KEYENCE

INSTANTANEOUS
TWO AXIS MEASUREMENT

2D DISPLACEMENT SENSOR

Ideal for high accuracy inline / offline measurements

High precision X and Z axis measurement provides an accurate reproduction of surface profiles.
An optimum mode can be selected from among 28 measurement modes to perform the simultaneous measurement of height, width, cross-sectional area, feature position, and step-height. Furthermore, the system provides and industry-leading simultaneous measurement of up to eight features.
More complex evaluations can be performed by performing onboard calculations based on extracted values.

BEST IN CLASS

Simultaneous measurement/ judgment of 8 features

KEYENCE advanced processing technology allows high simultaneous evaluation of multiple features without the need for multiple inspection systems.

■ Measurements

Peak height	Bottom height
Average height	Gap
Width/position	Cross sectional area
Angle/intersection	Profile comparison

FIRST IN THE WORLD

E³-CMOS image sensor provides stable measurements

The E³-CMOS with a 300 times wider dynamic range than conventional devices is built into the system. The LJ-G Series precisely follow the surface profile of any target in the X and Z axes. It can reliably measure a variety of different materials including black rubber, white ceramic, and metal.
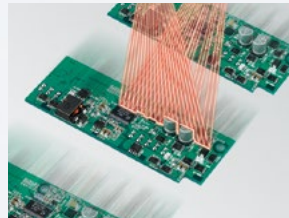
*E³-CMOS: Enhanced Eye Emulation C-MOS
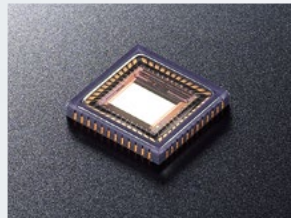
FASTEST IN CLASS

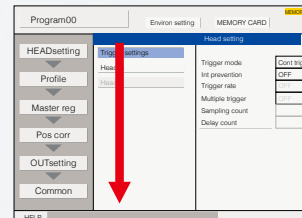High-speed sampling of 3.8 ms, high-accuracy of ±0.1% of F.S.

The Quatro link system achieves the highest sampling speed in its class, 3.8 ms. The LJ-G Series can follow high-speed production lines or moving targets. In addition, a 2D Ernostar lens is used to provide the highest accuracy optical system in its class.
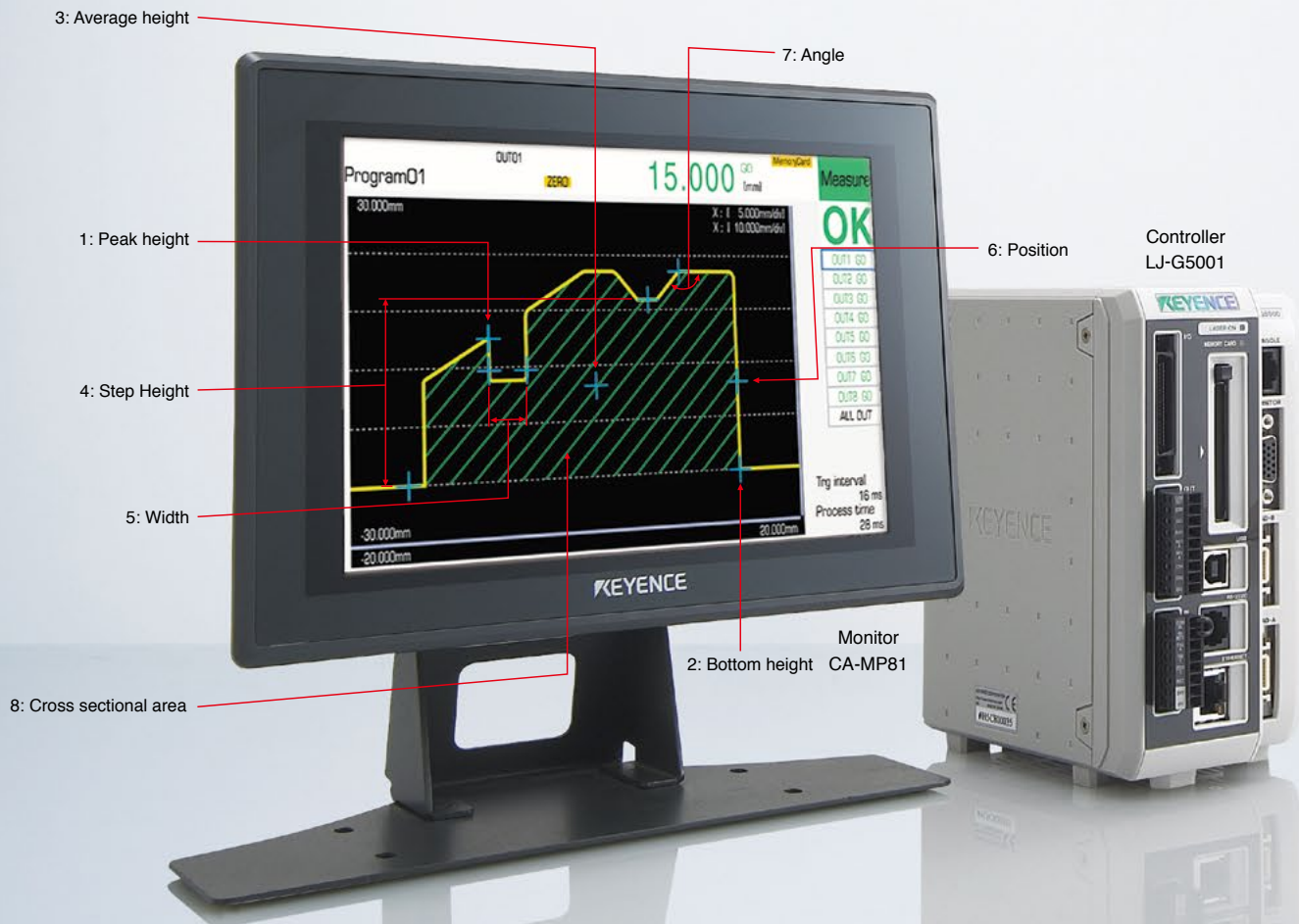
FIRST IN CLASS

Easy setting with the simple setting menu

Novice users can easily configure settings following the simple menu. Setup via a PC is also simplified thanks to the optional support software.

