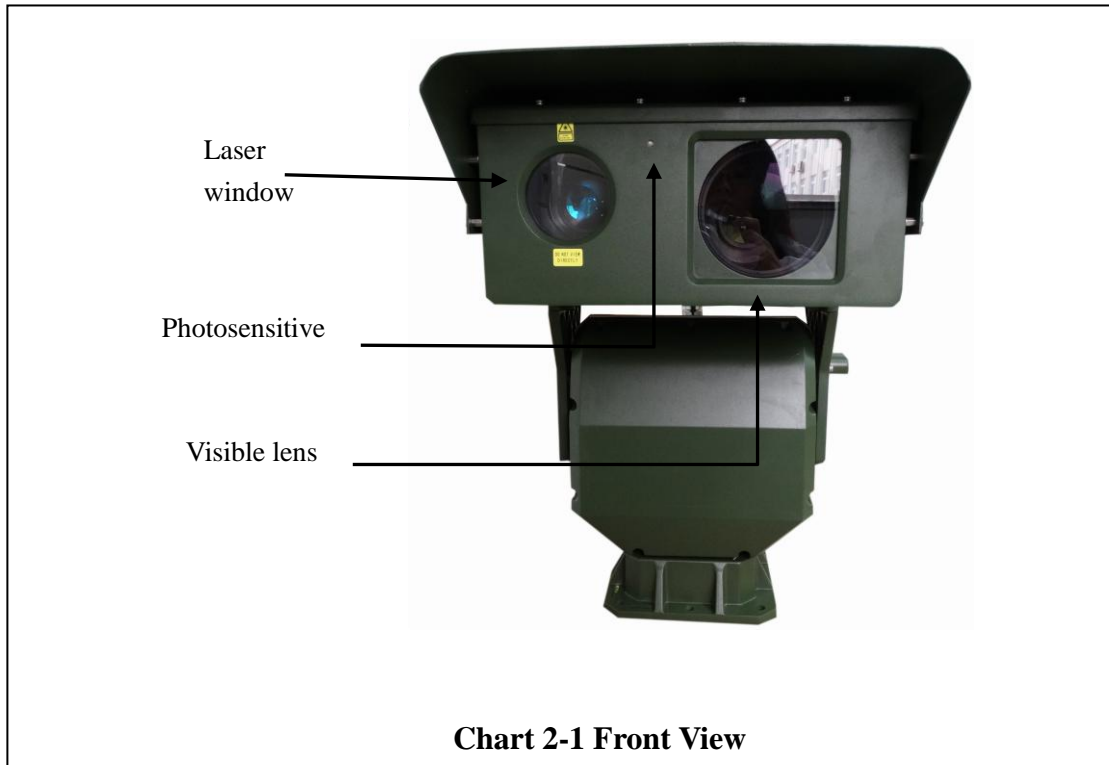
Detection Range		<i>Note: detection range varies depending on different environmental conditions, operational experience and displaying medium. The abovementioned detection range is acquired when atmospheric attenuation coefficient is 0.15km-1km.</i>
Camera	Sensor	1/2 " CCD, auto color to B/W at min. illumination
	Lens	30-750mm, motorized zoom and focus, auto iris
	Color mode	Color, min. illumination, fog penetration(color), fog penetration(B/W)
	Pixels	440,000.00
	Resolution	580TVL
	Min. Illumination	0.004lux
Laser	Power	10W
	Wave length	808nm
	Illumination angle	0.5-20 ° continuous, DSS digital synchronized zoom
	ON/OFF	Photosensitive control
Housing	Material	Alluminum alloy
	Structure	Double window
	Window glass	4mm crystallite optical glass
	Coating	Ice grey
	Interface	Waterproof aviation connector
PT	Load duty	50kg max.
	Angle	Pan: 0~360 ° continuous; Tilt: -90 ° ~ 20 °, angle display

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	Speed	Pan: 0.01~80 %S; Tilt: 0.01~60 %S
	Decoder	Built-in
	Presets	80
Interface	Control	RS485
	Video	BNC connector, PAL, CCIR
	Protocol	PELCO-D/P
	Baud rate	2400, 4800, 9600, 19200
	<b>Default</b>	<b>PELCO-D, 2400bps, address: 1</b>
	Power supply	AC24V ±10%, 50Hz, packed with AC220V->AC24V power adaptor
Environmental indicators	Working temp.	-25°C ~ +55°C
	Storage temp.	-40°C ~ +65°C
	Anti-shock	150m/s <sup>2</sup> 11ms
	Anti-corrosion	PH: 6.5~7.2, 48 hours' continuous spraying.
Others	Power supply	AC 24V ±10%
	Power consumption	≤150W
	Weight	40kg(PT included)
	Dimension	580mm×349mm×554mm(L×W×H, sun shade included)

