Measured values

Base value

Zeroing indicator

0.000 0.000 ■ Zeroing
■ Output

Output Indicator

Set Mode ▲ ▼

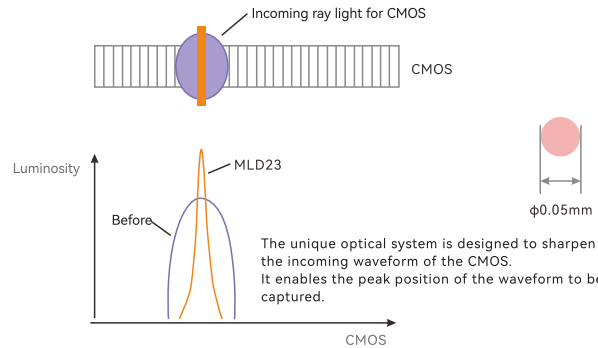"Set" "Mode" "Up" "Down"

Mini Chinese Display

More Intuitive and Simple for Commissioning
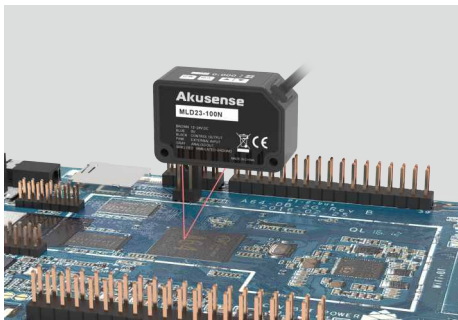
Convergent harnesses for more accurate detection

Akusense has developed its own optical system to significantly converge and improve the beam to 50um;

An ultra-small spot size of 0.05mm formed, which detects objects with stability and accuracy.

Incoming ray light for CMOS

CMOS

Luminosity

MLD23

Before

φ0.05mm

The unique optical system is designed to sharpen the incoming waveform of the CMOS.
It enables the peak position of the waveform to be captured.
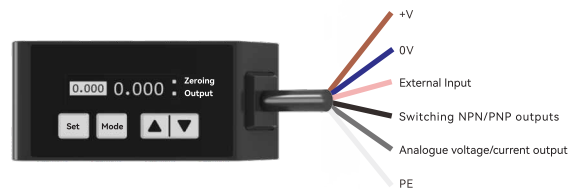
CMOS

Micron-level linear accuracy

Linear accuracy reaches to 0.01mm for easy inspection with high accuracy

Convenient Installation

Integration of analogue voltage, analogue current and switching

0.000 0.000 ■ Zeroing
■ Output

Set Mode ▲ ▼

+V

0V

External Input

Switching NPN/PNP outputs

Analogue voltage/current output

PE

Simple and flexible test patterns

Multiple teaching modes to make testing easier

Teaching Point 1

OFF
Base level
Teaching①
ON
Base value
OFF
Base level

Distance

Object

Teaching Point 2

Teaching②
OFF
Base value 2nd
ON
Teaching①
Base value 1st
OFF

Distance

Object Object

Teaching Point 3

Teaching③
3rd
OFF
Base value
Teaching②
ON
2nd
Teaching①
Base value
OFF
1st

Distance

Object Object Object
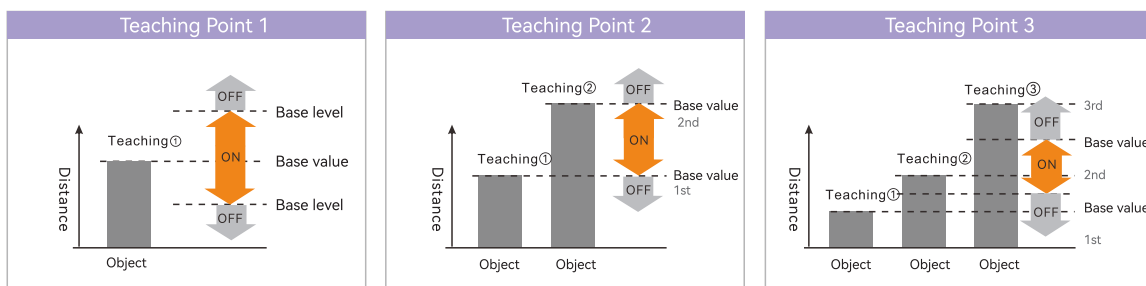
Selection Guide

MLD23 Series

Faster, more stable, more accurate

Three test modes are for option:
standard, high speed and high accuracy
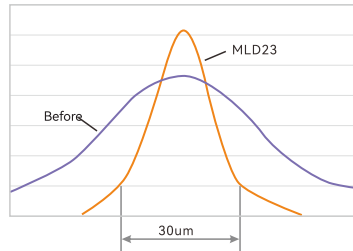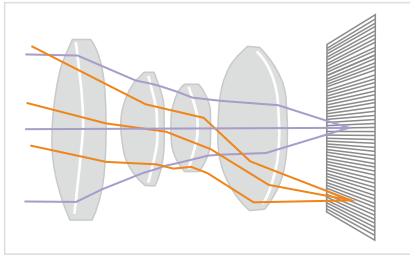
①Ultra-high speed computing and processing

The application of Akusense 's advanced IC and algorithm technology has greatly improved the sensor's detection rate and data accuracy, allowing for both high speed transmission and stable detection of measured values.

