Revopoint RevoScan MetroX Advanced

Revopoint MetroX 3D Scanner User Manual

Model: RevoScan MetroX Advanced

Brand: Revopoint

1. INTRODUCTION

The Revopoint MetroX 3D Scanner is an advanced industrial-grade blue laser 3D scanner designed for high-precision 3D modeling, industrial measurement, and quality control. It offers exceptional accuracy and versatility for various applications, from reverse engineering to 3D printing.

Image: The Revopoint MetroX 3D Scanner, showing its handheld design, blue laser projection, and accompanying accessories including a turntable and calibration board.

2. SAFETY INFORMATION

WARNING: The MetroX uses a Class 2M laser projector. **Avoid looking directly at the light source at close range!** Always operate the device in accordance with the instructions to prevent eye injury.

Ensure proper ventilation when operating the scanner. Keep the device away from water and extreme temperatures. Do not attempt to disassemble or repair the device yourself, as this may void the warranty and pose safety risks.

3. PACKAGE CONTENTS

The Revopoint MetroX Advanced Edition package includes the following components:

- MetroX 3D Scanner & Wrist Strap
- Tripod & Scanner Cradle
- Power Adapter

- Dual-axis Turntable
- Calibration Board
- Markers (6 mm) × 500
- USB Type-A to Type-C Cable
- USB Type-C to Type-A Adapter
- Carrying Case
- Sample Bust
- Quick Start Guide & Warranty Card
- Ball Marker × 10 (Magnetic)
- Dome Marker × 10 (Magnetic)
- Pyramid Marker × 4 (Magnetic)
- Bar Marker × 4

Advanced Edition
Standard Edition + Marker Block Kit

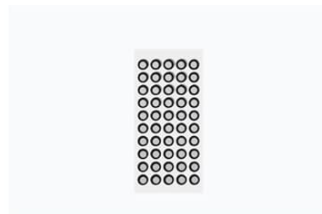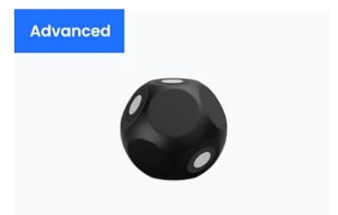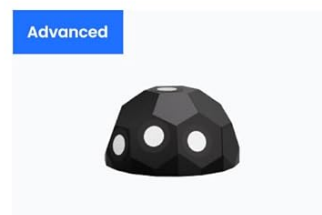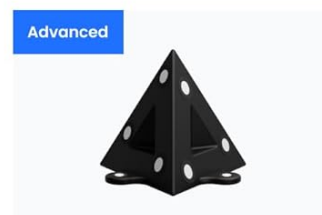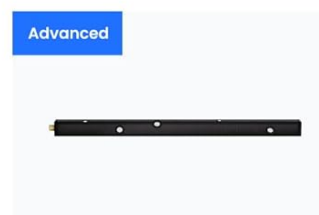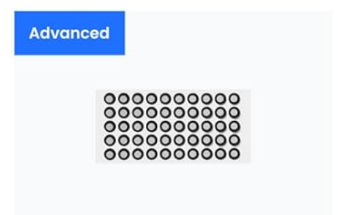|			
MetroX 3D Scanner & Wrist Strap	Tripod & Scanner Cradle	Power Adapter	Dual-axis Turntable
Calibration Board	Markers	USB Type-A to Type-C Cable	USB Type-C to Type-A Adapter
Carrying Case	Sample Bust	Quick Start Guide Certificate & Warranty Card	**Advanced** Ball Marker × 10 (Magnetic)
Advanced Dome Marker × 10 (Magnetic)	**Advanced** Pyramid Marker × 4 (Magnetic)	**Advanced** Bar Marker × 4	**Advanced** Markers

Image: A visual representation of all components included in the Revopoint MetroX Advanced Edition kit, such as the scanner, tripod, turntable, cables, and various marker types.

