KANDAO

Obsidian S

User Guide

使用说明书

Contents   EN

Battery Cover

Lens

Power Indicator

Battery Status Indicator

Power Button

Video Record Button

Time-lapse Photo Capture Button

Working Mode Indicators

Micro SD Card Slot

Microphone

Tripod Mount：3/8"UNC

Tripod Mount：1/4"UNC

Tripod Mount：Anti-Rotation Pin

External microphone input / Zoom H2n synchronization

Ethernet Port

12V External Power Supply Terminal

⚙ Specification

Model	Obsidian S
Video Format	MOV
Photo Format	JPG / DNG
Weight (Camera + Battery)	1.1kg
Recording Media	Micro SD / SDHC / SDXC cards, U3（USH‑I）cards are recommended
Video Coding Format	H.264 / H.265
Input Voltage	12V
Working Temperature	0 ~ 30 ℃
Working Humidity	10~90% RH
Storage Temperature	‑ 40 ~ 80 ℃
Storage Humidity	5 ~ 90% RH
ISO Range	100 - 3200

🎥 Video

	Video Resolution	Frame rate (fps)	Single-lens Resolution
Obsidian S	6k x 6k	50 *	3000 x 2160
	6k x 6k	30	3000 x 3000
	4k x 4k	120	1500 x 1080
	4k x 4k	80	1500 x 1500

📷 Photo

	Photo Resolution	Single-lens Resolution
Obsidian S	6k x 6k	3000 x 3000

* It can be conforms to 60fps in Kandao Studio for better VR HMD playback.

Package Contents

Obsidian Camera

Carrying Case

Shoulder Strap

Manual

Lens Cleaning
Cloths

Ethernet Cable
for PoE & Camera

* Sync control cable
for Zoom H2n Handy
Recorder(spatial sound)

* PoE Power Supply
for DC54V 60W

* PoE Power Cord

* Batteries LP-E6

* Lens Cleaning Pen

* Card Reader USB 3.0

* Battery Cover with
Hot/Cold-Shoe Socket

* Hot/Cold-Shoe Mount
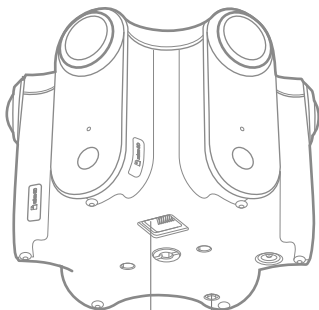for Zoom H2n Handy
Recorder(spatial sound)

* Bubble Level

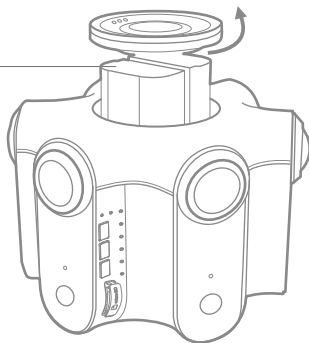(* Optional)

Using the camera

Power the Camera using one of the following ways

❶ PoE (Power over Ethernet)

❷ 12V external power supply

❸ 2 X Canon LP-E6 or compatible batteries

If more than one power source is connected to the camera at the same time, the camera will choose its supply in the order of preference as listed above.

Insert Micro SD cards

Insert all six Micro SD cards into the slots. **U3** （**USH-I**） cards are highly recommended for maximum speed and stability.
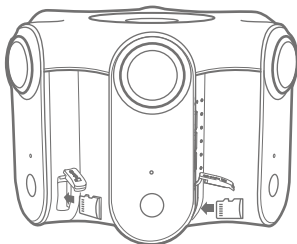
Switch on / off

Power on： Long press the [power button] for 3 seconds,if the camera is turned on normally,the power lamp will stay red and the six working mode lamps will blink the then stay blue.

Power off： Long press the [power button] for 3 seconds， all [working mode lamps] will turn off after fast blink.