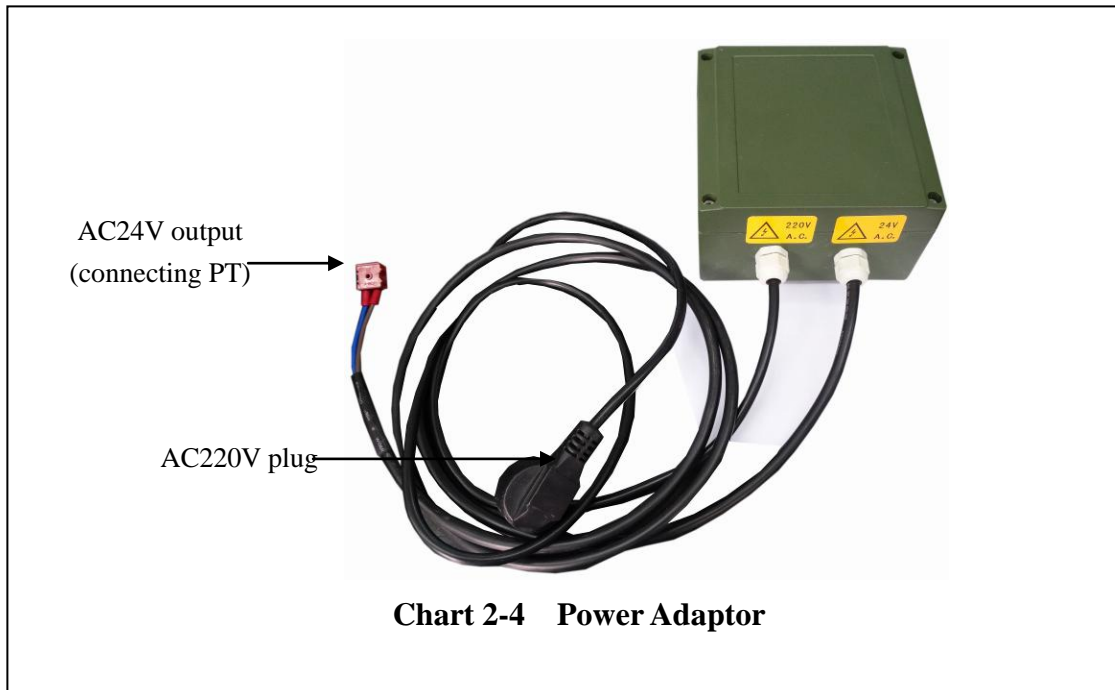
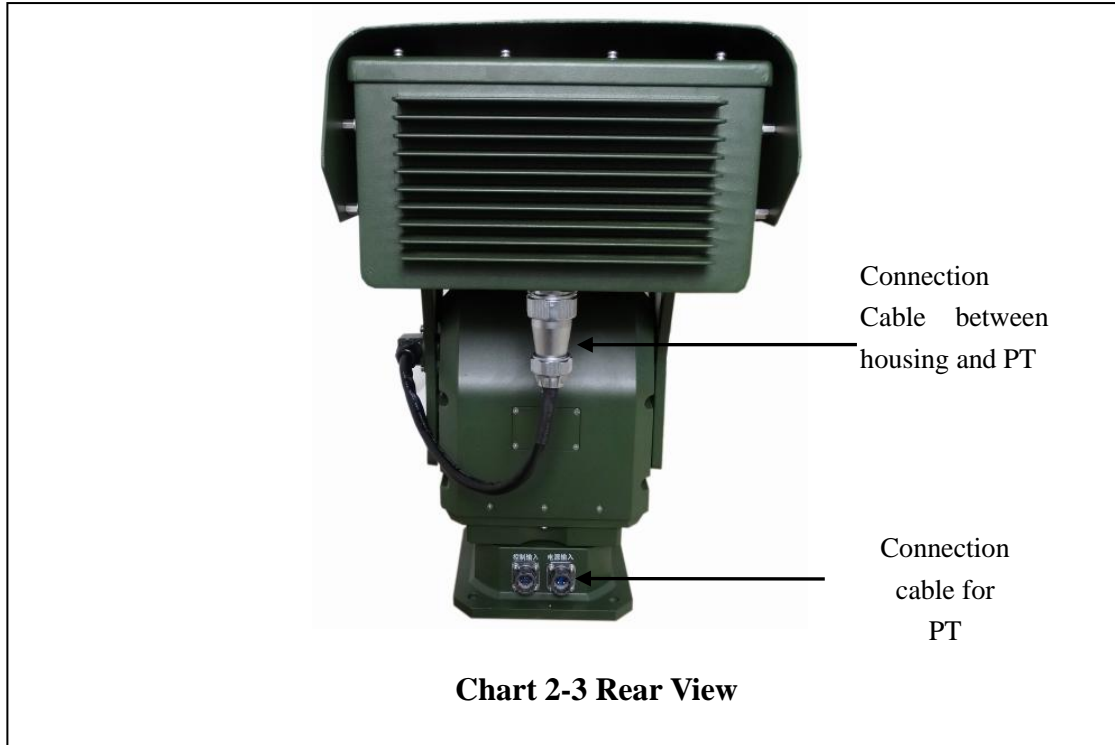
## II Appearance and Interface