Measure up to 8 features at the same time

3: Average height
7: Angle
1: Peak height
4: Step Height
5: Width
6: Position
2: Bottom height
8: Cross sectional area

Controller
LJ-G5001

Monitor
CA-MP81

2

Long-range
LJ-G200
Z-axis 200 ± 48 mm
7.87" ± 1.89"
X-axis 62 mm 2.44"
Z-axis 2 μm
0.000079"
X-axis 20 μm
0.000787"

Mid-range
LJ-G080
Z-axis 80 ± 23 mm
3.15" ± 0.91"
X-axis 32 mm 1.26"
Z-axis 1 μm
0.000039"
X-axis 10 μm
0.000394"

High accuracy
LJ-G030
Z-axis 30 ± 10 mm
1.18" ± 0.39"
X-axis 22 mm 0.87"
Z-axis 1 μm
0.000039"
X-axis 5 μm
0.000197"

Ultra high
accuracy
LJ-G015
Z-axis 15 ± 2.6 mm
0.59" ± 0.10"
X-axis 7 mm 0.28"
Z-axis 0.2 μm
0.000008"
X-axis 2.5 μm
0.000098"

Ultra high
accuracy
mirror reflection
LJ-G015K
Z-axis 15 ± 2.3 mm
0.59" ± 0.09"
X-axis 7 mm 0.28"
Z-axis 0.2 μm
0.000008"
X-axis 2.5 μm
0.000098"

KEYENCE

LJ-G200

Evolution of the 2D Laser Displacement Sensor

Being a world leader in laser displacement technology, KEYENCE employed the cutting edge concepts developed for our 1D displacement products for use in a brand new 2D system.
With the implementation of this technology we are able to present a state-of-the-art system based on proven technology.
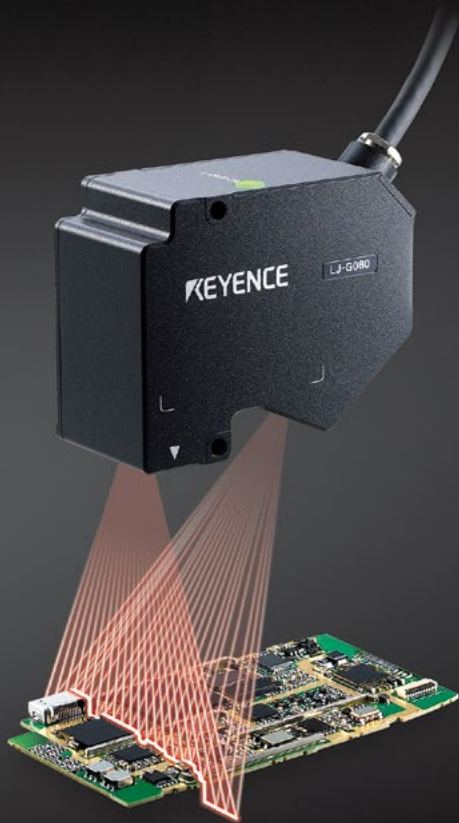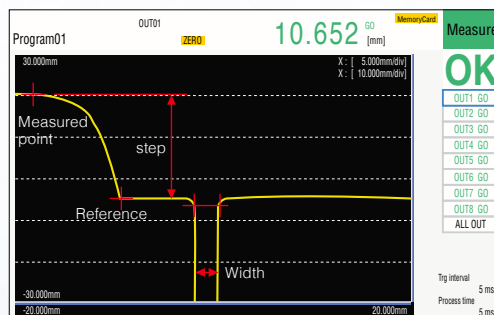

Height and warpage

Peak, bottom and average heights measurement
Peak, bottom and average heights can be measured within a specified range.

Warpage measurement
A simple to use tool set allows simple evaluation of warpage over a given area.

Width and step height
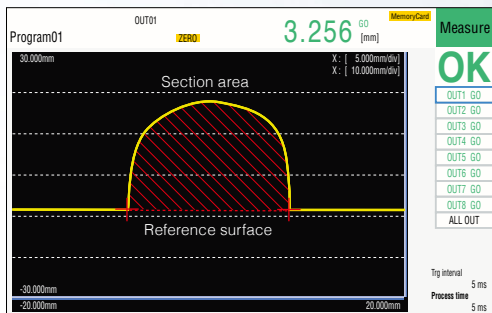

Step height measurement
A step height can be easily extracted by evaluating the difference in the z-axis between any two designated features.

Width measurement
Width can be determined in the X-axis (lateral direction) by specifying any two points.
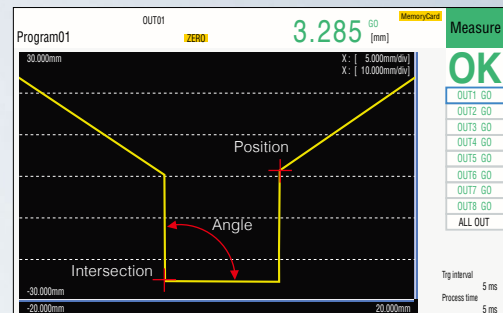
Profile and cross-sectional area

Profile measurement
Measures the maximum change in the z-axis when compared to the registered master profile.

Cross-sectional area measurement
Measures an area enclosed by the reference surface and the detected profile.

Angle, intersection and position

Angle measurement
Measures the angle between two designated intersecting lines.
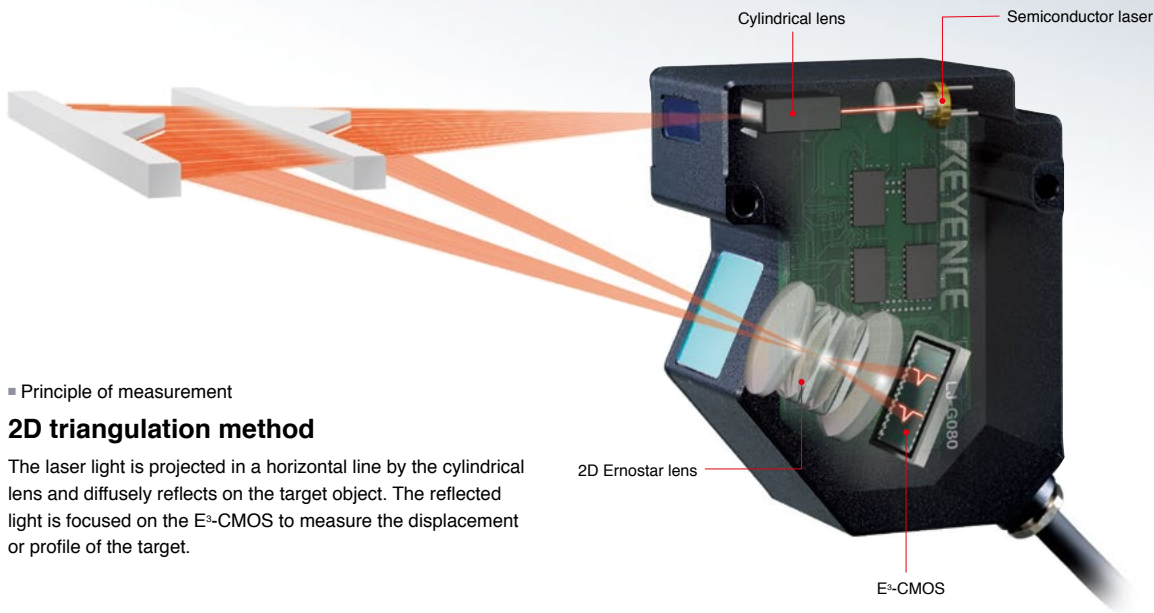
Intersection measurement
A measurement value is the coordinate of the intersection position, x or z, based on two projected lines.

