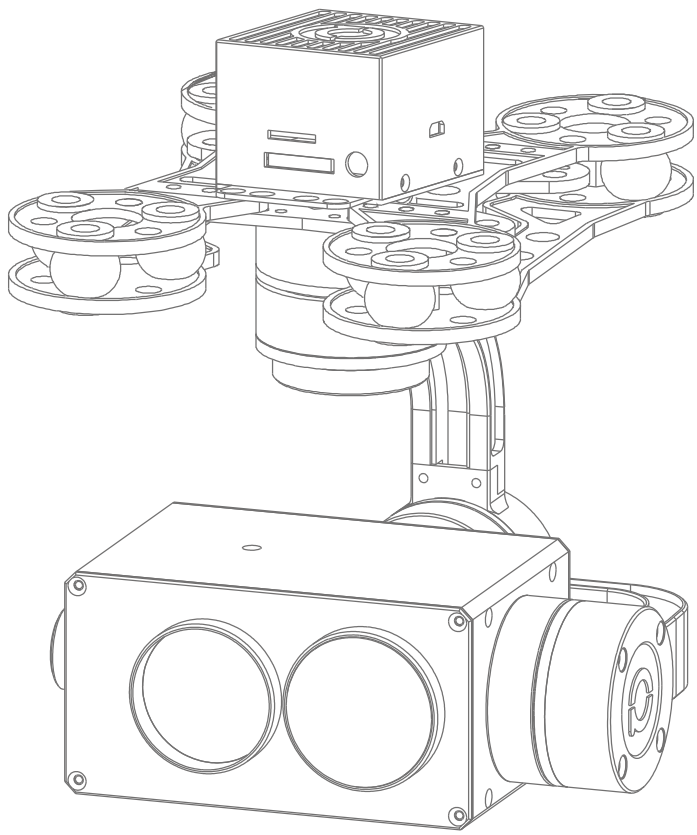
Viewpro

User manual

Z10TL

10x Zoom Laser Night Vision Object Tracking Camera Gimbal



Images are for reference only, please subject to the actual product.

Contents

Z10TL Pinpoint-precision Gimbal

Z10TL Network Camera

Gimbal Introduction

Z10TL is a pinpoint-precision professional 3-axis gimbal which features high stability, small size, light weight and low power consumption. The 3-axis gimbal based on FOC motor control technology, adopts pinpoint-precision encoder in each motor.

The speed of Z10TL gimbal is adjustable, LOW speed mode is used for large zoom range, the control will be more accurate; Fast speed mode is used for small zooming range, which makes the gimbal control sensitive and quick. Also the one-key to center function will allow the gimbal return to initial position automatically and rapidly.

Z10TL supports PWM, S.BUS and serial command control, suitable for close range remote control or remote data command control.

