Viewpro

User manual

Z10TL

10x Zoom IR Laser Night Vision Object Tracking Gimbal Camera

Compatible with DJI M200/M210/M210RTK and V2

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

Contents

Z10TL High-precision Camera

Camera Introduction

Z10TL is a high-precision professional 3-axis gimbal camera which features high stability, small size, light weight and low power consumption. The 3-axis gimbal based on FOC motor control technology, adopts high-precision encoder in each motor. It’ s developed based on DJI PSDK, comptible with DJI drones M200 / M210 / M210RTK and V2 series. Controlled by APP “DJI Pilot” it can fulfill many powerful functions, such as: shoots or records with 10 times optical zoom, object tracking, IR laser night vision and so on. The speed of Z10TL gimbal is adjustable, LOW speed mode for tele end, the control will be more accurate. Fast mode for wide end, 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. You can input a degree in APP Payload Setting and get the gimbal attitude angles exactly.

Camera Description

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.

Mechanics@Electronic Characteristics

Input voltage	3S~4S	Idle current	330mA@12V
Dynamic current	450mA@12V	Working environment temp	-40℃ ~ +60℃
Size	129.8*117.1*119.8mm	Weight	554g

Pitch/Tilt: Pitch angle range of action : ±90
Roll: Roll angle range of action : ±85°
Yaw/Pan: Yaw angle range of action : ±360°
Vibration angle: Pitch/Roll: ±0.02°, Yaw: ±0.03°

Application Description

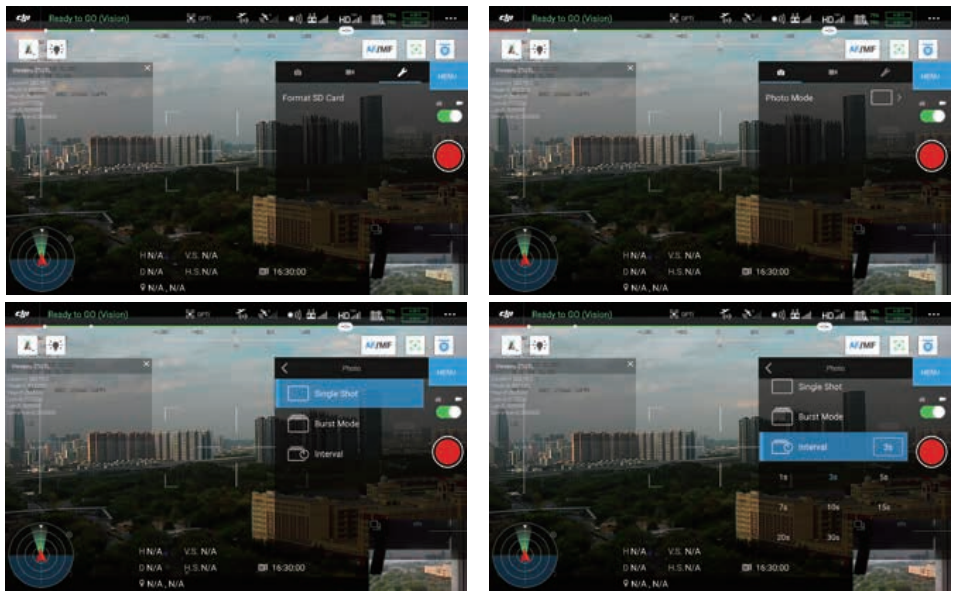
DJI Pilot

After mounting Z10TL on DJI drone and connecting with remote control, you can operate the gimbal camera via APP DJI Pilot. The gimbal attitude angels (tilt and pan) can be controlled by DJI remote control. Control method please refer to DJI related user manual.

