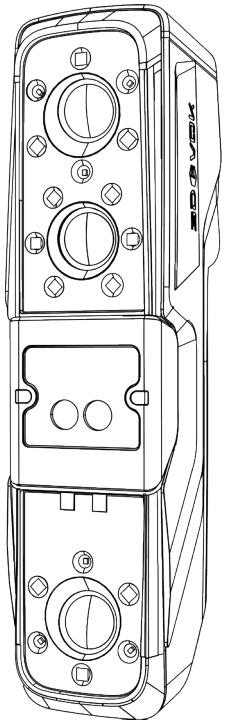
3DeVOK MQ

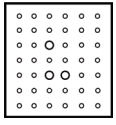
Handheld Color 3D Scanner



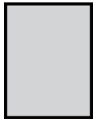
Quick Guide V1.3

1. Product List

3DeVOK MQ



Master Plate



Grey Card

Power Cable (with plug), Power Adapter

Power Data Cable

Reflective Markers (D3mmx500pcs; D6mmx2000pcs)

Stickers for Hybrid Alignment

Handheld Storage Bag

USB Stick (with Scanning Software)

Scanning Sample (for Detail Verification)

Lanyard

Dust-free Cloth

2. Technical Parameter

Light Sources	22 Infrared Laser Lines (invisible)	Infrared Vcsel Structured Light (invisible)
Class of Lasers	Class I (Eye-safe)	
Scan Mode	Infrared Laser (Supports markerless and invisible-light scanning)	Infrared Linear-array Structured Light (Speckle) (Supports markerless, invisible-light, fine scanning, and rapid scanning at ultra-long-distance range and ultra-large FOV)
Basic Accuracy*	Up to 0.08 mm* (Marker Alignment)	
Volumetric Accuracy*	Up to 0.25mm/m* (Marker Alignment)	
Point Distance	0.1 - 5 mm	Structured Light Scan: 0.2-5 mm, Fine Scan: 0.1-5 mm
Alignment Mode	Hybrid Alignment, Marker Alignment, Texture Feature Alignment and Geometric Feature Alignment	Hybrid Alignment, Texture Feature Alignment and Geometric Feature Alignment
Ability to Capture Texture	Yes	
Scanning Distance	150 - 1000 mm	150 - 1500 mm
Field of View	140 mm × 140 mm - 490 mm × 490 mm	50 mm × 75 mm - 1100mm × 1000mm
Scanning Frame	Up to 70 FPS (Marker Alignment) Up to 30 FPS (Hybrid Alignment)	Up to 30 FPS
Output Formats	*.obj, *.stl, *ply, *.asc, *.mk2, *.txt, *.epj, *.apj, *.spj, *.map	

The Ability for 3D Printing	Supports .stl, .obj and other formats
Working Temperature Range	0 - 40°C
Working Humidity Range	10% - 90% RH (Non-condensing)
Interface	USB 3.0
Scanner Dimensions & Weight	Dimensions: 215 mm × 73 mm × 53 mm; Weight: 620 g
Power Source	DC：12 V，5.0 A

*: Laboratory theoretical accuracy test results are subject to uncertainty errors. The actual value may be affected by external factors (e.g., temperature, humidity, the scanned object, scanning techniques, etc.).

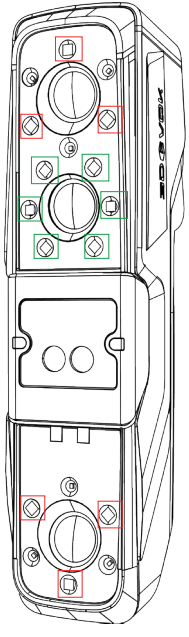
3. Recommended Configuration of PC

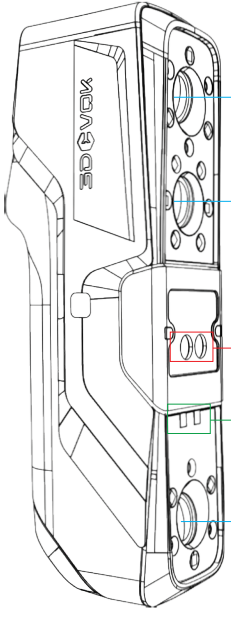
OS: Win10/Win11, 64-bit; CPU: i7-13650HX and above; RAM: 32GB and above
Graphic Card: NVIDIA discrete graphics card, NVIDIA RTX3060 and above
Graphics Memory: 6GB and above

