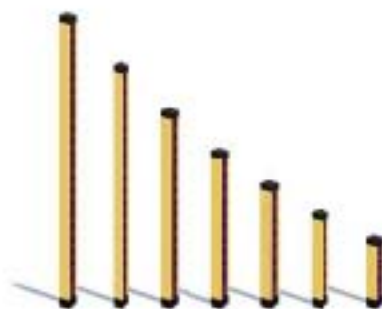
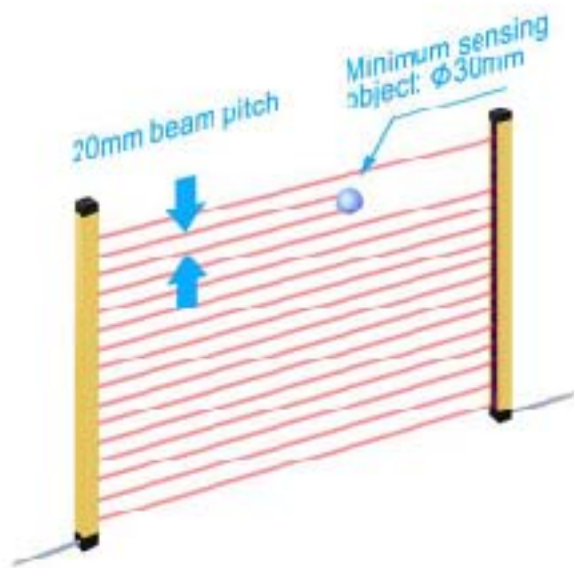




Vastly-e®

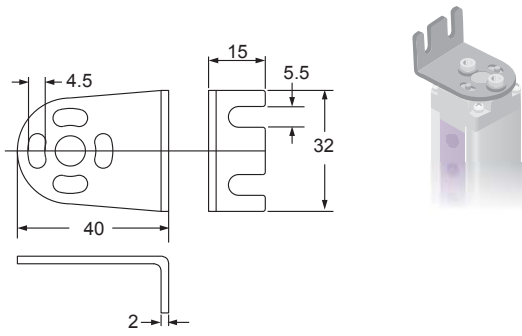
SL2 SERIES Photoelectric Area Sensor



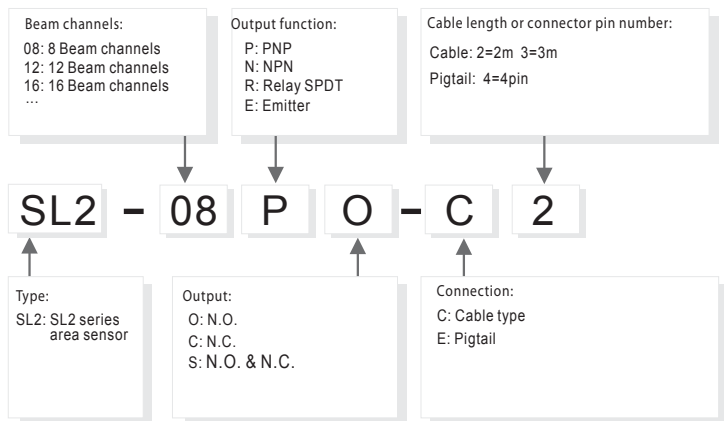
- 20mm beam pitch
- 8,12,16,20,24,28,32 beam channels
- Long sensing range: 8m
- NPN, PNP, Relay SPDT Output mode
- Supply Voltage: 12-24VDC
- Aluminum alloy shell
- CE Approvals

