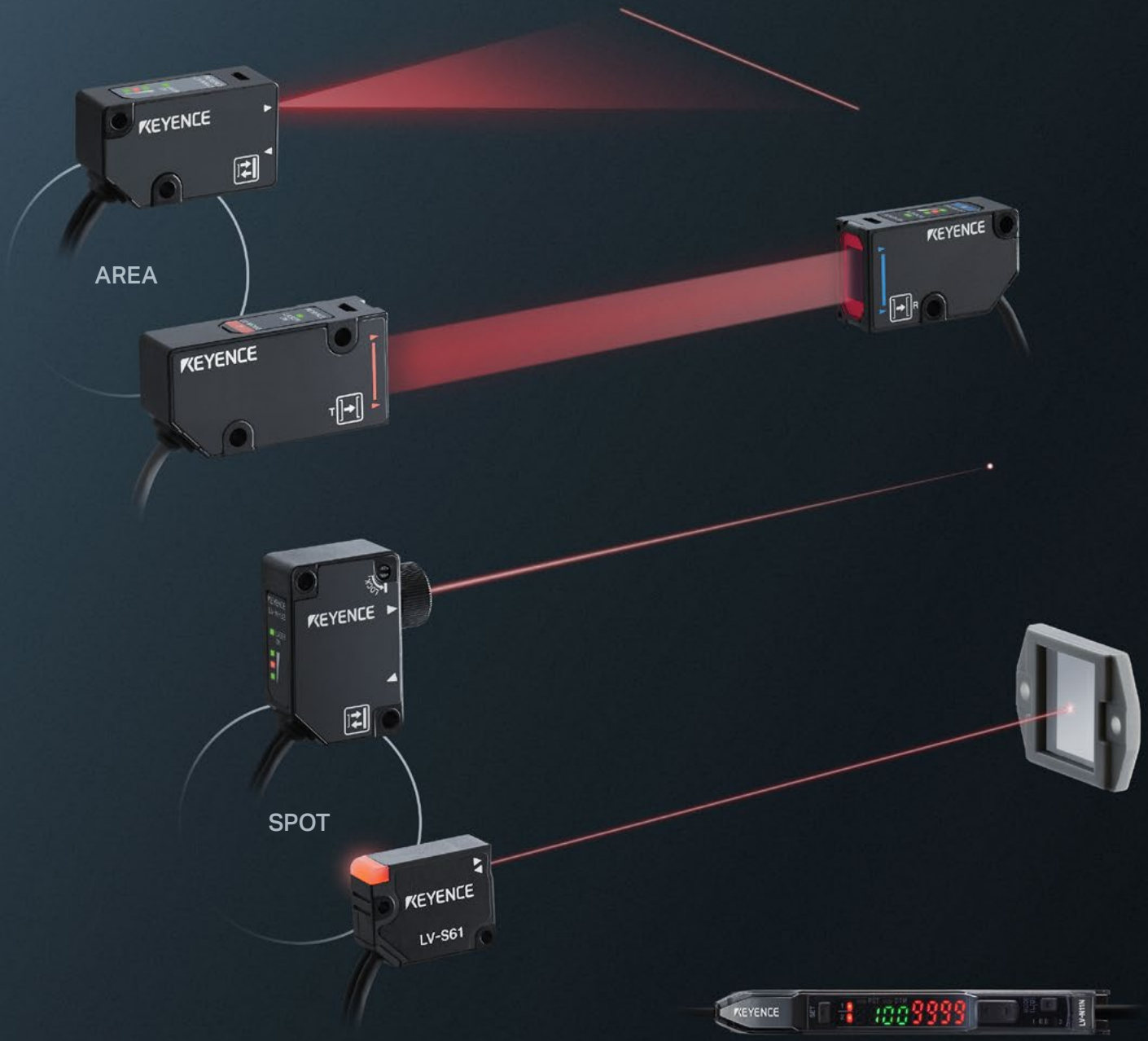
KEYENCE

Multi-Purpose Digital Laser Sensor

LV-N Series



Wide range of head variations

Multi-Purpose Digital Laser Sensor

LV-N Series

Visible beam

- Laser light source for a clearly visible beam spot
- Easy to see detection position and simple installation
- Class 1 laser in all heads

Various beam types

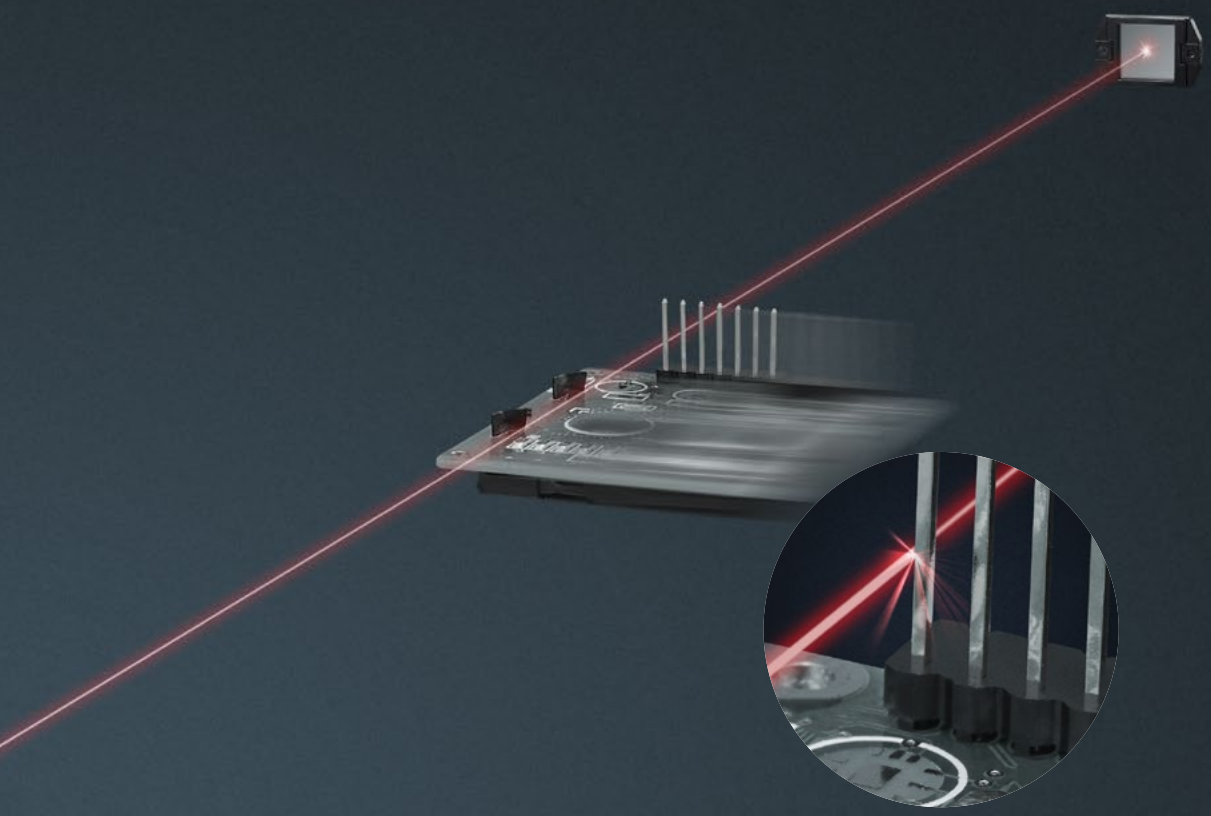
- Small beam spot types
- Area types for wide-area detection
- Can be chosen for various targets and installation conditions

Long range detection

- Long range detection is possible with the use of a laser
- Detecting distances of up to 50 m 164.0'
  (with the LV-NH67 + OP-42198)

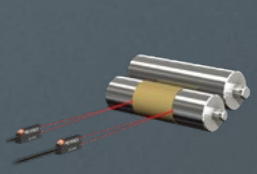
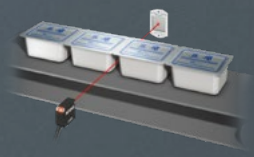
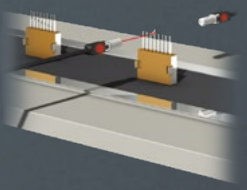
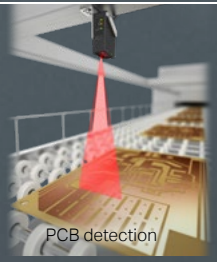
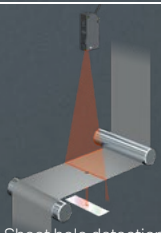


Retro-reflective model (Spot type)
LV-NH62



Wide range of head variations for various applications

Number of heads	Diffuse-reflective models	Retro-reflective models	Thrubeam models
Spot type	5	3	2
Area type	2	4	3

Detection examples	Diffuse-reflective models	Retro-reflective models	Thrubeam models
Spot type	 Meander detection	 Container passage detection	 Pin counting
Area type	 PCB detection	 Sheet hole detection	 Dropped item counting

Features/Specification Comparison

Spot type

Diffuse-reflective models

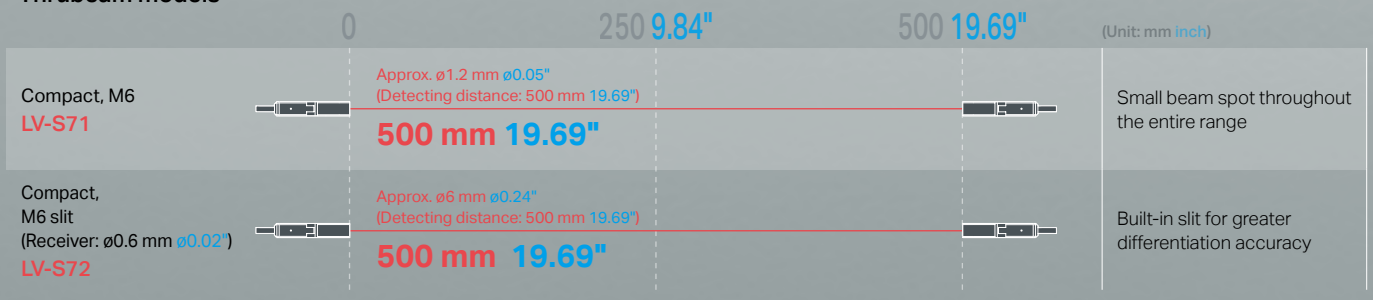


Retro-reflective models



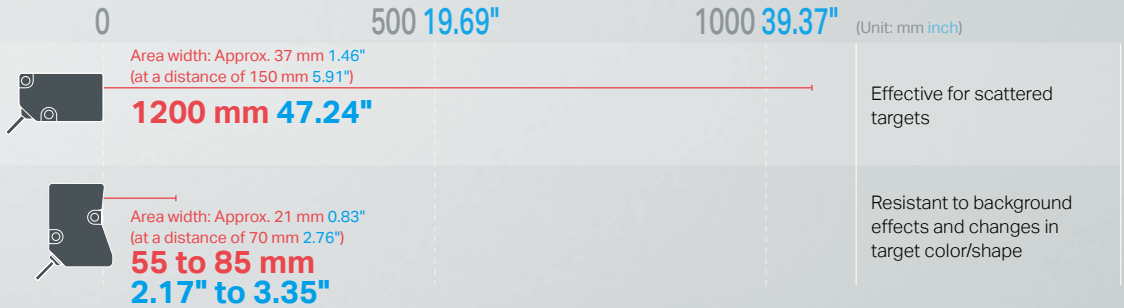
*1 Detecting distance when using the OP-42198 reflector (sold separately).