4. SYSTEM REQUIREMENTS

To ensure optimal performance of your MetroX 3D Scanner, your computer system must meet the following minimum requirements:

Operating System	CPU	RAM	GPU (Optional)
macOS 11.0 or better	M1 Pro/Max/Ultra	≥ 16GB	N/A
Windows 10/11 (64-bit)	Intel i7 12th Gen or AMD Ryzen 7 5800	≥ 32GB	NVIDIA GeForce RTX 3050 (8GB)

For best performance, especially with complex scans, consider the recommended specifications:

Operating System	CPU	RAM	GPU
macOS 11.0 or better	M2 Pro/Max/Ultra, M3 Pro/Max/Ultra	≥ 24GB	N/A
Windows 10/11 (64-bit)	Intel i9 12th Gen or better	≥ 64GB	NVIDIA RTX 4060 (8GB) or better

Note: If unsure about CPU configuration, ensure your CPU has cores ≥ 8, threads ≥ 16, and a base frequency ≥ 2.4GHz.

Image: A detailed chart outlining the minimum and recommended PC specifications for both macOS and Windows operating systems to run the MetroX scanner software effectively.

5. SETUP GUIDE

5.1 Initial Connection

1. **Unpack Components:** Carefully remove all items from the carrying case.
2. **Connect Power:** Plug the power adapter into the scanner and a suitable power outlet.
3. **Connect to PC:** Use the provided USB Type-C to Type-A cable to connect the scanner to a USB 3.0 port on your computer. Ensure it is a USB 3.0 port for optimal performance.
4. **Software Installation:** Download and install the latest version of Revo Scan 5 MetroX software from the official Revopoint website. The software is compatible with x86_64 architecture.

5.2 Calibration

Before your first scan, or if you experience tracking issues, it is crucial to calibrate the scanner using the included lithographic

calibration board. The Revo Scan 5 MetroX software provides a quick calibration utility to ensure reliable accuracy for every scan.

1. Place the calibration board on a flat, stable surface.
2. Follow the on-screen instructions within the Revo Scan 5 MetroX software to perform the calibration process.
3. Ensure the scanner is positioned correctly relative to the board as guided by the software.

6. OPERATING INSTRUCTIONS

6.1 Scanning Modes

The MetroX offers four effective scanning modes to manage various object types and surfaces:

- **Cross Lines Mode:** Utilizes 14 crossed blue laser lines for detailed scanning of challenging surfaces, including dark or shiny objects, at up to 60 frames per second (fps).
- **Parallel Lines Mode:** Employs 7 high-powered parallel blue laser lines to accurately capture every fine detail on surfaces.
- **Full-field Mode:** Provides rapid capture rates of up to 7 million points per second using 62 lines of structured light, ideal for geometrically rich or featureless objects.
- **Auto Turntable Mode:** Enables fully automated, metrology-grade scanning when used with the Dual-axis Auto Turntable. This mode captures high-density point clouds and color data for accurate 3D reconstruction.

Image: Visual examples of the four distinct scanning modes available with the MetroX scanner, illustrating their application for different object types and scanning scenarios.

6.2 Tracking Modes

MetroX supports three tracking modes to optimize scanning for different object characteristics:

- **Feature Tracking:** Best for objects with rich geometric details. No markers are needed.
- **Marker Tracking:** Ensures accurate scans for plain, featureless surfaces by using adhesive markers.
- **Global Marker Mode:** Offers improved volumetric accuracy for complex objects by utilizing a network of markers.
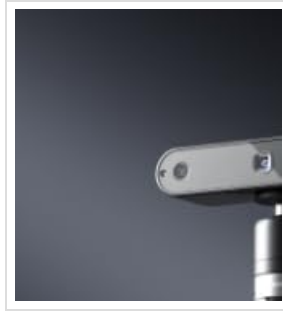
Image: The Marker Block Kit, including dome, ball, pyramid, and bar markers, designed to facilitate quick scan setup for complex or featureless objects.