SL 2 SERIES PHOTOELECTRIC AREA SENSOR

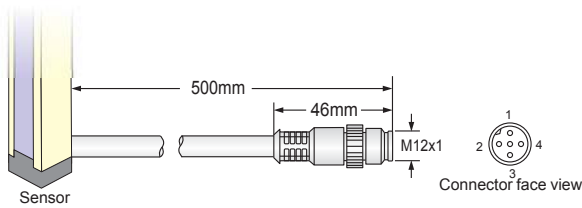
Bracket Dimensions



Selection Guide

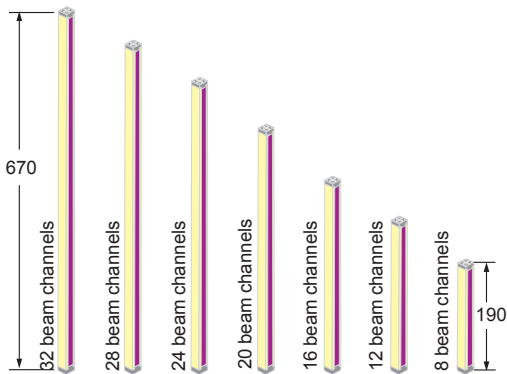


Diameter for Pigtail connect



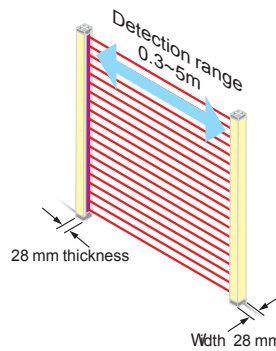
Wide variety

There are eight types of sensors having a sensing height ranging from 190mm(8 beam channels) to 670mm (32 beam channels).



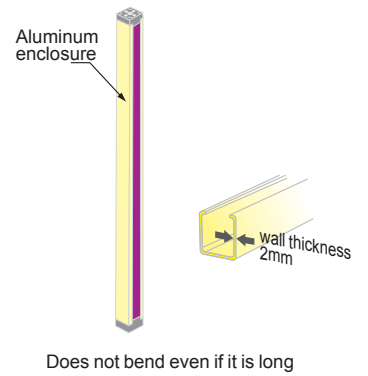
Space-saving design

With its 28 mm width and 28 mm thickness, it is small and requires the least installation space in the industry. It can be installed in small spaces incorporated within equipment.

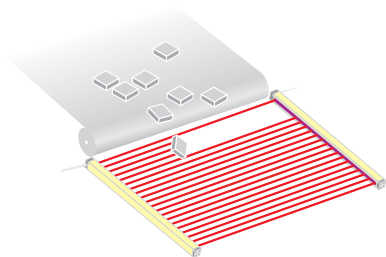


Robust Aluminum Enclosure

The modules are protected by a robust aluminum enclosure conforming to IP65 protection.



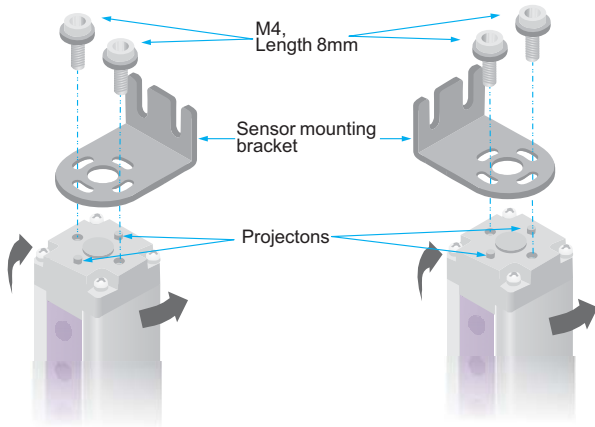
detecting falling objects whose path is uncertain



SL2 SERIES PHOTOELECTRIC AREA SENSOR

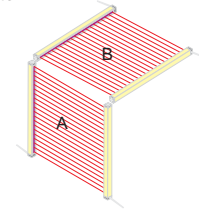
Mounting

Choose the mounting direction for the sensor mounting bracket based on the mounting direction (side or back), and temporarily tighten the brackets with the two hexagon-socket-head bolts for adjusting the mounting angle (M4 length 8mm). Tighten two hexagon-socket-head bolts securely, after beam alignment.



Interference Prevention Function

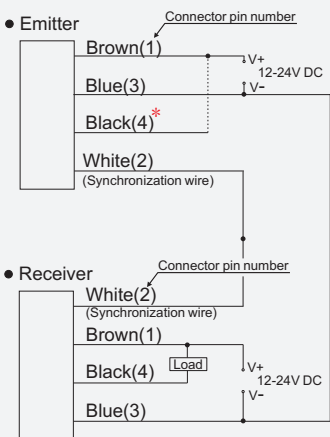
By setting different emission frequencies, two units of SL2 can be mounted close together, as shown in the figure on the right. The emission frequency can be checked by the number of power indicators lighting up on the emitter.



