INSIZE

MEASUREMENT SOLUTION PROVIDER



DLP-L SERIES
LASER PROJECTION SYSTEMS

CATALOGUE NO. DLP-E01

Product Overview

The DLP-L series laser projection system generates high-precision laser contours from 3D CAD models, projecting virtual templates directly onto the work surface to enable visual part positioning.

- The system employs a high-precision binocular vision system. Working distance: 1.5–10m (camera) and 1.5–15m (laser). Projection accuracy: up to 0.25mm. Projection angle: 60°×60°. Laser class 3R, wavelength 520nm.
- After software programming, selective (partial) projection and hole-free positioning are supported. The system automatically records the work process, generating digital documentation and a database. Hierarchical user permission settings are supported. Data formats: IGS, IGES, STP, STEP, DXF, DWG, PLY; compatible with FiberSIM and CATIA CPD formats.



Exclusive Dual-Format Compatibility

The industry's only system supporting both DWG and FiberSIM formats, enabling seamless integration with mainstream industrial design and production software.

Accuracy Specifications

For the DLP-L100 and DLP-L600, the guaranteed accuracy specification is up to 0.25mm. Projection distance matches the parameters of imported brands.

Software Functions

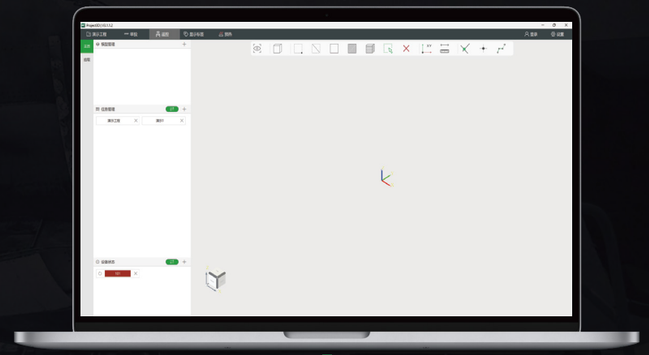
Supports import of a wide range of file formats. In our latest customized project, we are also developing a solution to turn 2D drawings into 3D drawings.

Technical Features

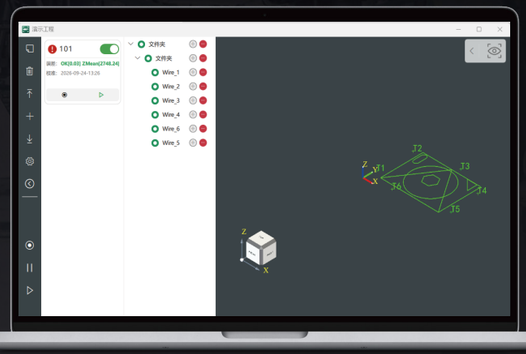
- Used in composite layup, aerospace, automotive engineering, shipbuilding, rail transit, precast concrete production, and heavy machinery.
- Suitable for precision positioning, operation guidance, painting, drilling, welding, and defect inspection.
- The laser projection system employs a high-precision binocular machine vision system and is equipped with dynamic tracking (DLP-L600 only).
- Selective (partial) projection and hole-free positioning.
- Automatically records the work process, generating digital documentation and a database.
- Supports hierarchical user permission settings.



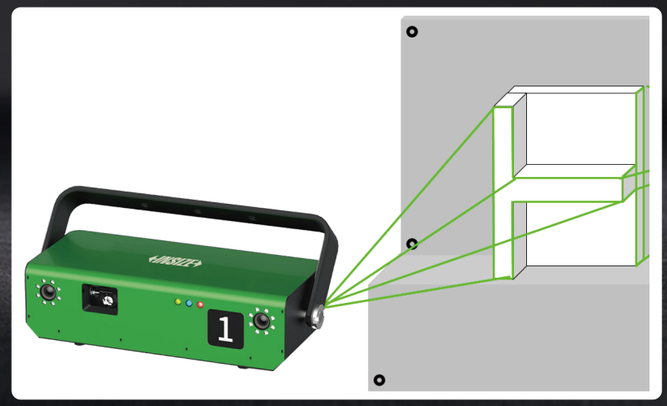
CAD Import



Soft Programming



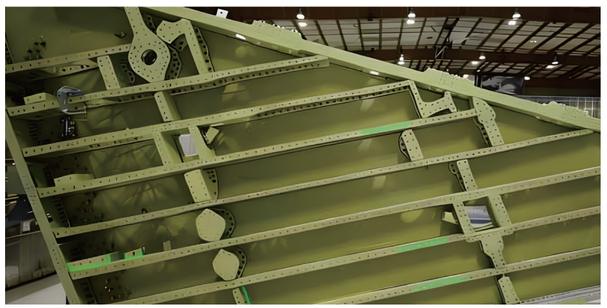
Laser Projection



Main Advantages

• Application Scenarios:

Industry Applications of the Laser Positioning System: Aerospace and defense materials; automotive materials and assembly; welding and hole alignment in heavy industry; cutting, drilling, infill and welding in construction; painting, lay-up and inspection of composite materials; and installation wiring and painting in rail and marine transport, among other fields.



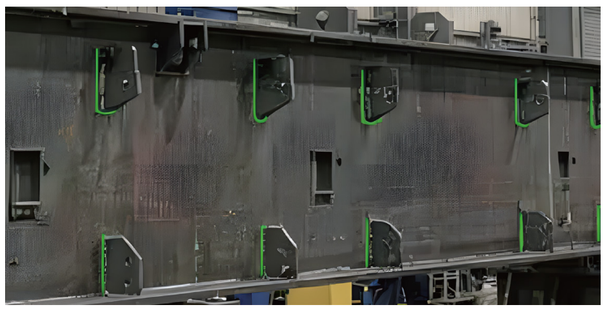
▸ Aerospace

Laser projection systems are widely used in manufacturing processes such as aircraft painting, drilling and labeling. Aerospace engineering projects, such as rocketry, have also long employed this type of equipment as an aid. Because early-generation equipment was costly, use was limited to the aerospace industry.



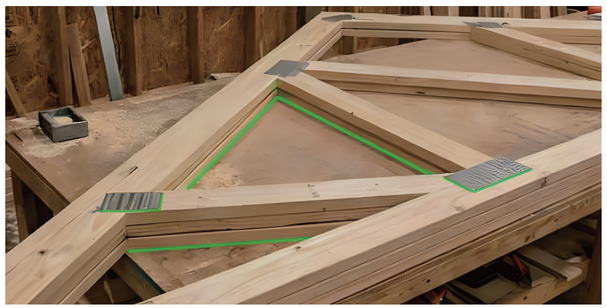
▸ Automotive

As technology continues to advance, the automotive manufacturing sector has also begun using laser projection systems to assist with drilling and component assembly—installing door speakers, door handles, mirrors and other parts on car doors, for example. Carbon-fiber cutting in the vehicle modification field also makes use of this equipment.



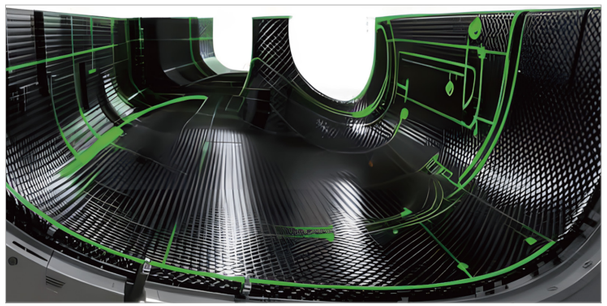
▸ Shipbuilding

The large-vessel shipbuilding industry initially relied heavily on paper materials such as blueprints to position components and locate holes, and later adopted physical molds to assist positioning—but the high replacement cost meant not all builders could use this approach. The introduction of the laser projection system solved this problem: swapping molds at virtually zero cost can greatly improve assembly and drilling efficiency.



▸ Construction & Heavy Industry

Applications in this sector are similar to shipbuilding; the laser projection system was likewise introduced to replace traditional molds, though adoption came later because early projection equipment was expensive. Today most high-volume cases are wind-power cutting and lay-up, and in assisting the construction of stadium exterior walls.



▸ Composite Materials

Widespread application in this industry originated mainly in automotive modification. Starting with carbon-fiber materials, polymer composites and the processing of certain special sheet materials have all begun using laser projection equipment as an aid, effectively avoiding human error and reducing material scrap.



▸ Rail Transit

In the manufacture of large transport vehicles such as trains, high-speed rail and metros, the capabilities of laser projection equipment are fully exploited, and the multi-unit simultaneous projection function can effectively increase the efficiency of lay-up and drilling/layout marking.

• Application Cases

#1
Aerospace



Project the 3D lay-up contour directly onto the mold, visualising lay-up direction and locating cutting positions.