Thrubeam models

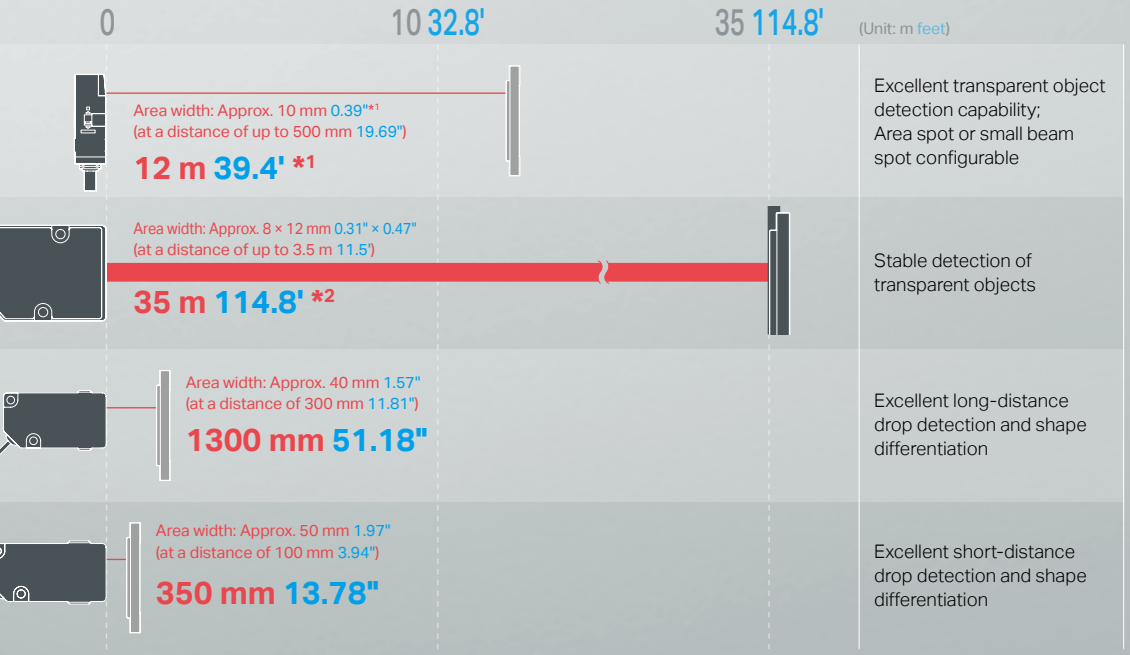


Area type

Diffuse-reflective models



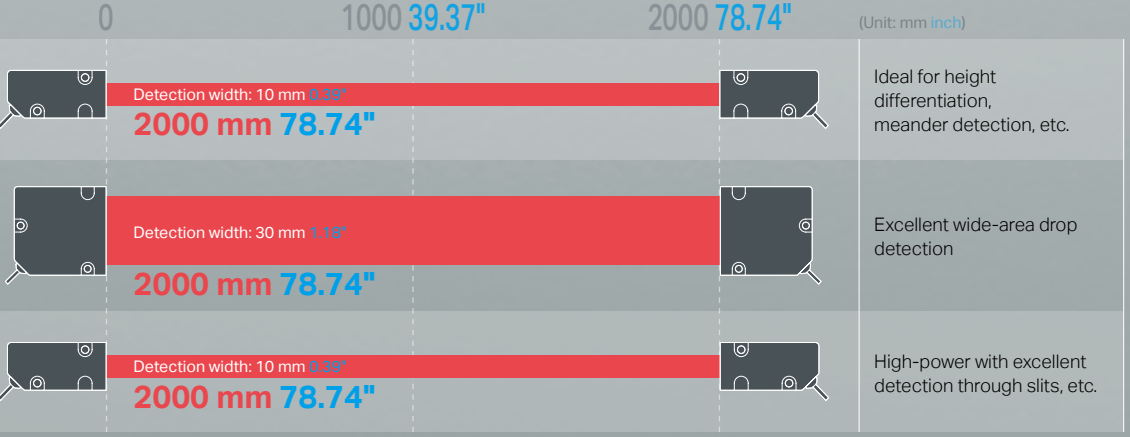
Retro-reflective models



*1 With area spot. A detecting distance of 1 m 3.3' or less is recommended when used for glass detection.
*2 A detecting distance of 3.5 m 11.5' or less is recommended when used for glass detection.

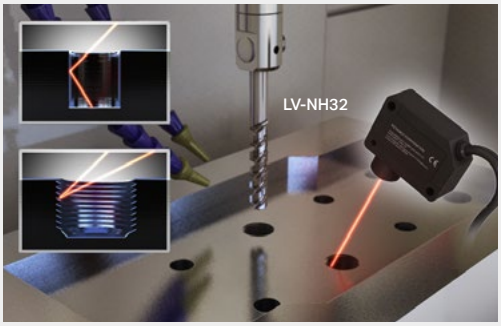
Head type	Detecting distance / Detection width	Features

Thrubeam models

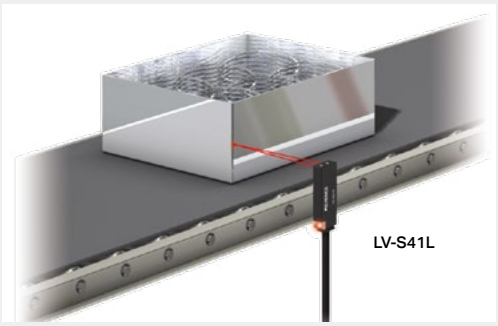


Applications

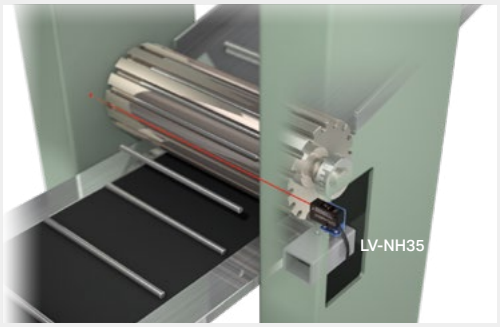
Spot types



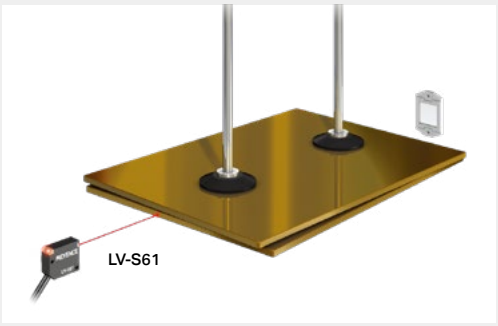
Diffuse-reflective (Adjustable beam spot)
Tap detection



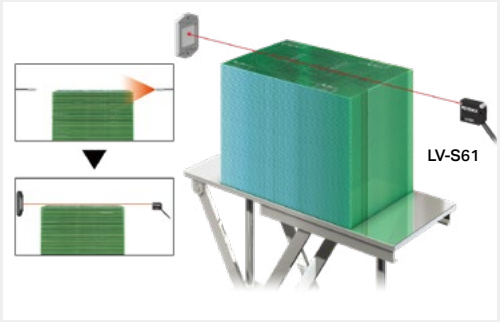
Diffuse-reflective (Side view)
Rack stop position detection



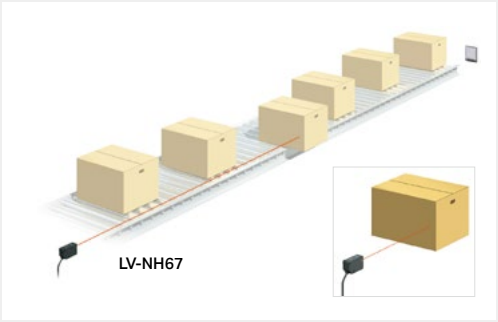
Diffuse-reflective (Coaxial structure)
Detection of targets in grooves



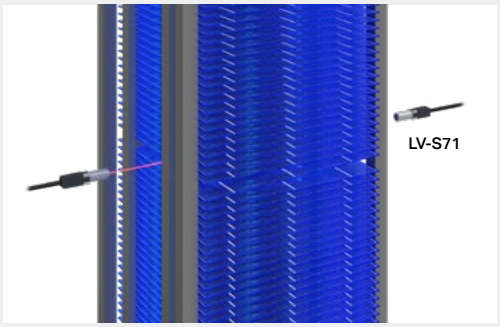
Retro-reflective (Compact)
PCB overlap detection



Retro-reflective (Compact)
Multi-layer PCB edge detection



Retro-reflective (Long-distance)
Misalignment detection

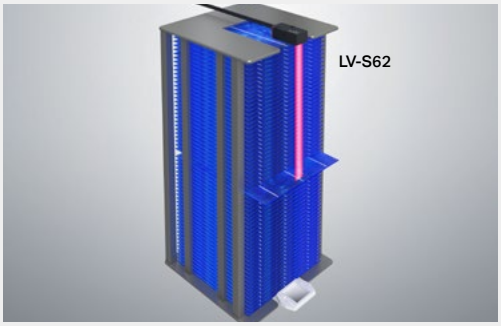


Thrubeam (Compact, M6)
Cassette PCB tilt detection



Thrubeam (Compact, M6)
Deburring checking

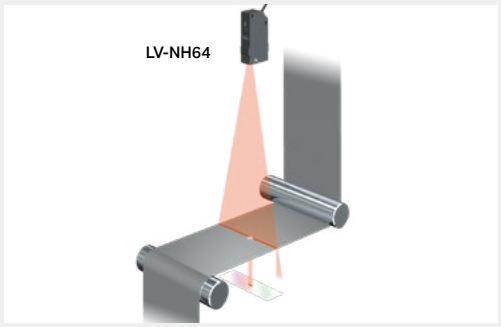
Area types



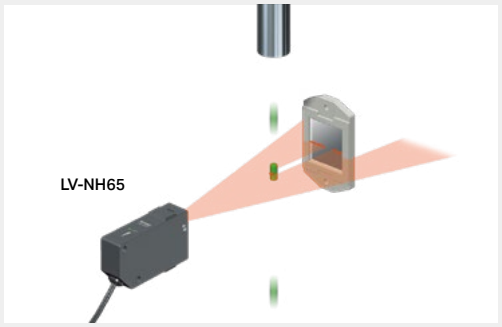
Retro-reflective (Parallel light)
PCB misalignment detection



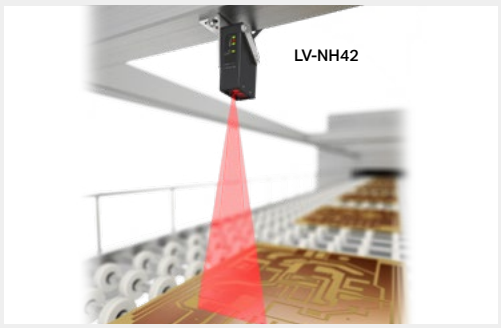
Retro-reflective (Parallel light)
Incorrect wafer chamber seating detection



Retro-reflective (Long-distance area)
Sheet hole detection



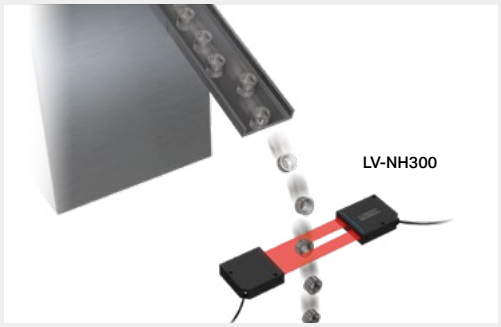
Retro-reflective (Wide area)
Drop detection



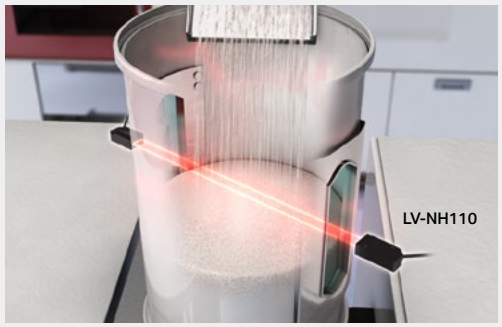
Diffuse-reflective (Long-distance)
PCB passage detection



Diffuse-reflective (Definite-reflective)
Shaft presence detection



Thrubeam (Detection width: 30 mm 1.18")
Dropped target counting



Thrubeam (High-power)
Hopper material detection

LV-NEO Amplifier



Cable type
LV-N11(N/P)
LV-N12(N/P)



M8 connector type
LV-N11C(N/P)
LV-N12C(N/P)



Zero-line type
LV-N10



Monitor output type
LV-N11MN



Equipped with NEO MEGA Mode

Take advantage of Class 2 or better detecting distances from a Class 1 laser with MEGA mode.

Same configuration method as the NEO Series (FS-N10/PS-N)

Settings can be configured just as with FS-N10 Series fiber optic sensor amplifiers and PS-N Series photoelectric sensor amplifiers, ensuring familiar usability.

NEO presets

Switch to a percentage display with the PRESET button for quick identification of changes in received light intensity.

