Image Dimension Measurement System

OM-1100

Place and Press

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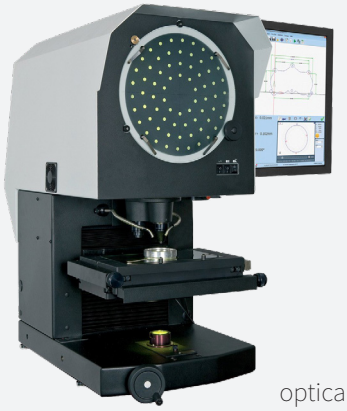
Common Problems with Dimensional Measurements

Conventional Measurement Tools such as optical comparator, measuring microscope, caliper, micrometer, etc., have some common problems like slow measuring speed, easy to introduce human error, tedious operation steps and high learning cost.



optical comparator

measuring microscope

caliper

micrometer

SLOW

- Adjusting complex fixtures for part placement and datum setup is time consuming
- Manual measurement, limited energy
- Data management and creating inspection reports can be tedious

INCONSISTENT

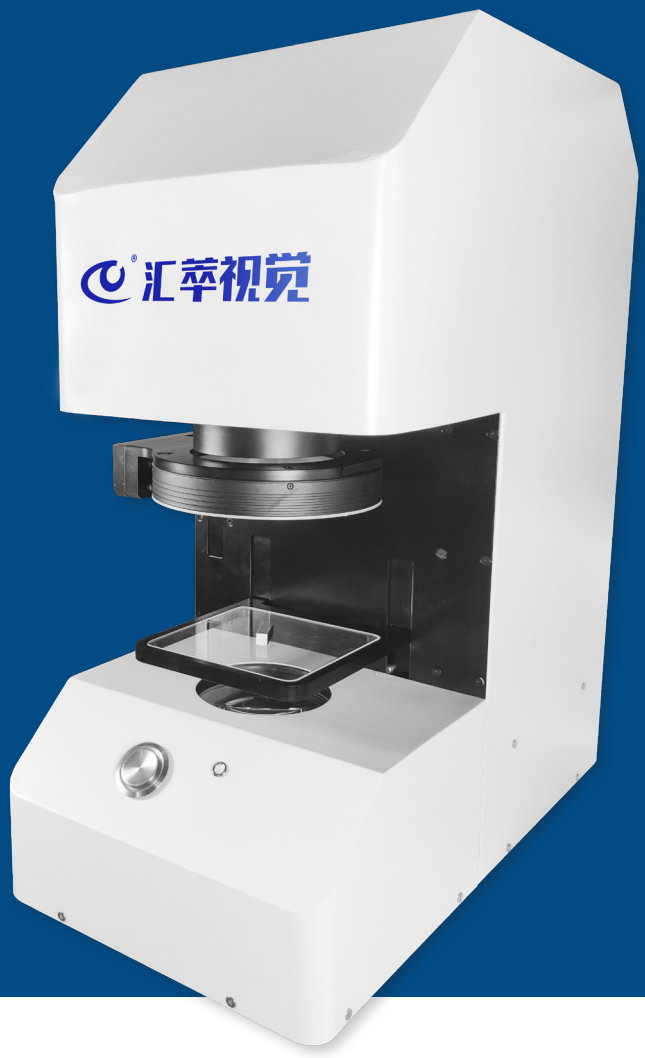
- Different lighting methods or lighting types results in inconsistent measurements
- Different position of the parts results in inconsistent measurements
- Measurements rely heavily on operator judgment and experience

COMPLICATED

- Learning how to operate the measuring instrument takes time
- Dimensions requiring virtual lines or points add a layer of complexity

OM-1100
Image Dimension Measurement System

Place-and-Press Measurement



FAST

- Automatic recognition of position and orientation
- No time consuming positioning work or datum setup required
- Automatically saves measurement data and creates inspection reports

