



LCC Studio

User Manual

2026.05

V1.13.0

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1. Getting Started

1.1 Lixel CyberColor Studio Software Overview

LixelCyberColor Studio employs a photorealistic 3D rendering method based on 3D Gaussian Splatting (3DGS) technology. LCC models offer superior visual quality with efficient processing, proving to be a popular choice by professionals over mesh and photogrammetry methods.

Key Advantages

1. **SLAM-based collection:** Efficiently captures large spaces through mobile scanning
2. **Integrated LiDAR data:** Produces more accurate structures, enabling measurement and spatial applications
3. **Rapid processing:** Converts 5-minute scans in 100-150 minutes (1:20-30 ratio)
4. **Compact data:** Files are 80% smaller than comparable formats
5. **Extensibility:** Supports measurement, annotation, editing and further development






Lixel CyberColor Studio (hereinafter referred to as LCC Studio) is a PC-based tool for generating and working with photorealistic 3D models. LCC processes LiDAR and visual data from Lixel scanners into high-quality 3D models in either .ply or proprietary .lcc formats. Models can be viewed locally or shared online via web links for collaborative exploration.

Core Features:

- **Generate:** Import Lixel raw data to automatically create 3D models in .lcc, .lcc2, .ply, .usd or 3D Tiles format
- **View:** Experience models through local viewing and first-person navigation using LCC, LCC2, PLY, and USD models.
- **Publish:** Share LCC results via web-viewable links with one-click publishing
- **Export:** Export in standard .lcc, .ply, .lcc2, .usd, 3D Tiles format
- **Measurement & Annotation:** Measure models and add annotations. Annotations support adding multimedia content from within or outside the scene.
- **Model Post-Processing:** Crop, color grade, and apply other post-processing operations to models.
- **Asset Overlay:** Import external 3D assets (.fbx, .glb, .obj) for model enhancement.

- **Collision:** Generate models with physical collision for immersive flythrough and interaction.
- **Snapshot & Recording:** Capture scene snapshots and render flythrough videos for presentations and reporting.
- **Viewpoints & Reports:** Add viewpoints to guide users through specific areas. Generate Scene Reports to compile and present related content.

Featured Capabilities

-  **Map Fusion:** Supports multi-segment ground data stitching through automatic overlap region recognition for unified large-scale model reconstruction.
-  **Aerial-Ground Map Fusion:** Fuses drone imagery with ground scan data for seamless integration of aerial and ground perspectives, suitable for building complexes, campuses, scenic areas, and other large-scale complex model reconstruction.
-  **HD Enhancement:** Import high-resolution images from DSLRs or smartphones to enhance detail and texture in key areas, suitable for refined restoration of focal points.
-  **Spatial Recognition:** For indoor scan data, automatically extracts spatial structure and building components to quickly generate structured intelligent floor plan outputs, suitable for spatial analysis and BIM modeling.
-  **Aerial Reconstruction:** Supports 3DGS reconstruction of large-scale models using only drone aerial images without ground equipment capture data.

1.2 First Use

1.2.1 Download and Installation

Download the software installation package through the official download link:
<https://xgrids.com/intl/support/download>

LCC Studio uses an .iso full installation package, supporting offline installation of all LCC modules.

Recommended Configuration:

- CPU: Intel i9 12th Gen or above
- GPU: RTX 3070 or above
- RAM: 64GB or above

For full configuration details, see: Section 3 — Download and Installation — System Requirements — Reconstruction Configuration Reference.

Registration and Authorization:

- **Free Edition:** Register and log in to access Free Edition features.
- **Premium Edition:** Register and log in, then contact sales to obtain an authorization code. Once the code is redeemed, the account activates Premium features.

Premium features include: all Free Edition features, Map Fusion, Aerial Reconstruction, Aerial-Ground Fusion, HD Enhancement, Spatial Recognition, and export to .lcc, .lcc2, .ply, .usd, and 3D Tiles formats.

Free	Premium
<ul style="list-style-type: none"> ✓ Generate: Create high-precision 3D models in one click ✓ View: Navigate models immersively in 1st-person POV ✓ Avatar: Add digital guides to enhance interactive experiences ✓ Collision: Simulate collision effects for improved realism ✓ Edit: Clip, crop, measure, and annotate models ✓ Portal: Switch quickly between different models ✓ Asset Overlay: Import .fbx/.glb/.obj models to add to scene ✓ Publish: Publish models to the web in one click ✓ Cloud Data Management: Set permissions and manage models online ✓ Export: Export models in .lcc, .lcc2 format ✓ Record: Support camera path recording ✓ Flythroughs: Export spatial navigation videos 	<ul style="list-style-type: none"> ✓ Everything in Free ✓ Map Fusion: Integrate multiple scans from same-model devices to extend modeling coverage ✓ Aerial Reconstruction: Instantly generate stunning city-scale 3DGS models ✓ Ground + Aerial Map Fusion: Integrate aerial and ground scanning for unified modeling ✓ HD Enhancement: Advanced fusion of images and point cloud data delivering exceptionally detailed models ✓ Intelligent Space Recognition: Automatically identifies indoor spatial structures and generates floor plan ✓ Export: Export models in .lcc, .lcc2, .ply formats, 3D Tiles or .usd

LCC Free and Premium

1.2.2 Data Capture

Before using LCC Studio for 3D reconstruction, you must first scan the space using an XGRIDS scanner device.

Note: LCC Studio's Map Fusion and Aerial-Ground Fusion features have specific data capture requirements. Follow the capture guidelines strictly during scanning. RTK data capture also has supplementary details to ensure scan quality and compatibility.

- Capture Guide: <https://da9i2vj1xvtoc.cloudfront.net/help/lcc/LCC+Scanning+Guide+v9.0.pdf>
- LCC Quick Start Guide: <https://xgrids.com/us/support/tutorials?page=LCCStudio>

1.2.3 Reconstruction (Local / Cloud)

On the My Models page, click **Create**, select the target reconstruction type, upload capture data following the on-screen instructions and parameters, and click **Start**. The model begins reconstruction.

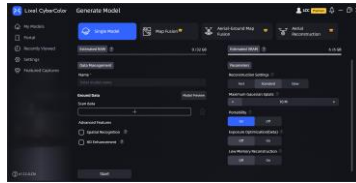
Note: Before starting reconstruction in LCC Studio, it is strongly recommended to set your project storage path and capture data backup path first. Keep LCC data storage separate from the software installation directory. Setting the storage path to an SSD significantly improves data generation and processing speed.

- Set LCC project path: Settings → General → Project Path → Select Directory
- Set LCC capture data backup path: Settings → General → Capture Data Backup

Path → Select Directory



Sign in



Create

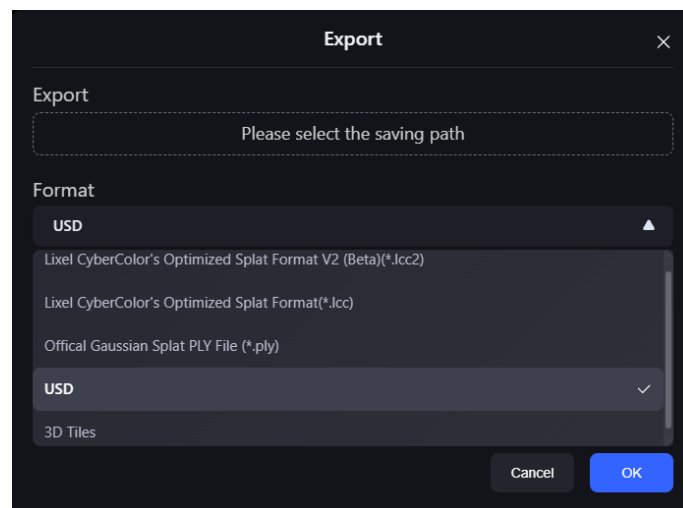


Set LCC project path

1.2.4 Export

Select a completed model card, click "..." in the upper-right corner, select Export, follow the dialog instructions, choose the desired export format, and click OK to export.

Export formats currently supported: .lcc and .lcc2 data files, .ply format, .usd format, and 3D Tiles format.

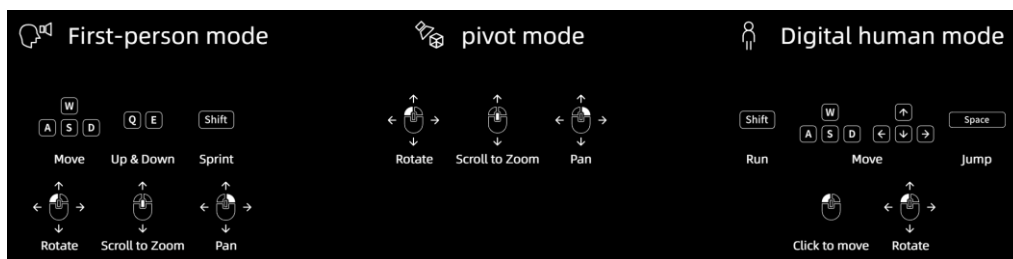


Export

1.2.5 Editing

After reconstruction completes, double-click a model card to enter LCC Editor for editing or viewing.

Three Navigation Modes — Quick Reference:



Shortcuts

Control	Function
Flythrough Mode	
W / A / S / D / Q / E	Forward / Left / Back / Right / Down / Up
Shift	Sprint
Scroll wheel	Adjust movement speed
Left-click drag	Rotate view
Right-click drag	Pan view
Avatar Mode	
Space	Jump
Left-click target	Navigate to position

Click the tools in the left toolbar to edit the model.

After editing, switch to View mode via the upper-right menu bar toggle to review edited content.

1.2.6 Publish (Share)

Click Menu Bar → File → Publish, configure publishing options, and click Share to publish the edited project to the cloud.

Share a published model: On the Editor homepage, find the published project. Click the link icon in the lower-right corner of the project card to copy the project's link for sharing with other users.

View a published model online: Click "..." in the upper-right corner of the project card, then click Online View to open the link in a browser.

Manage published models: Click "..." in the upper-right corner of the project card, then click Publish Management to open the cloud publishing dashboard, where you can manage all published links under your account.

2. Version and Updates

2.1 Version and Copyright Notice

Software Version: Lixel CyberColor Studio V1.13.0 Release Date: May 6, 2026

This manual covers LCC Studio V1.13.0. Operations may differ in other versions.

Notes: Lixel®, XGRIDS Lixel®, Lixel CyberColor™, and related marks are registered trademarks of Shenzhen XGRIDS Innovation Technology Co., Ltd. Other trade names, company names, and brand names mentioned in this document may be the trademark property of their holders.

2.2 Key Updates - Studio

1. **New K2 device support:** supports K2 data import, single-scene reconstruction, and Spatial Recognition.
2. **New USD format export:** supports exporting .usd format for the NVIDIA Omniverse ecosystem.
3. **New automatic device file reading:** automatically detects connected devices and displays the project list, supporting one-click import and reconstruction.
4. **Reconstruction report optimized:** Gaussian point count display changed from total points to LoD0 level points.
5. Bug fixes and stability improvements.

2.3 Key Updates - Editor

6. **Height Filter optimized:** cleaner model edges after height filtering.
7. Bug fixes and stability improvements.

3. Download and Installation

3.1 Installation Package Download

Download the software installation package through the official download link:

<https://xgrids.com/intl/support/download>

3.2 System Requirements

3.2.1 Reconstruction Configuration Reference

Operating System: Windows 10/11 Professional or Home

Hardware Requirements:

Item	Minimum	Recommended
System	Windows 10/11 Pro/Home	Windows 10/11 Pro/Home

CPU	i7 9th Gen	i9 12th Gen
GPU	NVIDIA RTX 2060 (6G)	NVIDIA RTX 3070 equivalent or above
Memory	32GB	64GB and above
Hard Drive	1TB	1TB (SSD)

- CPU: No explicit minimum. Recommended mainstream level from 2017 onwards:
 - Intel i7 8700K or above
 - AMD R7 1700X or above
- GPU: Based on VRAM requirements, suitable graphics cards include:
 - Server: V100 (16GB), **A10 (24GB), A100 (48GB)**
 - Desktop: RTX 2080Ti (11GB), RTX 3060 (12GB), RTX 4080 (16GB), **RTX 3090 (24GB), RTX 4090 (24GB)**
 - Laptop: RTX 3080Ti (16GB), RTX 4080Ti (16GB)

Recommended Configuration:

- CPU: Intel i7 8700K or above
- GPU: RTX 3070 or above
- RAM: 64GB or above

3.2.2 GPU Performance Impact on Reconstruction Efficiency

High-end GPUs (e.g., RTX 4090D): Faster reconstruction speed, especially for high-resolution and large-scale point cloud data. Maintains high processing efficiency under heavy data loads, reducing wait times.

Mid-range GPUs (e.g., RTX 3060): Suitable for standard-sized point cloud data processing. Lower efficiency than high-end GPUs under heavy loads, but still provides stable performance.

3.2.3 Memory vs Data Processing Capabilities

64GB Memory: Stable processing of up to 30 minutes of capture data. Processing more than 50% above this limit (over 45 minutes) may lead to reconstruction failure.

128GB Memory: Stable processing of up to 60 minutes of capture data. Processing more than 50% above this limit (over 90 minutes) may increase reconstruction failure risk.

3.2.4 Hardware Requirements for Map Fusion & Aerial-Ground Map Fusion

Map Fusion and Aerial-Ground Fusion require robust hardware for automated high-density multi-model alignment and intensive processing.

a. Recommended Configuration:

- Processor: AMD Ryzen 9 9950X or equivalent ≥ 16 -core high-performance desktop CPU
- Memory: 64GB DDR5 (96GB or 128GB recommended for larger datasets)
- GPU: NVIDIA RTX 3090 (RTX 4090 or 4090D recommended for optimal performance)

b. Notes:

- Verify sufficient system resources before starting tasks to prevent interruptions or failures.
- For large models (total length ≥ 150 minutes) requiring high-quality reconstruction, 96–128GB memory is recommended. If memory is insufficient, select **Standard** quality to ensure smooth processing.
- Processing time currently has no fixed estimate. With the recommended configuration using Standard settings, estimate approximately 20 minutes of processing per 1 minute of capture data (1:20 ratio).

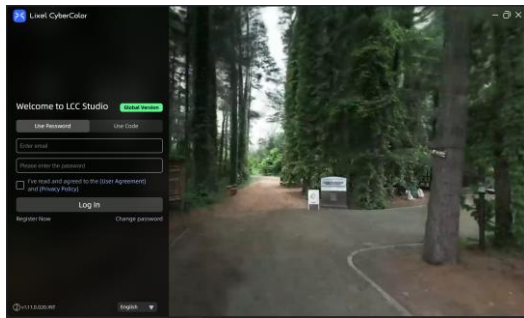
3.3 Installation

V1.12.0 LCC Studio uses an .iso full installation package, supporting offline installation of all LCC modules.

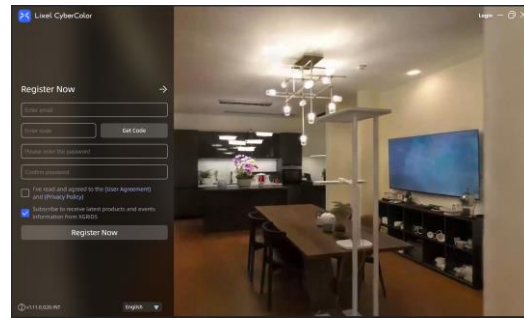
3.4 Registration and Login

3.4.1 Registration

1. Launch the software to access the login page. Click **Register** to enter the registration page.
2. On the registration page, fill in your information and click **Register** to complete registration and log in.



Login page



Registration

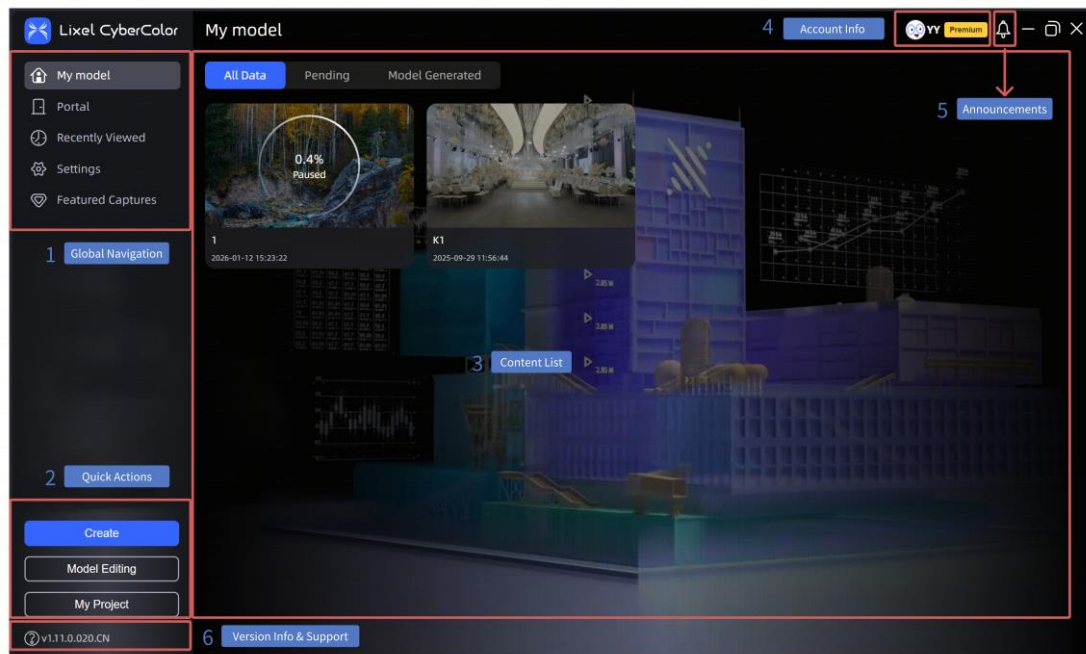
Subscribe to XGRIDS Updates: Check the subscription box during registration to receive product and event news via email. Unsubscribe anytime through links in any email.

3.4.2 Login

Users can log in via password or verification code to access the platform's various functions.

4. Studio

4.1 Interface Overview and Navigation



Interface overview

1. Global Navigation

- **My Models:** View and manage your models. The content list area displays

pending and generated models as model cards.

- **Portal:** View and manage historical "Portal" data. Starting from V1.12.0, the Portal entry is for historical content viewing only; new creation and import are no longer supported within this page. To create or maintain multi-scene portal relationships, go to My Projects in Studio and use the project workflow in Editor for scene editing and publishing.
- **Recently Viewed:** Records all locally reconstructed models browsed in the software, distinguishing between .lcc and .ply model formats.
- **Settings:** View and configure: Account, Advanced, General, Device, Language, Data & Privacy, About.
- **Featured Gallery:** View curated model use cases selected by the LCC team.

2. Quick Access

- **Create:** Click "Create" to begin the LCC model reconstruction workflow.
 - **Edit Model:** Import exported .lcc model files and .ply format files into Studio for editing.
 - **My Projects:** Enter LCC Editor for project management and editing.
3. **Content List:** Displays the primary content collection for the current module.
 4. **Account Info:** Displays the current logged-in account and permission information, including subscription status, Settings entry, Redeem Authorization Code, and Sign Out.
 5. **Announcements:** Important notices and system guides: software updates, feature changes, and answers to common questions.
 6. **Version Info & Help**
 - **Software Version:** Displayed in the lower-left corner for reference.
 - **User Manual:** Click Help to access the current version's user manual with detailed operation guides and FAQs.

4.2 Pre-Reconstruction Work

4.2.1 Data Capture

Before using LCC Studio for 3D reconstruction, you must first scan the space using an XGRIDS scanner device.

Note: LCC Studio's Map Fusion and Aerial-Ground Fusion features have specific data capture requirements. Follow capture guidelines strictly during scanning. RTK data capture has supplementary details to ensure quality and compatibility. Refer to the capture guide and quick start guide for detailed instructions.

Resources:

- Capture Guide:

<https://da9i2vj1xvtoc.cloudfront.net/help/lcc/LCC+Scanning+Guide+v9.0.pdf>

- LCC Quick Start Guide: <https://xgrids.com/us/support/tutorials?page=LCCStudio>

Absolute Coordinates: LCC files from RTK-equipped devices support CGCS2000 and WGS84 coordinate systems for geospatial platforms (e.g., Cesium).