Interference prevention function (for up to 8 units)

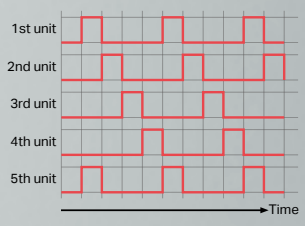
Every year, the size of FA equipment decreases, meanwhile the number of locations where sensors are used increases. This can be problematic when installing multiple sensors in limited space, as light from nearby sensors could be detected. The NEO Series includes a function that prevents interferences from up to 8 other units* and 4 units during normal operation.

* When using "DOUBLE" in ULTRA or MEGA mode.

Example sensor emission cycles

Interference is prevented by automatically shifting the laser emission cycle pattern.

* The example to the right is for the LV-N11N/N12N in FINE mode (when using "DOUBLE").



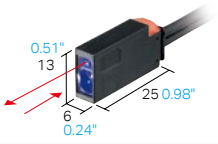
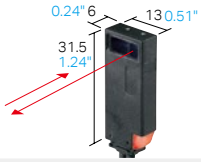
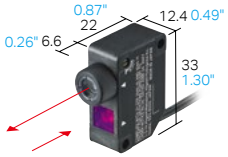
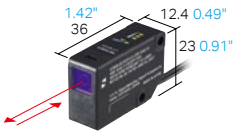
Network Compatibility (NU Series)

Industrial Network Integration is possible with the use of the KEYENCE NU Series. Multiple network options are available.

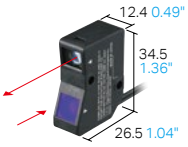


Lineup

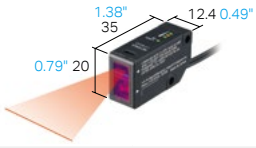
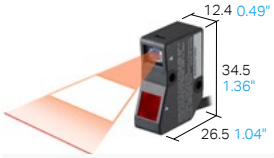
Diffuse-reflective models Spot type

Appearance (mm inch)				
Model (Type)	**LV-S41** (Compact)	**LV-S41L** (Compact, side view)	**LV-NH32** (Adjustable beam spot)	**LV-NH35** (Coaxial structure)
Detecting distance (mm inch)	MEGA : 600 23.62" ULTRA : 500 19.69" SUPER : 400 15.75" TURBO : 300 11.81" FINE : 200 7.87" HSP : 150 5.91"	MEGA : 480 18.90" ULTRA : 400 15.75" SUPER : 320 12.60" TURBO : 240 9.45" FINE : 160 6.30" HSP : 120 4.72"	MEGA : 1200 47.24" ULTRA : 1000 39.37" SUPER : 750 29.53" TURBO : 500 19.69" FINE : 250 9.84" HSP : 200 7.87"	MEGA : 750 29.53" ULTRA : 600 23.62" SUPER : 450 17.72" TURBO : 300 11.81" FINE : 150 5.91" HSP : 100 3.94"
Spot diameter (mm inch)	Approx. ø1.2 ø0.05" (Distance: 500 mm 19.69" or less)	Approx. ø1.2 ø0.05" (Distance: 400 mm 15.75" or less)	Approx. ø0.8 ø0.03" or less (Distance: 300 mm 11.81" or less)	Approx. ø2 ø0.08" (Distance: 600 mm 23.62" or less)
Dimensions	P. 15	P. 15	P. 17	P. 17

Diffuse-reflective models Spot type

Appearance (mm inch)	
Model (Type)	**LV-NH37** (Definite-reflective, ultra-small beam spot)
Detecting distance (mm inch)	70 ±15 2.76" ±0.59" * Same for all power modes
Spot diameter	Approx. ø50 µm ø1.97 Mil (Distance: 70 mm 2.76")
Dimensions	P. 17

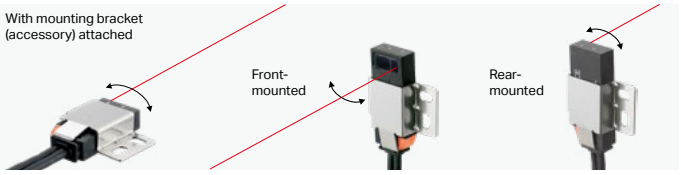
Diffuse-reflective models Area type

Appearance (mm inch)		
Model (Type)	**LV-NH42** (Long-distance)	**LV-NH47** (Definite-reflective)
Detecting distance (mm inch)	MEGA : 1200 47.24" ULTRA : 1000 39.37" SUPER : 750 29.53" TURBO : 500 19.69" FINE : 250 9.84" HSP : 200 7.87"	55 to 85 2.17" to 3.35" * Same for all power modes
Area width (mm inch)	Approx. 37 1.46" (Distance: 150 mm 5.91")	Approx. 21 0.83" (Distance: 70 mm 2.76")
Dimensions	P. 17	P. 17

Mounting brackets (included accessories/sold separately) / Optional accessories

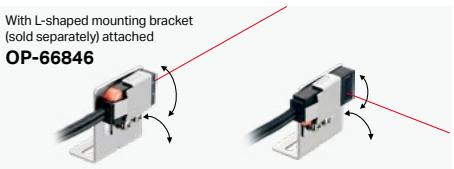
LV-S41 (S41L)

With mounting bracket (accessory) attached



With L-shaped mounting bracket (sold separately) attached

OP-66846



LV-NH42

With mounting bracket (accessory) attached



Slit (accessory) P. 17



Selectable area width.

Lens (sold separately)

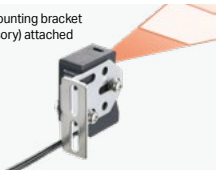
LV-L01



For thicker area.

LV-NH47

With mounting bracket (accessory) attached



Slit (accessory) P. 17



Selectable area width.

Lens (sold separately)

LV-L02



For thicker area.

LV-NH32

With mounting bracket (accessory) attached



LV-NH35

With mounting bracket (accessory) attached



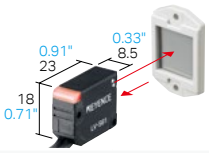
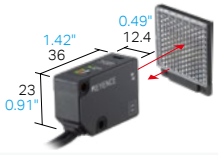
LV-NH37

With mounting bracket (accessory) attached



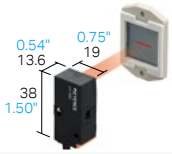
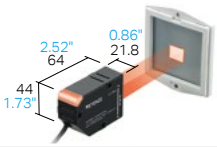
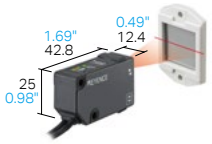
Lineup

Retro-reflective models Spot type

Appearance (mm inch)			
Model (Type)	**LV-S61** (Compact)	**LV-NH62** (Standard)	**LV-NH67** (Long-distance (50 m 164.0' *1 max.))
Detecting distance (m feet)	MEGA : 2.5 8.2' ULTRA : 2 6.6' SUPER : 1.5 4.9' TURBO : 1 3.3' FINE : 0.75 2.5' HSP : 0.5 1.6'	MEGA : 8 26.2' ULTRA : 7 23.0' SUPER : 6 19.7' TURBO : 5 16.4' FINE : 3.5 11.5' HSP : 2 6.6'	MEGA : 30 98.4' (50 164.0') *1 ULTRA : 30 98.4' (50 164.0') SUPER : 30 98.4' TURBO : 30 98.4' FINE : 22 72.2' HSP : 20 65.6'
Spot diameter (mm inch)	Approx. ø2.5 ø0.10" (Distance: 0.5 m 1.6' or less)	Approx. ø1.5 ø0.06" (Distance: 1 m 3.3' or less)	Approx. 50 × 15 1.97" × 0.59" (Distance: 10 m 32.8')
Dimensions	P. 15	P. 17	P. 16

*1 Detecting distance when using the OP-42198 reflector (sold separately) indicated in parentheses.

Retro-reflective models Area type

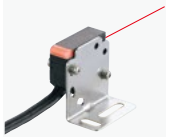
Appearance (mm inch)				
Model (Type)	**LV-S62** (Parallel light)	**LV-S63** (Long-distance, transparent object detection)	**LV-NH64** (Magnified beam, long-distance area)	**LV-NH65** (Magnified beam, wide area)
Detecting distance (m feet)	MEGA : 12 39.4' (6 19.7') *1 ULTRA : 10 32.8' (5 16.4') SUPER : 8 26.2' (3.5 11.5') TURBO : 5 16.4' (2 6.6') FINE : 2.5 8.2' (0.7 2.3')	MEGA : 35 114.8' *2 ULTRA : 30 98.4' SUPER : 25 82.0' TURBO : 15 49.2' FINE : 8 26.2'	MEGA : 800 to 1300 mm 31.50" to 51.18" (1000 to 1700 mm 39.37" to 66.93") *3 ULTRA : 400 to 1200 mm 15.75" to 47.24" (600 to 1500 mm 23.62" to 59.06") SUPER : 300 to 1000 mm 11.81" to 39.37" (500 to 1200 mm 19.69" to 47.24") TURBO : 200 to 850 mm 7.87" to 33.46" (300 to 1000 mm 11.81" to 39.37") FINE : 150 to 650 mm 5.91" to 25.59" (200 to 850 mm 7.87" to 33.46") HSP : 100 to 500 mm 3.94" to 19.69" (100 to 700 mm 3.94" to 27.56")	MEGA : 180 to 350 mm 7.09" to 13.78" (300 to 500 mm 11.81" to 19.69") *3 ULTRA : 100 to 200 mm 3.94" to 7.87" (150 to 350 mm 5.91" to 13.78") SUPER : 60 to 180 mm 2.36" to 7.09" (100 to 300 mm 3.94" to 11.81") TURBO : 10 to 150 mm 0.39" to 5.91" (10 to 250 mm 0.39" to 9.84") FINE : 0 to 120 mm 4.72" (10 to 200 mm 0.39" to 7.87") HSP : 0 to 100 mm 3.94" (0 to 150 mm 5.91")
Area width (mm inch)	With area spot: Approx. 10 mm 0.39" With small beam spot: Approx. 2 × 2 mm 0.08" × 0.08" (Distance: 500 mm 19.69" or less)	Approx. 8 × 12 0.31" × 0.47" (Distance: 3.5 m 11.5' or less)	Approx. 40 1.57" (Distance: 300 mm 11.81")	Approx. 50 1.97" (Distance: 100 mm 3.94")
Dimensions	P. 15	P. 15	P. 16	P. 16

*1 Detecting distance when using area spot indicated without parentheses. Detecting distance when using small beam spot indicated in parentheses. A detecting distance of 1 m 3.3' or less is recommended when used for glass detection. *2 A detecting distance of 3.5 m 11.5' or less is recommended when used for glass detection. *3 Detecting distance when using the included reflector indicated without parentheses. Detecting distance when using the OP-51428 reflective tape (sold separately) indicated in parentheses.

Mounting brackets (included accessories/sold separately)

LV-S61

With L-shaped mounting bracket (accessory) attached



LV-NH64

With mounting bracket (accessory) attached



LV-S62*1

With L-shaped mounting bracket (sold separately) attached

OP-84350





Reverse mounting

LV-NH62

With mounting bracket (accessory) attached



LV-NH65

With mounting bracket (accessory) attached



With rear mounting bracket (sold separately) attached

OP-84349





Reverse mounting

LV-S63

With mounting bracket (accessory) attached



LV-NH67

With mounting bracket (accessory) attached





With side mounting bracket (sold separately) attached

OP-84351

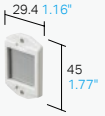


Reverse mounting

*1 All mounting brackets can be used for vertical and horizontal optical-axis alignment. Optical-axis alignment is required. Be sure to use a dedicated bracket.