CONSISTENT

- Visual focus can easily reproduce the same lighting conditions
- Automatically identifies the position of the parts
- The simple place-and-press operation means consistent measurement results regardless of the operator

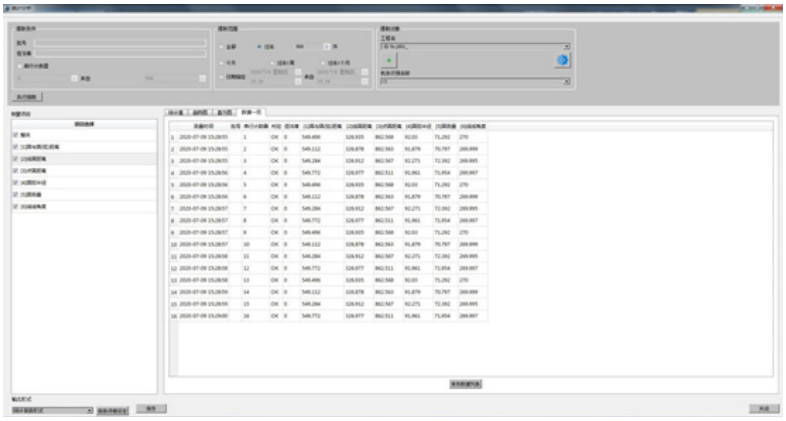
EASY

- Easily set up measurements with just a few clicks
- Setting up virtual lines and points is just as simple

FAST

Automatically saves measurement results

It can not only do the "OK/NG" judgment to the measurement results, but also automatically saves the measurement results and creates inspection reports.

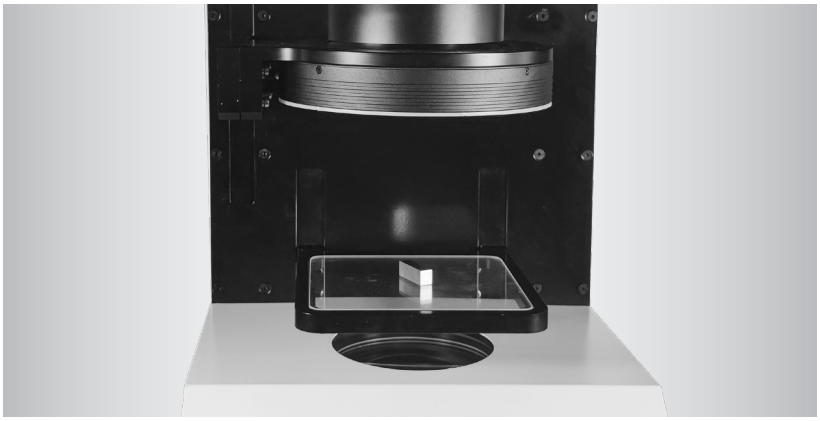


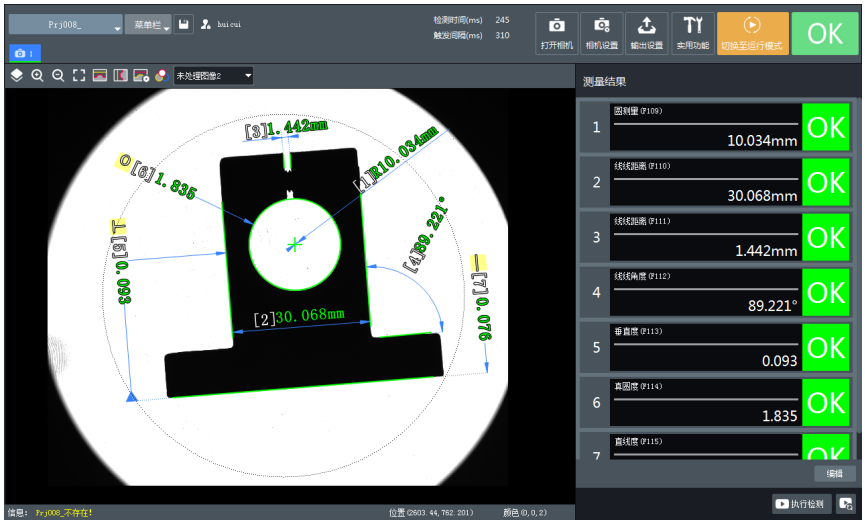
CONSISTENT

Equipped with a specifically designed optical lens with a large depth of field

Large DOF: Parts locates within the depth of field can be correctly measured.