### 1, Appearance

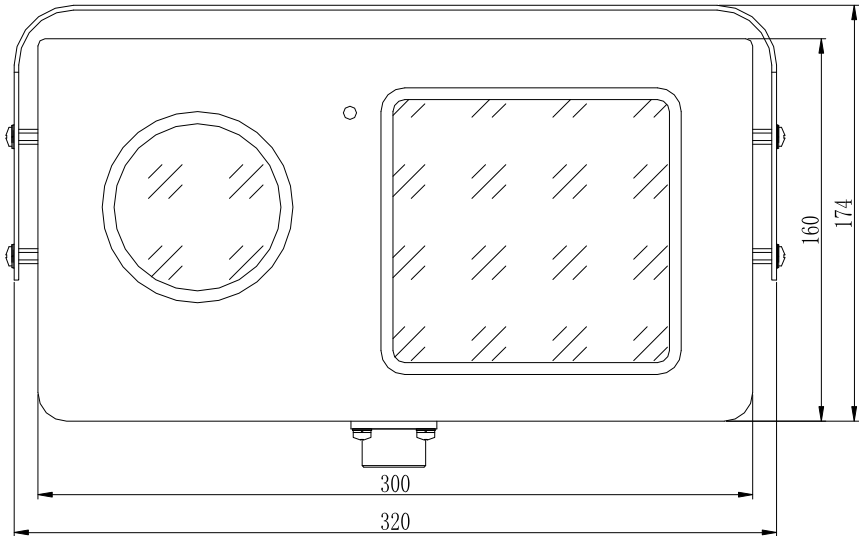




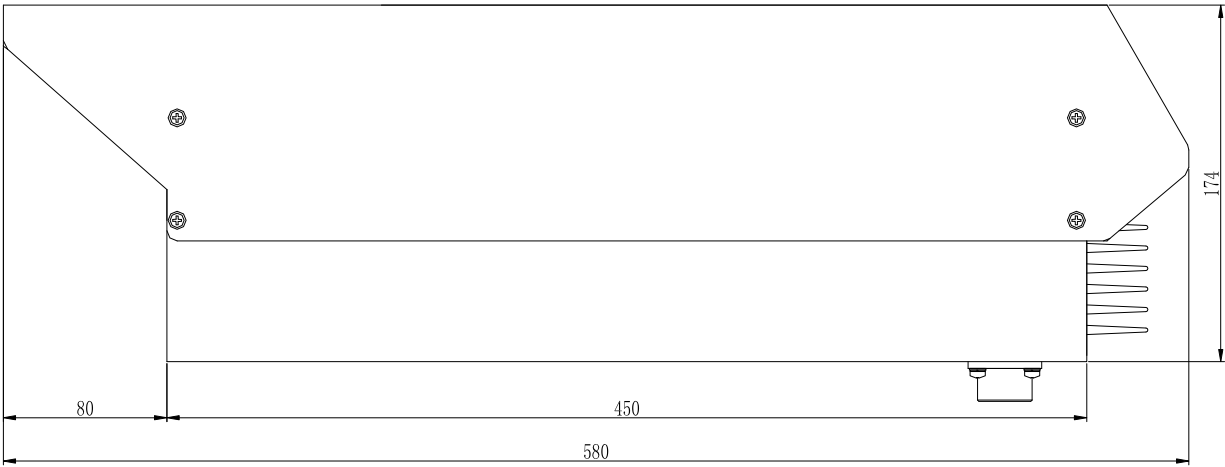
