



5 mm relative accuracy*

Lixel L3

Accuracy Meets Photorealism

*Tested in a designated 500 m² environment; accuracy reported at 1 σ .



Accuracy Meets Photorealism

The Lixel L3 is a flagship high-accuracy spatial scanner. It holds a verified 5 mm relative accuracy¹ and photorealistic color across large, complex sites. A single pass produces a true-color point cloud, a mesh, and a 3D Gaussian Splatting model – supporting precise measurement and true-to-life presentation alike. Deliverables fit directly into workflows across surveying and AEC, digital twin, and film and entertainment: the real world rebuilt in digital space.



5 mm
Relative accuracy¹



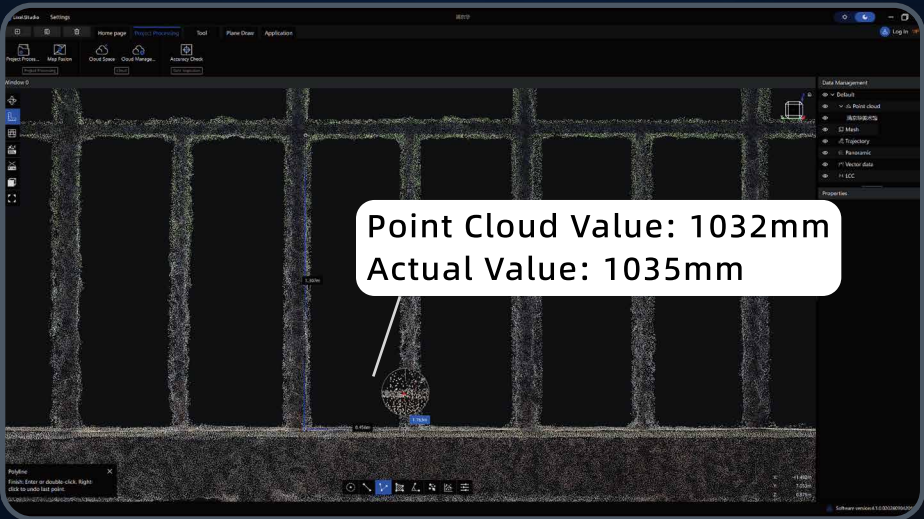
2 cm
Absolute accuracy²



0.005°
Leveling (with RTK fusion)³



1/1.3" CMOS
4K HDR⁴



Verified 5 mm relative accuracy¹

Mobile capture speed, survey-grade results.



True color photorealism

Rich tonal range, sharp detail, faithful color.



Stable mapping in complex scenes

Holds up in degraded environments and where GNSS is limited.



One scan, multiple deliverables

Point cloud, 3DGS and Mesh, delivered from a single pass.

¹ Tested in a designated 500 m² environment; accuracy reported at 1 σ . For full methodology, see the Accuracy Verification White Paper.

² Measured under open sky, free of multipath effects, with optimal GNSS geometry and favorable atmospheric conditions; accuracy stated as RMSE.

³ Measured under open sky, free of multipath effects, with optimal GNSS geometry and favorable atmospheric conditions. Actual performance may vary.

⁴ DCG HDR extends the sensor's dynamic range, holding detail in both highlights and shadows.

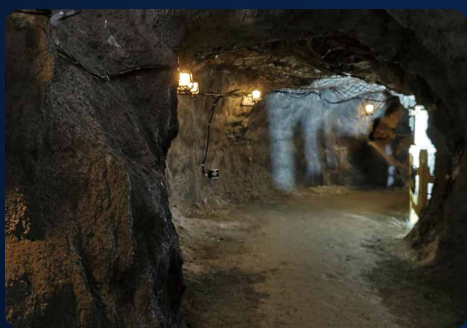
Industry applications



Surveying & AEC



Infrastructure



Natural Resources



Industrial Manufacturing



Film & Entertainment



Digital Twin



Robotics Simulation



Heritage & Tourism

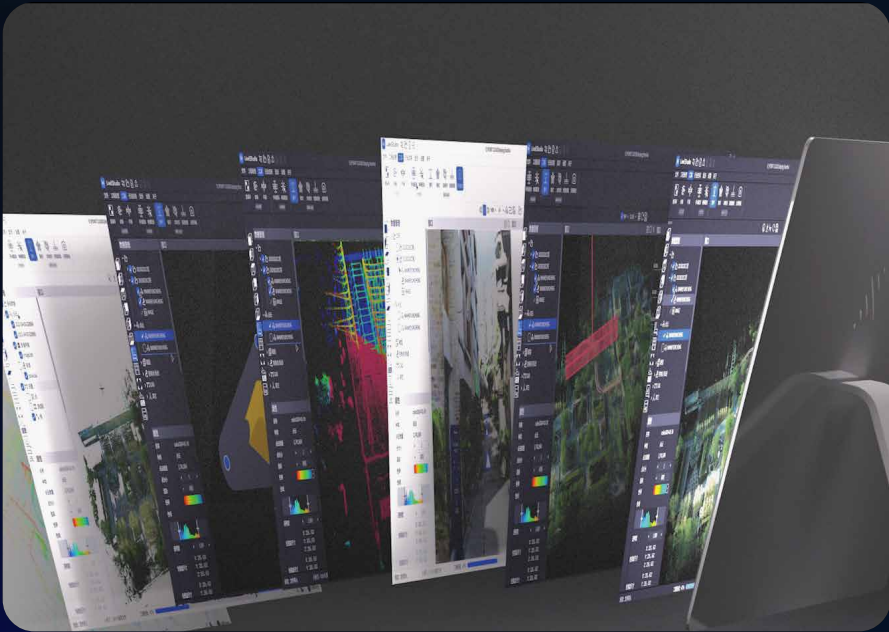
Companion software

LixelStudio

All-in-one point cloud processing software

Viewing, editing, processing, and industry plugins for point cloud data.