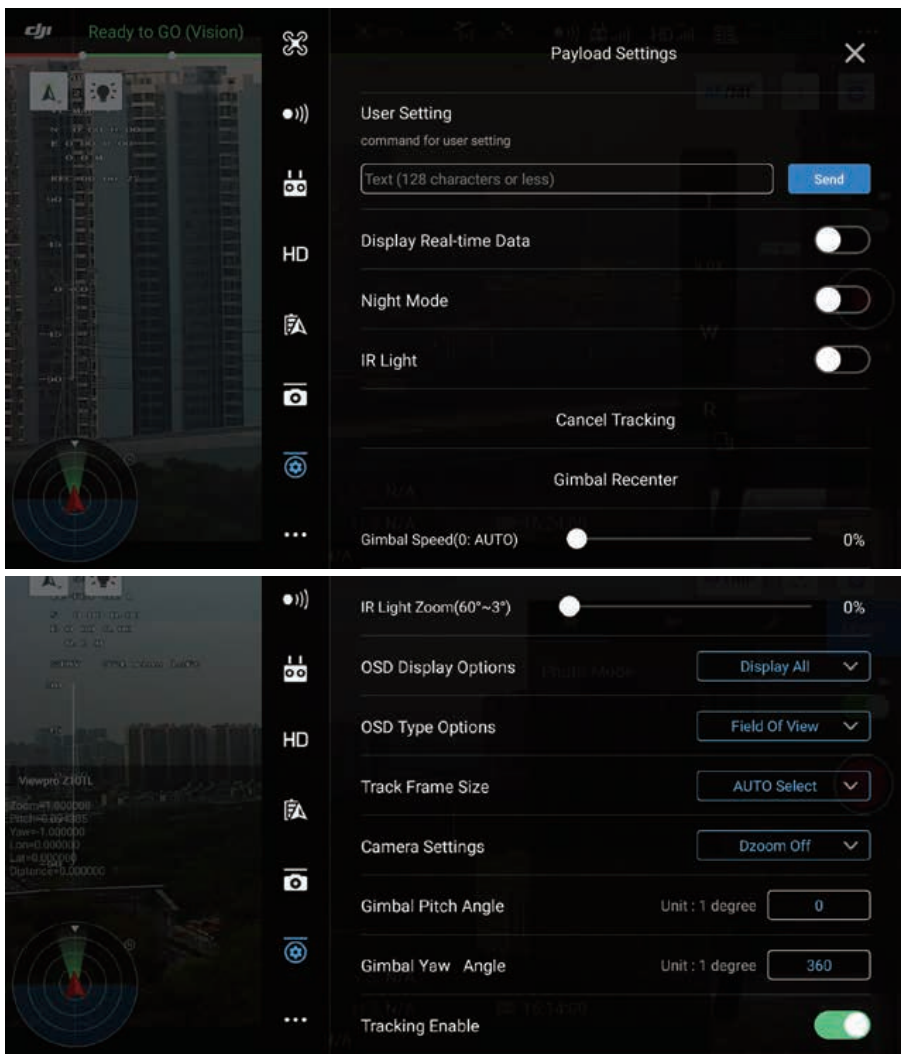
1. Menu instruction

1.1 Camera settings - Photo mode settings:

You can format SD card on Pilot, choose single shot, burst mode or interval mode.