6.3 Software Overview (Revo Scan 5 MetroX & Revo Design)

The **Revo Scan 5 MetroX** software is the primary interface for operating your scanner. It provides advanced tools for point cloud scanning, fusion, meshing, editing, import, and export. It supports numerous file formats for compatibility with third-party tools like Quicksurface and Geomagic Wrap, streamlining CAD workflows.

Revo Design, powered by Quicksurface software, is an efficient CAD tool that integrates seamlessly with Revo Scan 5 MetroX. It allows you to convert scanned data (STL, OBJ, PLY, etc.) into ready-to-use CAD models (IGES, STEP), simplifying the scan-to-CAD process for product design and reverse engineering.

Image: A screenshot of the Revo Design software interface, demonstrating the conversion of a 3D scan into a CAD model, highlighting its role in streamlining the design workflow.

7. SCANNING TIPS

7.1 Scanning Dark or Shiny Surfaces

The MetroX scanner is designed to efficiently scan dark or shiny surfaces without the need for scanning spray, thanks to its powerful GPU-accelerated 14-crossed blue laser lines. This makes scanning mechanical parts or molds significantly easier.

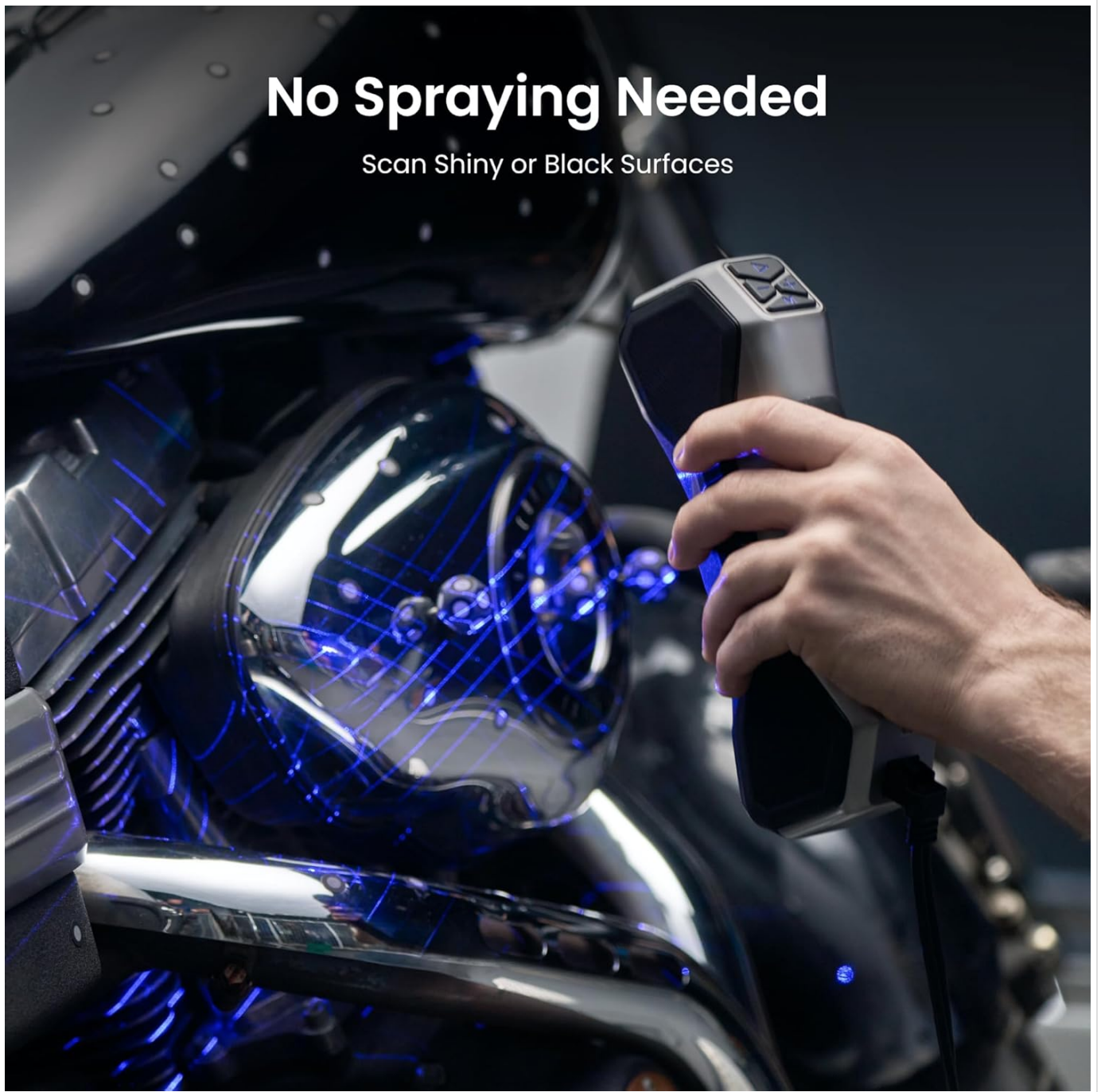Image: A close-up of the MetroX scanner in use, demonstrating its ability to scan a shiny motorcycle engine part, illustrating that no scanning spray is needed for such surfaces.