4. Device Introduction

Infrared Laser Fill Light

Color Camera Fill Light





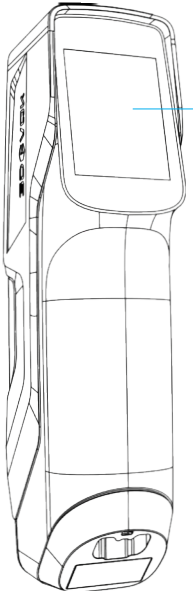
Black-and-white Camera

Color Camera

Infrared Laser Emitter

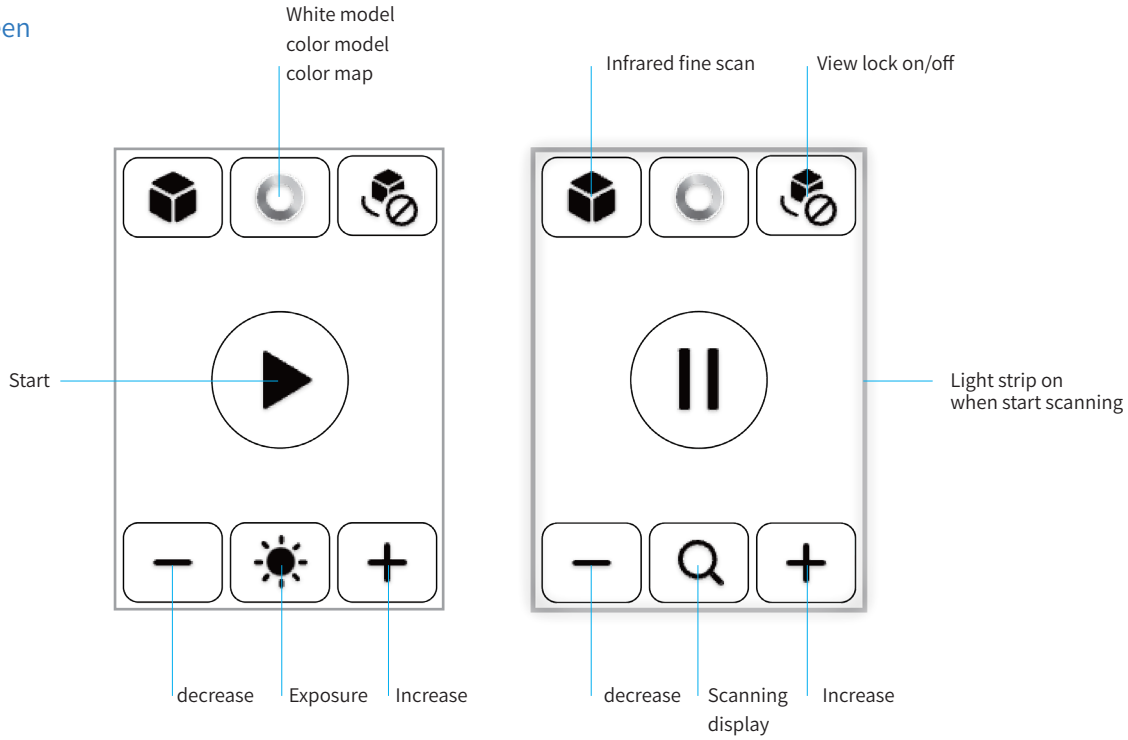
Infrared VESEL Emitter

Black-and-white Camera



Touch Screen

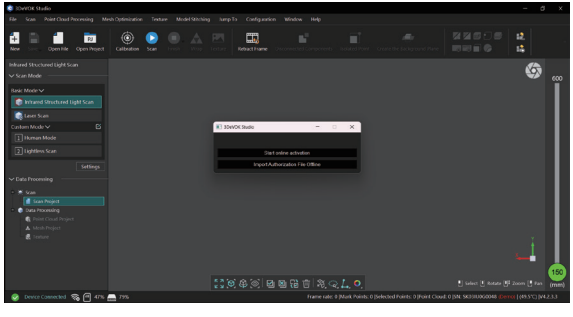
Touch Screen



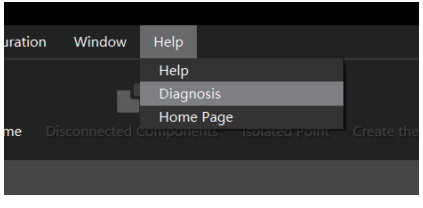
5. Software Installation and Activation

1.Insert the USB drive provided in the case to PC, find the 3DeVOK Studio Installer and install. Future updates to the installation can be obtained from the official website: www.3devok.com.