Video Shooting & Time Lapse

Video shooting

Short press the [Video Capture button] to start recording video and short press the button again to stop recording .All working mode lamps will be in quick flashes before the recording starts normally. During the recording process, all working mode lamps will flash slowly.

📷 **Time lapse shooting**

Short press the [Time-lapse Photo Capture button] to start the capture.The default time interval is 10 seconds. Short press the [Time-lapse Photo Capture button] again to end the capture. Every time it captures,the blue working mode lamps will twinkle once.Time inverval can be changed in the Obsidian Remote App.

Master Lens

The lens labeled "S"is the master lens of the camera. In default mode, each lens calculates its own exposure parameters (ISO & Shutter Speed) automatically and individually, and all of them follow the Automatic White Balance setting of the master lens . This setting can be changed in the Obsidian Remote App.

master lens
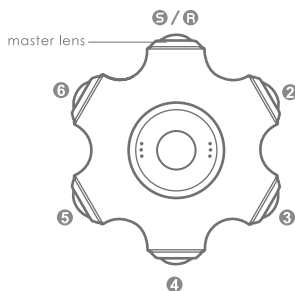
Operate With Obsidian Remote APP

Download the Obsidian remote APP to the mobile phone

APP	Obsidian Remote Controller		
Download	iOS	Android	
	APP Store	Google Play Store	http://www.kandaovr.com

WIFI connection

The camera must connect to a wireless router by an Ethernet cable and the mobile phone must connect to the same router. Please note:

1 The camera should be connected to the router's LAN port, not the WAN port.
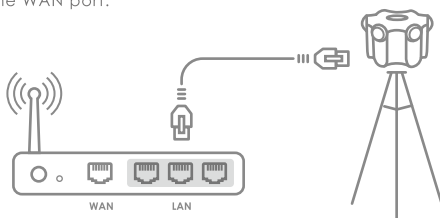
2 Connect your smartphone to the router's WIFI. For example, if you connect the camera to the router with WIFI name "Love Virtual Reality ", your phone should also connect to the WIFI named "Love Virtual Reality". You can verify this by checking the WIFI connection in your phone's settings.

WI-FI Name:Love Virtual Reality
WI-FI Key: Initial password

10:10
WIFI
Love Virtual Reality ✓

Click the Obsidian Remote APP icon to start .

Bluetooth connection

Turn on the Bluetooth of your phone. Click the Obsidian Remote APP icon to start and choose "Connect with Bluetooth".

Studio

Kandao Studio provides a effortless solution for stitching high quality 3D 360 VR videos and photos.
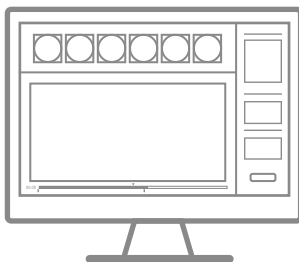
Effortless
One-Click
Processing