Object Tracking Function

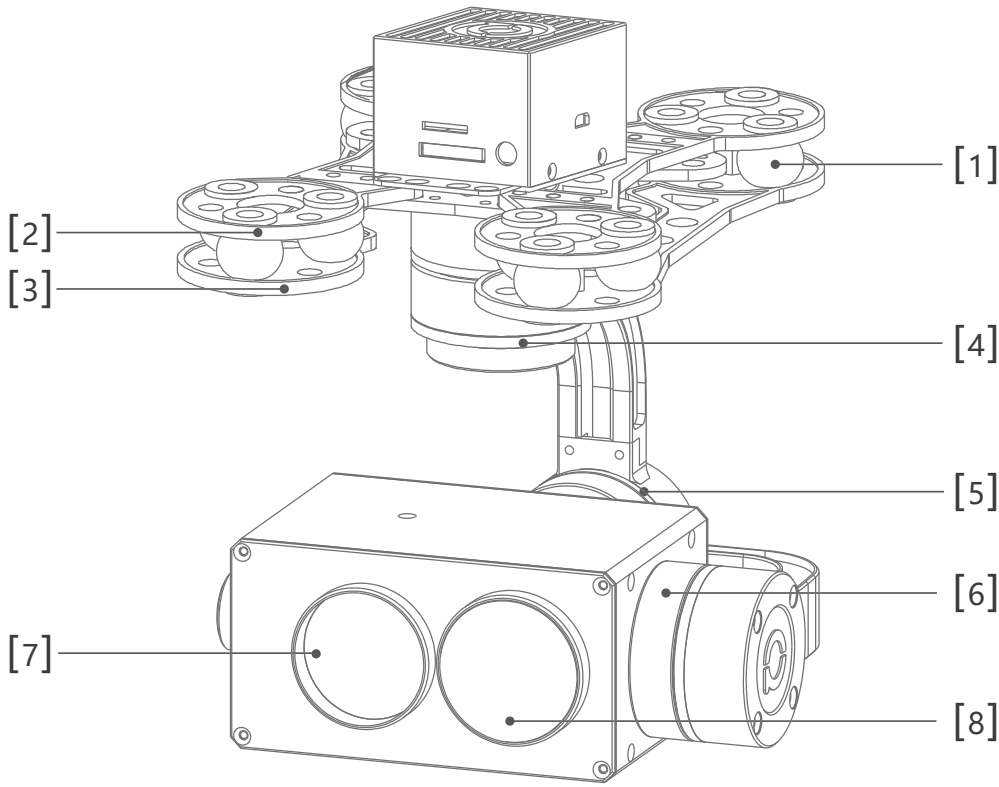
1. Function description

Build-in normalization, cross-correlation and tracking algorithm, combining with object missing recapture algorithm, achieve stable track of the target.
Support custom characters of user OSD, adaptive gate, cross cursor, tracking information display.

2. Tracking Performance

1) Update rate of deviation pixel 50Hz
2) Output delay of deviation pixel <15ms
3) Minimum object contrast 5%
4) The minimal signal-to-noise ratio (SNR) 4
5) Minimum object size 16*16 pixel
6) Maximum object size 160*160 pixel
7) Tracking speed 32 pixel/frame
8) The mean square root values of pulse noise in the object position<0.5 pixel
9) Object memory time 100 frames

Gimbal Description



[1]Damping ball

[2] Upper damping board

[3] Lower damping board

[4] YAW axis motor

[5] Roll axis motor

[6] Pitch axis motor

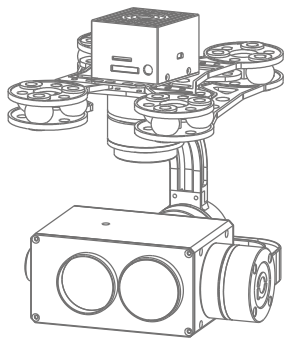
[7] Light supplement

[8] HD zoom network camera

Please make sure that the motor is not stopped by any object during the rotation, if the gimbal is blocked during rotation, please remove the obstruction immediately.

Packing list

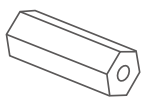
Gimbal*1



Screw pack*1

Screw pack*1
(M3*5mm button head hexagon screw*4)

