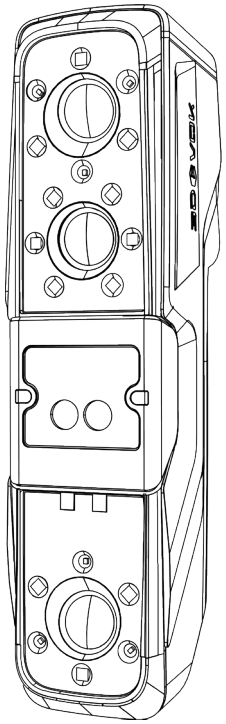
# 3DeVOK MQ

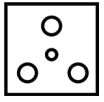
## Handheld Color 3D Scanner



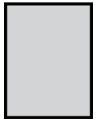
Quick Guide V1.0

# 1. Product List

3DeVOK MQ



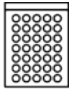
Master Plate



Grey Card

Power Data Cable

Power Cable (with plug), Power Adapter



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<br>(Supports markerless and invisible-light scanning) | Infrared Linear-array Structured Light (Speckle)<br>(Supports markerless, invisible-light, fine scanning, and rapid scanning at ultra-long-distance range and ultra-large FOV) |
| Basic Accuracy* | Up to 0.1 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)<br>Up to 30 FPS (Hybrid Alignment) | Up to 30 FPS |
| Output Formats | *.obj, *.stl, *ply, *.asc, *.mk2, *.txt, *.epj, *.apj, *.spj, *.map | |

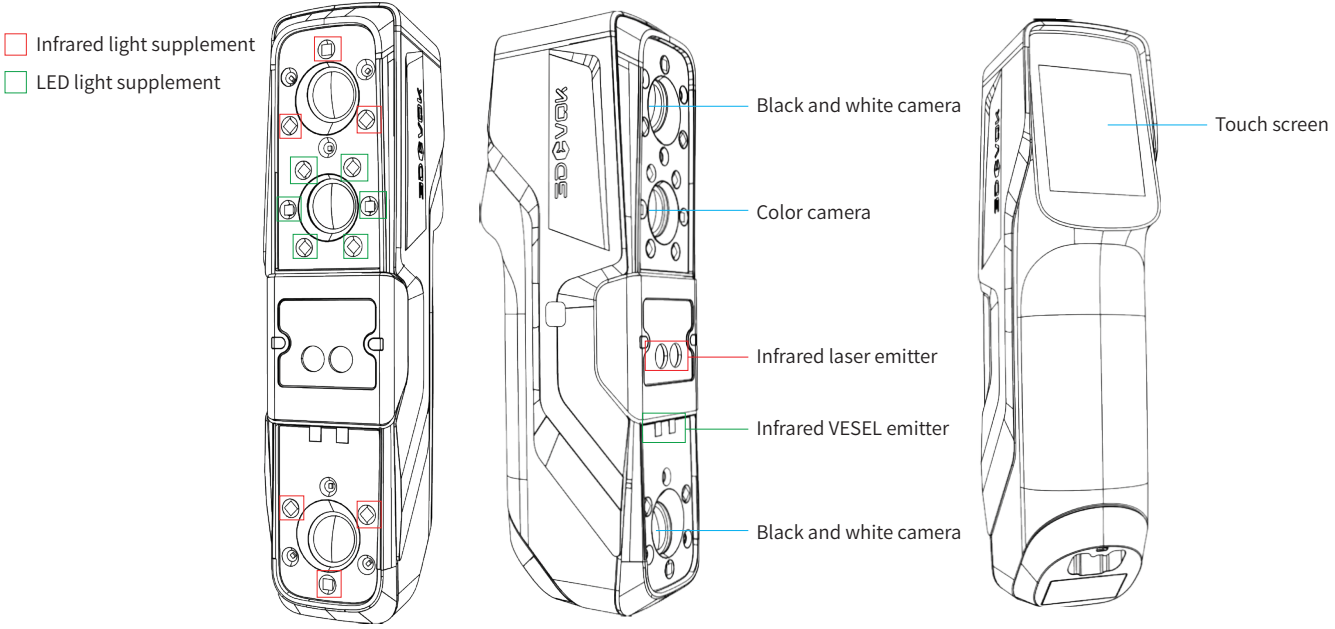
| | |
|---|---|
| The Ability for 3D Printing | Supports .stl, .obj and other formats |
| Working Temperature Range | 0 - 40°C |
| Working Humidity Range | 10% - 90% RH (Non-condensing) |
| Interface | USB 3.0 |
| Scanner Dimensions & Weight | Dimensions: 215 mm × 73 mm × 53 mm; Weight: 620 g |
| Power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