Immersive 3D
depth

Ambisonic
surround
sound support

GPU acceleration
to speed up
creative workflow

Download

http://www.kandaovr.com/studio.html

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部件介绍

电池室盖

镜头

电源指示灯

电池指示灯
电源键
录像键
拍照键

工作指示灯

Micro SD卡插座

麦克风

三脚架接口:3/8"UNC

三脚架接口:1/4"UNC

三脚架接口:止转口

外置麦克风输入
/Zoom H2n同步

Ethernet接口

12V外接电源接口
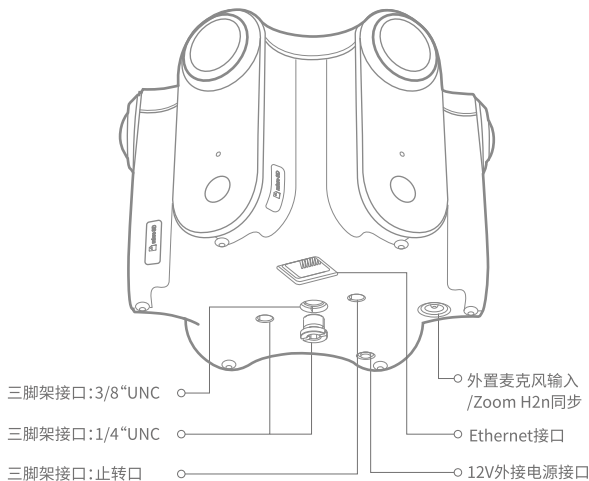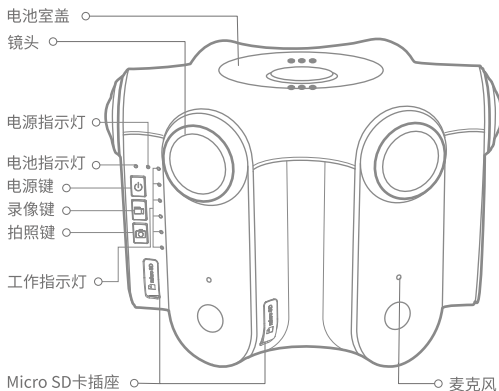
⚙ 相机规格参数

相机型号	Obsidian S
视频格式	MOV
照片格式	JPG / DNG
重量(相机+电池)	1.1kg
存储介质	Micro SD / SDHC / SDXC cards U3(USH-I) cards are recommended
视频编码格式	H.264 / H.265
外接输入电压	12V
工作温度	0 ~ 30 ℃
工作湿度	10~90% RH
储存温度	- 40 ~ 80 ℃
储存湿度	5 ~ 90% RH
ISO范围	100 - 3200

🎥 视频

	视频分辨率	帧率(fps)	单镜头分辨率
Obsidian S	6k x 6k	50 *	3000 x 2160
	6k x 6k	30	3000 x 3000
	4k x 4k	120	1500 x 1080
	4k x 4k	80	1500 x 1500

📷 照片

	照片分辨率	单镜头分辨率
Obsidian S	6k x 6k	3000 x 3000

* 相机以50fps录制视频。Kandao Studio可以将其处理为60fps,以提供更好的
VR头盔播放体验。

包装内容

Obsidian 相机

手提箱

背带

说明书

镜头布

网线

* Zoom H2n 同步线

* PoE 电源
DC54V 60W

* PoE 电源线

* 电池 LP - E6

* 镜头笔

* 读卡器 USB 3.0

* 冷靴连接配件
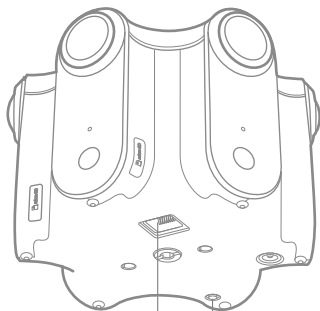
* Zoom H2n 连接座

* 水平仪
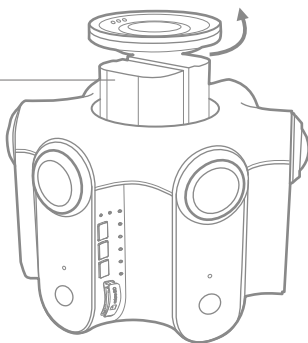
（ * 选配 ）

使用相机

采用如下方式中的一种为相机供电
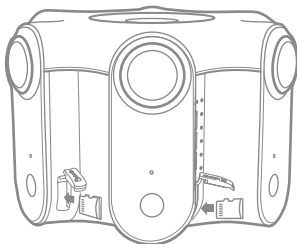

❶ PoE（通过以太网供电）

❷ 12V外部电源供电

❸ 2块佳能LP-E6或
  其他兼容性电池

当有多种电源同时连接相机时，相机会根据以上的优先级顺序去选择供电方式。

插入Micro SD卡

将6张Micro SD卡插入卡槽。为了速度和稳定性，强烈推荐使用 U3（USH-I）卡。

开启或关闭相机

开机： 长按【电源键】3s，相机正常开启后，
所有工作指示灯快闪后变为常亮蓝色，【电源
指示灯】常亮红色。

关机： 长按【电源键】3s，相机所有【工作指
示灯】快闪后熄灭。

拍摄视频和照片

视频拍摄

相机开启指示灯变为常亮后，短按【录像键】 开
始拍摄视频，视频拍摄过程指示灯均匀闪烁，拍
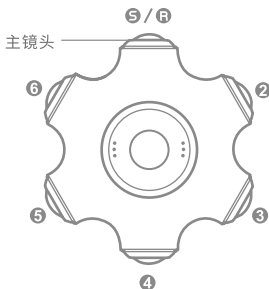摄完成时再短按 【录像键】结束拍摄视频。