7.2 Achieving Metrology-Grade Accuracy

The MetroX delivers metrology-grade 3D models with up to 0.01 mm precision and 0.02 mm accuracy. For consistent high accuracy, regularly use the included lithographic calibration board to calibrate your scanner.
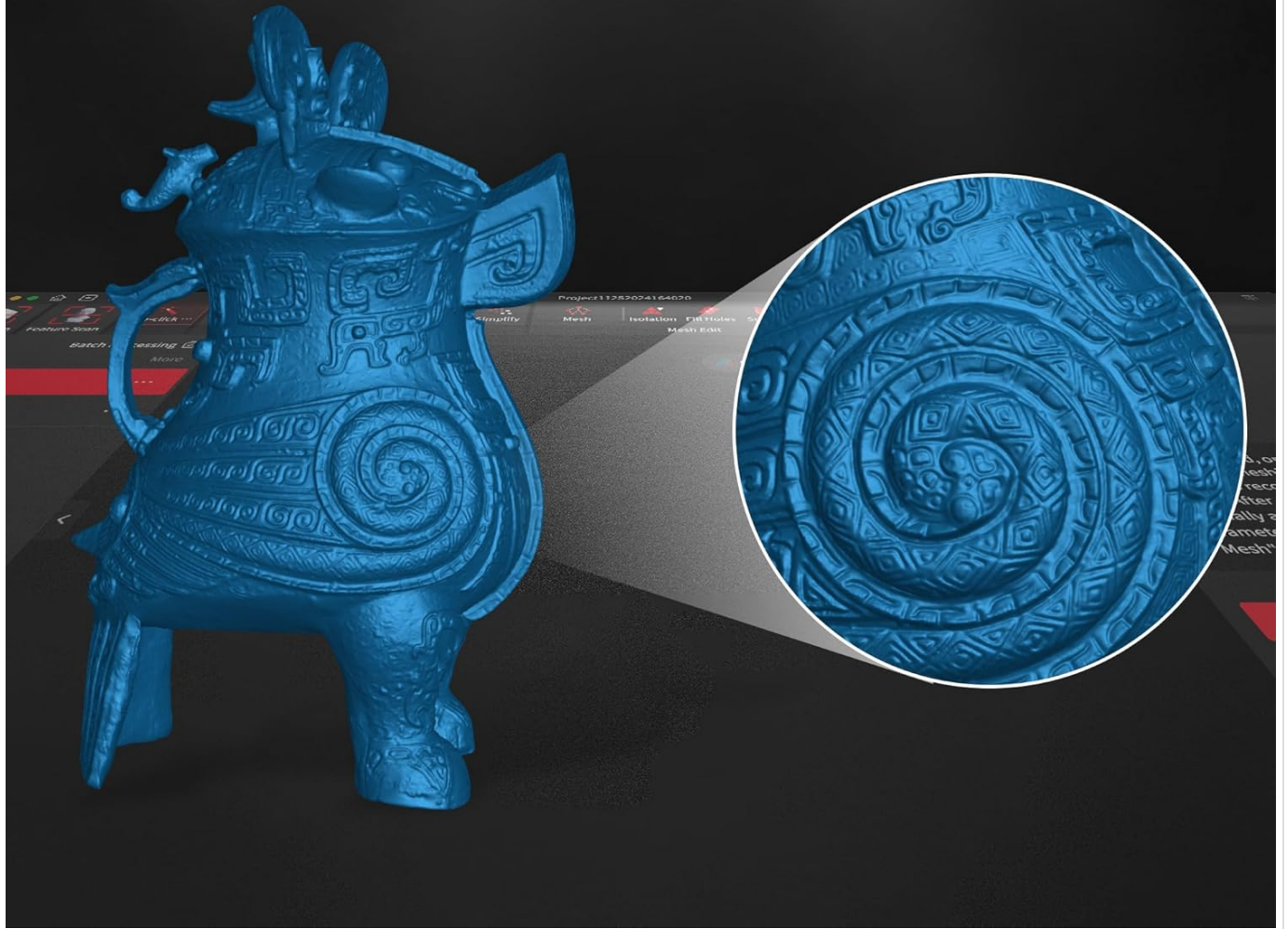
Image: A highly detailed 3D model of an intricate object, with a magnified section highlighting the fine details and precision achieved by the MetroX scanner.

