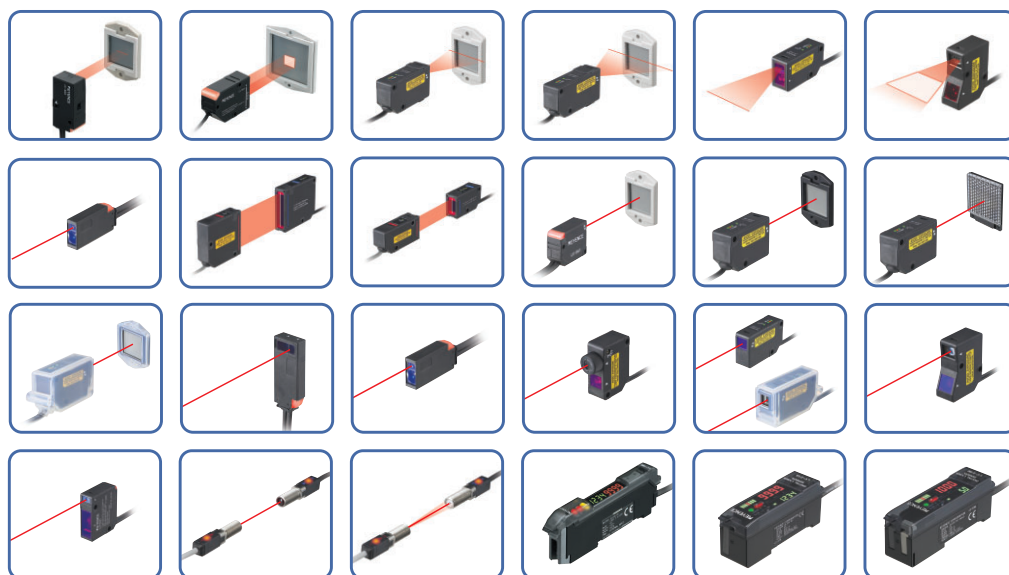


# Laser Sensor Catalog



Choose from the largest selection of laser sensors in the industry!

New laser sensors ➔ P. 6



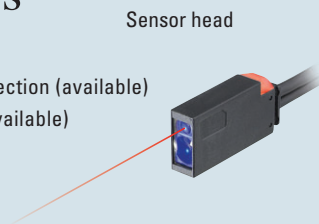
## Product composition

The LV Series are digital laser sensors consisting of both a sensor head and an amplifier.

Please note that the supported amplifier unit depends on the sensor head.

### LV-S Series

- Compact size
- Transparent object detection (available)
- Zero datum function (available)

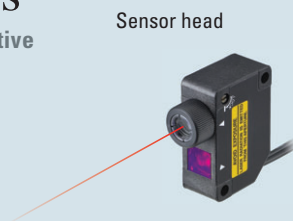


**NEW** LV-11SB  
**NEW** LV-12SB

### LV-H Series

Reflective/Retro-Reflective

- High-power
- Waterproof (available)

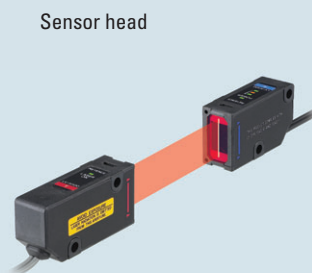


LV-21A  
LV-22A  
LV-20A

### LV-H Series

Thrubeam

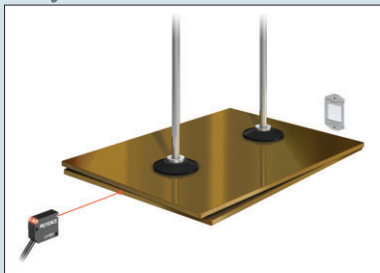
- 0.39"/1.18" 10 mm/30 mm area
- Analog output



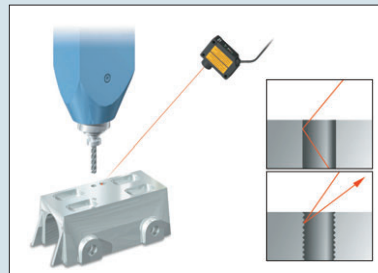
LV-51M  
LV-52

## Laser sensor features

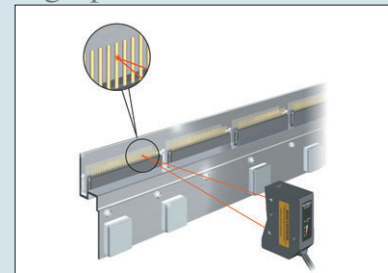
Visible beam allows for easy installation



Stable target detection from a remote location



Small beam spot ensures high precision

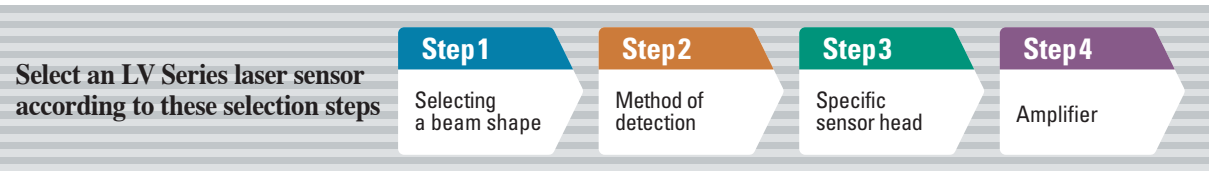




Ask the Expert  
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the LV Series

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Product selection guide



Step1

Selecting a beam shape

Select a laser sensor head, either an area beam or small beam spot, according to the target that is to be detected.

Area Beam



The shape of the laser beam emitted on the target forms a line.

Effective for wide detection ranges, such as when the target's position varies as it passes through the beam.

Type	Area Beam		
	Reflective	Retro-Reflective	Thrubeam
Detecting image			
Page		P.4	

Small Beam Spot



The shape of the laser beam emitted on the target forms a small spot.

Effective for highly precise detection of minute targets.

Type	Small Beam Spot		
	Reflective	Retro-Reflective	Thrubeam
Detecting image			
Page		P.5	

STEP 1

STEP 2

STEP 3

STEP 4

SPECIFICATIONS

DIMENSIONS

## Step2

## Method of detection

Select either a reflective, retro-reflective, or thru-beam sensor based on the application.

► If area beam was selected in Step 1

### Area Beam

#### Retro-Reflective ➡ P.6

Highly precise target detection with easy installation

Area laser



LV-S62

Long-distance transparent object detection



LV-S63

Long distance



LV-H64

Wide

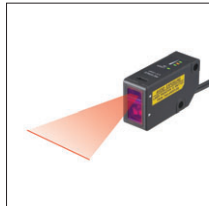


LV-H65

#### Reflective ➡ P.9

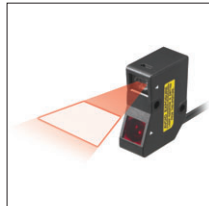
Small size and highly flexible installation

Long distance



LV-H42/H41\*

Definite reflective



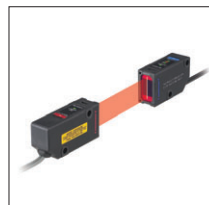
LV-H47

\*LV-H41 is a Class I infrared laser model.

#### Thru-beam ➡ P.10

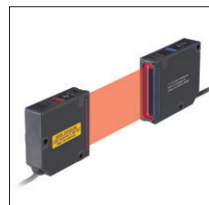
Unaffected by the target's color or shape

0.39" (10 mm) width



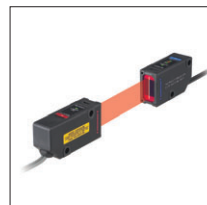
LV-H100

1.18" (30 mm) width



LV-H300

High-power  
0.39" (10 mm) width



LV-H110



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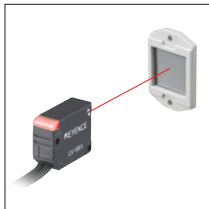
► If small beam spot was selected in Step 1

## Small Beam Spot

### Retro-Reflective ➡ P.12

Highly precise target detection with easy installation

**Small**



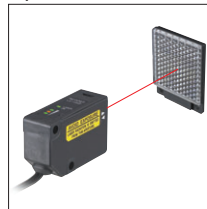
LV-S61

**Standard**



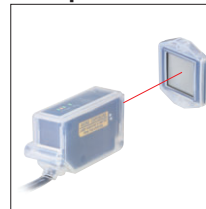
LV-H62

**Long distance**  
(up to 164' (50 m))



LV-H67

**Waterproof: IP67**



LV-H62F

### Reflective ➡ P.14

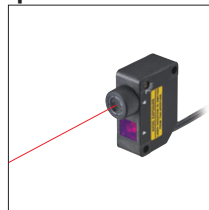
Small size and highly flexible installation

**Small**  
(side view)



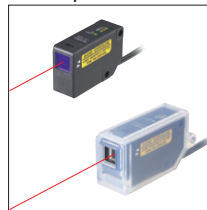
LV-S41(S41L)

**Adjustable beam spot**



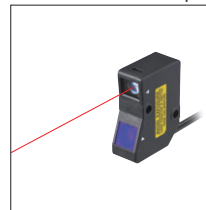
LV-H32

**Coaxial structure**  
(waterproof: IP67)



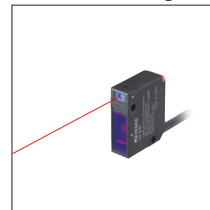
LV-H35(H35F)

**Ultra-small beam spot**  
(diameter: 1.97 Mil (50 μm))



LV-H37

**Adjustable distance setting**

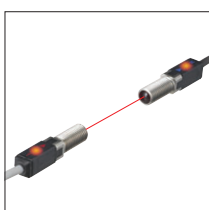


LV-S31

### Thrubeam ➡ P.16

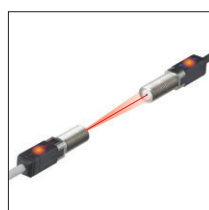
Unaffected by the target's color or shape

**Small: M6**



LV-S71

**Small: M6 (with slit)**



LV-S72

## Step 3

## Selecting a specific sensor head

Select a sensor head tailored to your application.

► If area beam retro-reflective was selected in Step 2

## Area Beam Retro-Reflective

Type	Shape (inch mm)	Detection distance*	Area width (inch mm)	Model	Supported amplifier	Dimensions
Area laser		ULTRA : 32.8' 10 m (16.4' 5 m) <sup>1</sup> SUPER : 26.2' 8 m (11.5' 3.5 m) TURBO : 16.4' 5 m (6.6' 2 m) FINE : 8.2' 2.5 m (2.3' 0.7 m)	Area spot: approx. 0.39" 10  Small beam spot: approx. 0.08" 2 (up to 19.69" 500 distance)	<b>NEW</b> LV-S62	<b>NEW</b> LV-11SB LV-12SB	► P.25
Long-distance transparent object detection		ULTRA : 98.4' 30 m SUPER : 82.0' 25 m TURBO : 49.2' 15 m FINE : 26.2' 8 m	Approx. 0.31"x0.47" 8 x 12 (up to 11.5' 3.5 m distance)	<b>NEW</b> LV-S63	► P.18	► P.27
Long-distance area		SUPER : 15.75" to 47.24" 400 to 1200 mm <sup>2</sup> (23.62" to 59.06" 600 to 1500 mm) TURBO : 7.87" to 33.46" 200 to 850 mm (11.81" to 39.37" 300 to 1000 mm) FINE : 3.94" to 19.69" 100 to 500 mm (3.94" to 27.56" 100 to 700 mm)	Approx. 1.57" 40 (up to 11.81" 300 distance)	<b>NEW</b> LV-H64	LV-21A LV-22A LV-20A	► P.35
Wide area		SUPER : 3.94" to 7.87" 100 to 200 mm <sup>2</sup> (5.91" to 13.78" 150 to 350 mm) TURBO : 0.39" to 5.91" 10 to 150 mm (0.39" to 9.84" 10 to 250 mm) FINE : 3.94" 100 mm (5.91" 150 mm)	Approx. 1.97" 50 (up to 3.94" 100 distance)	<b>NEW</b> LV-H65	► P.19	

All models support the P.R.O. function. The polarizing filter reduces direct reflected light from a mirrored-surface target.

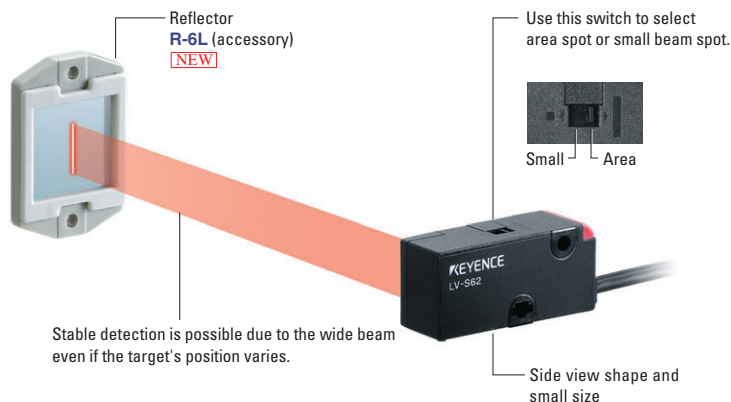
1. Numbers not enclosed in parentheses are the detecting distance for area spot. Numbers enclosed in parentheses are the detecting distance for small beam spot.

2. Numbers not enclosed parentheses are the detecting distance when an accessory reflector is used. Numbers enclosed in parentheses are the detecting distance when OP-51428 (sold separately) is used.

## Product features

## Area Laser **NEW**

LV-S62



LV-S62 is perfect for transparent object detection.

► P.8

(Note) We recommend that, when LV-S62 is used for glass detection, the detecting distance be set to 3.3' (1 m) or less.

Using all of the mounting brackets allows you to adjust the optical axis right, left, up, and down.

When installing the rear mounting bracket (sold separately)

OP-84350



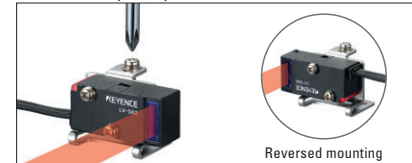
When installing the rear mounting bracket (sold separately)

OP-84349



When installing the rear mounting bracket (sold separately)

OP-84351



Be sure to use the dedicated mounting brackets because optical axis adjustment is required.

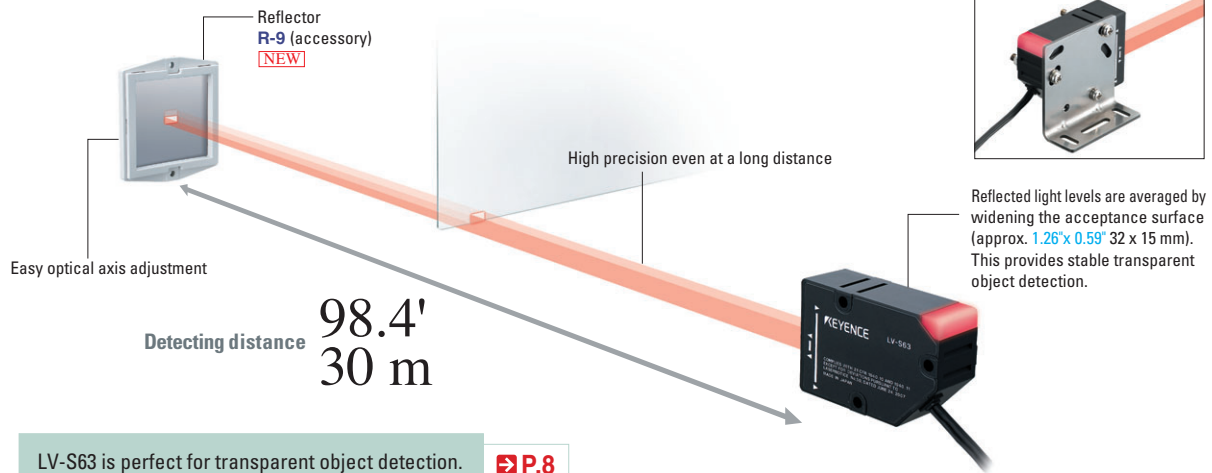


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## Long-Distance Transparent Object Detection NEW

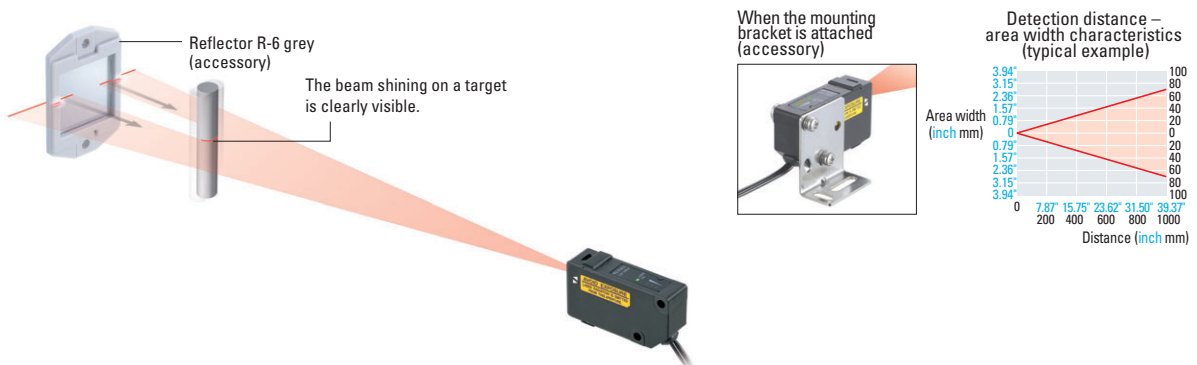
LV-S63



(Note) We recommend that, when LV-S62 is used for glass detection, the detecting distance be set to 11.5' (3.5 m) or less.