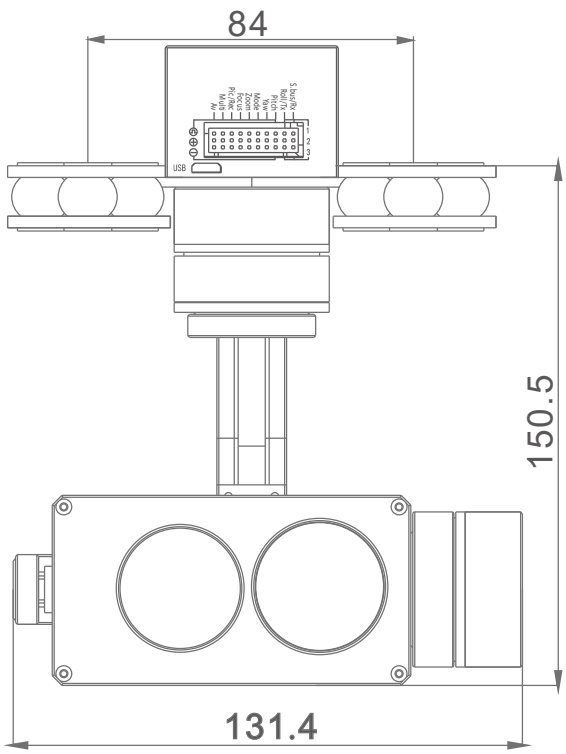
Copper cylindersr*4

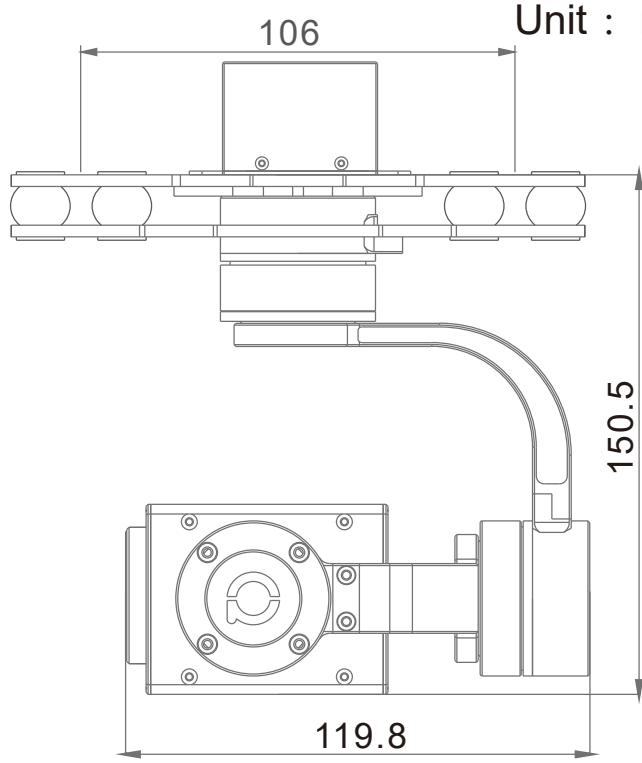


Damping balls*12

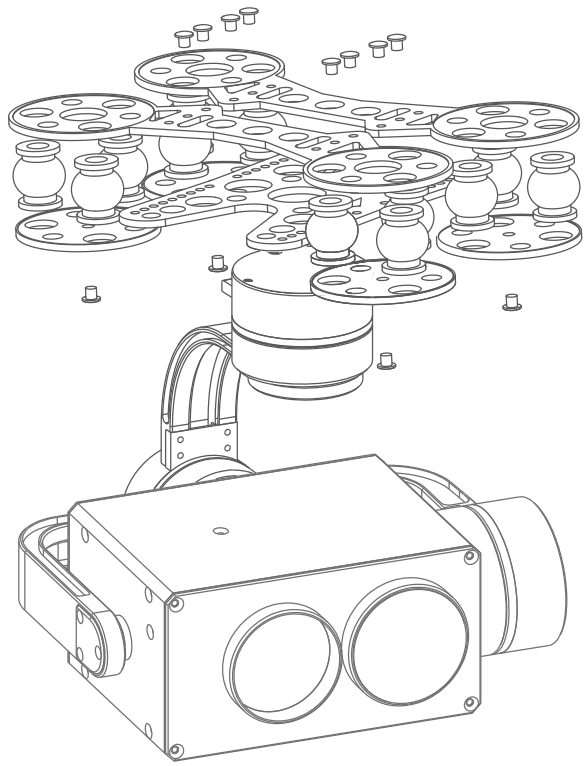
Gimbal Dimension

Unit： mm





Installing



Mechanics@Electronic Characteristics

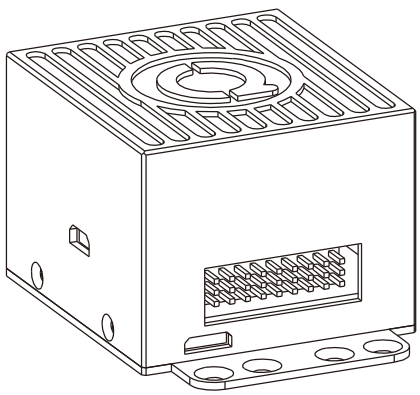
Input voltage	3S~4S	Idle current	800mA@12V