Position measurement
Measures the coordinate of a specified point (position).

5

Unique design for high-accuracy measurements

Cylindrical lens

Semiconductor laser

KEYENCE

LJ-G080

■ Principle of measurement

2D triangulation method

The laser light is projected in a horizontal line by the cylindrical lens and diffusely reflects on the target object. The reflected light is focused on the E^3-CMOS to measure the displacement or profile of the target.

2D Ernostar lens

E^3-CMOS

The LJ-G MEASURES ANY SUBSTANCE: E^3-CMOS EQUIPPED

The E^3-CMOS image sensor, developed for machine vision, has a 300 times wider dynamic range than a conventional sensors and a significantly improved signal to noise ratio.
This allows simultaneous measurements of drastically different targets such as black rubber (with weak reflection) and polished metal (with strong reflection).
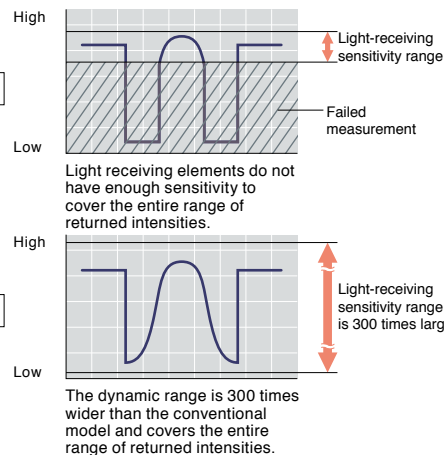
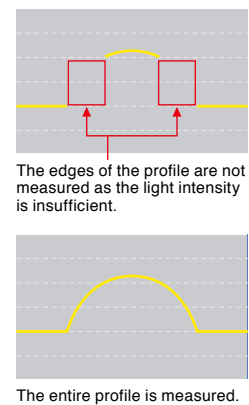*E^3-CMOS sensor: Enhanced Eye Emulation C-MOS image sensor

❚ Laser light reflection

Sensor head

Target object
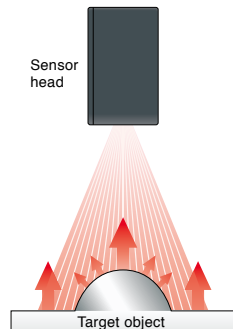
The reflectance and the reflected light intensity change according to the shape, color and material of the target.

Conventional

E^3-CMOS

❚ Light intensity

High

Low

Light-receiving sensitivity range

Failed measurement

Light receiving elements do not have enough sensitivity to cover the entire range of returned intensities.

High

Low

Light-receiving sensitivity range is 300 times larger

The dynamic range is 300 times wider than the conventional model and covers the entire range of returned intensities.

❚ Profile measurement

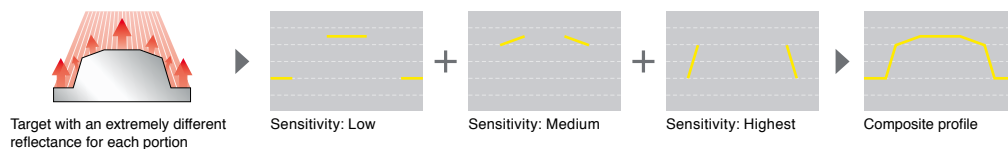The edges of the profile are not measured as the light intensity is insufficient.

The entire profile is measured.
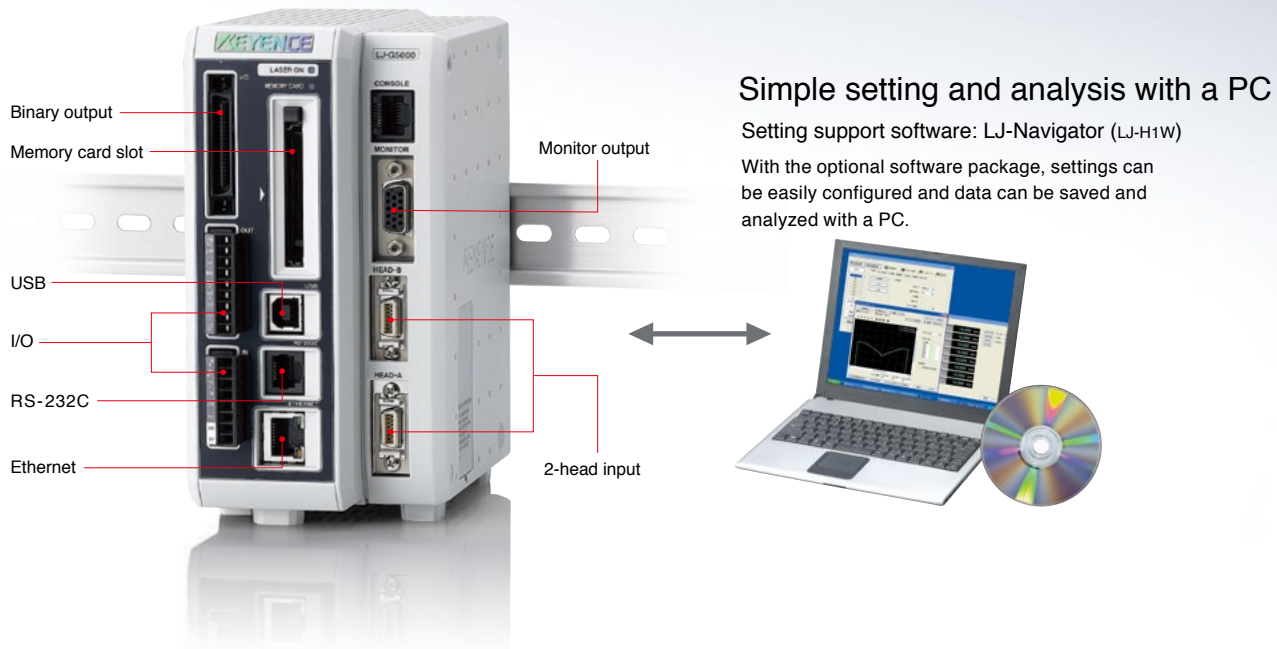
ASAP (Automatic Sensitivity Adjustment by Pixel)

This function adjusts the sensitivity and laser power of the E^3-CMOS to obtain suitable waveform data for each portion of the target that has a different reflectance. The obtained data is merged as a single composite profile.

