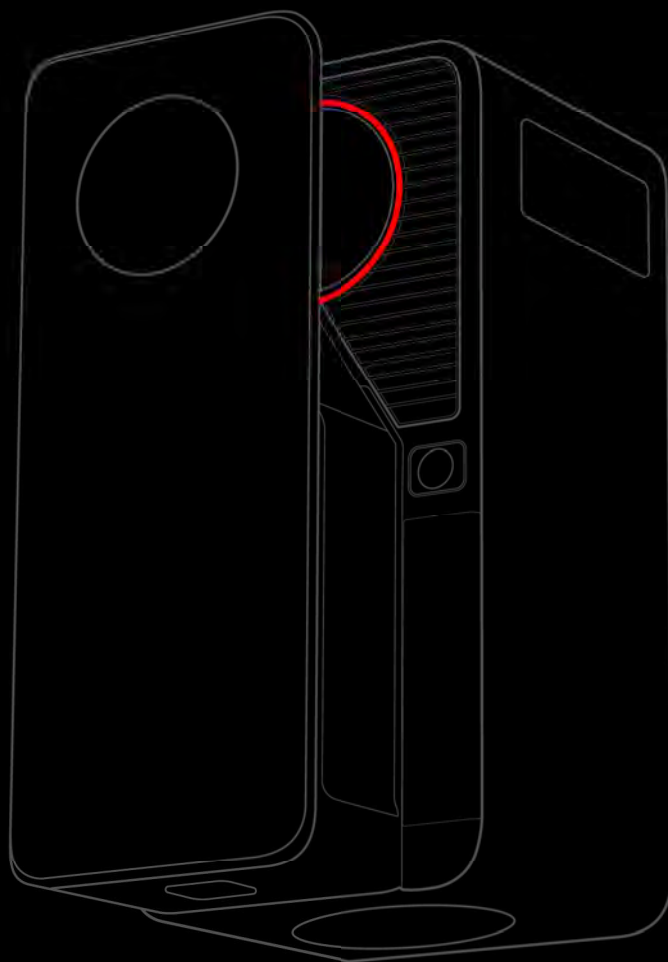




GALOIS Manual

Please read this before use

Legal Disclaimer

This product is manufactured under the authorization of Realsee (Beijing) Technology Co., Ltd. ("Realsee"). If you have any questions regarding this Manual. Please contact Realsee directly.

The information contained within this Manual shall not be construed as a warranty against any errors in installation or operation. Realsee will not bear any legal liability for any incidental or consequential damages arising therefrom.

This Manual, including all of its contents is protected by law. Realsee owns the copyrights and all related rights. No part of this Manual may be reproduced, photocopied, duplicated, or translated into any other language without the prior written consent of Realsee.

Realsee reserves the exclusive right to modify its product and the content of this Manual at its sole discretion, without prior notice. Any such modifications will be reflected in the future versions of the product and the Manual.

Realsee shall not be responsible for any products not supplied by Realsee or its authorized distributors.

The Galois 3D smart camera (hereinafter referred to as the "Galois camera") must be initially used indoors.

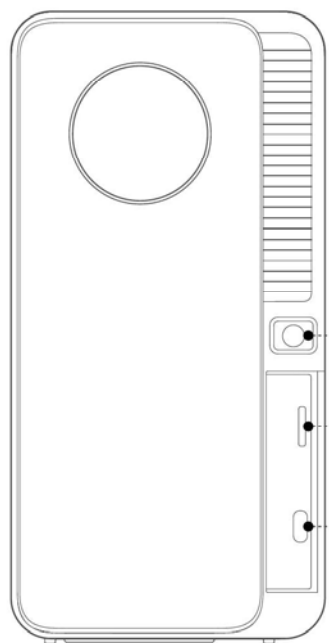
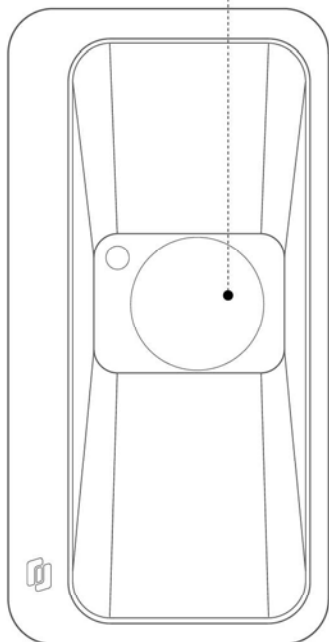
Realsee shall not be responsible for any malfunctions or defects resulting from failure to comply with this directive.