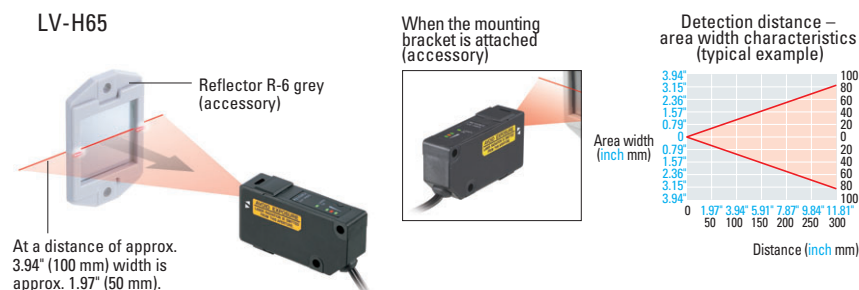
## Long-Distance Area NEW

LV-H64



## Wide Area NEW

LV-H65



### Options for LV-H64 and H65

Name	Reflective tape (sold separately)
Model	OP-51428
Shape	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> </div>
	t=0.03" 0.7 mm

STEP 1

STEP 2

STEP 3

STEP 4

SPECIFICATIONS

DIMENSIONS



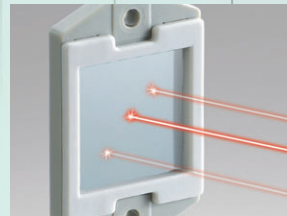
# What sets the LV-S62/S63 apart from conventional sensors for transparent object detection?

## Beam Shape

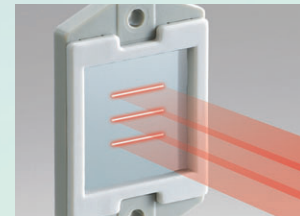
Area beams are excellent for detecting targets with gaps.

Unlike small beam spots, area beams are less affected by vibrating targets or backgrounds.

LV-S63 also spreads the spot's depth 0.31" 8 mm x 0.47" 12 mm to provide more stability.



**Small spot**  
Large light quantity variation if position shifts



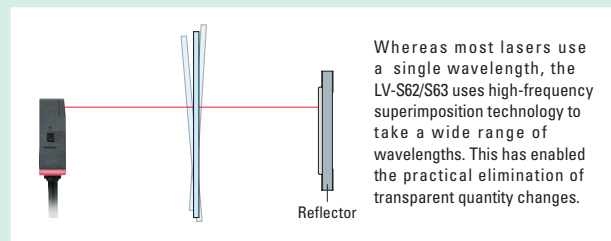
**Area beam**  
Small light quantity variation even if position shifts

## Laser Beam

Can stably detect vibrating/inclining transparent targets

Due to the characteristics of lasers, the slightest incline of a transparent target can cause light diffraction resulting in unstable detection. The newly-developed laser drive circuit found in the LV-S62 and LV-S63 compensates for this phenomenon.

High-frequency superimposition drive circuit



Whereas most lasers use a single wavelength, the LV-S62/S63 uses high-frequency superimposition technology to take a wide range of wavelengths. This has enabled the practical elimination of transparent quantity changes.

## Amplifier

The amplifier cancels light quantity variation.

The zero datum function always monitors the received light quantity when there is no transparent object and keeps the displayed value at 0 (light quantity variation cancellation). If a transparent object is input, the function displays the difference. This makes it very easy for the LV Series amplifier to stably detect transparent targets. (Patent pending)

World's first zero datum function



Amplifier unit  
LV-11SB/12SB  
**NEW**





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## Step 3

## Selecting a specific sensor head

Select a sensor head tailored to your application.

► If area beam reflective was selected in Step 2

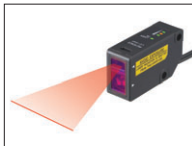
## Area Beam Reflective

Type	Shape (inch mm)	Detecting distance (inch mm)	Area width (inch mm)	Model	Connectable amplifier	Dimensions
Long distance		SUPER : 39.37" 1000 TURBO : 19.69" 500 FINE : 9.84" 250	Approx. 1.89" x 0.02" 48 x 0.4 (at 7.87" 200 mm distance)	LV-H42	LV-21A LV-22A LV-20A	P.34
Definite reflective		2.17" to 3.35" 55 to 85 * Common in all power modes	Approx. 0.83" x 0.03" 21 x 0.7 (at 2.76" 70 mm distance)	LV-H47	P.19	P.33

## Product features

### Long Distance

#### LV-H42



When the mounting bracket is attached (accessory)



Slit (accessory)



An area width can be selected.

Lens (sold separately)



The area becomes thicker.

#### LV-L01

### Definite Reflective

#### LV-H47



When the mounting bracket is attached (accessory)



Slit (accessory)



An area width can be selected.

Lens (sold separately)

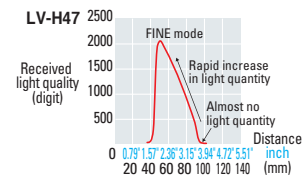


The area becomes thicker.

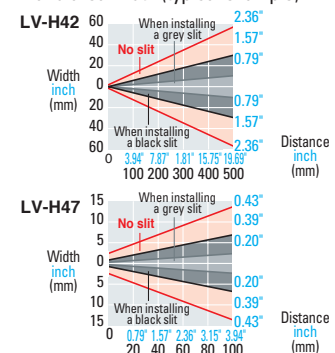
#### LV-L02

## Characteristics

Characteristics of received light quantity and distance (typical example)



Characteristics of detecting distance and area width (typical example)





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## Step 3

## Selecting a specific sensor head

Select a sensor head tailored to your application.

► If area spot thrubeam was selected in Step 2

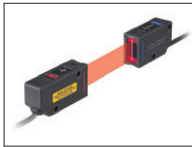
## Area Spot Thrubeam

Type	Detecting range (inch mm)	Shape (inch mm)	Detecting distance (inch mm)	Area width (inch mm)	Model	Connectable amplifier	Dimensions
Standard	0.39" 10		 78.74" 2000 * Common in all power modes	Approx. 0.47" 12	LV-H100	LV-51M LV-52 P.19	P.37
	1.18" 30			Approx. 1.26" 32	LV-H300		
High powered	0.39" 10			Approx. 0.47" 12	LV-H110		

## Product features

## Standard /High Power (0.39" (10 mm) wide)

LV-H100/110



When the mounting bracket  
is attached (accessory)



(2 brackets to 1 set)

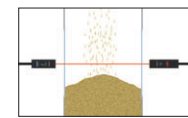
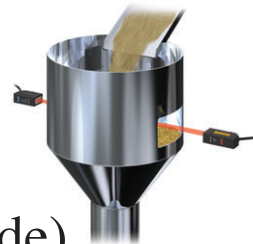
When the mounting bracket  
is attached (accessory)



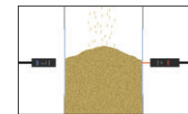
(2 brackets to 1 set)

### Example using the LV-H110

The sensitivity of the LV-H100 has been increased. The LV-H100 detects only targets that completely interrupt light.



OFF: Ignores small targets.



ON: Responds to targets with complete light interruption

## Standard (1.18" (30 mm) wide)

LV-H300



When the mounting bracket  
is attached (accessory)



(2 brackets to 1 set)

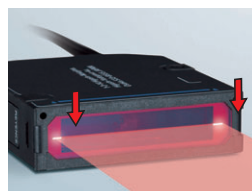
When the mounting bracket  
is attached (accessory)



(2 brackets to 1 set)

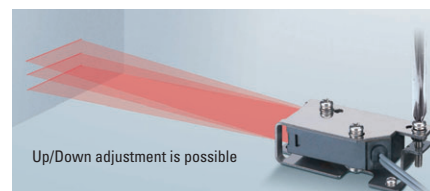
Easy optical axis adjustment  
via visible beam

You can clearly see the beam because a light diffuser sheet is inserted into the end of the receiver. This makes optical axis adjustment extremely easy.



Mounting brackets provide  
beam position adjustment.

Two types of mounting brackets are available: Brackets for mounting vertically and brackets for mounting horizontally. Be sure to use the dedicated mounting bracket because optical axis adjustment is necessary.



Up/Down adjustment is possible

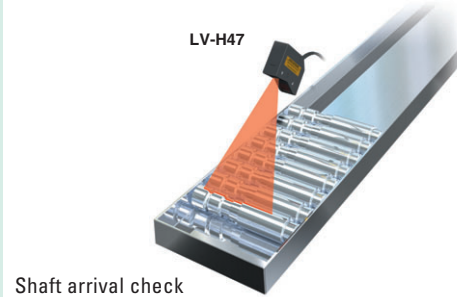
# Application

## Area spot

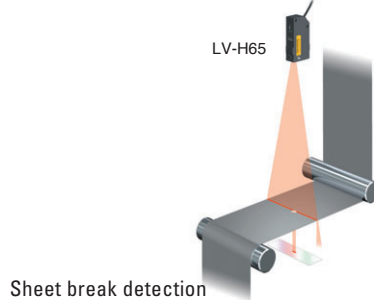
### Long distance, area detection



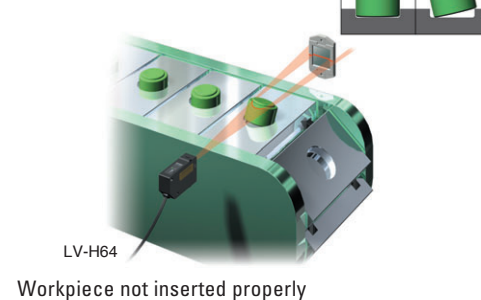
### Area detection, definite-reflective



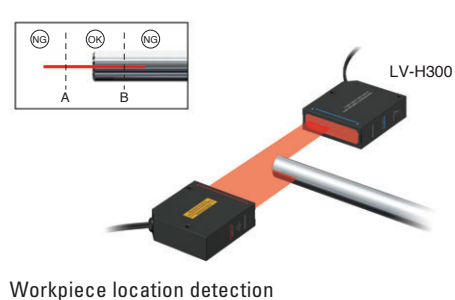
### Area retro-reflective (wide)



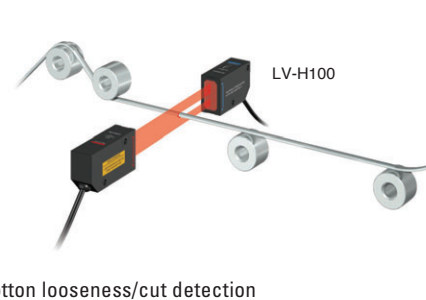
### Area retro-reflective (long distance)



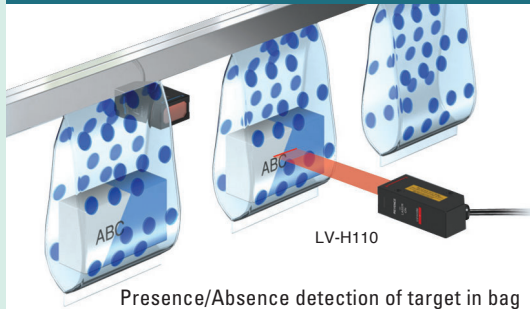
### Area thru-beam (1.18" (30 mm) wide)



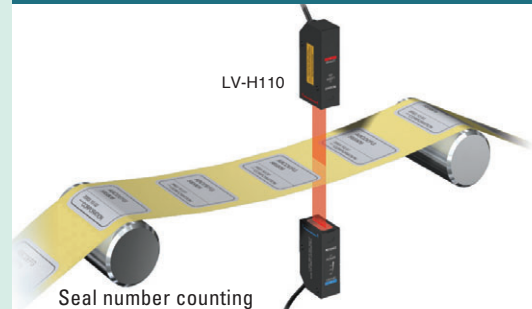
### Area thru-beam (0.39" (10 mm) wide)



### High-power area spot thru-beam



### High-power area spot thru-beam



STEP 1

STEP 2

STEP 3

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SPECIFICATIONS

DIMENSIONS

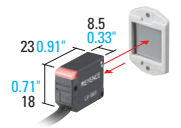
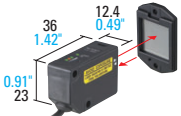
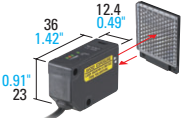
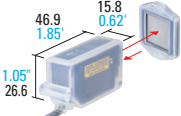
## Step 3

## Selecting a specific sensor head

Select a sensor head tailored to your application.

► If small beam spot retro-reflective was selected in Step 2

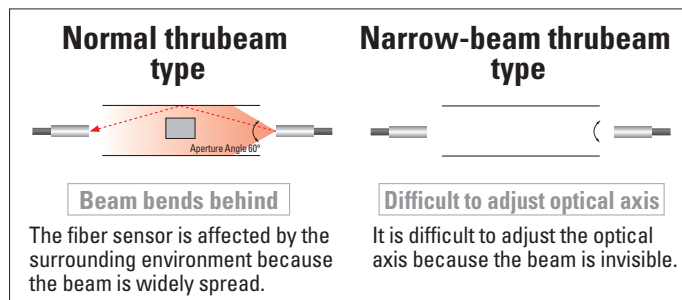
## Small Beam Spot Retro-Reflective

Type	Shape (inch mm)	Detection distance (feet m)	Spot diameter (inch mm)	Model	Connectable amplifier	Dimensions
Small		ULTRA : 6.6' 2 SUPER : 4.9' 1.5 TURBO : 3.3' 1 FINE : 2.5' 0.75 HSP : 1.6' 0.5	Approx. $\phi 0.10"$ $\phi 2.5$ (Up to 1.6' 0.5 m distance)	LV-S61	<b>NEW</b> LV-11SB LV-12SB P.18	► P.29
Standard		SUPER : 23.0' 7 TURBO : 16.4' 5 FINE : 6.6' 2	Approx. $\phi 0.06"$ $\phi 1.5$ (Up to 3.3' 1 m distance)	LV-H62		► P.32
Long distance (up to 164' 50 m)		SUPER : 98.4' 30* TURBO : 98.4' 30 FINE : 65.6' 20 <small>*Use OP-42198; 164.0' 50 m</small>	Approx. 1.97" 50 x 0.59" 15 (At 32.8' 10 m distance)	LV-H67	LV-21A LV-22A LV-20A P.19	► P.32
Waterproof: IP67		SUPER : 16.4' 5 TURBO : 11.5' 3.5 FINE : 4.9' 1.5	Approx. $\phi 0.08"$ $\phi 2$ (At 6.6' 2 m distance)	LV-H62F		► P.32

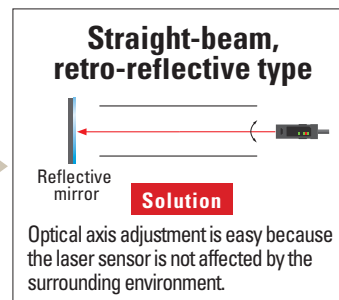
\*All models support the P.R.O. function. The polarizing filter reduces direct reflected light from a mirrored-surface workpiece.

