



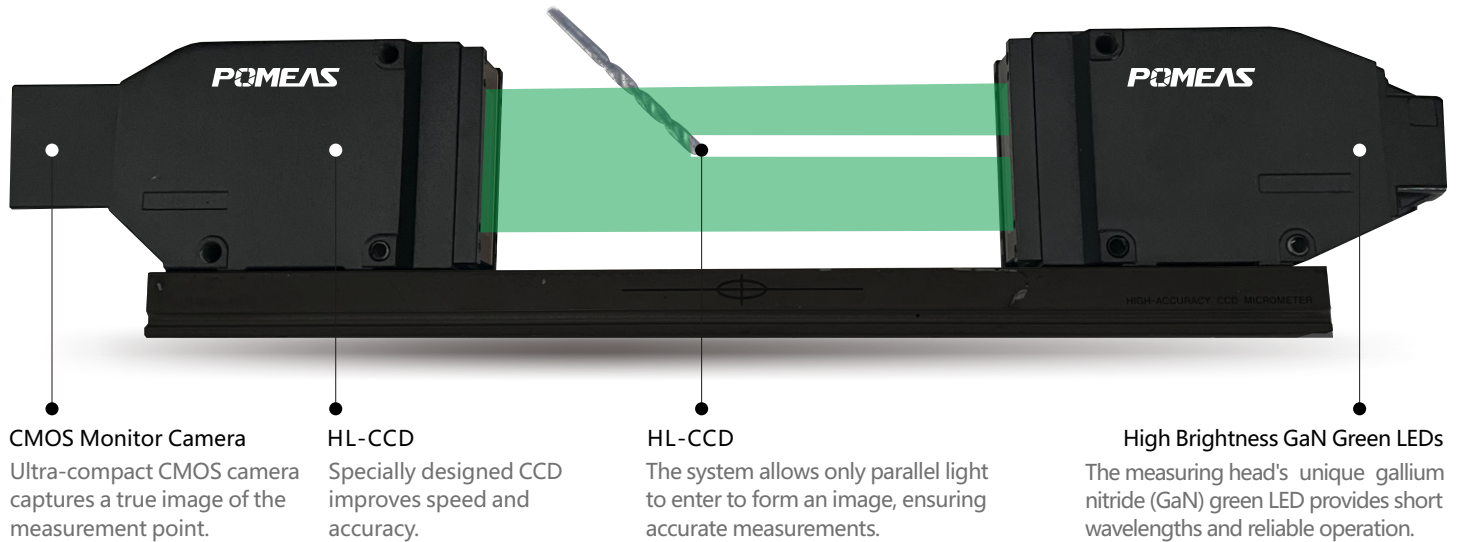
High Speed And Accuracy In Standard Models

LM-1030

Measuring Distance	0.3 to 30mm
Smallest Detectable Object	0.3mm
Measurement Accuracy	$\pm 2\mu\text{m}$
Reproducibility	$\pm 0.15\mu\text{m}$

Optical System Achieves High Speed, High Accuracy And High Durability

Speed, accuracy and durability are improved by advanced optics, high brightness green LEDs and telecentric lenses and HL-CCDs on the receiving end.



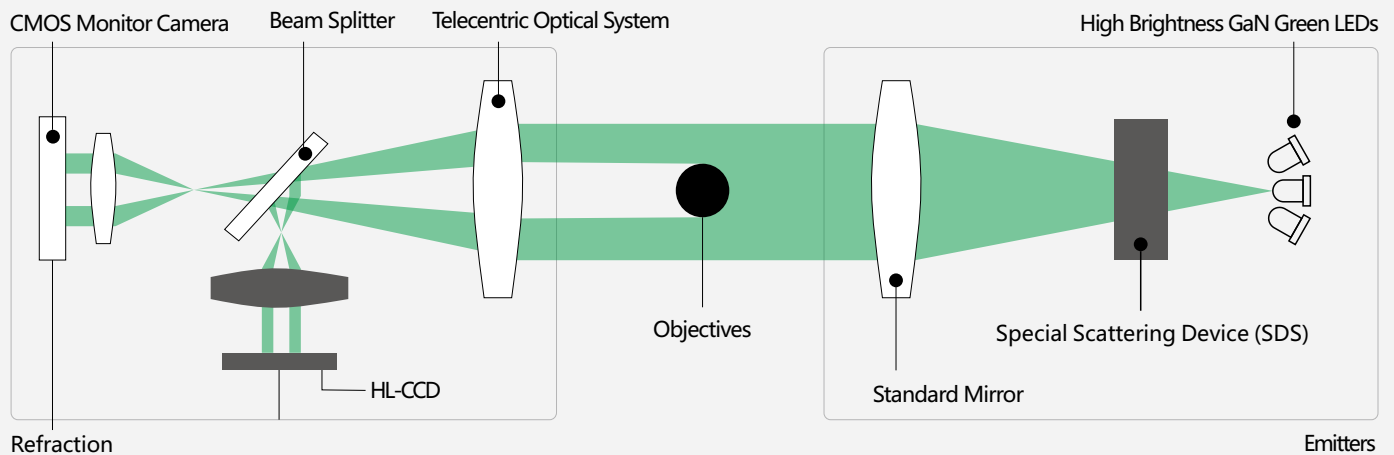
CMOS Monitor Camera
Ultra-compact CMOS camera captures a true image of the measurement point.