Realsee shall be considered responsible for the reliability, safety, and performance of this product only under the following conditions:

(i) all assembly, expansion, readjustment, performance enhancement, and maintenance are carried out by personnel or institutions duly authorized by Realsee; and (ii) all repair work and replacement parts and accessories are products of Realsee or its authorized products.

Product Introduction

Fisheye Lens



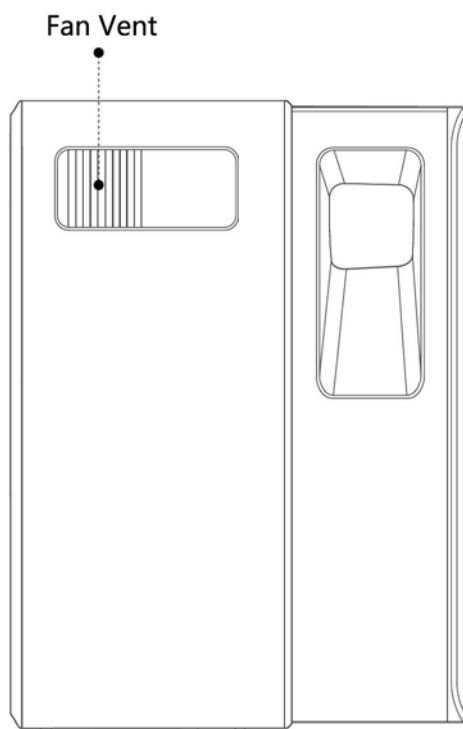
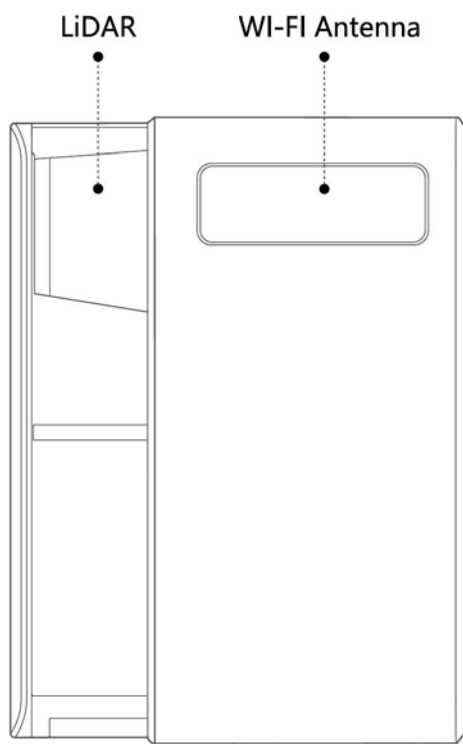
Touch and hold the power button for 3 seconds to power on or start.

