



# CR-Scan Ferret 3D Scanner

## User Manual



Small Build    Great Capture

# 1. Introduction

CR-Scan Ferret is a revolutionary 3D scanner that offers versatility and convenience. Using it with the mobile APP or desktop software, the scanner will provide you with a high-quality model under both indoor and outdoor lighting conditions. The scanner comes equipped with a special depth calculation chip developed by our company, reducing the computational requirements for both mobile phones and PCs. As a result, scanning becomes a smoother experience. Due to its small size and portability, this scanner is perfect for carrying around. It can quickly scan objects such as large and medium-sized furniture while completing figurine with high precision. The scanner is also equipped with a high-resolution RGB camera that supports color scanning. The resulting models can be directly used for 3D printing without any further processing.



## 2. Specification

Technology	Binocular Dual Camera Infrared Light
Working distance	150mm – 700mm
Single Capture Range	820mm x 560mm@700mm
Single- frame Precision	Up to 0.1mm
Minimum point distance/Resolution	0.16mm
Minimum scan volume	50mm×50mm×50mm
Alignment	Feature/color
Scanning Speed	Up to 30fps
Color Scanning	Yes
Color Camera Resolution	1080p@30fps
Applicable scenario	Indoor/ Outdoor scanning <30000Lux@ 0.4m
Light Source	Class1 NIR
Scanner Weight	105g
Scanner Dimensions	120*30*26mm
Data transmission	USB3.0 Type-C
Operating Systems	Windows 10/11 (64-bit), Android 10/11/12
Output Format	PLY, OBJ, STL
3D Printing Compatible	Yes

### 3. Packing List



### 4. Hardware Connection



## Smart phone connection



A: CR-Scan Ferret

B: Android phone

C: Rechargeable handle

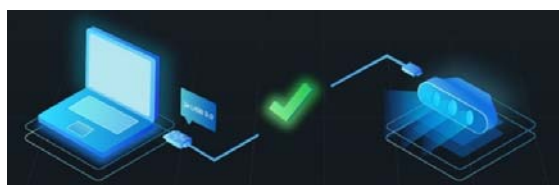
D1: USB Type-C

D2: USB Type-C

D3: USB Type-A

Make sure to connect the scanner, Android mobile phone and handle correctly. Shown as the picture above, D1, D2, D3 should be connected to the scanner, the mobile phone, and the handle respectively.

## Computer Connection



CR-Scan Ferret can be driven directly by computer. Make sure the scanner is connected to a USB 3.0 or above port, because USB 2.0 will not supply sufficient operating current.

## 5. APP&Software Installation

### System Requirements



Windows 10\11 (64-bit)

Memory:  $\geq 8\text{G}$

**Computer: USB3.0 , 8 gen i5 CPU or higher**



android

Android:  $\geq$  Android 10.0

Memory:  $\geq 8\text{G}$

**Smartphone: USB3.0**



Software icon

**Note: USB3.0 is highly recommended for better performance.**

**Software&Firmware link:**

<https://www.creality.com/pages/download-cr-scan-ferret>

QR code



## Recommended smartphone

Samsung	Google	Moto	Vivo	Nubia	One plus	OPPO
S21	Pixel 7 Pro	Razr 2	X90 pro+	redmagic 8 Pro	10 pro	Find X6 Pro
S21FE	Pixel 7	Edge 30 fusion	X90 pro	redmagic 8 Pro+		
S21 +	Pixel 6 Pro	Edge +	X80 pro			
S21 Ultra	Pixel 6					
S22	Pixel 5					
S22+						
S22Ultra						
S23						
S23+						
S23 Ultra						

## 6. Operation Guide

### Scan objects

In order to ensure model quality, the scan-suitable objects are divided to 5 types according to their dimensions shown as the table below.

Large objects>50cm



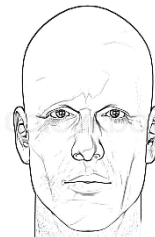
20cm<Medium object>50cm



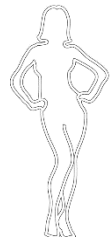
Small objects<20cm



Face



Body



### Feature type

#### ○ Geometry:

This scanning mode is ideal for capturing objects with intricate geometric details and irregular shapes. However, it may not be well-suited for objects with many planes or circles. This mode is particularly recommended for scanning materials such as plaster portraits and handmade items.

#### ○ Texture:

This scanning mode is best suited for objects with rich texture features and intricate color patterns. However, it may not be effective when scanning objects with solid colors or repetitive textures. It is highly recommended to use this mode when scanning objects such as tables with wood texture.

Texture mode is very useful because it can be used to scan various object when it is allowed to affix or draw markers on the surface of the objects.



It is not recommended to highlight reflective (metal or plated surface), translucent and transparent (glass cup, glasses) objects. Such scanning objects need to be dusted (liquid foundation, flour, dry cleaning shampoo, developer) and then scanned. It is not recommended to scan objects that are easily deformed (such as soft bags, animals).