Reflector

OP-51430
[R-6 (gray)]
(Included with LV-S61/NH64/NH65)



Dimensions: P. 15

R-6
(Included with LV-NH62)



Dimensions: P. 17

R-7
(Included with LV-NH62)



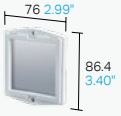
Dimensions: P. 17

R-6L
(Included with LV-S62)



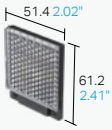
Dimensions: P. 15

R-9
(Included with LV-S63)



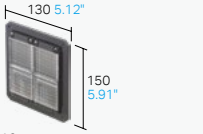
Dimensions: P. 16

OP-95388
[R-2]
(Included with LV-NH67)



Dimensions: P. 16

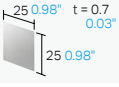
OP-42198
(sold separately)
(Used for long-distance detection with the LV-NH67)



Dimensions: P. 16

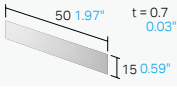
Reflective tape (sold separately)

OP-42197*1, 2



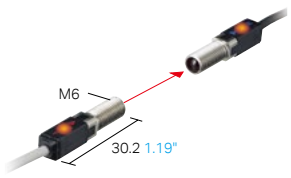
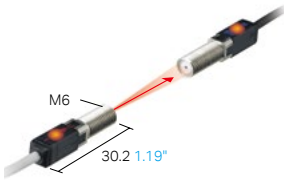
Dimensions: P. 17

OP-51428
(For LV-NH64/NH65)

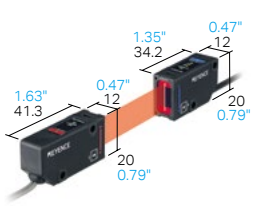
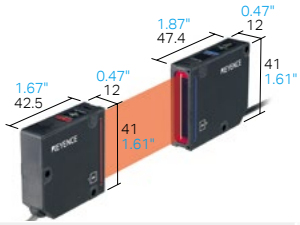
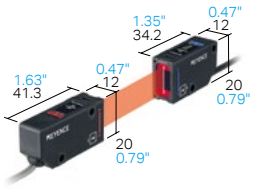


*1 Equivalent to OP-51430 and R-6.
*2 OP-87123 also available with same capacity as R-6L.

Thrubeam models Spot type

Appearance (mm inch)		
Model (Type)	**LV-S71** (Compact, M6)	**LV-S72** (Compact, M6 slit (Receiver: ø0.6 mm ø0.02"))
Detecting distance (mm inch)	500 19.69" * Same for all power modes	
Spot diameter (mm inch)	Approx. ø1.2 ø0.05" (Detecting distance: 500 mm 19.69")	Approx. ø6 ø0.24" (Detecting distance: 500 mm 19.69")
Dimensions	P. 16	P. 16

Thrubeam models Area type

Appearance (mm inch)			
Model (Type)	**LV-NH100** (Standard)	**LV-NH300** (Standard)	**LV-NH110** (High-power)
Detection width (mm inch)	10 0.39"	30 1.18"	10 0.39"
Detecting distance (mm inch)	2000 78.74" * Same for all power modes		
Area width (mm inch)	Approx. 12 0.47"	Approx. 32 1.26"	Approx. 12 0.47"
Dimensions	P. 18	P. 18	P. 18

Mounting brackets (included accessories/sold separately)

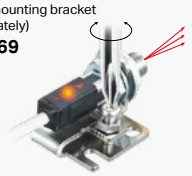
LV-S71/S72

Standard bracket (accessory)



(Dimensions: P. 16)

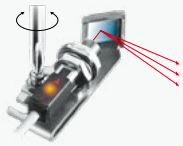
Compact mounting bracket (sold separately)
OP-66869
Set of 2



With optical-axis alignment function
Optical axis can be aligned from above.

(Dimensions: P. 16)

Side view attachment (sold separately)
LV-F1
Set of 2

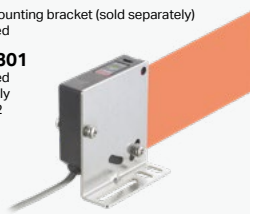


With optical-axis alignment function
Optical axis can be aligned from above.

(Dimensions: P. 16)

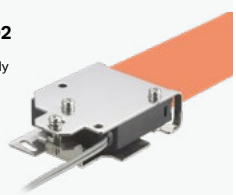
LV-NH300

With mounting bracket (sold separately) attached
LV-B301
Mounted vertically
Set of 2



(Dimensions: P. 18)

With mounting bracket (sold separately) attached
LV-B302
Mounted horizontally
Set of 2



(Dimensions: P. 18)

LV-NH100/NH110

With mounting bracket (sold separately) attached
LV-B101
Mounted vertically
Set of 2



(Dimensions: P. 18)

With mounting bracket (sold separately) attached
LV-B102
Mounted horizontally
Set of 2



(Dimensions: P. 18)

LV-Sxx (Diffuse-reflective model, Spot type)

Type		Compact	Compact, side view
Model		LV-S41	LV-S41L
FDA class		Class 1	
JIS (IEC)		Class 1	
Light source		Visible semiconductor laser, Wavelength: 655 nm	
Detecting distance	MEGA	600 mm 23.62"	480 mm 18.90"
	ULTRA	500 mm 19.69"	400 mm 15.75"
	SUPER	400 mm 15.75"	320 mm 12.60"
	TURBO	300 mm 11.81"	240 mm 9.45"
	FINE	200 mm 7.87"	160 mm 6.30"
	HSP	150 mm 5.91"	120 mm 4.72"
Operating ambient temperature		-10 to +50°C 14°F to 122°F (No freezing)	
Material	Case	Glass-reinforced plastic	
	Display	Polycarbonate	
	Lens cover	Norbornene plastic	Acrylic
Weight		Approx. 70 g 2.47 oz	
Dimensions		P. 15	

* Transmitter: Norbornene plastic / Receiver: Polyarylate

LV-NHxx (Diffuse-reflective model, Area type)

Type		Long-distance	Definite-reflective
Model		LV-NH42	LV-NH47
FDA class		Class 1	
JIS (IEC)		Class 1	
Light source		Visible semiconductor laser, Wavelength: 660 nm	
Detecting distance	MEGA	1200 mm 47.24"	55 to 85 mm 2.17" to 3.35"
	ULTRA	1000 mm 39.37"	
	SUPER	750 mm 29.53"	
	TURBO	500 mm 19.69"	
	FINE	250 mm 9.84"	
	HSP	200 mm 7.87"	
Operating ambient temperature		-10 to +55°C 14°F to 131°F (No freezing)	
Operating ambient humidity		35 to 85% RH (No condensation)	
Material	Case	Glass-reinforced plastic	
	Lens cover	Polyarylate	Transmitter: Glass Receiver: Polyarylate
Weight		Approx. 65 g 2.29 oz	Approx. 70 g 2.47 oz
Dimensions		P. 17	

LV-NHxx (Retro-reflective model, Spot type)

Type		Standard	Long-distance
Model		LV-NH62	LV-NH67
FDA class		Class 1	
JIS (IEC)		Class 1	
Light source		Visible semiconductor laser, Wavelength: 660 nm	
Detecting distance	MEGA	8 m 26.2'	30 m 98.4' (50 m 164.0') *1
	ULTRA	7 m 23.0'	30 m 98.4' (50 m 164.0') *1
	SUPER	6 m 19.7'	30 m 98.4'
	TURBO	5 m 16.4'	30 m 98.4'
	FINE	3.5 m 11.5'	22 m 72.2'
	HSP	2 m 6.6'	20 m 65.6'
Operating ambient temperature		-10 to +55°C 14°F to 131°F (No freezing)	
Material	Case	Glass-reinforced plastic	
	Lens cover	Norbornene plastic	
	Reflective mirror	Polycarbonate, Acrylic	
Weight		Approx. 65 g 2.29 oz	
Dimensions		P. 17	P. 16

*1 Detecting distance when using the OP-42198 reflector (sold separately) indicated in parentheses.

LV-Sxx (Thrubeam model, Spot type)

Type		Compact, M6	Compact, M6 slit (Receiver: ø0.6 mm ø0.02")
Model		LV-S71	LV-S72
FDA class		Class 1	
JIS (IEC)		Class 1	
Light source		Visible semiconductor laser, Wavelength: 655 nm	
Detecting distance	MEGA	500 mm 19.69"	
	ULTRA		
	SUPER		
	TURBO		
	FINE		
	HSP		
Operating ambient temperature		-10 to +50°C 14°F to 122°F (No freezing)	
Material	Case	Metal part: Stainless steel, Plastic part: Polyarylate	
	Lens cover	Transmitter: Norbornene plastic Receiver: Polyarylate	Transmitter: Norbornene plastic Receiver: Glass
Weight		Approx. 70 g 2.47 oz	
Dimensions		P. 16	

LV-F1

Type		Side view attachment for thrubeam models	
Model		LV-F1	
Applicable heads		LV-S71	LV-S72
Detecting distance	MEGA	250 mm 9.84"	400 mm 15.75"
	ULTRA		
	SUPER		
	TURBO		
	FINE		
	HSP		
Operating ambient temperature		-10 to +50°C 14°F to 122°F (No freezing)	
Material		Metal part: SUS304 Mirror part: Glass	
Vibration resistance		10 to 55 Hz; Double amplitude: 1.5 mm 0.06" 2 hours in each of the X, Y, and Z directions	
Weight		Approx. 22 g 0.78 oz	
Dimensions		P. 16	

LV-NHxx (Diffuse-reflective model, Spot type)

Type		Coaxial structure	Adjustable beam spot	Definite-reflective, ultra-small beam spot
Model		LV-NH35	LV-NH32	LV-NH37
FDA class		Class 1		
JIS (IEC)		Class 1		
Light source		Visible semiconductor laser, Wavelength: 660 nm		
Detecting distance	MEGA	750 mm 29.53"	1200 mm 47.24"	70 ±15 mm 2.76" ±0.59"
	ULTRA	600 mm 23.62"	1000 mm 39.37"	
	SUPER	450 mm 17.72"	750 mm 29.53"	
	TURBO	300 mm 11.81"	500 mm 19.69"	
	FINE	150 mm 5.91"	250 mm 9.84"	
	HSP	100 mm 3.91"	200 mm 7.87"	
Operating ambient temperature		-10 to +55°C 14°F to 131°F (No freezing)		
Operating ambient humidity		35 to 85% RH (No condensation)		
Material	Case	Glass-reinforced plastic		
	Lens cover	Norbornene plastic	Acrylic*1	Glass*1
Weight		Approx. 65 g 2.29 oz		
Dimensions		P. 17		

*1 The LV-NH32/LV-NH37 receiver is made of polyarylate.

LV-Sxx (Retro-reflective model)

Type		Compact	Parallel light	Long-distance, transparent object detection
Model		LV-S61	LV-S62	LV-S63
FDA class		Class 1		
JIS (IEC)		Class 1		
Light source		Visible semiconductor laser*1		
Detecting distance*	MEGA	2.5 m 8.2'	12 m 39.4' (6 m 19.7')	35 m 114.8'
	ULTRA	2 m 6.6'	10 m 32.8' (5 m 16.4')	30 m 98.4'
	SUPER	1.5 m 4.9'	8 m 26.2' (3.5 m 11.5')	25 m 82.0'
	TURBO	1 m 3.3'	5 m 16.4' (2 m 6.6')	15 m 49.2'
	FINE	0.75 m 2.5'	2.5 m 8.2' (0.7 m 2.3')	8 m 26.2'
	HSP	0.5 m 1.6'	—	—
Operating ambient temperature		-10 to +50°C 14°F to 122°F (No freezing)		
Material	Case	Glass-reinforced plastic		
	Lens cover	Acrylic		
	Reflective mirror	Polycarbonate, Acrylic		
Weight		Approx. 70 g 2.47 oz	Approx. 65 g 2.29 oz	Approx. 110 g 3.88 oz
Dimensions		P. 15		

* Detecting distance when using small beam spot indicated in parentheses.
*1 [Wavelength] LV-S61: 655 nm, LV-S62/S63: 660 nm

LV-NHxx (Retro-reflective model, Area type)

Type		Magnified beam, long-distance area	Magnified beam, wide area
Model		LV-NH64	LV-NH65
FDA class		Class 1	
JIS (IEC)		Class 1	
Light source		Visible semiconductor laser, Wavelength: 660 nm	
Detecting distance	MEGA	800 to 1300 mm 31.50" to 51.18" (1000 to 1700 mm 39.37" to 66.93")*1	180 to 350 mm 7.09" to 13.78" (300 to 500 mm 11.81" to 19.69")*1
	ULTRA	400 to 1200 mm 15.75" to 47.24" (600 to 1500 mm 23.62" to 59.06")*1	100 to 200 mm 3.94" to 7.87" (150 to 350 mm 5.91" to 13.78")*1
	SUPER	300 to 1000 mm 11.81" to 39.37" (500 to 1200 mm 19.69" to 47.24")*1	60 to 180 mm 2.36" to 7.09" (100 to 300 mm 3.94" to 11.81")*1
	TURBO	200 to 850 mm 7.87" to 33.46" (300 to 1000 mm 11.81" to 39.37")*1	10 to 150 mm 0.39" to 5.91" (10 to 250 mm 0.39" to 9.84")*1
	FINE	150 to 650 mm 5.91" to 25.59" (200 to 850 mm 7.87" to 33.46")*1	0 to 120 mm 4.72" (10 to 200 mm 0.39" to 7.87")*1
	HSP	100 to 500 mm 3.94" to 19.69" (100 to 700 mm 3.94" to 27.56")*1	0 to 100 mm 3.94" (0 to 150 mm 5.91")*1
Operating ambient temperature		-10 to +55°C 14°F to 131°F (No freezing)	
Operating ambient humidity		35 to 85% RH (No condensation)	
Material	Case	Glass-reinforced plastic	
	Lens cover	Norbornene plastic	
Weight		Approx. 70 g 2.47 oz	
Dimensions		P. 16	

*1 Detecting distance when using the included reflector indicated without parentheses. Detecting distance when using the OP-51428 reflective tape (sold separately) indicated in parentheses.