## Difference from fiber sensor

### Fiber sensor

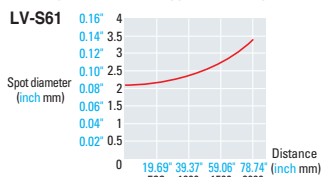


### Laser sensor

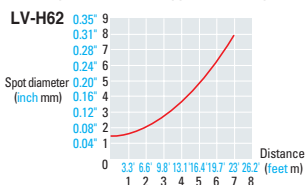


## Characteristics

Characteristics of detecting distance and spot diameter (typical example)



Characteristics of detecting distance and spot diameter (typical example)





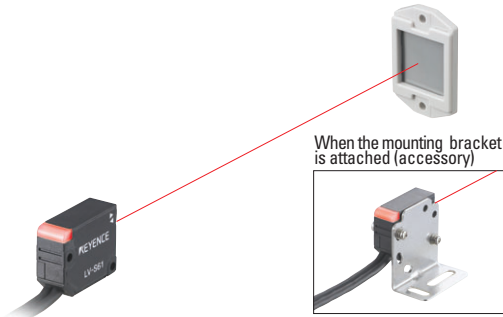
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## Product features and mounting brackets

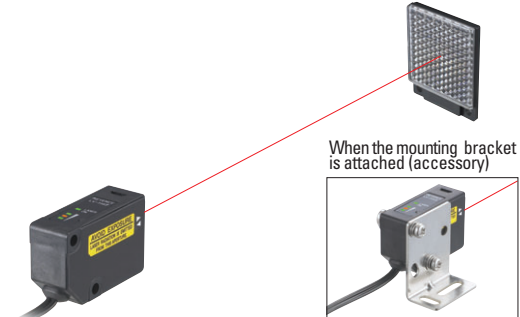
### Small

LV-S61



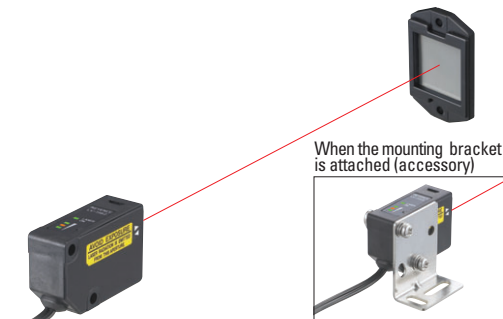
### Long Distance (up to 164' (50 m))

LV-H67



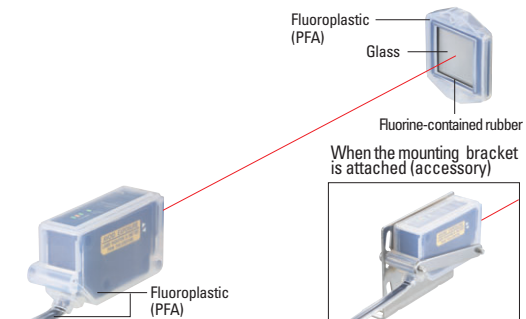
### Standard

LV-H62



### Waterproof: IP67

LV-H62F



## Reflector (accessory)

Type	Reflector (inch mm)				
Model	OP-51430 (R-6 grey)	R-6	R-7	OP-95388 (R-2)	R-8
Accessory model	LV-S61	LV-H62		LV-H67	LV-H62F
Shape					
Dimensions	➔ P.29	➔ P.32	➔ P.32	➔ P.33	➔ P.32

## Reflector (option)

Unit: inch mm		
Type	Reflective tape	Reflector
Model	OP-42197	OP-42198
Supported model	LV-S61/H62	LV-H67
Shape		
Dimensions	—	➔ P.33

\* The detecting distance remains unchanged even if the reflective tape is used.

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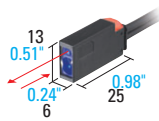
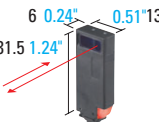
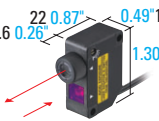
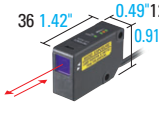

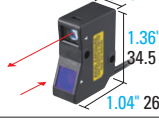
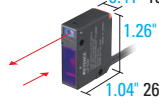
## Step 3

## Selecting a specific sensor head

Select a sensor head tailored to your application.

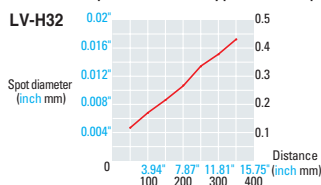
► If small beam spot reflective is selected in Step 2

### Small Beam Spot Reflective

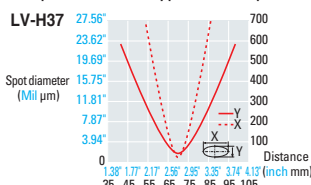
Type	Shape (inch mm)	Detection distance (inch mm)	Spot diameter (inch mm)	Model	Connectable amplifier	Dimensions
Small		ULTRA : 19.69" 500 SUPER : 15.75" 400 TURBO : 11.81" 300 FINE : 7.87" 200 HSP : 5.91" 150	Approx. $\phi 0.05"$ $\phi 1.2$ (Up to 19.69" 500 mm distance)	LV-S41	NEW LV-11SB LV-12SB ► P.18	► P.29
Small side view		ULTRA : 15.75" 400 SUPER : 12.60" 320 TURBO : 9.45" 240 FINE : 6.30" 160 HSP : 4.72" 120	Approx. $\phi 0.05"$ $\phi 1.2$ (Up to 15.75" 400 mm distance)	LV-S41L		
Adjustable beam spot		SUPER : 39.37" 1000 TURBO : 19.69" 500 FINE : 9.84" 250	$\phi 0.03"$ $\phi 0.8$ or less (Up to 11.81" 300 mm distance)	LV-H32	LV-21A LV-22A LV-20A ► P.19	► P.33
Coaxial structure		SUPER : 23.62" 600 TURBO : 11.81" 300 FINE : 5.91" 150	Approx. $\phi 0.08"$ $\phi 2$ (Up to 23.62" 600 mm distance)	LV-H35		► P.32
Waterproof: IP67		SUPER : 17.72" 450 TURBO : 7.87" 200 FINE : 3.94" 100	Approx. $\phi 0.08"$ $\phi 2$ (Up to 17.72" 450 mm distance)	LV-H35F		► P.32
Ultra-small beam spot		2.76" $\pm 0.59$ " 70 $\pm 15$ * Common in all power modes	Approx. $\phi 1.97$ Mil $\phi 50 \mu\text{m}$ (At 2.76" 70 mm distance)	LV-H37		► P.33
Small adjustable distance setting		Adjustment range*: 1.97" to 7.87" 50 to 200 * Range in which the reference distance can be adjusted without reference to the response time	Approx. $\phi 0.08"$ $\phi 2$ (Up to 7.87" 200 mm distance)	LV-S31	NEW LV-11SB LV-12SB ► P.18	► P.28

### Characteristics

Characteristics of detecting distance and minimum spot diameter (typical example)



Characteristics of setting distance and spot diameter (typical example)





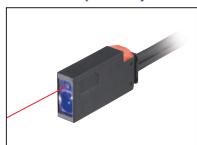
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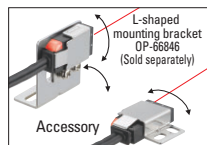
## Product features and mounting brackets

### Small

LV-S41 (S41L)



When the mounting bracket is attached

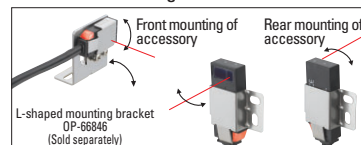


### Small Side-View

LV-S41L



When the mounting bracket is attached



## Adjustable Beam Spot

LV-H32



When the mounting bracket is attached (accessory)



### Adjustable by hand

Spot adjustment can be easily made by turning the focus ring by hand.



### Also lockable

Adjustments are secured using the lens position lock feature.

## Coaxial Structure

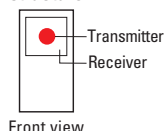
LV-H35



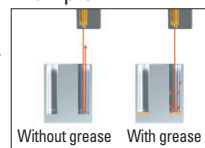
When the mounting bracket is attached (accessory)



### Coaxial structure



### Example



With the coaxial structure, the LV-H35 can receive reflected light even from a small gap.

## Waterproof: IP67

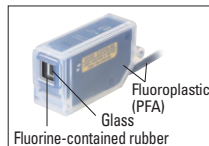
LV-H35F



When the mounting bracket is attached (accessory)



### Material



## Ultra-small Beam Spot (1.97 Mil (50 μm)) Small Adjustable Distance Setting

LV-H37



When the mounting bracket is attached (accessory)



The supplied magnifying glass enables users to check the beam spot position.



LV-S31



When the mounting bracket is attached (accessory)



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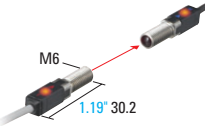
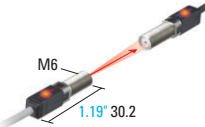
## Step 3

## Selecting a specific sensor head

Select a sensor head tailored to your application.

► If small beam spot thru-beam is selected in Step 2

## Small Beam Spot Thru-beam

Type	Shape (inch mm)	Detection distance (inch mm)	Spot diameter (inch mm)	Model	Connectable amplifier	Dimensions
Small beam spot		19.69" 500 * In all power modes	Approx. $\phi 0.05"$ $\phi 1.2$ (Up to 19.69" 500 mm distance)	LV-S71	NEW LV-11SB LV-12SB P.18	P.30
Step differentiation		19.69" 500 * In all power modes	Approx. $\phi 0.24"$ $\phi 6$ (Up to 19.69" 500 mm distance)	LV-S72		

## Product features

## Small Beam Spot

LV-S71

Ultra-small **World's Smallest**  
LV-S71 is the smallest red laser sensor in its class.



Operation indicator

Both the transmitter and receiver are equipped with an operation indicator.

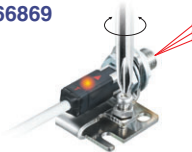
Receiver

Standard mounting bracket (accessory)



Small type mounting bracket (option)

OP-66869



The optical axis can be adjusted from above.

Each symmetrical mounting bracket (two sets)

## Step Differentiation

LV-S72

High-precision differentiation

The receiver side uses a slit with a width of 0.02" (0.6 mm), allowing high-precision differentiation.

Receiver

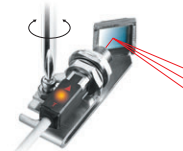
Easy optical axis adjustment

Optical axis adjustment is easy because the spot diameter is approx. 0.02" (0.6 mm) and 19.69" (500 mm) ahead of the transmitter (large spot).

Transmitter

Side viewer attachment (option)

LV-F1



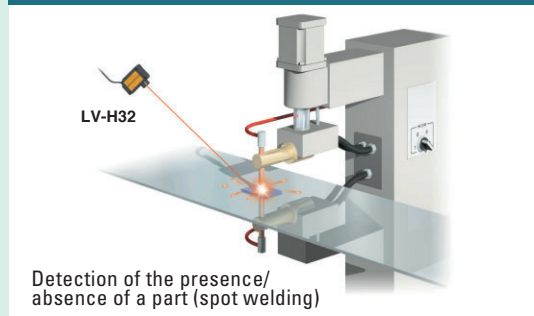
The optical axis can be adjusted from above.

(2 brackets to 1 set)

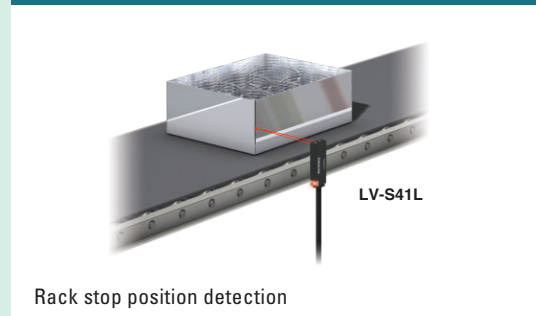
# Application

## Small beam spot

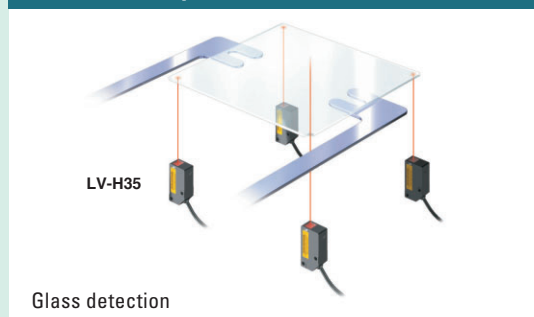
### Small beam spot reflective (adjustable beam spot)



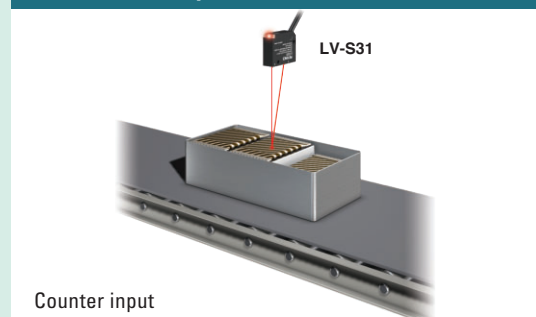
### Small beam spot reflective (side view)



### Small beam spot reflective (coaxial structure)



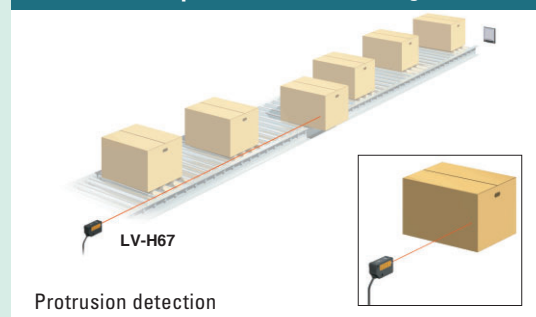
### Small beam spot reflective (distance setting)



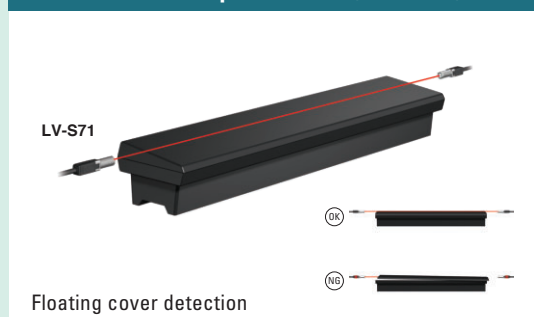
### Small beam spot retro-reflective (small)



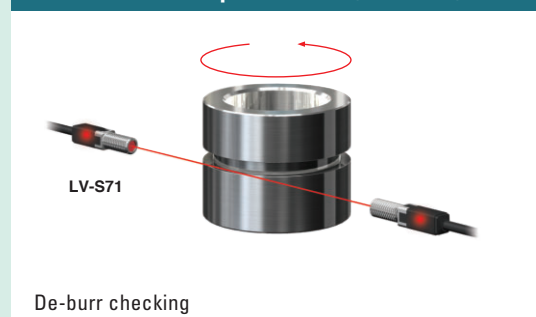
### Small beam spot retro-reflective (long distance)



### Small beam spot thru-beam (small, M6)



### Small beam spot thru-beam (small, M6)



STEP 1

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## Step 4

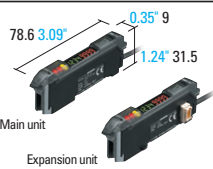
## Selecting an amplifier

When using one amplifier, select the main unit. When using two or more amplifiers, select one main unit and one or more expansion units.

► If the LV-S Series is selected in Step 3

## LV-S Series

The main unit comes with an amplifier mounting bracket.  
The expansion unit comes with an end unit.