Large FOV： It allows parts which is placed within the field of view to be measured accurately in a short time.





EASY

Automatic Recognition of Position and Orientation

The location and orientation of the part placed on the measurement stage are automatically detected. No need for precise positioning of the part.

Load project

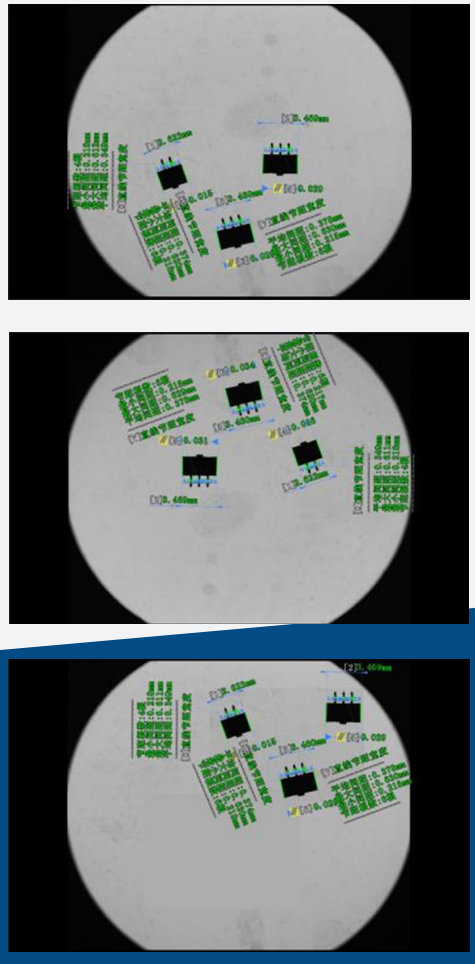
Load the previous project and restore the original measurement environment and settings.

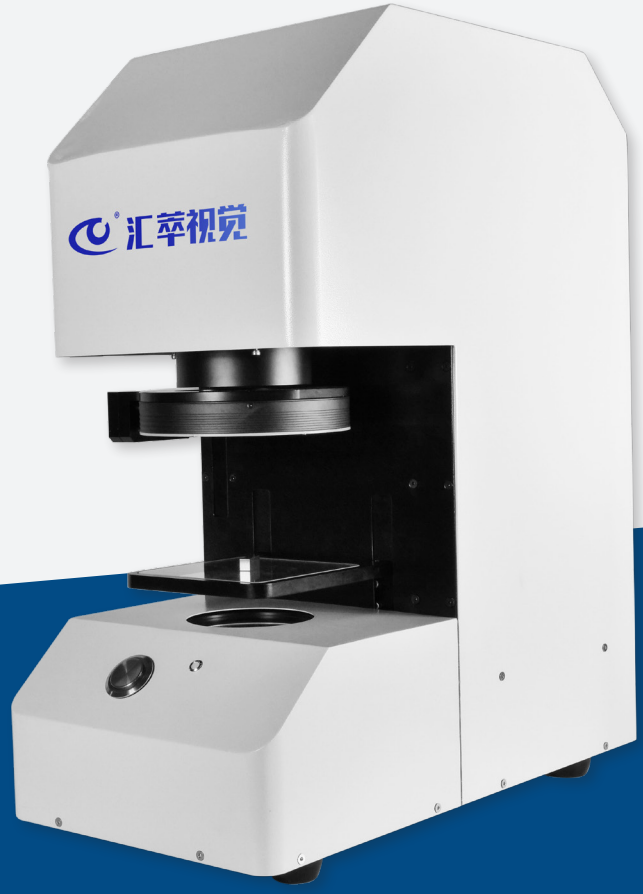
Place the parts

Place randomly within the field of view, it will be located automatically.