📷 拍摄照片

相机开启指示灯变为常亮后，短按【拍照键】开始拍摄照片，相机拍摄间隔默认为每10秒一张，(可用遥控器设置，请参考遥控器说明书)，拍摄完成时再短按【拍照键】结束拍摄照片。拍摄间隔可以通过Obsidian遥控器手机应用改变。

主镜头

具有"S"或"R"标签的镜头是相机的主镜头。在默认模式中，每个镜头自动独立地计算各自的曝光参数（ISO和快门速度），所有镜头的白平衡参数都跟随主镜头在自动模式下的白平衡参数。通过Obsidian遥控器手机应用可以改变这些设置。

主镜头

📱 相机遥控器

在手机上下载遥控器

APP	Obsidian Remote Controller		
下载地址	iOS	Android	
	APP Store	Google Play Store	http://www.kandaovr.com

连接到手机APP遥控器

Wi-Fi连接

相机需通过网线连接到路由器,手机必须同时连接到该路由器,请注意如下内容:

❶ 相机必须连接到路由器的 LAN 接口, 而不是 WAN 接口;
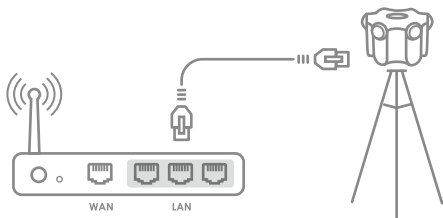
❷ 将装有遥控器的手机连接到相同的路由.例如,如果相机连接的路由WIFI名字是 "Love Virtual Reality ",那么手机也应该连接到 "Love Virtual Reality"。

点击遥控器 APP 图标开启遥控器。

蓝牙连接

打开手机蓝牙功能,点击遥控器 APP 图标开启遥控器,选择蓝牙连接模式。

Studio

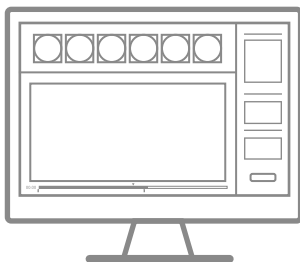Kandao Studio提供一款简单易用的解决方案去拼接高质量的3D全景视频和照片。

一键操作　　　真正3D　　　全景声支持　　　GPU加速
　　　　　　　　　　　　　　　　　　　　　　单机即可胜任

下载

http://www.kandaovr.com/studio.html

Safe Handling Precautions

1. Avoid condensation and freeze — When moving the camera from one extreme temperature to another, keep your camera in sealed plastic bags to prevent condensation. Allow time for equipment to adjust to temperature change before removing from the plastic bag.

2. Avoid snow — Be careful that snowflakes can easily scratch the lens. To prevent camera circuits from being damaged by melting snow, please turn off the camera and pull out the battery immediately.

3. Avoid dust — Please use and store the camera in a clean environment. When using the camera outdoors, be careful not to allow dust or sand scratch the camera. Please use blower brush, or lens tissue to remove dust from the lens. Never use alcohol or any volatile liquid to clean the camera.

4. Avoid moisture — Avoid using the camera in high humidity conditions. Remove and store the battery in a dry box when not using the camera.

5. Avoid shake — Do not bang or subject the camera to strong impacts. Do not put the extra objects attached with the camera into the package (for example, forget to remove the quick release plate), which will increase the possibility of lens damage when shaking and vibration.