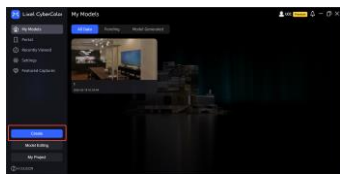
Developer Platform: <https://developer.xgrids.com/#/>

4.2.2 Upload Capture Data

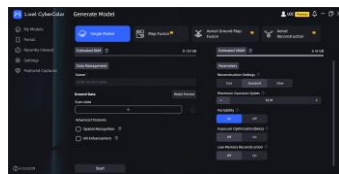
Click **Create** to enter the reconstruction page. Select a reconstruction type based on your needs — Single Model, Map Fusion, Aerial-Ground Fusion, or Aerial Reconstruction — then follow the on-screen workflow to upload capture data.

Supports uploading capture data from local storage. Also supports external USB drive mode for direct reading of raw capture files.

1. **Note:** USB drive mode only supports reading data from local storage devices (including internal hard drives, SSDs, USB drives, and USB-connected external storage). Network storage (e.g., OneDrive, NAS) is not supported.
2. **Tip:** Before starting reconstruction in LCC Studio, set your project storage path and capture data backup path. Keep LCC data storage separate from the software installation directory. An SSD is recommended for storage to significantly improve data generation and processing speed.
 - a. Set LCC project path: **Settings** > **General** > **Project Path** > **Select Directory**
 - b. Set capture data backup path: **Settings** > **General** > **Capture Data Backup Path** > **Select Directory**



Create



Choose reconstruction type



Set LCC project path

4.2.3 Automatic Device File Reading

In addition to the methods above, LCC Studio v1.13.0 introduces automatic device file reading. When you connect an XGRIDS scanner device via USB, LCC automatically detects the external device and reads project information, simplifying the data import workflow.

4.2.3.1 Workflow

1. Connect the XGRIDS device to the computer via USB.

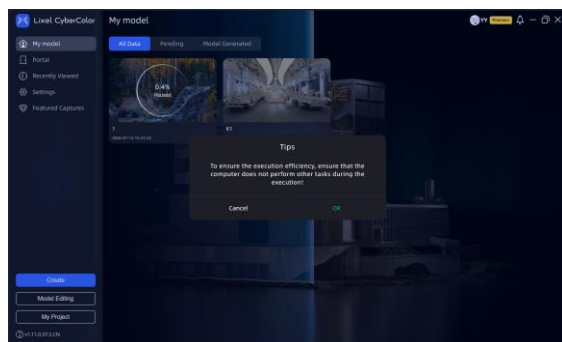
2. Once the system detects the device, a notification appears in the lower-right corner of the screen. Click to open the device dialog.
3. In the device dialog, you can view: device model and SN number, importable project list (including project name, file size, capture date). Previously imported projects are grayed out and cannot be re-imported.
4. Select the reconstruction method.
 - a. **Note:** If the connected device is a **scanner**, only single-scene quick import and reconstruction is currently supported.
5. Set the file storage path (defaults to the capture data backup path).
6. Click "Start Reconstruction" to add the project directly to the reconstruction queue.

4.2.3.2 Disable Auto-Detection

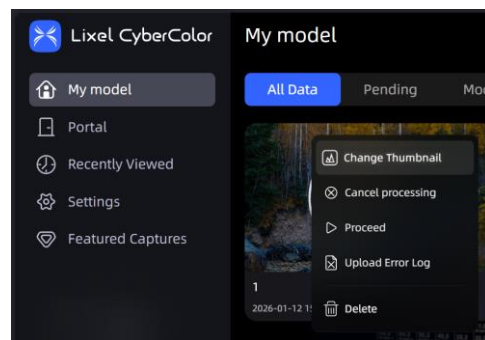
Auto-detection is enabled by default. To disable: 1. Go to **Settings > General**. 2. Find the "Device" option. 3. Click **Off** to disable automatic device detection.

4.3 Model Reconstruction

After model creation, click **Start** to load data. Once data loading completes, the model appears in the My Models list. Click **Start Reconstruction** on the specific project, then click **Confirm** in the prompt to begin automatic model generation.



Start Reconstruction



Dropdown menu

Notes:

1. For batch reconstruction, ensure all data uploads are complete before queuing. Avoid running other VRAM-consuming tasks during reconstruction.
2. Do not close LCC Studio during reconstruction, or the task will be interrupted.
3. Ensure sufficient disk space in the LCC data storage directory — reserve at least 2x the capture data size to prevent interruption or failure.
4. If LCC Studio is closed during generation, the model shows as failed with its previous progress upon reopening. Click "..." on the model card and select **Continue**

Reconstruction or **Restart Reconstruction** to re-enter the generation queue.

4.3.1 Reconstruction Parameters

1. **Reconstruction Quality:** Different quality settings (Fast, Standard, Slow) produce models with different signal-to-noise ratios. Slow reconstruction significantly increases VRAM consumption and extends processing time but produces higher-quality results.
2. **Max Gaussian Points:** In Single Model mode, this directly limits the total point count of the final reconstruction. Keep within VRAM capacity (typically $\leq 25M$). Setting too high may cause VRAM shortage or performance degradation, affecting model quality and stability. In Map Fusion, Aerial-Ground Fusion, and Aerial Reconstruction modes, this setting applies only to individual block reconstruction scale and does not limit the final model's total Gaussian point count. The system auto-adjusts each block's range based on model size, so setting above 25M has no significant effect on overall results.
3. **Portability (Cross-Platform Optimization):** Generates LCC models compatible with most devices. When enabled, reduces model size and improves smoothness, optimizing for most use cases and especially improving mobile rendering quality. When disabled, enables more realistic lighting effects but may cause performance degradation or stuttering.
4. **Debug Options:** Advanced configuration parameters for power users and developers, used for tuning the 3D reconstruction pipeline, diagnosing anomalies, or handling accuracy and compatibility needs in specific scenarios.
 - **Exposure Optimization:** Specifically addresses floating artifacts in scenes with dramatic lighting changes (e.g., indoor-to-outdoor transitions). May cause slight detail degradation in very bright or dark areas. Enable only when encountering such issues.
 - **PPR (Point Cloud Participation Rate):** If sky bleeding occurs (e.g., at tree or building edges), try rebuilding with lower PPR. Note: Bleeding typically results from limited capture angles.

Note: Supplement with multiple angles and heights during capture for best results.



Before lowering - normal



After lowering - low

- **RTK Data:** Controls whether RTK data recorded during scanning is used in

reconstruction:

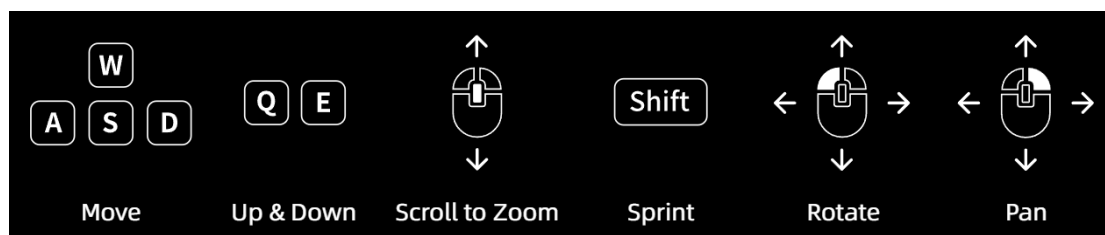
- **Auto:** Prioritizes RTK data. If anomalies are detected, automatically disables RTK to ensure stable results.
- **Disabled:** Ignores RTK data entirely. Results will not contain absolute coordinate information and cannot be used for Map Fusion or Aerial-Ground alignment, but avoids issues caused by anomalous RTK data.
- **Special SLAM Mode:** Select the SLAM mode matching your scanning environment for better results:
 - **Auto (recommended):** Intelligently selects the best reconstruction strategy. Prioritizes high-accuracy mode first; if vibration or interference causes failure, automatically switches to Robust mode and retries. Suitable for most scenarios.
 - **None:** Prioritizes high modeling accuracy. Suitable for stable devices and clear environments. Capture with vibration or interference may cause reconstruction failure.
 - **Robust (default):** Balances accuracy and stability with moderate interference tolerance during capture. Suitable for most scenarios.
 - **Narrow Scene:** Optimized for tunnels, mine shafts, long corridors, and other narrow environments. Using this in normal scenarios may cause failure.

4.3.2 Pre-Reconstruction Point Cloud Preview

After uploading capture data and before starting reconstruction, use the Point Cloud Preview tool to check the scan trajectory and point cloud.

Workflow:

1. Upload capture data → click **Point Cloud Preview**.
2. The system checks each quality indicator. Review the results and adjust your capture data before proceeding with reconstruction to improve success rate and quality.
3. After checks complete, click **View Point Cloud** to enter the Point Cloud Preview tool, where you can view the capture trajectory and coarse point cloud.
4. Controls within the Point Cloud Preview tool are the same as LCC Editor.

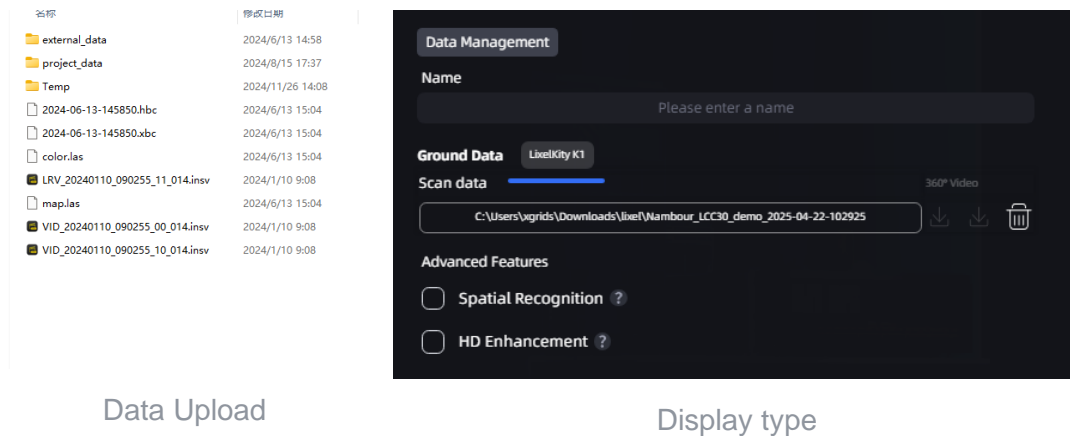


Shortcuts and references for previewing models

4.3.3 Single Model Reconstruction

Workflow

1. **Upload Capture Data** Upload data files captured by XGRIDS scanner device. The interface displays the corresponding device type.



2. **Set Model Name and Parameters**

- **Low-Memory Mode:** When device memory is insufficient, enable Low-Memory Mode. This writes intermediate data to disk instead of keeping it in memory, reducing peak memory usage. May extend reconstruction time but improves stability and reduces failure risk from insufficient memory. Note: Low-Memory Mode is only available in Single Model reconstruction mode.

Advanced Features

1. **Spatial Recognition:** For indoor environments, enable Spatial Recognition. The system automatically identifies walls, doors, windows, and other structures, organizing them into a structured intelligent floor plan. Useful for spatial analysis, renovation planning, or BIM modeling preparation.
2. **HD Enhancement:** For key areas requiring higher detail and texture quality (e.g., landmarks, equipment, decorative elements), use HD Enhancement. Capture additional high-resolution photos with a DSLR or smartphone. These photos combine with original scan data to enhance detail and texture quality.

Notes:

- **Performance requirement:** HD Enhancement and Spatial Recognition require GPU VRAM >8GB. Insufficient VRAM will prevent the features from running.
- **HD Enhancement requirements:**
 - All supplementary photos must be taken with the same device.
 - Photo count: Lixel L series supports 20–500 photos; PortalCam supports 20–1,000 photos.

- Supported formats: JPG, PNG, JPEG.

Notes on Lixel K2 Device

- K2 currently supports **Single Model reconstruction** mode only. The maximum single-scene capture duration for is 90 minutes.
- HD Enhancement is currently not supported.

Note: Support for K2 devices in Map Fusion, Aerial-Ground Fusion, and other reconstruction types is coming soon in a future version.

4.3.4 Map Fusion

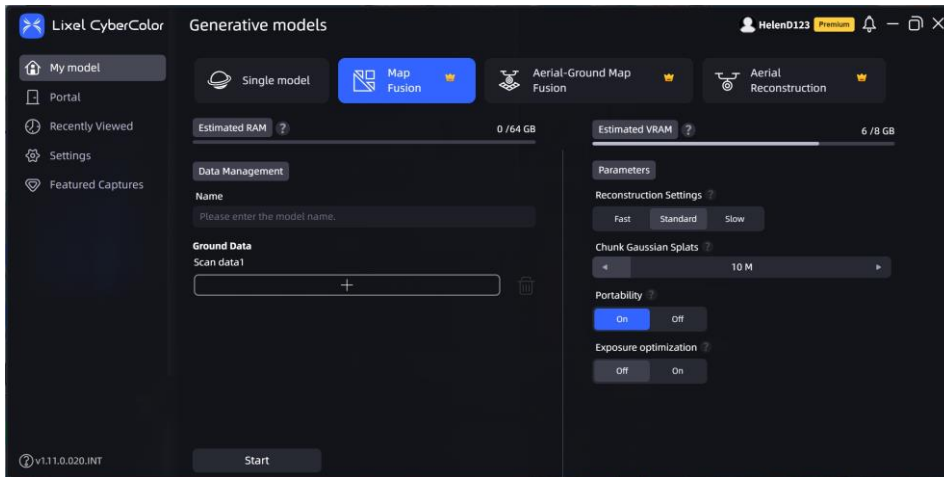
Map Fusion supports uploading multiple capture data segments at once, with a highly automated pipeline for preprocessing, calibration, matching, and intelligent stitching into a complete 3D model.

Workflow:

1. Batch Upload Multiple Capture Data Segments

- Upload multiple data files captured by the same device type. The interface displays the corresponding device type.
 - **Note:** L2 Pro 16-line and 32-line versions cannot fuse together.
- Add additional segments sequentially as needed (up to 10 segments).

2. Set Model Name and Parameters



Map Fusion

4.3.5 Aerial-Ground Map Fusion

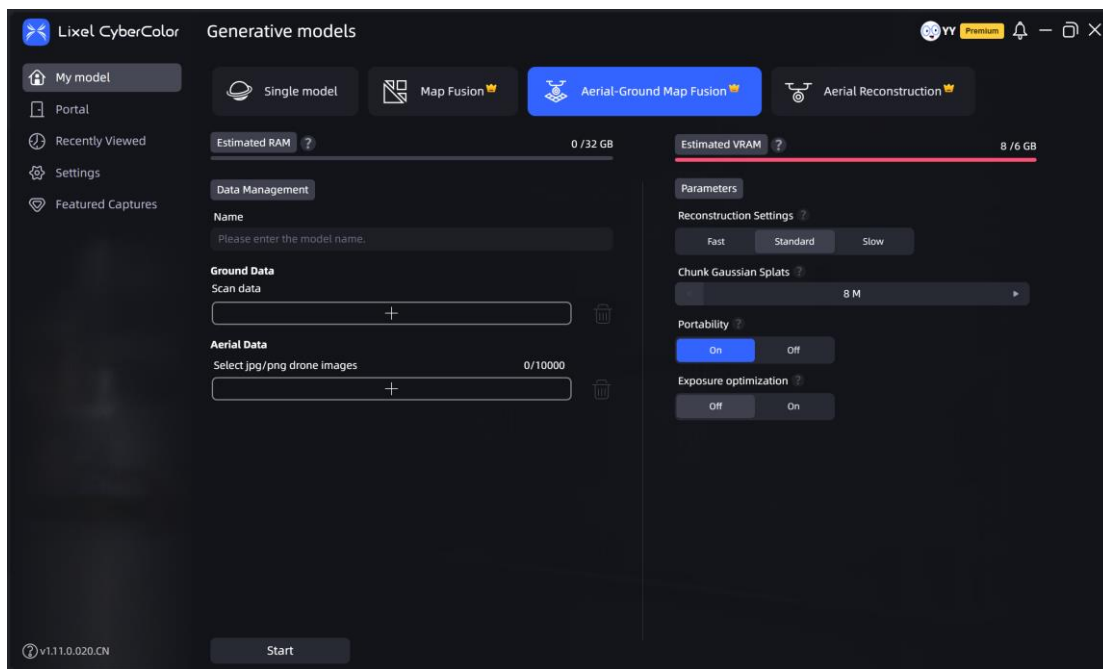
Aerial-Ground Map Fusion merges drone-captured aerial imagery with ground scanning data for multi-perspective, multi-scale unified modeling. This enables more comprehensive restoration of spatial structure and detail in large-scale complex models, significantly improving model completeness and realism.

Workflow:

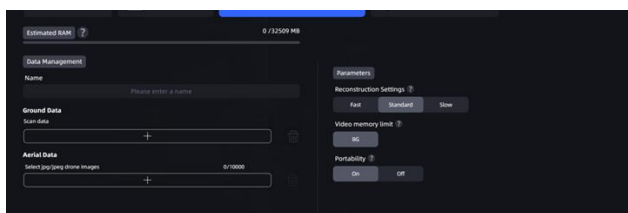
1. Upload Ground and Aerial Data

- **Ground Data:** Upload from L or P series devices. The interface displays the corresponding device type.
- **Aerial Data:** Select the folder containing drone photos. Requirements:
 - 100–10,000 images
 - JPG/JPEG only
 - Resolution >1024×768, consistent across all images
 - For PortalCam: upload the aerial photos and takeoff/landing point photo folder at the corresponding Aerial-Ground Fusion point. If fusion points were not set during drone takeoff/landing and only aerial photos are uploaded, there is a risk of degraded results or reconstruction failure.

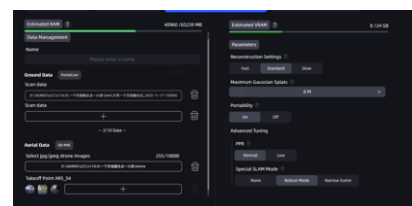
2. Set Model Name and Parameters



Aerial-Ground Map Fusion



no control points



with control points

4.3.6 Aerial Reconstruction

Aerial Reconstruction supports 3DGS reconstruction of large-scale models using only drone aerial images without ground equipment capture data.

Workflow:

1. Upload Aerial Data

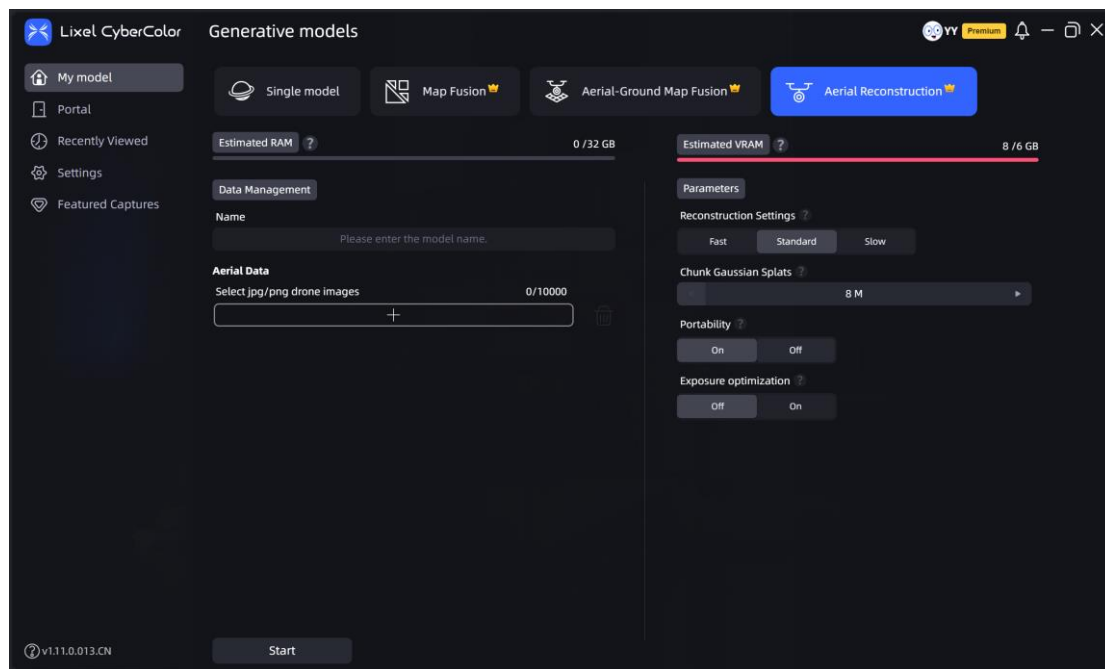
- Upload drone aerial data. The interface displays the corresponding device type.

2. Set Model Name and Parameters

Aerial Data: Select the folder containing drone photos.

