

Creality CR-Scan-Raptor

Creality CR-Scan Raptor 3D Scanner

INSTRUCTION MANUAL



1. Introduction

This manual provides comprehensive instructions for the safe and effective use of your Creality CR-Scan Raptor 3D Scanner. The CR-Scan Raptor is designed for high-precision 3D scanning, featuring hybrid blue light and Near-Infrared (NIR) technology to achieve 0.02mm accuracy. It supports scanning objects ranging from 5mm to 2000mm, making it suitable for various applications from small components to larger parts. Please read this manual thoroughly before operating the device.



Image 1.1: The Creality CR-Scan Raptor 3D Scanner capturing a detailed object.

2. Product Overview and Components

Familiarize yourself with the various parts of your CR-Scan Raptor 3D Scanner to ensure proper handling and operation.

Anti-Shake for Smooth Scanning

Equipped with **One-Shot 3D** imaging technology, the CR-Scan Raptor is naturally stabilized and less likely to tracking loss.



Image 2.1: Detailed view of the CR-Scan Raptor components.

- **USB-C 3.0 Port:** For connecting the scanner to your computer.
- **Two-color Supplemental Light:** Provides additional illumination for enhanced texture capture.
- **3D Scanning Camera:** Captures the geometric data of the object.
- **DOE Projector:** Projects structured light patterns for accurate depth perception.
- **Color Camera:** Captures color information for full-color 3D models.
- **Multi-line Laser Projector:** Emits blue laser lines for high-precision scanning.
- **Start/Pause Button:** Initiates or pauses the scanning process.
- **Zoom In/Out Buttons:** Adjusts the scanning field of view.
- **Brightness/Exposure Buttons:** Controls the brightness and exposure settings for optimal scanning.

3. Setup

Follow these steps to set up your Creality CR-Scan Raptor 3D Scanner.

3.1 System Requirements

Ensure your computer meets the following specifications for optimal performance:

Cross-platform Compatibility

Note : Pleaser ensure your computer configuration meets the following requirements



Windows 10/11 (64 bit): i7-Gen7, Nvidia graphics card (6GB video memory).
RAM: 16GB or higher



macOS: 11.7.7 and above, Apple M1/M2/M3 series processors.
RAM: 16GB or higher

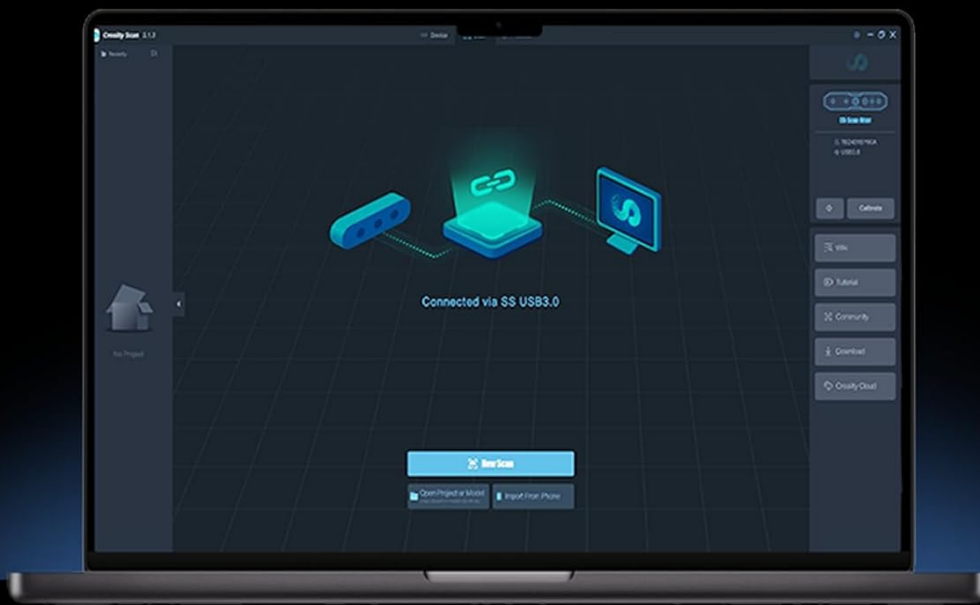


Image 3.1: Cross-platform compatibility and system requirements.

- **Windows:** Windows 10/11 (64-bit), Intel i7-7th generation or higher, Nvidia graphics card (6GB video memory), 16GB RAM or higher.
- **macOS:** macOS 11.7.7 and above, Apple M-series processors (M1/M2/M3), 16GB RAM or higher.

3.2 Hardware Connection

1. Connect the CR-Scan Raptor to your computer using the provided USB-C 3.0 cable.
2. Ensure the connection is secure. The scanner will typically be recognized automatically by your operating system.

3.3 Software Installation

1. Download the latest CrealityScan software from the official Creality website.
2. Follow the on-screen instructions to install the software on your computer.
3. Launch CrealityScan and ensure the scanner is detected.

4. Operating Instructions

This section details the process of using your CR-Scan Raptor for 3D scanning.

4.1 Scanning Modes and Technology

The CR-Scan Raptor utilizes a dual blue light and NIR technology for versatile scanning.