2.Import the activation file before first scan, and make sure the PC is properly connected to the internet during activation. Click Help - Diagnosis, and click  in the License session. Wait for the activation update.



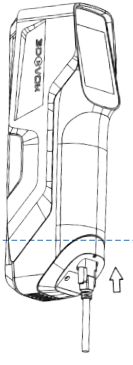
Note: The initial activation time will be related to the warranty period. For details, please refer to the device purchase contract



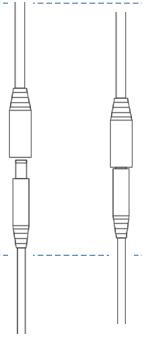
3.After the license update, the device is in normal operation.

6. Device Connection

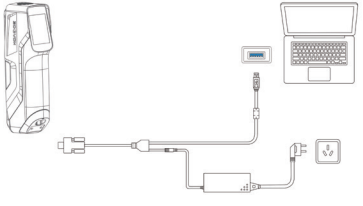
1.Connect one end of the USB cable to USB 3.0 port (the blue port) of PC (if it is a desktop, it should be plugged into the USB 3.0 port at the back of the chassis), then connect the other end to the bottom of the device (in the direction of the arrow), and tighten the screw.

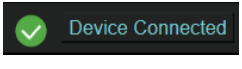


2.Connect the power cable and the power adapter to the power source, and connect the round plug at the end of the power adapter to the round connector of the USB cable (as shown in the figure below).



3.The connection of device, data cable, power adapter, power cable, and PC is shown at the diagram below.



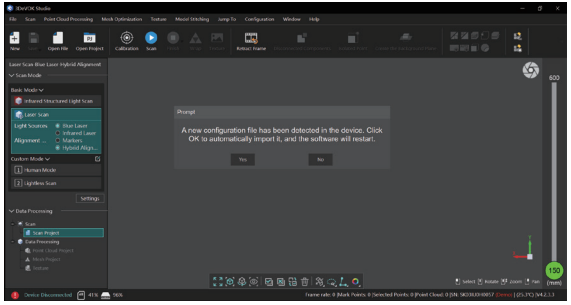
4. After connection, open the 3DeVOK Studio software. When 

appear at the bottom left of the screen, the device is successfully connected to PC.

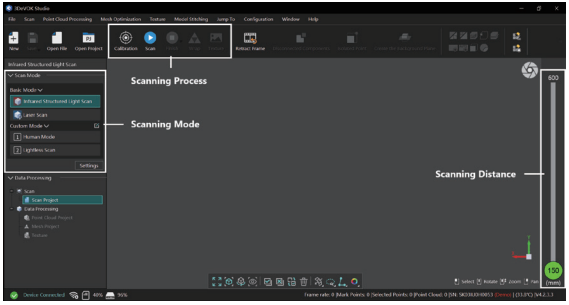
7. First Scan

1.Open the 3DeVOK Studio software, and it will first prompt for the import of a new configuration file. Click the “Yes” button, the software will automatically import the configuration file and restart for the update. After the restart, the new configuration file will be applied to the device.

Note: If the connection fails, please try unplugging and re-plugging the device, or use a different USB 3.0 port.



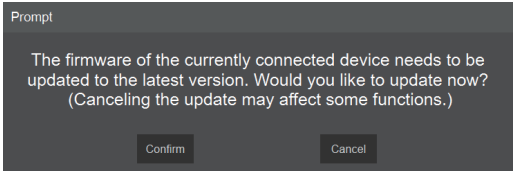
2.After the update, the device is successfully connected, and the software interface is displayed as shown in the figure below. The scanning mode can be selected at the left sidebar (left white box), with the scanning process (upper white box) displayed at the top (Calibration-Scan-Finish-Wrap-Texture). On the right is the distance indicator bar (right white box), where the green dot represents the scanning distance. During scanning, ensure that the green dot stays in the optimal position on the distance bar.



Note: The actual user interface may differ slightly from what is shown in this guide. Please refer to the version of the software in the USB stick.