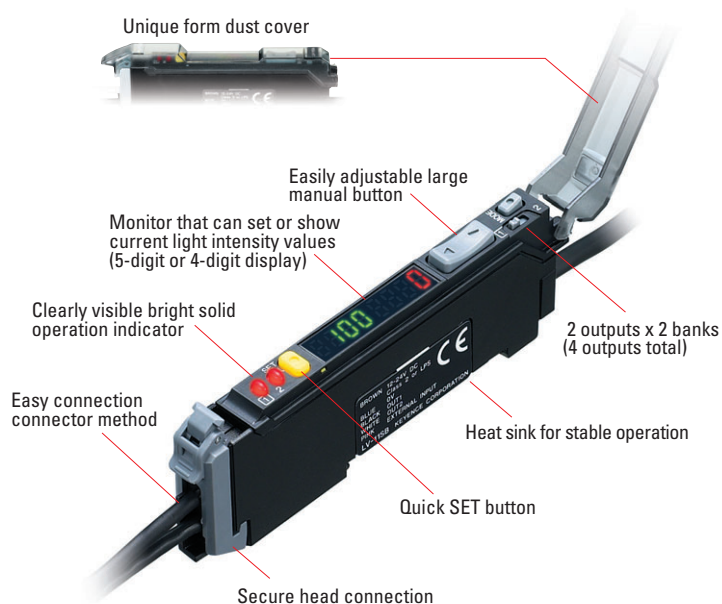
Type	Shape (inch mm)	Number of ON/OFF outputs	External input*	Model		Dimensions
				NPN output	PNP output	
Main unit		2	1	<b>NEW</b> LV-11SB	<b>NEW</b> LV-11SBP	<b>P.31</b>
Expansion unit		2	1	<b>NEW</b> LV-12SB	<b>NEW</b> LV-12SBP	

\* For external input, select "light emission stop", "tuning", "set value bank selection" or "received light quantity shift."  
Up to 16 expansion units can be installed to one main unit.

Connectable sensor heads

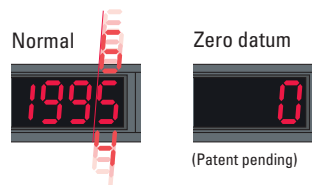
Reflective	LV-S41, LV-S41L, LV-S31
Retro-Reflective	LV-S61, LV-S62, LV-S63
Thrubeam	LV-S71, LV-S72

## Part names and features



## The LV-S Series, comes with the world's first zero datum function.

Usually\* the first digit of the digital display will drift when there is no workpiece. The zero datum function\* clears the display to 0, eliminating this drifting status. (Returning to the nominal display when light is interrupted)



[Supplement]

Datum means reference. Zero datum is a function that changes the light quantity display to 0 when there is no work piece at 0 reference.

\*When the retro-reflective type or thrubeam type is used

## Popular DSC function

The LV-S Series comes with the DSC function.



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► If the LV-H Series is selected in Step 3

## LV-H Series Reflective or Retro-Reflective

The main unit comes with an amplifier mounting bracket.  
The expansion unit comes with an end unit.

Type*1	Shape (inch mm)	Number of ON/OFF outputs	External calibration input*2	Laser emission stop input*2	Analog output	Model		Dimensions
						NPN output	PNP output	
Main unit		2	1	1	0	LV-21A	LV-21AP	➔ P.36
Expansion unit		2	0	0	0	LV-22A	LV-22AP	

\*1 The LV-20A is also available to support the zero line. (It does NOT have a cable for power or outputs).

\*2 external inputs on the expansion units can be used for calibration. However, laser emission stop input cannot be used on the expansion units.  
Up to seven additional expansion units can be installed for each main unit.

Connectable sensor heads

Reflective	LV-H32, LV-H35, LV-H35F, LV-H37, LV-H42, LV-H47
Retro-Reflective	LV-H62, LV-H67, LV-H62F, LV-H64, LV-H65

### Amplifier unit for invisible infrared LV-H41

The amplifier unit comes with the amplifier mounting bracket.

Type	Shape (inch mm)	Number of ON/OFF outputs	External calibration input	Laser emission stop input	Analog output	Model	Dimensions
Main unit		2	1	1	0	LV-11A	➔ P.36

(Note) Only the LV-H41 and LV-H51 can be used with the LV-11A amplifier.

## LV-H Series Thrubeam

The main unit comes with an amplifier mounting bracket.  
The expansion unit comes with an end unit.

Type	Shape (inch mm)	Number of ON/OFF outputs	External calibration input	Laser emission stop input*1	Analog output	Model		Dimensions
						NPN output	PNP output	
Main unit		2	0	1	1	LV-51M	LV-51MP	➔ P.39
Expansion unit		2	0	0	0	LV-52	LV-52P	

\*1 Laser emission stop input on the main unit only.

Up to seven additional expansion units can be installed for each main unit.

Connectable sensor heads

Thrubeam	LV-H100, LV-H300, LV-H110
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# LV-S Series




## Specifications

### Straight-Beam, Retro-Reflective





Type	Small beam spot	Area beam	Long-distance transparent object
Model	LV-S61	<b>NEW</b> LV-S62	<b>NEW</b> LV-S63
Shape			
Light source	Visible light semiconductor laser		
Detecting distance*	ULTRA 6.6' 2 m	32.8' 10 m (16.4' 5 m)	98.4' 30 m
	SUPER 4.9' 1.5 m	26.2' 8 m (11.5' 3.5 m)	82.0' 25 m
	TURBO 3.3' 1 m	16.4' 5 m (6.6' 2 m)	49.2' 15 m
	FINE 2.5' 0.75 m	8.2' 2.5 m (2.3' 0.7 m)	26.2' 8 m
	HSP 1.6' 0.5 m	—	—
Ambient temperature used	14 to 122°F (-10 to 50°C)		
Material	Case	Glass reinforced plastic	
	Lens cover	Acrylic	
	Reflective mirror	Polycarbonate, acrylic	
Weight	Approx. 70 g	Approx. 65 g	Approx. 110 g
Dimensions	<b>P.29</b>	<b>P.25</b>	<b>P.26</b>



\* The parentheses indicate the detecting distance when the small beam spot is used.

### Reflective



Type	Small	Small side view	Adjustable distance definite reflective
Model	LV-S41	LV-S41L	LV-S31
Shape			
Light source	Visible light semiconductor laser		
Detecting distance*	ULTRA 19.69' 500 mm	15.75' 400 mm	1.97' to 7.87' 50 to 200 mm (adjustment range)
	SUPER 15.75' 400 mm	12.60' 320 mm	
	TURBO 11.81' 300 mm	9.45' 240 mm	
	FINE 7.87' 200 mm	6.30' 160 mm	
	HSP 5.91' 150 mm	4.72' 120 mm	
Ambient temperature used	14 to 122°F (-10 to 50°C)		32 to 122°F (0 to 50°C)
Material	Case	Glass reinforced plastic	
	Lens cover	Acrylic	
	Reflective mirror	Polycarbonate, acrylic	
Weight	Approx. 70 g		Approx. 75 g
Dimensions	<b>P.28</b>	<b>P.29</b>	<b>P.38</b>

### Thrubeam

Type	Small standard	Small (with slit)
Model	LV-S71	LV-S72
Shape		
Light source	Visible light semiconductor laser	
Detecting distance*	ULTRA	19.69" 500 mm
	SUPER	
	TURBO	
	FINE	
	HSP	
Ambient temperature used	14 to 122°F (-10 to 50°C)	
Material	Case	Glass reinforced plastic
	Lens cover	Acrylic
	Reflective mirror	Polycarbonate, acrylic
Weight	Approx. 70 g	
Dimensions	 <b>P.30</b>	 <b>P.30</b>

Type	Side-view attachment for thrubeam		
Model	LV-F1		
Shape			
Applicable head	LV-S71	LV-S72	
Detecting distance	ULTRA	9.84" 250 mm	15.75" 400 mm
	SUPER		
	TURBO		
	FINE		
	HSP		
Ambient temperature used	14 to 122°F (-10 to 50°C) No condensation		
Material	Metal part: Stainless steel Mirror part: Glass		
Vibration	10 to 55 Hz, double amplitude: 0.06" 1.5 mm, 2 hours in each of X, Y and Z axis directions		
Weight	Approx. 22 g		
Dimensions	 <b>P.30</b>		

\* Contains a symmetrical mounting bracket (two in total).

Type	Compact mounting bracket for thrubeam		
Model	OP-66869		
Shape			
Applicable head	LV-S71	LV-S72	
Detecting distance	ULTRA	19.69" 500 mm	
	SUPER		
	TURBO		
	FINE		
	HSP		
Ambient temperature used	14 to 122°F (-10 to 50°C), No condensation		
Material	Metal part: Stainless steel		
Vibration	10 to 55 Hz, double amplitude: 0.06" 1.5 mm, 2 hours in each of X, Y and Z axis directions		
Weight	Approx. 14 g		
Dimensions	 P.30		

\* Contains a symmetrical mounting bracket (two in total).




### Laser specifications

Sensor head	LV-S31/S41/S41L/S61/S71/S72	<b>NEW</b> LV-S62/S63
Wavelength	655 nm	660 nm
Maximum output	350 μW	315 μW
FDA*	Class I	
IEC	Class 1	
JIS	Class 1	

\* IEC60825-1 based classification is made according to FDA (CDRH) Laser Notice No. 50 Regulations.

## LV-S Series

## Amplifier

Type		Main unit		Expansion unit (1 line)									
Model <sup>1)</sup>	NPN output	NEW LV-11SB		NEW LV-12SB									
	PNP output	NEW LV-11SBP		NEW LV-12SBP									
Shape													
Response time	Exept LV-S31	HSP: 80 μs FINE: 250 μs TURBO: 500 μs SUPER: 2 ms ULTRA: 4 ms (LV-S62 and LV-S63 can ONLY be used with amplifiers ending with B or BP.)											
	LV-S31 standard mode	SPED 1: 500 μs SPED 2: 2ms SPED 3: 8 ms SPED 4: 32 ms											
	LV-S31 High-speed mode	250 μs											
Control output		NPN(PNP) open-collector x 2 ch		40 VDC (30 V) max.	100 mA max. per output								
Control input		Light emission stop input, external calibration, set value bank selection input, or shift input											
Number of interference preventive units <sup>2)</sup>		<table><tr><td>Power mode</td><td>Number of units</td></tr><tr><td>HSP</td><td>None</td></tr><tr><td>FINE/TURBO</td><td>2 units</td></tr><tr><td>SUPER/ULTRA</td><td>4 units</td></tr></table>				Power mode	Number of units	HSP	None	FINE/TURBO	2 units	SUPER/ULTRA	4 units
Power mode	Number of units												
HSP	None												
FINE/TURBO	2 units												
SUPER/ULTRA	4 units												
Expansion of units <sup>3)</sup>		Up to 16 expansion units can be installed (17 units including the main unit)											
Ratings	Power supply voltage <sup>4)</sup>	12 to 24 VDC ripple (P-P) 10% max. Class 2											
	Power consumption	Normal	1.5 W max. (62.5 mA max. for 24 V)										
		Eco-Half Eco-All	1.35 max. (57.3 mA max. for 24 V)										
Ambient temperature used <sup>3)</sup>		14 to 122°F (-10 to 50°C), No condensation											
Vibration		10 to 55 Hz, 0.06" 1.5 mm double amplitude: 2 hours in each of X, Y, and Z axis directions											
Material		Main body, cover: Polycarbonate											
Weight (including 6.6' 2-m cable)		Approx. 80 g											
Dimensions		 P.31											

1. LV-S62 and LV-S63 can ONLY be used with amplifiers ending with B or BP.

2. Numbers for the LV-S31 are four in standard mode and two in high-speed mode.

3. To connect several units they must be mounted on a METAL DIN rail. Ensure that the output current is 20 mA max. With several units connected, the allowable ambient temperature range varies as follows:

1 to 2 units connected: 14 to 131°F (-10 to +55°C)

3 to 10 units connected: 14 to 122°F (-10 to +50°C)

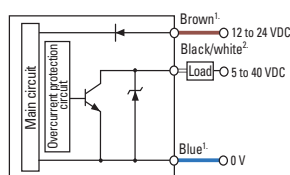
11 to 16 units connected: 14 to 113°F (-10 to +45°C)

4. When more than 8 units connected, be sure to use supply voltage 24 VDC Ripple (P-P) 10% max.

## Input/Output Circuits

## Output circuit

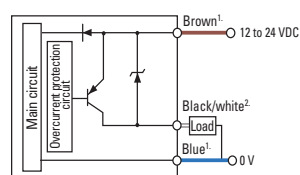
## LV-11SB/12SB



1. The LV-11SB only

2. Black: Control output 1, white: Control output 2

## LV-11SBP/12SBP



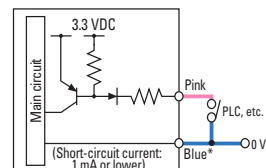
1. The LV-11SBP only

2. Black: Control output 1, white: Control output 2

## Input circuit

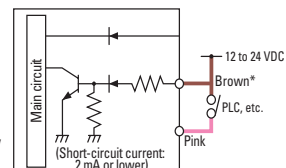
Laser emission stop input/External calibration input/Setting value bank selection input/Received light intensity shift input

## LV-11SB/12SB



\* The LV-11SB only

## LV-11SBP/12SBP



\* The LV-11SBP only

STEP 1

STEP 2

STEP 3




STEP 4

SPECIFICATIONS

DIMENSIONS

# LV-H Series




## Straight-Beam, Retro-Reflective

Type	Small beam spot		High power	
Model	LV-H62		LV-H67	
Shape				
FDA	Class II			
Light source	Visible light semiconductor laser Wavelength: 650 nm			
Detecting distance	FINE	6.6' 2m	65.6' 20m	
	TURBO	16.4' 5m	98.4' 30m	
	SUPER	23.0' 7m	98.4' 30m <sup>1</sup>	
Ambient temperature used	14 to 131°F (-10 to 55°C), No condensation			
Material	Case	Glass reinforced plastic		
	Lens cover	Transparent plastic <sup>2</sup>		
	Reflective mirror	Polycarbonate, Acrylic	ABS plastic, Acrylic	
Weight	Approx. 45 g			
Dimensions				

1. The detecting distance is 164.0' 50 m when **OP-42198** is used.

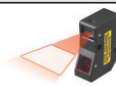
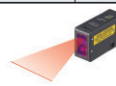

2. Norbornene plastic or acrylic

## Area Beam, Retro-Reflective

Type	Long distance		Wide
Model	LV-H64		LV-H65
Shape			
FDA	Class II		
Light source	Visible light semiconductor laser Wavelength: 650 nm		
Detecting distance	FINE	3.94' to 19.69' (3.94' to 27.56') 100 to 500 mm (100 to 700 mm)	3.94'(5.91') 100mm (150 mm)
	TURBO	7.87' to 33.46' (11.81' to 39.37') 200 to 850 mm (300 to 1000 mm)	0.39' to 5.91' (0.39' to 9.84') 10 to 150 mm (10 to 250 mm)
	SUPER	15.75' to 47.24' (23.62' to 59.06') 400 to 1200 mm (600 to 1500 mm)	3.94' to 7.87' (5.91' to 13.78') 100 to 200 mm (150 to 350 mm)
Ambient temperature used	14 to 131°F (-10 to 55°C), No condensation		
Material	Case	Reinforced glass/plastic	
	Lens	Norbornene plastic	
	Reflective mirror	Polycarbonate, acrylic	
Weight	Approx. 45 g		
Dimensions			






\* The parentheses indicate the detecting distance when **OP-51428** is used.