The First 2-in-1 Consumer 3D Scanner

Blue Laser

For tiny objects(5mm) and higher accuracy(0.02mm)



NIR

Scanning easier and wider compatibility



Image 4.1: Dual scanning modes: Blue Laser for precision, NIR for versatility.

- **Blue Laser Mode:** Employs 7 parallel blue laser lines (0.1mm thin) for ultra-high precision scanning of small objects (5mm and above) with an accuracy of up to 0.02mm. This mode is ideal for capturing intricate details.
- **NIR (Near-Infrared) Mode:** Offers easier and wider compatibility for scanning larger objects and provides robust

performance, especially for objects that might be challenging for blue laser alone.

7 Parallel Blue Laser Lines

Create highly detailed models with precision of up to 0.02mm

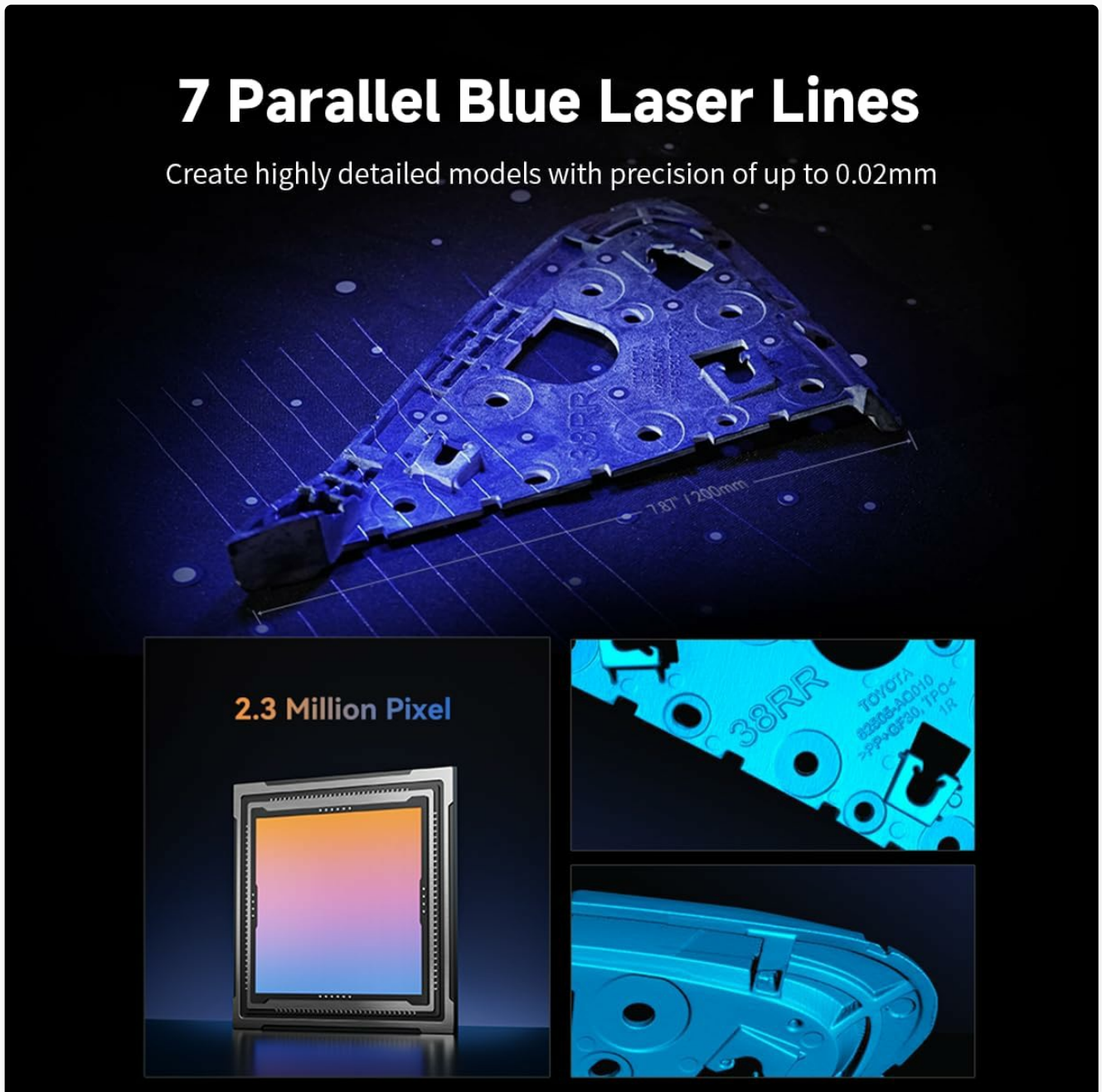


Image 4.2: The precision of 7 parallel blue laser lines and the 2.3 million pixel sensor.