Press one button to measure

Parts can be measured no matter where they are placed within the field of view.

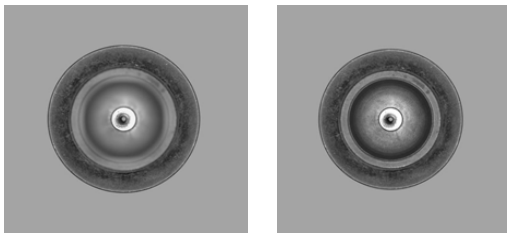




Large Diameter Telecentric Lenses

Clear Focus Regardless of Height Differences

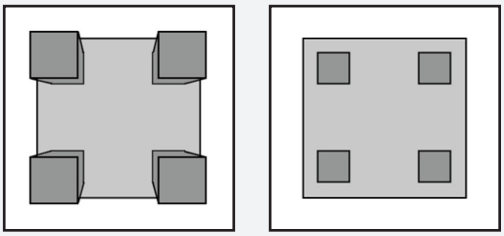
The OM-1100 is equipped with a specially designed lens with a large depth of field. This ensures accurate measurements despite height differences on the part. There is no need for extreme focus adjustment.



Zoom lens　　OM-1100

Apparent Feature Size Not Affected by Height Differences

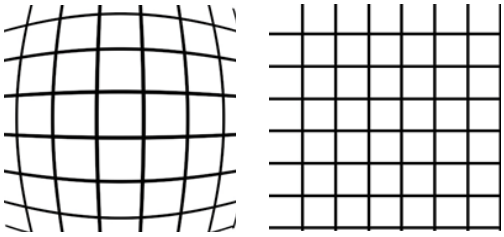
The OM-1100 is equipped with telecentric lenses, which means that the image is not affected by the height differences of the part. This enables accurate measurements of parts with uneven surfaces.



Zoom lens　　OM-1100

Reduced Distortion Throughout the Entire Field of View

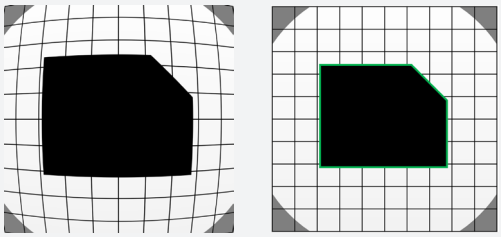
The OM-1100 is equipped with a low distortion lens designed to not only minimize distortion near the centre, but also at the outer reaches of the field of view. This allows parts to be measured accurately despite its location on the stage.



Zoom lens　　OM-1100

Automatic Edge Recognition for Sub-pixel Processing

Professional sub-pixel edge extraction technology is adopted to extract the edge more accurately.



Zoom lens　　OM-1100

Measurement Software

HCVision 7.1

OM-1100 is equipped with professional vision measurement software - HCVision 7.1, which is fully developed by Mstar. The software interface is simple and clear, easy to operate, powerful and easy to use. HCVision 7.1 provides five categories of tools - element tools, basic measurement tools, auxiliary tools, tolerance tools and application tools. The combination and interaction of tools can be carried out according to users' own requirements, so as to improve work efficiency.