LV-NHxx (Thrubeam model, Area type)

Type		High-power	Standard	
Model		LV-NH110	LV-NH100	LV-NH300
Detection width		10 mm 0.39"		30 mm 1.18"
FDA class		Class 1		
JIS (IEC)		Class 1		
Light source		Visible semiconductor laser, Wavelength: 660 nm		
Detecting distance		2000 mm 78.74"		
Operating ambient temperature		-10 to +55°C 14°F to 131°F (No freezing)		
Operating ambient humidity		35 to 85% RH (No condensation)		
Material	Case	Glass-reinforced plastic		
	Lens cover	Transmitter: Glass Receiver: Polyarylate		
Weight		Approx. 75 g 2.65 oz		Approx. 95 g 3.35 oz
Dimensions		P. 18		

Cable type

Type		Appearance	Model		Control output	External input	Monitor output	Dimensions
			NPN output	PNP output				
Standard	Main unit		**LV-N11N**	**LV-N11P**	2	1	0	P. 19
	Expansion unit		**LV-N12N**	**LV-N12P**				
Monitor output	Main unit		**LV-N11MN**	—	1	1	1	

M8 connector type

Type		Appearance	Model		Control output	External input	Monitor output	Dimensions
			NPN output	PNP output				
Standard	Main unit		**LV-N11CN**	**LV-N11CP**	1	1	0	P. 19
	Expansion unit		**LV-N12CN**	**LV-N12CP**				

Zero-line type

Type		Appearance	Model	Control output	External input	Monitor output	Dimensions
Standard	Expansion unit		**LV-N10**	None*1	0	0	P. 19

*1 Counted as one output when added to the NU Series communication unit.

Optional parts (sold separately)

Type	Appearance	Model	Description
End units (when using expansion units)		**OP-26751**	Insert the amplifier to secure it when adding main and expansion units. Always use when adding units. (Pack of 2)
M8 connector cable 2 m 6.6'/10 m 32.8'		**2 m 6.6' type OP-73864**	Used to connect to the LV-N11CN/N11CP/N12CN/N12CP. The amplifier does not come with a connector cable.
		10 m 32.8' type OP-73865	

Specifications

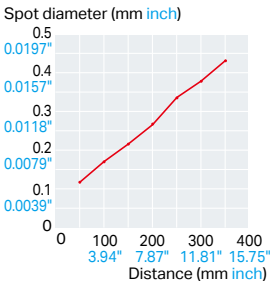
Type			Dual output		Single output		Zero-line	Monitor output
Cable/connector			Cable		M8 connector		—	Cable
Main/expansion unit			Main unit	Expansion unit	Main unit	Expansion unit	Expansion unit	Main unit
Model		NPN	**LV-N11N**	**LV-N12N**	**LV-N11CN**	**LV-N12CN**	**LV-N10**	**LV-N11MN**
		PNP	**LV-N11P**	**LV-N12P**	**LV-N11CP**	**LV-N12CP**		—
I/O		Control output	2 outputs		1 output		None	1 output
		External input	1 input		1 input		None	1 input
		Monitor output	None					1 output
Response time			80 µs (HIGH SPEED) / 250 µs (FINE) / 500 µs (TURBO) / 1 ms (SUPER) / 4 ms (ULTRA) / 16 ms (MEGA) * 80 µs not selectable when the LV-S62/S63 is connected.					
Output selection			LIGHT-ON/DARK-ON (switch-selectable)					
Timer function			Timer OFF/OFF delay/ON delay/One-shot; Variable timer duration (1 ms to 9999 ms); Maximum error against setting value: ±10% or less					
Control output		NPN output	NPN open collector: 30 V; Residual voltage: 1 V or less (with output current of 10 mA or less) / 2 V or less (with output current of 10 to 100 mA) (When used as a solitary unit) 100 mA or less per output; 100 mA or less total of 2 outputs / (When used as an expansion unit) 20 mA or less per output					
		PNP output	PNP open collector: 30 V; Residual voltage: 1.2 V or less (with output current of 10 mA or less) / 2.2 V or less (with output current of 10 to 100 mA) (When used as a solitary unit) 100 mA or less per output; 100 mA or less total of 2 outputs / (When used as an expansion unit) 20 mA or less per output					
Monitor output (LV-N11MN only)			1 to 5 V voltage output; Load resistance: 10 kΩ or more; Repeatability: ±0.5% of F.S.; Response time: 1 ms (HSP/FINE/TURBO), 1.2 ms (SUPER), 1.8 ms (ULTRA), 4.2 ms (MEGA)					
External input time			Input time: 2 ms (ON)/20 ms (OFF) or more*1					
Unit expansion			Up to 17 connectable units (including the main unit); Dual output type is treated as two units					
Protection circuit			Reverse polarity protection, Output overcurrent protection, Output surge protection					
Mutual interference prevention units*4			HIGH SPEED: 0 units; FINE/TURBO/SUPER: 2 units; ULTRA/MEGA: 4 units					
Ratings	Power voltage*5		24 VDC (Operating voltage: 10 to 30 VDC (including ripple)), Ripple (P-P): 10% or less, Class 2 or LPS*7					
	Power consumption*6	NPN	Normal: 830 mW or less (At 30 V; 30 mA or less at 24 V, 56 mA or less at 12 V)*2 Eco on: 710 mW or less (At 30 V; 26 mA or less at 24 V, 48 mA or less at 12 V)*2 Eco full: 550 mW or less (At 30 V; 21 mA or less at 24 V, 40 mA or less at 12 V)					
		PNP	Normal: 950 mW or less (At 30 V; 33 mA or less at 24 V, 60 mA or less at 12 V)*2 Eco on: 815 mW or less (At 30 V; 29 mA or less at 24 V, 52 mA or less at 12 V)*2 Eco full: 650 mW or less (At 30 V; 24 mA or less at 24 V, 40 mA or less at 12 V)				—	
Environmental resistance		Operating ambient temperature	-20 to +55°C -4°F to +131°F (No freezing)*3					
		Operating ambient humidity	35 to 85% RH (No condensation)					
		Vibration resistance	10 to 55 Hz; Double amplitude 1.5 mm 0.06"; 2 hours in each of the X, Y, and Z directions					
		Shock resistance	500 m/s² 1640'/s², 3 times in each of the X, Y, and Z directions					
Material		Case	Main unit and cover: Polycarbonate					
		Cable	PVC					
Case size			32.6 × 9.8 × 78.7 mm 1.28" × 0.39" × 3.10" (H × W × L)					
Weight			Approx. 75 g 2.65 oz	Approx. 65 g 2.29 oz	Approx. 20 g 0.71 oz	Approx. 20 g 0.71 oz	Approx. 20 g 0.71 oz	Approx. 75 g 2.65 oz

*1 The input time becomes 25 ms (ON)/25 ms (OFF) when external calibration input is selected.
*2 Increases by 30 mW (1 mA) for HIGH SPEED mode.
*3 When expanding the system, the operating ambient temperature will vary according to the conditions below. Mount the expansion units to the DIN rail (mounted on metal plates), and make sure the output current is 20 mA or less per unit.
Expansion of 1 to 2 units: -20 to +55°C -4°F to +131°F; Expansion of 3 to 10 units: -20 to +50°C -4°F to +122°F; Expansion of 11 to 16 units: -20 to +45°C -4°F to +113°F; Dual output type treated as two units.
*4 The number of mutual interference prevention units doubles when set to "DOUBLE".
*5 Use a power voltage of 20 V or more when connecting 9 or more units.
*6 Increases by 15% when connected to the LV-NH100/NH110/NH300. Does not include load power consumption. The power consumption when using expansion units becomes the total power consumption of each amplifier unit.
[Example] When using one main unit (LV-N11N) with two expansion units (LV-N12N) with an LV-NH100 connected to each in HIGH SPEED mode: (1.15 × 860 mW × 1) + (1.15 × 860 mW × 2) = 2967 mW max.
*7 Use with an overcurrent protection device rated at 30 V or more and 1 A or less.

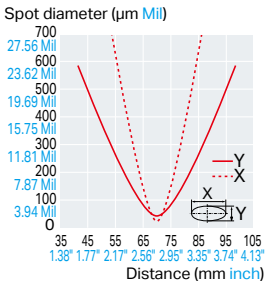
Characteristics

Distance and spot diameter (typical example)

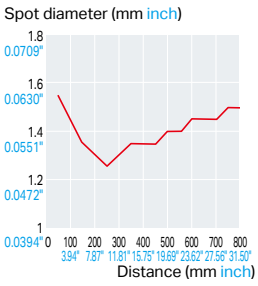
LV-NH32



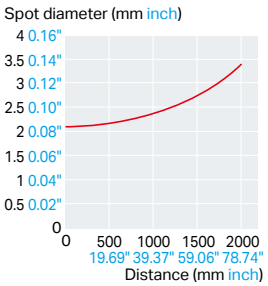
LV-NH37



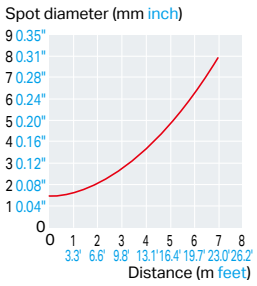
LV-NH35



LV-S61

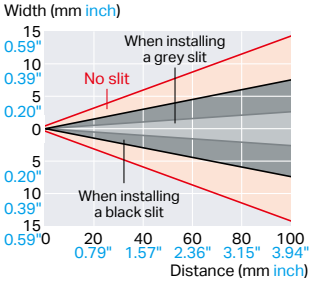


LV-NH62

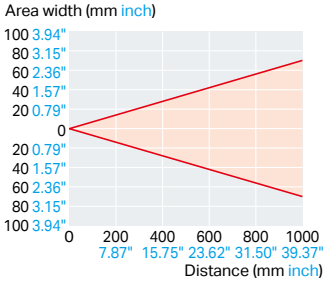


Detecting distance and area width (typical example)

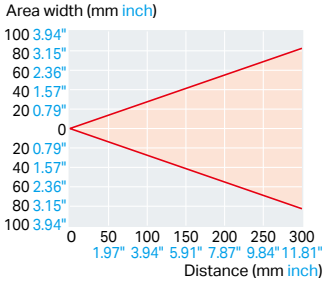
LV-NH47



LV-NH64



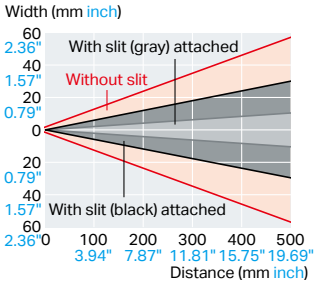
LV-NH65

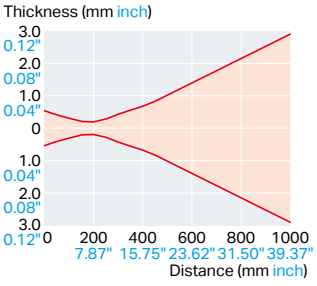


Detecting distance and area width (typical example)