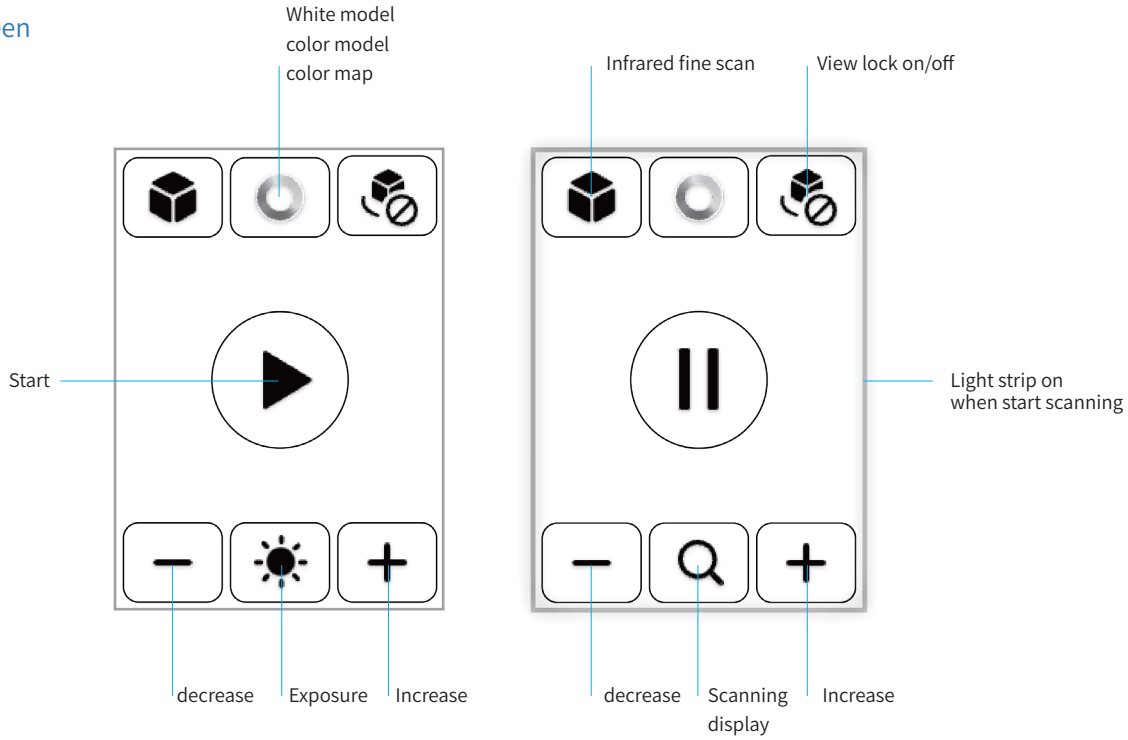
## 3. Recommended Configuration of PC

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



## Touch Screen

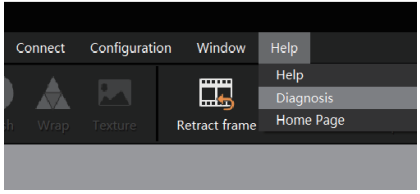


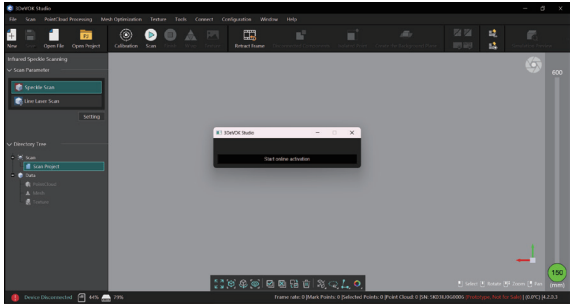
# 5. Software Installation and Activation

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

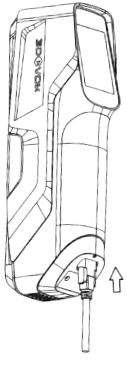


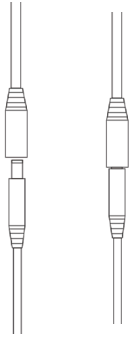
3.After the license update, the device is in normal operation.

