

Industrial 3D Profiler

GY3000

Features

- Ultra-high precision fine measurement.
- Supports various surface materials.
- The software interface is intuitive, easy to operate and saves time.
- Support customer in 2secondary development functions of software.
- Supports drawing 2D/3D shape measurement of samples.
- Historical data storage helps users better understand the results.
- The device is compact and easy to carry.
- Low maintenance cost and easy maintenance.

Application

3D inspection objects in the field of intelligent manufacturing are mainly industrial manufactured products.

- Automotive industry: tire appearance inspection, car body gap detection, brake disc impact mark detection.
- 3C smart industry: mobile phone assembly accuracy inspection, packaging component shape inspection, etc..
- Furniture industry: board width and defect inspection, wood grading.
- Others: Character recognition on the surface of castings, concave and convex detection of cables, packaging integrity detection, weld positioning and weld shape detection.

Description

GY3000 is a measuring instrument that uses a cylindrical objective lens to diffuse laser light into a line laser and then projects it on the surface of the target to form diffuse reflection. After the reflected light is imaged on CMOS, it measures displacement and shape by detecting changes in position and shape.

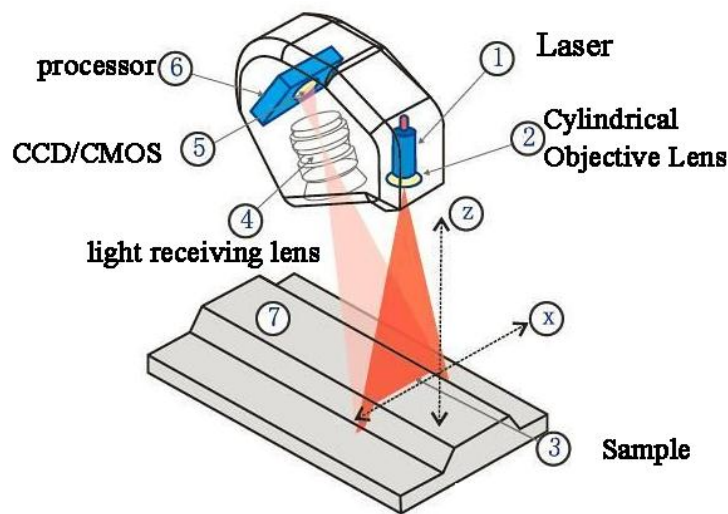
The GY3000 3D profile measuring instrument is mainly composed of a 3D high-precision camera, controller, connecting cables and host computer software. The core device uses a camera with an accuracy of up to 3200 points/profile, a high-precision XY moving platform, combined with Optosky's unique algorithm technology provides users with a new generation of leading 3D line laser measuring instruments.



1. Working principle

The core component of this product, the laser sensor, uses the KEYENCE 3D profile sensor. It uses the laser beam emitted by the laser transmitter to be processed into parallel light through the cylindrical objective lens. The parallel light is vertically incident on the surface of the object to be measured, causing diffuse reflection. The laser sensor can form an image on the photosensitive element CMOS based on the diffusely reflected light. The position of the light spot on the photosensitive element changes according to the distance to the target, and the system automatically converts this change into a measurement result of the target position.

Equipped with an XY-axis high-precision motion platform, it can realize point cloud splicing and splicing out a complete 3D outline of the measured object. It can also achieve 3D size measurement on the outline as well as flatness, height difference, etc.



2. Hardware specifications

GY3000 3D profile measuring instrument	
Model\parameters	GY3000
Basic information	
Measurement mode	Automatic measurement
Operating system	Windows10/11
Button	Power button
Scanning platform	X+Y+Z axis movement
Movable stroke	150mm
Moving speed	5cm/s
Material	Aluminum alloy
Power supply	100~240VAC, 50~60Hz
Packing list	Measurement platform, power cord, instructions
Product Size	350×400×500mm
Product weight	20Kg
Accuracy	
Measurement accuracy (repeat accuracy)	±1um