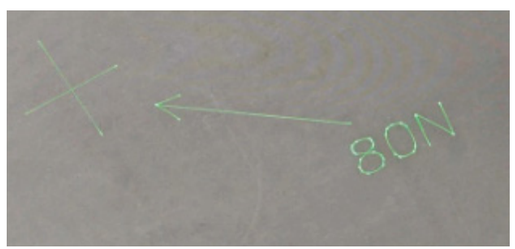


Drill and align according to the laser-projected pattern, effectively improving work efficiency and avoiding deviations caused by manual drawing interpretation; the equipment is also used to check whether panel joint positions conform to the drawing.



Use the multi-unit simultaneous projection function to inspect aircraft surfaces and to assist with decal application and painting, saving the consumable cost of large physical templates and improving work efficiency.

#2
Automotive



In new-energy battery industry applications, key parameters such as work instructions, tightening torque and foam-coverage guides can be added directly to the drawing and projected onto the battery pack with the laser projection equipment.



It serves as a positioning aid in work such as chassis drilling and label application; after the chassis is drilled, it can be used to check for missed holes or positional offsets.

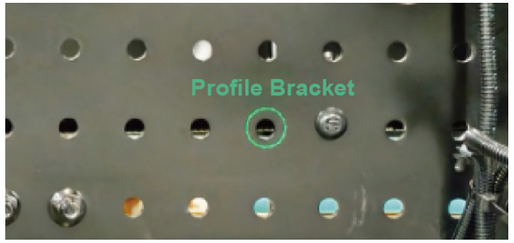


Suitable for assisting positioning and inspecting fine details in the production of tires, carbon fiber, dark interior trims, leather and the like, as well as marking and recording defects.

#3
Heavy Industry—Adaptive Welding Guidance



Project a 1:1 CAD template directly onto the structure. If welding heat causes a part to warp or bend, scan-and-compare technology adjusts the projection to match the deformed part.

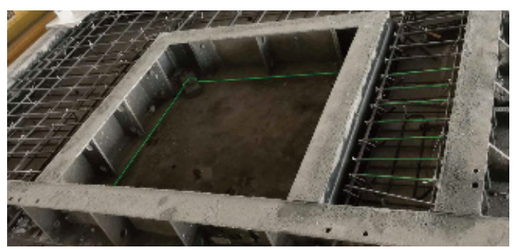


Production integrity is ensured: annotations such as position names, detailed dimensions and force parameters can be edited for the corresponding hole positions to assist operators during work.



In the fabrication industry it can also assist with welding and component positioning, as well as post-weld inspection and painting. Likewise, cutting, drilling and assembly can all be performed with the laser projection equipment, and even complex joining work can be assisted through step-by-step projection.

#4
Construction



The application principle is similar to machining: it can likewise assist with cutting and positioning, effectively helping operators weld rebar and fill concrete; after the concrete is filled, the laser can also be used for assisted inspection.



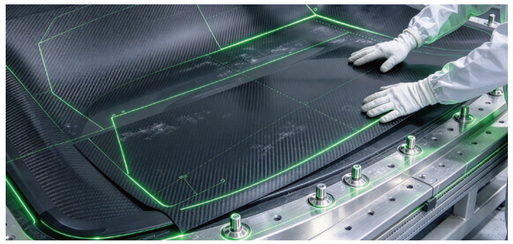
Projecting the drawing onto timber with the laser adds a sense of realism, and is used for timber mold making, cutting, filling, alignment and inspection. Materials for different templates can be switched at zero cost, effectively saving the time spent cross-checking drawings.



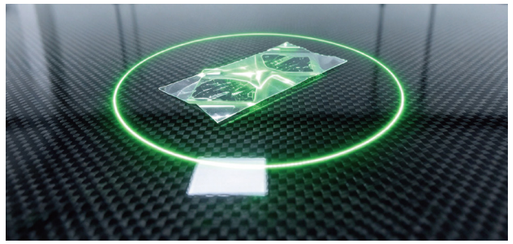
Used for welding and cutting large steel frames and steelwork, such as wind-turbine tower sections and other steel structures, and stadium external frameworks. This application field is relatively new and has broad prospects.

#5

Composite Materials



Project the drawing directly onto the product surface for cutting positioning. Because many composite materials are special in nature—their surfaces are curved—2D drawings previously could not provide precise positioning directly; cutting positioning depended heavily on operator experience and was subject to human error.



Finished products can be inspected through laser projection. Defects that easily occur during composite-material production—debris, missing sections, snap-fit issues and foreign objects— can all be checked by projecting the laser pattern.