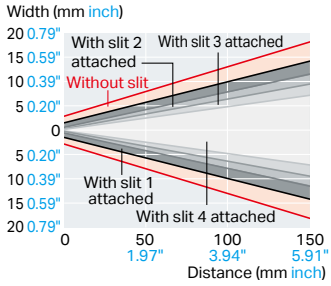
LV-NH42

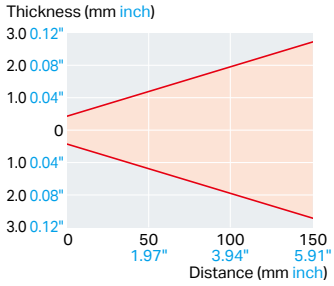
Slit included





LV-L01

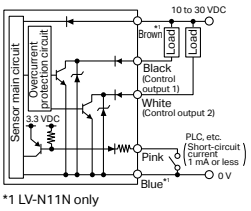




I/O Circuit Diagram

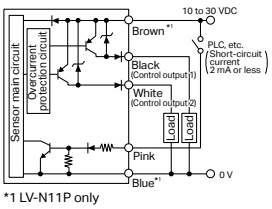
Cable type

LV-N11N/N12N



*1 LV-N11N only

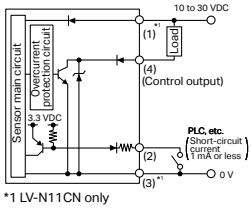
LV-N11P/N12P



*1 LV-N11P only

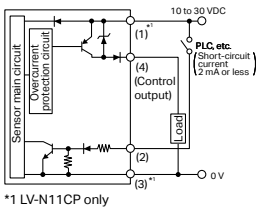
M8 connector type

LV-N11CN/N12CN



*1 LV-N11CN only

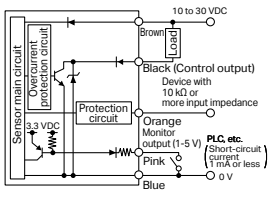
LV-N11CP/N12CP



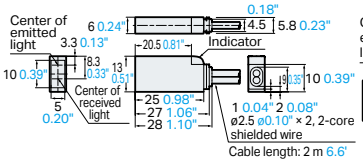
*1 LV-N11CP only

Monitor output type

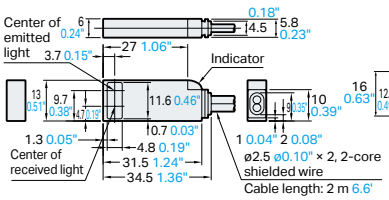
LV-N11MN



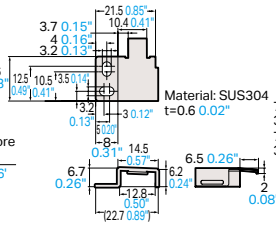
LV-S41



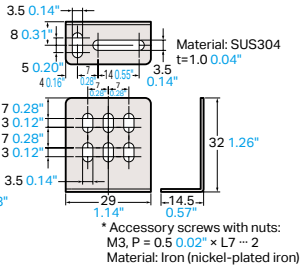
LV-S41L



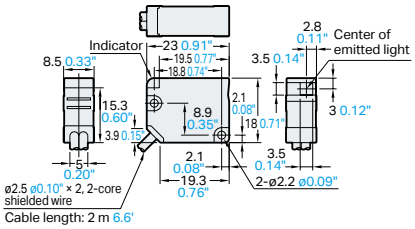
Mounting bracket (accessory) for LV-S41/S41L



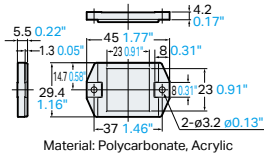
OP-66846
L-shaped mounting bracket (sold separately) for **LV-S41/S41L**



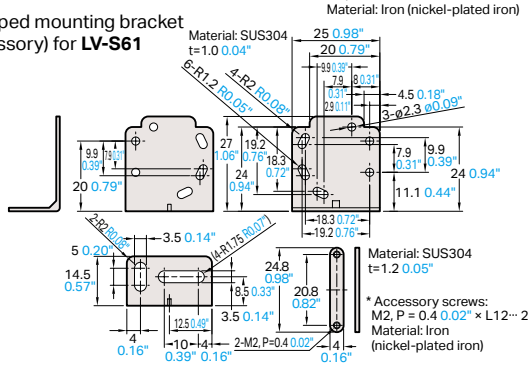
LV-S61



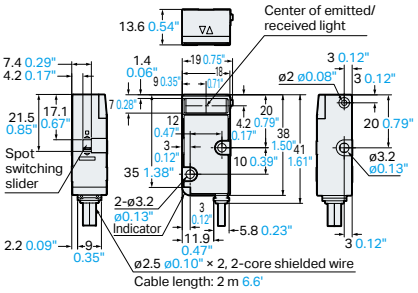
OP-51430
R-6 (gray) (accessory)



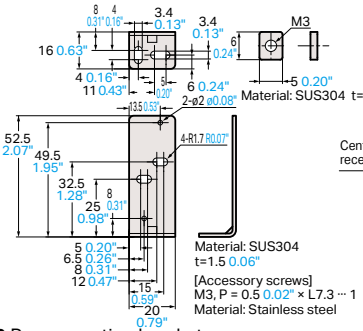
L-shaped mounting bracket (accessory) for LV-S61



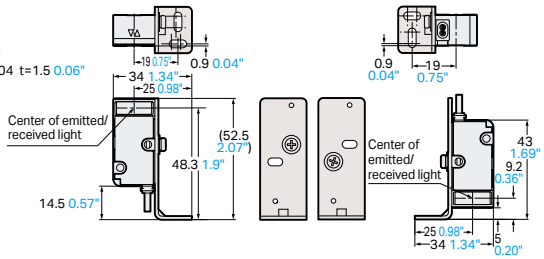
LV-S62



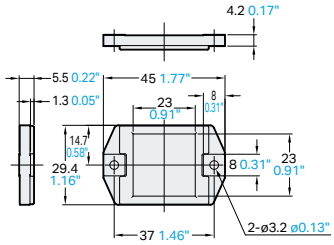
OP-84350 L-shaped mounting bracket (sold separately) for LV-S62



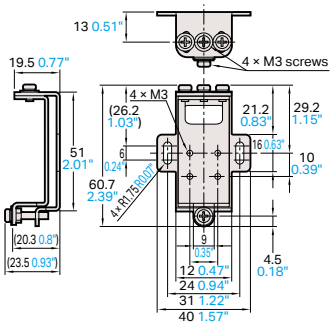
When attached to mounting bracket



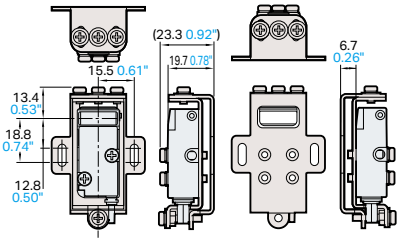
R-6L
reflector (included with **LV-S62**)



OP-84349 Rear mounting bracket (sold separately) for LV-S62



When attached to mounting bracket

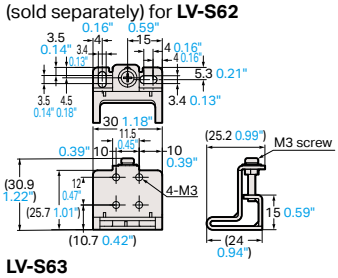


Material: SUS304, t = 1.5 0.06"

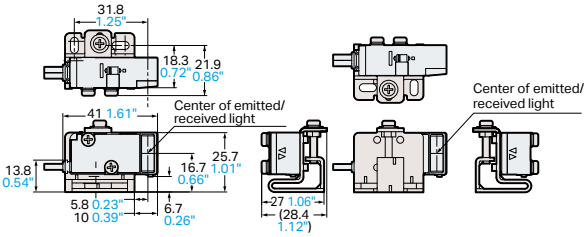
[Accessory screws]
M3, P = 0.5 0.02" × L5 ··· 3
Material: Stainless steel
M3, P = 0.5 0.02" × L16.5 ··· 1
Material: Stainless steel
M3, P = 0.5 0.02" × L18 ··· 2
Material: Stainless steel

[Accessory nuts]
M3 ··· 1
Material: Stainless steel

OP-84351 Side mounting bracket (sold separately) for LV-S62



When attached to mounting bracket

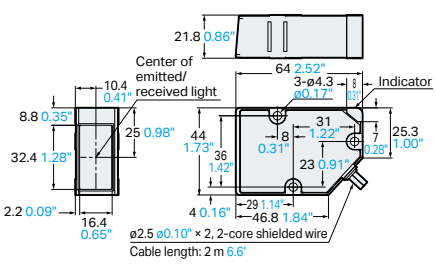


Material: SUS304, t = 1.5 0.06"

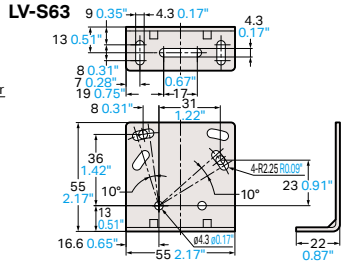
[Accessory screws]
M3, P = 0.5 0.02" × L16.5 ··· 1
Material: Stainless steel
M3, P = 0.5 0.02" × L18 ··· 2
Material: Stainless steel

[Accessory nuts]
M3 ··· 1
Material: Stainless steel

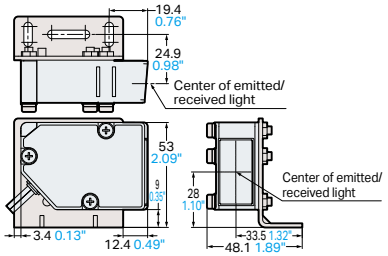
LV-S63



Rear mounting bracket (accessory) for LV-S63



When attached to mounting bracket

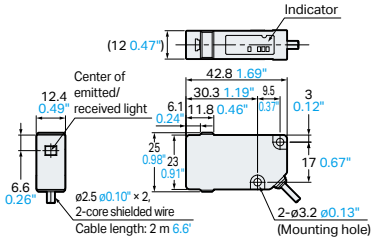


Material: SUS304, t = 2.0 0.08"

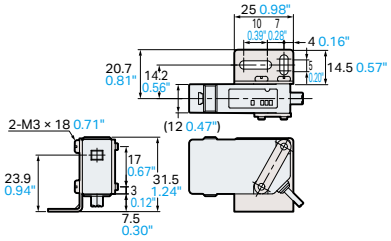
[Accessory screws]
M4, P = 0.7 0.03" × L30 ··· 3
Material: Stainless steel

[Accessory nuts]
M4 ··· 3
Material: Stainless steel

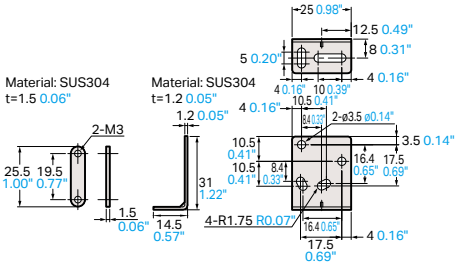
LV-NH64



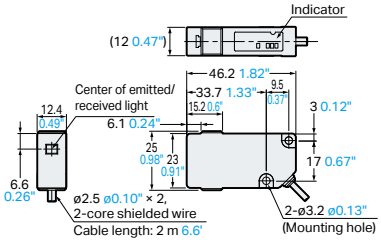
LV-NH64 (with mounting bracket attached)



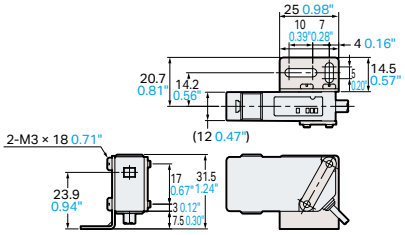
Mounting bracket (accessory) for **LV-NH64/65/67**



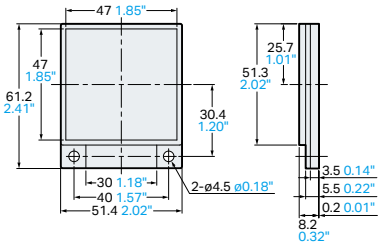
LV-NH65



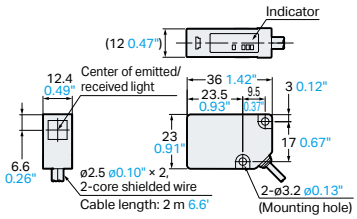
LV-NH65 (with mounting bracket attached)



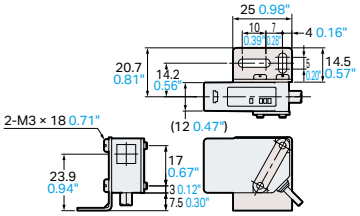
OP-95388 (**R-2**) reflector (included with **LV-NH67**)