Requirements:

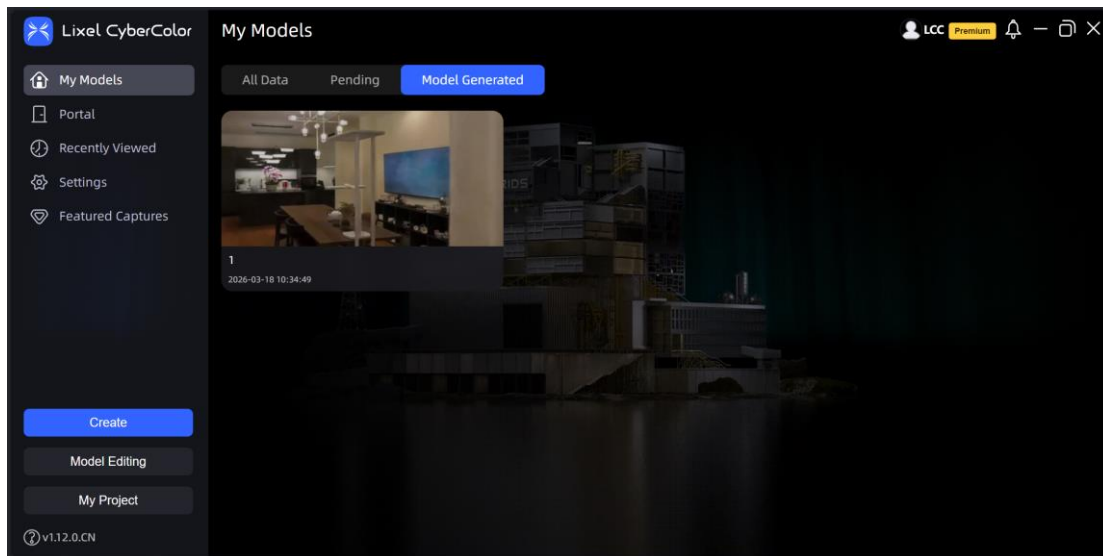
- 100–10,000 images
- JPG/JPEG only
- Resolution >1024×768, consistent across all images



Aerial Reconstruction

4.4 My Models

This area contains all LCC model data you have created and uploaded, including pending and generated data. View, edit, and manage your models here.



My Models

4.4.1 Model Generation and Editing

- **Create:** Click "Create" to begin the LCC model reconstruction workflow.
- **Edit Model:** Import exported .lcc model files and .ply format files into LCC Editor for editing.

4.4.2 LCC Model Management

Three data categories:

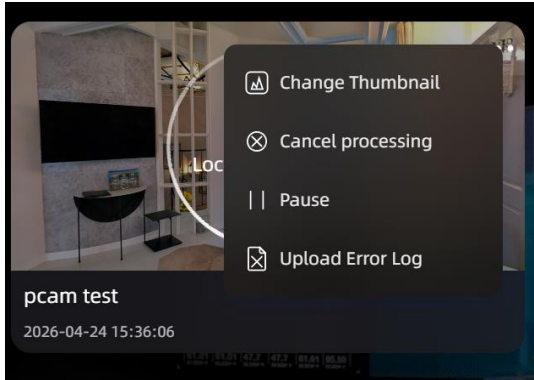
- **All Data:** All valid data categories plus all dynamic categories (reconstructing, exporting, publishing, paused).
- **To Be Reconstructed:** Local reconstruction failures, pending reconstruction, in-progress reconstruction, and paused reconstruction.
- **Generated:** All successfully reconstructed data.

Note: In the Generated list, double-click to enter Edit mode for direct editing; or click View to enter View mode.

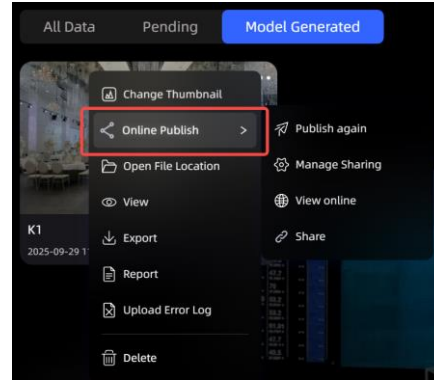
4.4.3 Model Settings

Each model card has a "..." menu in the upper-right corner. Click for operations based on the model's current status:

- **Reconstructing:** Change Cover, Cancel Reconstruction, Pause, Error Log Upload
- **Generated:** Change Cover, Publish, Publish Management, Open File Location, View, Export, Report, Error Log Upload, Delete



Reconstructing



Generated

1. Change Cover

Customize card cover images at any reconstruction stage.

Image requirements:

- Format: JPEG / JPG / PNG only
- Size: ≤ 5MB

2. Publish:

LCC model publishing lets you share created models with other users or groups. Choose between unprotected or protected sharing to control content privacy.

- **Unprotected sharing:** Anyone with the link can access the model without a password.
- **Protected sharing:** Password-protected access. Set a custom password or let the system auto-generate a strong password.
- **Model description (optional):** Add a brief description of the model's content, purpose, or other relevant information for reference when managing published content.
- **Link generation:** After clicking Create, the system generates a model link and allows direct copying for sharing.

3. Publish Management:

Click **Publish Management** to open the cloud publishing dashboard, where you can view all published links and details, and modify published link settings.

1. **Republish** For published models, you can modify the following link settings:
 - **Link parameters:** Change the URL suffix of the model link.
 - **Sharing permissions:** Toggle between password-protected and public access.
 - **Access password:** Set or change the model's access password.

- **Model description:** Update the description to provide visitors with clearer context.
2. **Cloud Publishing Management** Manage link availability by toggling Publish or Unpublish to control whether the link is publicly accessible. Access via the developer platform.
 3. **Online View** View the published model online.
 4. **Share** Click Share to quickly copy the link and access password.

Publish Model

Model Name
K1

Link

Random Custom

https://lcc-viewer.xgrids.cloud/pub/dbdccb- Custom URL (5-30 characters)

URL only supports lowercase letters, numbers, and "-", "."

Access Password

None Random Custom

Description

*If you use the publish model feature, the model and related data will be uploaded to the server for processing and analysis.

I confirm uploaded data complies with applicable laws

Cancel Share

Publish

4. Open File Location

Quickly navigate to the model file location on disk.

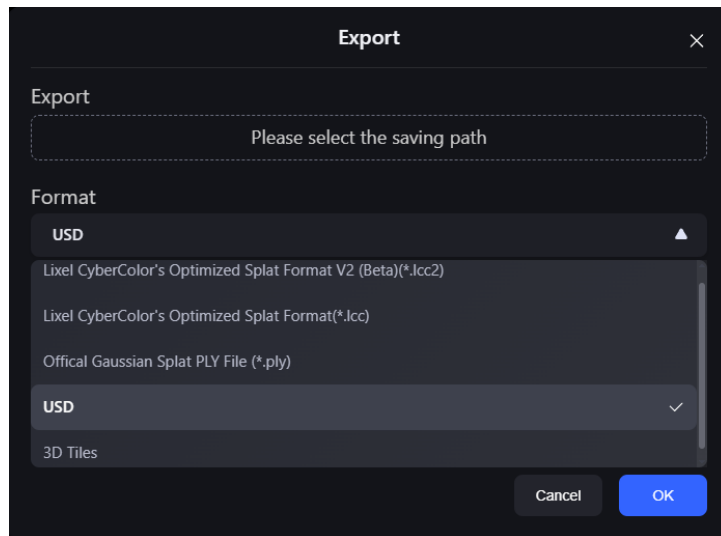
5. View

Open the model in View mode.

6. Export

LCC Studio supports exporting models in multiple 3DGS data formats: .lcc, .lcc2, .ply, .usd, and 3D Tiles. Two options are available when exporting .usd format:

- **USD (Recommended):** Based on 3DGRUT, supports Omniverse Kit 110.0+, supports ray tracing.
- **USDZ (Forward Compatible):** Based on 3DGUT, supports Omniverse Kit 107.3+, no ray tracing.



Export

6.1 File Format Descriptions

1. .lcc Format:

- Exports as a set of files containing the .lcc format data.
- Create a new folder for these files and rename it during export.
- LCC format compresses 70–90% compared to traditional formats, improving storage, viewing, and application efficiency.
- Compatible with XGRIDS Unity and Unreal Engine developer toolkits for further development.

Mesh export is also supported alongside LCC export. Mesh files are triangular mesh models exported with LCC assets, widely used in 3D modeling and rendering. Currently, Mesh files do not include texture information and support .obj and .ply formats only.

2. .lcc2 Format:

Next-generation LCC data format. .lcc2 offers smaller file sizes, smoother rendering, and faster model loading compared to .lcc.

3. .ply Format:

- Standard point cloud format for open-source 3DGS viewers.
- Compatible with UE/Unity 3DGS plugins for import and processing.
- Export at different precision levels, or export all PLY data.

4. .usd Format:

- USD format is exported via the NVIDIA 3DGRUT toolchain, supporting ray-traced rendering of Gaussian point clouds.
- Supports NVIDIA Omniverse Kit 110.0+ and Isaac Sim 5.0+.

Note: USD format is an NVIDIA Omniverse-specific format using UsdVolVolume Schema custom extensions. This format **cannot** be rendered in general-purpose 3D software such as Blender, Maya, Houdini, or Cinema 4D — it is only supported in NVIDIA Omniverse and Isaac Sim. For general compatibility, choose a different export format.

5. **.usdz Format:**

- USDZ format is exported via the NVIDIA 3DGUT toolchain using the NuRec standard, supporting non-linear camera projection (fisheye lens / rolling shutter).
- Supports NVIDIA Omniverse Kit 107.3+.

Note: USD format is recommended for better rendering quality and cross-platform compatibility. USDZ is a forward-compatible version without ray tracing support. USDZ export is only available when: ① firmware version ≥ 3.0 , ② Single Model reconstruction type.

6. **3D Tiles Format:**

- Tiled 3D data format for WebGIS and digital twin applications.
- Conforms to OGC 3D Tiles 1.1 standard, directly loadable in Cesium 131.
- One-click export of LCC Studio reconstruction results for web display.

Note: Currently supports Gaussian models with up to 4 million Gaussian points only.

Click "OK" to complete export.

7. Report

View detailed data reports for each locally generated model, including comprehensive reconstruction information.

8. Error Log Upload

Upload diagnostic logs to the LCC team for analysis. Select the relevant log duration. Ensure the log covers the period before and after the issue for accurate diagnosis.

4.5 Portal

Portal is a legacy workflow entry for viewing and managing legacy "Portal" data.

1. **Current Version Status** Starting from V1.12.0, the Portal entry is for historical content viewing only; new creation and import are no longer supported within this page.
2. **Alternative Workflow** To create or maintain multi-scene portal relationships, go to My Projects in Studio and use the project workflow in Editor for scene editing and publishing.
3. **Legacy Content Note** Existing portal projects missing required project files may

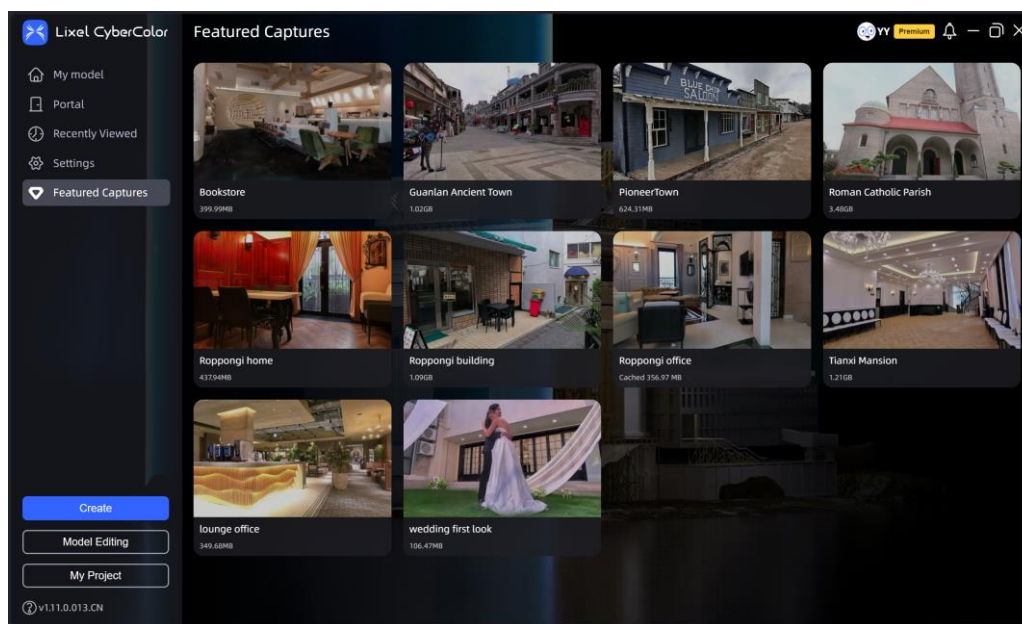
not display or open in the list. We recommend migrating content to the new project workflow in My Projects for continued maintenance.

4.6 Recently Viewed

Records all locally reconstructed models browsed in the software, distinguishing between .lcc and .ply model formats.

4.7 Featured Gallery

View curated model use cases selected by the LCC team.



Featured Captures

4.8 My Projects

Access LCC Editor from My Projects. In Editor, manage work content by project. Projects contain models, imported models, resources, and editing data for ongoing editing and version maintenance.

4.9 Settings

4.9.1 Account

1. **Change Avatar and Username:** Update your display avatar and name in LCC Studio.
2. **Modify Account Binding:** Change the phone number or email address linked to your account.
3. **Change Password:** Update your account password.

4. **Authorization Code:** Redeem authorization codes to unlock or upgrade features.
5. **Delete Account:** Delete your account. After deletion, the account can no longer log in to LCC, and all associated data will be permanently removed.

4.9.2 Advanced

View additional professional features with detailed parameters and descriptions.

4.9.3 General

1. **Project Path:** Configure LCC reconstruction data storage location.

Setting this to an SSD significantly improves generation and processing speed. Keep the data storage location separate from the software installation directory.

2. **Capture Data Backup Path:** When reconstructing from external storage, data is backed up to this local path. An SSD is recommended for faster generation speed.

4.9.4 Device

View your current device and sign out of all devices.

4.9.5 About

Access the latest version download link and tutorials. Submit feedback or improvement suggestions directly to the LCC team.

4.9.6 Language

Switch between available languages. Currently supported: Simplified Chinese, Traditional Chinese (Hong Kong), English, Japanese, Italian, German, and Spanish.

Note: If you change the language during editing or viewing, you must re-enter the workspace for the setting to take effect.

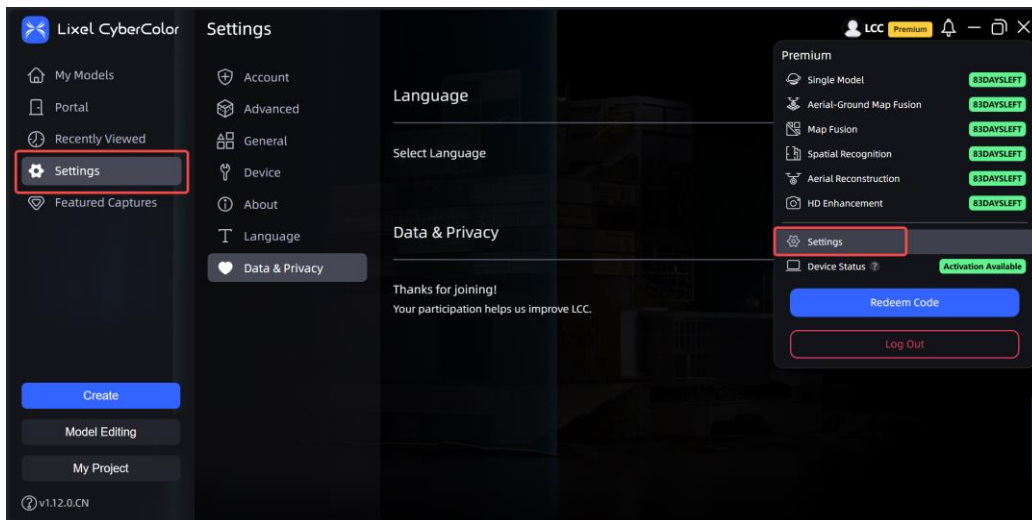
4.9.7 Redeem Authorization Code

Redeem via Settings → Account → Authorization Code → Redeem, or via the Permission Card in the upper-right corner of the LCC Studio interface.

4.10 Account Info

In the upper-right corner of the LCC Studio interface, account and permission information is displayed. Click to open the Permission Card. Click Settings to quickly navigate to account settings.

Permission Card: Displays your LCC permission tier, activated features, and feature expiration dates.



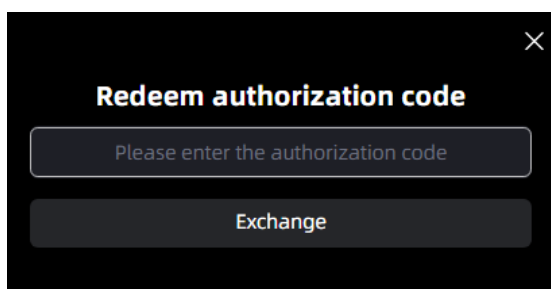
Account Information / Settings

4.10.1 Redeem Authorization Code

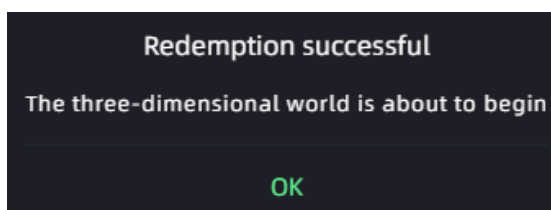
You can also redeem an authorization code from the Permission Card in the upper-right corner.

Steps:

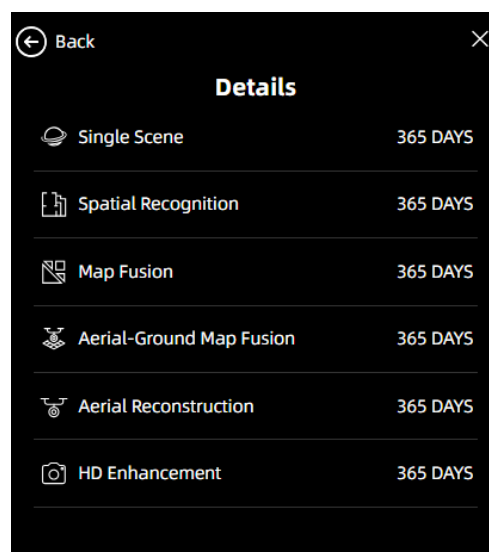
1. Click **Redeem Authorization Code** to open the dialog.
2. Paste the authorization code and click **Redeem**.
3. Verify the code corresponds to the correct permissions. Click **View Benefits** to see features and duration. If correct, click **Confirm Redemption**; if incorrect, go back and re-enter.
4. On success, the Permission Card updates to reflect the new permissions.



Redeem Authorization Code



Successful



Authorization Details

4.11 Announcements

Important notices and system guides: software updates, feature changes, and answers to common questions.

4.12 Help and Version Info

Located in the lower-left corner of the LCC Studio interface. Click to access the user manual.

1. **User Manual:** Click Help to access detailed operation guides and FAQs for the current version.
2. **Software Version:** Displays the current LCC Studio version for reference.

5. LCC Editor

LCC Editor is a desktop application for editing and viewing projects/scenes. It organizes work content by "project," supporting import and management of project resources, creating and maintaining editing data (annotations, measurements, viewpoints, 3D Layout floor plans, Scene Reports) in 3D scenes, and synchronizing results to online viewing through publish/update for sharing and delivery.

LCC Editor integrates editor and viewer capabilities. Edit mode and View mode switch seamlessly to meet collaboration needs of different roles within the same project.

5.1 Product Overview

5.1.1 Edit / View Mode

LCC Editor — Edit Mode: Configure and edit scenes and assets. Supports measurement, annotation, post-processing adjustments, camera path recording and video rendering, viewpoint and Scene Report output. Supports overlaying external 3D assets.