Dynamic range 6000x

Target with an extremely different reflectance for each portion

Sensitivity: Low

+

Sensitivity: Medium

+

Sensitivity: Highest

Composite profile

Multifunctional controller satisfies any need

Binary output

Memory card slot

USB

I/O

RS-232C

Ethernet

Monitor output

2-head input

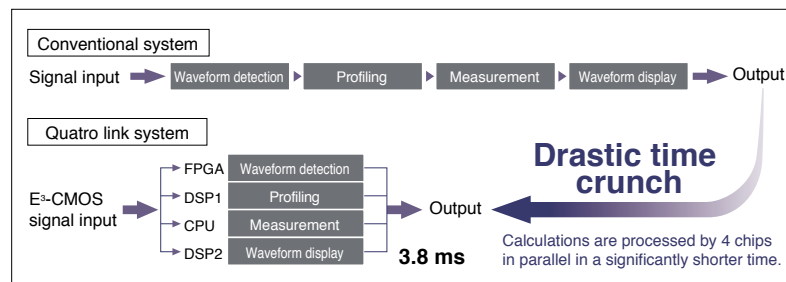## Simple setting and analysis with a PC

Setting support software: LJ-Navigator (LJ-H1W)

With the optional software package, settings can
be easily configured and data can be saved and
analyzed with a PC.

SAMPLING SPEED OF 3.8 ms QUATRO LINK SYSTEM

Four dedicated data processors are
arranged in parallel inside
the controller. The Quatro link system
simultaneously conducts four processes
to achieve a sampling speed of 3.8 ms.
This allows faster measurements on
production lines.

Conventional system

Signal input ▶ Waveform detection ▶ Profiling ▶ Measurement ▶ Waveform display ▶ Output

Quatro link system

E^3-CMOS
signal input

FPGA	Waveform detection
DSP1	Profiling
CPU	Measurement
DSP2	Waveform display

▶ Output

3.8 ms

Drastic time crunch

Calculations are processed by 4 chips
in parallel in a significantly shorter time.

LARGE CAPACITY MEMORY FOR SAVING DATA

The LJ-G5000 series has a large amount of memory built into the controller.
An additional memory card slot is included to store the production records of mass-produced products.
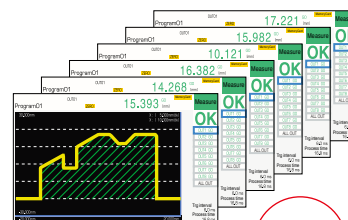
Handling many product types

The memory in the controller stores up to 16
programs. When the setting call function from
the memory card is used, up to 160 programs
can be stored to handle various product types.

	Program setting	Profile saving	Data storage
Internal memory	16	1024 × 2	65536 × 8
CF (1 GB)	160	1024 × 300	65536 × 3200

**Handles up to 160
unique configurations**

Profile storage

For analyzing NG records or
production history.

**1024 profiles
can be stored**

Data storage

For controlling daily production
records or for traceability.

**65536 data points
can be stored**

Simple procedure for setup and high-accuracy measurements

QUICK AND EASY SETTING
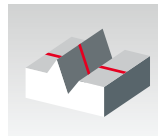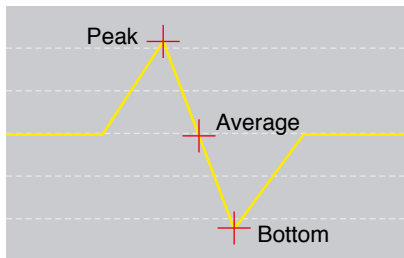
Uncomplicated setup menu

The setup menu is designed so novice users can effortlessly configure settings. Configuration via a PC is also simplified thanks to the optional setting support software (LJ-H1W).
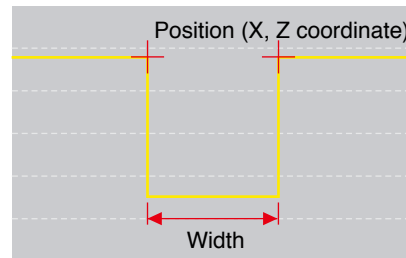
MEASUREMENT MENUS

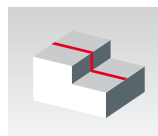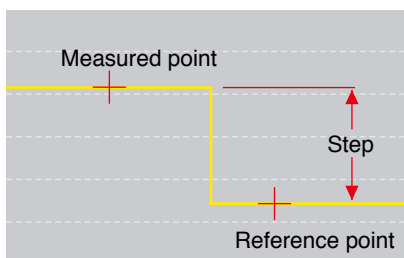| HEIGHT | Measures height in a specified range. |

Peak
Average
Bottom

| WIDTH/POSITION | Measures width/position of a designated feature. |

Position (X, Z coordinate)
Width
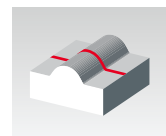
| STEP | Determines the height difference between a measured point and a reference point. |

Measured point
Step
Reference point

| CROSS-SECTIONAL AREA | Measures the area enclosed by the target on the basis of a reference surface. |

Section area
Reference surface
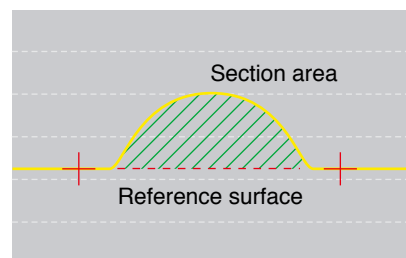
| ANGLE/INTERSECTION | Measures the angle or intersection of detected lines. |

Angle
Position of intersection (X, Z coordinate)
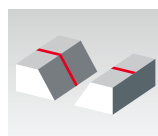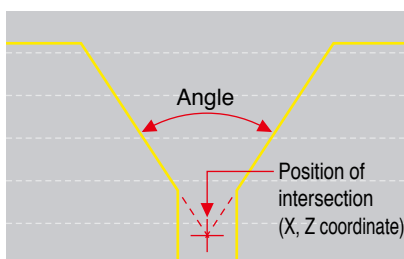
| PROFILE COMPARISON | Compares the target profile with the master profile to measure the largest difference. |

Master profile
Measurement value
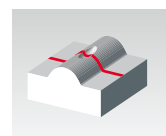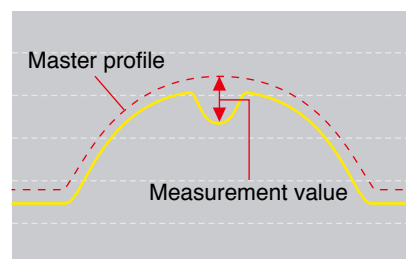
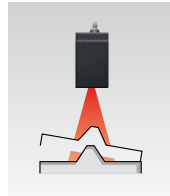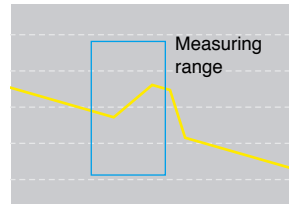# USEFUL ADJUSTMENT FUNCTIONS
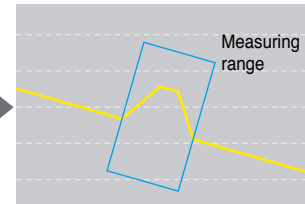
POSITION ADJUSTMENT FUNCTION

After the adjustment, the LJ-G Series can provide stable measurements though the targets are not perfectly arranged or positioned.

