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› Revopoint MetroY Pro 3D Scanner User Manual

Revopoint METROY-PRO

Revopoint MetroY Pro 3D Scanner User Manual

Model: METROY-PRO | Brand: Revopoint

1. INTRODUCTION

The Revopoint MetroY Pro is an industrial-grade 3D scanner designed for high-precision 3D printing, reverse engineering, and metrology applications. It features advanced blue laser technology, multiple scanning modes, and wireless connectivity to capture intricate details of various objects.

2. WHAT'S IN THE BOX

Upon unboxing your Revopoint MetroY Pro 3D Scanner, verify that all components are present:

- MetroY Pro 3D Scanner
- USB Type-C to Type-C Cable
- Power Adapter
- Markers
- Calibration Board
- Carrying Case
- Tripod
- Dual-axis Turntable
- Sample Bust
- Mobile Kit (3rd Gen)

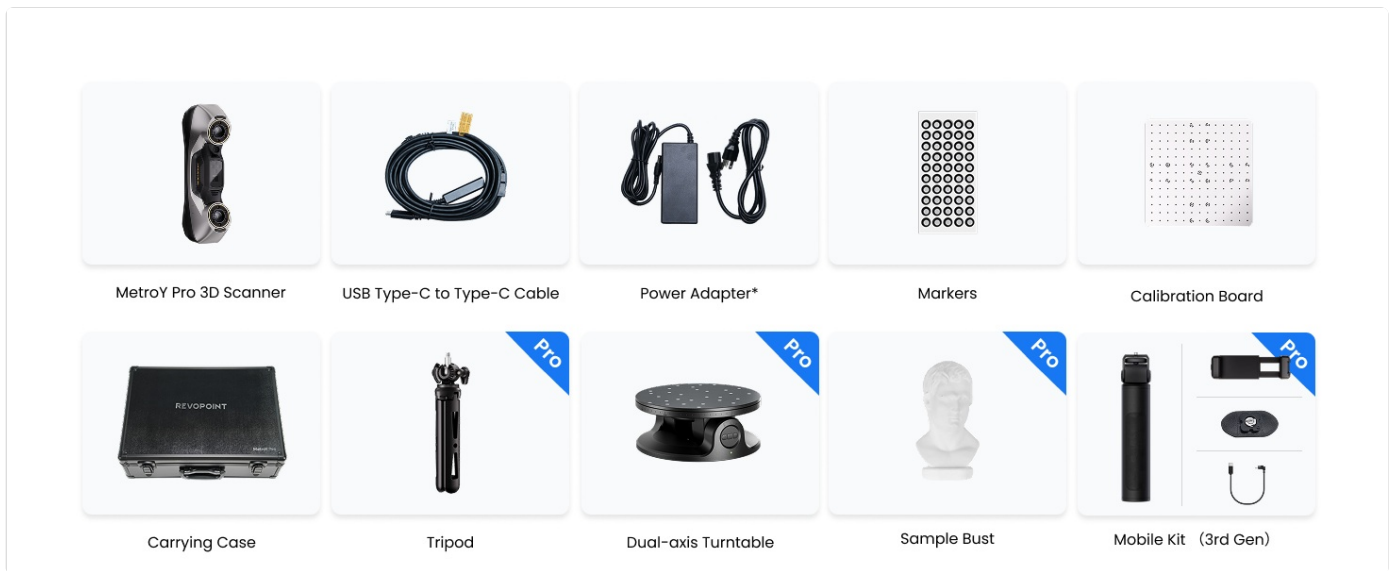


Image: All components included in the Revopoint MetroY Pro 3D Scanner package, neatly arranged.

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Video: A detailed unboxing and first use guide for the MetroY Series 3D Scanner, demonstrating how to unpack and identify all included accessories.

3. SETUP

3.1 Software Installation

Before using the scanner, download and install the **Revo Metro** software from the official Revopoint website. Ensure your computer meets the minimum system requirements for optimal performance.

- **macOS:** CPU: M2 Pro, RAM \geq 16 GB
- **Windows:** CPU: Intel i7 13th Gen or AMD Ryzen 7 5800, RAM \geq 32GB, GPU: NVIDIA GeForce RTX 3060 (8GB)

For detailed instructions and software downloads, visit the [Revopoint Support Page](#).

3.2 Wired Connection

To connect the MetroY Pro scanner to your computer via a wired connection:

1. Connect one end of the power adapter to a power socket.
2. Connect the other end of the power adapter to the USB Type-C to Type-C cable.
3. Connect the USB Type-C to Type-C cable to the scanner's USB Type-C port.
4. Connect the remaining end of the USB Type-C to Type-C cable to your PC's USB Type-C port. Ensure the PC port is USB 3.0 or above.
5. Open the Revo Metro software. The scanner should connect automatically.