6. Never place the camera close to magnets,motors or other devices that generate strong electromagnetic fields.Exposure to strong magnetic fields may cause malfunctions or corrupt image data.

7. Memory cards are small, thin and easy to break, so keep them in a special box when not using and make sure the metal contacts are clean and shiny. Avoid storing the cards with data in areas exposed to strong magnetic fields or electromagnetic radiation or high temperature.

8. Don't charge the battery inside the camera for a long time, unplug the external power cable when not using the camera.

9. Do not bump or rub the lens.

10. Do not use camera beyond the normal power supply range.

11. Do not take the camera apart or try to repair any of the electronics yourself.

12. Avoid foreign objects or liquids inside the camera.

相机使用安全须知

1. 防寒—相机从低温到高温时,会有结露现象,需用报纸或塑料袋将相机包好,相机温度升至室温时再使用。

2. 防雪—风雪易刮伤相机镜头,防止雪融化渗入相机造成短路损坏相机,此时应立即将电源关掉拔出电池。

3. 防尘— 应在清洁的环境中使用和保存,户外拍摄时风沙会较大,易刮伤镜头,此时应保护好相机。清理时,使用专用镜头笔或镜头布,切勿使用酒精及任何挥发性液体。

4. 防潮—请勿超出正常湿度范围使用相机。存放前取出电池,存放在干燥的盒子里。

5. 防震—避免跌撞,碰撞相机。

6. 请勿将相机放近磁铁、马达或其他会产生强力电磁场的装置。暴露在强磁场下可能导致相机故障或损坏影像资料。

7. 存储卡小且薄,易折断,金属触点极易污染或划伤,应注意保存在专用包装盒内或相机,对存储有图像的卡要避磁、避高温,存放在干燥环境。

8. 请勿将电池放在相机中长时间充电,如果不使用相机应拔掉外接电源,避免把相机放置在过热的地方。

9. 请勿撞击或摩擦镜头。

10. 请勿超出正常供电范围使用相机。

11. 请勿擅自拆卸相机或修理相机。

12. 请勿将异物放入相机内部,防止相机进水。

FCC Special Statement

FCC Regulatory Information

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
— Reorient or relocate the receiving antenna.
— Increase the separation between the equipment and receiver.
— Connect the equipment into an outlet on a circuit different from that
   to which the receiver is connected.
— Consult the dealer or an experienced radio/TV technician for help.

RF Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC特别声明

FCC法规信息

警告：未遵守责任方明确批准的变更或修改可取消用户操作设备的权限。
注：本设备经检验符合《FCC规则》第15部分的规定，符合B级数字设备的限制。这些限制旨在为住宅安装中的有害干扰提供合理的保护。

该设备产生、使用会产生无线电射频，如果没有按照说明书安装和使用，可能会对无线电通信造成有害干扰。相反，也无法保证在特定的安装中一定不会产生干扰。

如果通过打开和关闭设备确认该设备确实对无线电或电视接收造成有害干扰，则鼓励用户通过以下一种或多种措施纠正干扰：
- 调整接收天线的方向或位置。
- 增加设备和接收器之间的分离。
- 将设备连接到与接收器不同的电路插座上。
- 咨询经销商或有经验的电台/电视技术人员寻求帮助。

辐射曝光

该设备符合FCC针对无控制环境的辐射曝光限值。该设备应在散热器和人体之间距离大于20cm的条件下安装及操作。
此发射机不可与其他天线或发射机结合操作。

FC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC ID: 2AMZV-KDOY

CE

KANDAO

www.kandaovr.com

Kandao is a high tech company committed to virtual reality with a strong mixed of mission and passion to build the best VR camera for the mass. The co-founders and core team members of Kandao graduated from top universities and have either/both technical and/or commercial backgrounds in leading technology organization such as Tencent ,Huawei ,Philips, Sharp and other well-known enterprises. With strong research, development, and operational capabilities, Kandao builds the word's first portable high quality 3D 360 camera and are creating more fascinating VR technologies.

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