# Thermal camera system



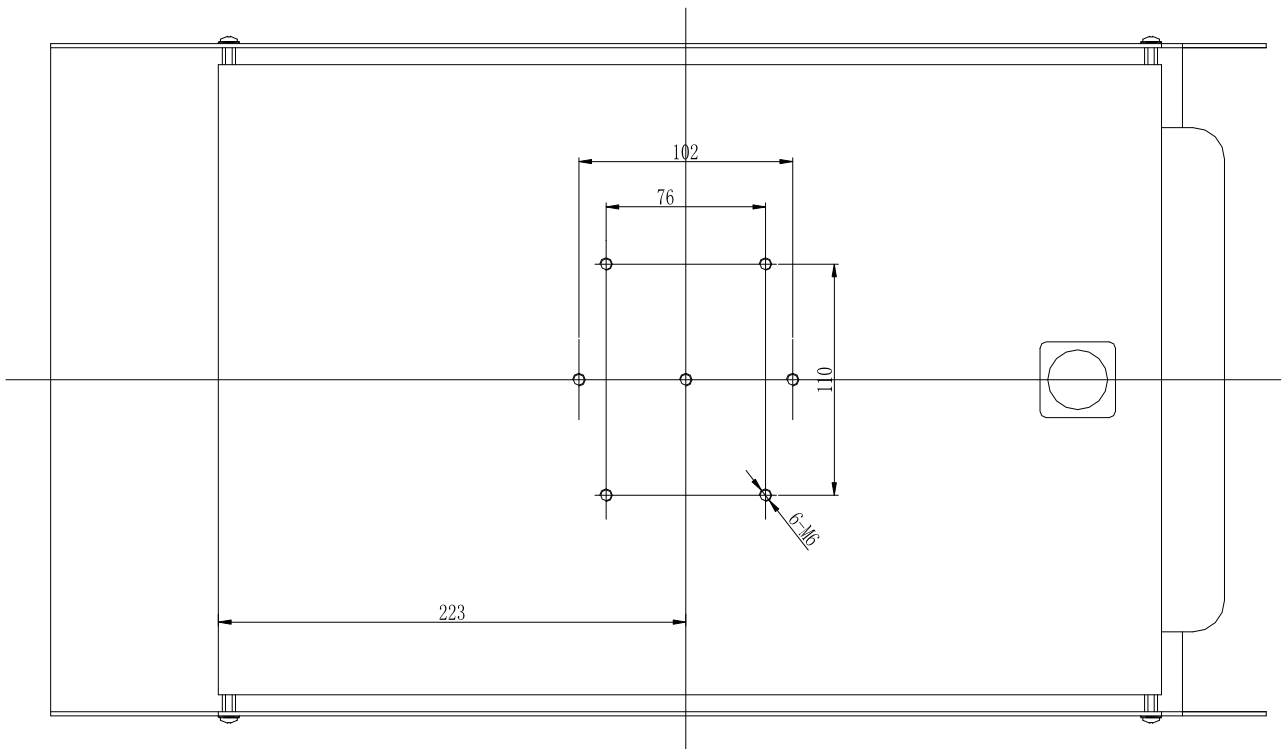
**2, Dimension(mm for unspecified unit)**