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Video: The "MetroY Series: First Use Guide and Unboxing" video also demonstrates the wired connection process for the scanner.

3.3 Wireless Connection (Wi-Fi 6)

The MetroY Pro supports wireless operation via Wi-Fi 6 for increased flexibility:

1. Attach the battery grip to the scanner.
2. Connect the battery grip to the scanner using the power cable from the Mobile Kit.
3. Power on the scanner.
4. On your PC, find and connect to the Wi-Fi network named "METROY-REVO-XXXXXX" (no password needed).

5. Open the Revo Metro software. The scanner will connect wirelessly.

You can also stream scans to your phone via Revo Mirror. Refer to the Quick Start Guide for more details.

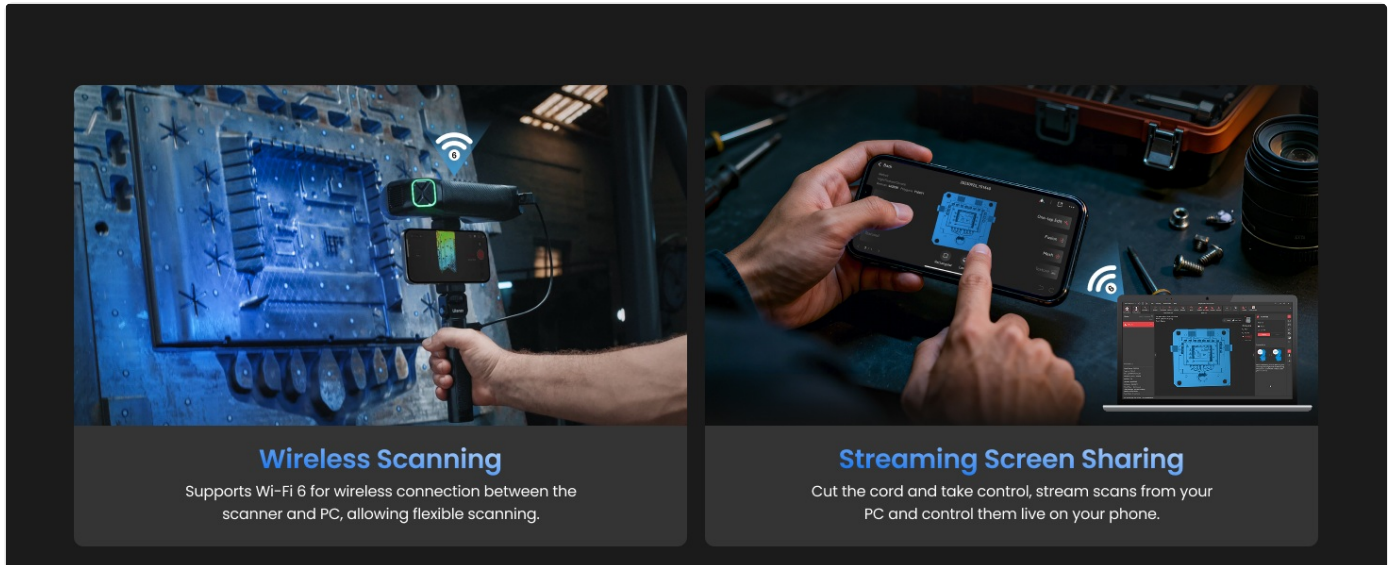


Image: Illustration of wireless scanning and screen sharing capabilities with the MetroY Pro scanner.

3.4 Calibration

Regular calibration ensures the highest accuracy for your scans. Use the provided calibration board:

- Place the calibration board on a flat, stable surface.
- Follow the on-screen instructions in the Revo Metro software to perform the calibration process.
- Ensure you use the correct calibration board for your MetroY Pro model, as MetroY and MetroY Pro use different boards.