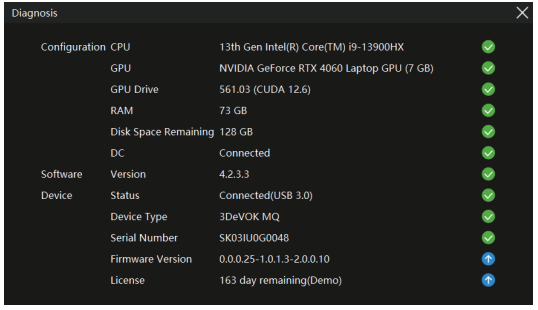
Firmware Update

1. Connect the device. For V4.2.3.3, the software will automactically detect the firmware version and pop up a prompt for upgrading to the latest version. Click Confirm to update, and follow step 3.

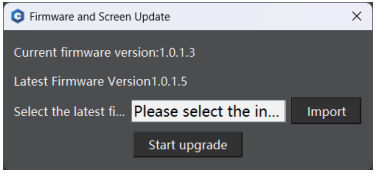


2. If the software does not pop up a prompt, check the "Firmware Version" section in Diagnosis. For V4.2.3.3, ensure the parameters are configured as 0.0.0.25-1.0.1.5-2.0.0.10.

Otherwise, click the  button to import the update zip file.

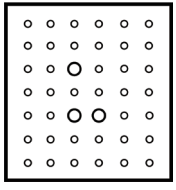


3. select Import to import the zip file (which can be downloaded via the Wetransfer link). Click Start Upgrade to initiate the process. Wait for the successful instructions, then the device can be used normally.



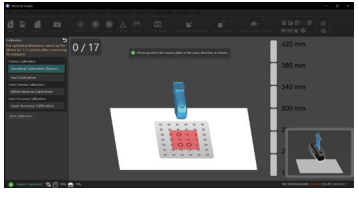
Device Calibration

1.Take out the master plate from the bag, place it on a flat and light-color table, as shown in the figure below.



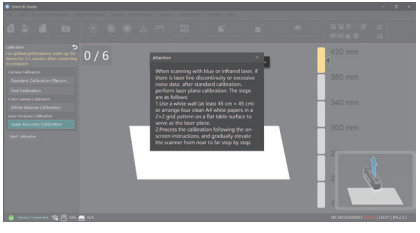
2. Click 

and choose Standard Clibration*, then follow the steps (shown in the figure below).
*more steps than the Fast Calibration, slower but more accurate



Laser Accuracy Calibration

After device calibration, if there is laser line discontinuity or excessive noise data during scanning, the laser accuracy calibration of the device needs to be performed. The steps are as follows:
1.. Use a white wall (at least 45 cm × 45 cm) or arrange four clean A4 white papers in a 2×2 grid pattern on a flat table surface to serve as the laser plane.
2.Click the “Laser Accuracy Calibration” button on the left, and follow the on-screen instructions to finish the laser accuracy calibration.



Color Camera Calibration

When higher color accuracy is required for the texture, white balance calibration can be performed. The steps are as follows:
1.Take out the gray card from the case and place it face up on a light-colored background surface.
2.Click the "White Balance Calibration" button on the left, and follow the on-screen instructions to complete the calibration.

Noted: When is it necessary to calibrate the white balance?
1.When the scanning environment changes between two scans (e.g., the first scan was outdoors, and the second scan is indoors).
2.When color distortion is observed during scanning or the scanned colors differ significantly from the real object.
3.When the surrounding ambient light is complex (e.g., there is red light, green light, etc.).

Scan

1.Select the scanning mode, then click 

to start, or click the ▷ button on the center of the screen to begin scanning. Keep the device at the optimal scanning distance and scan the object at different angles until the object' s color map turns green.

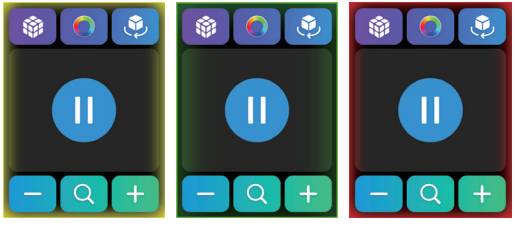
Mode Guide:

Infrared Structured Light Scan: Suitable for human body scanning, as well as fast scanning of medium-to-large objects.

Laser Scan:

-Hybrid alignment: Suitable for objects with continuous and non-repetitive geometric or texture features, such as sculptures and artistic ornaments with complex surfaces

-Marker: Suitable for industrial parts and industrial design products (regular shapes, large curves), especially for black or reflective objects



Too close Moderate Too far

2.After scanning, click 

to process and generate the optimized point cloud data.

3.After removing the excess 3D point cloud data, click 

to process mesh data. After meshing, click 

to export the model in formats such as STL or OBJ. If the data is in color, export it in OBJ format (including MTL and PNG files).