HL-CCD
Specially designed CCD improves speed and accuracy.

HL-CCD
The system allows only parallel light to enter to form an image, ensuring accurate measurements.

High Brightness GaN Green LEDs
The measuring head's unique gallium nitride (GaN) green LED provides short wavelengths and reliable operation.

LM-1030 Product Schematic Diagram :



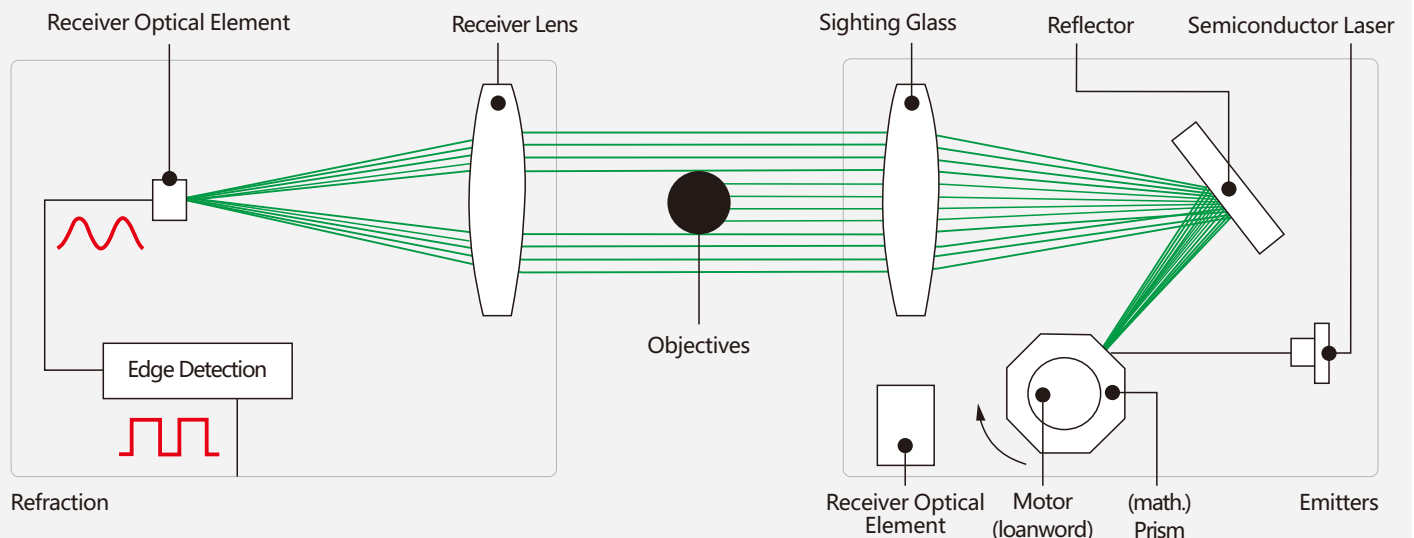
Refraction

The unique optical system of green LED and telecentric lens HL-CCD helps to achieve double the speed and accuracy of conventional micrometers. Motorless construction and long-life light source ensure excellent durability for long and reliable operation.

Emitters

The green LED light illuminates the target as a single parallel ray. fringes are detected between the bright and dark areas on the CCD to obtain measured values, e.g. outer diameters, etc. The green LED light is used to illuminate the target as a single parallel ray.

Diagram of the principle of the laser scanning method:



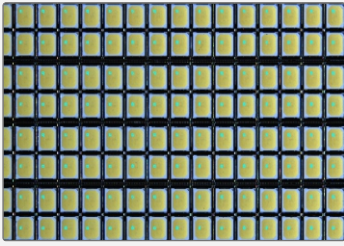
Refraction

Emitters

High Durability

CCD with no moving parts & long life LEDs

The laser scanning method was completely modified. Thanks to the combination of green LEDs and HL-CCDs, the problem of motor durability, which has been a weakness of the laser scanning method, has been solved. In addition, the long-life LEDs provide continuous reliability over the long term.