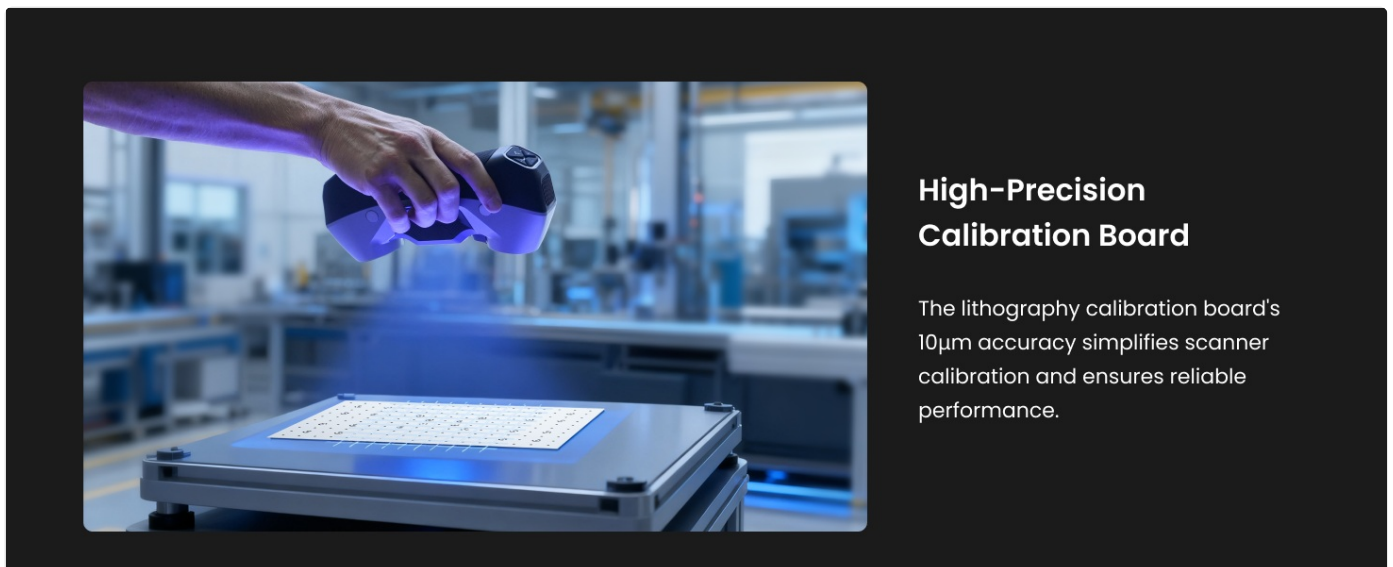


Image: The high-precision lithography calibration board, essential for maintaining scanner accuracy.

4. OPERATING THE SCANNER

4.1 Industrial-Grade Accuracy

The MetroY Pro delivers exceptional precision for demanding tasks:

- **Precision:** Up to 0.01 mm
- **Accuracy:** Up to 0.02 mm

- **Volumetric Accuracy:** Up to 0.02 mm + 0.04 mm x L(m)



Image: Visual representation of the MetroY Pro's single-frame precision and volumetric accuracy.

4.2 Scanning Modes

The MetroY Pro offers five versatile scanning modes:

- **34 Cross-lines:** For quickly capturing large surface areas.
- **15 Parallel Lines:** For capturing intricate and detailed features.
- **Single-line Blue Laser:** Ideal for scanning deep holes, grooves, and narrow surfaces.
- **62-Line Full-field Blue Structured Light:** Enables ultra-fast, marker-free scans of feature-rich objects at up to 7 million points/second.
- **Auto Turntable Mode:** For one-click, ultra-detailed scans of small to medium objects using the Dual-axis Turntable.