8. MAINTENANCE

Proper maintenance ensures the longevity and performance of your Revopoint MetroX 3D Scanner:

- **Cleaning:** Use a soft, dry, lint-free cloth to clean the scanner's exterior. Do not use liquid cleaners or aerosols directly on the device.
- **Lens Care:** Gently clean the scanner lenses with a specialized lens cleaning cloth or air blower to remove dust. Avoid touching the lenses with your fingers.
- **Storage:** Store the scanner and its accessories in the provided carrying case in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Software Updates:** Regularly check the official Revopoint website for software and firmware updates to ensure optimal performance and access to new features.

9. TROUBLESHOOTING

This section addresses common issues you might encounter with your MetroX 3D Scanner.

9.1 Tracking Issues / Poor Scan Quality

- **Recalibrate:** Even if the scanner is new, recalibrate it using the included calibration board and the Revo Scan 5 MetroX software. This often resolves initial tracking problems.
- **Lighting Conditions:** Ensure the scanning environment has stable, diffused lighting. Avoid direct sunlight or strong spotlights that can interfere with the scanner's sensors.
- **Object Preparation:** For featureless or highly reflective/transparent objects, consider using markers or a temporary matte spray (if not using MetroX's spray-free capabilities for dark/shiny surfaces).
- **Scanning Distance:** Maintain the optimal working distance (200-400 mm) from the object.
- **Movement Speed:** Scan at a consistent and appropriate speed. Too fast or too slow movement can lead to tracking loss.

9.2 Scanner Disconnecting Frequently

- **USB Port:** Ensure the scanner is connected to a **USB 3.0 port**. USB 2.0 ports may not provide sufficient power or data transfer speed, leading to disconnections.
- **Cable Integrity:** Check the USB cable for any damage or kinks. Try using a different USB 3.0 cable if available.
- **Power Supply:** Verify that the power adapter is securely connected to both the scanner and a working power outlet.
- **Computer Resources:** Ensure your computer meets the minimum system requirements, especially RAM and GPU. Insufficient resources can cause instability. Close other demanding applications during scanning.
- **Driver Issues:** Reinstall the scanner drivers and Revo Scan 5 MetroX software to rule out corrupted installations.