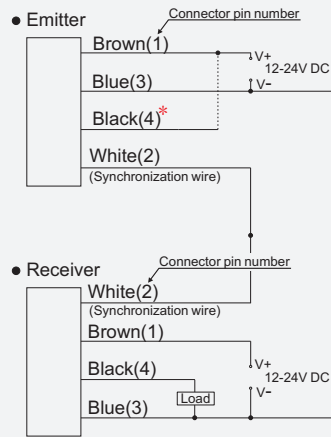
	Sensor: 'A' for A frequencies	Sensor: 'B' for B frequencies
Emitter Wiring for setting different emission frequencies		
	Note: Black wire is connected to V+ or open	Note: Black wire is connected to V- or open
Power indicator (Emitter)	One LED lights up	Two LEDs light up

Wiring Diagram

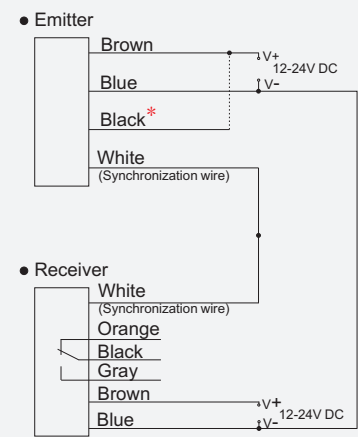
NPN output type



PNP output type



Relay SPDT output type



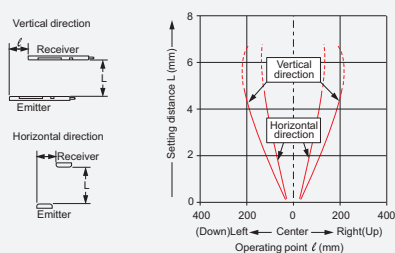
* Note: Black wire is connected to V+ or open for A frequencies; Black wire is connected to V- for B frequencies

Pigtail Wiring Diagrams For Dc NPN/PNP Type

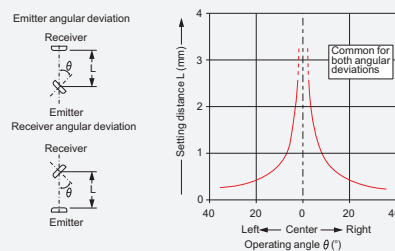
<p>Connector face view</p>	Emitter	Receiver
	1. Brown(V+)	1. Brown(V+)
	2. White (Synchronization wire)	2. White (Synchronization wire)
	3. Blue(V-)	3. Blue(V-)
	4. Black*	4. output

Sensing Characteristics (typical)

Parallel deviation (all models)



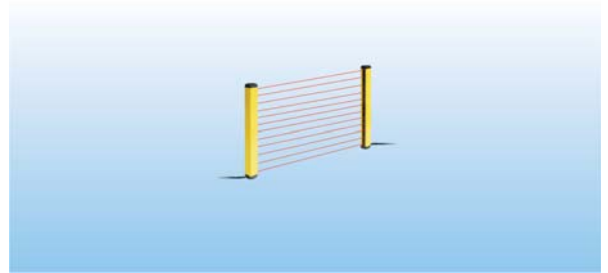
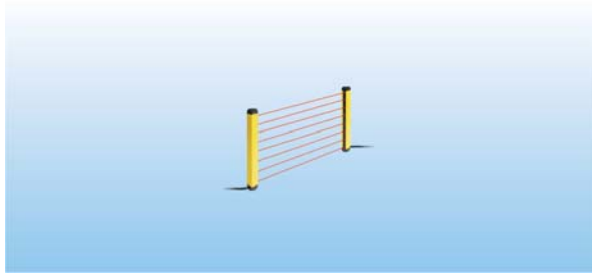
Angular deviation all models



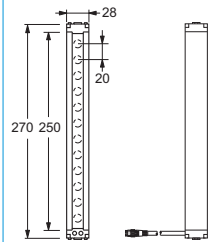
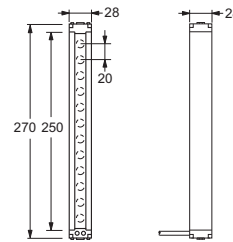
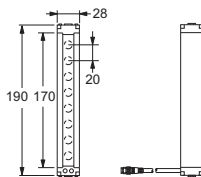
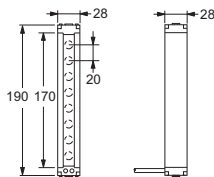
SL2 SERIES PHOTOELECTRIC AREA SENSOR