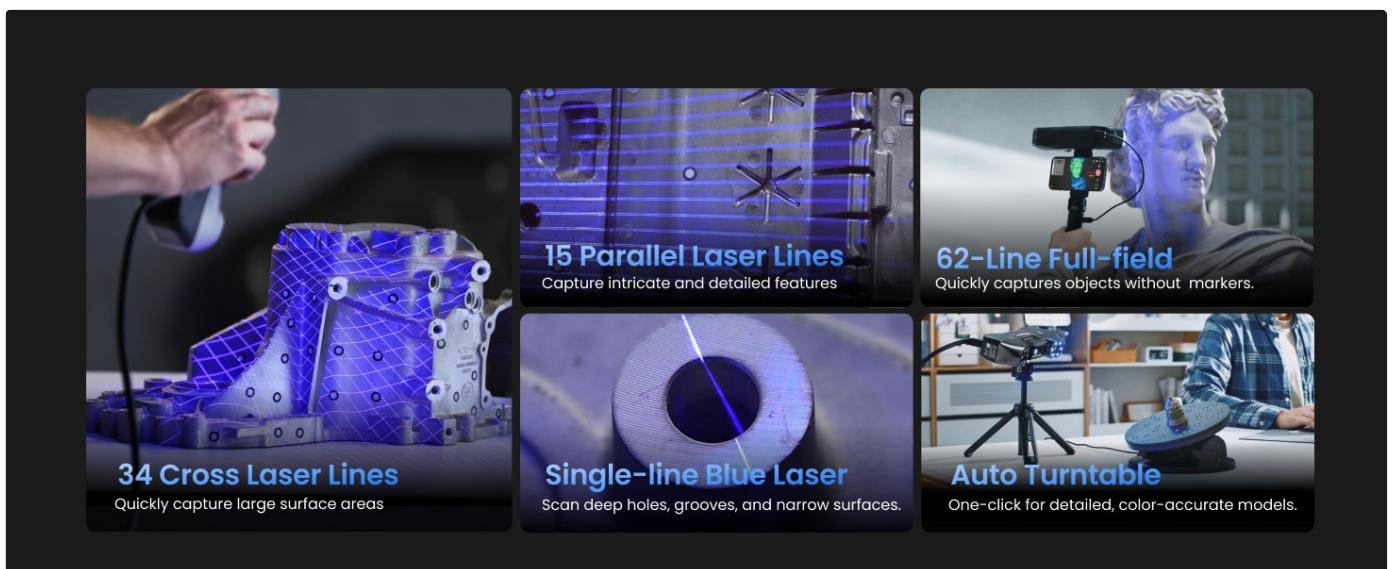


Image: A visual guide to the five distinct blue light scanning modes available on the MetroY Pro.

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Video: Demonstration of wireless scanning a car bumper using the industrial blue laser scanner, highlighting seamless movement and no need for scanning spray.

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Video: Scanning an engine timing cover without scanning spray, showcasing the scanner's ability to handle challenging surfaces.

4.3 High-Speed Scanning

Achieve rapid data acquisition with scanning speeds of up to 2,000,000 points per second in multi-line laser scan mode, and up to 7,000,000 points per second in full-field structured light mode.



Image: The MetroY Pro rapidly generates point clouds, capturing up to 2,000,000 points per second.

4.4 Scanning Dark or Shiny Surfaces

The MetroY Pro's blue lasers are designed to handle challenging surfaces, eliminating the need for scanning spray on most dark or shiny objects.



Image: The MetroY Pro effectively scans dark and shiny surfaces, removing the need for pre-treatment with scanning spray.

4.5 True Color Capture

Utilize the integrated HD RGB camera to capture detailed textures and create vibrant, true-to-life full-color 3D models.

Stunningly Detailed Texture Mapping

Capture detailed textures, create vibrant 3D models using MetroY's HD RGB camera.



Image: The MetroY Pro's HD RGB camera captures stunningly detailed textures for realistic 3D models.

4.6 Tracking Methods

The scanner supports three tracking methods to ensure stable and accurate scanning:

- **Marker Tracking Mode:** Requires markers for scanning featureless objects or for improved stability.
- **Global Marker Tracking:** Uses a larger set of markers for better volumetric accuracy over larger areas.
- **Feature Tracking Mode:** Allows quick capture of detail-rich objects without the need for markers.

Three Tracking Methods




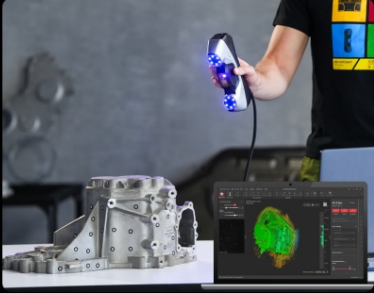


 Marker Tracking Mode Markers Needed	 Global Marker Tracking Markers Needed	 Feature Tracking Mode No Markers Needed
 For laser scans and featureless objects	 Better volumetric accuracy	 Quickly capture the detail-rich objects

Image: Visual explanation of the three tracking methods: Marker Tracking, Global Marker Tracking, and Feature Tracking.

5. SOFTWARE AND WORKFLOW

The MetroY Pro integrates with professional software for a seamless workflow:

- **Revo Metro:** Intuitive tools for scanning, meshing, and editing your 3D models.
- **Revo Measure (Sold Separately):** Directly import 3D models from Revo Metro for shape, dimension, and GD&T evaluation by comparing scans to CAD models.
- **Revo Design (Sold Separately):** For reverse engineering and design applications.
- **Compatibility:** Integrates effortlessly with Quicksurface, Geomagic Control, and other professional platforms.

From Scanning to 3D Measurement

Directly import 3D models into Revo Measure from Revo Metro, enabling shape, dimension, and GD&T evaluation by comparing scans to CAD models.