Many finished surfaces are curved, and the final painting work likewise requires the laser and other auxiliary means to delineate precise paint edges on the surface; the principle is the same as painting aircraft surfaces.

#6

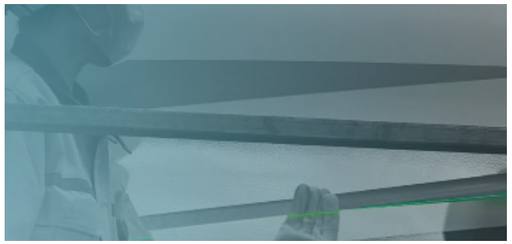
Study: Rail Transit and Shipbuilding



When cutting, marking out and labeling on train surfaces, the required pattern can be projected onto the body or steel-frame surface with laser projection for assistance, saving the time otherwise spent locating reference points from drawings and measuring with a ruler, and effectively increasing work efficiency.



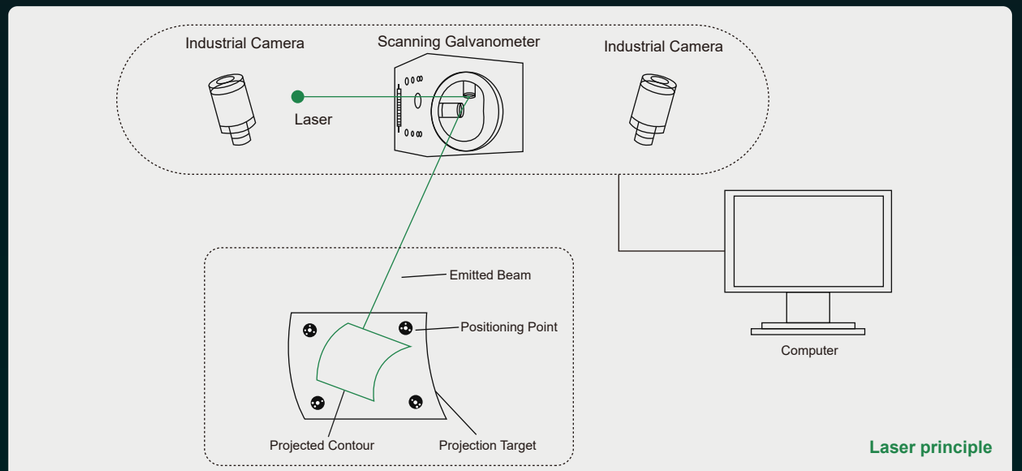
Projection onto curved inner walls follows the same principle; annotation and other functions can assist with wiring and inspection, and the laser can also aid hole drilling and paint layout marking.



Following the same principle as composite materials and aircraft painting, train-surface painting can also use the laser projection system for assisted positioning and guidance; the difference is that positioning references on trains are relatively harder to find, so even more manual searching and positioning time can be saved.

Technical Principle and Core Performance Advantages

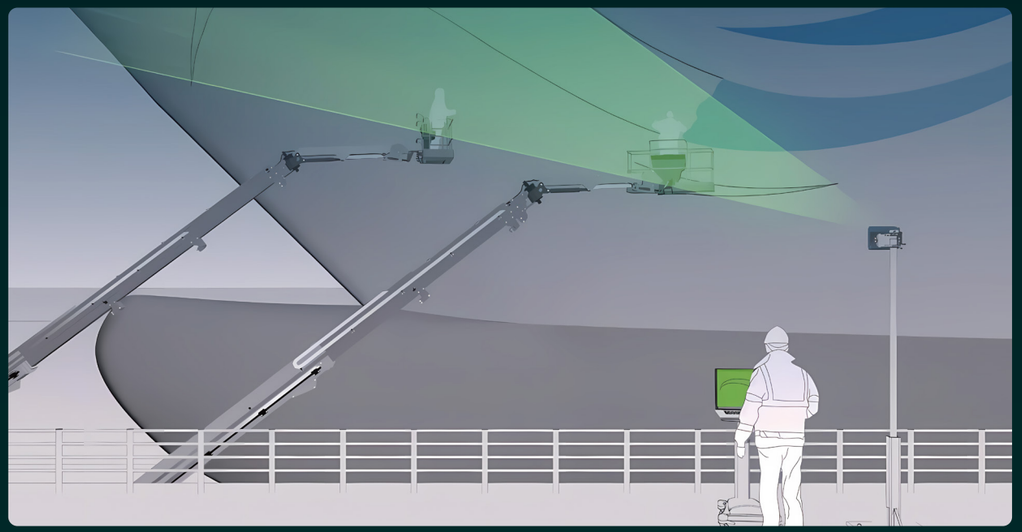
The **DLP-L** series laser projection system is driven by the part's 3D CAD digital model, operating high-precision scanning galvanometers so that the point laser appears within the target projection area as laser lines forming the part's contour, accurately displayed on the region to be installed or machined. This provides operators with reference and guidance for efficient, accurate work, makes the information more intuitive and practical, and effectively bridges CAD engineering design with laser-assisted manufacturing and assembly.