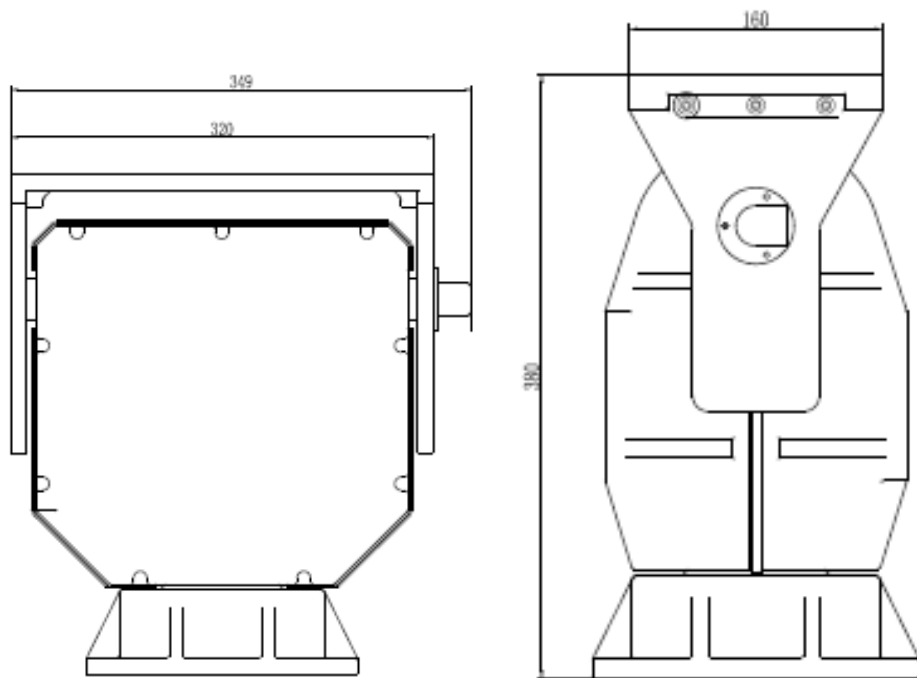
**Chart 2-5 Front View of Camera**



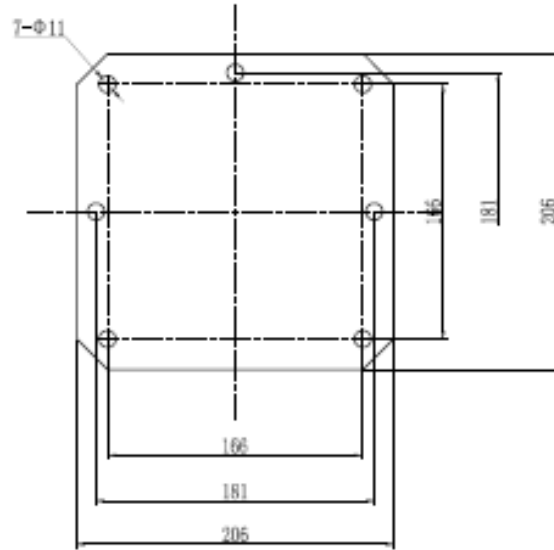
**Chart 2-6 Lateral View of Camera**



**Chart 2-7 Bottom View of Camera**



**Chart 2-8 Front and Lateral View of PT**



**Chart 2-9 Mounting Hole at the Bottom**

### 3, Connector

The connector employs waterproof connector with 24 cores, please refer to the following for specifics:

Pin No.	1	2	3	4	5	6
Pin definition	Blue COM	Brown Zoom	Orange Focus		Pink 3.3V+	Light blue GND
Pin No.	7	8	9	10	11	12
Pin definition	White Z preset	Purple F preset	Yellow K1	Yellow K1	Grey K2	Grey K2
Pin No.	13	14	15	16	17	18
Pin definition		Core Video+	Shield Video-			
Pin No.	19	20	21	22	23	24
Pin definition	Red 12V+	Black 12V-		Blue 24VAC		Brown 24VAC

#### Outgoing line at the base of PT

Left

Pin No.	1	2	3	4	5	6
Pin definition						
Pin No.	7	8	9	10	11	12
Pin definition			Orange RS485A	Yellow RS485B	Core Video+	Shield video-

