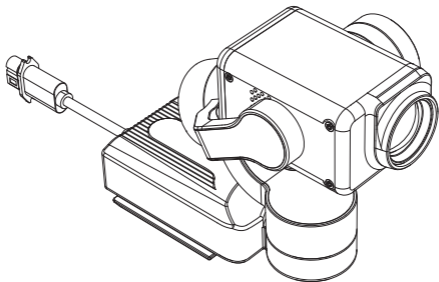


IR3 红外变焦云台灯

IR3 Infrared Zoom Spotlight

2025.09 V2.0

用户手册
User Manual



目录

一、免责声明与警告	01
二、IR3介绍	02
三、安装	03
四、软件使用教程	04
五、固件升级	16
六、技术参数	17

Contents

I.Disclaimer and Warning.....	18
II.Introduction of IR3.....	19
III.Installation.....	20
IV.Software Usage Tutorial.....	22
V.Firmware Upgrade	36
VI.Technical Parameter.....	38

一、免责声明与警告

感谢您购买成至智能产品。本文所提及的内容关系到您的安全以及合法权益与责任。使用本产品之前，请仔细阅读本文以确保已对产品进行正确的设置。不遵循本文的说明与警告进行操作可能会给您和他人造成伤害。本文档及所有相关的文档最终解释权归成至智能所有。如有更新，恕不另行通知。请访问www.czi.com.cn官方网站获取最新的产品信息。

警告事项

1. IR3属于3B类非可见光激光器，在激光灯开启的状态下，严禁用眼直视或者使用光学仪器观察激光光束。
2. 在正常使用的情况下，镜头前方15m内严禁有易燃物体遮挡，以防发生火灾。
3. 如遇硬件问题，请返厂维护，请勿擅自拆卸，否则由此造成对激光的不良影响，后果需自行承担。

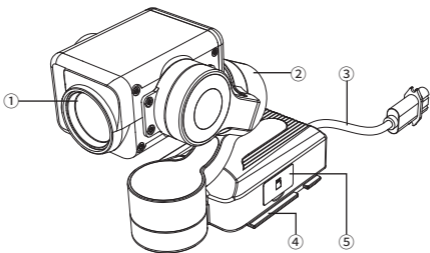
注意事项

1. 请在使用完毕后，将设备放入安全箱，并及时更换干燥剂，避免环境湿度过大导致镜头起雾。若镜头起雾，通常情况下开机一段时间后水汽即可消散。
2. 清洁出光镜头时，请务必使用柔软干燥的清洁布擦拭镜头表面，切勿使用碱性清洁剂进行清洁。
3. 起飞前，请确认滑槽与快拆支架是否已正确卡好。

二、IR3介绍

成至IR3红外变焦云台灯，搭载高性能激光器，出光功率高达4W。可在2-70°之间平滑调节照射光角，实现聚光与泛光自如切换，最大红外补光距离超过300米，在无光环境下获得更好的观测效果。

通过DJI Pilot 2 APP控制灯光开关、调节亮度及光角，可自动跟随云台相机转动。配备E-port接口，适配 DJI 经纬 M30 系列无人机。

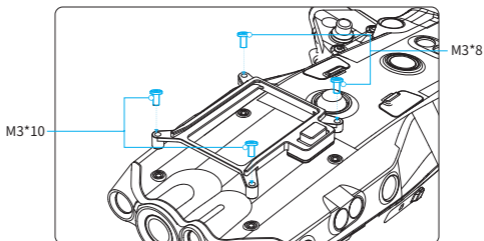


①出光口 ②三轴云台 ③供电通讯线

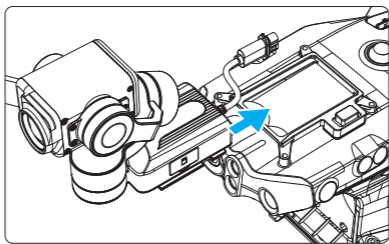
④快拆结构 ⑤microSD卡盖

三、安装

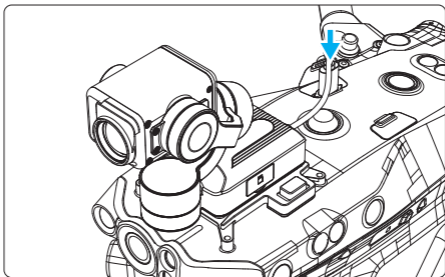
1. 首次使用时,需在无人机上安装快拆支架,使用标配的M3*10和M3*8六角薄头螺丝将支架拧紧固定。