Software tools

Element tools

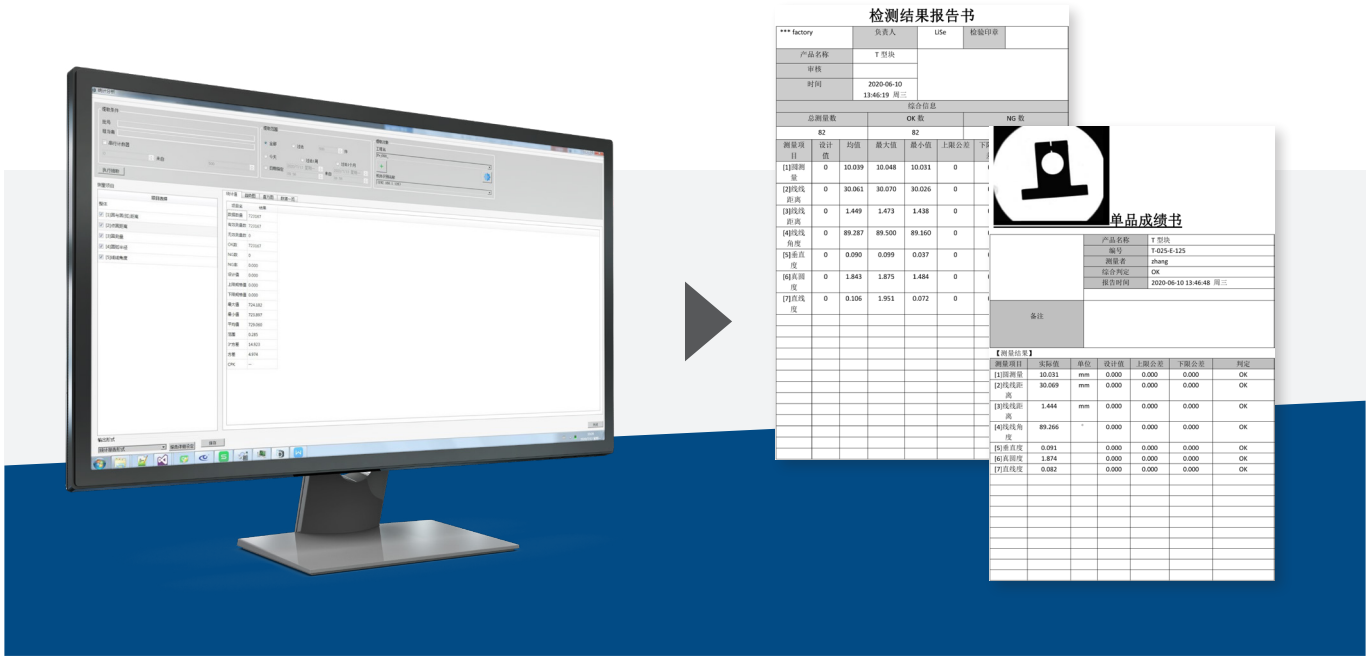
Auxiliary tools

Basic measurement tools

Tolerance tools

Application tools

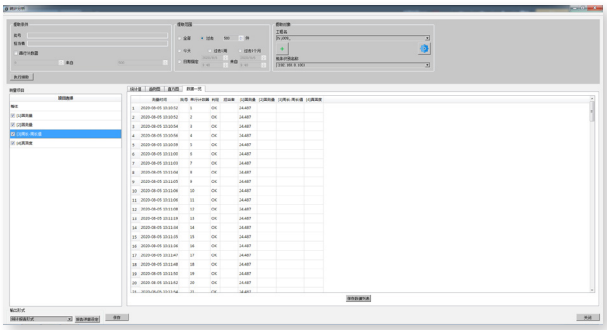
Statistical analysis



Statistical analysis interface has **statistical value**, **trend chart**, **histogram** and **data summary** options, wchich can automatically generate inspection report in seconds.