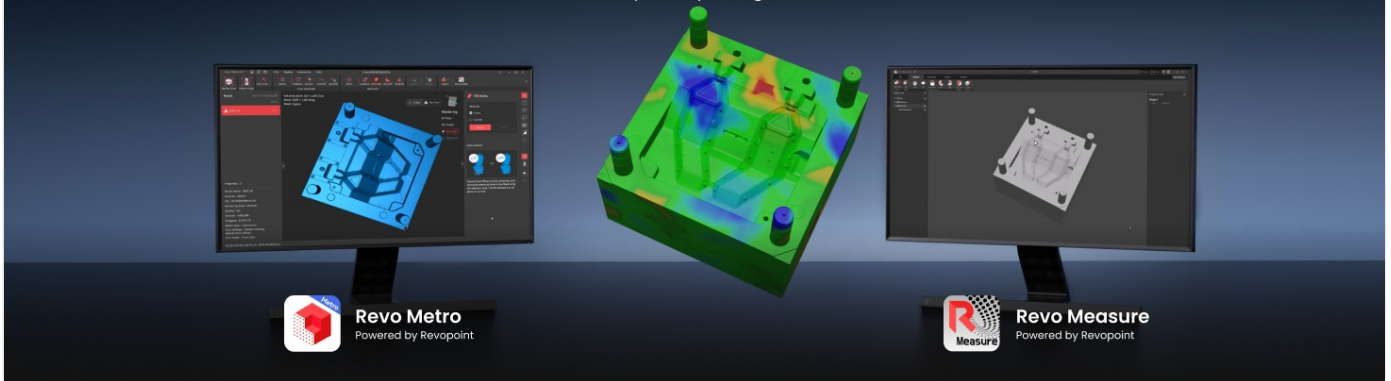


Image: Illustrates the seamless transition from scanning in Revo Metro to 3D measurement in Revo Measure.

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Video: Demonstrates the scanning process for small to medium objects using the portable blue laser 3D scanner, highlighting its capabilities for various applications.

6. MAINTENANCE

To ensure the longevity and optimal performance of your Revopoint MetroY Pro 3D Scanner, follow these maintenance guidelines:

- **Cleaning:** Gently wipe the scanner's exterior and optical lenses with a soft, dry, lint-free cloth. Avoid abrasive materials or harsh chemicals.
- **Storage:** Store the scanner in its original carrying case in a cool, dry environment away from direct sunlight and extreme temperatures.
- **Software Updates:** Regularly check the Revopoint website for software and firmware updates to ensure you have the latest features and performance enhancements.
- **Calibration:** Perform calibration periodically, especially if you notice any inconsistencies in scan accuracy or after significant environmental changes.

7. TROUBLESHOOTING

If you encounter issues with your MetroY Pro scanner, consider the following common troubleshooting steps:

- **Scanner Not Connecting:**
 - Ensure all cables are securely connected (for wired connection).
 - Verify your PC's USB-C port is USB 3.0 or above.
 - For wireless connection, confirm you are connected to the scanner's Wi-Fi network.
 - Restart the Revo Metro software and the scanner.
- **Poor Scan Quality/Accuracy:**
 - Perform a calibration using the provided calibration board.
 - Ensure proper lighting conditions; avoid direct sunlight or overly bright environments.
 - Check the scanning distance and adjust as needed (optimal working distance: 200-400 mm).
 - For featureless or shiny objects, consider using markers.
- **Software Crashes/Freezes:**

- Ensure your computer meets the minimum system requirements.
- Update your graphics card drivers.
- Close other demanding applications while scanning.
- Check for the latest Revo Metro software updates.

For further assistance, refer to the official Revopoint support resources or contact customer service.

8. SPECIFICATIONS

Scanner Type	3D Scanners
Brand	Revopoint
Model Name	Revo MetroY Pro Standard
Connectivity Technology	USB, Wi-Fi 6
Resolution	0.05 mm Fused Point Distance
Item Weight	450 Grams
Minimum System Requirements (macOS)	CPU: M2 Pro, RAM ≥ 16 GB, OS: Mac OS 12 Monterey
Minimum System Requirements (Windows)	CPU: Intel i7 13th Gen or AMD Ryzen 7 5800, RAM ≥ 32GB, GPU: NVIDIA GeForce RTX 3060 (8GB), OS: Windows 10
Power Source	Corded Electric or Battery Grip
Manufacturer	Revopoint

9. WARRANTY INFORMATION

The Revopoint MetroY Pro 3D Scanner comes with a **2-year warranty**. For detailed terms and conditions, please refer to the warranty card included in your package or visit the official Revopoint website.

10. SUPPORT

For technical support, FAQs, and additional resources, please visit the official Revopoint website:

www.revopoint3d.com

You can also find community forums and tutorials to help you get the most out of your MetroY Pro 3D Scanner.