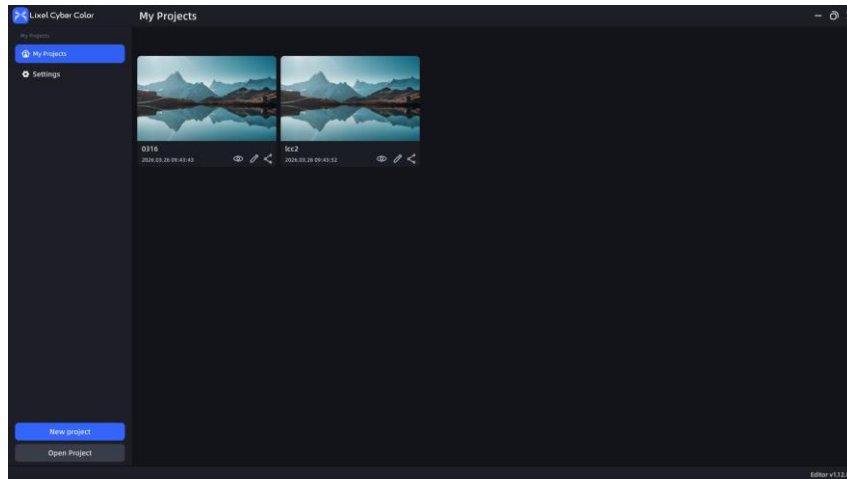
LCC Editor — View Mode (Viewer): Browse opened LCC scenes in View mode. Supports basic navigation, viewing guided tours and Scene Reports, and distance and area measurement. Great for presentations, on-site communication, and deliverable handoff.

5.1.2 Download and Installation

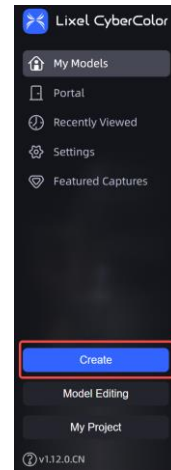
See Section 3: Download and Installation.

5.2 LCC Editor Homepage

Double-click to open LCC Editor, or enter from LCC Studio → My Projects.



LCC Editor Homepage



My Projects

5.2.1 My Projects

My Projects provides centralized management of created projects displayed as cards.

Project card and list menu operations:

Common Operations (unpublished and published):

1. **View:** Open project in View mode
2. **Edit:** Open project in Edit mode
3. **Rename:** Modify project name
4. **Open Folder Location:** Open the project directory for viewing project files and exports
5. **Delete:** Deletes the project folder and its contents

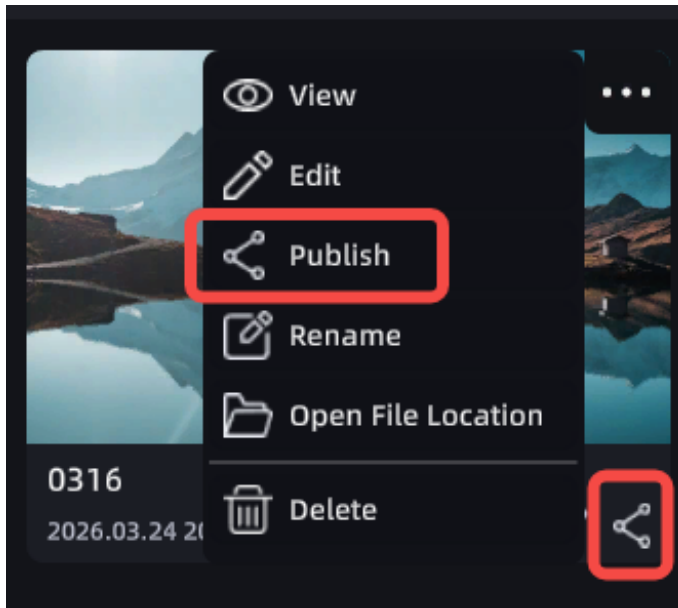
Draft Projects:

Publish: Publish the project to the cloud to generate a Web Viewer link for sharing and online viewing.

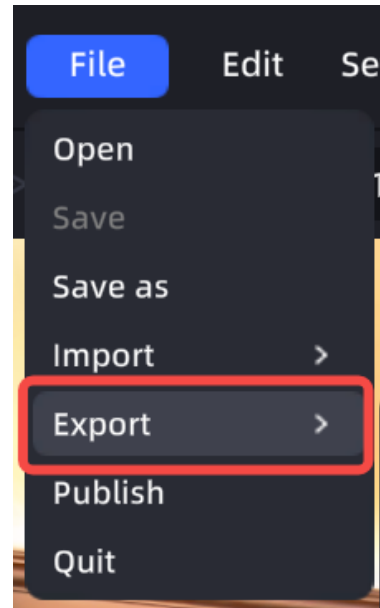
Two entry points for publishing:

1. My Projects → project card lower-right quick publish button, or card upper-right "..." → Publish
2. LCC Editor editing interface → Menu Bar → File → Publish

For publish details, see Section 4.4.3 — Model Settings — Publish.



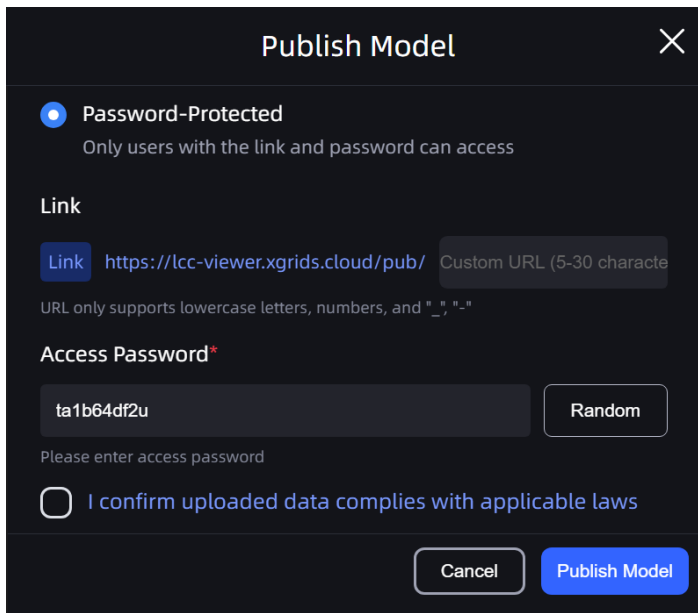
Entrance to publishing projects



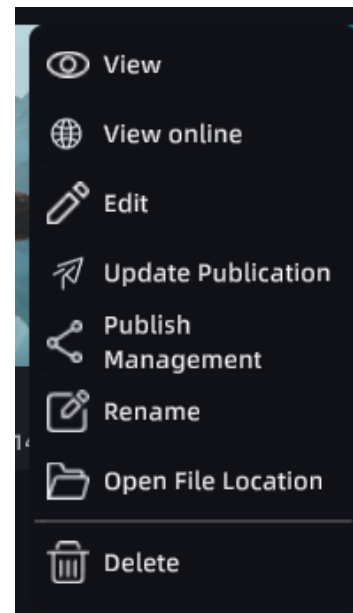
Publish from Editor

Published Projects:

1. **Online View:** Open and view the project in Web Viewer
2. **Update Publication:** Sync latest project content to Web Viewer
3. **Publish Management:** Open the publish management page for managing published links and permissions



Publish



Published projects

5.2.2 Create New Project

Create a new project workspace.

Steps:

1. Click **Create New Project** in My Projects
2. Enter project name:
 - ≤60 characters
 - Supports: Chinese characters, letters, numbers, "_" and "-"
 - Does not support: spaces or special characters (% ? # & / \ = : ; < > | " *)
 - Non-compliant names may prevent shared links from opening correctly.
3. Select project storage path
4. Confirm to enter the Editor interface

5.2.3 Open Project / Model

Two types of objects can be opened:

1. **Open Project:** Continue editing the project's models and editing data (assets, annotations, measurements, viewpoints, etc.).
2. **Open Model File:** Open a single model for viewing or temporary editing. For long-term maintenance, generate a project via **Save**.

5.2.4 Settings

1. **Language:** Switch between Simplified Chinese, Traditional Chinese (Hong Kong), English, Japanese, Italian, German, and Spanish.

Note: If language is changed during editing or viewing, re-enter the workspace for the setting to take effect.

2. **About:** Access the latest version download link and tutorials. Submit feedback directly to the LCC team.
3. **Data & Privacy**

5.3 LCC Editor Interface Overview



LCC Editor Interface Overview

1. **Menu Bar:**
File, Edit, Settings, Help — common function entries for file management, editing, software settings, and help.
2. **Quick Access Toolbar:**
High-frequency operation buttons for quick use.
3. **Toolbar:**
Editing tools including Selector, Color Grading, Snapshot, Measurement, Annotation, 3D Layout, etc.
4. **Mode Switch:**
Toggle between Edit mode and View mode.
5. **View Controller:**
Switch navigation modes, rendering views, origin point, and Height Filter.
6. **Asset List:**
Displays assets in the current project for centralized management.
7. **Properties Panel:**
View and adjust parameters of the currently selected asset.
8. **File Path Display Bar:**
Shows the current project file path.
9. **Status Bar / Prompt Area:**

- Displays software version, FPS, and other performance info.
- Shows operation feedback and prompts.

10. 3D Viewport:

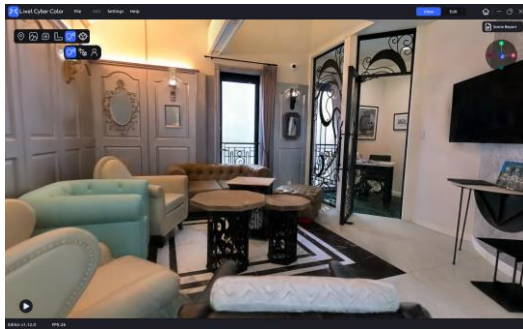
Scene editing and preview area supporting panoramic browsing, rotation, and other interactions.

5.4 Three Navigation Modes

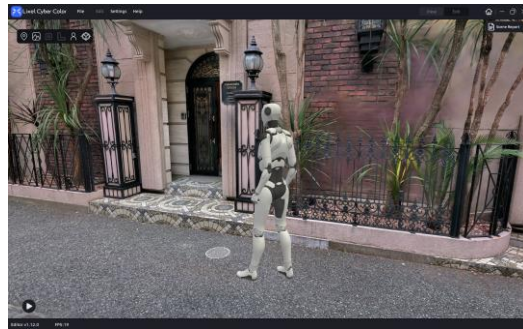
LCC Editor provides three navigation modes: Flythrough, Pivot, and Avatar. Click the **Perspective Switching** button to toggle between them.

In Edit mode: switch between Flythrough and Pivot.

In View mode: switch between Flythrough, Pivot, and Avatar.



First person flythrough mode

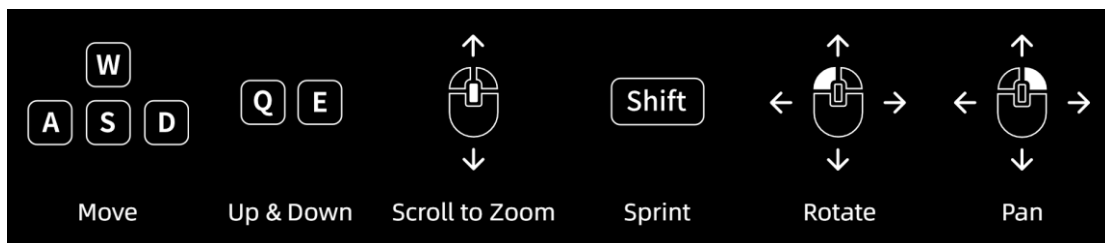


Avatar mode

5.4.1 First-person Flythrough Mode

First-person navigation simulating an "as you see it" experience, as if standing in the scene looking around. The view follows mouse and keyboard input. Ideal for immersive indoor or detail-area browsing.

- **Controls:**



First person flythrough mode

Control	Function
W / A / S / D / Q / E	Forward / Left / Back / Right / Down / Up

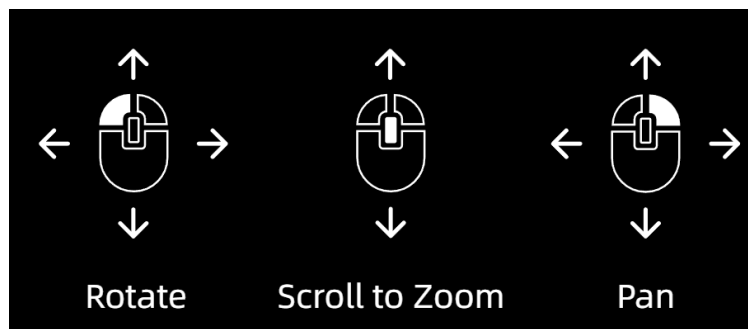
Shift	Sprint
Scroll wheel	Adjust movement speed
Left-click drag	Rotate view
Right-click drag	Pan view

5.4.2 Pivot Mode

The camera rotates around a fixed "pivot point" in the scene, suitable for global model inspection.

Since panning the camera also shifts the pivot point, switching suddenly from Flythrough to Pivot mode may cause erratic rotation due to center offset. The **Origin Point** function becomes **Reset Center Point** — click to recalibrate the camera position and restore the model center for easier operation.

- **Controls:**



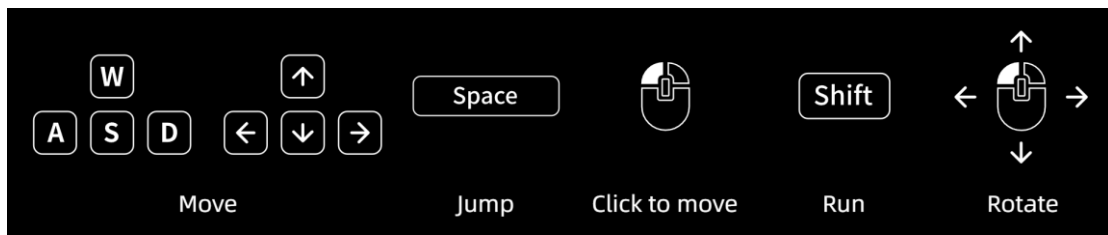
Pivot mode

Control	Function
Scroll wheel	Zoom
Left-click drag	Rotate around pivot point
Right-click drag	Pan view
Double-click a point	Quick-switch pivot center

5.4.3 Avatar Mode (View Mode Only)

Navigate as a virtual character walking through the scene. Only available in View mode. Supports immersive flythrough only — measurement and annotation are not available.

- Controls:

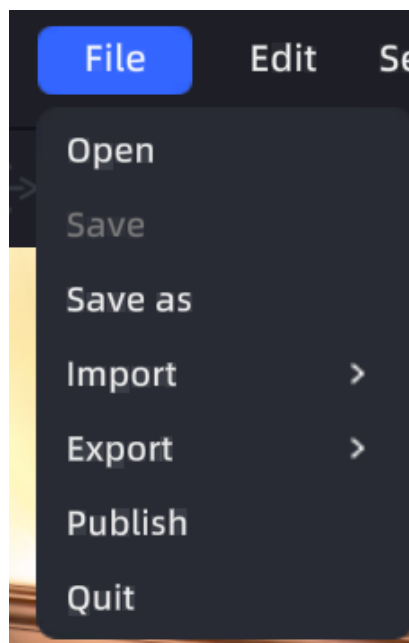


Avatar Mode (View Mode Only)

Control	Function
W / A / S / D	Forward / Left / Back / Right
Space	Jump
Shift	Sprint
Left-click target position	Auto-navigate to location
Left-click drag	Rotate view

5.5 File

Open, save, save as, import, export, publish, and exit operations for projects/models in Editor.



File

5.5.1 Open

Open project files or model files from local storage.

- **Open Project:** Continue editing the same work content (models, assets, annotations, measurements, etc.).
- **Open Model (e.g., .lcc / .ply):** For temporary viewing/editing. For long-term maintenance, generate a project via **Save**.

Steps:

1. Menu Bar → File → Open
2. Select the file to open
3. Confirm

5.5.2 Save

Save the current project's editing state.

Steps:

- a. Ctrl + S, or Menu Bar → File → Save
 - b. Select save location — choose an empty folder or create a new one
 - c. Click OK
1. **Auto-Save:** Generates project backups for recovery after abnormal exits.
 - Auto-save applies to projects only (not temporary projects).
 - Backups are stored in the project's autosave folder (e.g., D:\Project1\autosave).
 - Retains one copy for one month.
 - Triggers after 3 minutes of inactivity, repeating every 10 minutes.

First Save of Temporary Project: If the current work is a temporary project, the first save requires:

- a. Enter a project name
- b. Select a project storage path
- c. Confirm to generate a formal project and continue editing

5.5.3 Save As

Save the current project as a new version, keeping the original unchanged.

Steps:

1. Menu Bar → File → Save As
2. Select save location — choose an empty folder or create a new one

3. Click OK

5.5.4 Import

Import external resources into the current project/scene.

Entry: Menu Bar → File → Import

Currently supported import types:

- LCC
- LCC2
- PLY
- FBX
- GLB
- OBJ
- Collision
- 3D Layout

Notes and Limitations:

1. LCC and LCC2 files cannot currently be mixed within the same project.
2. LCC2 does not currently support model editing features (Selector, Crop, Color Grading).
3. File size limits:
 - Single import file ≤ 100MB
 - Multiple files total ≤ 1GB
4. Texture resolution limit: ≤ 2048×2048 per file.
5. Supported texture formats: .jpg and .png only.

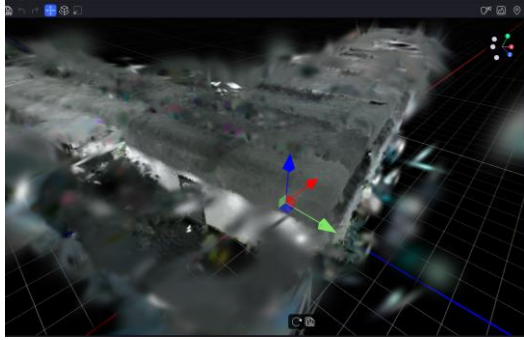
Import .ply (3DGS)

Open .ply (3DGS) files, loading as viewable/editable scene.

Entry: Menu Bar → File → Import → PLY

After opening, the Quick Access area provides translate and rotate controls. Bottom controls include reset and save.

- **Translate:** Move asset position
- **Rotate:** Adjust asset angle
- **Reset:** Restore to initial state
- **Save:** Save specific view settings; next opening will automatically switch to that view



Translate



Rotate

For .ply files generated within LCC Studio, the software may recognize them as editable LCC data and maintain consistent viewing and editing behavior.

For third-party .ply files, the origin point/initial view may differ, but this generally does not affect usage.

When importing .ply (3DGS), the system may perform internal conversion, which may have some impact on performance and rendering quality.

5.5.5 Export

Export editing results as deliverable files or data. Export types are based on the current version's File → Export menu.

Currently supported export types:

- Project
- LCC
- LCC2
- PLY
- OBJ (under 3D Layout function)
- JPEG (under 3D Layout function)
- Collision

Note: When LCC2 has been imported, exporting to LCC2 and PLY is not supported.

5.5.6 Publish

Publish the project as a Web Viewer link for sharing and online viewing.

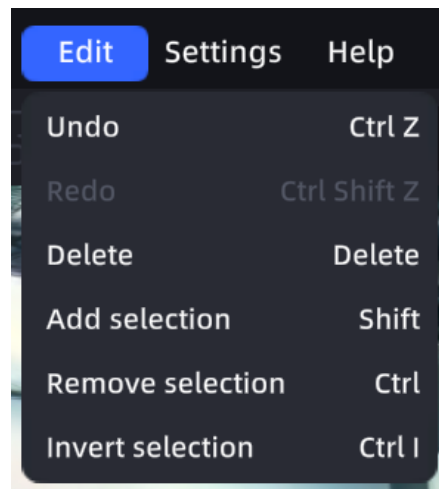
Operations are the same as project page publish operations. See Section 4.4.3 — Model Settings — Publish.

5.5.7 Exit

Close the current software.

5.6 Edit

Editing and selection functions for model content.



Edit menu

5.6.1 Undo

How to: Press **Ctrl + Z**, or click the Undo button in the Quick Access Toolbar.

Supported Undo/Redo operation types:

1. Selector functions: Select area, Add to Selection, Subtract from Selection, Invert Selection
2. Contrast adjustment
3. Saturation adjustment
4. Brightness adjustment
5. Crop area

5.6.2 Redo

How to: Press **Ctrl + shift + Z** to restore undone operations.

Supported operation types are the **same as Undo**.

Note: Redo is only activated after executing Undo. Once a new operation is performed, Redo history is immediately cleared.

5.6.3 Delete

Delete selected objects or elements.

An important tool for cleaning invalid or interfering data from models. Through flexible selection methods, you can quickly target areas or objects for removal via cropping, improving clarity and usability.

Cropping does not directly modify original data. Save processed results as a new

model to preserve original data integrity.

5.6.4 Add to Selection

When using any selection mode (Clipping Box, Rectangle, Polygon, Brush), each selection replaces the current selection by default. To select multiple areas and keep them all:

How to: Hold **Shift** while performing a new selection.

- New selection objects are added to the current selection without overwriting.
- Selection box edge displays **green** during add selection.