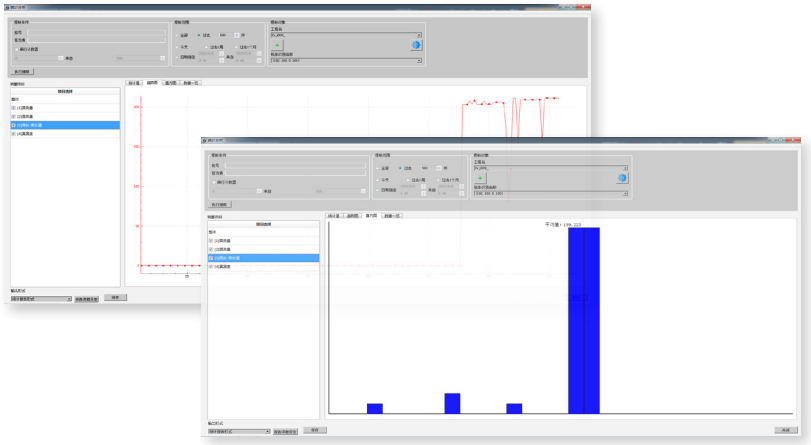
Automatically Calculate Cp and Cpk

The system automatically calculates and displayskey statistical values for each measurement itemincluding OKs, NGs, maximum point, minimumpoint, average, Cp, Cpk, and others.



Product quality visualization

Built-in trend graph and histogram functions allow for verification of trends and variations of each measured item.



Trend graph

Anomalies in the production process can be monitored by the trend of measure values.

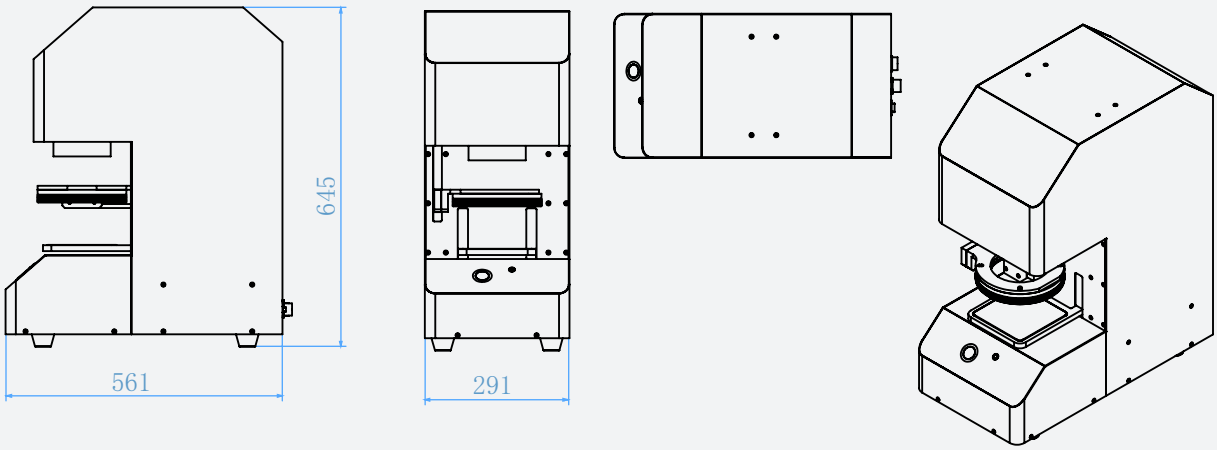
Histogram

It reflects the fluctuating state and distribution of product quality, which is used to judge and predict product quality

Parameters

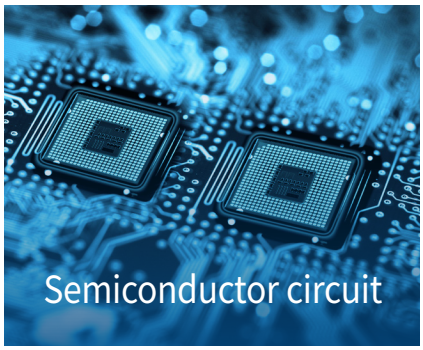
Model No.		OM-1100
Dimension(mm)		561*291*645
Load weight(kg)		3kg
Lens		Telecentric lens
WD(mm)		120
Camera		5.0 MP CMOS
Field of View(mm)		Φ100
Measurement accuracy (μm)		⩽ 5μm
Repeatability(μm)		⩽ 1μm
Stage moving range(mm)		45
Light	Transparent	Telecentric transparent illumination
	Ring	Ring illumination (electric)
Software		HCVision 7.1
Working enviroment		indoor temperature (best temp.: 23°C ±2°C); Humidity 30-80%; Vibration <0.002g lower than 15Hz。