## Area Beam

Type	Area definite reflective		Long-distance area	
Model	LV-H47		LV-H42	LV-H41
Shape				
FDA	Class II			Class I
Light source	Visible light semiconductor laser Wavelength: 650 nm			Invisible light semiconductor laser Wavelength: 785 nm
Detecting distance	FINE	2.17" to 3.35" 55 to 85 mm	9.84' 250 mm	
	TURBO		19.69' 500 mm	
	SUPER		39.37' 1000 mm	
Ambient temperature used	14 to 131°F (-10 to 55°C), No condensation			
Ambient humidity used	35% to 85% RH, No condensation			
Material	Case	Glass reinforced plastic		
	Lens cover	Glass <sup>1</sup> .	Polyarylate	
Weight	Approx. 45 g			
Dimensions				

1. The **LV-H47** and the **LV-H42** receivers are polyarylate




## Small Beam Spot

Type	Straight-beam coaxial		Adjustable beam spot	Ultra-small beam spot
Model	LV-H35		LV-H32	LV-H37
Shape				
FDA	Class II			
Light source	Visible light semiconductor laser Wavelength: 650 nm			
Detecting distance	FINE	5.91" 150 mm	9.84" 250 mm	2.76" ±0.59" 70 ±15 mm
	TURBO	11.81" 300 mm	19.69" 500 mm	
	SUPER	23.62" 600 mm	39.37" 1000 mm	
Ambient temperature used	14 to 131°F (-10 to 55°C), No condensation			
Ambient humidity used	35% to 85% RH, No condensation			
Material	Case	Glass reinforced plastic <sup>1</sup>		
	Lens cover	Transparent plastic	Acrylic <sup>2</sup>	Glass <sup>2</sup>
Weight	Approx. 45 g			
Dimensions				

1. Norbornene plastic or acrylic

2. The **LV-H32** and the **LV-H37** receivers are polyarylate

## Waterproof (IP67)





Type	Straight-beam coaxial		Retro-reflective
Model	LV-H35F		LV-H62F
Shape			
FDA class	Class II		
Light source	Visible light semiconductor laser Wavelength: 650 nm		
Detecting distance	FINE	3.94" 100 mm	4.9' 1.5 m
	TURBO	7.87" 200 mm	3.5' 3.5 m
	SUPER	17.72" 450 mm	16.4' 5 m
Ambient temperature used	14 to 131°F (-10 to 55°C), No condensation		
Ambient humidity used	35% to 85% RH, No condensation		
Material	Case	Fluoroplastic (PFA)	
	O-ring	Fluororubber	
	Lens cover	Glass	
Weight	Approx. 80 g	Approx. 100 g	
Dimensions illustration			

\* The cable minimum bend radius is 0.98' 25 mm.



## LV-H Series

## Amplifier Specifications (for reflective/retro-reflective sensor heads)

Model	NPN Output PNP Output	LV-21A LV-21AP	LV-22A LV-22AP	LV-20A	LV-11A(dedicated to LV-H41)
Shape					
Main unit/ Expansion unit		Main unit	Expansion unit (1 line)	Expansion unit (0 line)	Main unit
Response speed		FINE: 80 µs/ TURBO: 500 µs/ SUPER TURBO: 4 ms		280 µs to 4.7 ms	FINE: 500 µs/ TURBO: 2 ms/ SUPER TURBO: 8 ms
Control output		NPN (PNP) open-collector x 2 channels, 40 VDC (30 V) max., max. 100 mA, residual voltage (1.0 V max.)			
Protection circuit		Reverse polarity protection, overcurrent protection, surge absorption			
Expansion of units		Up to 7 additional expansion units can be installed (8 units including the main unit),			
Number of interference preventive units <sup>1</sup>		Power mode	FINE	TURBO	SUPER
		Number of units	None	2 units	4 units
Ratings	Power supply voltage	12 to 24 VDC ripple (P-P) 10% max. (For the LV-20A/22A/22AP, the power supply voltage is supplied from the main unit.)			
	Power consumption	1.5 W max. (125 mA max. for 12 V, 62.5 mA max. for 24 V)			
Ambient temperature used		14 to 131°F (-10 to 55°C), No condensation <sup>2</sup>			
Ambient humidity used		35% to 85% RH, No condensation			
Material		Main body, cover: Polycarbonate			
Weight		Approx. 120 g	Approx. 75 g	Approx. 35 g	Approx. 120 g
Dimensions		P.36			

1. To connect several units they must be mounted on a METAL DIN rail. Ensure that the output current is 20 mA max. With several units connected, the allowable ambient temperature range varies as follows:

2. When 2 to 5 expansion units are additionally installed: 14 to 122°F (-10 to +50°C). When 6 or 7 expansion units are additionally installed: 14 to 113°F (-10 to +45°C).

## LV-L01 Specifications (lens attachment for LV-H42) (Unit: inch mm)

Name		LV-L01	When slit 1 is mounted	When slit 2 is mounted	When slit 3 is mounted	When slit 4 is mounted
Detecting distance	FINE	7.87" 200	6.89" 175	5.91" 150	4.92" 125	3.94" 100
	TURBO	15.75" 400	13.78" 350	11.81" 300	9.84" 250	7.87" 200
	SUPER	31.50" 800	27.56" 700	23.62" 600	19.69" 500	15.75" 400
Area thickness	1.97" 50 mm			0.10" 2.6		
	3.94" 100 mm			0.16" 4.0		
	5.91" 150 mm			0.22" 5.5		
Area width	1.97" 50 mm	0.59" 15.0	0.45" 11.5	0.37" 9.5	0.30" 7.5	0.22" 5.5
	3.94" 100 mm	1.02" 26.0	0.79" 20.0	0.67" 17.0	0.51" 13.0	0.39" 10.0
	5.91" 150 mm	1.46" 37.0	1.14" 29.0	0.94" 24.0	0.75" 19.0	0.55" 14.0
Case material		Polyacetal (main body) Arton (lens)				
Weight		Approx. 1 g				
Dimensions		➡P.34				

## Typical example of "width x thickness" of area in LV-L01 detecting distance (Unit: inch mm)

Distance	LV-H42	LV-H42+black slit	LV-H42+grey slit	LV-L01	L01+slit 1	L01+slit 2	L01+slit 3	L01+slit 4
3.94" 100	1.02"x0.02" 26 x 0.6	0.51"x0.02" 13 x 0.6	0.20"x0.02" 5 x 0.6	1.06"x0.16" 27 x 4	0.79"x0.16" 20 x 4	0.67"x0.16" 17 x 4	0.51"x0.16" 13 x 4	0.39"x0.16" 10 x 4
7.87" 200	1.89"x0.02" 48 x 0.4	0.98"x0.02" 25 x 0.4	0.35"x0.02" 9 x 0.4	1.93"x0.28" 49 x 7	1.50"x0.28" 38 x 7	1.26"x0.28" 32 x 7	0.98"x0.28" 25 x 7	0.75"x0.28" 19 x 7
11.81" 300	2.76"x0.03" 70 x 0.8	1.42"x0.03" 36 x 0.8	0.51"x0.03" 13 x 0.8	2.83"x0.39" 72 x 10	2.20"x0.39" 56 x 10	1.85"x0.39" 47 x 10	1.42"x0.39" 36 x 10	1.06"x0.39" 27 x 10
15.75" 400	3.62"x0.05" 92 x 1.34	1.84"x0.05" 48 x 1.34	0.67"x0.05" 17 x 1.34	3.70"x0.51" 94 x 13	2.87"x0.51" 73 x 13	2.40"x0.51" 61 x 13	1.89"x0.51" 48 x 13	1.42"x0.51" 36 x 13

## LV-L02 Specifications (lens attachment for LV-H47) (Unit: inch mm)

Name		LV-L02	When slit 1 is mounted	When slit 2 is mounted	When slit 3 is mounted	When slit 4 is mounted
Area thickness	2.17" 55 mm	0.12" 3.0				
	2.76" 70 mm	0.13" 3.4				
	3.35" 85 mm	0.15" 3.8				
Area width	2.17" 55 mm	0.67" 17.0	0.51" 13.0	0.43" 11.0	0.33" 8.5	0.24" 6.0
	2.76" 70 mm	0.81" 20.5	0.61" 15.5	0.51" 13.0	0.39" 10.0	0.30" 7.5
	3.35" 85 mm	0.94" 24.0	0.71" 18.0	0.59" 15.0	0.45" 11.5	0.35" 9.0
Case material		Polyacetal (main body) Arton (lens)				
Weight		Approx. 1 g				
Dimensions		➔ P.34				

STEP 1

STEP 2

STEP 3




STEP 4

SPECIFICATIONS

DIMENSIONS




# LV-H Series

## Thrubeam

Type	Area thrubeam		
	High power	High performance	
Model	LV-H110	LV-H100	LV-H300
Shape			
Detecting area	0.39" 10 mm		1.18" 30 mm
FDA	Class II		
Light source	Visible light semiconductor laser Wavelength: 650 nm		
Detecting distance	78.74" 2000 mm		
Ambient temperature used	14 to 131°F (-10 to 55°C), No condensation		
Ambient humidity used	35% to 85% RH, No condensation		
Material	Case	Glass reinforced plastic	
	Lens cover	Transmitter: Glass Receiver: Polyarylate	
Weight	Approx. 80 g		Approx. 100 g
Dimensions	 <b>P.37</b>		

\* Use a dedicated mounting bracket to install the sensor.

## Amplifier Specifications

Model		NPN Output	LV-51M		LV-52			
		PNP Output	LV-51MP		LV-52P			
Main unit/ Expansion unit			Main unit			Expansion unit (1 line)		
Shape								
Response speed			FINE		TURBO		SUPER	
			80 μs		500 μs		4 ms	
Inspection mode			Light intensity distinction / edge detection					
Control output			NPN (PNP) open-collector x 2 channels, 40 VDC (30 V) max., 100 mA, max. residual voltage (1.0 V max.)					
Monitor output			1 to 4 V for 1 to 4 V voltage output and FINE display 0 - 3000, load resistance 20 kΩ min. (LV-51M/LV-51MP only)					
Protection circuit			Reverse polarity protection, overcurrent protection, surge absorption					
Expansion of units			Up to 7 additional expansion units can be installed (8 units including the main unit),					
Number of interference preventive units <sup>1</sup>			FINE: No device (0) TURBO: 2 units SUPER: 4 units					
Ratings	Power supply voltage		12 to 24 VDC ripple (P-P) 10% max. (For the LV-52/52P, the power supply voltage is supplied from the main unit.)					
	Power consumption		1.5 W max. (125 mA max. for 12 V, 62.5 mA max. for 24 V)					
Ambient temperature used			14 to 131°F (-10 to 55°C), No condensation <sup>1</sup>					
Ambient humidity used			35% to 85% RH, No condensation					
Material			Main body, cover: Polycarbonate					
Weight			Approx. 120 g			Approx. 75 g		
Dimensions			 P.39					

1. To connect several units they must be mounted on a METAL DIN rail. Ensure that the output current is 20 mA max. With several units connected, the allowable ambient temperature range varies as follows:  
 When 2 to 5 expansion units are additionally installed: 14 to 122°F (-10 to +50°C).  
 When 6 or 7 expansion units are additionally installed: 14 to 113°F (-10 to +45°C).



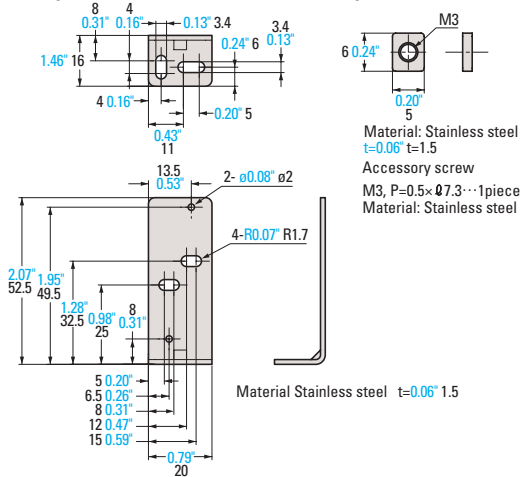
# LV-S Series



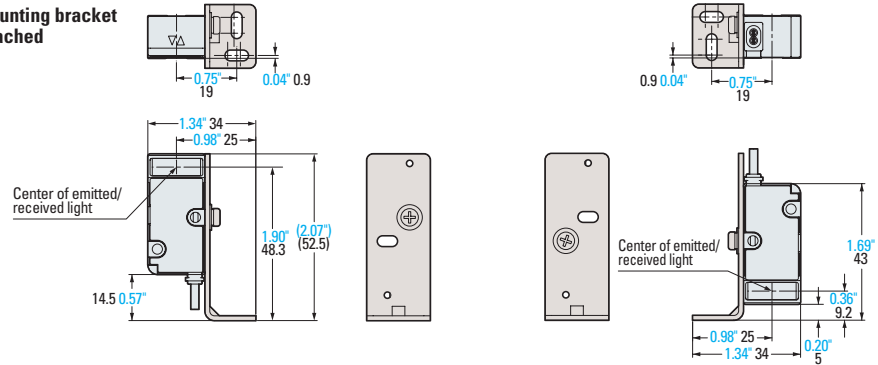
## OP-84350

### L-shaped mounting bracket for LV-S62 (Option)

Unit: inch mm

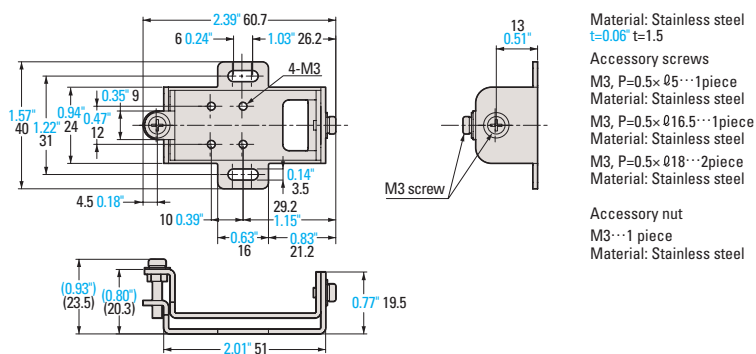


### Mounting bracket attached

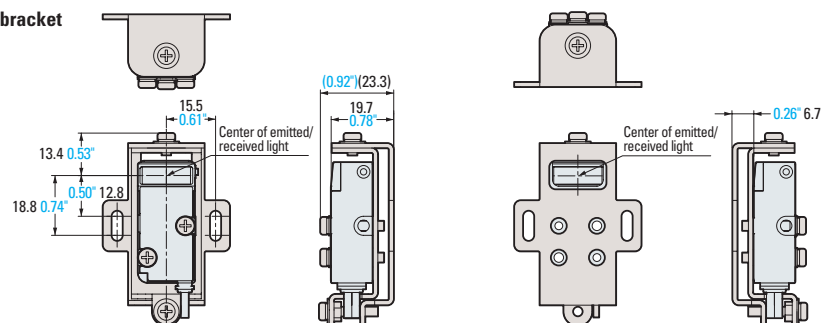


## OP-84349

### Rear mounting bracket for the LV-S62 (Option)



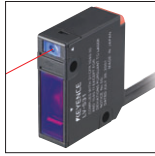
### Mounting bracket attached



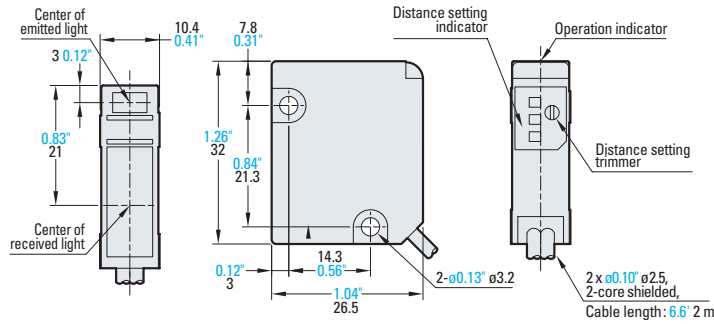


# LV-S Series

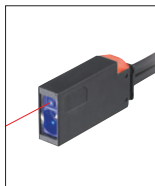
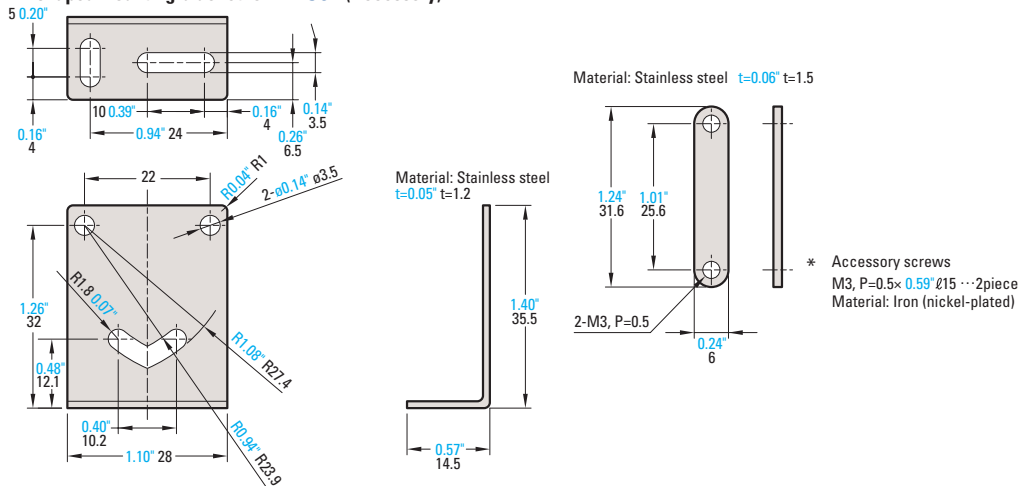
Unit: inch mm