Original state



Add to selection



Visual guide (green outline)

Best for:

- Selecting objects from multiple disconnected areas
- Adding missed content after initial selection
- Combining different selection tools for complex selections

5.6.5 Subtract from Selection

Remove unwanted objects from your current selection.

How to: Hold **Ctrl** before performing a new selection.

- Previously selected objects within the new selection area are deselected. Unselected objects remain unaffected.
- Selection box displays **yellow** during subtract selection.



Original state



Subtract from selection



Visual guide (yellow box)

Best for:

- Refining a broad selection by removing specific areas
- Working with Add to Selection for precise complex selections
- Preventing accidental deletion of desired content

5.6.6 Invert Selection

Toggle between selecting objects **inside** vs. **outside** the selection box.

How to: In any selection mode, press **Ctrl + I** to toggle. The selection updates immediately.



Select inside



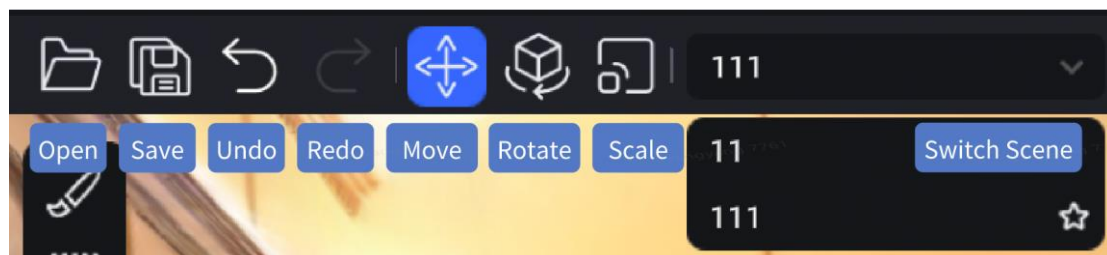
Select outside

Best for:

- Selecting everything except a specific area
- Quick exclusion operations in large scenes

5.7 Quick Access Toolbar

Provides Open Folder, Save, Undo, Redo, Move, Rotate, Scale, Switch Scene, and other high-frequency operation buttons.



Quick Access Toolbar

1. **Undo:** Revert last action
2. **Redo:** Restore undone action
3. **Move / Rotate / Scale:** Transform target objects

5.7.1 Switch Scene

The dropdown list supports switching between scenes in the same project. Each scene corresponds to independently viewable and editable content (e.g., different imported LCC/PLY files, LCC projects, or scenes created via transition annotations).

Steps:

1. Click the **Scene Dropdown** in the top toolbar.
2. Select the target scene name.
3. The system switches to the selected scene and refreshes the display.

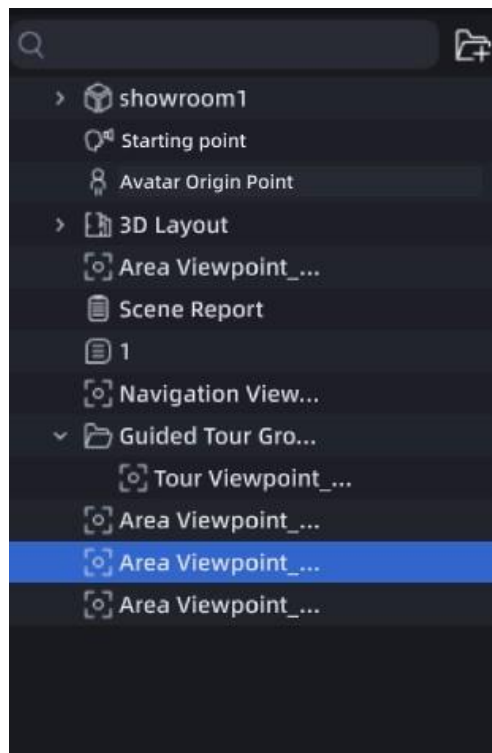
After switching:

- The 3D view displays the selected scene's content.
- The Asset List updates to the selected scene's assets and data.
- Annotations, viewpoints, measurements, 3D Layout floor plans, and Scene Reports update with the scene switch.

5.8 Assets and Properties

5.8.1 Asset List

Centralized management of objects and data in the current project/scene (models, annotations, guided tours, measurements, etc.). Supports search, locate, grouping, visibility toggle, rename, delete, and relink.



Assets

5.8.1.1 Quick Start

1. **Find and Locate an Object**
 - a. Find the target entry in the Asset List.
 - b. Right-click → Locate.
 - c. The 3D view jumps to and selects the asset.
2. **Grouping (Folders)**
 - a. Create a folder: right-click empty space in the Asset List, or click the **Create Folder** button.
 - b. Drag items onto a folder to organize.
 - c. Drag items out of a folder to ungroup (if the type supports drag).
3. **Show / Hide** Click the eye icon to toggle 3D view visibility of the asset.
4. **Relink Missing Resources**
 - a. Common when resource files have been moved, renamed, or deleted.
 - b. When an item shows a missing resource state (e.g., turns red or shows a warning), right-click → **Relink**.
 - c. Select the correct file in the file picker and confirm.
 - d. The item restores to normal display.

5.8.1.2 Basic Operations

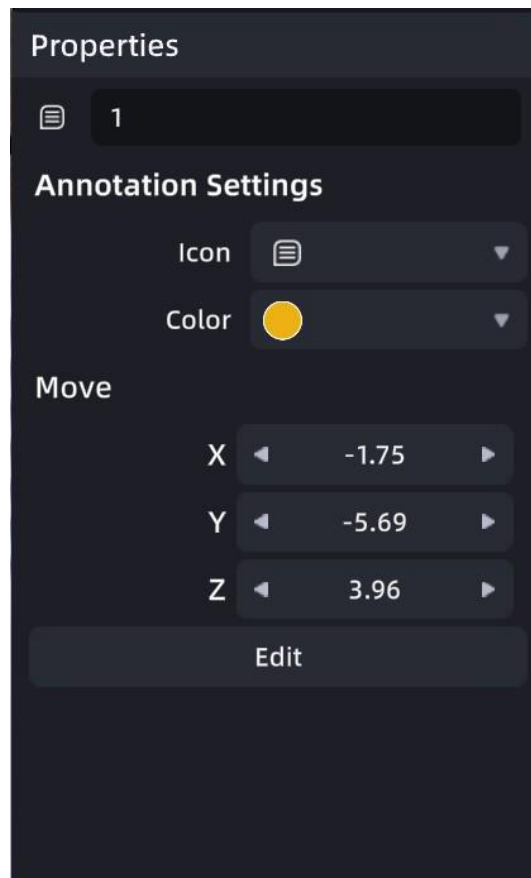
1. **Search:** Enter keywords in the search box to filter.
2. **Rename:** Double-click the item name, edit, press Enter.
3. **Select / Multi-select**
 - Single-select: Click an item.
 - Deselect: Click empty space in the list or 3D view.
 - Multi-select: Shift for continuous range; Ctrl for individual item toggle.
4. **Drag and Drop**
 - Same-level reorder: Drag to new position; release when insertion line appears.
 - Move into folder: Drag item onto folder.
 - Move out of folder: Drag item out (if type supports drag).
 - Batch drag: Multi-select then drag (same-level items only; some types don't support drag).
5. **Right-click Menu**

Right-click menu varies by asset type. Common items:

- **Rename, Delete, Hide/Show**
- **Create Folder** (in empty space or during multi-select)
- **Relink** (for missing external file resources)
- **Clone / Paste** (for models, 3D Layout items, folders/groups)
- **Ungroup** (for folders/groups)
- **Export** (for Media Render file groups)
- **Render** (for guided tour viewpoint groups)
- **Locate** (jump to the location of an asset in 3D view)

5.8.2 Properties Panel

View and adjust parameters of the currently selected asset (name, position, rotation, scale, export, render, collision toggle, etc.). Auto-syncs with 3D view selection.



Properties panel

5.8.2.1 Quick Start

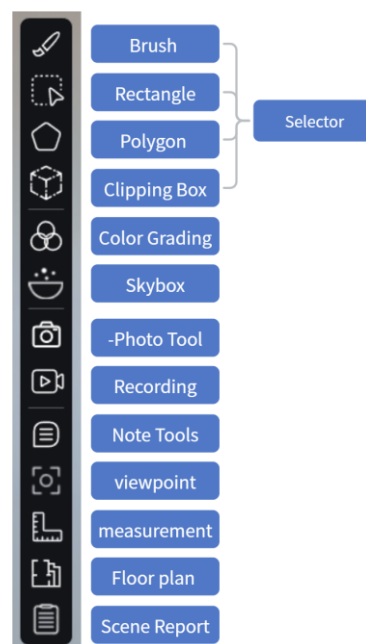
1. **Select Asset:** Click an object in the Asset List or 3D view. The Properties Panel

displays that object's properties.

2. **Adjust Values:** Enter values in Move/Rotate/Scale fields. The 3D view updates in real time.
3. **Toggle Switches:**
 - **Environment Data:** Control display of model environment data. Not affected by model cropping. Can toggle freely in Editor and Viewer for spatial models with environment data.
 - **Collision:** Enable/disable spatial collision. Default: enabled when model opens.
4. **Function Buttons:** Click Edit / Export / View / Update to enter the corresponding function or execute the operation. Available buttons vary by asset type. For editing operations, use Confirm / Save within that page.

5.9 Editing Tools

Main editing capabilities for the Editor.



Editing tools

5.9.1 Selector

Flexible selection for targeted operations.

5.9.1.1 Brush Selection

Drag the mouse to "paint" a selection region, which the system projects into 3D from your current camera view. All objects within the projected volume are selected.

How to use:

- a. Click the **Brush** tool.
- b. Hold left mouse button and drag to paint.
- c. Release to complete selection.



Brush



After selection



Brush selection

Best for:

- Local selections of complex-shaped objects where rectangle/polygon would be imprecise
- Fine-tuning add/subtract selections after broad initial selection

5.9.1.2 Rectangle Selection

Drag a rectangle on screen. The system projects it from the camera into a 3D selection volume.

How to use:

1. Click the **Rectangle** tool.
2. Hold left mouse button and drag to define area.
3. Release to complete.



Rectangle
Select

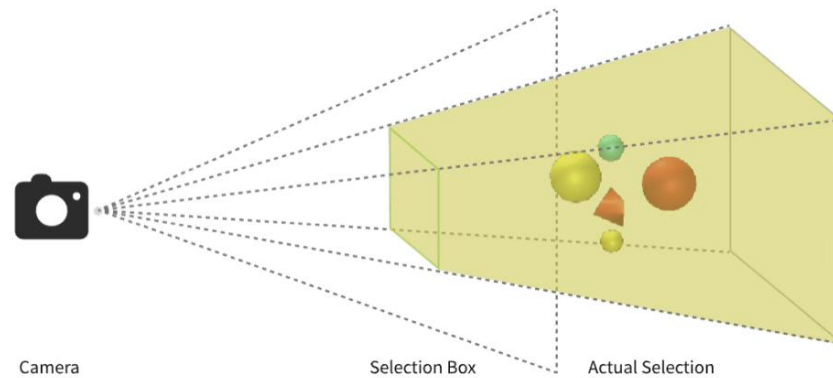


Rectangle Select

Best for:

- Quick rough selection as a first step before refining
- Efficient edge cleanup — crop sparse, blurry model edges from a macro view

How Camera Projection Works: Imagine a flashlight shining from your camera through the rectangle. Everything illuminated in 3D space gets selected.



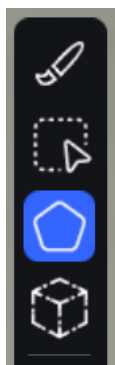
Principle of camera projection

5.9.1.3 Polygon Selection

Click points to draw a custom closed shape. The system projects it from the camera view into 3D.

How to use:

1. Click the **Polygon** tool.
2. Left-click to place each vertex.
3. Right-click during drawing to cancel.
4. Click the first vertex or double-click to close the polygon.
5. Objects within the projected volume are selected.



Polygon
select



Polygon select

5.9.1.4 Clipping Box

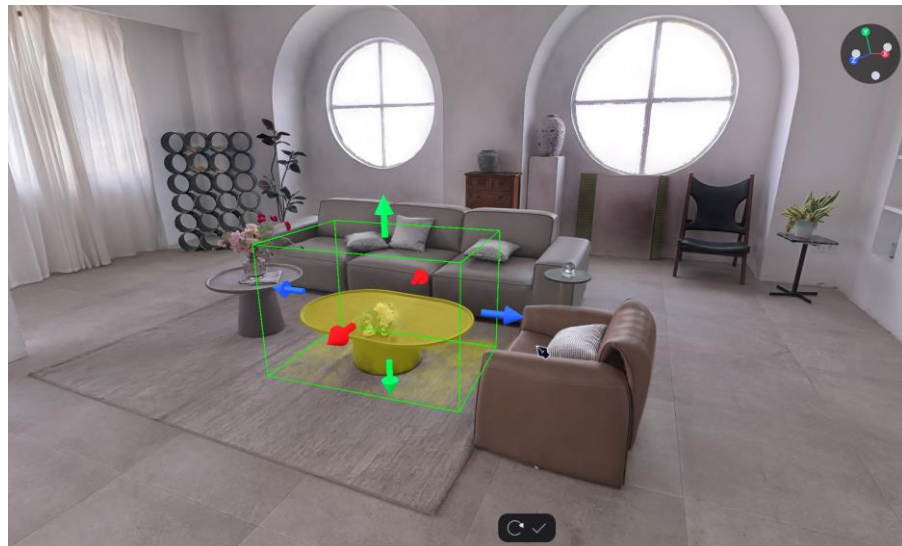
The only true 3D selection method — define a precise cubic region independent of camera angle.

How to use:

1. Click the **Clipping Box** tool.
2. Click three times:
 - First click: first corner of the base rectangle
 - Second click: opposite corner (forms the base)
 - Third click: set height (Z-axis)
3. A transparent cube appears showing the selection range.
4. Click to confirm.



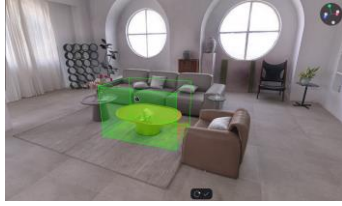
Clipping
box



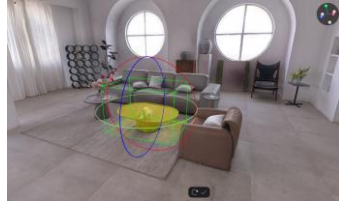
Clipping box

Edit the Clipping Box:

- **Translate:** Drag the cube to reposition.
- **Rotate:** Spin around any axis.
- **Scale (Stretch):** Elongate or compress along any axis.
- **Reset:** Discard and recreate from initial state.
- **Confirm:** Apply the selection defined by this cube.



Translate



Rotate



Zoom

Best for:

- Cleaning floor/ceiling artifacts (e.g., debris, mis-scanned pipes)
- Isolating a specific room or shelf by encompassing it, then inverting
- Layered structures (multi-tier shelving, stairwells) without affecting adjacent layers
- Industrial applications requiring predictable, consistent boundary control

5.9.1.5 Tips and Shortcuts

View Control Tips

Selection modes auto-lock the camera to prevent accidental movement. Temporary unlock is available.

1. **View Lock:** Camera locks automatically in Rectangle, Polygon, and Brush selection modes. Mouse drag and WASD keys do not affect the camera while locked.
2. **Temporary Unlock:** Hold **Alt** to unlock the camera:
 - **Alt + Left-click drag:** Rotate
 - **Alt + Right-click drag:** Pan
 - **Alt + Scroll wheel:** Zoom
 - **Alt + W/A/S/D:** Move

Release **Alt** to re-lock and resume selection.

3. **Cancel Selection:** While drawing (before completing the shape), press **Esc** or right-click to cancel without affecting existing selections.
4. **Clear All Selections:** Press **Ctrl + Shift + D** to deselect everything.

Selector Comparison:

Scenario	Recommended	Description
Quick selection of roughly regular areas	Rectangle	Simple, efficient, smooth

Precise selection of complex irregular areas	Polygon	Accurate, flexible, avoids mis-selection
New users or quick tasks	Rectangle	Easy to learn
High precision or edge control needed	Polygon	User-defined detailed selection

Shortcut Overview:

Function	Shortcut	Description
Crop selection	Delete/Backspace	Delete currently selected objects
Add to selection	Shift	Hold while selecting to add to existing selection
Subtract from selection	Ctrl	Hold while selecting to remove from existing selection
Invert selection	Ctrl+I	Toggle inside vs. outside selection
Cancel selection	Esc/Right-click	Cancel current drawing (keeps existing selection)
Clear all selections	Ctrl+Shift+D	Deselect all
Undo	Ctrl+Z	Revert last action
Redo	Ctrl+shift+z	Restore undone action
Temporary view unlock	Alt(hold)	Unlock camera for navigation
Exit cropping mode	Esc	Exit cropping (history is cleared)

5.9.2 Color Grading

Adjust brightness, contrast, and saturation with real-time preview. Settings save automatically and sync across platforms (Web Viewer, View mode).



Color Grading

5.9.2.1 Usage

1. Click **Color Grading** in the toolbar to open the panel.
2. The panel contains Brightness, Contrast, and Saturation sliders.
3. Drag sliders to adjust. Changes display in real time and save automatically, maintaining the same effect across platforms.

Tips:

- Moderate adjustment: Excessive brightness or contrast may cause detail loss.
- Stylized processing: High saturation suits certain artistic styles but not all scenes.

Sample results:



Original



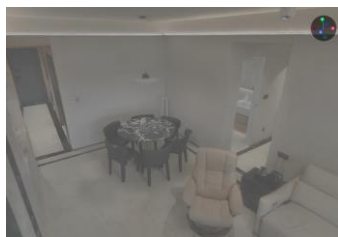
Brightness=1



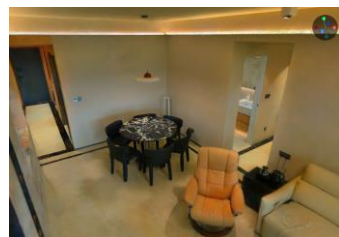
Brightness=-1



Contrast=1



Contrast=-1



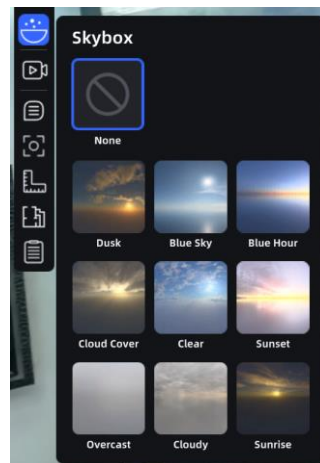
Saturation=1



Saturation=-1

5.9.3 Skybox

Replace scene background with preset templates for different time-of-day and weather atmospheres. Select directly from presets to preview and apply.



Preset skyboxes

5.9.3.1 Usage

1. Click **Skybox** to open the settings panel.
2. Select a preset template from the panel to preview and apply.

Note: Skybox conflicts with environment data — only one mode can be displayed in subsequent scene loading.

5.9.4 Photo Tool

Capture scene snapshots with selectable aspect ratios for quick image output and unified export.