2. 将IR3红外变焦云台灯主机从滑槽推入快拆支架中,直到听到“哒”的一声确保卡好。



3. 将供电通讯线插到PSDK 接口上。(右侧口)。



4. 启动无人机,启动遥控器,打开APP。

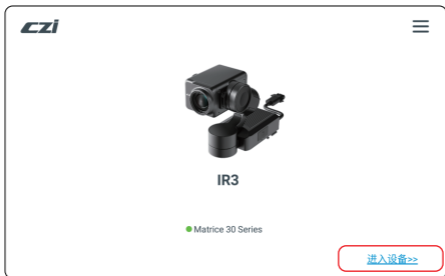
四、软件使用教程

czy Pilot APP使用教程

1. 点击 czy Pilot APP进入软件主界面。(APP在成至智能官方网站 www.czi.com.cn 下载)



2. 进入到主页面。显示出IR3负载名称，成功识别负载后，点击进入设备。



3. 点击功能面板开关图标，显示IR3各控件按钮。




3.1. czi Pilot 内部各控件按钮介绍。

	灯关		灯开
	变焦控制关		变焦控制开
	云台锁定关		云台锁定开
	功率限制关		功率限制开
	亮度调节		

4. 点击打开激光补光灯按钮后，M30系列云台相机将会自动切换为夜景模式，滑动进度条即可调节亮度。

 当功率限制开启后，亮度调节大小会限制在40%。

地面可手动关闭功率限制，无人机起飞后将自动关闭且无法开启，落地后重新打开。

 在激光开启的状态下，严禁用眼直视或者使用光学仪器观察激光光束。




5. 点击变焦控制按钮，滑动进度条即可调节光斑大小。






6. 光斑微调方法：

方法一：微调控件

① 点击  (内部控件菜单)，展开二级菜单后，点击云台设置。展开微调界面，滑动进度条对云台角度进行微调，即可控制光斑位置。调节完毕后，点击保存微调即可保存当前云台角度设置。

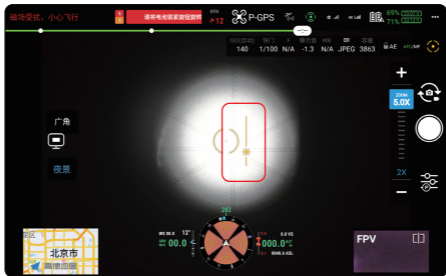


方法二：五维按键映射微调

① 点击  (内部设置菜单) 点击  (遥控器设置), 点击遥控器自定义按键  , 选择五维键功能自定义按键。在自定义选项中, 设置五维键功能以对应云台角度, 完成设置后, 操作五维按键即可控制光斑位置。



7. 对目标进行观测时,如遇相机曝光过曝的情况,可滑动画面上的曝光按钮进行调节。



8. 点击 **!** (内部控制件菜单), 展开二级菜单后, 点击云台设置。展开云台设置界面, 点击云台校准控件, 云台将进行自动校准, 校准完成后需要重启设备方能使用云台。