Displacement of target

Measuring range

Adjustment

Measuring range

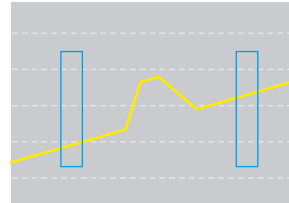Since the workpiece is not in the measurement range, a precise measurement cannot be carried out.

The measurement range moves according to the displacement of the workpiece for precise measurement.

TILT CORRECTION

This simplifies the installation of the sensor head and eliminates measurement errors.
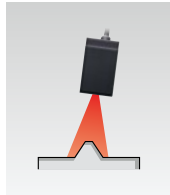
Inclination of the sensor head to the workpiece

Adjustment

Due to the inclination of the sensor head, the workpiece is not properly measured.
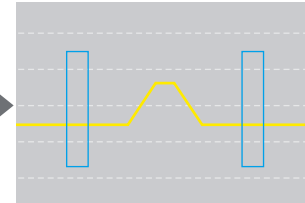
The inclination adjustment adjusts the angle of the sensor head for precise measurement.

PROFILE LINK FUNCTION

When two sensor heads are connected to a controller in parallel, the individual head profiles can be combined into a single profile. This significantly simplifies dual head installations and eliminates measurement errors.
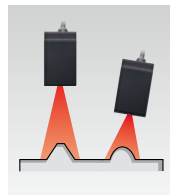
Installation position of two sensor heads

Adjustment
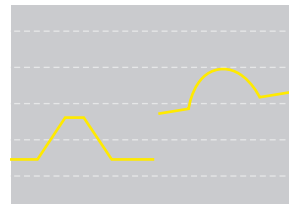
The profiles of two sensor heads are not linked and proper measurement is impossible.
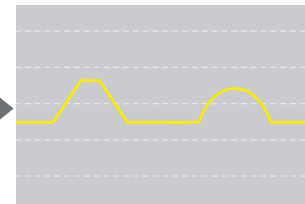
The profile link function compiles the profiles from two sensor heads as a profile for precise measurement.

TWO-SENSOR HEAD CONNECTION

Two sensor heads can be connected to a controller. The sensor heads can be arranged face-to-face or in parallel.

IP67

The LJ-G Series heads are designed to be rugged and operate in otherwise difficult environments.

CONTROLLER/SENSOR HEAD COMPATIBILITY

Adjustment data is stored in the sensor head for compatibility, so sensor heads can be exchanged.

HIGH-FLEX CABLE

The high-flex cable is standard one the LJ-G Series. This makes the sensor head easy to install on a moving fixture.

"Easy setup" and "Data storage/analysis" via a PC

Sensor Head
Controller
USB
RS-232C
Ethernet
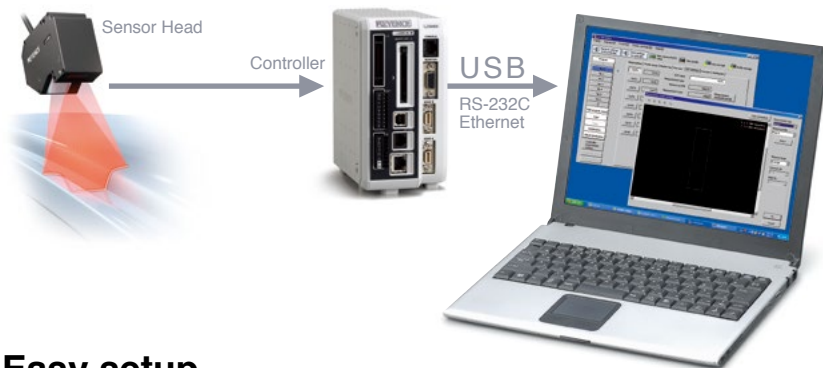
Easy setup

Just by selecting from an easy to use menu, anyone can easily configure the system with no training.

16 types of program switching
You can collectively manage and configure program switching, copy, initialization, etc.

Quick setup menu
Select from Mater Registration, Position Correction Menu, Output Setup, etc.
Selected items can be checked and configured with a few clicks.

OUT settings
You can configure up to 8 discrete feature settings.

Direct configuration mode
Measurement range can be directly specified onto the target profile depending on the measurement content.

Data storage

Data storage

You can view the measurement data stored in the controller. Data for all 8 outputs can be stored, the software provides easy to use overlay, zoom, and various other data analysis functions. For a more detailed analysis, data can be stored as a CSV file and viewed in Excel.
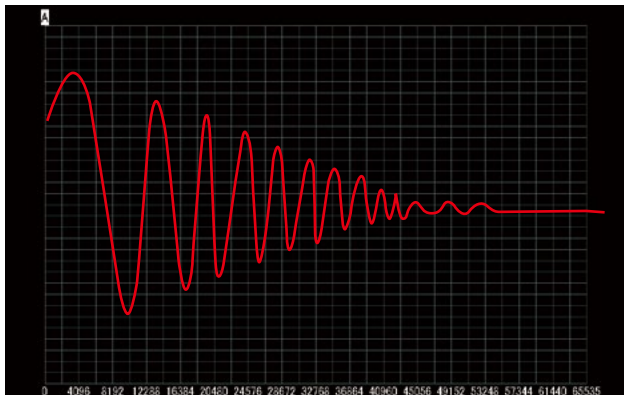
Profile storage

Measured profile data is stored in the controller. The measurement value of any point can be read from the stored data or exported in CSV format.
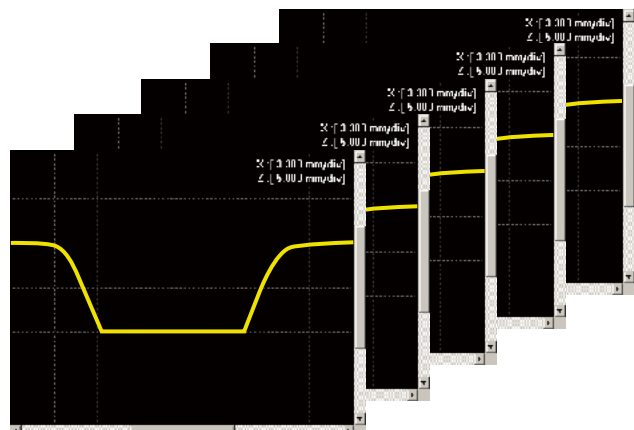
SPECIFICATION