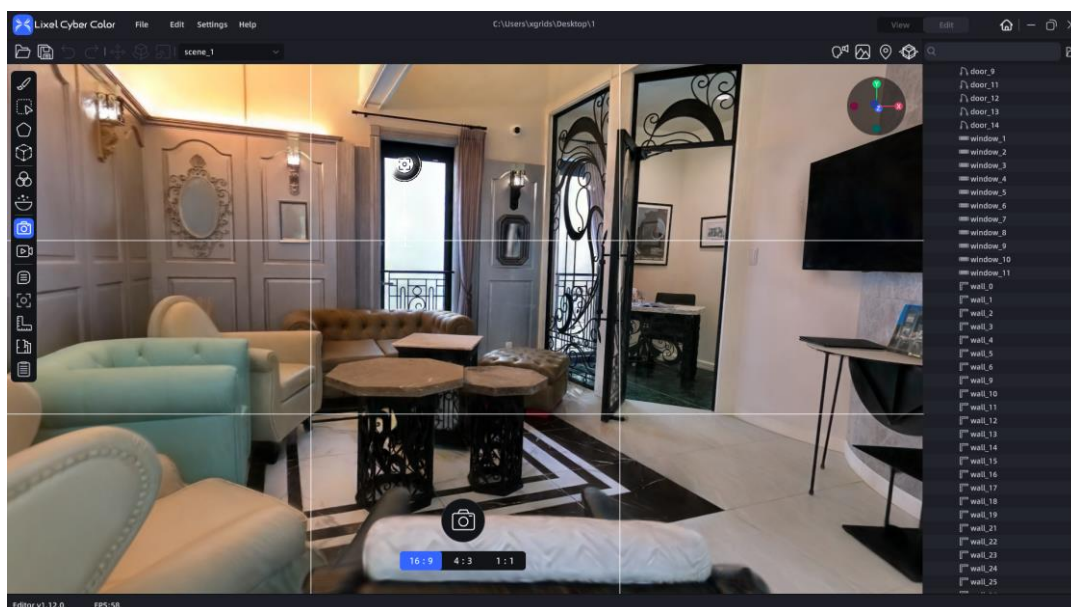


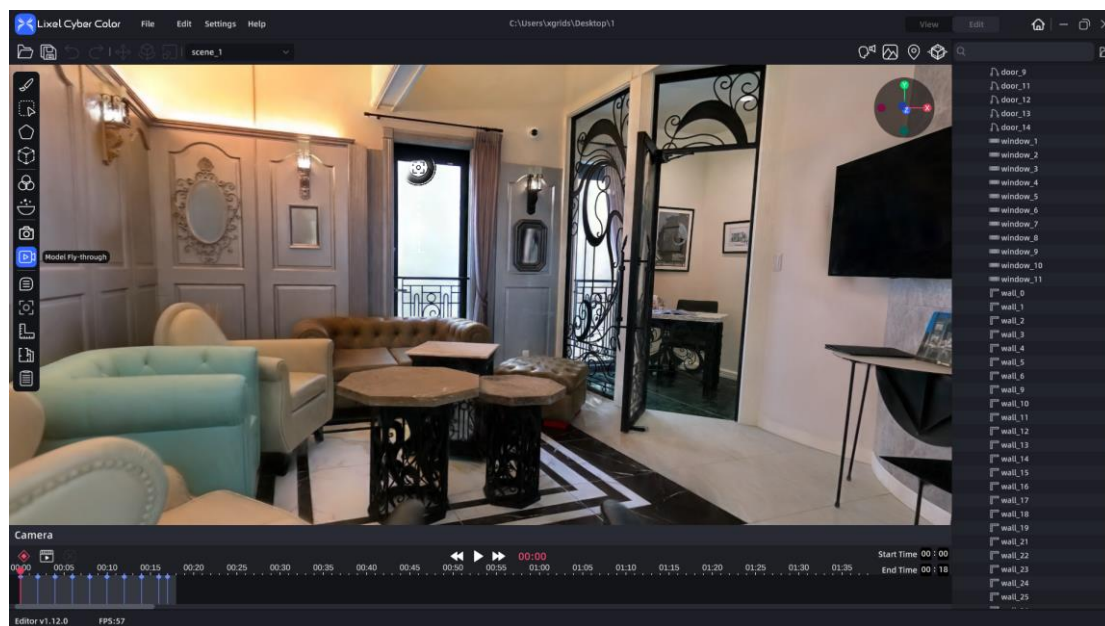
Photo Tool

5.9.4.1 Workflow

1. Click **Photo** to enter photo mode.
2. Switch aspect ratio as needed. Default: 16:9.
3. Click the capture button to render the current view as an image, added to the Media Render folder in the Asset List.
4. In the Asset List, click to preview. Right-click → Export to save locally.
5. Double-click an image asset to view the full photo.

5.9.5 Scene Flythrough

Camera navigation recording and video output.



Scene Flythrough Recording

5.9.5.1 Workflow

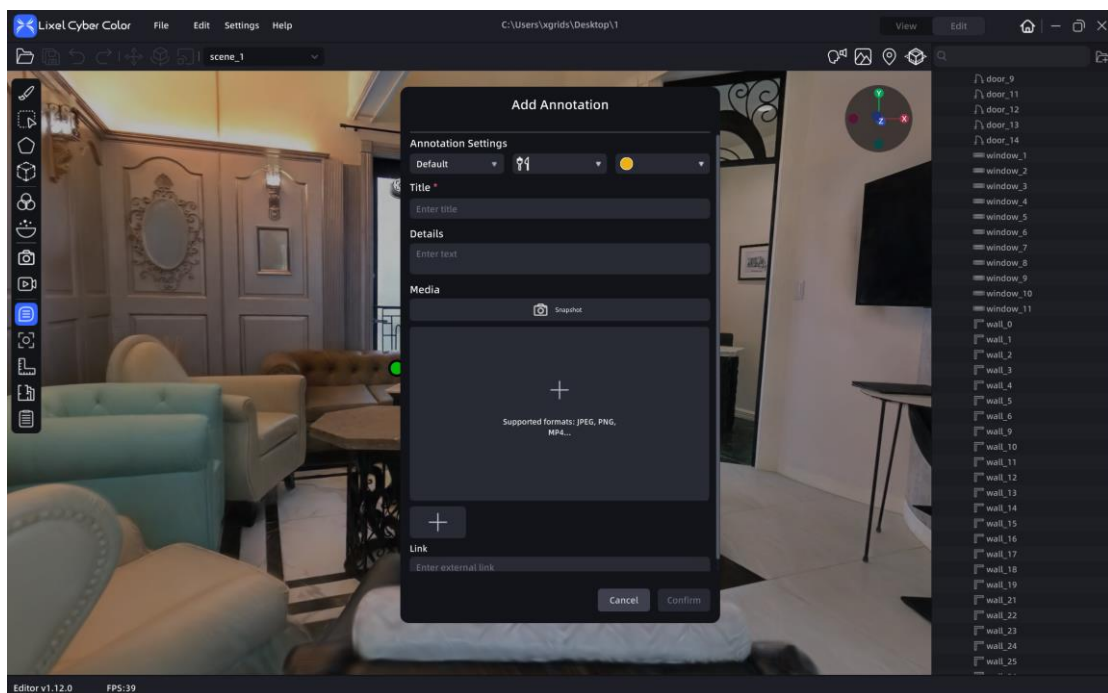
- a. Click **Add Keyframe** to record the current camera position and view angle on the timeline.
- b. Navigate to the next desired position. Click Add Keyframe. Repeat until all keyframes are placed.
- c. Manually set the end time. Default range: 0s–1m55s.
- d. Click **Video Output** to open the video rendering panel.
- e. In the rendering panel, select your preferred render parameters.
- f. Optionally check **Add to Media Render List** to make the video available for cloud sharing.
- g. Click OK.

Usage Notes:

- Select a keyframe and click Delete to remove it.
- Click Play to preview the recorded camera path.
- Drag the playhead to scrub through the animation in real time.
- Adjust start/end times on the timeline to modify the video range. Default: 0s–1m55s.

5.9.6 Annotations

Add clickable annotation points with title, body, media, and links. Two types: **Display Annotation** (shows content) and **Transition Annotation** (links to another scene).



Add Annotation

5.9.6.1 Workflow

1. Add Annotation

- a. Click **Annotations** in the toolbar to enter annotation mode.
- b. Click the target model surface to place the annotation point.
- c. In the annotation editing panel, select annotation type:
 - **Display Annotation:** Shows title, body, media, and link information.
 - **Transition Annotation:** Links from the current scene to another scene.
- d. Follow the panel prompts to configure content (see details below).
- e. Click **Confirm** to complete.
- f. Click **Annotations** again in the toolbar to exit annotation mode.

2. Display Annotation

- a. **Icon Style / Color:** Select from dropdown.
- b. **Title (required):** ≤20 characters.
- c. **Body:** ≤1,000 characters.

3. Add Media ⚡

Two methods for adding media:

a) Snapshot

1. Click the **Snapshot** button to enter the annotation snapshot view.
2. Navigate to adjust the angle, then click Capture to record the current scene view and add it as annotation media. Maximum 5 media items.
3. Click **Done** to exit the snapshot view and return to the annotation dialog.

b) Add File

- Click **+** in the media area to add files.
 - Supported formats: JPEG / PNG / MP4
 - Maximum 5 files (mixed types allowed)
 - Maximum 500MB per file
5. **Add Link:** Paste a URL in the link input field.
 6. **Transition Annotation**
 - a. **Title (required):** ≤20 characters.
 - b. **Select Target:** Choose from existing scenes in the scene list, or add a new scene from local files.

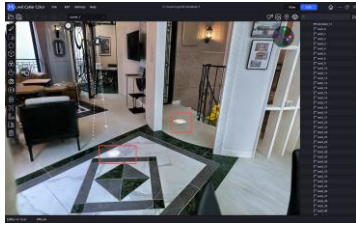
7. Manage

Edit:

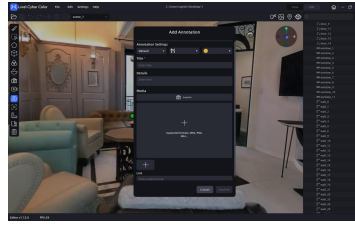
1. Click the annotation in the Asset List or scene.
2. Adjust position directly in the 3D view and Properties Panel.
3. Click **Edit** in the Properties Panel to open the full editing panel.

Delete:

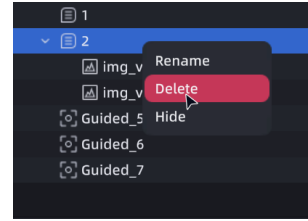
- Select in 3D view or Asset List and press Delete.
- Or right-click the annotation in the Asset List → Delete.



Click to move



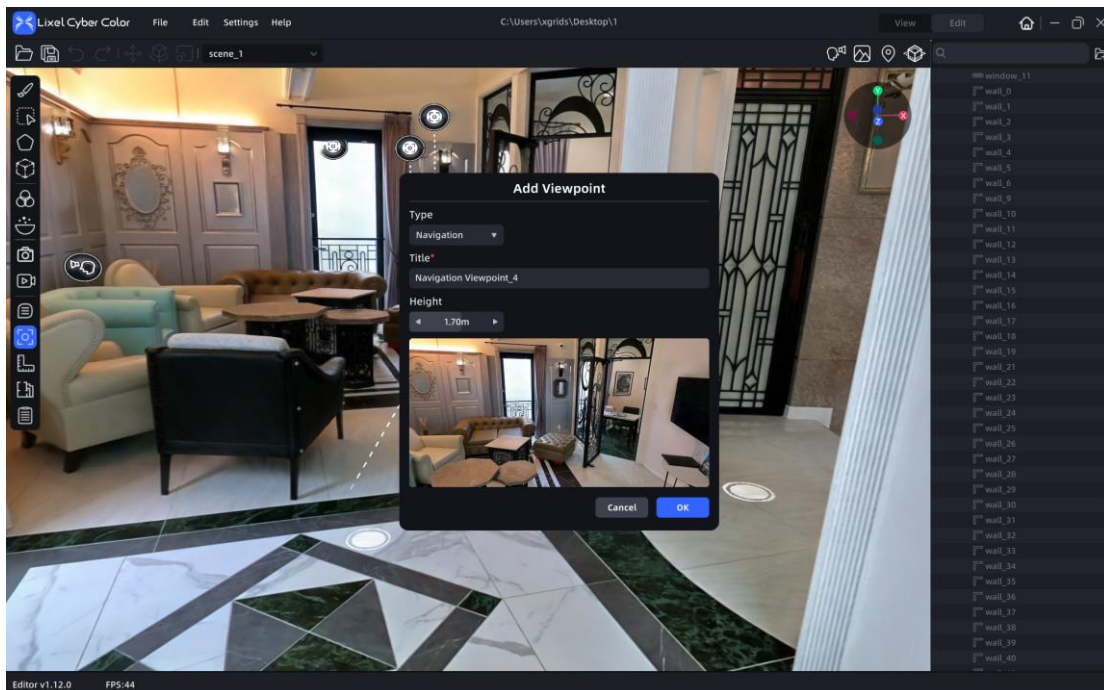
Add Annotation



Right-click to delete

5.9.7 Viewpoints

Set preset view angles in the scene. Three types: Navigation Viewpoint, Guided Tour Viewpoint, and Area Viewpoint. Created viewpoints can be used for automatic flythrough and quick positioning in View mode.



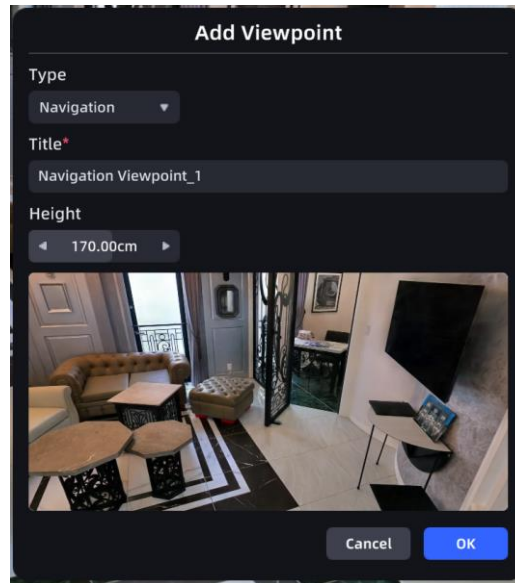
Adding a viewpoint

5.9.7.1 Workflow

4. Click **Viewpoint** in the toolbar to enter viewpoint creation mode.
5. Click a position in the scene. The system creates a viewpoint and opens the settings panel.
6. Select viewpoint type. The interface displays the corresponding settings.
7. Configure the relevant parameters.
8. Click **Confirm** to create.
9. Switch to View mode to experience the viewpoint behavior.

5.9.7.2 Navigation Viewpoint

Clickable ground indicators for quick switching to preset view angles.



Tour Viewpoint

Settings:

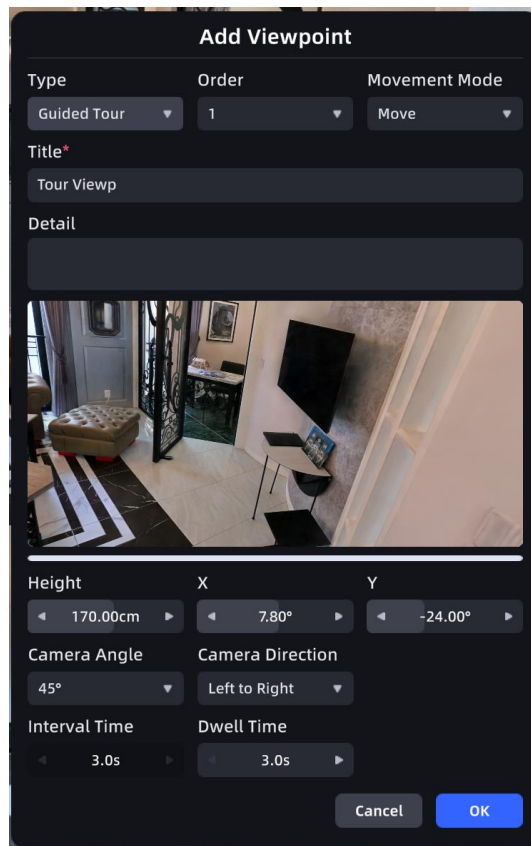
- **Title:** ≤20 characters
- **Height:** Slider, 0.1m–3m (default 1.7m)
- **Preview:** Real-time preview of the viewpoint's view

Create and View:

1. Edit the title (displays in View mode).
2. Click **Confirm** to create.
3. On success:
 - New entry appears in the Asset List.
 - Translucent ground indicator appears at the viewpoint location. Click to animate to that viewpoint.

5.9.7.3 Guided Tour Viewpoint

Define an automatic flythrough path that plays in View mode and Web Viewer.



Guided Tour Viewpoint

Settings:

- **Order:** Adjust playback sequence
- **Transition Mode:** Transition to next viewpoint (Jump / Linear)
- **Title (required):** ≤20 characters
- **Body:** ≤100 characters (displays as text annotation during playback)
- **Height:** Slider, 0.1m–3m
- **Angle:** Default view direction (X/Y)
- **Camera Motion:** Lens direction and angle
- **Transition Time:** Time from current to next viewpoint (3–10 seconds)
- **Dwell Time:** Duration at current viewpoint (3–10 seconds)

Screenshot:

- In the preview window, click the screenshot button to render the viewpoint's view and add the image to the Media Render list for cloud sharing.
- Default: 16:9 (1920 × 1080 px), 1080P resolution.

Export Guided Tour Video

- Right-click the guided tour viewpoint group in the Asset List → Export
- Click the guided tour viewpoint group in the Asset List → Export in the Properties

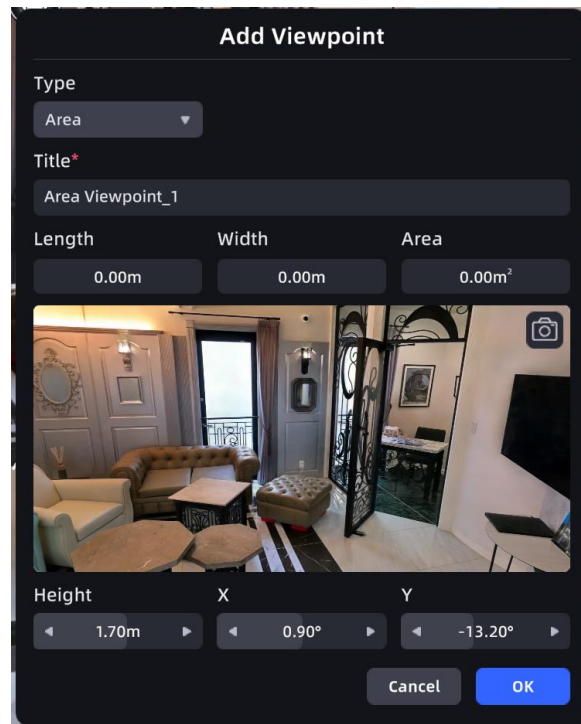
Panel

Create and Organize:

4. Click **Confirm** to create.
5. New entry appears in the Asset List.

5.9.7.4 Area Viewpoint

Records a view with defined dimensions, used as screenshot source for Scene Report export.



Area Viewpoint

Settings:

- **Title:** ≤20 characters
- **Length / Width:** Input values; system auto-calculates area.
- **Height:** Slider, 0.1m–3m (default 1.7m)
- **Angle:** Default view direction (X/Y)

Screenshot:

In the preview window, click the screenshot button to render the viewpoint's view and add the image to the Media Render list for cloud sharing.

Default: 16:9 (1920 × 1080 px), 1080P resolution.

Create and Manage:

1. Click **Confirm** to create.
2. New entry appears in the Asset List.

5.9.7.5 Modifying Viewpoints

Edit:

- Click the viewpoint in the Asset List or scene.
- Adjust position in the 3D view and Properties Panel.
- Click **Edit** in the Properties Panel for the full editing panel.

Delete:

- Select in 3D view or Asset List → press Delete.
- Or right-click in Asset List → Delete.

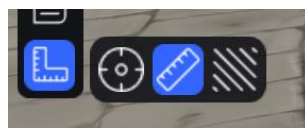
5.9.8 Measurement

Obtain coordinate, distance, or area data with real-time calculation, unit switching, and professional measurement display. Includes: **Coordinate Measurement**, **Distance Measurement**, and **Area Measurement**.

Axis snapping is enabled when the Measurement tool is active (XYZ axis snapping). After placing a measurement point, guide lines along the X, Y, and Z axes at that point will automatically appear. Guides will also appear when the cursor hovers near a measurement point. Moving along a guideline's direction will snap the point to that axis, enabling precise horizontal, vertical, or depth-direction measurements.



Coordinate Measurement



Distance Measurement



Area Measurement

5.9.8.1 Workflow

- Activate** Click **Measurement**. The measurement indicator appears, confirming the function is active.
- Select Type:** Coordinate, Distance, or Area.

Coordinate Measurement:

- Click the **Coordinate** button.
- Click a point on the model.
- If the scene contains RTK data, the system displays absolute coordinates.

Distance Measurement:

- Click the first measurement point.
- Click the second point. Distance displays in real time (m).

- c. Right-click to end.

Area Measurement:

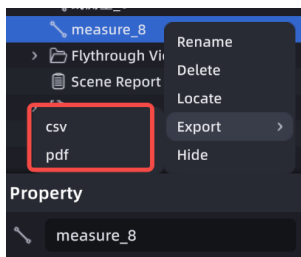
- a. Click the first point.
- b. Click additional coplanar points (minimum 3).
- c. Click the first point to close, or right-click to complete.

3. Delete

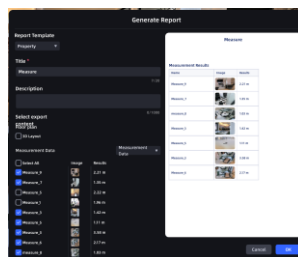
- Hover over the measurement and click the delete button.
- Or select in Asset List → press Delete or right-click → Delete.