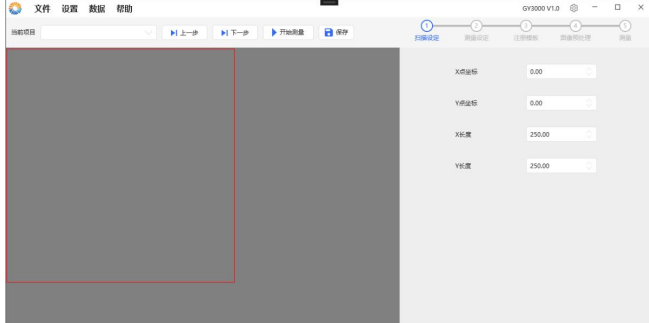
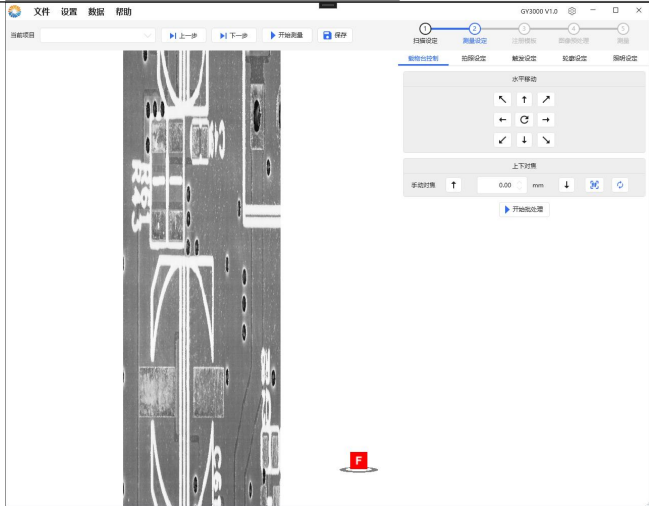
Repeatability in Z direction	0.4um
Measuring range	Without splicing: 150×16×14.6mm Splicing: 150×150×70mm

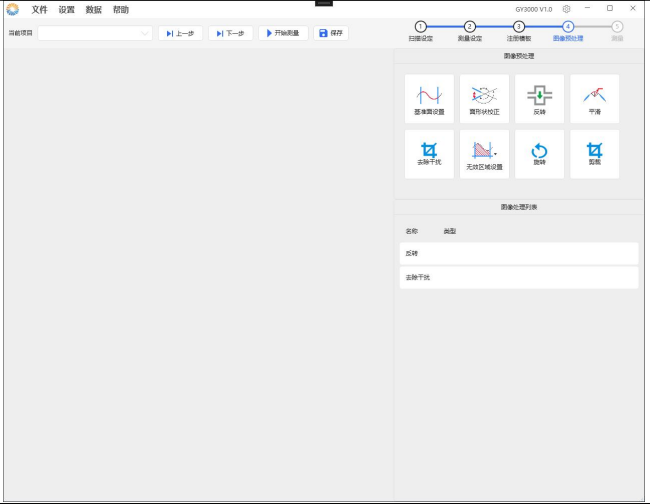
3. Software function

The software supports control of the XY motion platform to complete 3D modeling of the measured object, and can paste 2D images onto 3D to achieve a high degree of restoration of the measured object.

Supports two measurement methods: contour measurement and surface measurement. In contour measurement, it supports a variety of contour line establishment methods, and supports multiple measurement operators such as point-to-point distance, line-to-line distance, diameter, angle, etc.; in surface measurement, it supports various 3D measurement operators such as datums settings, surface-to-surface distance, etc.

Before measurement, it supports a variety of 3D point cloud preprocessing methods to effectively reduce noise and improve measurement accuracy. It also supports historical record query and analysis; after the measurement is completed, you can create engineering files, support template matching, and replace the same type of workpiece for measurement, no clamping required for positioning, to automatically match the measurement items.

Serial number	Function	Illustration
1	Path settings	
2	Scan settings	
3	Template registration	To be added

4	Image and processing	
5	Measurement	Contour measurement Surface measurement 