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Right

Pin No.	1	2
Pin definition	Blue 24VAC	Brown 24VAC

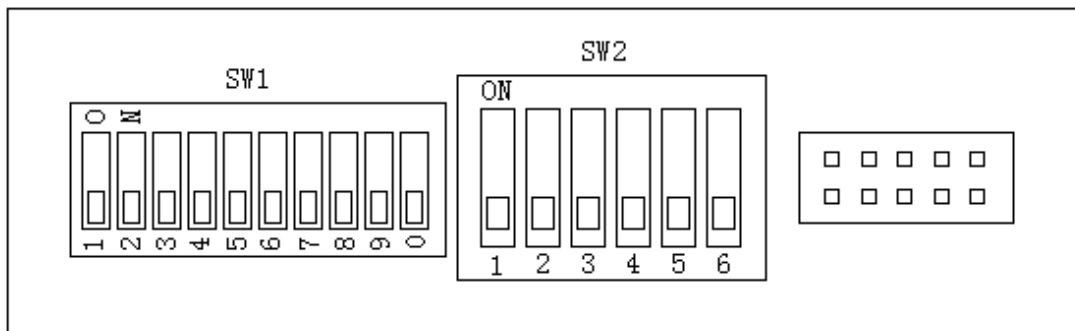
### III Camera Installation

#### 1, Protocol, Baud rate and address setting

Protocol: PELCO-D; Address: 1; Baud rate: 2400bps; data bits: 8, stop bates: 1;  
Correction;

##### 1.1 Addressing setting

When setup the dip switch or function code switch, please open the small window which is in the front of pan tilt;



Address, protocol and baud rate setting

Address DIP:

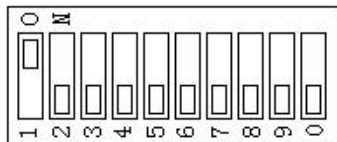
Address	SW1 On-off							
	DIP-1	DIP-2	DIP-3	DIP-4	DIP-5	DIP-6	DIP-7	DIP-8
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF

## Detail Design Decicate Laser long camera system

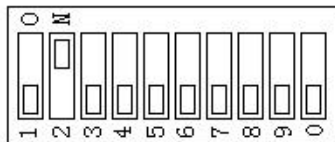
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
...	...							
255	ON	ON	ON	ON	ON	ON	ON	ON

**Note:** Pls make sure the power is off when setting address, or pan tilt won't accept the setting.

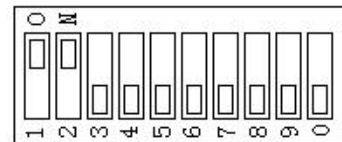
SW1:setup pan tilt address from 0~255. From DIP-1 to DIP-8, it equals to a binary system number with eight digits. Among them, DIP-8 indicates the top digit, while DIP-1 indicates the lowest digit. "ON" stands for "1", "Off" stands for "0".



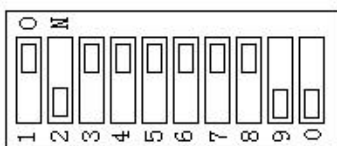
Address = 1



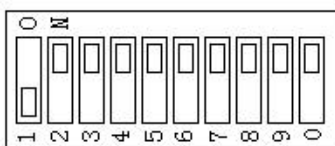
Address = 2



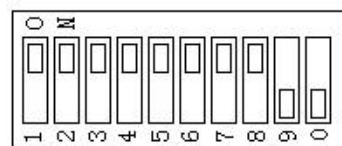
Address = 3



Address = 253



Address = 254



Address = 255

In the above picture, it shows one part of address code, the other addresses please refer to the same method according to binary code.

### 1.2 Baud rate setup

Pan tilt can provide 2400bps、4800bps、9600bps、19200bps.This can change by setting button **9,10** on **SW1** as following:

Baud Rate	SW1 On-off	
	DIP-9	DIP-10
2400	OFF	OFF
4800	ON	OFF
9600	OFF	ON
19200	ON	ON

### 1.3 Protocol setup

This can change by setting button **1,2** on **SW1** as following:

Protocol	Button 1	Button 2
Pelco-D	OFF	OFF
Pelco-P	ON	OFF

**Note:** Pelco-D, Pelco-P are common control protocol. This pan tilt can be controlled by keyboard or computer software.

After setting address, protocol and baud rate, pls close the small window and keep silicone seal still installed under the window.