• TF Card Slot

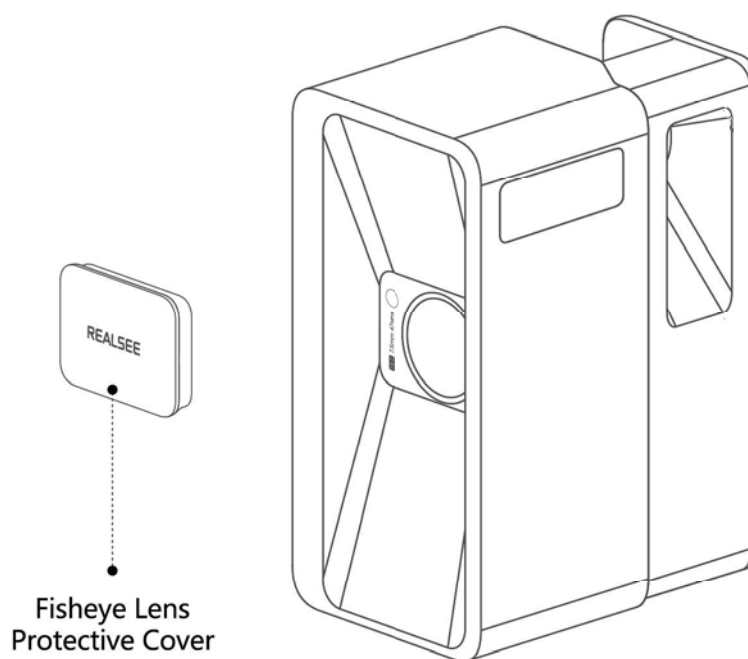
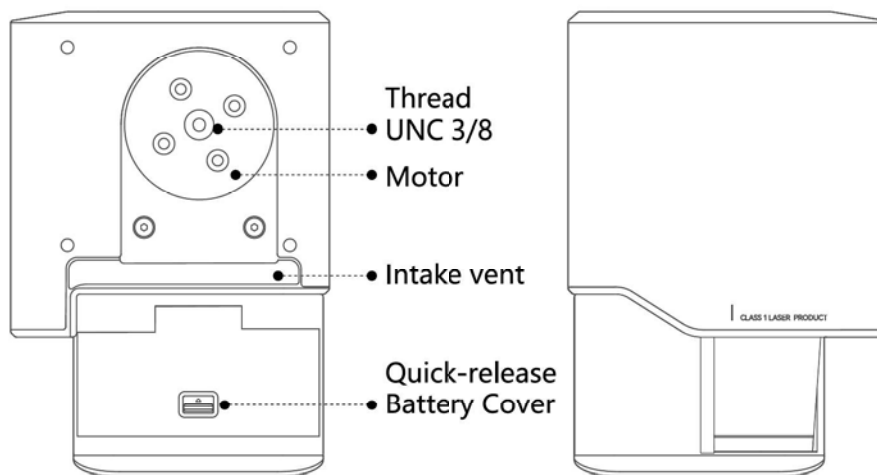
• TYPE-C Port

Product Introduction

English



Product Introduction



Important Safety Information

⚠ Warning!

Failure to comply with these safety instructions may result in fire, electric shock, or other injuries, as well as damage to the product or other property.

Please read all the following safety information before using this product. This product contains a laser device. According to IEC60825-1 EN/IEC 60825-1 International Edition 3 (2014) and IEC 60825-1 US Editions 2 (2017). This device is classified as a Class 1 laser product.

⚠ Warning!

Control, management, or operational steps not specified in these terms may result in harmful radiation exposure.

Safety and Precautionary Measures

- Do not remove the housing of the laser device. Opening the housing increases the risk.
 - Invisible laser radiation may be emitted during product operation; please avoid direct exposure to the beam.
 - Do not use magnifying optical components, such as small magnifying glasses or magnifiers.
 - Do not modify this product in any way. Hardware modifications or repairs may result in emissions exceeding Level 1.
 - Do not update to unofficial editions of specific modules or edition.
-

Charging

Use only the compatible third-party adapter and cable that comply with applicable regulations and safety standards of your country or region when charging the the Galois camera. Adapters and cables that do not comply with the relevant safety standards may pose a risk of death or injury.

When charging the Galois camera with the adapter, ensure that the AC plug or power cord is securely connected to the adapter before plugging it into a power outlet.

Using damaged adapters or cables, or charging in a damp environment may result in fire, electric shock, injury, or damage to the Galois camera or other equipment.

Important Safety Information

Extended Exposure to High Temperatures

During normal use, the Galois camera and power adapter may generate heat. The Galois camera and power adapter comply with surface temperature limits.

However, even within the specified limits, prolonged contact with heated surfaces may cause discomfort or injury. To prevent prolonged skin exposure to heat, avoid direct contact with the device or adapter while it is powered on, especially while sleeping. Do not operate the Galois camera on soft materials such as pillows, blankets, or other items that may block ventilation openings. When using the Galois camera or charging it via the adapter, place it in a well-ventilated area. Never insert objects into the ventilation openings, as this can be dangerous and may cause overheating. Do not place items on the top of the Galois camera while it is in operation. If the Galois camera becomes uncomfortably hot while on your lap, move it to a stable, well-ventilated work surface. If you have a medical condition that affects heat sensitivity, take extra precautions.