4.2 Scanning Process

1. **Prepare the Object:** Ensure the object is clean and stable. For highly reflective or transparent objects, a matte scanning spray may be beneficial, though the CR-Scan Raptor is designed to minimize this need for black/metal objects.
2. **Launch CrealityScan Software:** Open the software and select your desired scanning mode (Blue Laser or NIR) based on the object's size and required detail.
3. **Position the Scanner:** Hold the scanner steadily, maintaining an appropriate distance from the object. The software will provide visual feedback on optimal distance.
4. **Start Scanning:** Press the 'Start' button on the scanner or in the software. Move the scanner smoothly around the object to capture all surfaces. The 60FPS high-speed scanning and One-Shot 3D imaging technology help reduce tracking loss and ensure smooth handheld operation.
5. **Monitor Progress:** Observe the real-time scan data on your computer screen. Adjust brightness/exposure as needed using the scanner's buttons.

6. **Capture Color:** The 24-bit true color capture, supported by 12 LED texture lights and dual-color LEDs, ensures photorealistic color data, even in low light conditions.
7. **Complete Scan:** Once all necessary data is captured, press the 'Pause' or 'Stop' button.



Image 4.3: Handheld scanning with anti-shake technology for smooth data acquisition.

4.3 Post-Processing

The CrealtyScan software includes features for processing your scan data:

- **1-Click Processing:** Simplifies the steps for merging, aligning, and meshing scan data.
- **Point Cloud Editing:** Tools for cleaning, optimizing, and refining the captured point cloud data.
- **Export:** Export your final 3D model in various formats for use in other CAD or 3D modeling software.

5. Maintenance

Proper maintenance ensures the longevity and accuracy of your CR-Scan Raptor.

5.1 Cleaning

- Gently wipe the scanner's exterior with a soft, dry, lint-free cloth.
- For lenses and projectors, use a specialized lens cleaning cloth and solution to avoid scratches.
- Do not use abrasive cleaners or solvents.

5.2 Calibration

The CR-Scan Raptor includes a glass calibration board for maintaining long-term accuracy. Refer to the CrealityScan software's calibration guide for detailed instructions on how and when to perform calibration.

6. Troubleshooting

This section addresses common issues you might encounter.

- **Scanner Not Detected:**
 - Ensure the USB-C 3.0 cable is securely connected to both the scanner and your computer.
 - Verify that your computer meets the minimum system requirements.
 - Try connecting to a different USB 3.0 port.
 - Restart the CrealityScan software and your computer.
- **Poor Scan Quality/Tracking Loss:**
 - Ensure adequate lighting conditions.
 - Maintain a steady hand and smooth scanning motion.
 - Check if the object has sufficient geometric features for tracking. Add markers if necessary for featureless objects.
 - Calibrate the scanner using the provided calibration board.
 - Adjust brightness and exposure settings in the software or using the scanner buttons.
- **Software Crashes/Freezes:**
 - Ensure your graphics drivers are up to date.
 - Close other demanding applications running in the background.
 - Reinstall the CrealityScan software.

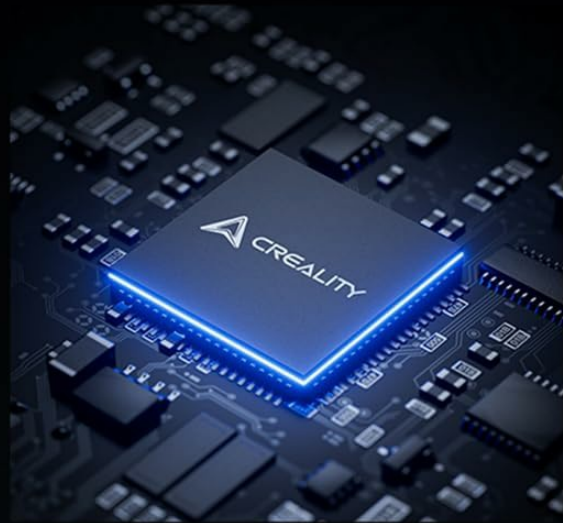
If you encounter issues not covered here, please refer to the official Creality support resources or contact customer service.

7. Specifications

Key technical specifications for the Creality CR-Scan Raptor 3D Scanner:

Stable Scanning Performance

Advanced temperature compensation algorithm



High Performance Structure

- $\phi 20\text{mm}$ large depth of field lens
- Low distortion lens $< 5\%$
- 9-elements glass lens
- Metal lens barrel and holder

Image 7.1: Internal structure and performance features of the CR-Scan Raptor.

Feature	Specification
Model Number	CR-Scan-Raptor
Accuracy	Up to 0.02mm
Scanning Speed	60 FPS
Scanning Range	5mm – 2000mm
Light Source	Dual Blue Light & Infrared (NIR)
Color Capture	24-Bit True Color (with 12 LED texture lights)
Connectivity	USB-C 3.0
Operating System	Windows 10/11 (64-bit), macOS 11.7.7 and above

Feature	Specification
Weight	Approximately 372g (12.8 ounces)
Dimensions (Package)	13.74 x 12.48 x 6.46 inches
Included Accessories	Scan Body, Glass Calibration Board

8. Warranty and Support

For warranty information, technical support, or service inquiries, please visit the official Creality website or contact their customer support team. Keep your purchase receipt as proof of purchase for warranty claims.

Manufacturer: Creality

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