Dynamic current	1100mA@12V	Working environment temp	-20℃ ~ +80℃
Size	L131.4 *W 119.8*H150.5mm	Weight	650g

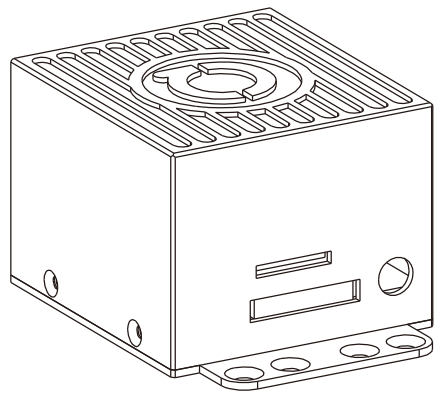
Working Characteristics

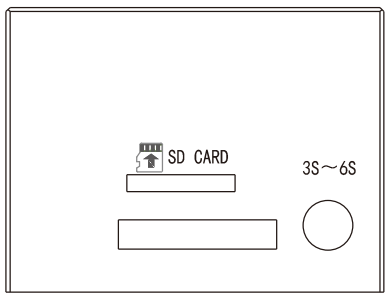
Pitch/Tilt: Pitch angle range of action : ±90
Roll: Roll angle range of action : ±85°
Yaw/Pan: Yaw angle range of action : ±150°
Vibration angle: Pitch/Roll: ±0.02°, Yaw： ±0.03°