Max **1.5ms** response time

Repeat accuracy up to**10um**
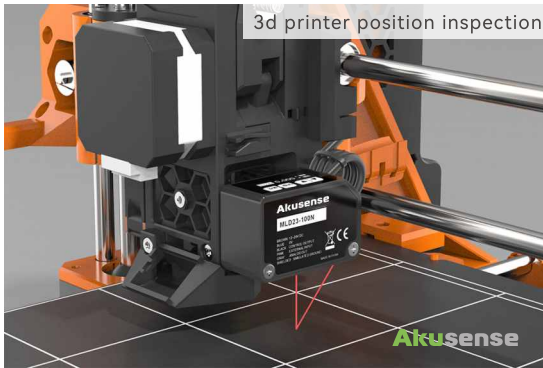
Min **±0.1%** F.S linearity
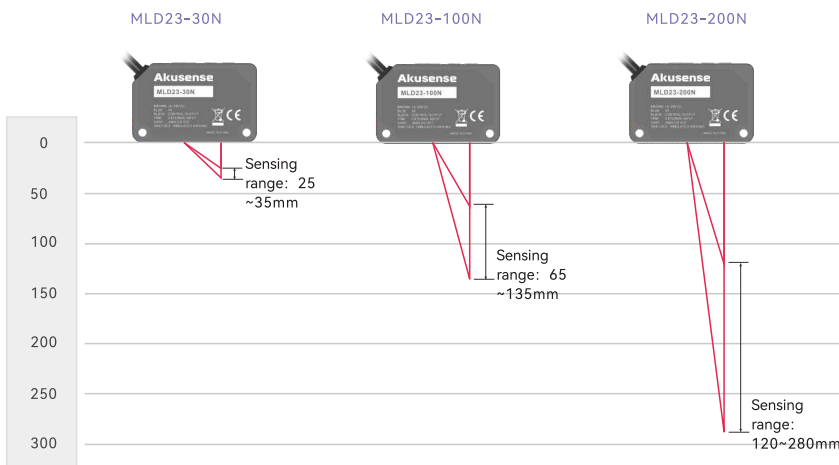
② Achieving greater precision

The new Akusense high-resolution lens design reduces pixel aberration and is assembled with precision.

The small spot of light at any angle can be imaged at the receiving section, resulting in a smaller waveform and higher measurement accuracy.

MLD23

Before

30um

Application

3d printer position inspection

Detection of stacked and empty material in mobile phone production

Selection table

MLD23-30N

Sensing range: 25 ~35mm

MLD23-100N

Sensing range: 65 ~135mm

MLD23-200N

Sensing range: 120~280mm

Model	MLD23-30N
Repeat accuracy	10µm
Linear accuracy	±0.1% F.S.
Base distance	30mm

Model	MLD23-100N
Repeat accuracy	70µm
Linear accuracy	±0.1% F.S.
Base distance	100mm

Model	MLD23-200N
Repeat accuracy	200µm
Linear accuracy	±0.2% F.S.
Base distance	200mm

Economical type

Appearance			
Principle	Diffuse reflection		
Center of sensing distance	30mm	100mm	200mm
Sensing distance	25~35mm	65~135mm	120~280mm
Repeat accuracy	10μm	70μm	200μm
Light source	Medium, wavelength	Red semiconductor laser, wavelength：655nm	
	Max. output power	1mW	
	Laser class	Class2	
Standard	EMC		
Temperature drift	±0.03%/℃ F.S.		
Spot size	≈Φ0.05mm	≈Φ0.15mm	≈Φ0.3mm
Linearity	±0.1% F.S.		±0.2% F.S.
Supply voltage	12~24V DC±10%		
Current consumption	<60mA（24V DC），<100mA（12V DC）		
Response time	1.5ms/5ms/50ms switchable		
Switch Output	NPN open-collector transistor, max. inflow current: 50mA; applied voltage: <30V DC（between control output-0V），residual voltage: <1.5V (inflow current <50mA)		
Analog output	Voltage	Output range: 0V~5V (when alarm: +5.2V), output impedance: 100Ω	
	Current	Output range: 4mA~20mA (when alarm: 0mA), load: less than 300Ω	
External input	Input conditions Invalid: +8V~+V DC or open, valid: 0V~+1.2V DC; input impedance: about 10kΩ		
Ambient performance	Protection Degree	IP66	
	Ambient Temperature	−10℃~+45℃，No freezing	
	Ambient humidity	35%~85%RH，No condensation	
	Ambient light	Incandescent lamp: Illumination below 3000Lux on the light-receiving surface	
Cable	5-core 2M cable		
Material	Aluminum, acrylic		
Model	**MLD23-30N**	**MLD23-100N**	**MLD23-200N**

Dimensions

Unit：mm

Emitter axis

50
45.95
4.05
4.05
2−Φ3.3
32

13.05
10.16
22.5
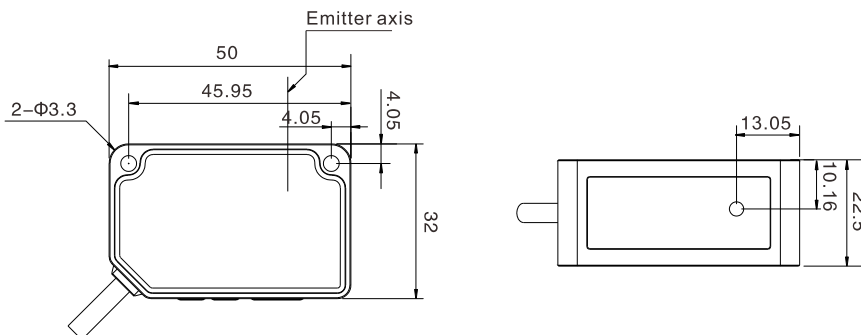
Mini Digital Display

Circuit Diagram

The main circuit

Wire	Signal
Brown	+V Power supply 12~24V ±10%
Pink	External input
Black	Control output
Blue	0V
Gray	Analog voltage output
Shield	Analog GND

Load