Adapter

To safely operate the adapter and reduce the risk of injury or damage due to overheating, please follow these steps:

- Plug the adapter directly into a power outlet.
- If using an adapter extension cord, place the adapter on a desk, dining table, or a well-ventilated floor. Never use the adapter in damp locations such as near sinks, bathtubs, showers, and never handle it with wet hands.

Disconnect the adapter and unplug all cables in the following situations:

- Cleaning the exterior (only use the methods recommended in the important operational information).
 - The power cord or plug is damaged.
 - The Galois camera or adapter has been exposed to rain, excessive moisture, or liquid spills.
 - The Galois camera or adapter has been dropped, its casing is damaged, or you believe it requires maintenance or servicing. If debris has entered the adapter port, use a cotton swab to gently remove it.
 - If you have a medical condition that affects heat sensitivity, take extra precautions.
-

Important Safety Information

Maintenance

The Galois camera does not contain any user-serviceable parts. Do not open or disassemble the Galois camera, or attempt to repair or replace any parts. Disassembling the Galois camera may cause damage or lead to personal injury. If the Galois camera is damaged, malfunctions, is exposed to liquids, or requires servicing please contact Realsee or an authorized service center. Attempting to disassemble the Galois camera may cause damage, which is not covered under the limited warranty of the Galois camera.

RF Energy Exposure

The Galois camera connects to the wireless network via radio signals, which can emit RF energy. To minimize exposure, please follow the steps below:

- When using the Galois camera, especially during transmission, maintain a distance from the device.
 - Only use parts recommended by the manufacturer.
 - Use the device in a well-ventilated area and avoid prolonged exposure to the device.
 - If you are unsure of the potential health effects of RF energy, consult a doctor before using the device.
-

Medical Device Interference

The Galois camera contains components and radio equipment that emit electromagnetic fields. These fields may interfere with medical devices such as pacemakers and defibrillators. Consult your physician and the manufacturer of your medical device for specific guidance on maintaining a safe distance. If you suspect interference, discontinue use immediately.

Important Safety Information

Activities with Severe Consequences

The Galois camera is not intended for any purposes where a malfunction could result in death, personal injury, or significant environmental harm.

Explosive and Other Air Conditions

Charging or operating the Galois camera in explosive environments may be hazardous, especially in areas with high concentrations of flammable chemicals, vapors, or airborne particles (such as dust or metal powders) in the air. Exposure to environments containing high concentrations of industrial chemicals, including volatile liquefied gases (e.g., helium), may damage the Galois camera's functionality. Avoid placing the Galois camera near strong magnetic fields. Always adhere to all safety markings and instructions.

Carrying the Galois Camera

If you carry the Galois camera in a bag or briefcase, ensure there are no loose items (such as paperclips or coins) that could accidentally enter the device through the ventilation holes or block the ports. Do not transport the device without proper protective packaging, as this could result in damage. Keep magnetically sensitive items away from the power ports. The Galois camera is a precision instrument and should be carried using high-quality protective packaging.

Use of Plugs and Ports

Never force the plug into the port. Before connecting a device, ensure the port is free of debris, the plug matches the port, and they are correctly aligned, ensuring proper alignment with the port.

Storing the Galois Camera

If you intend to store the Galois camera for a prolonged period, place it in a cool environment with an ideal temperature of 22°C or 71.5°F, and discharge the battery to around 50% of its capacity. If storing a camera for more than three months, recharge it to around 50% every three months to maintain battery health.

Important Safety Information

Cleaning the Galois Camera

Before cleaning the exterior of the Galois camera and its components, power off the camera and unplug the adapter. Then, use a clean, soft, lint-free cloth to wipe the exterior. Prevent moisture from entering any openings.

Do not spray liquids directly onto the device. Do not use aerosol sprays, solvents, abrasives, or cleaning agents containing hydrogen peroxide, as they may damage the casing.

Battery

The S-LIBAT01 is the model of the camera-specific battery. It can only be charged with the compatible charger. There is a risk of explosion if the incorrect battery model is replaced. Do not swallow the battery, as it may cause chemical burns. Do not overcharge or open the battery. There is a risk of explosion! Do not expose the battery to fire or a hot oven, nor mechanically crush or cut the battery, as this could lead to an explosion. Avoid placing the battery in environments with extremely high or low temperatures, as this may cause an explosion or leakage of flammable liquids or gases. Do not expose the battery to environments with extremely low atmospheric pressure, as this could cause an explosion or leakage of flammable liquids or gases.