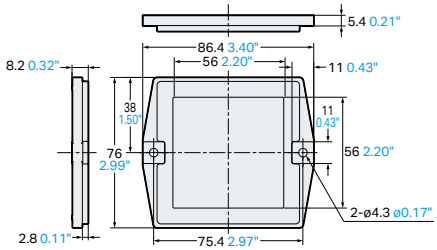
LV-NH67



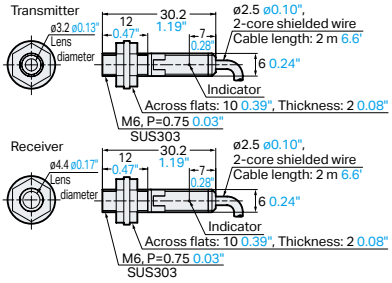
LV-NH67 (with mounting bracket attached)



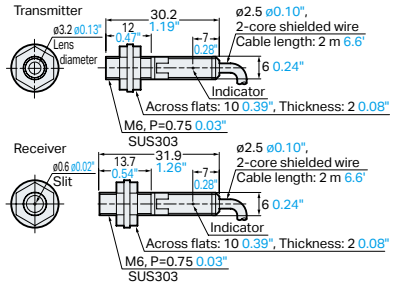
R-9 reflector (included with **LV-S63**)



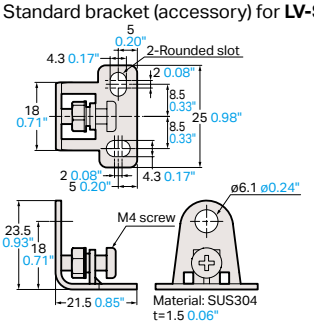
LV-S71



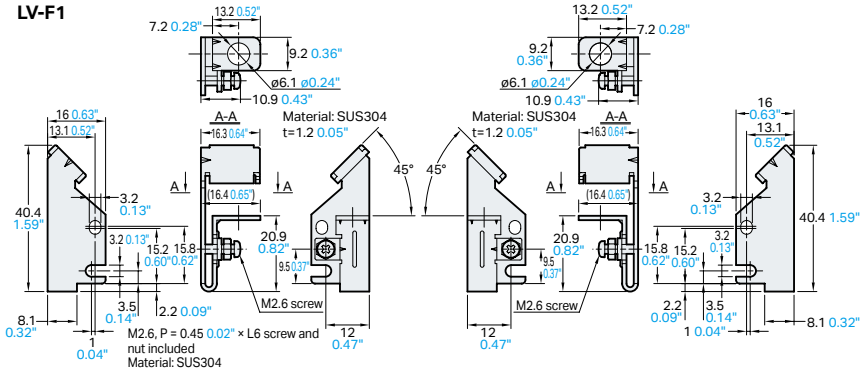
LV-S72



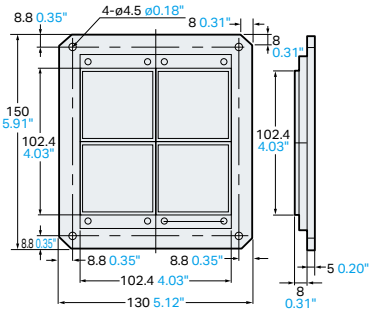
Standard bracket (accessory) for **LV-S71/S72**



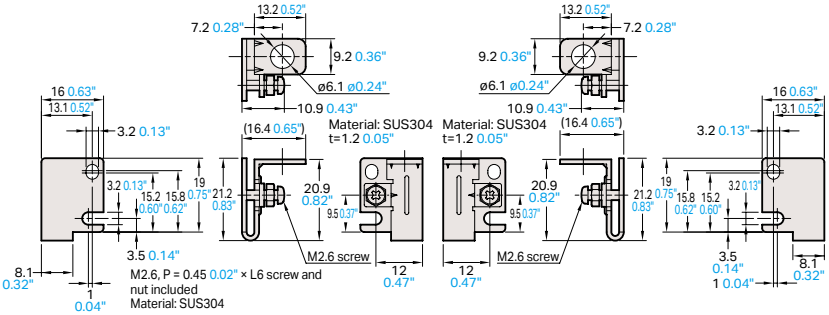
LV-F1



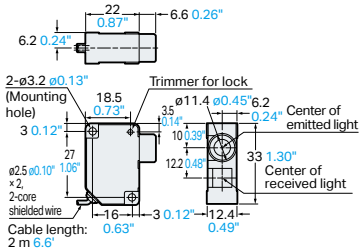
OP-42198
Long-distance reflector for **LV-NH67**



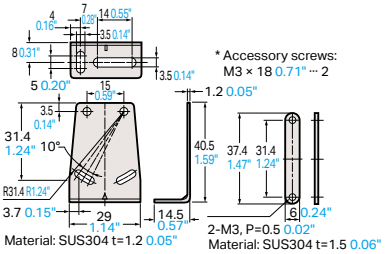
OP-66869 Compact mounting bracket for thrubeam models (sold separately)



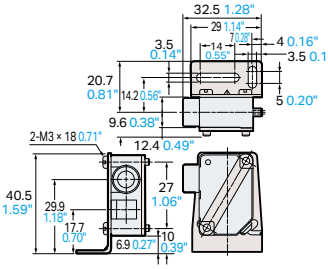
LV-NH32



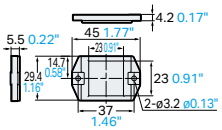
Mounting bracket (accessory) for LV-NH32



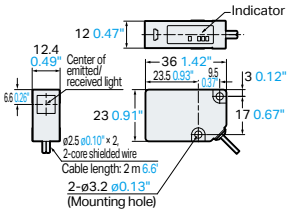
LV-NH32 (with mounting bracket attached)



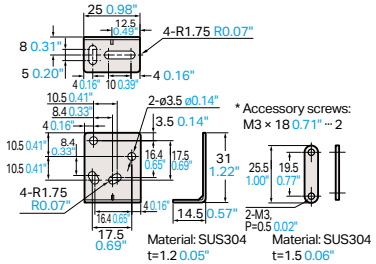
R-6 reflector (included with LV-NH62)



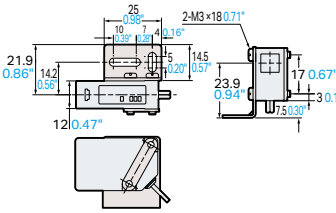
LV-NH35/NH62



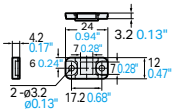
Mounting bracket (accessory)



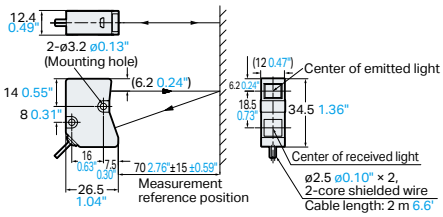
LV-NH35/NH62 (with mounting bracket attached)



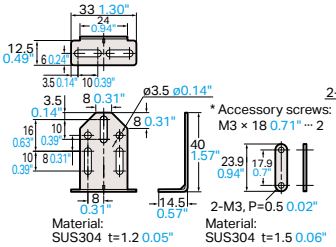
R-7 reflector (included with LV-NH62)



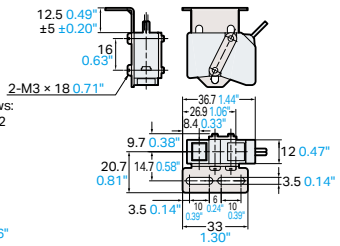
LV-NH37



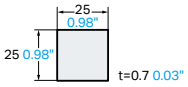
Mounting bracket (accessory) for LV-NH37



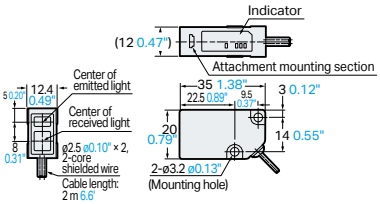
LV-NH37 (with mounting bracket attached)



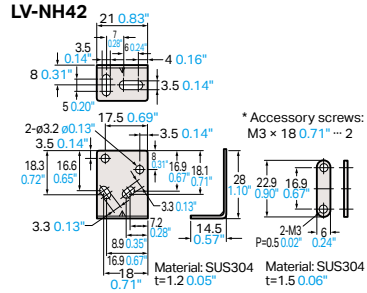
OP-42197/87123 reflective tape



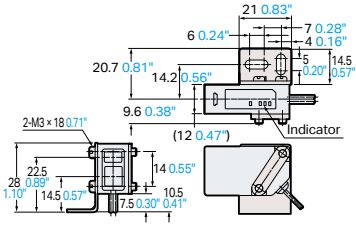
LV-NH42



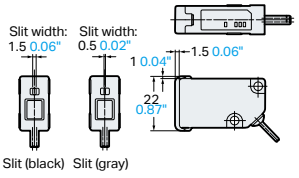
Mounting bracket (accessory) for LV-NH42



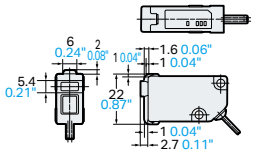
LV-NH42 (with mounting bracket attached)



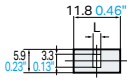
LV-NH42 with included slit attached



With LV-L01 attached (LV-NH42)

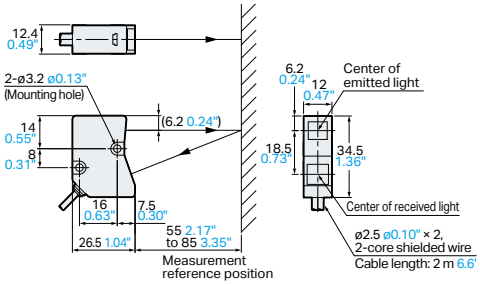


Slit seal (included with LV-L01)

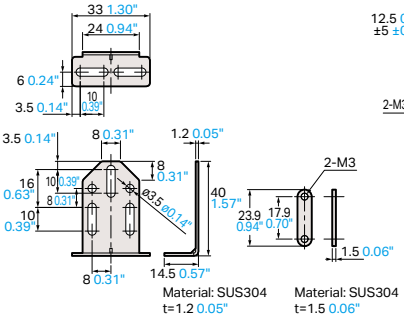


Slit seal name	L
Slit 1	2.6 0.10"
Slit 2	2.0 0.08"
Slit 3	1.5 0.06"
Slit 4	1.1 0.04"

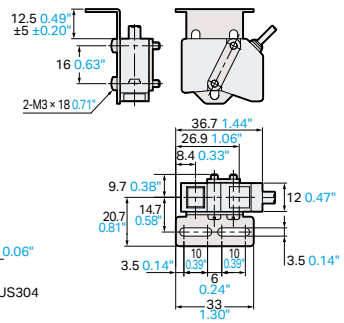
LV-NH47



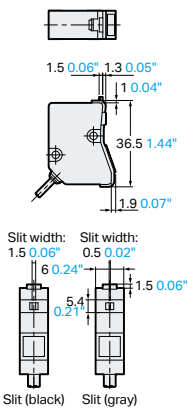
Mounting bracket (accessory) for LV-NH47



LV-NH47 (with mounting bracket attached)

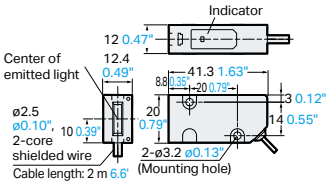


LV-NH47 with included slit attached

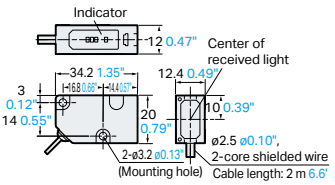


LV-NH100/NH110

Transmitter



Receiver



LV-B101

(Transmitter/receiver mounting bracket set for **LV-NH100/NH110**)