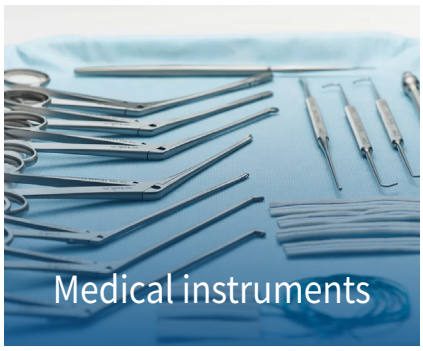
Drawings | (Unit: mm)



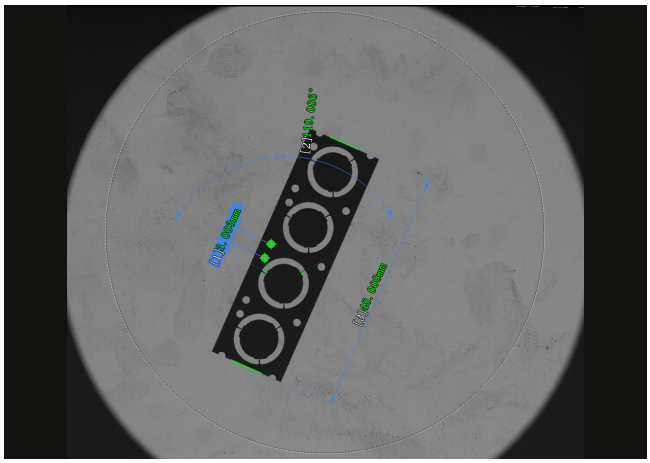
Application Area

OM-1100 can be used in 3C industry, pharmaceutical industry, medical apparatus and instruments, automobile manufacturing industry, hardware industry, semiconductor industry, agriculture and food, cosmetics, packaging and so on.