8 beam channels and 12 beam channels

Number of beam channels		8 beam channels					12 beam channels				
		Cable			Pigtail		Cable			Pigtail	
Connect		NPN output	PNP output	Relay SPDT	NPN output	PNP output	NPN output	PNP output	Relay SPDT	NPN output	PNP output
Output		SL2-08ES-C2	SL2-08ES-C2	SL2-08ES-C2	SL2-08ES-E4	SL2-08ES-E4	SL2-12ES-C2	SL2-12ES-C2	SL2-12ES-C2	SL2-12ES-E4	SL2-12ES-E4
Emitter		SL2-08NO-C2	SL2-08PO-C2		SL2-08NO-E4	SL2-08PO-E4	SL2-12NO-C2	SL2-12PO-C2		SL2-12NO-E4	SL2-12PO-E4
Receiver	N.O.	SL2-08NC-C2	SL2-08PC-C2		SL2-08NC-E4	SL2-08PC-E4	SL2-12NC-C2	SL2-12PC-C2		SL2-12NC-E4	SL2-12PC-E4
	N.C.			SL2-08RS-C2					SL2-12RS-C2		
	N.C.+N.O.										



Sensing height	140mm		220mm			
Sensing range	8m					
Beam pitch	20mm					
Sensing object	Ø30mm or more opaque object					
Supply voltage	12 to 24V DC 10% Ripple p-p 10% or less					
Current consumption(at DC 24V)	Emitter: 18.5mA, Receiver: 41mA		Emitter: 19mA, Receiver: 58mA			
Output	NPN	NPN open-collector transistor, Max.load current:100mA; Voltage Drop: <1.5V				
	PNP	PNP open-collector transistor, Max.load current:100mA; Voltage Drop: <1.5V				
	Relay	Relay SPDT, 5A/250VAC, 5A/30VDC				
Output operation	ON when all beams are received, OFF when one or more beams are interrupted.					
Short-circuit protecton	Incorporated					
Response time for NPN/PNP type	10ms or less					
Indicators	Emitter	Power indicator: green LEDx2(light up when the power is ON; emission frequency A or B is indicated by the number of LEDs lighting up)				
	Receiver	Operation indicator: Red LED(lights up when one or more beams are interrupted), Stable indicator: Green LED(lights up when all beams are stably received)				
Interference prevention function	Incorporated					
Ambient temperature	-10 to +55 °C, Storage:-10 to +60 °C					
Ambient humidity	35 to 85 % RH, Storage: 35 to 85 % RH					
Ambient illuminance	Sunlight: 10,000lx at the light -receiving face, Incandescent light: 3,000lx at the light-receiving face					
EMC immunity	RFI>10V/m(in 30-1000MHZ), EFT>1KV, ESD>4KV(contact)					
Voltage withstand ability	1,000 V AC for one min. between all supply terminals connected together and enclosure					
Insulation resistance	20 MΩ, or more, with 250 V DC megger between all supply terminals connected together and enclosure					
Vibration resistance	10 to 150 Hz frequency, 0.75 mm 0.030 in amplitude in X, Y and Z directions for two hours each					
Shock resistance	490m/s ² , acceleration(50G approx) in X, Y and Z directions for three times each					
Emitting element	Infrared LED					
Material	Enclosure: Aluminum, lens: polyester					
Cable or pigtail	Ø 5.0 PVC 2m, 4x0.5mm ²	Ø5.0 PVC 2m, 6x0.25mm ²	Ø5.0 PVC 2m, with m12 Euro style connector	Ø 5.0 PVC 2m, 4x0.5mm ²	Ø 5.0 PVC 2m, 6x0.25mm ²	Ø 5.0 PVC 2m, with m12 Euro style connector
Weigh(approx.)	230g	240g	220g	285.5g	295.5g	275.5g



SL2 SERIES PHOTOELECTRIC AREA SENSOR

16 beam channels and 20 beam channels

Number of beam channels

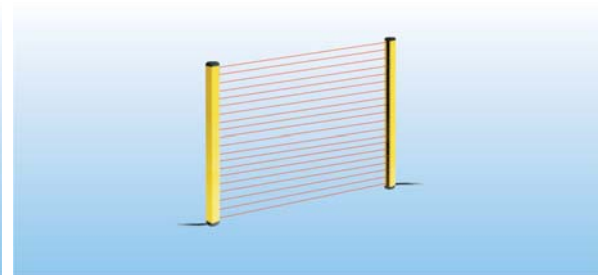
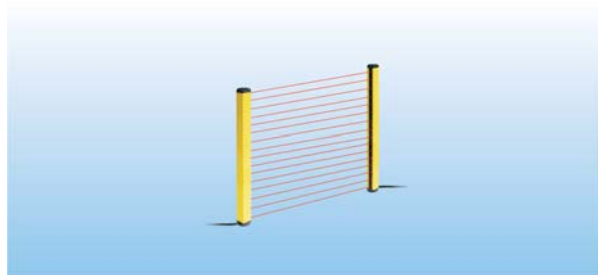
Connect	
Output	
Emitter	
Receiver	N.O.
	N.C.
	N.C.+N.O.