Controller

Model		LJ-G5001	LJ-G5001P
Sensor head compatibility		Compatible	
Number of connectable sensors		2 units max.*3	
Display	Minimum display unit	0.1 μm*1·, 0.001 mm², 0.01° (Inch mode : 0.00001 inch)	
	Maximum display range	±99999.9 mm, ±999999 mm², ±99999.9° (Inch mode : ±999.999 inch)	
Input terminal block	Laser remote interlock input	Non-voltage input	Non-voltage input
	Trigger input	For sensor head A, non-voltage input	For sensor head A, voltage input
	Timing 1 input		
	Auto-zero 1 input	Non-voltage input	Voltage input
	Reset input		
Output terminal block	Analog voltage output	±10 V x 2 outputs, out put impedance: 100 Ω	
	Total judgment output	NPN open-collector output	PNP open-collector output
	Error output	NPN open-collector output (N.C.)	PNP open-collector output (N.C.)
	Process output	NPN open-collector output	PNP open-collector output
	Trigger input enable output	For sensor head A, NPN open-collector output	For sensor head A, PNP open-collector output
	Adjusted error output		
Expansion connector	Timing 2 input	Non-voltage input	Voltage input
	Auto-zero 2 input		
	Trigger input	For sensor head B, non-voltage input	For sensor head B, voltage input
	Program switching input	Non-voltage input, 4 inputs	Voltage input, 4 inputs
	Memory card save input	Non-voltage input	Voltage input
	Laser-Off input	For sensor head A/B, non-voltage input	For sensor head A/B, voltage input
	Judgment/Binary output*2	3-level judgment output: OUT1 to OUT8, total judgment output Binary output: OUT1 to OUT8 measured data output (21 bits) NPN open-collector output	3-level judgment output: OUT1 to OUT8, total judgment output Binary output: OUT1 to OUT8 measured data output (21 bits) PNP open-collector output
	Strobe output	NPN open-collector output	PNP open-collector output
	Trigger input enable output	For sensor head B, non-voltage input	For sensor head B, PNP open-collector output
	Adjusted error output		
Analog RGB monitor output		\multicolumn{2}{c}{SVGA (800 x 600 pixels)}	
RS-232C interface		\multicolumn{2}{c}{Measured data output and control input/output (Maximum baud rate: 115200 bps, selectable)}	
USB interface		\multicolumn{2}{c}{In conformity with USB Revision 2.0 HI-SPEED (USB 1.1 Full-SPEED compatible)}	
Ethernet interface		\multicolumn{2}{c}{100BASE-TX/10BASE-T}	
Memory card		\multicolumn{2}{c}{Compatible with NR-M1G (1 GB). (with FAT32)}	
Major functions		\multicolumn{2}{l}{Sensor heads calculation, Profile adjustment, Filter, Smoothing, Averaging, Position adjustment, OUT name change, Measurement mode selection (Height, position, gap, width, center position, section area, intersection, angle, profile comparison, profile tracking), Scaling, Average, Measurement, Measured value alarm, Tolerance setting, Auto-zero, Storage (data/profile), Memory card saving, Program memory, Trigger mode change, Mutual interference prevention, Measuring range change, Calibration, Laser light adjustment, Sampling time setting, Mask, Profile alarm setting, Inclination adjustment, Height adjustment, Display language switch, Setting support software connection, Trigger pitch/Measuring time display, etc.}	
Ratings	Power supply voltage	\multicolumn{2}{c}{24 VDC ± 10%, Ripple: 10% (P to P) or less}	
	Current consumption	\multicolumn{2}{c}{800 mA or less with 1 sensor head/1 A or less with two sensor heads}	
Environmental resistance	Ambient temperature	\multicolumn{2}{c}{0 to 50°C (32 to 122°F)}	
	Relative humidity	\multicolumn{2}{c}{35 to 85% (No condensation)}	
Weight		\multicolumn{2}{c}{Approx. 1050 g}	

*1. When LJ-G015 or LJ-G015K is connected only. When other sensor heads are connected, the minimum display unit is 1 μm.
*2. Time-sharing output of judgment results or binary measured data.
The rating of the NPN open-collector output: 50 mA max. (30 V max.), residual voltage of 1 V max.
The rating of the PNP open-collector output: 50 mA max. (30 V max.), residual voltage of 1 V max.
The rating of the non-voltage input: 1 V or less ON voltage, 0.6 mA or less OFF current (Trigger input terminal: 1 V or less ON voltage, 1.0 mA or less OFF current)
The rating of the voltage input: 26.4 V maximum rating, 10.8 V or less ON voltage, 0.6 mA or less OFF current
(Trigger input terminal: 26.4 V maximum rating, 10.8 V or less ON voltage, 1.0 mA or less OFF current)
*3. When mounting two heads, make sure that head A and B are of the same type. Measurement is not possible if two different types of heads are connected.

Sensor head

Model			LJ-G015K	LJ-G015	LJ-G030	LJ-G080	LJ-G200
Type			Specular reflective	Diffuse reflective			
Reference distance			\multicolumn{2}{c}{15 mm 0.59"}	30 mm 1.18"	80 mm 3.15"	200 mm 7.87"
Measuring range	Z-axis (Height)		±2.3 mm ±0.09"	±2.6 mm 0.1"	±10 mm ±0.39"	±23 mm ±0.91"	±48 mm ±1.89"
	X-axis (Width)	Near	\multicolumn{2}{c}{6.5 mm 0.26"}	20 mm 0.79"	25 mm 0.98"	51 mm 2.01"
		Reference distance	\multicolumn{2}{c}{7.0 mm 0.28"}	22 mm 0.87"	32 mm 1.26"	62 mm 2.44"
		Far	\multicolumn{2}{c}{7.5 mm 0.30"}	25 mm 1.98"	39 mm 1.54"	73 mm 2.87"
Light source			Red semiconductor laser				
	Wavelength		650 nm (Visible light)				655 nm (Visible light)
	Laser Class		Class II (FDA CDRH 21CFR Part 1040.10)				
	Output		0.95 mW				
Spot diameter (at reference distance)			Approx. 32 μm x 12 mm 0.001260" x 0.47"	Approx. 40 μm x 25 mm 0.001575" x 0.98"		Approx. 80 μm x 46 mm 0.003150" x 1.81"	Approx. 180 μm x 70 mm 0.007087" x 2.76"
Repeatability*1	Z-axis (Height)*2		0.2 μm 0.000008"	1 μm 0.000039"		1 μm 0.000039"	2 μm 0.000079"
	X-axis (Width)*3		2.5 μm 0.000098"	5 μm 0.000197"		10 μm 0.000394"	20 μm 0.000787"
Linearity Z-axis (Height)*2			±0.1% of F.S.				
Sampling frequency (Trigger pitch)*4			3.8 ms				
Temperature characteristics			0.02% of F.S./°C				
Environmental resistance	Enclosure rating		IP67 (IEC60529)				
	Ambient illumination*5		Incandescent lamp or fluorescent lamp: 5,000 lux max.				
	Ambient temperature		0 to 50°C (32 to 122°F)				
	Relative humidity		35 to 85% (No condensation)				
	Vibration		10 to 55 Hz, multiple amplitude 1.5 mm 0.06", two hours in each direction of X, Y and Z				
Material			Aluminum				
Weight			\multicolumn{2}{c}{Approx. 260 g}	Approx. 290 g	Approx. 350 g	Approx. 480 g

*1. The value obtained after 64 times Averaging at the reference distance.
*2. The target is KEYENCE standard object. (White diffusing material). The value is the average of the widths in the Height mode.
*3. The target is ø10 mm ø0.39" pin gauge. The value is the edge in the Position mode after 16 times of the Smoothing.
*4. When the measuring range is the minimum in the initial setting and the smoothing is set to 1.
*5. The illumination on the receiver of the sensor head when targeting an illuminated white paper.