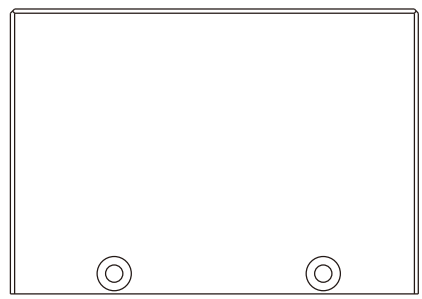
Gimbal’s Signal Wire Box

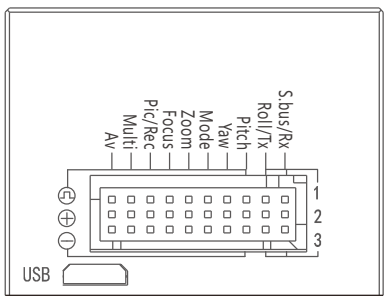
Size:49*45.4*35.7 Unit : mm

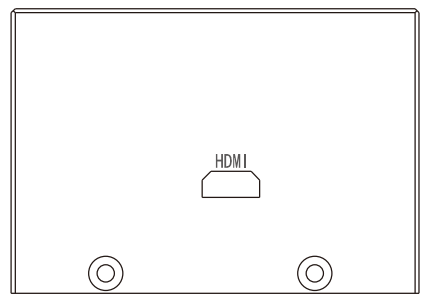




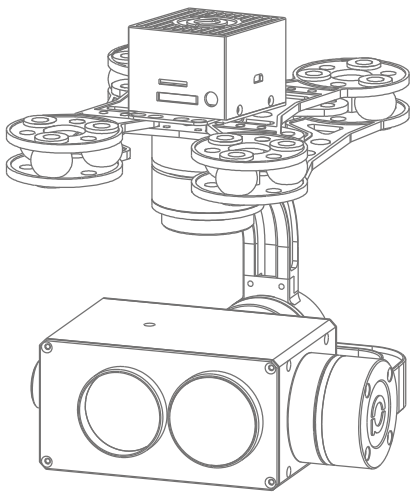




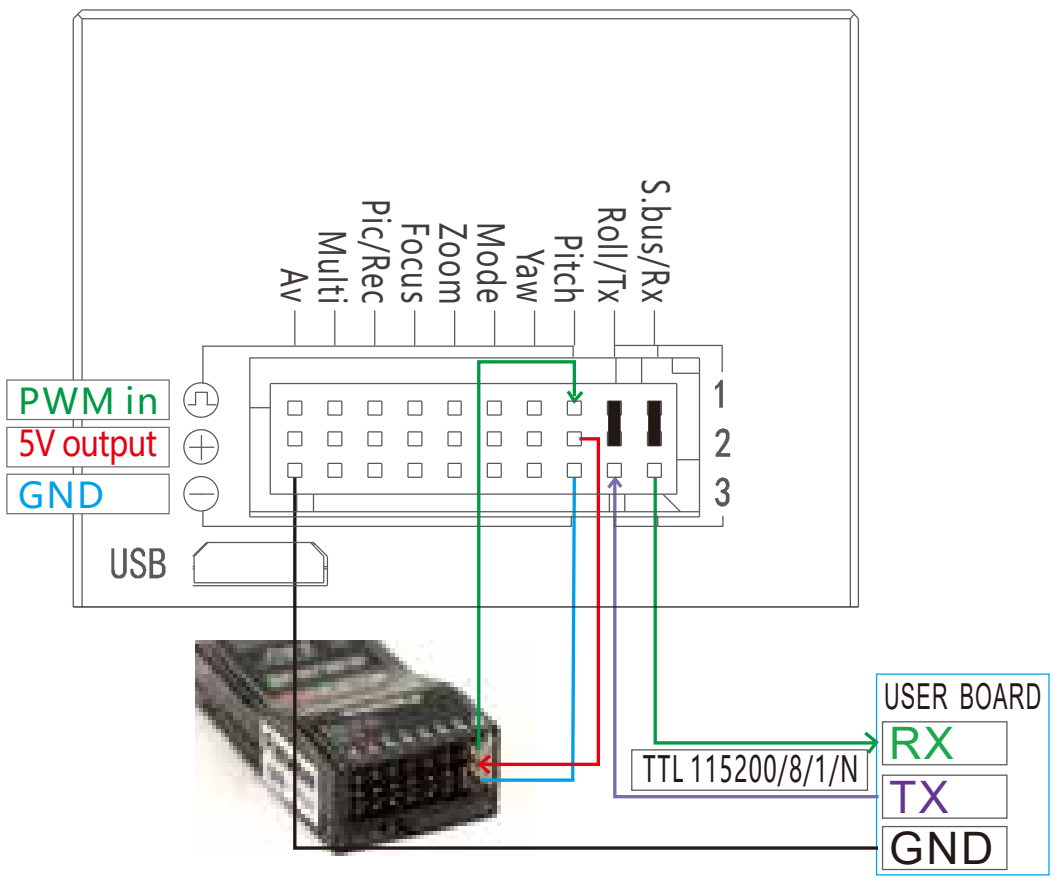




Connection of Control Box and Wiring Instruction



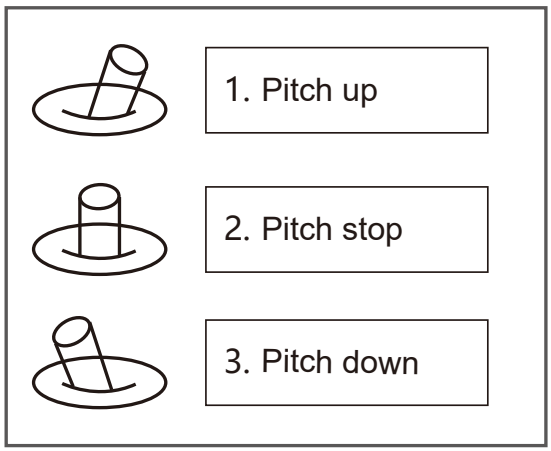
HDMI: micro HDMI OUTPUT
1080P 60fps default
SD card: max 128G, class10
FAT32 or exFAT format

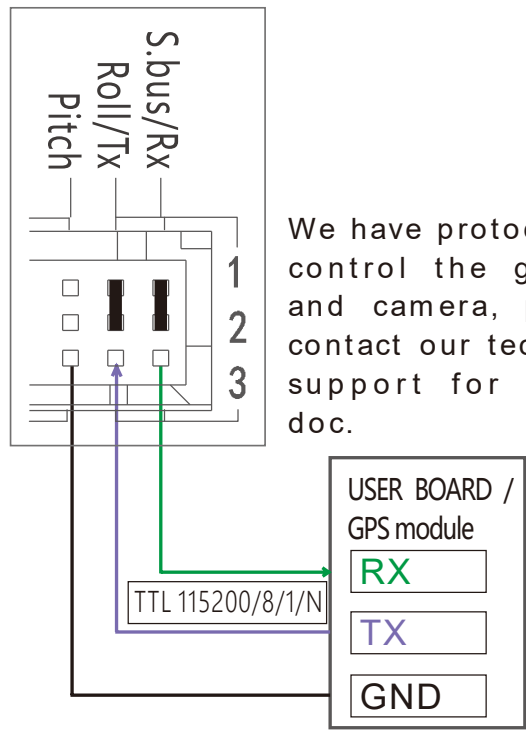


S.bus/Rx: connect to Rx2 for track function.