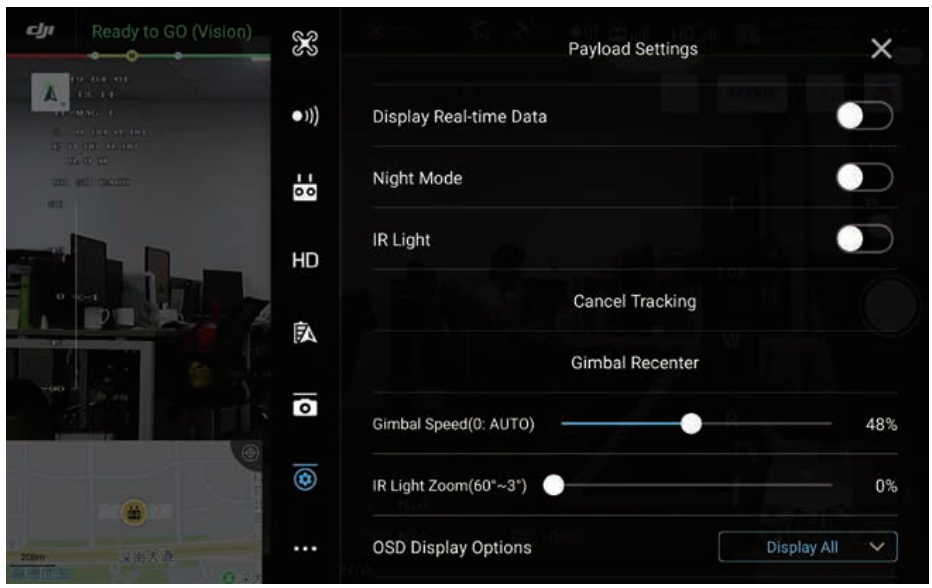


1.2 Payload Settings:



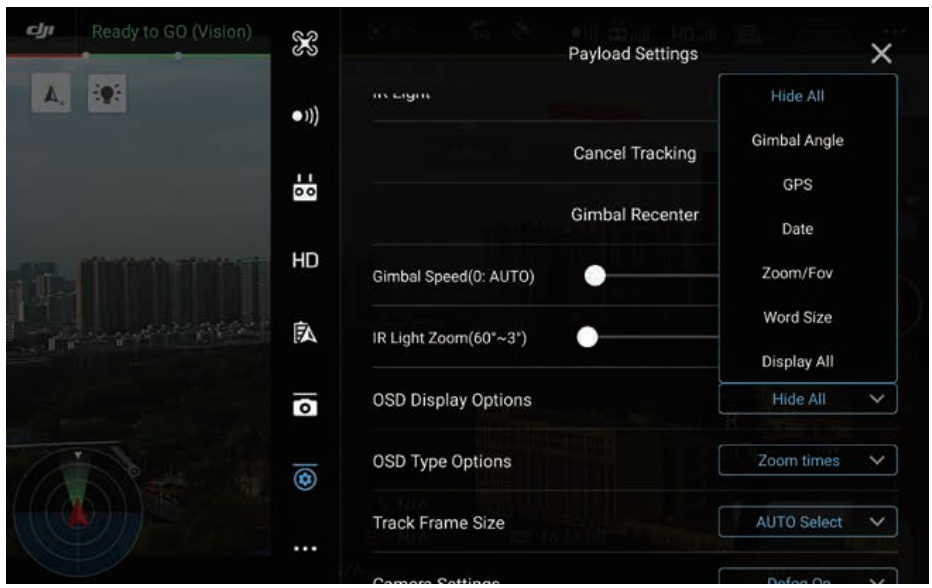
Gimbal Speed:

Gimbal speed is adjustable. When it's 0%, the speed will be adjust automatically, quick speed for wide end, slow speed for tele end. When you adjust it to 1% manually, the speed will be low even in wide end. The high the percentage is, the quicker the speed will be.