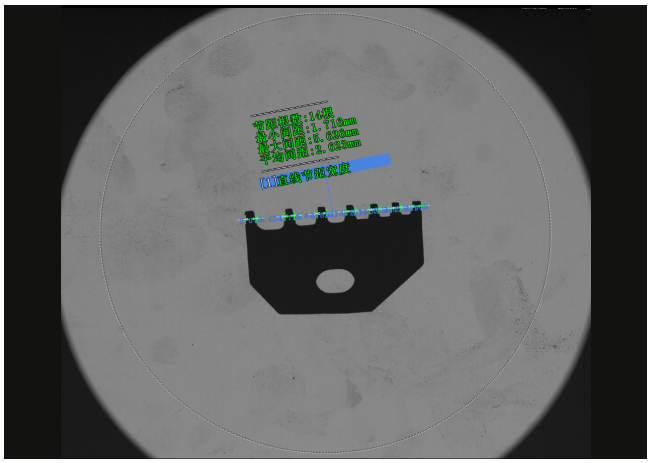




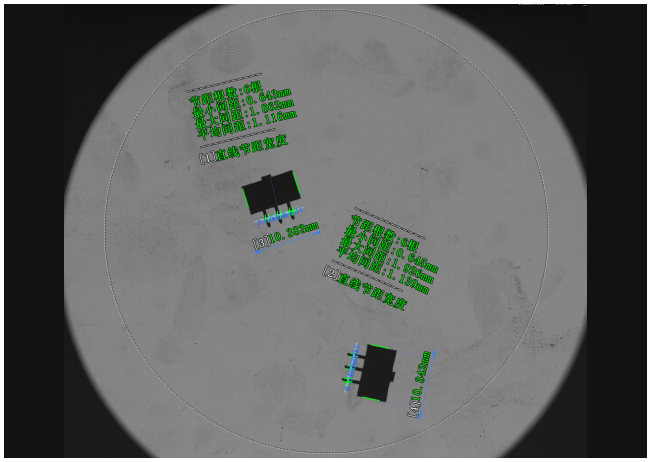
Application Examples



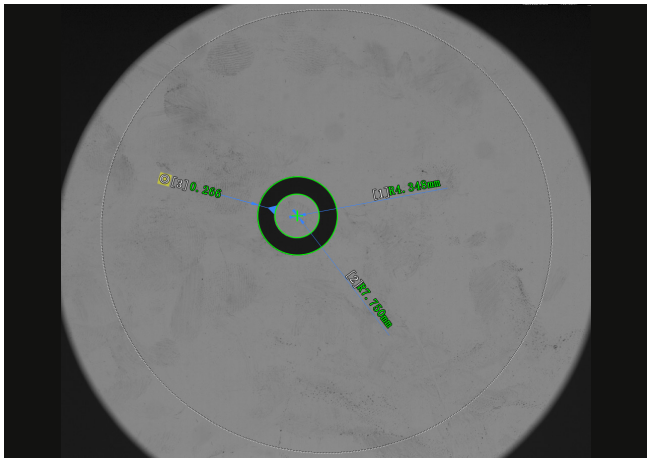
Wafer measurement



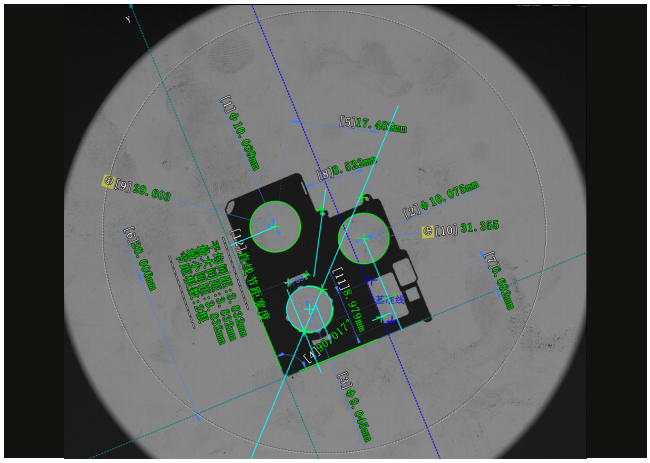
Gear distance measurement



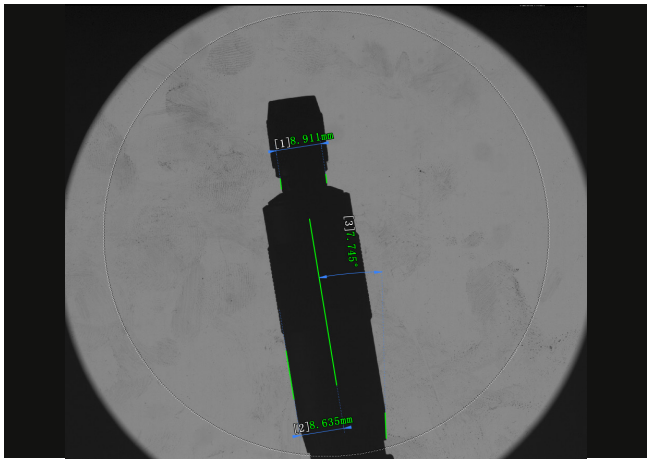
Connector dimension measurement



Gasket dimension measurement



Dimension measurement of stamping parts



Shaft parts measurement

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