16 beam channels

Cable			Pigtail	
NPN output	PNP output	Relay SPDT	NPN output	PNP output
SL2-16ES-C2	SL2-16ES-C2	SL2-16ES-C2	SL2-16ES-E4	SL2-16ES-E4
SL2-16NO-C2	SL2-16PO-C2		SL2-16NO-E4	SL2-16PO-E4
SL2-16NC-C2	SL2-16PC-C2		SL2-16NC-E4	SL2-16PC-E4
		SL2-16RS-C2		

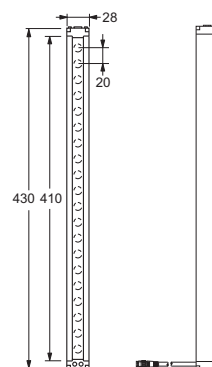
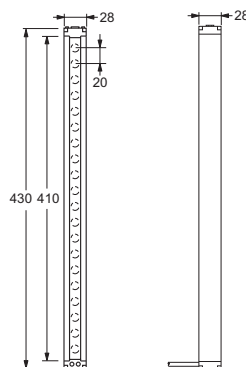
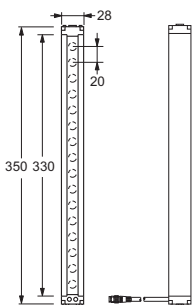
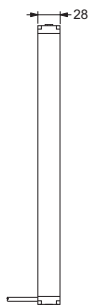
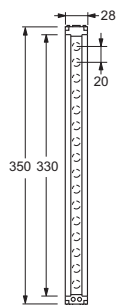
20 beam channels

Cable			Pigtail	
NPN output	PNP output	Relay SPDT	NPN output	PNP output
SL2-20ES-C2	SL2-20ES-C2	SL2-20ES-C2	SL2-20ES-E4	SL2-20ES-E4
SL2-20NO-C2	SL2-20PO-C2		SL2-20NO-E4	SL2-20PO-E4
SL2-20NC-C2	SL2-20PC-C2		SL2-20NC-E4	SL2-20PC-E4
		SL2-20RS-C2		



Sensing height	
Sensing range	
Beam pitch	
Sensing object	
Supply voltage	
Current consumption(at DC 12V)	
Output	NPN
	PNP
	Relay
Output operation	
Short-circuit protecton	
Response time for NPN/PNP type	
Indicators	Emitter
	Receiver
Interference prevention function	
Ambient temperature	
Ambient humidity	
Ambient illuminance	
EMC immunity	
Voltage withstand ability	
Insulation resistance	
Vibration resistance	
Shock resistance	
Emitting element	
Material	
Cable or pigtail	
Weigh(approx.)	