! 校准过程中请勿移动无人机或触碰云台。

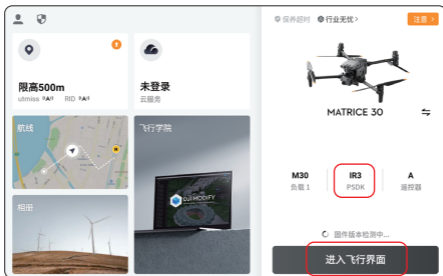


DJI Pilot2 APP使用教程

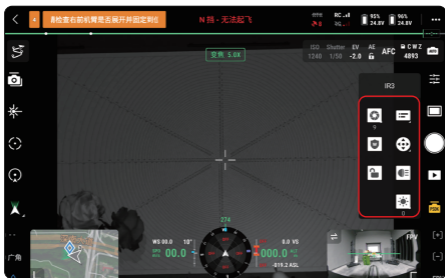
1. 点击 DJI Pilot2 APP 进入软件主界面。



2. 进入到主界面, 显示出IR3负载名称, 成功识别负载后, 点击进入飞行界面。



3. 点击PSDK按钮，显示IR3各控件按钮。



3.1. IR3内部各控件按钮介绍。

	灯关		灯开
	亮度调节关		亮度调节开
	光斑调节关		光斑调节开
	功率限制关		功率限制开
	云台跟随		云台锁定

4. 将M30系列云台相机切换为变焦模式,点击相机设置菜单,点击内部设置,点击打开夜景模式。



5. 点击PSDK负载控制界面,点击开灯按钮后,选择亮度调节与光斑调节,滑动进度条即可调节亮度及光斑大小。

 在功率限制开启后,亮度调节的最高值被限制在40%。

地面可手动关闭功率限制,无人机起飞后将自动关闭且无法开启,落地后重新打开。

 在激光开启的状态下,严禁用眼直视或者使用光学仪器观察激光光束。



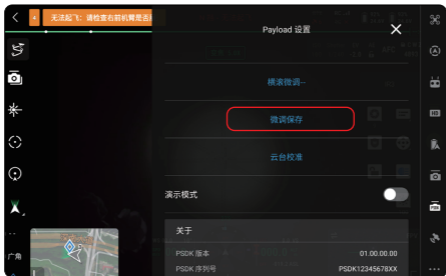
6. 光斑微调方法：

方法一：微调控件。

① 点击微调按钮，展开微调界面，对云台角度进行微调，即可控制光斑位置。

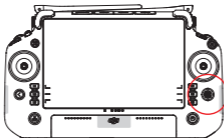


② 调节完毕后，通过PSDK内部设置菜单的微调保存功能，即可保存当前云台角度设置。



方法二：五维按键映射微调。

① 点击PSDK内部设置菜单，点击遥控器设置，点击遥控器自定义按键，选择五维键功能自定义按键。在自定义选项中，设置五维键功能以对应云台角度，完成设置后，操作五维按键即可控制光斑位置。



五维按键

7. 对目标进行观测时,如遇相机曝光过曝的情况,可滑动画面上的曝光按钮进行调节。



8. 打开 PSDK 内部设置菜单,点击云台校准控件,云台将进行自动校准,校准完成后需要重启设备方能使用云台。



校准过程中请勿移动无人机或触碰云台。



五、固件升级

使用microSD卡升级

升级前请务必确保 IR3 红外变焦云台灯已安装于飞行器上且飞行器电源已关闭，microSD 卡格式正确、有足够的存储空间且飞行器智能飞行电池电量充足。

1. 请通过官方渠道获取固件升级包；
2. 将解压后的固件升级包放到 microSD 卡的根目录下；
3. 将 microSD 卡插入云台灯的 microSD 卡槽；
4. 开启飞行器电源，此时云台灯将启动自检，自动开始升级固件；
5. 升级完成后，程序将再次启动，请观察悬浮窗版本号检查是否更新成功。

使用czi pilot升级

升级前请务必确保 IR3 红外变焦云台灯已安装于飞行器上且飞行器已开机，且飞行器智能飞行电池电量充足。

1. 遥控器连接到网络，打开 czi Pilot APP；
2. 进入设备打开控件菜单，打开二级菜单固件版本点击检查更新，按提示升级固件；
3. 此时云台灯将启动自检，自动开始升级固件；
4. 升级过程中，云台灯会重启一次，此时升级尚未完成，请等待蜂鸣器第二次鸣叫结束；
5. 升级完成后，请检查云台灯固件版本是否更新成功。

六、技术参数

型号	IR3
规格	126.5*60*88.5mm
重量	208±5g(不含支架)
有效距离	≥300 米
激光器类型	面射型激光器
发光波长	850±10nm
变倍时间	≤2 秒(远角-近角)
出光功率	4±0.5W
照明角度	电动同步变焦, 2.0°~70°连续可调
激光安全等级	Class 3B (FDA、IEC)
激光安全距离	最小角度时 15m
储存	
存储卡类型	最大支持16 GB容量, 传输速度达到 UHS-I Speed Grade 3 评级的 microSD 卡
存储文件系统	FAT32

I. Disclaimer and Warning

Thank you for purchasing czi products. The contents mentioned herein are related to your safety, legal rights and responsibilities. Before using this product, please read this document carefully to ensure that you have set up the product properly. Failure to follow and comply with the instructions and warnings in this document may result in injury to you and others, damage to the product or other surrounding items. This document and all related documents are subject to the final interpretation of czi. Updates are subject to change without notice. Please visit the official website at www.czi.com.cn for the latest product information.