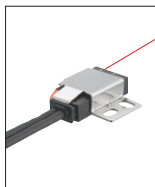
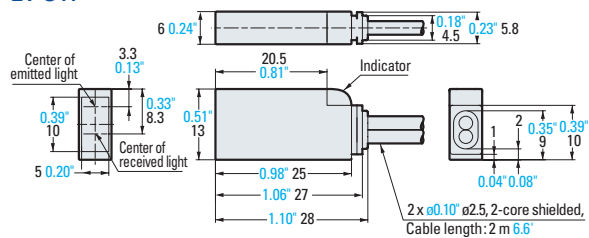
## LV-S31



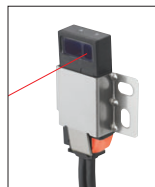
## L-shaped mounting bracket for LV-S31 (Accessory)



## LV-S41

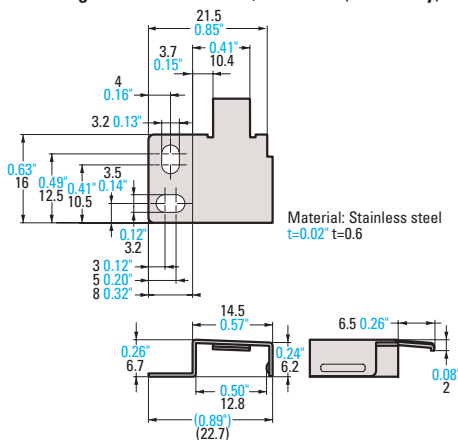


Installed bracket on the LV-S41



Installed bracket on the LV-S41L

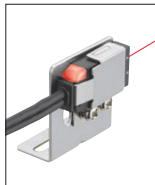
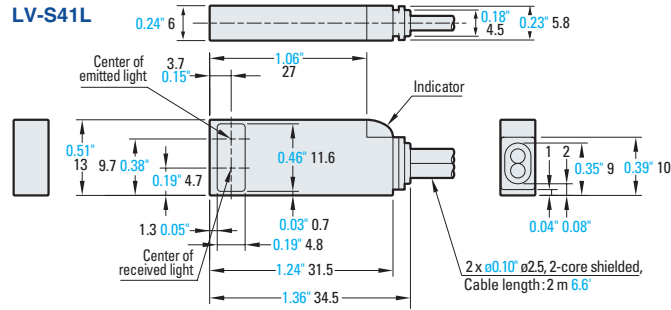
## Mounting bracket for LV-S41/LV-S41L (Accessory)



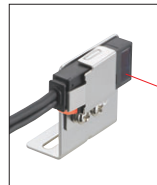
# LV-S Series



**LV-S41L**



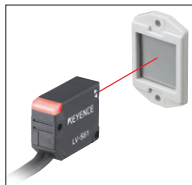
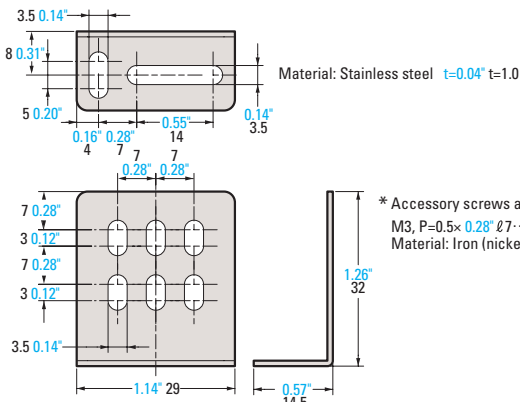
Installed bracket on the LV-S41



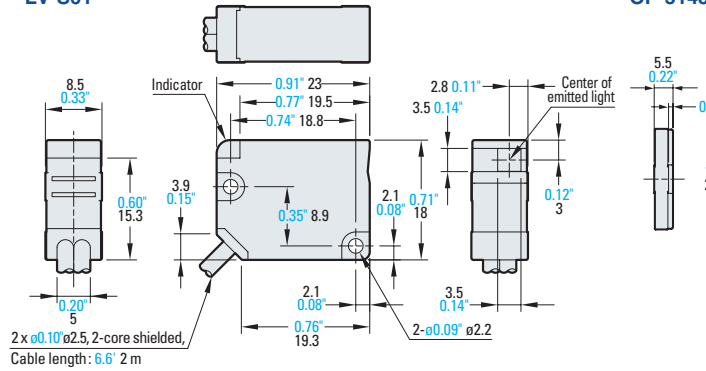
Installed bracket on the LV-S41L

**OP-66846**

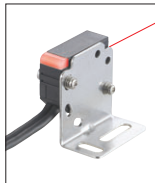
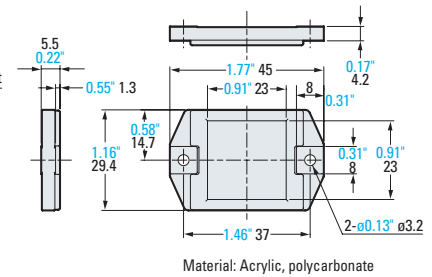
L-shaped mounting bracket for LV-S41/LV-S41L (Option)



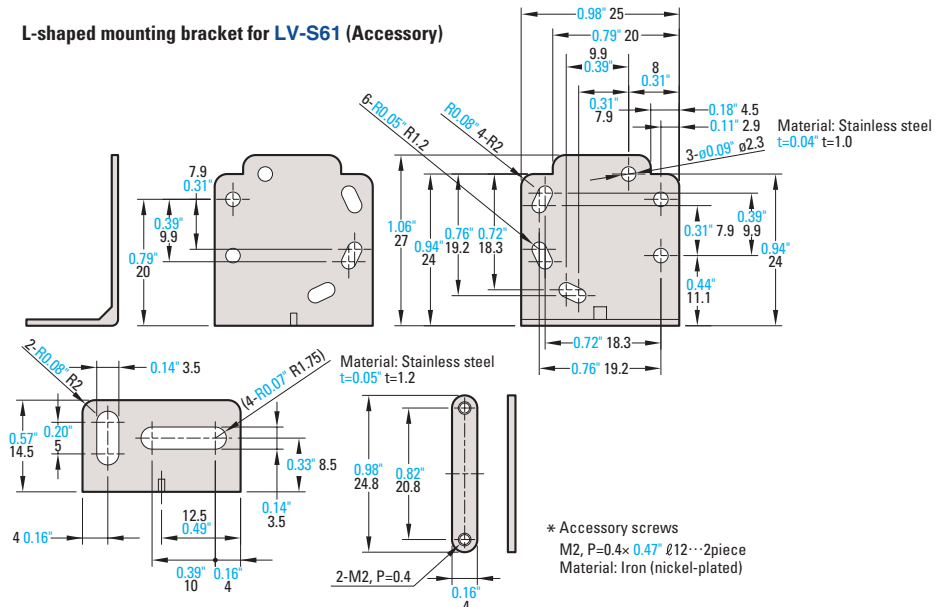
**LV-S61**



**OP-51430 R-6 (Grey) (Accessory)**



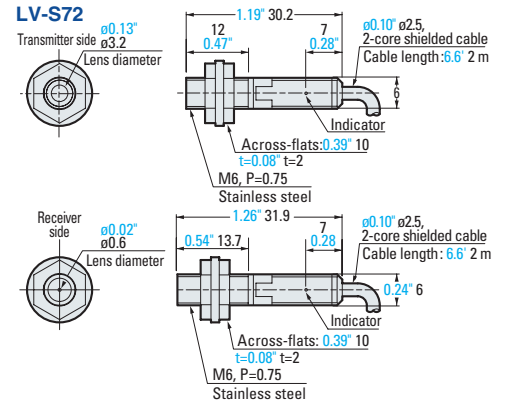
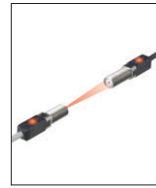
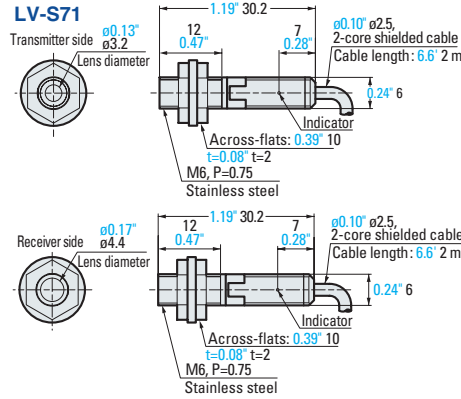
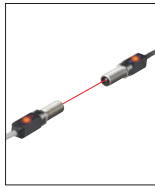
L-shaped mounting bracket for LV-S61 (Accessory)



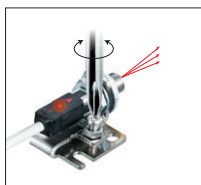
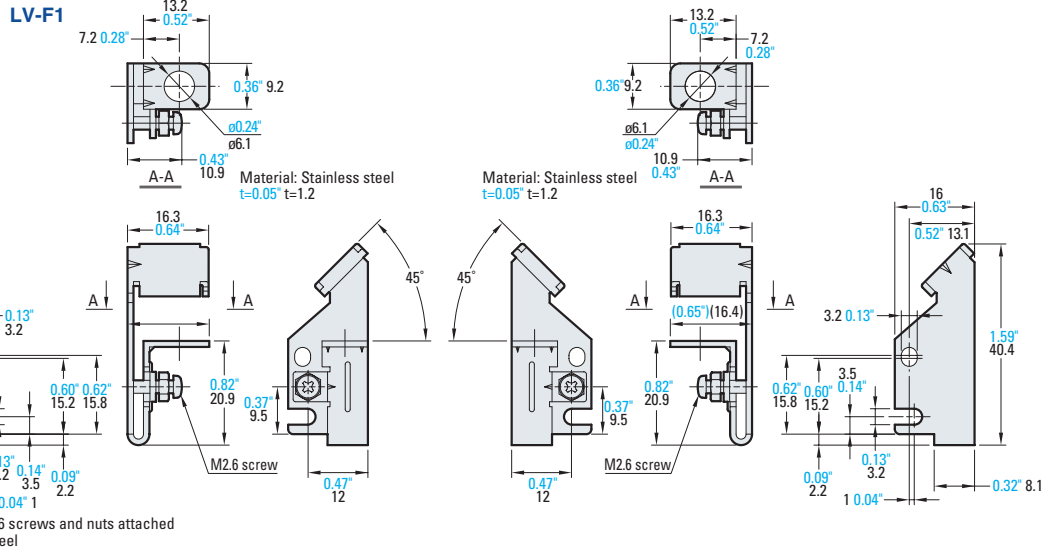
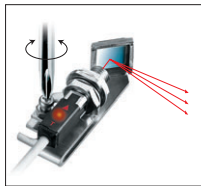
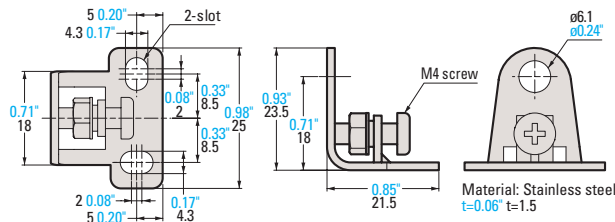


# LV-S Series

Unit: inch mm

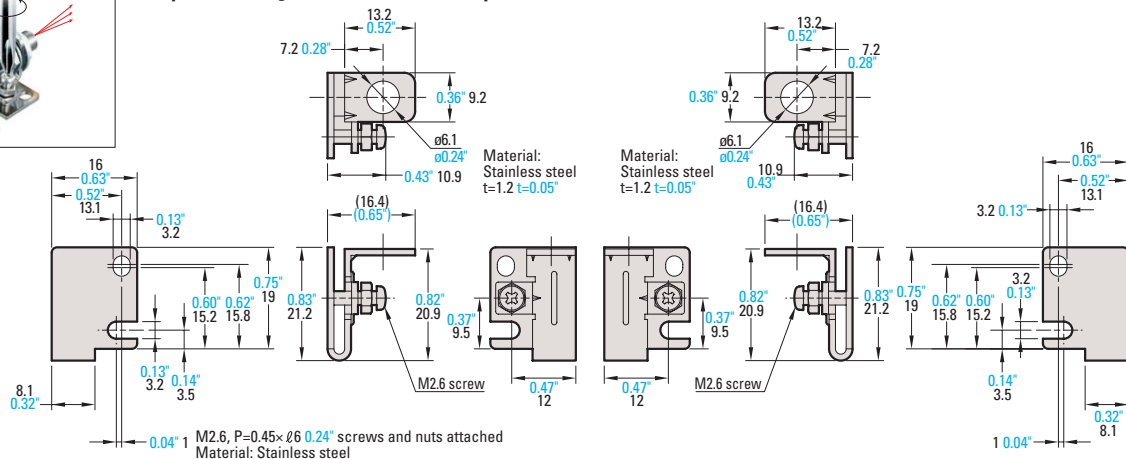


## Mounting bracket for LV-S71 / LV-S72 (Accessory)



## OP-66869

### Compact mounting bracket for thru-beam (Option)

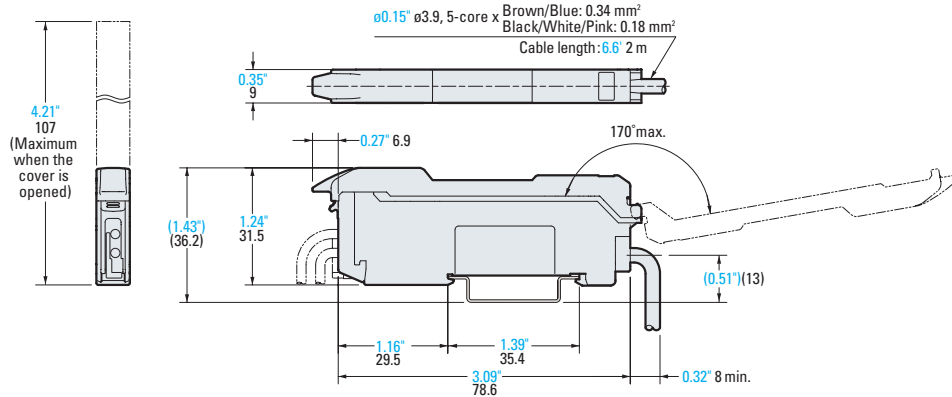


# LV-S Series

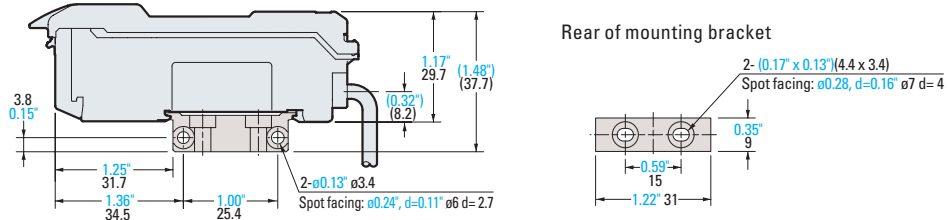
Unit: inch mm



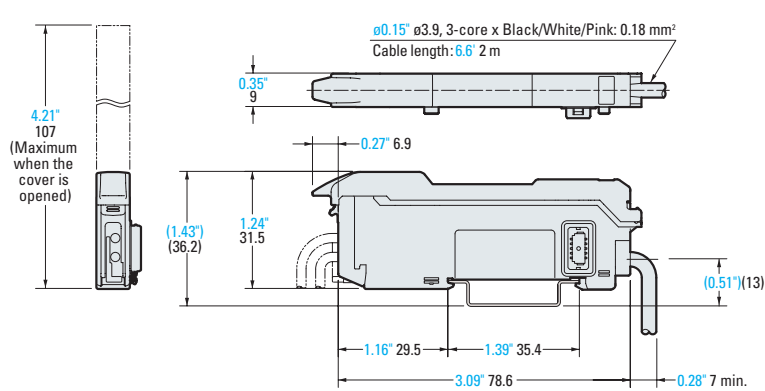
## LV-11SB/11SBP



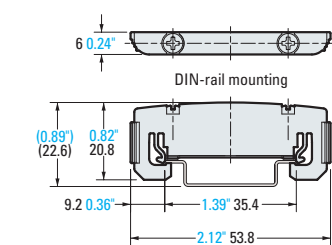
### Mounting bracket attached (LV-11SB and LV-11SBP DIN rail accessory)



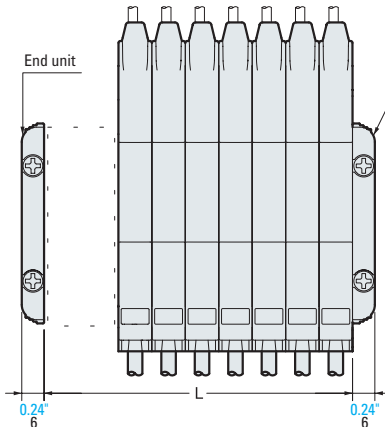
## LV-12SB/12SBP



### End unit (included with LV-12SB/LV-12SBP)



### When several units are connected



\* Make sure to use end units when adding expansion units.