- Photorealistic colorization
- Engineering-grade leveling
- Clean point clouds through intelligent denoising
- High-detail mesh output



Lixel CyberColor

Next-generation spatial content production platform

Combines SLAM and 3D Gaussian Splatting to generate photorealistic 3D models automatically.

- Large-scale scene reconstruction
- Lighter model formats
- World model editing
- Open SDK and plugins



Specifications

Hardware

Model	Lixel L3 (16-channel) Lixel L3 (32-channel)
Dimensions	206mm × 107mm × 329mm
Power consumption	<30W
Weight [1]	Approx. 2.5 kg
Data interface	USB 3.1 Gen2
Internal storage	1TB UFS
RTK module	Supported (built-in)
WiFi	802.11 a/b/g/n/ac/ax 2.400–2.4835 GHz 5.15–5.850 GHz
Bluetooth	v2.1+EDR / 3.0+HS / 4.2 / 5.0 / 5.2 2.4–2.4835 GHz
Housing	Aluminum alloy
Total operating time	100 min

Operating environment

Operating temperature	–20 °C to 50 °C
Ingress protection	IP54

Battery

Battery voltage	14.4V
Battery capacity	3,350 mAh

Display

Screen size	4.3" TFT
Brightness	Up to 1,000 nits
Resolution	480 x 800

On-device feature

On-screen Model preview & Measurement	✓
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Vision module

Forward camera	1
Forward camera FOV	100° × 75°
Panoramic cameras	2
Panoramic camera FOV	200° × 200°
Camera resolution	4096 × 3072
CMOS size	1/1.3"
Shutter	Rolling shutter
HDR [2]	DCG HDR

Survey-grade GNSS module

Signals tracked	BDS B1I, B3I, B1C, B2a, B2b GPS L1C/A, L1C, L2C, L2P(Y), L5 GLONASS G1, G2, G3 Galileo E1, E5a, E5b, E6 QZSS L1C/A, L1C, L2C, L5, L6 IRNSS L5 SBAS L1C/A
Accuracy	Horizontal: 0.8 cm + 1 ppm Vertical: 1.5 cm + 1 ppm
Peak Gain	4.0 dBi
Azimuth coverage	360°
Impedance	50 Ω
Polarization	Right-hand circular (RHCP)
Axial ratio	≤3 dB
Output VSWR	≤2.0

Accessories

Base mount	Standard
Charging hub	Standard
Portable hard case with backpack system	Standard
Support rig	Optional

Post-processing features

POI point cloud enhancement	Supported
Control-point-free map fusion	ICP, GCP, Scan Overlay
Face & car plate blurring	Supported

Output formats

Point cloud	.las .rcp .e57 .ply .ilas
Imagery	.jpg
Mesh	.osgb .obj
3DGS	.lcc2 .lcc .ply
Others	3D Tiles (.3tz), .usd

Accuracy

Post-processed relative accuracy (1σ) [3]	5 mm (500m ²)
Post-processed point cloud thickness [4]	≤ 5 mm
Absolute accuracy, vertical (RMSE) [5]	2 cm
Absolute accuracy, horizontal (RMSE) [5]	2 cm
Repeatability [5]	2 cm
Real-time relative accuracy [6]	1 cm
Real-time absolute accuracy, vertical (RMSE) [7]	2.5 cm
Real-time absolute accuracy, horizontal (RMSE) [7]	2.5 cm
Leveling (with RTK fusion) [8]	0.005°
Leveling (without RTK fusion) [9]	0.02°

LiDAR module

Laser class	Class 1 (905nm)
Scanning range	0.7–120 m
Field of view	≈360° × 270°
Scanning method	Mobile
Point cloud rate	320,000 / 640,000 pts/s
Laser channels	16 / 32

• [1] Including battery; other components not included.

• [2] DCG HDR extends the sensor's dynamic range, holding detail in both highlights and shadows.

• [3] Tested in a dedicated 500 m² test environment; accuracy reported at 1σ. For full details on the test environment and accuracy metrics, see our white paper.

• [4] Point cloud planar thickness within a 10 m walking path.

• [5] Measured under open sky, free of multipath effects, with optimal GNSS geometry and favorable atmospheric conditions.

• [6] Measured under laboratory conditions; actual performance may vary.

• [7] Measured under open sky, free of multipath effects, with optimal GNSS geometry and favorable atmospheric conditions. WGS84 and CGCS2000 only.

• [8] Measured under open sky, free of multipath effects, with optimal GNSS geometry and favorable atmospheric conditions. Actual performance may vary.

• [9] Measured under laboratory conditions in a 2,000 m² scene without RTK fusion; actual performance may vary.