Warnings

1. IR3 belongs to a kind of Class 3B non-visible light laser. When the laser light is turned on, it is strictly prohibited to look directly at the laser beam or observe the laser beam with optical instruments.
2. In normal use, flammable objects are strictly prohibited within 15 m in front of the lens to prevent the occurrence of a fire.
3. In case of hardware problems, please return to the factory for maintenance. Do not disassemble it without authorization, otherwise the adverse effects on the laser would be caused thereby, and the consequences need to be borne by oneself.

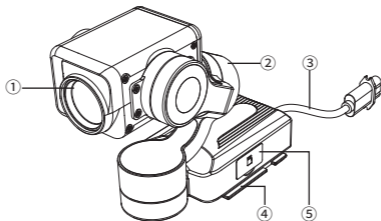
Precautions

1. After using the device, please put it into the safety box, and replace the desiccant in time to avoid lens fogging due to excessive environmental humidity. If the lens is fogged, the water vapor can usually dissipate after the device is turned on for a period of time.
2. When cleaning the light-emitting lens, be sure to use a soft and dry cleaning cloth to wipe the surface of the lens, and never use alkaline cleaning agents for cleaning.
3. Before takeoff, please confirm whether the slide groove and the quick-release bracket have been properly locked.

II. Introduction of IR3

IR3 Infrared Zoom Spotlight is equipped with a high-performance laser. Its maximum light output power can reach 4W. The illumination angle can be smoothly adjusted between 2 and 70 °, to enabling free switching between spotlight and floodlight. The maximum infrared fill light distance exceeds 300 m. This can achieve better observation results in a dark environment.

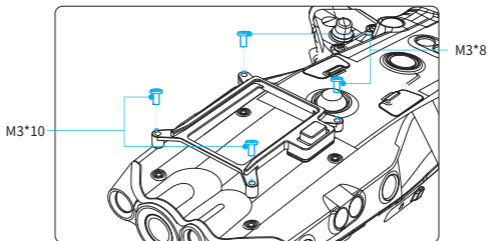
The light switch, brightness adjustment, and light angle can be controlled through the DJI Pilot 2 APP, and it can automatically rotate following the gimbal camera. It is equipped with an E-port interface, which is compatible with the DJI Matrice M30 series drones.



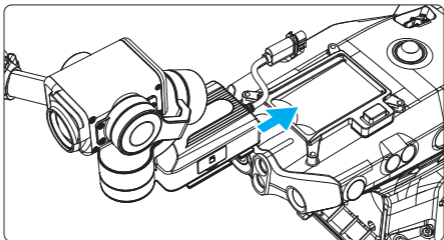
- ①Light outlet ②Three-axis gimbal
- ③Power supply and communication cable
- ④Quick-release structure ⑤microSD card cover

III. Installation

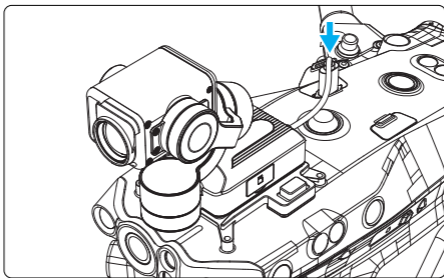
1. When using it for the first time, it is necessary to install the quick-release bracket on the drone. And use the standard M3*10 and M3*8 hexagon thin-head screws to tighten and fix the bracket.



2. Push the main body of the IR3 Infrared Zoom Spotlight into the quick-release bracket along the slide groove until you hear a “click” sound to ensure it is properly locked.



3. Insert the power supply and communication cable into the PSDK interface (the right port).

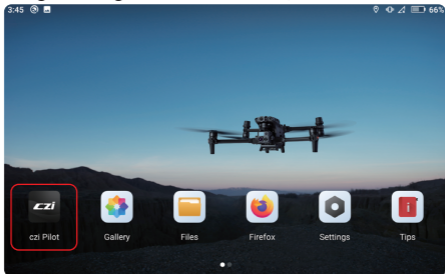


4. Start the drone. Start the remote controller. Then open the APP.

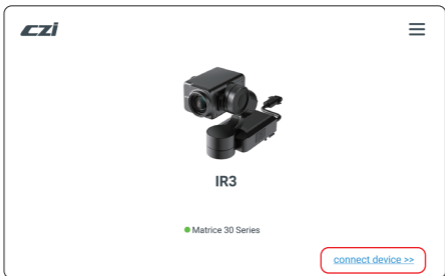
IV. Software Usage Tutorial

czi Pilot APP Usage Tutorial

1. Click on the czi Pilot APP to enter the main interface of the software. (APP downloaded from the official website of Chengzhi Intelligence www.czi.com.cn.)