# 6. Device Connection

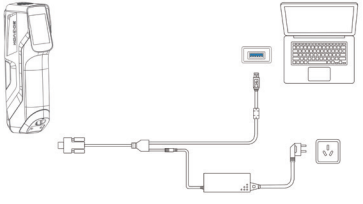
1.Connect one end of the USB cable to USB 3.0 port (the blue port) of PC (if it is a desktop, it should be plugged into the USB 3.0 port at the back of the chassis), then connect the other end to the bottom of the device (in the direction of the arrow), and tighten the screw.

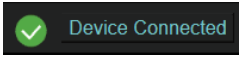


2.Connect the power cable and the power adapter to the power source, and connect the round plug at the end of the power adapter to the round connector of the USB cable (as shown in the figure below).



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



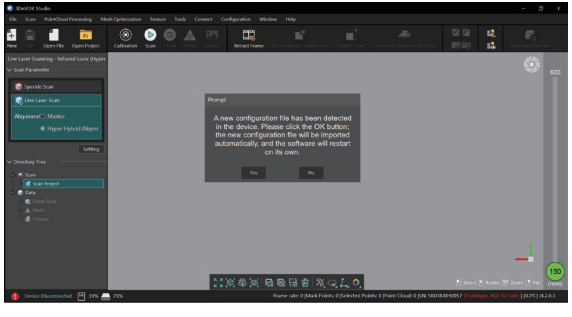
4. After connection, open the 3DeVOK Studio software. When 

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

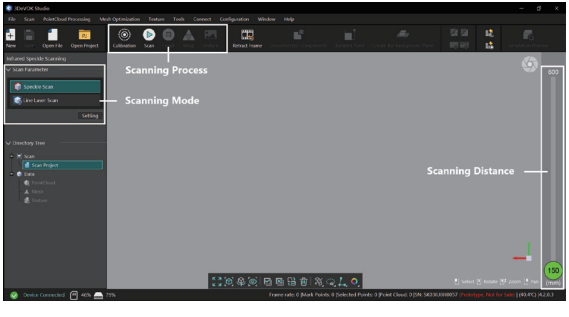
# 7. First Scan

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.



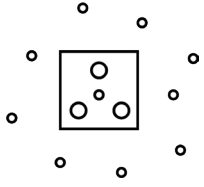

2.After the update, the device is successfully connected, and the software interface is displayed as shown in the figure below. The scanning mode can be selected at the left sidebar (left white box), with the scanning process (upper white box) displayed at the top (Calibration-Scan-Finish-Wrap-Texture). 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.

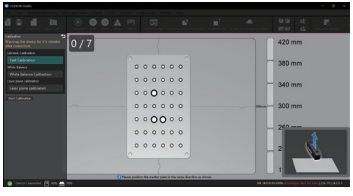
## Device Calibration

1.Take out the master plate from the bag, place it on a flat table, and put an appropriate amount of markers around the plate for calibration, as shown in the figure below.



2.Click 

for device calibration, and follow the steps (shown in the figure below).




## Laser Plane Calibration

After standard calibration, if there is deficiency of laser lines or excessive noise data during scanning, the laser plane calibration of the device needs to be performed. The steps are as follows:

1.Use a white wall, or prepare four clean sheets of A4 paper arranged in a 2*2 grid on the table, to serve as the laser plane.

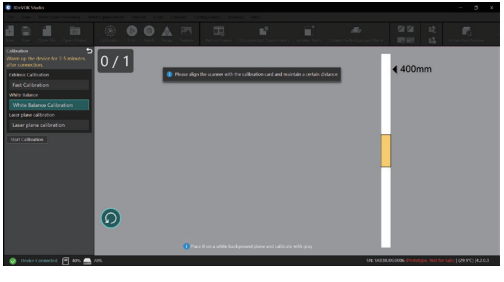
2.Click the “Laser Plane Calibration” button on the left, and follow the on-screen instructions to finish the laser plane calibration.


## White Balance 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 "Calibrate White Balance" 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.

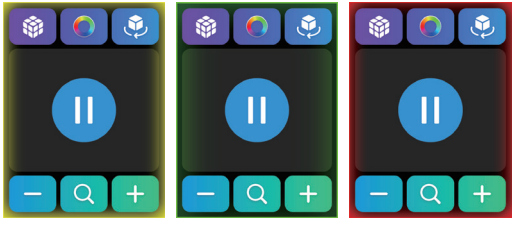
**Mode Guide:**

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).

For more tutorials on 3DeVOK products and software updates,
please visit the official
website: https://www.3devok.com/

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