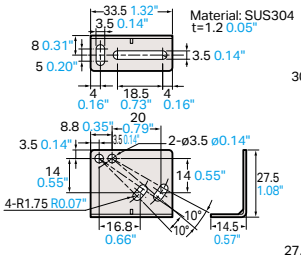


Plate nut for transmitter

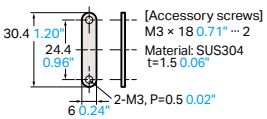
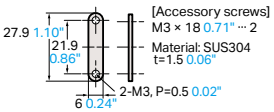
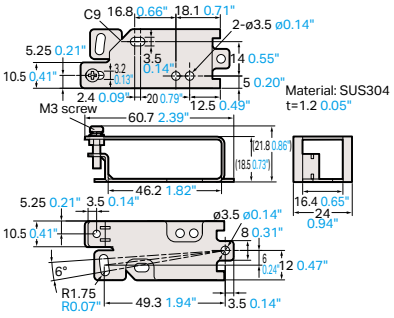


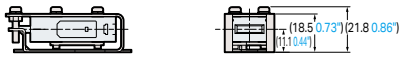
Plate nut for receiver



LV-B102 (Transmitter/receiver mounting bracket set for **LV-NH100/NH110**)



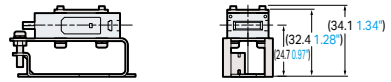
With LV-NH100/NH110 transmitter attached (inside)



With LV-NH100/NH110 receiver attached (inside)



With LV-NH100/NH110 transmitter attached (outside)



With LV-NH100/NH110 receiver attached (outside)

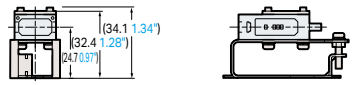


Plate nut for transmitter

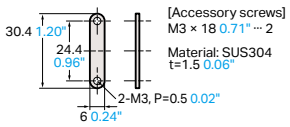
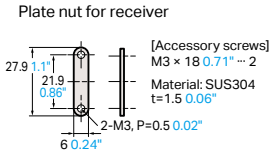
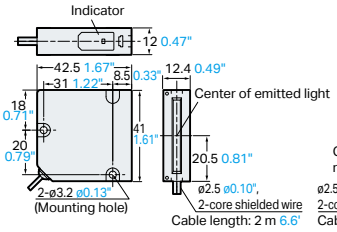


Plate nut for receiver

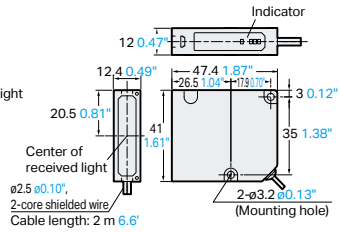


LV-NH300

Transmitter



Receiver



LV-B301 (Transmitter/receiver mounting bracket set for **LV-NH300**)

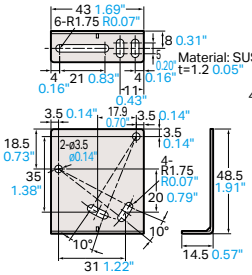


Plate nut for transmitter

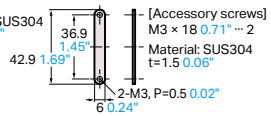
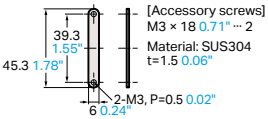
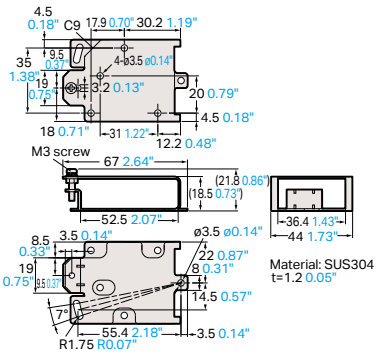


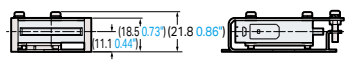
Plate nut for receiver



LV-B302 (Transmitter/receiver mounting bracket set for **LV-NH300**)



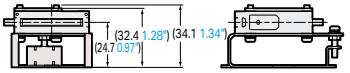
With LV-NH300 transmitter attached (inside)



With LV-NH300 receiver attached (inside)



With LV-NH300 transmitter attached (outside)



With LV-NH300 receiver attached (outside)

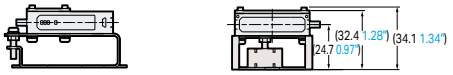


Plate nut for transmitter

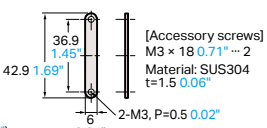
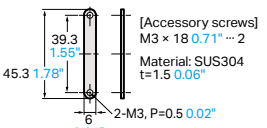
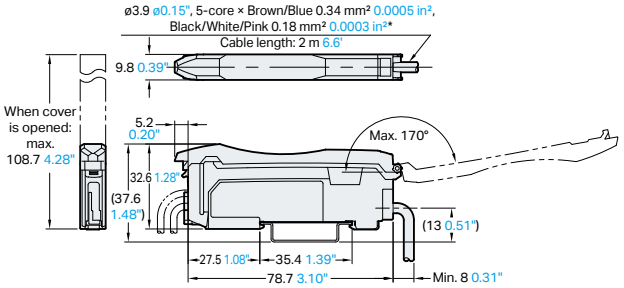


Plate nut for receiver

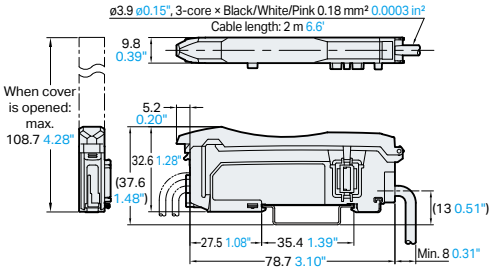


LV-N11N/N11P/N11MN Cable type, Main unit

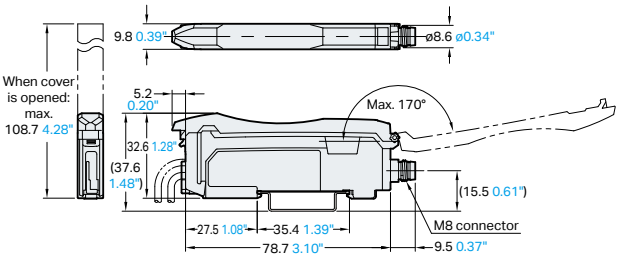


* LV-N11MN: ø3.9 ø0.15", 5-core × Brown/Blue 0.34 mm² 0.0005 in², Black/Orange/Pink 0.18 mm² 0.0003 in²

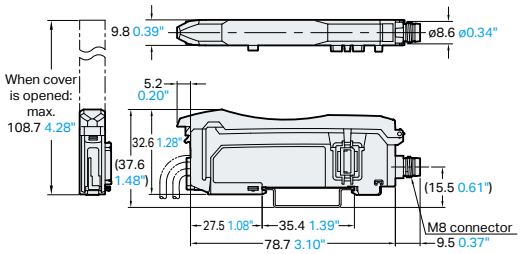
LV-N12N/N12P Cable type, Expansion unit



LV-N11CN/N11CP M8 connector type, Main unit

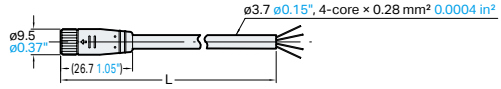


LV-N12CN/N12CP M8 connector type, Expansion unit

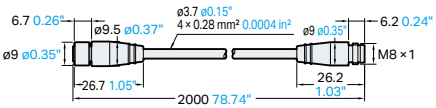


M8 connector cable (**OP-73864/73865** sold separately)

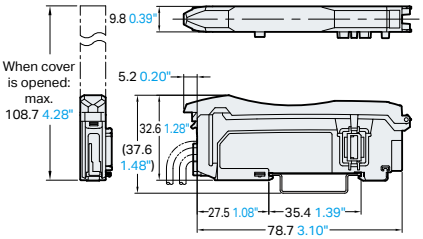
Cable length	L (m feet)
OP-73864	2 6.6'
OP-73865	10 32.8'



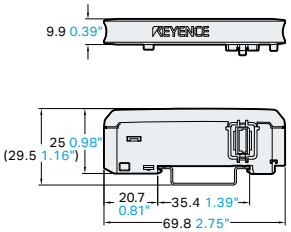
M8 connector extension cable (**OP-85498** sold separately)



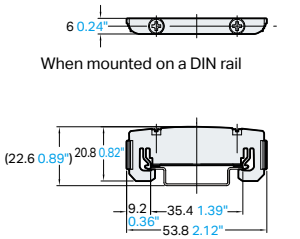
LV-N10 Zero-line type, Expansion unit



OP-87199 Conversion adapter



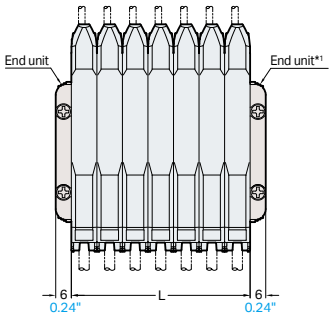
End unit (**OP-26751** sold separately)



Material: Polycarbonate

Common for all types

With expansion units

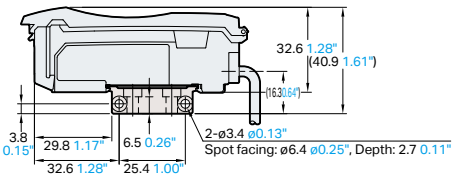


*1 When using expansion units, be sure to use the end units (optional).

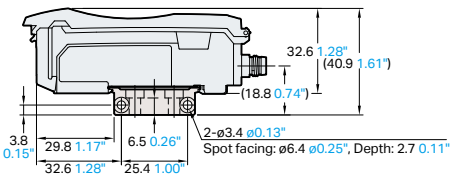
No. of units	L (mm inch)
1	9.8 0.39"
2	19.6 0.77"
3	29.4 1.16"
4	39.2 1.54"
5	49.0 1.93"
6	58.8 2.31"
7	68.6 2.70"
8	78.4 3.09"
9	88.2 3.47"
10	98.0 3.86"
11	107.8 4.24"
12	117.6 4.63"
13	127.4 5.02"
14	137.2 5.40"
15	147.0 5.79"
16	156.8 6.17"
17	166.6 6.56"

With mounting bracket (**OP-73880** sold separately) attached

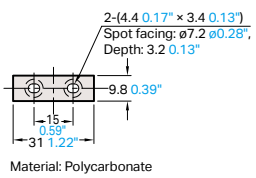
Cable type



M8 connector type

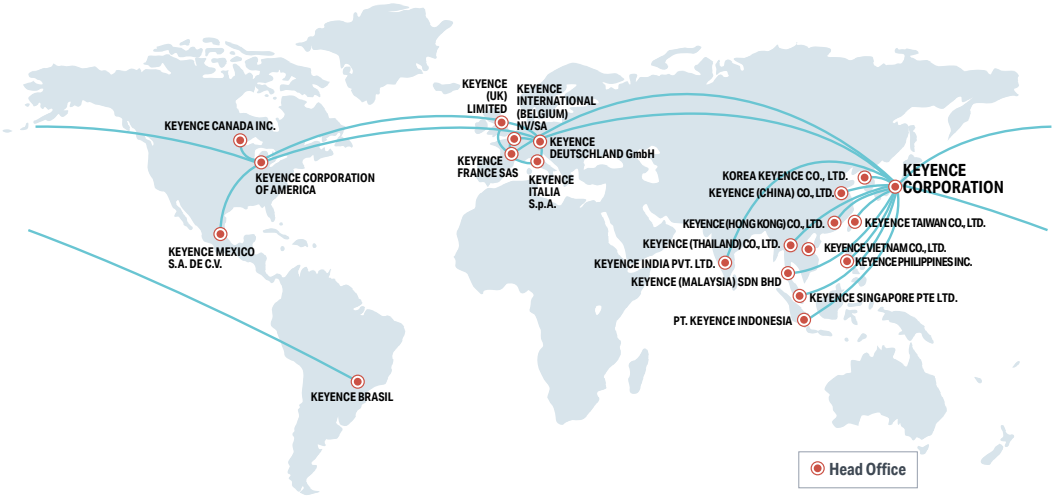


Back of mounting bracket



Material: Polycarbonate

Global Support



WWL1_2072

Quick solutions regardless of borders

Seamless support

KEYENCE offers a large number of sales engineers in various countries to provide customers with the same level of reliable support anywhere in the world. For projects that cross international borders, information discussed in meetings can be shared between reps internationally to enable seamless support for everyone involved.

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Equipment problems that occur in other countries can be a major concern for engineers. KEYENCE's manufacturer-direct sales system does not involve distributors or other overseas agents, ensuring customers receive reliable assistance from skilled technicians even after the equipment has been installed.

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