No. of expansion units	L	No. of expansion units	L
1	0.71" 18	9	3.54" 90
2	1.06" 27	10	3.90" 99
3	1.42" 36	11	4.25" 108
4	1.77" 45	12	4.61" 117
5	2.13" 54	13	4.96" 126
6	2.48" 63	14	5.31" 135
7	2.83" 72	15	5.67" 144
8	3.19" 81	16	6.02" 153

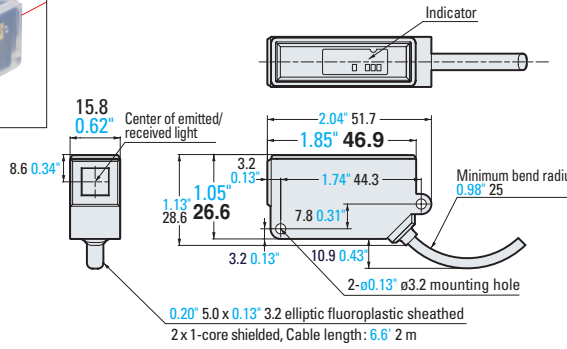
# LV-H Series

## LV-H Series reflective/retro-reflective

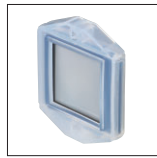
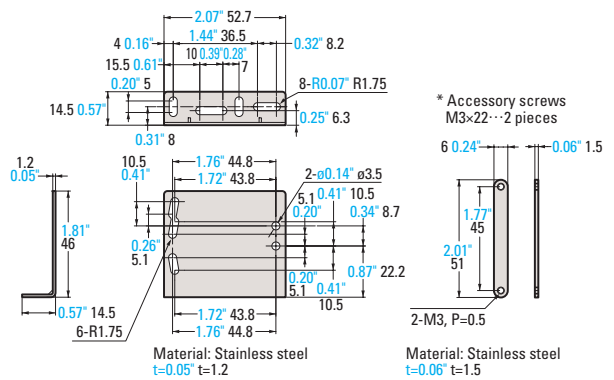
Unit: inch mm



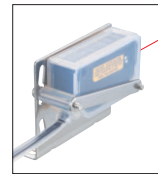
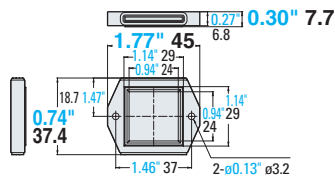
**LV-H35F/H62F**



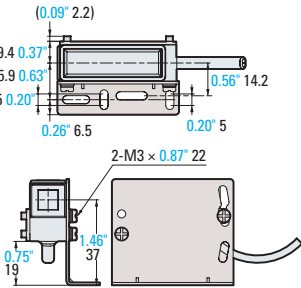
**Mounting bracket (Accessory)**



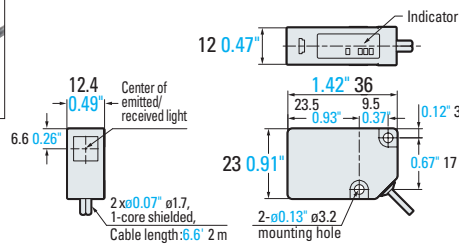
**Reflector R-8 for LV-H62F (Accessory)**



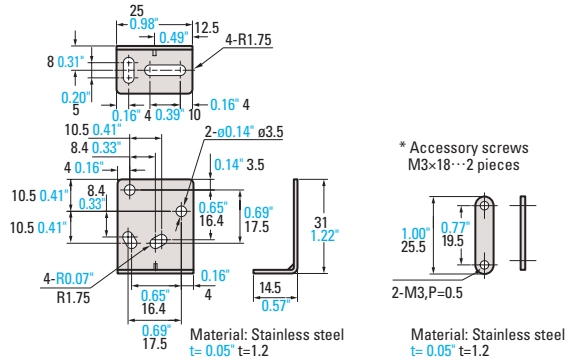
**Mounting bracket attached**



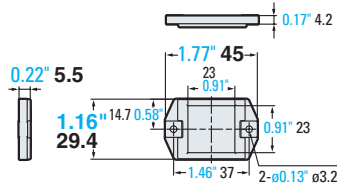
**LV-H35/H62/H67**



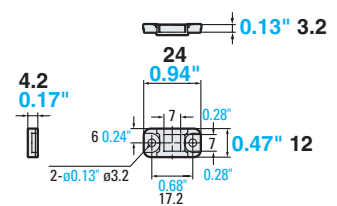
**Mounting bracket (Accessory)**



**Reflector R-6 for LV-H62 (Accessory)**

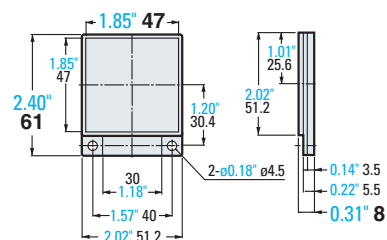


**Reflector R-7 for LV-H62 (Accessory)**

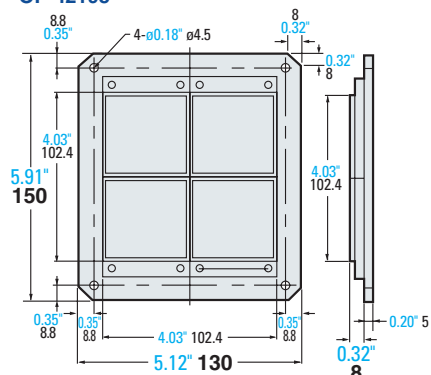


Unit: **inch** mm

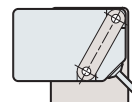
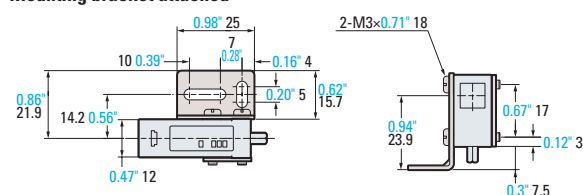
### Reflector R-2 for LV-H67 (Accessory)



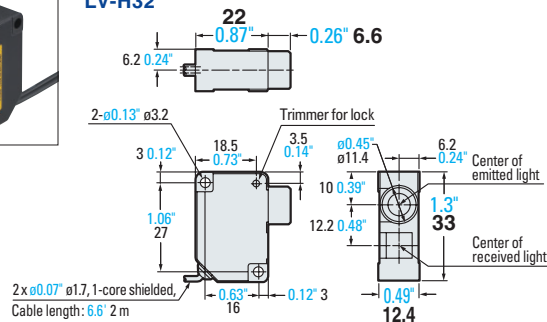
**Long-distance reflector (Option)**  
**OP-42198**



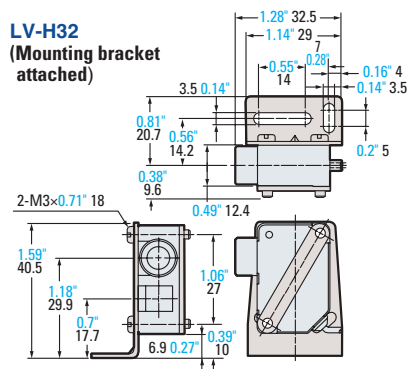
### Mounting bracket attached



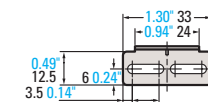
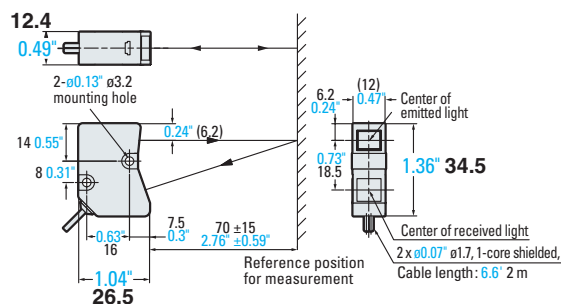
LV-H32



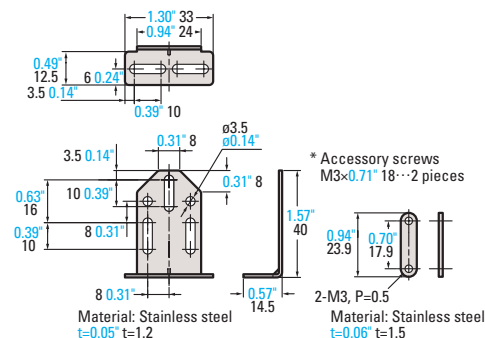
**LV-H32**  
(Mounting bracket attached)



LV-H37/H47

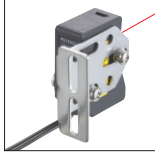


**Mounting bracket for LV-H37/H47 (Accessory)**

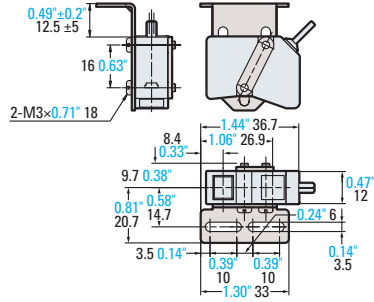


# LV-H Series

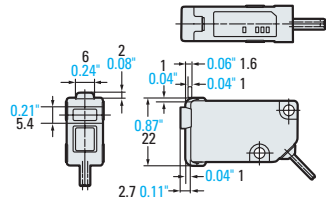
Unit: inch mm



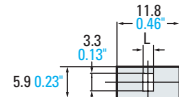
## Mounting bracket attached (LV-H37/H47 accessory)



## When mounting LV-L01 (LV-H42/41)

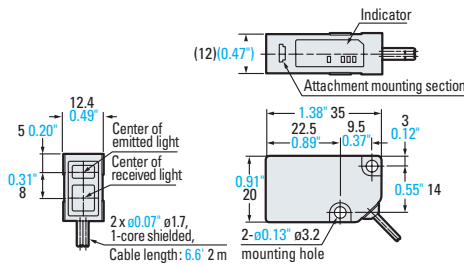


## Slit seal (included with LV-L01)

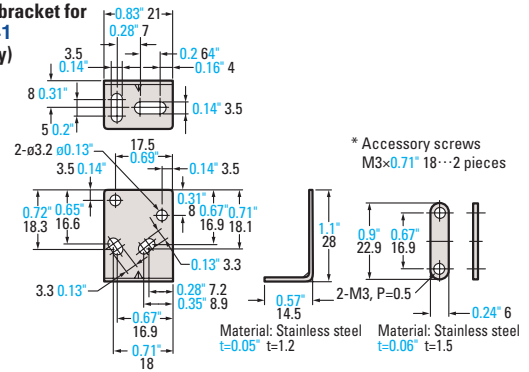


Slit sticker name	L
Slit 1	0.10" 2.6
Slit 2	0.08" 2.0
Slit 3	0.06" 1.5
Slit 4	0.04" 1.1

## LV-H42/41



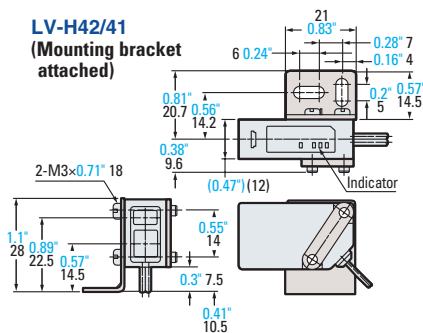
## Mounting bracket for LV-H42/41 (Accessory)



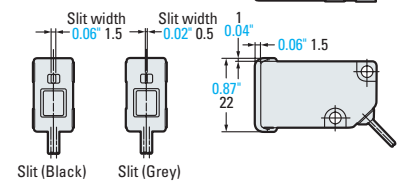
\* Accessory screws  
M3×0.71 18...2 pieces



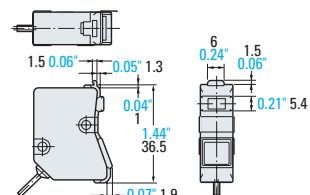
## LV-H42/41 (Mounting bracket attached)



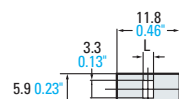
## LV-H42/41 When mounting the accessory slit



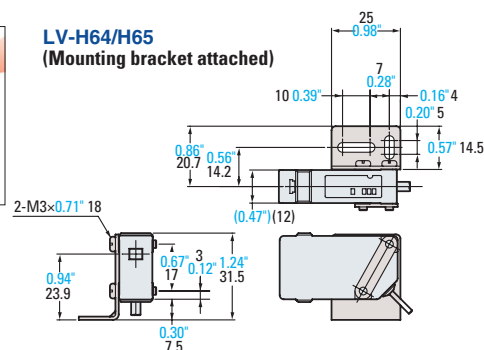
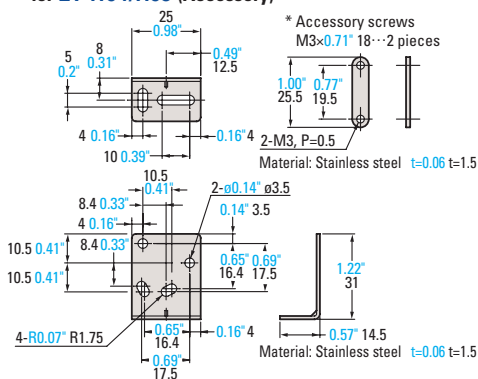
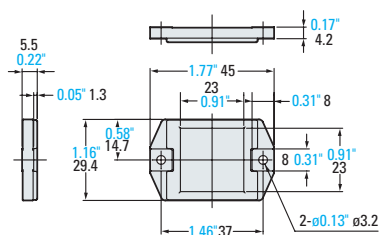
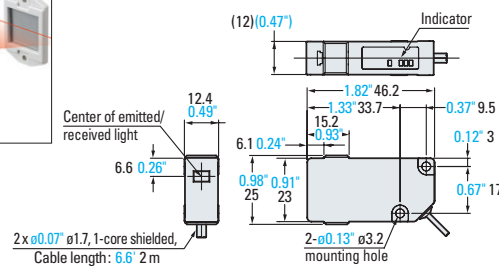
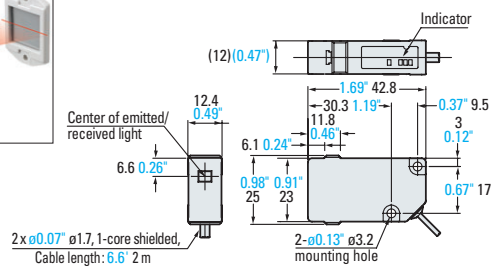
## When mounting LV-L02 LV-H47



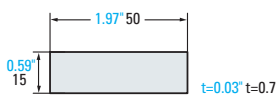
## Slit seal (included with LV-L02)



Slit sticker name	L
Slit 1	0.10" 2.6
Slit 2	0.08" 2.0
Slit 3	0.06" 1.5
Slit 4	0.04" 1.1