Laser principle

This **DLP-L** series replaces traditional physical molds with digital templates, streamlining the assembly process while reducing the risk of human error, and can save more than 30% of template costs.

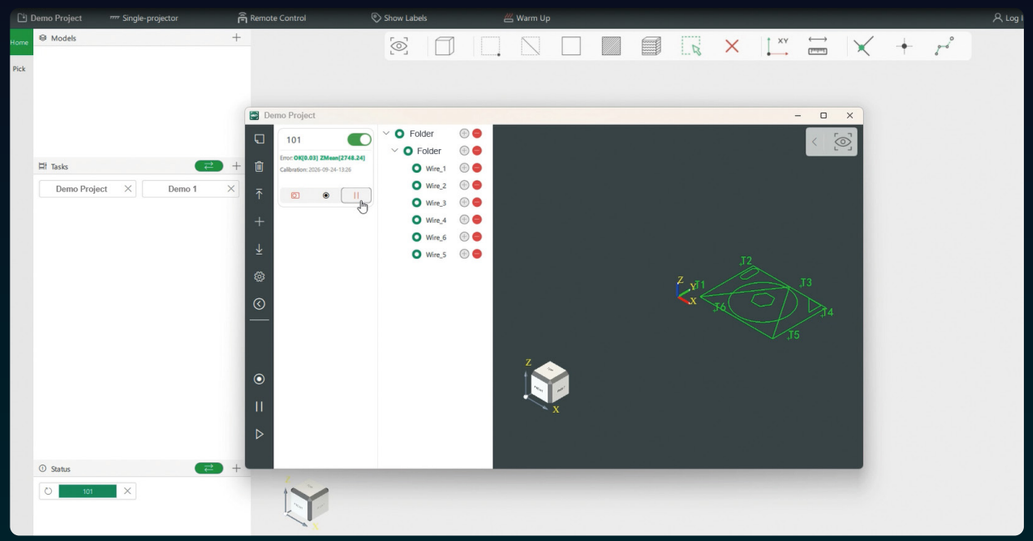
The system is equipped with intelligent guidance and an easy-to-use interface, allowing even inexperienced personnel to master it quickly, effectively improving manufacturing efficiency and cutting the quality-inspection rework rate by 90%.



Software Function and Data Processing Advantages

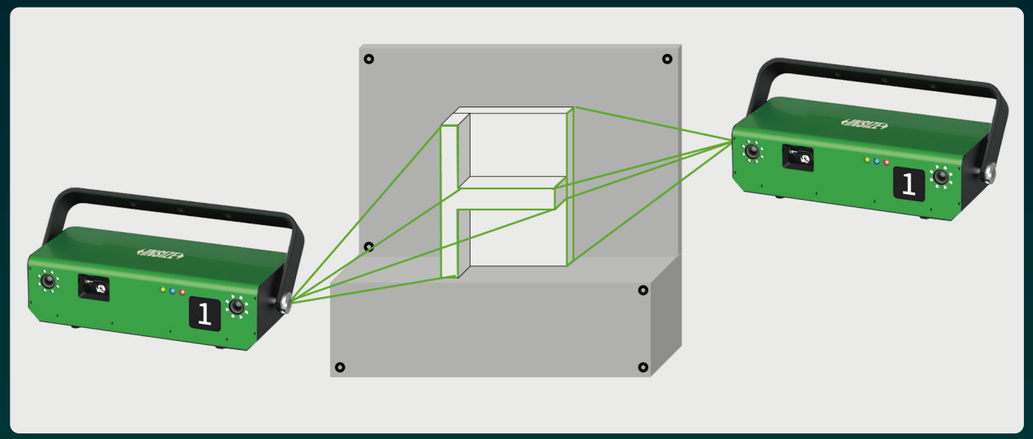
1. CAD Import

The software supports importing CAD files in many formats, and imported files can be individually edited to select which parts to import; each component can be set up as a separate, individually named task, and its annotation information can be viewed in preview mode.