#### Not recommended object



High reflective



Transparent/Hollow



Ductile

### Optimization mode

- **Fast:** Faster scanning, but the accuracy in this mode is relatively lower than with Hi-Quality scans.
- **Hi-Quality:** Added to meet users' needs for higher-precision data capturing. In Hi-Quality mode, the processing time for point cloud fusion/mesh/texture operations will be relatively longer.

### Color map

- **Map/Color:** The final processed result of the model is attached with a color map (Creality Scan can only export color objects in the .PLY & .OBJ file formats).
- **No map/No Color:** The final processed model appears as a solid color without any color information, only the shape information is captured.



### Android gesture



Single finger rotation




Two-finger press and move (with haptic feedback)




Two-finger zoom

### Export/Share



Click  to export the 3D model. Select a file name and a file format ( .PLY, .OBJ & .STL, are supported).



 : Share button. After point cloud optimization and subsequent steps, the scanning results can be shared.

## 7. Tips

### 1. Scan targets

Suitable object: face, parts, sculpture, cultural relic, garage kit, toy, shoes, body.

Unsuitable object: superlarge object such as wall, room; micro parts like jewelry; ductile objects;

Special treatment objects: transparent objects, metals, high reflective objects

### 2. Target size

Typical size: 5cm×5cm×5cm ~ 150cm×150cm×150cm

If you are experienced in scanning, you can challenge scanning larger or smaller objects.

### 3. Scan distance

Move the scanner at a perfect distance to your target according to the prompt.

### 4. Scan background

Less objects are expected in the view of the depth camera except your target.

### 5. Tracking lost

When tracking lost, aim the scanner at the scanned part of the target according to the prompt.



## 6. Exposure

If you want to obtain a better model, you should adjust the exposure yourself to avoid red or blue part appearing in IR image which means overexposure or underexposure respectively.

## 7. How to obtain a high quality model?

Hi-Quality mode should be chosen;

Move your hand or rotate the dial slowly during scanning;

Keep perfect distance according to the prompt during scanning;

Adjust the exposure yourself to avoid red or blue part appearing in IR image;

Keep scanning until all the parts you want are adequately scanned (the quality map turns green in quality mode);

Set smaller resolution when optimize the point cloud.

# 8. FAQs

### 1. Can the scanner be powered directly by a mobile phone, without using a charging handle?

If the mobile phone supports USB3.0 Type-C port, then it can power the scanner directly. However, this consumes a lot of power and we recommend using the charging handle for a stable power supply.

### 2. How to avoid tracking loss?

Return the scanner to the previous correct position and hold on for 2s to retrieve the image.

### 3. What is the scanning frame rate of the scanner?

The scanner provides depth images of 30fps, supports a scanning frequency of 30 fps theoretically. However, the actual scanning rate depends on the calculation power of the mobile phone or PC involved in the process. In practice, the scanning frame rate can be lower than 30 fps. We recommend using a device with high calculation power to achieve optimal results.

### 4. What system configuration is recommended for the scanner?

For mobile phones, it is recommended to use smart phones with USB3.0 interface and running memory of more than 8G, such as Samsung S22, S23, etc. For computers, it is recommended to use i5 or above with USB3.0 interface.

### 5. Does CR-Scan support USB2.0?

The scanner supports USB2.0, and the scanning frame rate will be limited by the lower data transmission rate. In order to adapt to USB2.0, the scanning accuracy will also be reduced.

### 6. How long can the charging handle support continuous scanning?

It can support more than two hours of continuous scanning by directly using the charging handle. Generally speaking, the scanning time of small and medium-sized objects is within 5min, that is, the charging handle can support 20 to 30 small and medium-sized objects.

### 7. How to restore the connection when the mobile phone scanner is disconnected?

Plug the USB cable on the handle of the rechargeable battery again.



**8. Some Android phones show disconnection when they are disconnected from the scanner for a certain period of time. How to restore the connection?**

If the device is disconnected for more than a certain time (for example, 10 minutes), some Android systems will automatically turn off the OTG connection, and the device status is always offline. The device can be connected only after the OTG switch is turned on in the Android system.

**9. What are the influences of scanning effect?**

① The model itself is too thin or too narrow with holes. There are reflective and transparent parts on the model. ② If there are other objects around during preview, remove the obstacles and rescan.

**10. What are the limitation of scanning frame rate?**

① The configuration of computers and mobile phones is too low, ② USB3.0 interface is recommended.

**11.What do we do if "few point clouds" is showed?**

If the exposure time is too long or too short, you need to cancel the automatic exposure and manually adjust the exposure time.

**12. The USB2.0 is detected while USB3.0 was connected.**

Usb3.0 is compatible with USB2.0 and has four pins in common. If the usb3.0 is plugged in slowly, the four common pins are detected before the additional pins of usb3.0, the PC or smartphone will recognize the connection as usb2.0. The solution is to plug in usb3.0 quickly again.

**13.How to deal with the warning "Invalid data" ?**

If the "Invalid data" warning constantly appear, please check the scan objects setting. While the medium objects are being scanned on a turntable and large objects option have been chosen, the scanner will give the warning. We suggest you rescan the target using medium objects option and aim the scanner at the prominent part of the target texture or slow down the speed of scanning.

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