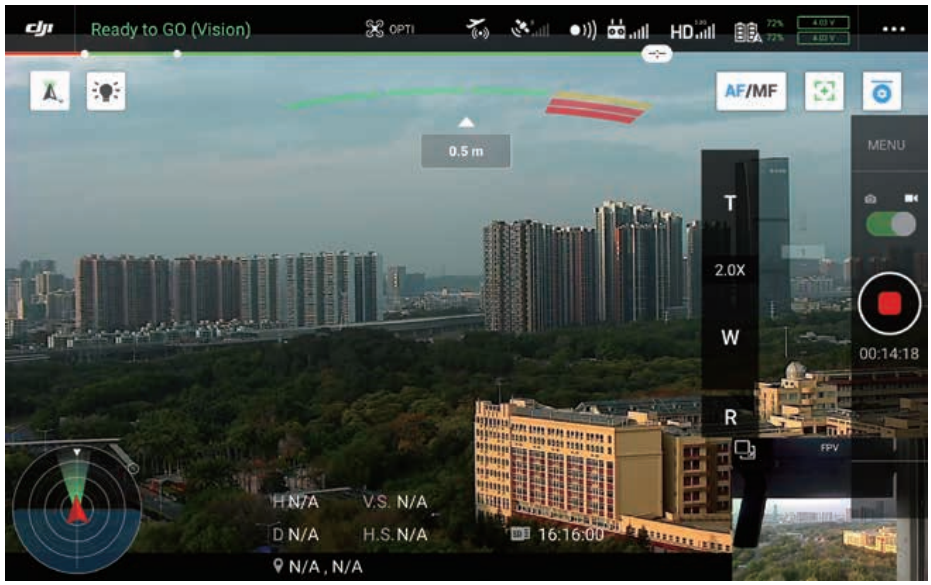


OSD Display Options:

You can DIY you on-screen-display (OSD). Choose Hide All, then you can choose to display the items you want only.

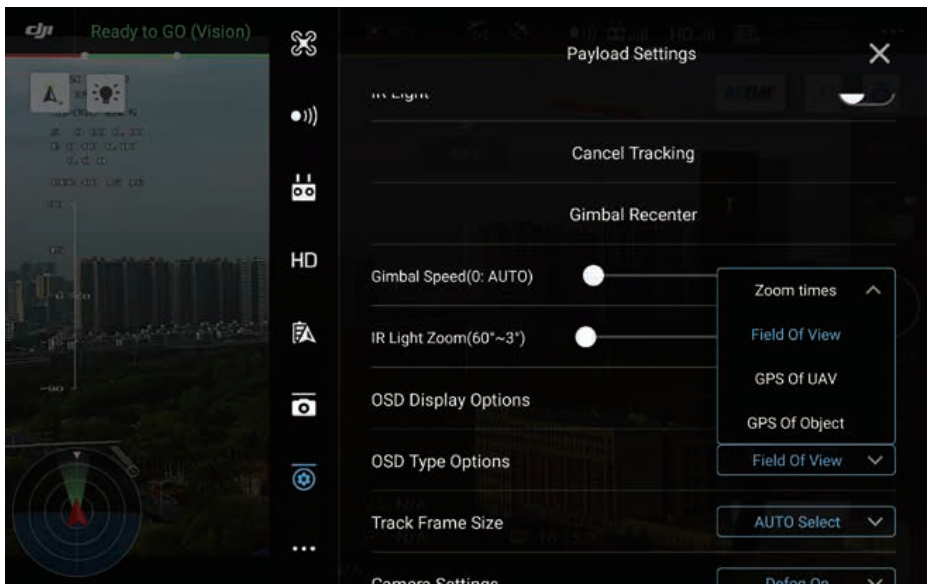


Hide All:



OSD Type Options:

You can choose to display FOV (Field of View) or Zoom times on the OSD, GPS coordinate of UAV or the object (estimate).