9.3 Software Not Launching or Crashing

- **System Requirements:** Double-check that your PC meets the minimum system requirements, particularly for CPU, RAM, and GPU.
- **Software Version:** Ensure you have the latest version of Revo Scan 5 MetroX installed.
- **Graphics Drivers:** Update your graphics card drivers to the latest version.
- **Antivirus/Firewall:** Temporarily disable your antivirus or firewall to see if it's interfering with the software.

10. TECHNICAL SPECIFICATIONS

Feature	Specification
Model Name	MetroX
Scanner Type	3D Scanners (Multi-line Laser & Full-field Structured Light)
Precision	Up to 0.01 mm
Accuracy	Up to 0.02 mm
Fused Point Cloud Distance	0.05 mm
Scanning Speed	Up to 60 fps (Cross Lines), Up to 7 million points/s (Full-field)
Connectivity	USB Type-C (USB 3.0 recommended)
Working Distance	200 mm ~ 400 mm
Single Capture Area (at 400mm)	320 x 215 mm

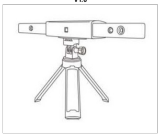| Feature	Specification
Supported OS	Windows 10/11 (64-bit), macOS 11.0 or better
Package Dimensions	20.19 x 14.72 x 6.61 inches
Item Weight	14.88 Pounds

11. WARRANTY AND SUPPORT

Revopoint provides a 2-year warranty for the MetroX 3D Scanner. For technical support, warranty claims, or any inquiries, please contact Revopoint Official Store customer service. You can find contact information on the official Revopoint website or through your purchase platform.

For additional resources, including FAQs and community forums, visit the Revopoint Store on Amazon.

Related Documents - RevoScan MetroX Advanced

RANGE 3D SCANNER Quick Start Guide V1.0 REVOPOINT	**Revopoint RANGE 3D Scanner: Quick Start Guide and User Manual** Get started quickly with the Revopoint RANGE 3D Scanner. This guide covers setup, software, connection methods for PC and smartphones, specifications, troubleshooting, and safety. Learn to scan objects with ease and achieve high-quality 3D models.
Skaner 3D Revopoint Metrox Instrukcja obsługi V1.2 REVOPOINT	**Instrukcja obsługi skanera 3D Revopoint Metrox** Kompletna instrukcja obsługi skanera 3D Revopoint Metrox, obejmująca konfigurację, tryby skanowania, obsługę oprogramowania, kalibrację i środki bezpieczeństwa.
INSPIRE 3D SCANNER User Manual V1.0 REVOPOINT	**Revopoint INSPIRE 3D Scanner User Manual V1.0** Comprehensive user manual for the Revopoint INSPIRE 3D Scanner. Covers setup, connection, Revo Scan 5 software, scanning techniques, and specifications for professional and hobbyist 3D scanning.

POP 3 3D SCANNER **Quick Start Guide** **V2.0** **REVOPOINT**	[Revopoint POP 3 3D Scanner Quick Start Guide V2.0](#) This guide provides essential information for setting up and using the Revopoint POP 3 3D Scanner, including software installation, connection methods for PCs and smartphones, scanning tips, specifications, and maintenance.
POP 3 3D SCANNER **Quick Start Guide** **V2.0** **REVOPOINT**	[Revopoint POP 3 3D Scanner Quick Start Guide](#) Get started quickly with the Revopoint POP 3 3D Scanner. This guide provides essential information on setup, software download, connection methods for PC and mobile devices, and basic scanning tips for optimal results.
Trackit 光学跟踪式三维扫描仪 **快速操作指南** **V1.0** **REVOPOINT**	[Revopoint Trackit 3D](#) 　　Revopoint Trackit