LCD display makes viewing and calibrating Targets more easily

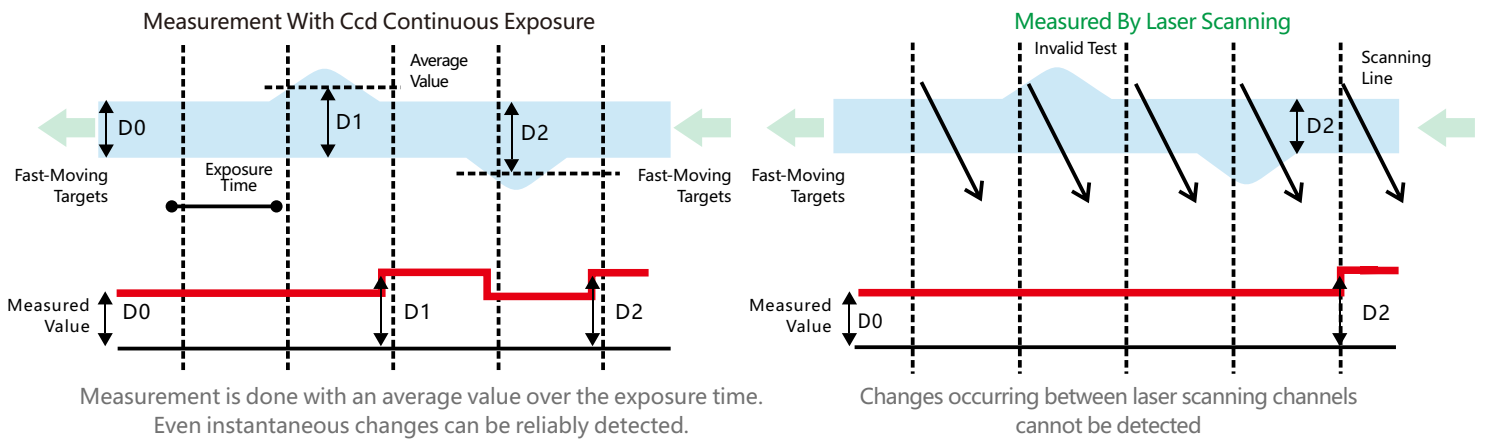
By providing advanced features, the controller increases efficiency to meet demanding measurement needs.



High Speed & High Accuracy

2400 samples/sec, $\pm 0.06\mu\text{m}$ reproducibility

Continuous exposure measurement using HL-CCD enables high-speed sampling, realising twice the conventional speed and accuracy. Unlike laser scanning methods, there is no invalid detection. This can be applied in situations where greater accuracy is required due to finer product design or faster production line speeds.



Multiple Measurement Functions Support Multiple Tests

Outside Diameter Measurement

Dual measuring head mode

Special modes enable the measurement of large diameter objects or large sheet materials. No complicated calculations or other settings are required.

Simultaneous measurement of the outer diameter and eccentricity of the copy cylinder

Simultaneous measurement with one head

One measuring head can simultaneously measure in two measuring modes, e.g. OD and eccentricity.

Measurement Of Ic Lead Spacing

Measurement area design

The measurement area can be designed according to the purpose of the inspection, e.g. to measure the gap or spacing of IC wires.

Checking The Width Or Edge Position Of The Glass Panel

Measurement of transparent objects

Even transparent objects that are difficult to detect with conventional micrometers can be measured.

The edge detection level can be easily changed by the controller.

Measuring The Outer Diameter Of An Optical Fibre

Trend display

The outer diameter of the optical fibre is continuously measured and not only the numerical value is displayed but also a trend graph representing the measured value as a waveform.

Numerical Records

The history of abnormal values, e.g. date/time, measured values and comparison results can be recorded in the controller's memory.

Product Parameter	
Type	Standard
Product Type	Camera with observation function
Model	LM-1030
Measuring Distance	0.3 to 30mm
Minimum Detectable Object	0.3mm
Transmitter/receiver Distance	160 ±40mm
Light Source	GaN green LED
Ccd Scanning Distance	Approx. 33mm
Measurement Accuracy	±2μm
Reproducibility	±0.15μm
Number Of Samples ⁷	2400 samples/sec
Display Camera	Supplied with
Enclosure Protection Class	Ip64
Ambient Temperature	0 to +50°C
Relative Humidity	35 to 85% (no frost junctions)
Weights	Transmitter: approx. 140g Receiver: approx. 380g Base: approx. 220g

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