Hardware environment for the LJ-H1W (LJ-Navigator)

Item	Hardware requirements
CPU	Pentium III, 400 MHz or higher
Supported OS	Windows 10*1 Windows 7 (SP1 or later)*2 Windows Vista (SP2 or later)*3 Windows XP (SP3 or later)*4
Memory capacity	128 MB or more
Display	XGA (1024 x 768 pixels) or greater, 256 colors or greater
Hard disk space	30 MB or more
Interface	Includes one of the following: USB 2.0/1.1*5, Ethernet*6, RS-232C (Serial port)

*1. Home, Pro, and Enterprise editions are supported.
*2. Home Premium, Professional, and Ultimate editions are supported.
*3. Ultimate, Business, Home Premium, and Home Basic editions are supported.
*4. Professional and Home editions are supported.
*5. Connection through a USB hub is not included in the guarantee.
*6. Connection to LAN and connection via a router is not included in the guarantee.

Cable between the sensor head and the controller

Model	LJ-GC2	LJ-GC5	LJ-GC10	LJ-GC20	LJ-GC30
Cable length	2 m 6.6'	5 m 16.4'	10 m 32.8'	20 m 65.6'	30 m 98.4'
Weight	Approx. 200 g	Approx. 400 g	Approx. 750 g	Approx. 1400 g	Approx. 2000 g

Component list selection guide

Sensor Head

Type	Ultra high-accuracy specular target model		Ultra high-accuracy model		High-accuracy model	
Model	LJ-G015K		LJ-G015		LJ-G030	

(mm inch)

		250 9.84"	200 7.87"	150 5.91"	100 3.94"	50 1.97"

Measuring range 15±2.3 mm 0.59"±0.09" — 12.7 mm 0.5" / 15 mm 0.59" / 17.3 mm 0.68" — width: 7 mm 0.28"

Measuring range 15±2.6 mm 0.59"±0.1" — 12.4 mm 0.49" / 15 mm 0.59" / 17.6 mm 0.69" — width: 7 mm 0.28"

Measuring range 30±10 mm 1.18"±0.39" — 20 mm 0.79" / 30 mm 1.18" / 40 mm 1.57" — width: 20 mm 0.79" / width: 22 mm 0.87" / width: 25 mm 0.98"

Measuring range	Z axis	15 ± 2.3 mm	0.59 ± 0.09"	15 ± 2.6 mm	0.59 ± 0.1"
	X axis	7 mm	0.28"	7 mm	0.28"
Repeatability	Z axis	0.2 µm	0.000008"	0.2 µm	0.000008"
	X axis	2.5 µm	0.000098"	2.5 µm	0.000098"

30 ± 10 mm	1.18 ± 0.39"		
22 mm	0.87"		
1 µm	0.000039"		
5 µm	0.000197"		

Controller

Controller
LJ-G5001(P)

Controllers

NPN output type	**LJ-G5001**
PNP output type	**LJ-G5001P**

Console (Optional)
OP-82125

Setting support
software LJ-H1W
(Optional)

USB cable 2 m 6.6'
OP-66844
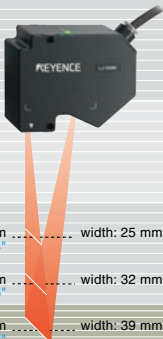
Monitor

High-resolution monitor
CA-MP81

Monitor stand
OP-42278

Mid-range model	Long-range model
LJ-G080	LJ-G200

LJ-G200:
152 mm 5.98" .... width: 51 mm 2.01"
Measuring range 200±48 mm 7.87"±1.89"
200 mm 7.87" .... width: 62 mm 2.44"
248 mm 9.76" .... width: 73 mm 2.87"

LJ-G080:
57 mm 2.24" .... width: 25 mm 0.98"
Measuring range 80±23 mm 3.15"±0.91"
80 mm 3.15" .... width: 32 mm 1.26"
103 mm 4.06" .... width: 39 mm 1.54"

80 ± 23 mm	3.15" ± 0.91"	200 ± 48 mm	7.87" ± 1.89"
32 mm	1.26"	62 mm	2.44"
1 µm	0.000039"	2 µm	0.000079"
10 µm	0.000394"	20 µm	0.000787"

▌Communication Cables

Cable between the sensor head and the controller LJ-GC (2 m, 5 m, 10 m, 20 m, 30 m) (6.6', 16.4', 32.8', 65.6', 98.4')

Monitor cable 3 m 9.8'
OP-66842

Expansion cable 3 m 9.8'
OP-51657

Ethernet cable 3 m 9.8'
OP-66843

▌Options

Memory card
NR-M1G: 1 GB

RS-232C communication cable
OP-96368 (2.5 m 8.2")

Communication cable 9-pin conversion connector
OP-26401

Communication cable 25-pin conversion connector
OP-96369

Dimensional Drawings

■ Sensor Heads

Unit: mm inch

Sensor head LJ-G015K

X-axis measurement range
Z-axis measurement range

Sensor head LJ-G015

X-axis measurement range
Z-axis measurement range

Sensor head LJ-G030

X-axis measurement range
Z-axis measurement range

Sensor head LJ-G080

X-axis measurement range
Z-axis measurement range

Sensor head LJ-G200
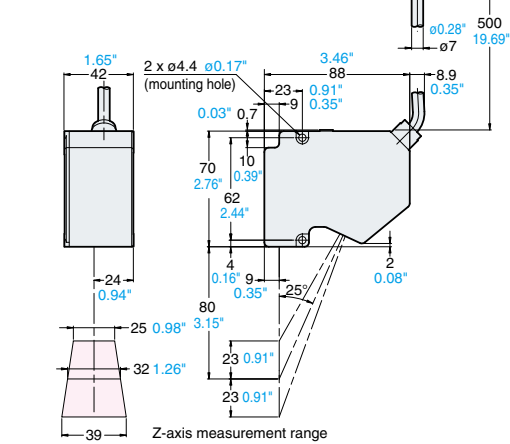
X-axis measurement range
Z-axis measurement range

WARNING

The LJ-G Series conforms to the following FDA standard:

Model	LJ-G015K/LJ-G015/LJ-G030/LJ-G080/LJ-G200
FDA (CDRH) 21CFR Part 1040.10	Laser Class Ⅱ

AVOID EXPOSURE
LASER RADIATION IS EMITTED FROM THIS APERTURE.