2. Multi-Unit Simultaneous Projection

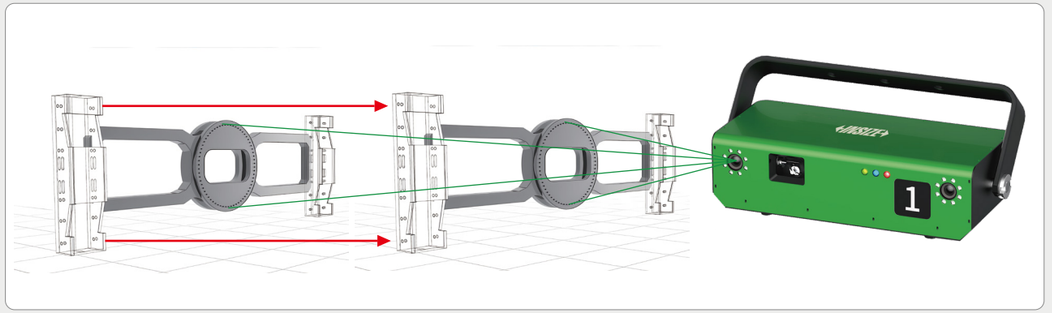
Multiple devices use the same model to project the same object. This function enables 360° all-around projection positioning of large targets such as aircraft, trains and ships, avoiding projection blind spots and increasing work efficiency.



3. Dynamic Tracking

During projection, the system continues to track the sample's position and keeps projecting even if the sample is moved (this function is supported by the **DLP-L600** model only).

It provides real-time following of workpiece movement, deformation and similar conditions, allowing operators to detect anomalies promptly.



4. Process Recording

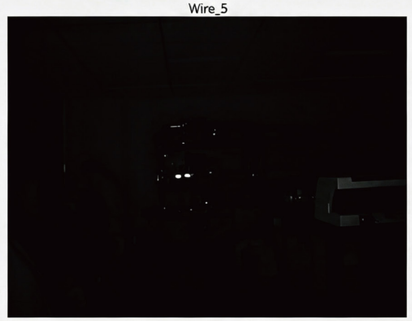
During assembly, the camera takes photos to record the projection-positioning work process, ensuring that the process of every projection positioning is traceable. It can be exported as a report for inspection of the work process.

(this function is supported by the **DLP-L600** model only).

Process Record Report

Process Record Report

Equipment No.: 101

Type	Data	Time	Prquipration Name	
BeginProject	NULL	2026-09-22_14-11-38	Demo Project	101
CheckNextWire	Wire_3	2026-09-22_14-11-34	Demo Project	101
CheckNextWire	Wire_4	2026-09-22_14-11-35	Demo Project	101
CheckNextwire	Wire_5	2026-09-22_14-11-37	Demo Project	101
CheckNextwire	Wire_5 	2026-09-22_14-11-39	Demo Project	101

Specification



DLP-L100



DLP-L600

SPECIFICATION

Code	DLP-L100	DLP-L600
Sensor	laser scanning sensor	high-precision binocular vision system+ laser scanning sensor
Working distance	1.5~10m (camera), 1.5~15m (laser)	
Projection accuracy	≥0.25mm	
Projection angle	60°×60°	
Laser class	3R, <5mW	
Laser wavelength	520nm	
Data formats	IGS, IGES, STP, STEP, DXF, DWG, PLY, compatible with FiberSIM, CATIA CPD software type	
Environmental requirement	temperature: 0~40°C, relative humidity: 0~90%, no condensation	
Output	USB3.0/ethernet port	
Power supply	220V, 50/60Hz	
Dimension (L×W×H)	400×204×142mm	470×205×129mm
Net weight	8kg	9kg

STANDARD DELIVERY

Main unit	1 pc	Software	1 set
Tripod	1 pc	Reflective positioning head	1 set
Remote controller	1 pc		

POSITION RANGE

Working distance	Position range	Working distance	Position range
2m	2×2m	9m	9×9m
3m	3×3m	10m	10×10m
4m	4×4m	11m	11×11m
5m	5×5m	12m	12×12m
6m	6×6m	13m	13×13m
7m	7×7m	14m	14×14m
8m	8×8m	15m	15×15m



reflective positioning head (included)



can be used with a tripod **(computer is not included)**

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