2. Enter the main page. Once the IR3 payload name is displayed and the payload is successfully recognized, click to enter the device.



- Click the Function Panel Switch icon to display the control buttons of IR3.



3.1. Introduction to the internal control buttons of czi Pilot.

	Light off		Light on
	Zoom control off		Zoom control on
	Gimbal off		Gimbal on
	Power limit off		Power limit on
	Brightness adjustment		

- After clicking the button to turn on the laser fill-in light, the M30 series gimbal camera automatically switches to Night Mode. Brightness can be adjusted by sliding the progress bar.

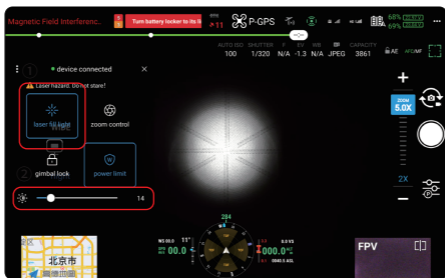


After the power limit is turned on, the maximum value of the brightness adjustment is limited to 40%.

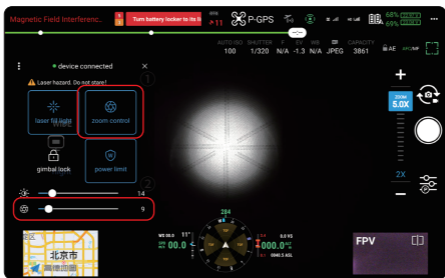
The power limitation can be manually disabled on the ground. It will be automatically disabled after takeoff and cannot be enabled during flight. The function will be available again once the drone has landed.



When the laser is turned on, it is strictly prohibited to directly look at the laser beam with the eyes or observe it using optical instruments.



- Click the zoom control button and slide the progress bar to adjust the spot size.



- Fine-tuning Method for Spot:

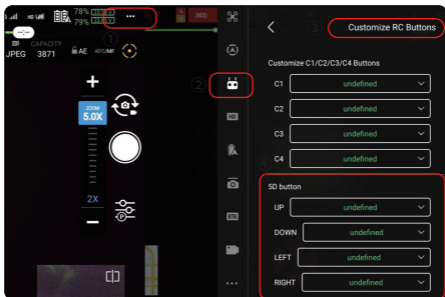
Method 1: Fine Tune the Control.

- Click **☰** (Internal Controls Menu), expand the secondary menu and then click gimbal setting. Open the fine-tuning interface, slide the progress bar to fine-tune the gimbal angle to control the spot position. After the adjustment is complete, click save to store the current gimbal angle setting.

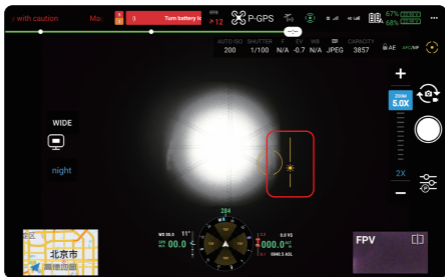



Method 2: Fine-tuning of 5D key mapping.


① Click **⋮** (the internal settings menu). Click **🔒** (remote controller settings). Click the Customize RC Buttons. Select the 5D key function custom button. In the customization option, set the 5D key function to correspond to the angle of the gimbal, after completing the settings, operate the 5D key to control the spot position.

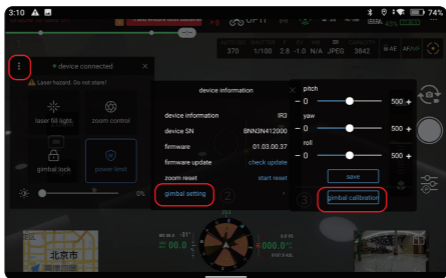


7. When observing the target, if the camera exposure is overexposed, slide the exposure button on the screen to adjust it.