Roll/ Tx: connect to Tx2 for track function.

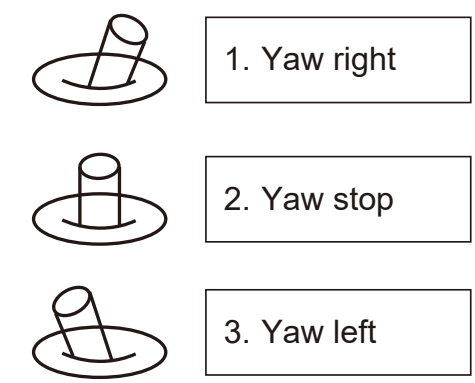
Pitch: PWM in, pitch control



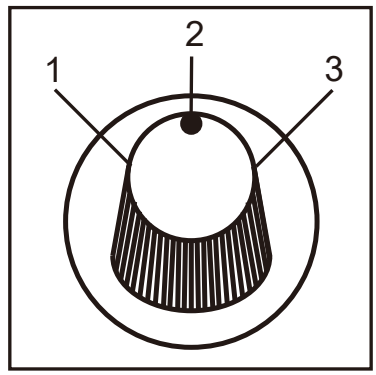


We have protocol for control the gimbal and camera, please contact our technical support for detail doc.

Yaw:PWM in, Yaw control



Mode: Change the speed / home position



Position 1: Lowest speed for pitch and yaw.
Position 2: Middle speed for pitch and yaw.
Position 3: Highest speed for pitch and yaw. The speed is continuously quickly from 1 to 3.