4. Measurement Export

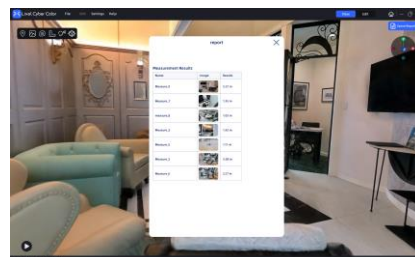
- Select one or more measurements in the Asset List → right-click → Export. Supported formats: .csv and .pdf.
- Measurement data can also be included in Scene Reports. In the Scene Report tool, switch to measurement data view, select entries, and export them as part of the report.



Export measurements



Switch to measurement data



Scene report

5.9.8.2 Tool Settings

1. Measurement Units

Set measurement units for distance and area display. Switch between metric and imperial systems and length units. All measurement values update in real time. Metric is the default.

2. Professional Measurement Data

When enabled for distance measurement, the system calculates real-time offsets between two selected points, displayed as dx, dy, dz. Typically used to verify whether a line segment is horizontal or vertical.

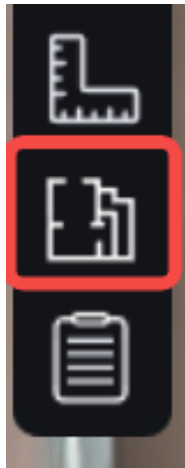
5.9.9 3D Layout

View and edit floor plans for indoor scenes with Spatial Recognition enabled during reconstruction. Features: split-screen comparison, 2D/3D switching, mini-map,

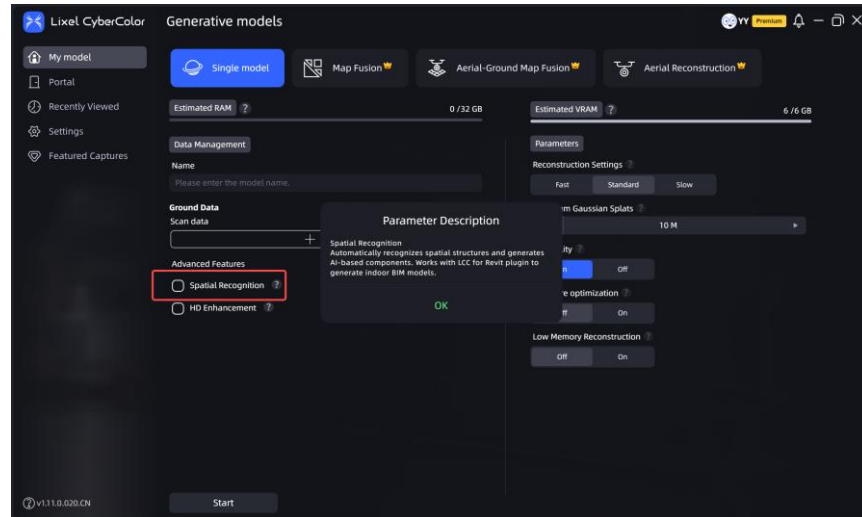
drawing tools. Export as OBJ/JPG.

Note:

1. Only available for indoor scenes with Spatial Recognition enabled during reconstruction.
2. Requires 3D Layout permission.



3D Layout

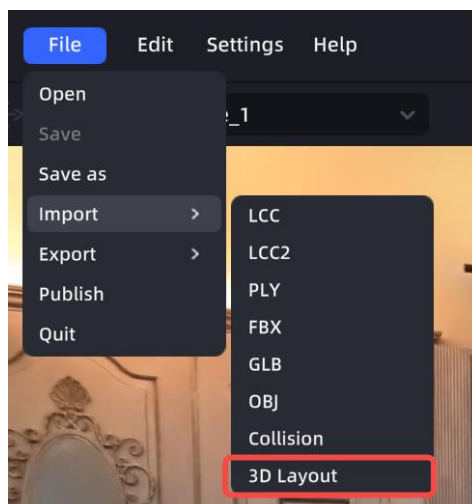


Check Spatial Recognition

Entry and Setup:

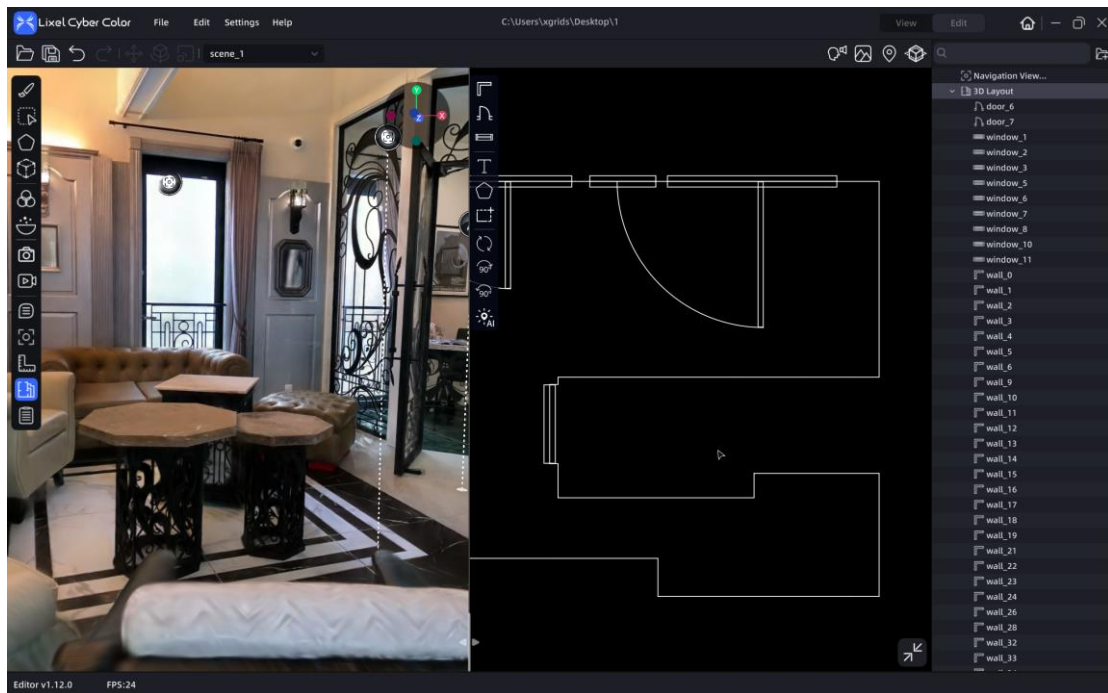
First Use:

1. File → Import → Floor Plan File Directory
2. Select the `semantic-result` folder in the project files.
3. Click OK.
4. Click the mini-map enlarge button to switch to split-screen 2D view.



Import 3D Floor Plan

5. **Entry:** Click **3D Layout** in the toolbar.

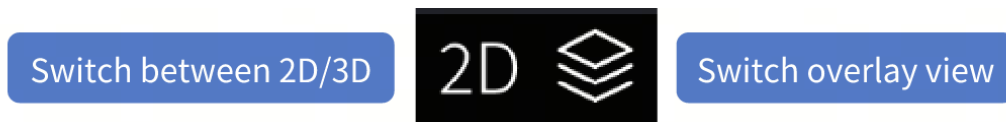


3D Layout interface

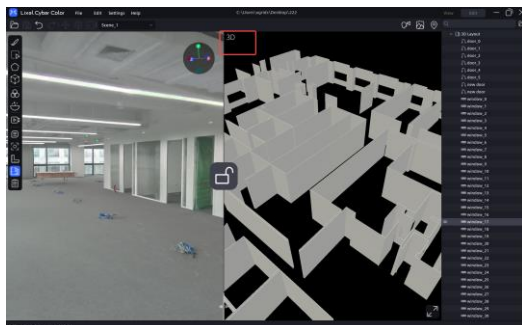
5.9.9.1 Interface and Tools

1. **Comparison and Views**

- Right panel: floor plan canvas with zoom, pan, drag browsing.
- Canvas supports 2D/3D view switching and 2D view overlay.



Switch View



Switch between 2D/3D



Switch overlay view

2. **Drawing Toolbar**

Tools: Wall, Door, Window, Text Label, Polygon Drawing, Rectangle Drawing.



Drawing Toolbar

5.9.9.2 Basic Operations

1. Selection and Movement

- Select: Click
- Move: Drag
- Deselect: Click empty space
- Cancel/End: Esc or right-click
- Delete: Select → Delete key
- Undo: Ctrl + Z

2. Canvas Navigation

- Pan: Right-click drag
- Zoom: Scroll wheel
- Rotate: Left-click drag

3. Rules

- Right-click behavior: When idle, pans the canvas; when drawing, ends/cancels the current action.
- Exit: Click the active tool icon again to exit drawing mode.

5.9.9.3 Drawing Tools

In 2D view, use Wall, Door, Window, Text, Polygon, and Rectangle tools to modify and create indoor floor plans.

General Workflow:

1. Select a drawing tool.
2. Draw on the canvas.
3. Click the tool icon again to exit drawing mode.

5.9.9.3.1 Wall

Add missing walls or refine the layout.

1. Workflow:

- a. Click **Wall**.
- b. Click to place the start point.
- c. Move mouse to adjust length and angle.
- d. Click to set the end point.
- e. Right-click to finish.



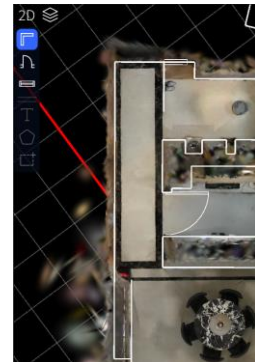
Add wall starting point



Move the mouse to adjust length and angle.



Place wall endpoint



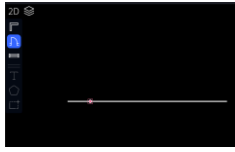
Right click to complete

5.9.9.3.2 Door

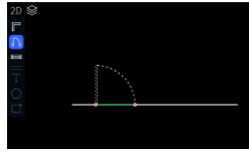
Add door elements that snap to and associate with walls.

1. Workflow:

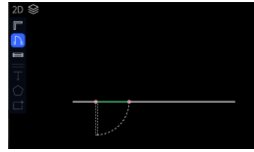
- a. Click **Door**.
- b. Click to place the pivot point.
- c. Move mouse to adjust width.
- d. Click to set the endpoint.
- e. Move mouse to set swing direction, left-click to finish.



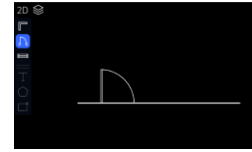
Click to place the pivot point.



Move the mouse to adjust width.



Click to set the endpoint.



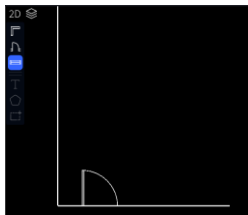
Set the swing direction, then Left-click to finish.

5.9.9.3.3 Window

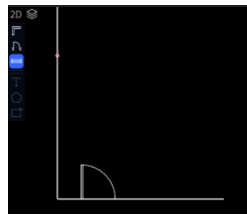
Add window elements that associate with walls.

1. Workflow:

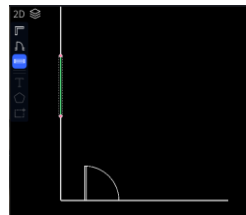
- a. Click **Window**.
- b. Click to place the start point.
- c. Move mouse to adjust width.
- d. Click to set the endpoint.



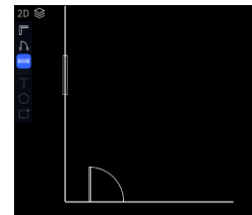
Click Window



Click to place the start point.



Move the mouse to adjust width.



Click to set the endpoint.

5.9.9.3.4 Text Label

Add information labels such as room names or numbers.

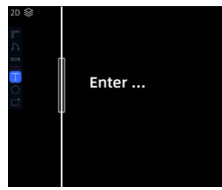
Workflow:

1. Click **T**.
2. Click the canvas to place the text box.
3. Double-click to activate the text box.
4. Enter text.
5. Click empty space or right-click to finish.

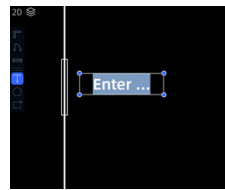
Resize:

1. Click to select the text box.
2. Drag corners to adjust font size.

3. Click outside to finish.



Click to place text box



Double click to activate textbox



Enter text



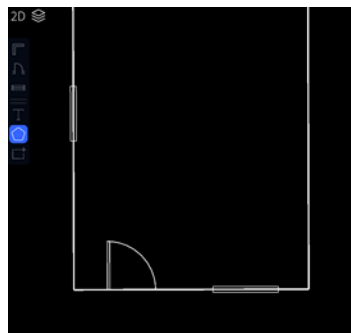
Right click or click outside to finish

5.9.9.3.5 Polygon Drawing

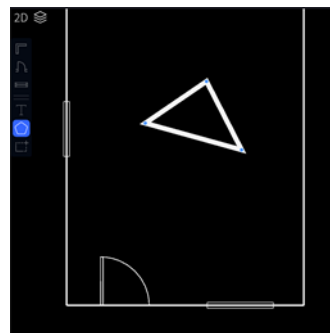
Create irregular areas and labels by drawing custom closed shapes point-by-point.

Workflow:

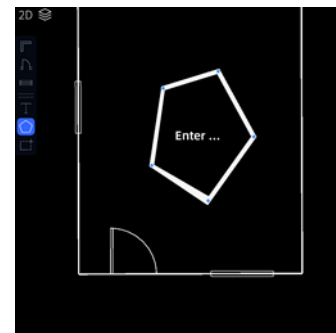
- a. Select **Polygon Drawing**.
- b. **Click** to place control points.
- c. **Double-click** to complete the shape. (*Note: Right-click cancels the current drawing without saving.*)
- d. **Double-click** the text box to edit the label.
- e. **Click empty space** to exit the tool.



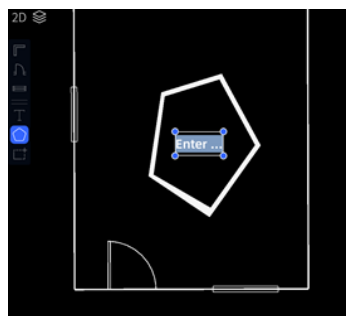
Click [Polygon Drawing]



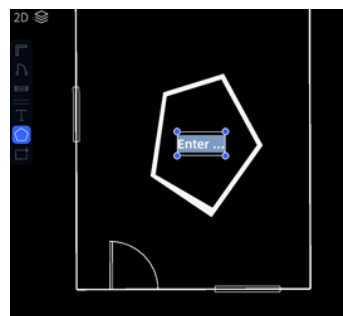
Click to place points



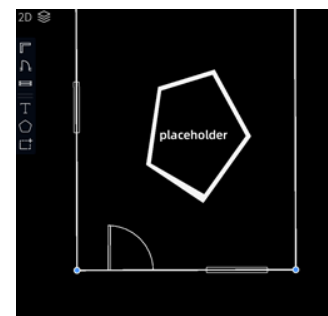
Double-click to end



Click text box to edit



Edit



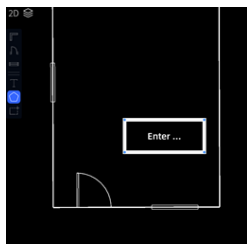
Exit

5.9.9.3.6 Rectangle Drawing

Quickly add rectangular areas with automatic text labels.

Workflow:

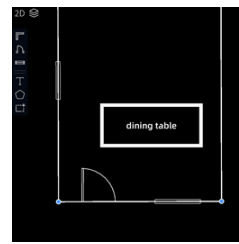
- Select **Rectangle Drawing**.
- Click and drag** to draw the rectangle.
- Release** the mouse to finish the shape.
- Click empty space** to complete the command.
- Double-click** the text box to edit the label.



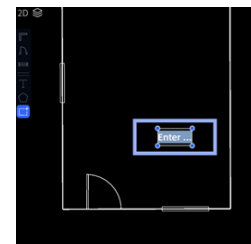
Hold mouse and drag rectangle



Release to complete



Click empty space to complete



Double click to edit text

5.9.9.3.7 View Angle Quick Controls

Quickly straighten and rotate by 90° rotation.

5.9.9.4 3D Layout Export

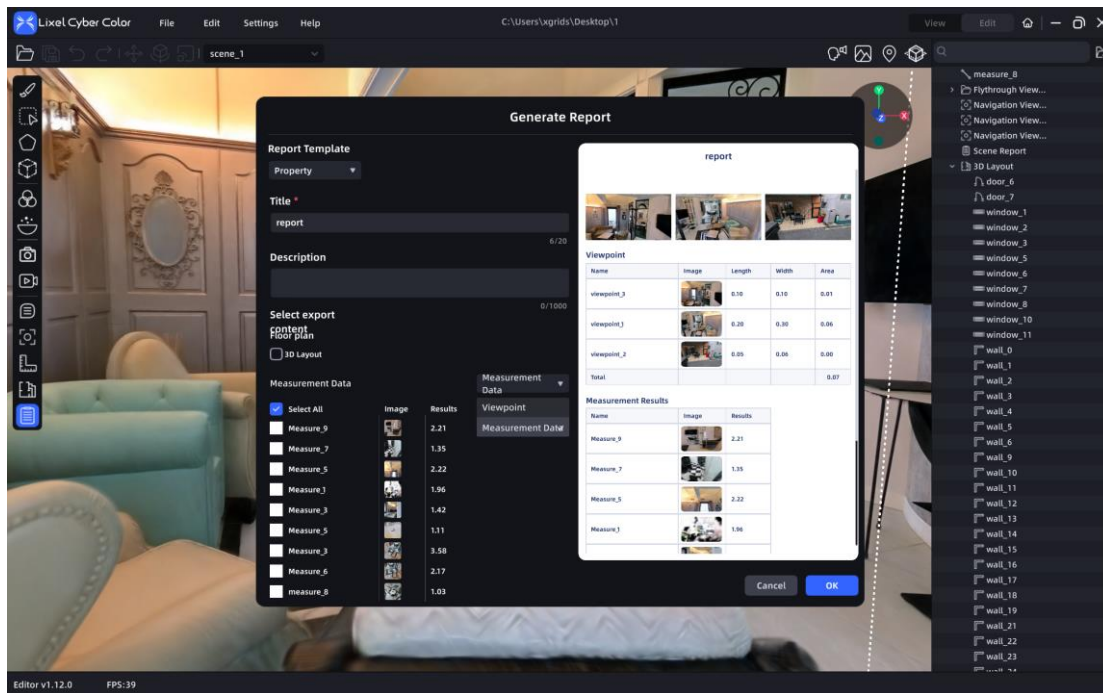
In Split-screen mode, export your floor plan as a 3D model (OBJ) or a 2D image (JPG).

- Workflow:** File -> Export -> Select **OBJ** or **JPEG** -> Confirm.

5.9.10 Scene Report

Compile 3D Layout floor plans and viewpoint content from the current project into a template-based report for viewing, publishing, or local export.

- Supports local export in JPEG and PDF formats.
- Optionally includes viewpoints and measurement data.



Scene Report

5.9.10.1 Workflow

1. Create

- a. Click **Scene Report** to enter the editing panel.
- b. Fill in content:
 - **Title (required):** ≤20 characters
 - **Body:** ≤1,000 characters
 - **3D Layout:** If the project contains floor plan data, it can be selected.
 - **Optional content:** Select viewpoints or measurement data to include.
- c. Click **Confirm** to complete.

2. Manage

View and Edit:

- Click the Scene Report entry in the Asset List.
- In the Properties Panel, open the preview and edit the report.
- **Export:** In the Properties Panel, export the Scene Report. Two formats: JPEG and PDF.
- **Delete:** Select in Asset List → press Delete or right-click → Delete.

Post-Publication:

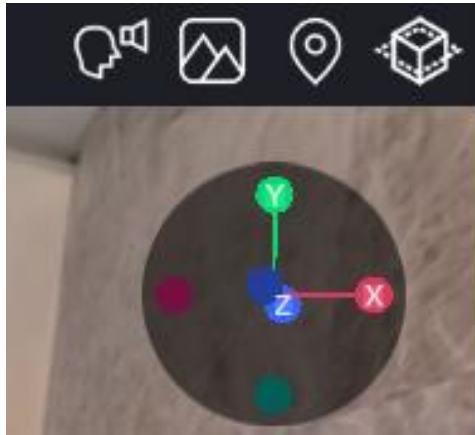
- After publishing, view the report in View mode.

- If modified after publishing, use **Update** to sync the latest version to View mode.

5.10 View and Navigation

5.10.1 View Direction Axis

Located in the upper-right corner of the 3D viewport. Click axis labels to snap to standard views. Click the axis center to reset orientation.