8. Tap  (Internal Controls Menu), expand the secondary menu, and select Gimbal Settings. Expand the Gimbal Settings interface, tap Gimbal Calibration to initiate automatic calibration. After calibration is completed, restart the device before using the gimbal.

 Do not move the drone or touch the gimbal during calibration.

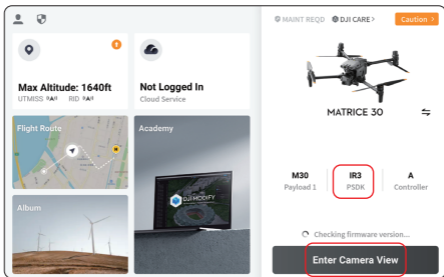


DJI Pilot 2 APP User Tutorial

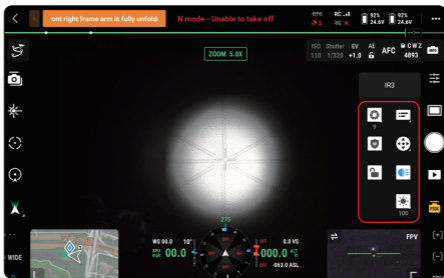
1. Click on the DJI Pilot 2 APP to enter the main interface of the software.













2. After entering the main interface, the name of IR3 load will be displayed. After the load is successfully identified, click to Enter Camera View.



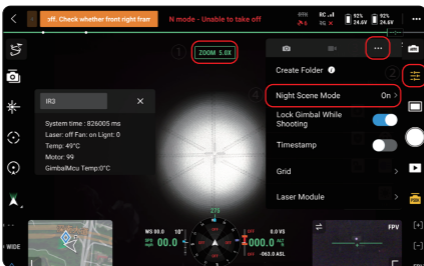
3. Click on the PSDK button to display the control buttons of IR3.



3.1. Introduction to the internal control buttons of IR3.

	Light off		Light on
	Brightness adjustment off		Brightness adjustment on
	Spot adjustment off		Spot adjustment on
	Power limit off		Power limit on
	Gimbal following		Gimbal lock

- Switch the gimbal camera of the M30 series to the zoom mode. Click on the camera setting menu. Click on the internal settings. Then click to open the night mode.



- Click on the PSDK load control interface. After clicking the light-on button, select brightness adjustment and spot adjustment. Then slide the progress bar to adjust the brightness and spot size.



After the power limit is turned on, the maximum value of the brightness adjustment is limited to 40%.

The power limitation can be manually disabled on the ground. It will be automatically disabled after takeoff and cannot be enabled during flight. The function will be available again once the drone has landed



When the laser is turned on, it is strictly prohibited to directly look at the laser beam with the eyes or observe it using optical instruments.



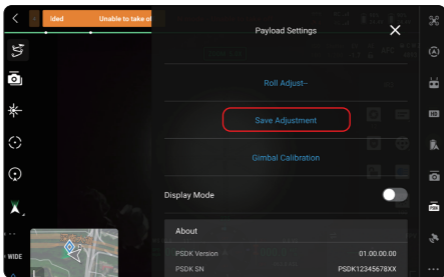
6. Fine-tuning Method for Spot :

Method 1: Fine Tune the Control.

① Click on the fine-tuning button to expand the fine-tuning interface. Fine-tune the gimbal angle to control the position of the light spot.

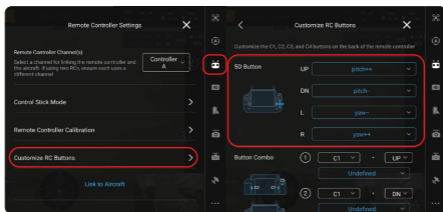


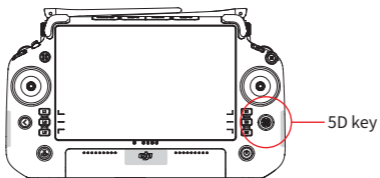
② After the adjustment is completed, the current gimbal angle setting can be saved through the fine-tuning save function in the PSDK internal settings menu.



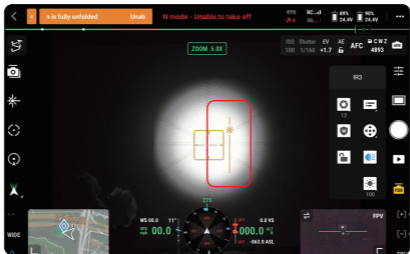
Method 2: Fine-tuning of 5D key mapping.