CAUTION
LASER RADIATION—
DO NOT STARE INTO BEAM
SEMICONDUCTOR LASER
WAVELENGTH 650nm
MAXIMUM OUTPUT 0.95mW
CLASSⅡ LASER PRODUCT

AVOID EXPOSURE
LASER RADIATION IS EMITTED FROM THIS APERTURE.

CAUTION
LASER RADIATION—
DO NOT STARE INTO BEAM
SEMICONDUCTOR LASER
WAVELENGTH 655nm
MAXIMUM OUTPUT 0.95mW
CLASSⅡ LASER PRODUCT

■ Controller

**Controller
LJ-G5001(P)**

3.24"
82.4

5.20"
132

DIN rail
mounting
position

153
6.02"

35.9
1.41"

83.3
3.28"

65.3
2.57"

6
0.24"

(65)
2.56"

117
4.61"

4 x M4
Depth: 6 0.24"

60 2.36"

80
3.15"

17
0.67"
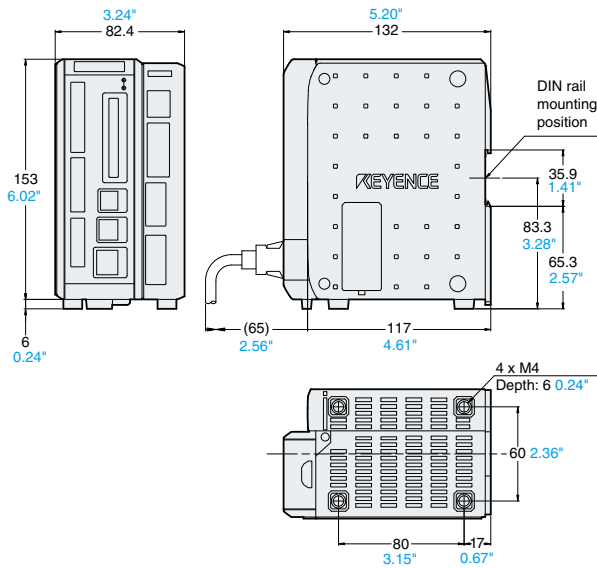
**Cable between the sensor head and the controller
LJ-GC2/LJ-GC5/LJ-GC10/LJ-GC20/LJ-GC30**

ø7 ø0.28"
Cable length: 2 m 6.6',
5 m 16.4', 10 m 32.8',
20 m 65.6', 30 m 98.4'

1.30"
33

2.17"
55

ø14 ø0.55"

1.02" 26

0.45" 11.5

■ Monitor

**LCD monitor
CA-MP81**

241.2   9.50"
Outer dimension of
mounting bracket

230   9.06"

151 5.94"

0.04" to 0.16"
Panel thickness 1.0 to 4.0

Mounting bracket

Mounting screw

191.2
7.53"
Outer
dimension of
mounting bracket

180
7.09"

129.8
5.11"
Effective
display area

106
4.17"

156 6.14"
172.4   6.79"
Effective
display area

6
0.24"

34
1.34"
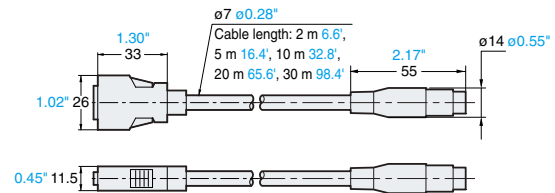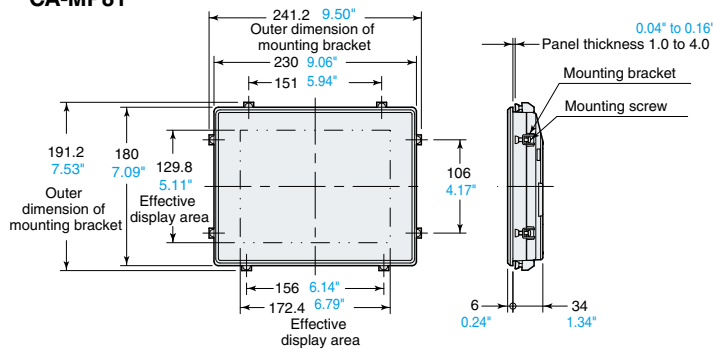
Panel cutout dimensions

255   10.04"

205
8.07"

169.5 $^{+1}_{0}$
6.67" $^{+0.04}_{0}$

219.5 $^{+1}_{0}$
8.64" $^{+0.04}_{0}$

**Stand
OP-42278**

230 9.06"

236
9.29"

146
5.75"

0.85" 2.62"
21.5   66.5

2. R2.5
R0.01"

5   0.20"

8
0.32"

111
4.37"

130   5.12"

210   8.27"

4.30"
109.2

5.69"
144.6

5.69"
144.6

30°

30°
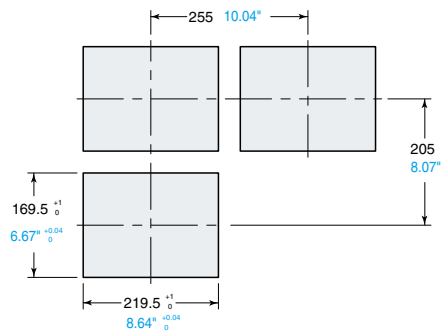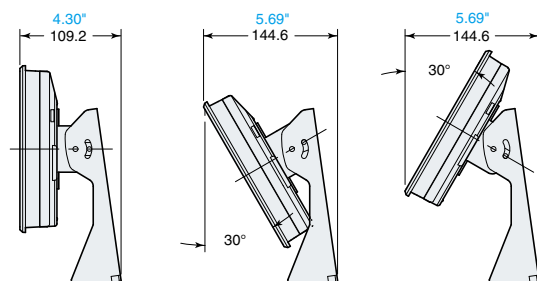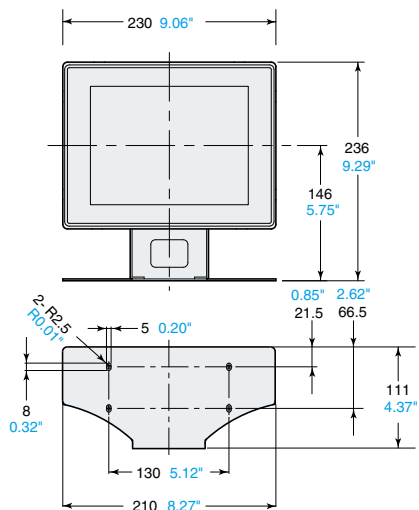
Single point laser displacement sensor

Ultra high speed / high accuracy laser displacement sensor
LK-G5000 Series

COARSE TARGETS

TRANSPARENT/MIRROR TARGETS

FINE TARGETS

Evolving further, achieving the world highest specifications

Fastest in the world

392 kHz

Highest accuracy in its class

±0.02 %

Highest repeatability in its class

0.005 µm

KEYENCE

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