Specifications

Galois 3D LiDAR Camera

Model	RS54100
Processor	NVIDIA Jetson Orin Nano
Storage Device	4GB LPDDR5 RAM, 516GB SSD Storage
Dimensions	Length x Width x Height = 152 x 104 x 209.5(mm)
Weight	Approximately 2.6kg
Color	Black
Input Voltage	20V DC
Battery Type	Lithium battery
Battery Capacity	3300mAh
Wireless Connection	WiFi 802.11 b/g/n 2.4GHz ; WiFi 802.11 a/n/ac 5GHz
Operating Temperature	0°C - 40°C (32°F to 104°F)
Charging Temperature	0°C to 45°C (32°F to 113°F)
Storage Temperature	-10°C to 50°C (14°F to 122°F)
CMIIT ID	24J113WXD313

Recommended Adapter

Input Voltage	100~240V AC
Input Current	Max Input Current 1.5A, 50/60Hz
Input Frequency	50 / 60 Hz
Output Voltage	20V DC
Output Current	3.25A

Camera	Approx. 48 MP FOV: H 151°, V 100.86°, D 184.08°
Scanning	Accuracy: P4 ± 10 mm @15m; M4 ± 20mm @15m Field of View: 360° x 213.25° Scan Rate: 125,600 pts/sec

FCC

FCC statements:

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.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or changes to this equipment. Such modifications or changes 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.

Federal Communication Commission (FCC) Radiation Exposure Statement

When using the product, maintain a distance of 20cm from the body to ensure compliance with RF exposure requirements.

WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

IC

IC statements:

This device complies with Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme avec Industrie Canada RSS exemptes de licence standard(s). Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne peut pas provoquer d'interférences, et (2) cet appareil doit accepter toute interférence, y compris celles pouvant causer un mauvais fonctionnement de l'appareil.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Radiation Exposure Statement: This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations: Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

CE

1.BATTERY:

Operating ambient temperature: 0 - 40°C,

Storage and transportation ambient temperature: -10 - 50°C,

altitude not higher than 2000m (air pressure not less than 80kPa),

WARNING:

- replacement of a battery with an incorrect type may defeat a safeguard;
- disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, may result in an explosion;
- leaving a battery in an extremely high temperature surrounding environment, such as sunshine, fire, or hot surface may result in an explosion or the leakage of flammable liquid or gas;
- a battery subjected to extremely low air pressure may result in an explosion or the leakage of flammable liquid or gas.

CAUTION

Risk of fire or explosion if the battery is replaced by an incorrect type!

2.This product can be used across EU member states.

3.EU Regulatory Conformance

Hereby, Realsee (Beijing) Technology Co., Ltd. declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

For the declaration of conformity, visit the Web site www.XX.com/certification.

4.RF exposure information: The Maximum Permissible Exposure (MPE) level has been calculated based on a distance of d=20 cm between the device and the human body. To maintain compliance with RF exposure requirement, use product that maintain a 20cm distance between the device and human body.

5. Frequency bands and power

Operation Frequency			Max. EIRP
Bluetooth	2.4GHz	2402-2480 MHz	7.87dBm
WLAN 5.8G:	5745 MHz ~ 5825 MHz		13.94dBm

[Laser Safety Class]



Invisible Laser
Radiation

CLASS 1 Laser Product

This product's laser safety classification complies with the following standards:

IEC/EN 60825-1:2014, 21CFR1040.10 and 1040.11, except for deviations outlined in (Laser Notice No. 56) issued on May 8, 2019 (IEC 60825-1 3rd Edition).

This product's laser safety classification complies with the following standards:

- IEC/EN60825-1:2014
- 21CFR1040.10 and 1040.11, except for deviations outlined in (Laser Notice No. 56) issued on May 8, 2019 (IEC 60825-1 3rd Edition).

Although this product complies with Class 1 eye safety standards, do not view the emitted laser through magnifying devices (such as microscopes, head-mounted magnifiers, or other optical instruments).

For optimal safety, users should avoid direct eye exposure to the product during operation.



Warning

Using controls, adjustments, or operating procedures not specified by the manufacturer may result in hazardous radiation leakage.