① Click the PSDK internal settings menu. Click remote controller settings. Click the remote controller custom button. Select the 5D key function custom button. Set the 5D key function to correspond to the Gimbal angle in the custom options. After completing the settings, operate the 5D key to control the spot position.





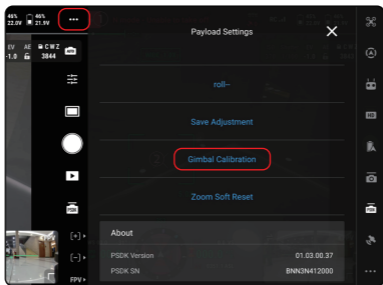
7. When observing the target, if the camera exposure is overexposed, you can slide the exposure button on the screen to adjust it.



- Open the PSDK Internal Settings Menu, then select Gimbal Calibration to initiate automatic calibration. After calibration is completed, restart the device before using the gimbal.



Do not move the drone or touch the gimbal during calibration.



V. Firmware Upgrade

Using microSD card for upgrade

Before upgrading, please make sure that the IR3 Infrared Zoom Spotlight is properly installed on the aircraft, the aircraft power is turned off, the microSD card is correctly formatted with sufficient storage space, and the aircraft's intelligent flight battery is adequately charged.

- Please obtain the firmware upgrade package through the official channels;
- Place the decompressed firmware upgrade package in the root directory of the microSD card.

3. Insert the microSD card into the microSD card slot of the IR3 Infrared Zoom Spotlight;
Turn on the power of the aircraft. At this time, the IR3 Infrared
4. Zoom Spotlight will start the self-test and automatically start to upgrade the firmware;
5. After the upgrade is completed, the program will start again. Please check whether the update is successful by observing the version number of the hovering dialogue window.

Using czi pilot for upgrade

Before upgrading, please make sure that the IR3 Infrared Zoom Spotlight is properly installed on the aircraft, the aircraft power is turned off, and the Intelligent Flight Battery is sufficiently charged.

1. Connect the remote controller to the network and open the czi Pilot APP;
2. Enter the device interface, open the control menu, then the secondary menu Firmware Version. Click Check for Updates and upgrade the firmware as instructed;
3. The gimbal light will initiate a self-check and automatically begin the firmware upgrade;
4. During the upgrade, the gimbal light will restart once. This does not indicate completion. Please wait until the second buzzer sound has finished;
5. After the upgrade is completed, please check whether the gimbal light firmware version has been successfully updated.

VI. Technical Parameter

Model	IR3
Specification	126.5*60*88.5mm
Weight	208 ± 5g (Excluding bracket)
Effective Distance	≥300 m
Type of Laser	Surface-emitting laser
Luminous Wavelength	850±10nm
Zooming Time	≤ 2 s (far angle - near angle)
Light Output Power	4±0.5W
Illumination Angle	Electrically synchronized zoom, continuously adjustable from 2.0° to 70°
Laser safety level	Class 3B (FDA, IEC)
Laser safe distance	15 m at the minimum angle
Storage	
Storage card type	microSD card, up to 16 GB capacity, transfer speeds up to UHS-I Speed Grade 3
Storage File System	FAT32

装箱清单/Packing List

名称/Name	数量/Quantity
红外变焦云台灯 Infrared Zoom Spotlight	1
合格证 Certificate	1
使用说明书 User manual	1
快拆支架 Quick mount bracket	1
H2.0六角头螺丝刀 H2.0 hexagonal head screwdriver	1

了解红外变焦云台灯固件更新情况或下载最新版本固件，请关注成至智能官网：www.czi.com.cn。

To know about the firmware update status of the Infrared Zoom Spotlight or download the latest version of the firmware, please pay attention to the official website of czi: www.czi.com.cn.



扫码下载最新版电子说明书

Scan the QR code to download the latest electronic manual.

成至技术支持

www.czi.com.cn

服务热线：400-008-8306

如您对说明书有任何疑问或者建议

请通过以下电子邮箱联系我们：

czzn@czi.com.cn

ChengZhi Support

www.czi.com.cn

Service Hotline: 400-008-8306

If you have any questions or suggestions regarding the manual, please contact us at:

czzn@czi.com.cn

Made in China