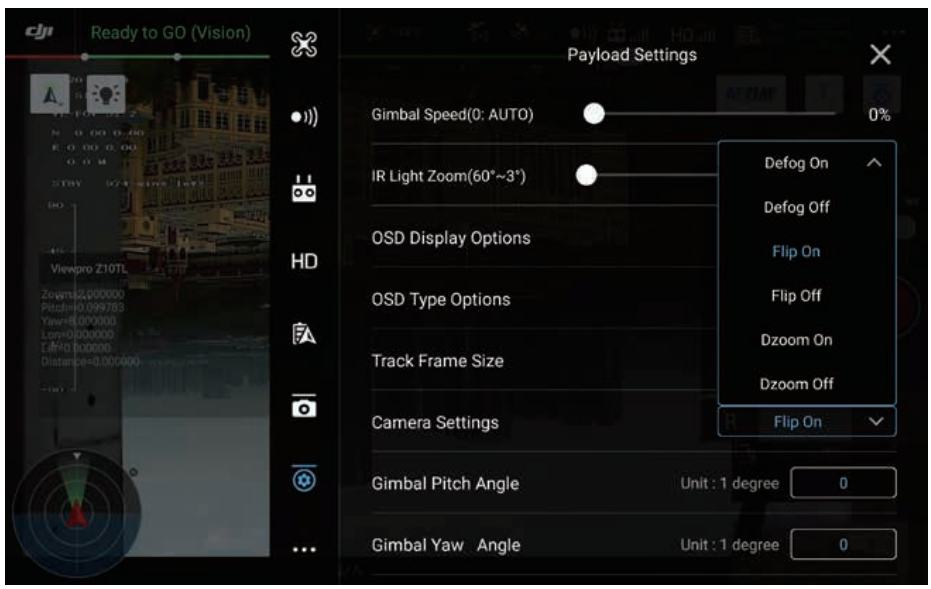


Digital Zoom Options:

The EO camera of Z10TL has 6 times digital zoom. Press T continually will get digital zoom automatically after 10x full optical zoom.
The zoom times number will become blue when it's in digital zoom status. You can also disable digital zoom in camera settings.

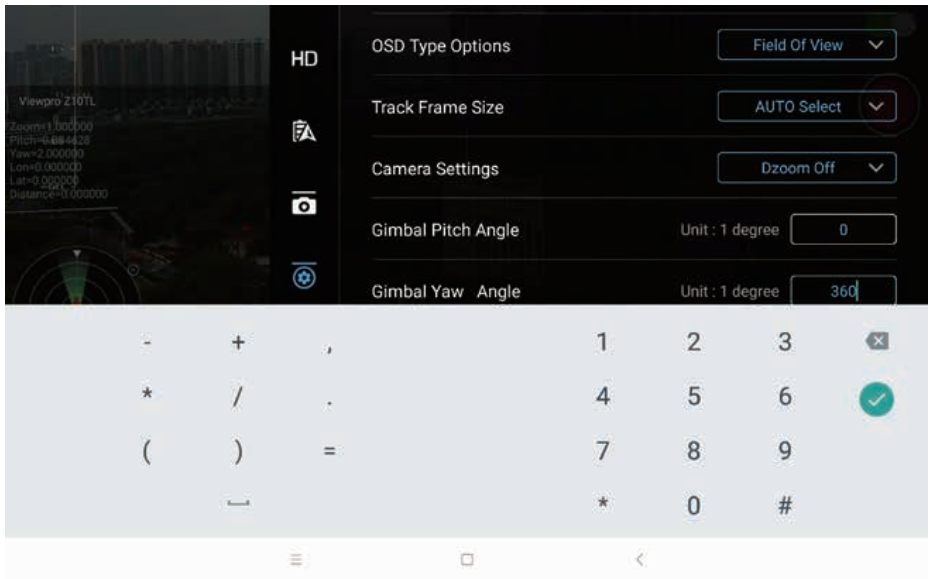
Camera Settings:

Choose defog, flip the screen or Dzoom (digital zoom) on/off when necessary.



Gimbal Pitch / Yaw Angle Settings:

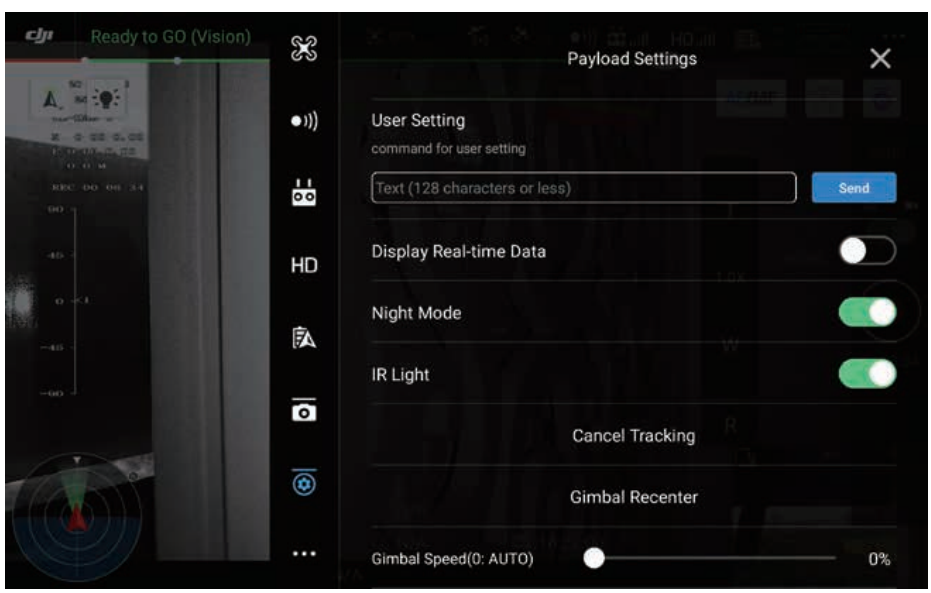
Input the pitch / yaw angle degrees to get exact attitude angles directly.

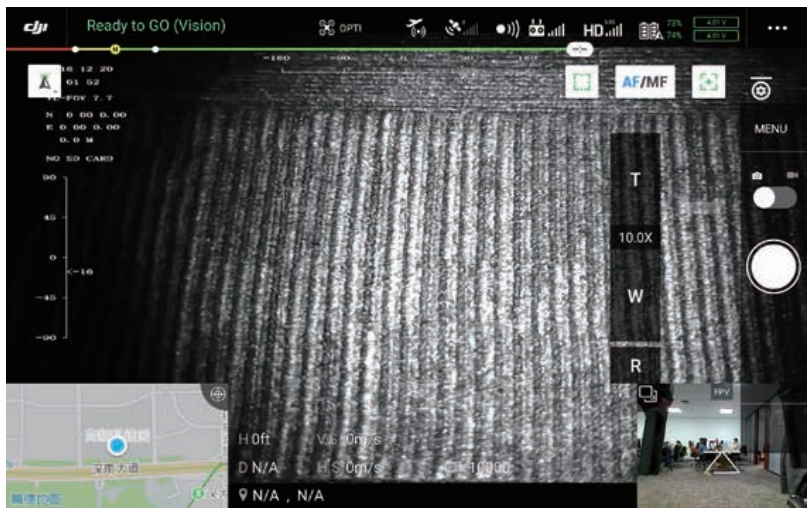


2. Main functions instruction

2.1 IR laser light for Night Mode

Z10TL can let you see clearly even in a pitch-dark environment with an invisible light. Switch on IR light (then Night Mode will be turned on automatically), you will see a laser light beam on the target directly. The light beam size is adjustable. It will be divergent for wide end and condensed for tele end automatically. You can also adjust the light beam size manually from Payload Settings, then zoom to see clearly.