## 2, Camera Installation and Cable Connection

### 2.1 Installation

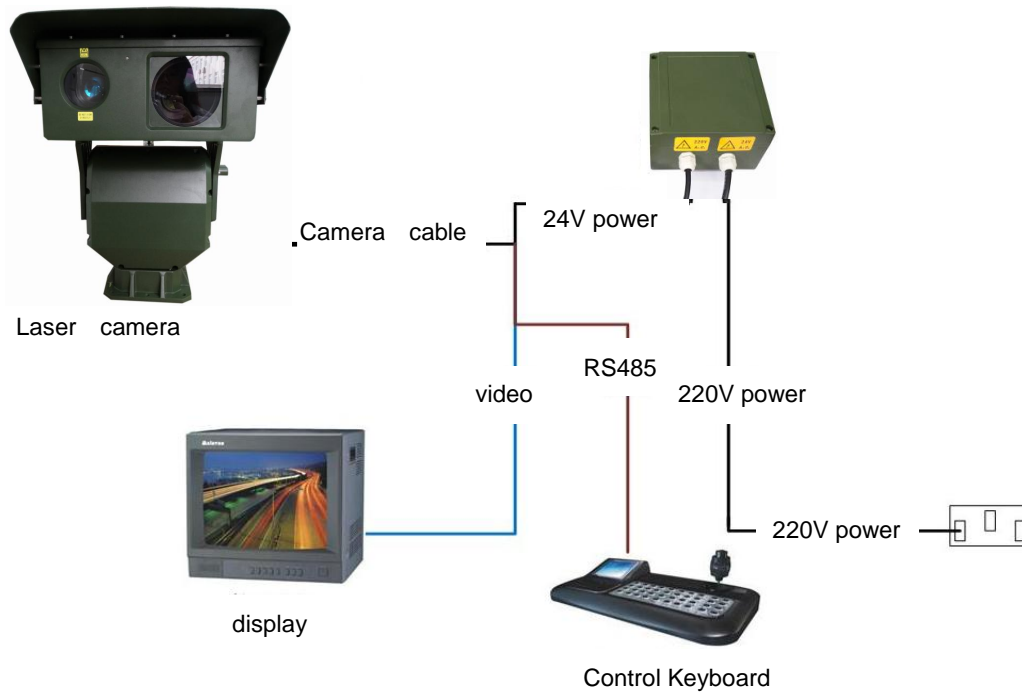
Mount the pinboard on the camera with M6\*12 hexagonal screw(already done ).Then, mount the camera on PT with M6×12 hexagonal screw. Do not use screws too long in case of damaging the base plate of the camera; do not use screws too short in case of unsecure installation.





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**Chart 3-4 Cable Connection**

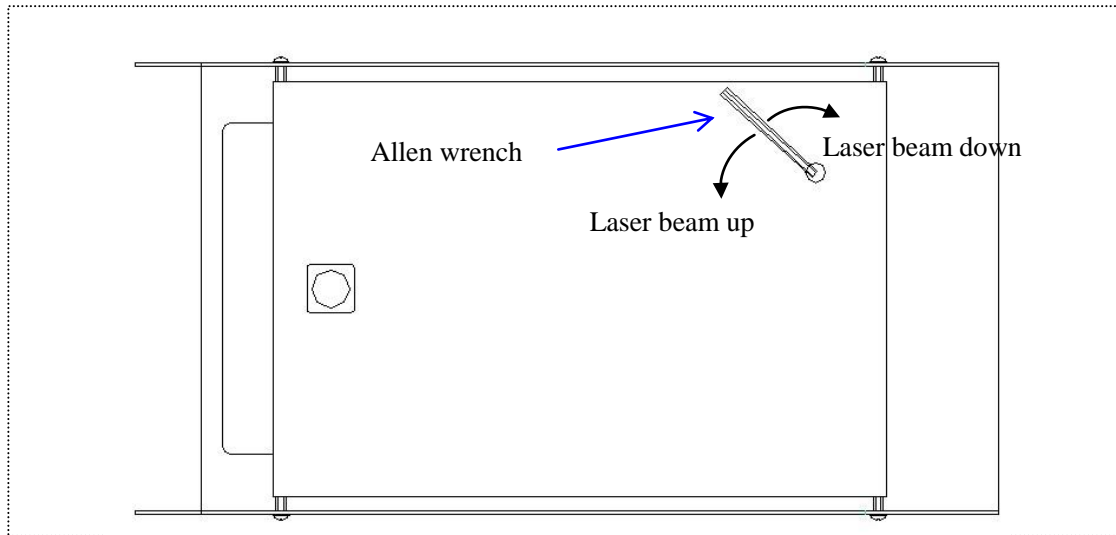
### **3, Laser adjustment**

The laser beam should be at the center of the field while the detection distance is 1000m and it can be adjusted via an external mechanism.