Unit: **inch** mm

**Optional reflective tape** **OP-51428**

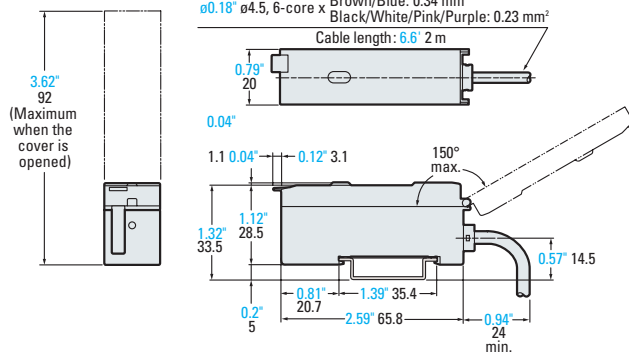


# LV-H Series

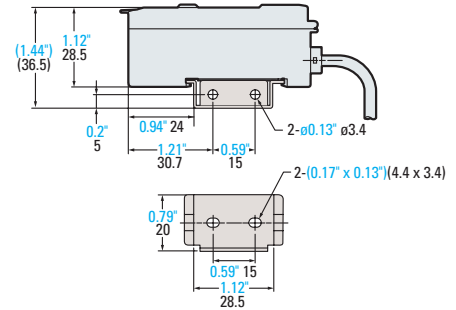
Unit: inch mm



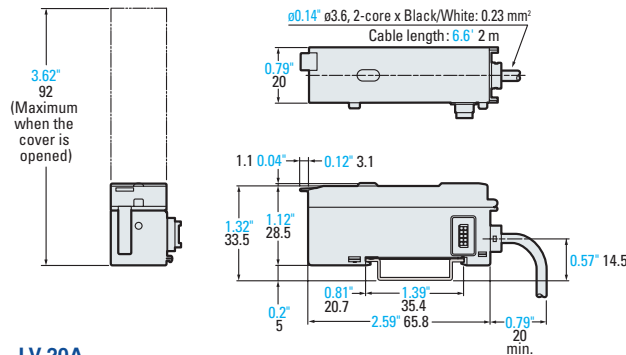
## LV-21A/21AP/11A



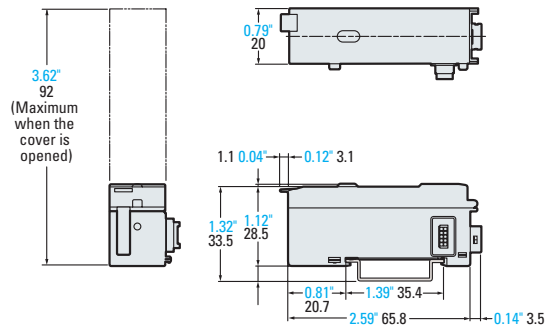
## Mounting bracket attached (included with LV-21A/11A)



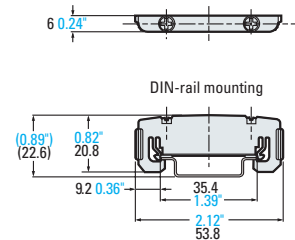
## LV-22A/22AP



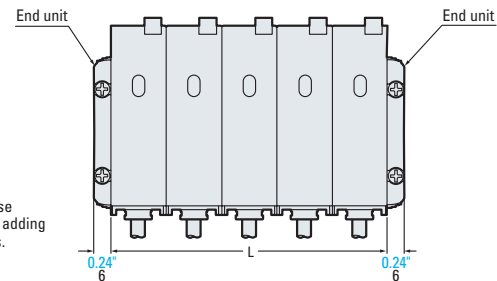
## LV-20A



## End unit (included with LV-22A/22AP)



## When several units are connected:



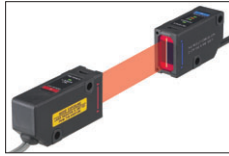
\* Make sure to use end units when adding expansion units.

No. of units	L
1	1.57" 40
2	2.36" 60
3	3.15" 80
4	3.94" 100
5	4.72" 120
6	5.51" 140
7	6.30" 160

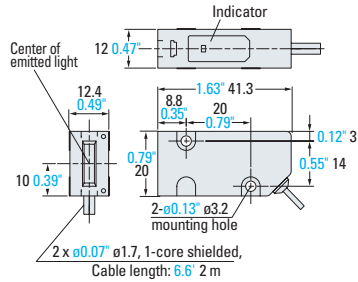


# LV-H Series

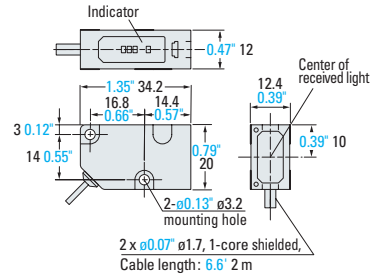
Unit: inch mm



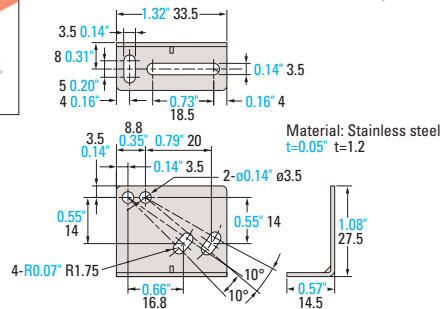
**LV-H100/H110 (Transmitter)**



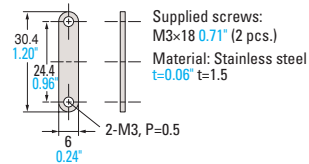
**LV-H100/H110 (Receiver)**



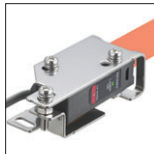
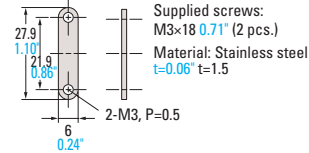
**LV-B101: (Mounting bracket set includes 2 brackets for transmitter/receiver for LV-H100/H110)**



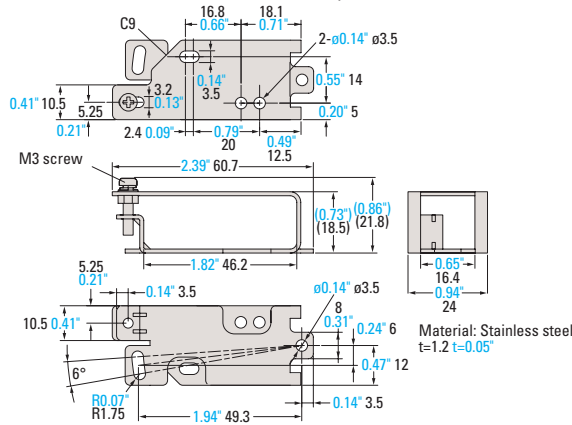
**Plate nut for transmitter**



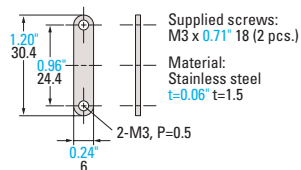
**Plate nut for receiver**



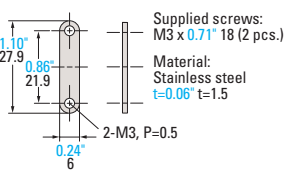
**LV-B102: (Mounting bracket set includes 2 brackets for transmitter/receiver for LV-H100/H110)**



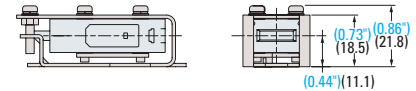
**Plate nut for transmitter**



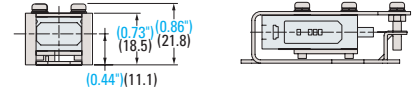
**Plate nut for receiver**



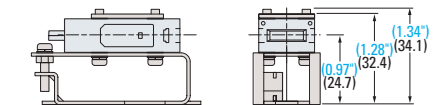
**When the transmitter of the LV-H100/H110 is mounted (Inside)**



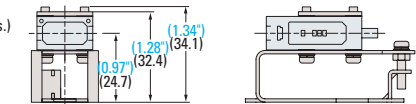
**When the receiver of the LV-H100/H110 is mounted (Inside)**



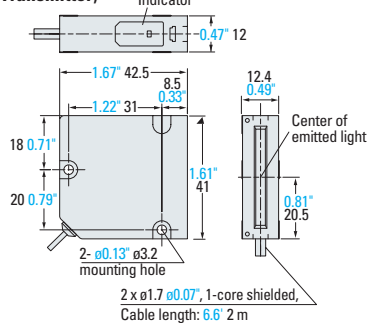
**When the transmitter of the LV-H100/H110 is mounted (Outside)**



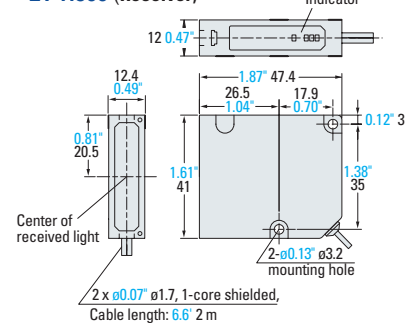
**When the receiver of the LV-H100/H110 is mounted (Outside)**

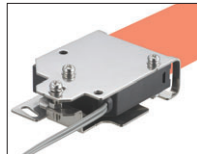


**LV-H300 (Transmitter)**



**LV-H300 (Receiver)**





Technical drawing of a mechanical part with dimensions in inches and millimeters. The drawing includes a top view, a side view, and a detail view of a corner. Dimensions are provided in both units, with millimeter values in parentheses.

**Top View Dimensions:**

- Overall width: 4.5" (114.3)
- Overall height: 35" (889)
- Top left corner: R0.37" (9.5)
- Top center hole: 4-ø0.35" (9.14)
- Top right corner: 0.79" (20)
- Bottom left corner: 0.71" (18)
- Bottom center hole: 0.70" (17.8)
- Bottom right corner: 0.18" (4.5)
- Internal width: 3.1" (78.7)
- Internal height: 1.22" (31)
- Internal width (right): 0.48" (12.2)

**Side View Dimensions:**

- Overall width: 2.64" (67)
- Overall height: 2.07" (52.5)
- Top hole: (0.73") (18.5) (0.86") (21.8)
- Bottom hole: 0.48" (12.2)

**Detail View Dimensions:**

- Overall width: 1.43" (36.4)
- Overall height: 1.73" (44)
- Top hole: ø0.14" (3.5)
- Bottom hole: 0.87" (22)
- Left hole: 0.31" (8)
- Right hole: 0.57" (14.5)
- Bottom corner: R0.07" (1.75)
- Bottom width: 2.18" (55.4)
- Bottom height: 0.14" (3.5)
- Angle: 7°

**Material:** Stainless steel  
**t=0.05" t=1.2**

Technical drawing of a vertical plate with the following dimensions and specifications:

- Overall height: 42.9
- Distance from top edge to center of top hole: 1.69
- Distance between centers of two holes: 36.9
- Distance from center of bottom hole to bottom edge: 1.45
- Overall width: 6
- Distance from center line to edge: 0.24
- Supplied screws: M3 x 0.71" 18 (2 pcs.)
- Material: Stainless steel
- Thickness:  $t=0.06"$   $t=1.5$
- Thread specification: 2-M3, P=0.5

Supplied screws:  
M3 x 0.71 18 (2 pcs.)

Material:  
Stainless steel  
t=0.06" t=1.5

2-M3, P=0.5

Technical drawing of a vertical plate with the following dimensions and specifications:

- Overall height: 42.9
- Distance between screw centers: 36.9
- Distance from top edge to first screw center: 1.45
- Distance from bottom edge to first screw center: 1.69
- Plate width: 6
- Distance from edge to screw center: 0.24
- Material: Stainless steel
- Supplied screws: M3 x 0.71" 18 ... (2 pcs.)
- Material: Stainless steel
- t=0.06 t=1.5
- 2-M3, P=0.5

Technical drawing of a vertical plate with the following dimensions and specifications:

- Overall height: 45.3
- Distance from top edge to top hole center: 1.78
- Distance between hole centers: 39.3
- Distance from bottom hole center to bottom edge: 1.55
- Plate thickness: 0.24
- Bottom hole diameter: 6
- Supplied screws: M3 x 0.71" 18 ... (2 pcs.)
- Material: Stainless steel
- Temperatures:  $t=0.06$   $t=1.5$
- Bottom hole specification: 2-M3, P=0.5

Technical drawings of the 1000 Series Linear Actuator showing front and side views with dimensions:

- Front View Dimensions:**
  - Overall width: 11.1
  - Stroke length: 18.5 (0.73")
  - Stroke length: 21.8 (0.86")
- Side View Dimensions:**
  - Overall height: 2.0
  - Stroke length: 1.5

Technical drawing of the 'B' type hydraulic cylinder. The drawing shows the cylinder with a piston rod and a mounting bracket. Dimensions are provided in inches and millimeters:

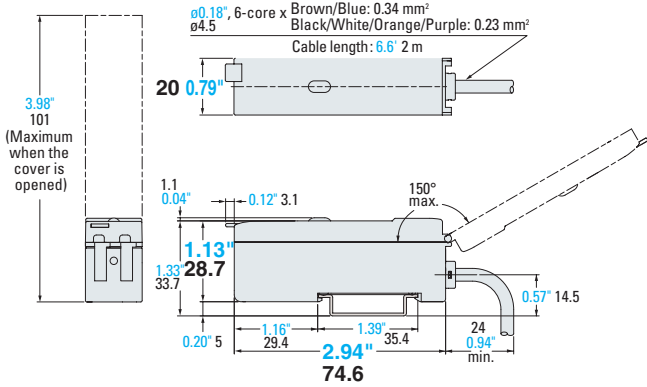
- Stroke length: 1.28" (32.4)
- Mounting bracket height: 1.34" (34.1)
- Mounting bracket width: 0.97" (24.7)

LV-H Series

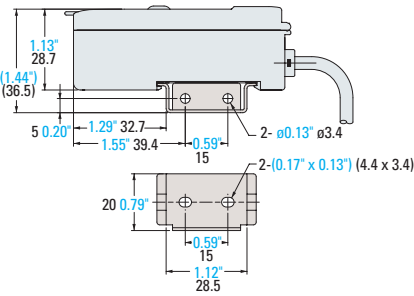
Unit: inch mm



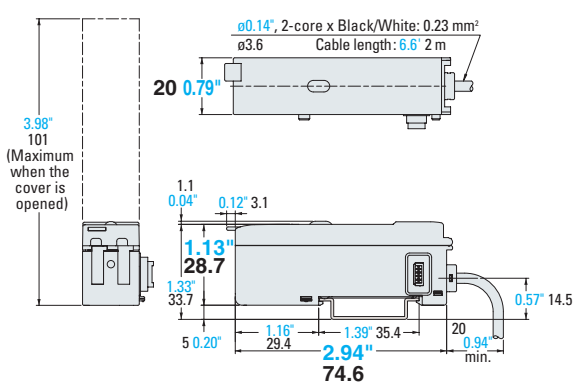
LV-51M/51MP



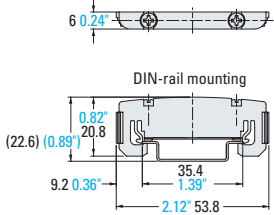
Mounting bracket attached (LV-51M/51MP accessory)



LV-52/52P

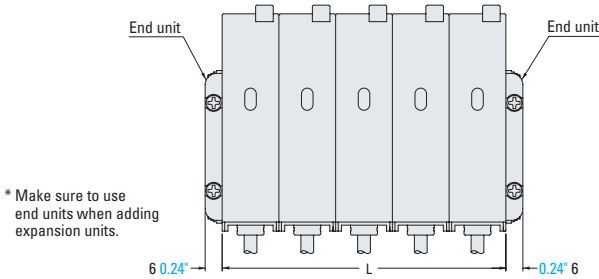


End unit (LV-52/52P accessory)



No. of units	L
1	1.57" 40
2	2.36" 60
3	3.15" 80
4	3.94" 100
5	4.72" 120
6	5.51" 140
7	6.30" 160

When several units are connected:





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**Fax : 201-930-0099**

#### KEYENCE CORPORATION OF AMERICA

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