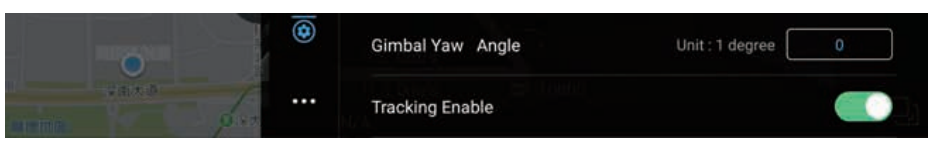


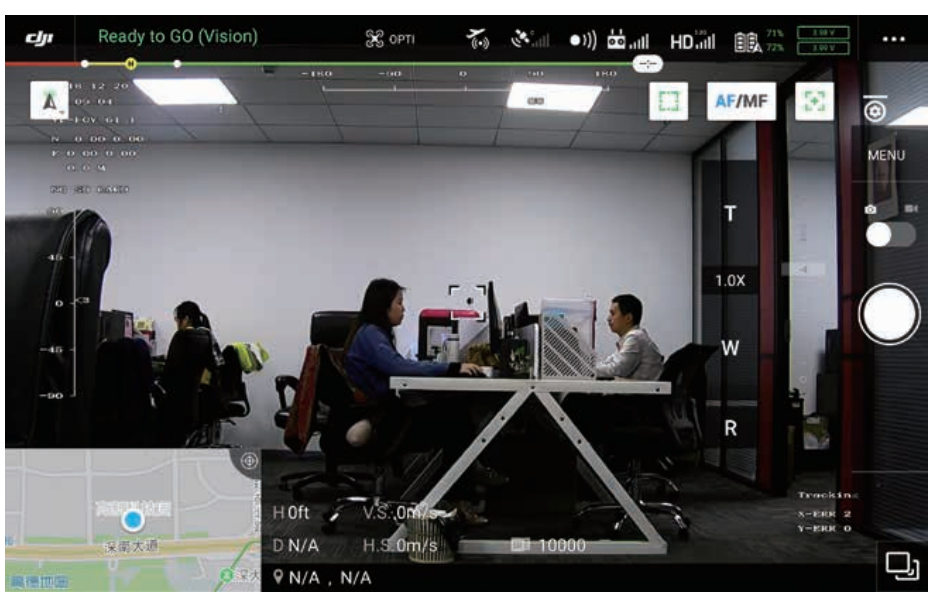
2.2 Object tracking

Start tracking: Enable tracking function, then single touch on the screen to pick tracking object.

Stop tracking： Payload Settings --CANCEL TRACKING

*Note: the gimbal will follow the object automatically after object is chosen, to control the gimbal manually please cancel tracking first.





Specification

	Hardware Parameter
Working voltage	12V
Input voltage	3S ~ 4S
Dynamic current	1100mA@12V
Idle current	800mA @ 12V
Power consumption	≤ 13.2W
Working environment temp.	-40℃ ~ +60℃
Output	Skyport
Local-storage	SD card (Up to 128G, class 10, FAT32 or ex FAT format)
Control method	DJI Pilot
	Gimbal Spec
Pitch/Tilt	±90°
Roll	±85°
Yaw/Pan	±360°*N
Vibration angle	Picth/Roll: ±0.02°, Yaw：±0.03°
One-key to center	√
	Camera Spec
Imager Sensor	**1/2.8" CMOS**
Picture quality	Full HD 1080 (1920*1080)
Effective pixel	2.43MP
Lens optical zoom	10x, F=4.7~47mm
Digital zoom	6x
Min object distance	1.5m
View angle	Horizontal: 58.7°(wide end) ~ 3.2°(tele end)
	Vertical: 45°(wide end) ~ 2.4°(tele end)
	Focus: 70.9°(wide end) ~ 7.1°(tele end)
Sync system	Progressive scanning
S/N ratio	≥52dB
Min illumination	Color 0.05lux@F1.6
Focus	Auto
Gain	Auto
White balance	Auto / Manual
Shutter speed	Auto
Image rotation	180°, Horizontal/Vertical mirror image
User presetting bit	20 sets
Defog	Yes
OSD	Yes

Camera Object Tracking	
Update rate of deviation pixel	50Hz
Output delay of deviation pixel	<10ms
Minimum object contrast	5%
SNR	4
Minimum object size	16*16 pixel
Maximum object size	160*160 pixel
Tracking speed	±32 pixel/frame
Object memory time	100 frames (4s)
The mean square root values of pulse noise in the object position	< 0.5 pixel
Light Supplement	
Effective range	300meters
Illumination angle	power zoom synchronously, 70°~2.0° adjustable
Packing Information	
N.W.	554g
Product meas.	129.8*117.1*119.8mm
Accessories	1pc gimbal camra device / box