One click: Home position.
Two click: Look down.
Three click: Yaw not followed by frame.
Four click: Yaw followed by frame.
Five click: Restore the factory settings.
(Click = from 2 to 3 and back to 2 quickly)

ZOOM: Zoom the camera


1. Zoom tele


2. Stop zoom


3. Zoom wide

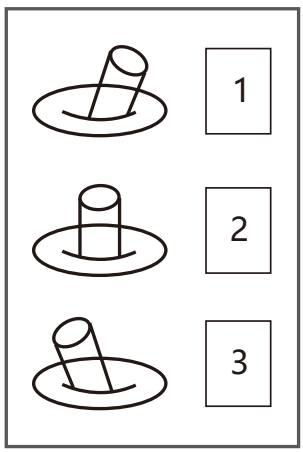
Focus: Focus the camera


1 Switch 2 to 1: IR color white hot, black hot, pseudo color


2


3 Switch 2 to 3: Picture in Picture. EO+IR , IR+EO, EO only, IR only.

Pic /Rec picture / Start record, stop record



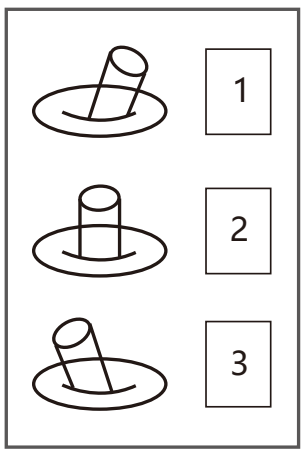
Switch 2 to 1:

Start record / stop record. start record,
the OSD display rec hh:mm:ss ; stop record, the OSD display STBY.

Switch 2 to 3: Take a picture.

OSD display' REC IMG' a second.

Multi: Tracking control



Position 1 exit the tracking

Switch 1 to 2: Display the cross cursor. Adjust the object to the cross cursor.

Switch 2 to 3: Start tracking. Change the object during tracking.

Switch 3 to 2: Display the cross cursor, use Pitch/Yaw to adjust the cross cursor.

Switch 2 to 3: Start tracking.

AV: NO AV output this model.

Camera Introduction

Z10TL has 2 mega effective pixels, supports 10x optical autofocus, possess HD 1080P video. There are two video streams in the camera, one is 1080P 30FPS, local H.264 compression, stored in the device SD card, another video output HDMI HD signal for the wireless transmission, according to the characteristics of UAV photography application, we design fast auto-focus speed, small size, and support PWM and S.BUS and serial command control.

Camera Features

•Excellent 1080p (1920 x 1080) HD image quality

• 1/2.9" high-performance CMOS sensor, 2MP, high picture quality and high sensitivity

• Powerful zoom capability - 10x optical zoom, 12x digital zoom, excellent autofocus
Performance: fixed aperture is F1.6 with a focal length range of 4.7-47mm

• Video output pixel (H) x (V) : 1920 x 1080

• VFM 1080p/25, 1080p/30, 1080p/50, 1080p/60,720p/25, 720p/30, 720p/50, 720p/60

• Day /night function (on, off, automatic)

• Multiple white balance models

• Powerful low noise effect and excellent noise reduction performance

• Support for ultra-low illumination: 0.05Lux@F1.6 (color), 0.01Lux@F1.6 (black)White), 0Lux (IR)

• The signal-to-noise ratio is greater than or equal to 52dB

• Image effects (e-flip, black and white, mirror, image GAMMA, e-mist, numbers Wide dynamic)

• Electronic shutter

• Support OSD function display

Light Supplement Characteristics

Effective range	300 meters
Light wave length	850 ± 10nm (940nm, 980nm)
Illumination angle	Power zoom synchronously, 70°~2.0° adjustable
Zoom time	2s (wide end - tele end)
Power consumption of laser chipset	2 ± 0.2W
Illumination range	Tele end 2.0°: effective range 300 meters, spot diameter < 20 meters Wide end 70°: effective range ＞ 40 meters
Working voltage	DC12V ± 10%
Power consumption in total	< 11W
Control system	PWM/TTL
Communication system	UART_TTL
Communication protocol	PELCO-D (defualt baud rate 9600bps)
Working temp	-20℃~+80℃
Environment temp	-40℃~+80℃