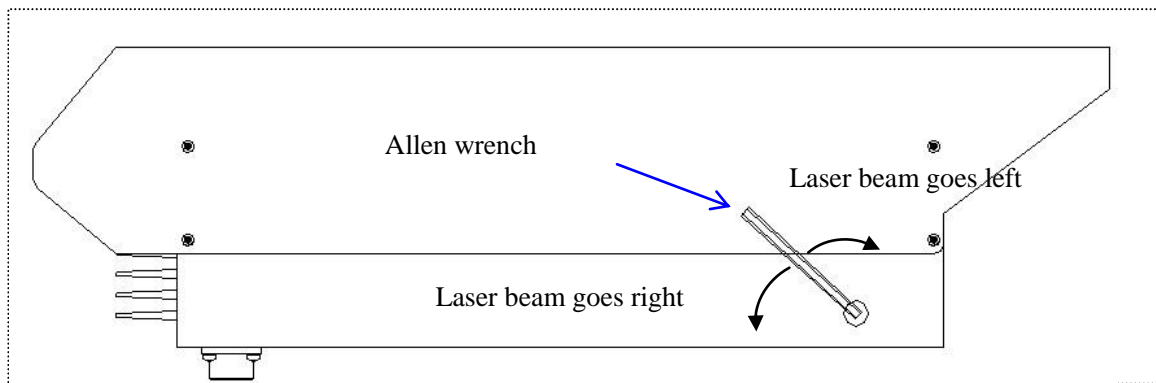
Steps: select a target 1000m away in total darkness(laser is on); make sure the laser beam is at its smallest angle; then, zoom in until it can not be amplified any longer; remove the waterproof plugs both at the side and base of the camera(refer to Chart 2-2); adjust the screw inside the housing with a 5mm allen wrench until the laser beam is at the center of the field.

Please refer to the Chart below:

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**Chart 3-5 Laser Adjustment(UP and Down)**












**Chart 3-6 Laser Adjustment(LEFT and RIGHT)**

## 4, Common Operation

The camera can be controlled by keyboard or software. We just listed some common operations below as there are too many controlling medium. Please refer to the following for specifics:

Functions	Keyboard	Software	Remark
PTZ rotates rightwards	Pull joystick rightwards	Right or 	

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PTZ rotates leftwards	Pull joystick leftwards	Left or 	
PTZ rotates upwards	Pull joystick rightwards	Up or 	
PTZ rotates downwards	Pull joystick rightwards	Down or 	
Zoom+	TELE	Zoom+ or 	
Zoom-	WIDE	Zoom- or 	
Focus-	NEAR	Focus- or 	
Focus+	FAR	Focus+ or 	
Iris+	OPEN	Open or 	
Iris-	CLOSE	Close or 	
Preset	X+SHOT+ON	Setup	X is the NO. of preset
Call presets	X+SHOT+ACK	Call	X is the NO. of preset
Through the fog function	1+SHOT+ACK	General Wipers Switch	

Note: for reference only.(Mainvan keyboard, Pelco-D or Pelco-P)

## 5, Common Faults

The table below includes some of the common faults may appear during operation. Whenever these problems occur, you may refer to this table or contact us directly for proper solution.

Fault	Possible Cause	Solution
No movement and video after powering on	Power damage or under power	Replace the original power.
	Wrong connection of power line	Reconnect
	Circuit malfunction	Check circuit
Successful auto detection, but can't	Wrong connection of RS485 or open circuit	Check circuit

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be controlled.	Wrong address	reset
	Wrong address and baud rate	reset
Successful PT auto detection, no video	Wrong cable connection of camera or open circuit	Reconnect
	Wrong connected of video line or open circuit	Reconnect
	Camera damaged	Replace
Image loss while PT is rotating	PT underpower	Replace
	Network not connected properly	Check network connection and ensure its proper connection
No laser	Photoresistance damage	Replace
	PCB damage of photoswitch	Replace
	Laser damage	Replace

## **IV Warranty and After sales**

- 1, Customer satisfaction is what we've been pursuing all along and quality is what brought our company prosperity. The night vision cameras manufactured by our company integrates independent technology and unique design.
- 2, If you have any suggestions either for our product or services, contact us. We'll do our utmost to improve and offer you the customized system you need.
- 3, All of our cameras are packed with detailed user manuals, we may also assist with the installation and debugging if it is feasible.
- 4, If any problems such as quality, technology and operation occur during operation, Hope Wish will give you our quickest response.
- 5, Your suggestions are valuable and your support will be our driving force. Thank you!