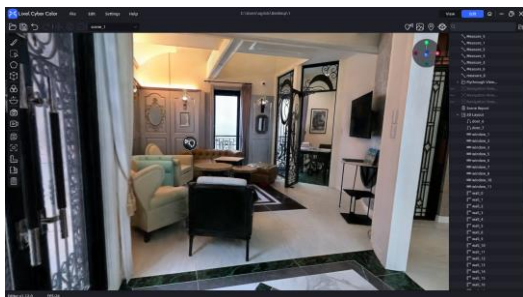


View Direction Axis

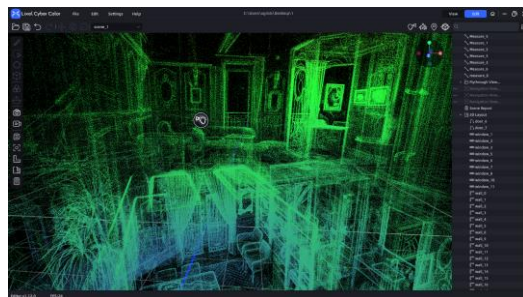
5.10.2 Switch View

Switch the model view to point cloud view for more direct inspection of structure, data density, or scan precision.

Point cloud view displays the model as dense points without surface textures. Useful for data inspection, accuracy comparison, or viewing structural information only. All navigation modes remain available.



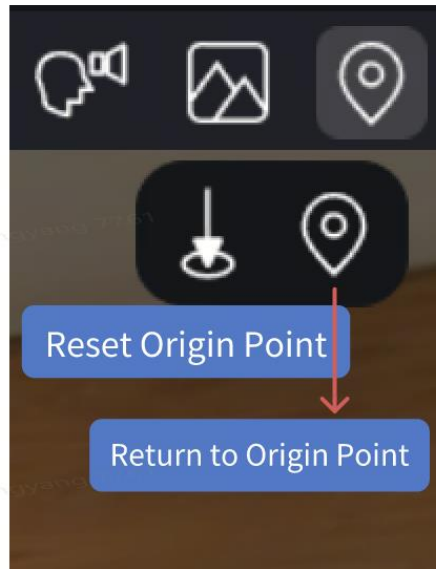
Model view



Point cloud view

5.10.3 Origin Point

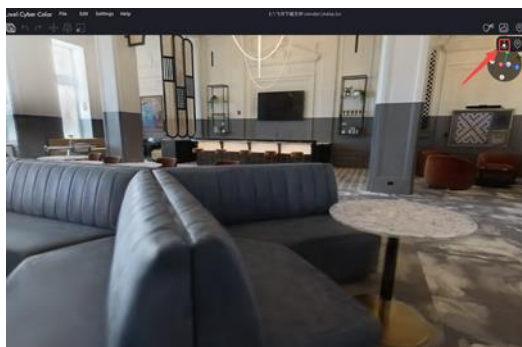
In Flythrough mode, reset the origin point. Supports **Return to Origin** and **Reset Origin**.



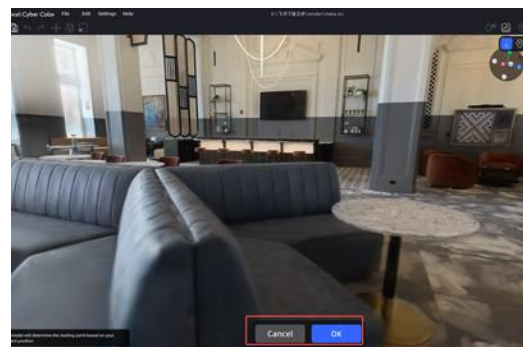
Origin Point

1. Reset Origin

- a. Navigate to the desired position in Flythrough view.
- b. Click Confirm. The origin resets to the current view angle.



Reset Origin Point



Confirmation

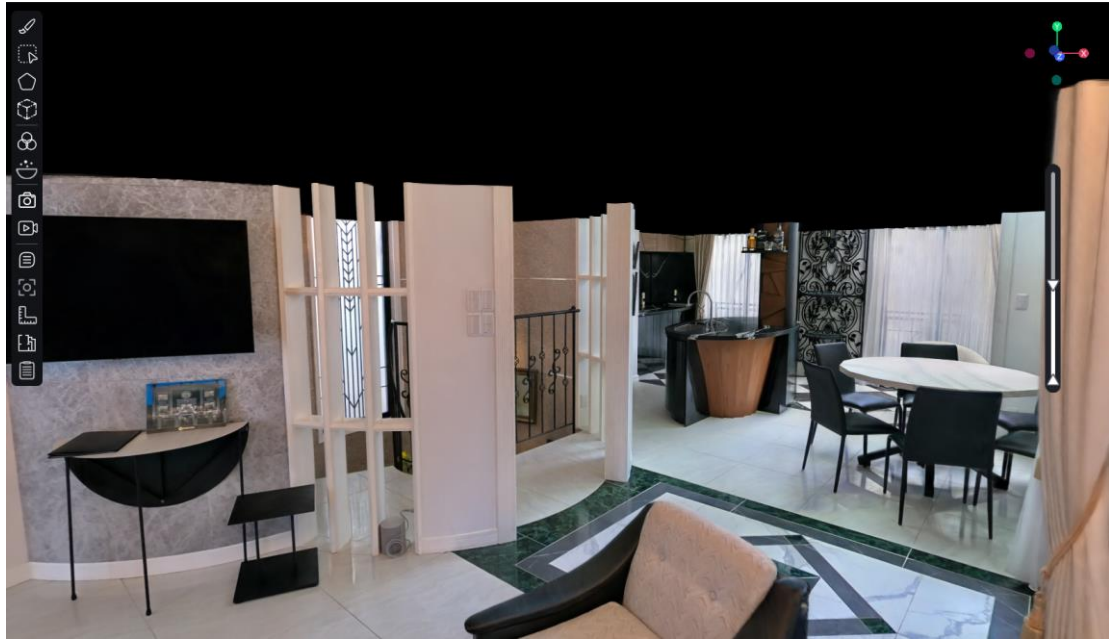
2. Return to Origin

- a. Click **Return to Origin** to jump to the set origin.
- b. If no origin has been set, jumps to the scene's default initial origin.

5.10.4 Height Filter

Height Filter mode controls model visibility along the Z-axis by adjusting height range, allowing you to view or edit the model from a sandbox-like top-down perspective.

1. Click the **Height Filter** button to enter height filter mode.
2. Drag the height adjustment sliders from the top and/or bottom to set the visible range.
3. Click **Height Filter** again to exit. The current height state is preserved on exit.

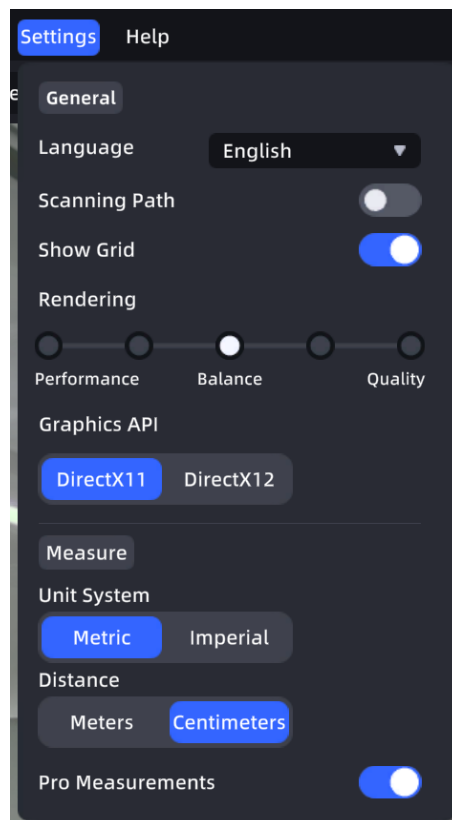


Height Filter

5.11 Settings and Help

5.11.1 Settings

Configure scene-level settings in Editor.



Settings

1. **Language:**

Simplified Chinese, Traditional Chinese (Hong Kong), English, Japanese, Italian, German, and Spanish.

2. **Capture Trajectory:**

For scenes generated by the latest version, view the device capture path. Available in all terminals (Editor / Viewer).

3. **Show Grid Plane:**

2D working plane for alignment and detail design in Editor. Editor only.

4. **Rendering:**

Performance mode (faster) / Quality mode (clearer, higher hardware requirements).

5. **Graphics API:**

Switch if rendering shows tearing, flickering, or other display artifacts.

6. **Measurement Settings:**

- a. Switch between metric and imperial, and set length units. All measurements update in real time.
- b. Professional Measurement Data: display dx / dy / dz axis offsets for more precise measurement.

5.11.2 Help

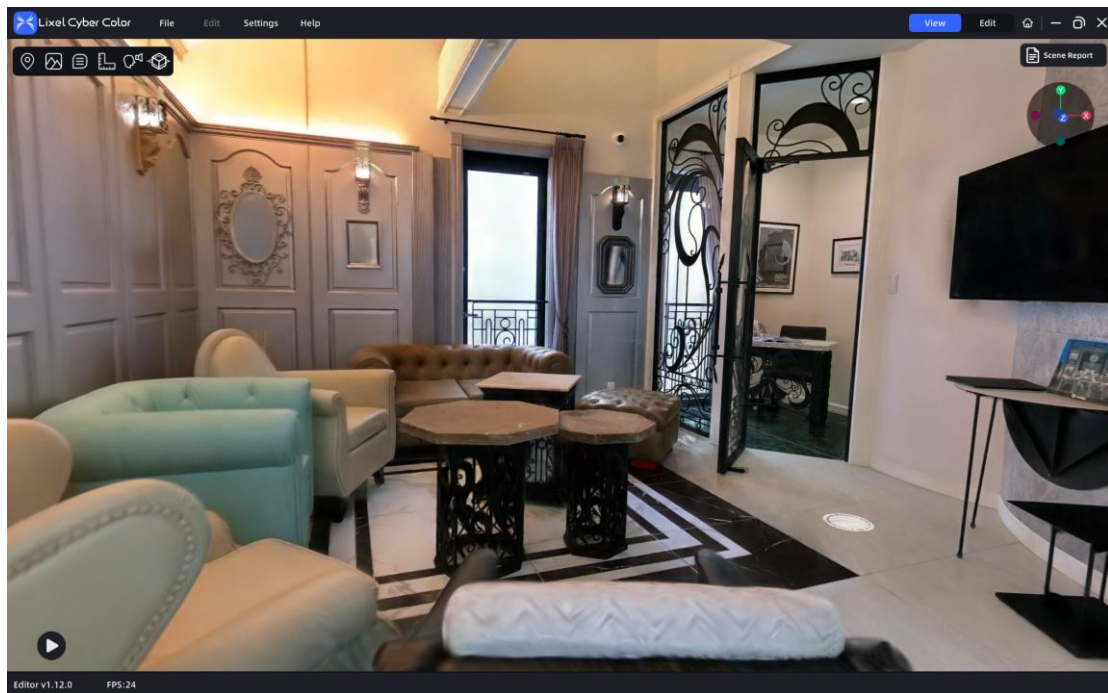
1. **Tutorials:** Access the official user manual and capture guide.
2. **Community:** Platform for user feedback and exchange.
3. **Official Website:** XGRIDS official website for the latest versions and updates.

5.12 View Mode (Viewer)

Browse LCC scenes with basic navigation, viewpoint-guided tours, Scene Reports, and measurement. Suitable for presentations, on-site communication, and deliverable handoff.

5.12.1 Interface Overview

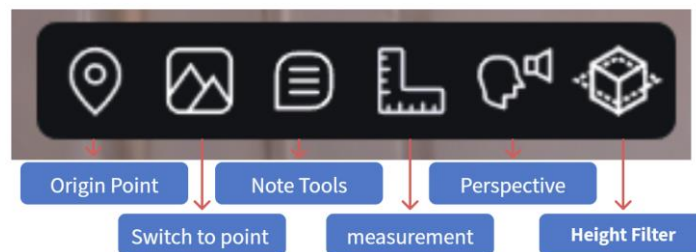
Includes: Menu Bar, Toolbar, Guided Tour Viewpoints (if set by editor), Scene Report (if set by editor).



View mode interface

Toolbar

The LCC model viewing toolbar includes: **Origin Point**, **Point Cloud Toggle**, **Annotations**, **Measurement**, **Perspective Switching**, **Scene Report**, **Height Filter**.



Web viewer Toolbar

Origin Point

Reset camera to the scanner's initial capture position for viewing from the original capture angle.

Point Cloud Toggle

Switch to point cloud view for structure, density, or precision inspection.

View Annotations

1. Click **Annotations** in the toolbar to open the annotation list.
2. Hover over a scene annotation for a brief summary.

3. Click an annotation to view full details.
 - **Show/Hide:** Hover over an annotation in the list to reveal the eye icon. Click to toggle visibility.
 - **Expand Details:** Click to view full details (images, videos, text, links).

Measurement

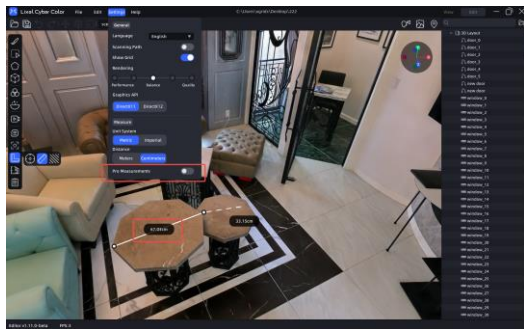
Perform temporary measurements or view publisher-saved measurement data.

Workflow

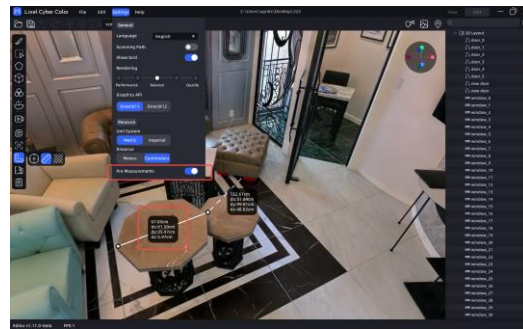
For detailed instructions see: 5. LCC Editor - 5.9 Edit Tools - 5.9.8 Measurement - **5.9.8.1 Workflow**

Usage Notes:

1. Temporary measurements are valid for the current session only. Data clears when the function is closed or the model is exited.
2. Publisher measurements can be viewed but not edited.
3. **Professional Measurement Data:** When enabled, displays dx, dy, dz offsets for horizontal/vertical verification.



Without pro measurement



With pro measurement

Perspective Switching

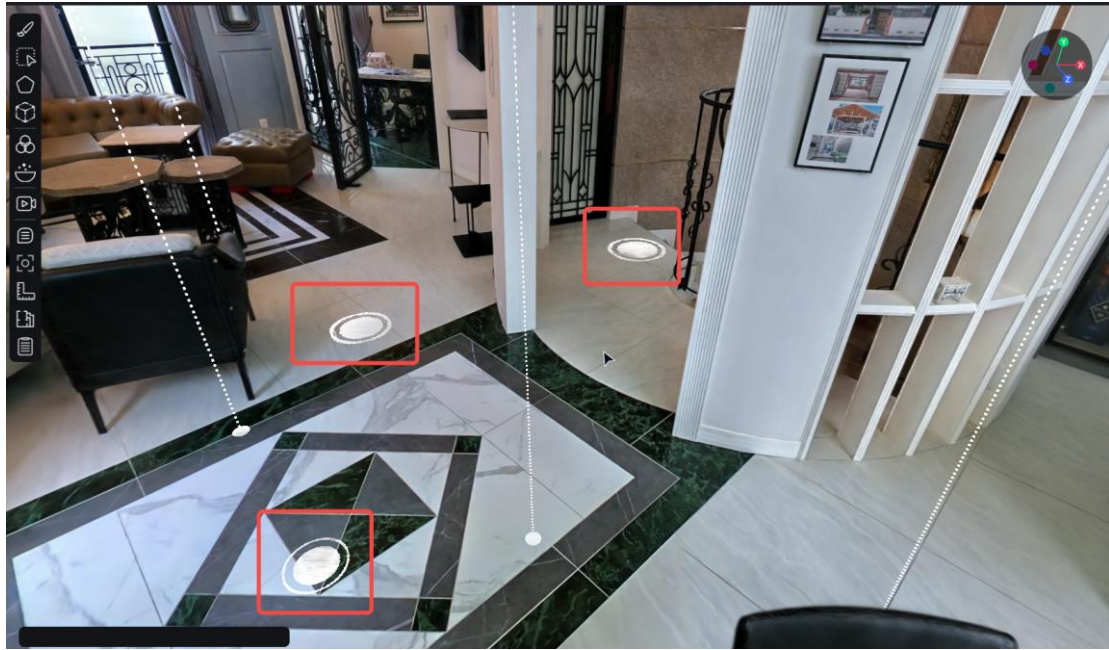
Toggle between Flythrough, Pivot, and Avatar modes.

Height Filter

Control model visibility along the Z-axis for sandbox-like viewing.

5.12.2 Navigation Viewpoints

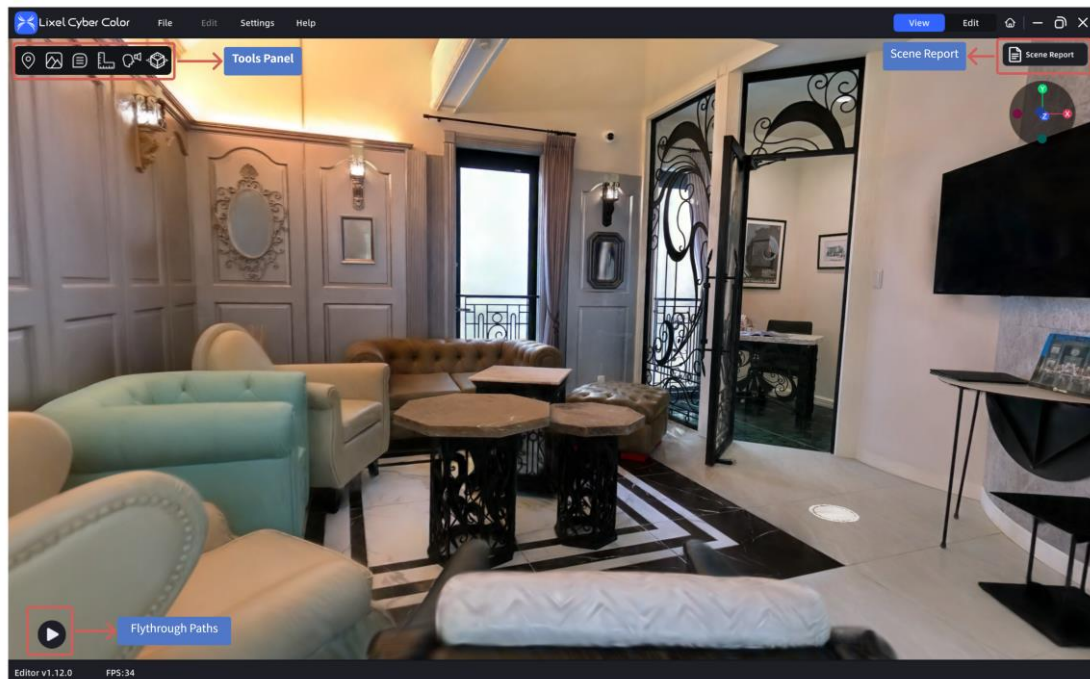
White ground indicators are viewpoints added by the editor. Click to quickly switch to the preset view angle and position.



Navigation viewpoints

5.12.3 Guided Tour

The guided tour consists of multiple guided tour viewpoints set by the editor in sequence, used for automatically browsing key areas of the scene.



Guided Tour Viewpoints

5.12.4 Scene Report

View existing Scene Reports for the project, including floor plans, viewpoint

screenshots, and dimension/area information.

The screenshot displays the Lixel Cyber Color software interface. The main window shows a 3D rendered scene of a room with a light blue sofa, a white wall with a decorative mirror, and a black metal railing. A 'report' window is overlaid on the scene, containing two tables: 'Viewpoint' and 'Measurement Results'. The 'Viewpoint' table lists three viewpoints with their respective dimensions and areas. The 'Measurement Results' table lists five measurements with their results. The software's menu bar includes 'File', 'Edit', 'Settings', and 'Help'. The status bar at the bottom left shows 'Editor v1.12.0' and 'FPS:34'. A 'Scene Report' button is visible in the top right corner of the interface.

Name	Image	Length	Width	Area
viewpoint_3		0.10	0.10	0.01
viewpoint_1		0.20	0.30	0.06
viewpoint_2		0.05	0.06	0.00
Total				0.07

Name	Image	Results
Measure_9		2.21
Measure_7		1.35
measure_8		1.03
Measure_3		1.42

Scene Report