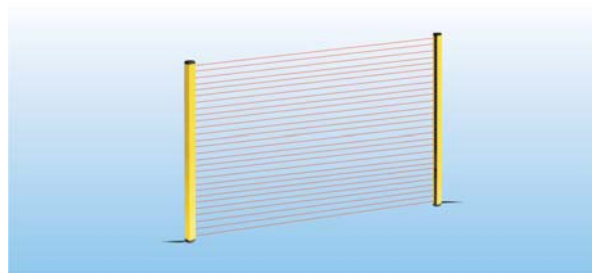
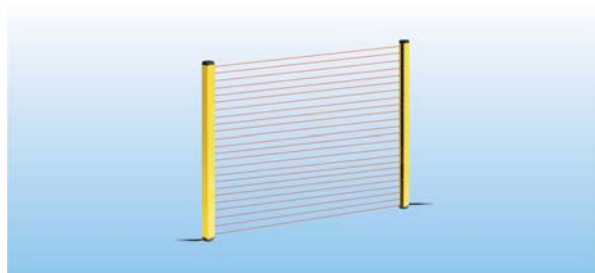
	300mm			380mm
		8m		
		20mm		
		∅30mm or more opaque object		
		12 to 24V DC	10% Ripple p-p	10% or less
	Emitter: 19.5mA, Receiver: 71mA		Emitter:20mA, Receiver:87mA	
	NPN open-collector transistor, Max.load current:100mA; Votage Drop: <1.5V		PNP open-collector transistor, Max.load current:100mA; Votage Drop: <1.5V	
	Relay SPDT, 5A/250VAC, 5A/30VDC			
	ON when all beams are received, OFF when one or more beams are interrupted.			
	Incorporated			
	10ms or less			
	Power indicator: green LEDx2(light up when the power is ON; emission frequency A or B is indicated by the number of LEDs lighting up)			
	Operation indicator: Red LED(lights up when one or more beams are interrupted), Stable indicator: Green LED(lights up when all beams are stably received)			
	Incorporated			
	-10 to +55 °C, Storage:-10 to +60 °C			
	35 to 85 % RH, Storage: 35 to 85 % RH			
	Sunlight: 10,000lx at the light -receiving face, Incandescent light: 3,000lx at the light-receiving face			
	RFI>10V/m(in 30-1000MHZ), EFT>1KV, ESD>4KV(contact)			
	1,000 V AC for one min. between all supply terminals connected together and enclosure			
	20 MΩ, or more, with 250 V DC megger between all supply terminals connected together and enclosure			
	10 to 150 Hz frequency, 0.75 mm 0.030 in amplitude in X, Y and Z directions for two hours each			
	490m/s ² , acceleration(50G approx) in X, Y and Z directions for three times each			
	Infrared LED			
	Enclosure: Aluminum, lens: polyester			
	∅ 5.0 PVC 2m, 4x0.5mm ²	∅5.0 PVC 2m, 6x0.25mm ²	∅5.0 PVC 2m, with m12 Euro style connector	∅ 5.0 PVC 2m, 4x0.5mm ²
	341g	351g	331g	396.7g
				406.7g
				386.7



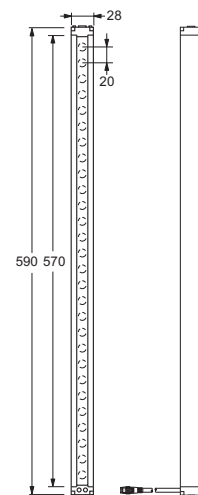
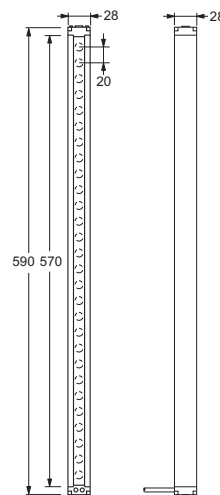
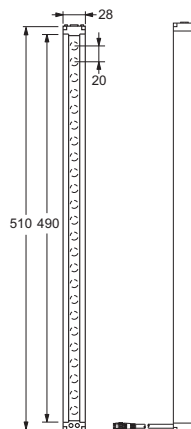
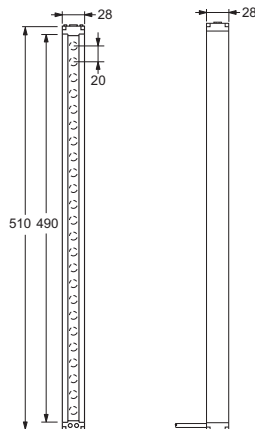
SL2 SERIES PHOTOELECTRIC AREA SENSOR

24 beam channels and 28 beam channels

Number of beam channels		24 beam channels					28 beam channels				
Connect		Cable			Pigtail		Cable			Pigtail	
Output		NPN output	PNP output	Relay SPDT	NPN output	PNP output	NPN output	PNP output	Relay SPDT	NPN output	PNP output
Emitter		SL2-24ES-C2	SL2-24ES-C2	SL2-24ES-C2	SL2-24ES-E4	SL2-24ES-E4	SL2-28ES-C2	SL2-28ES-C2	SL2-28ES-C2	SL2-28ES-E4	SL2-28ES-E4
		SL2-24NO-C2	SL2-24PO-C2		SL2-24NO-E4	SL2-24PO-E4	SL2-28NO-C2	SL2-28PO-C2		SL2-28NO-E4	SL2-28PO-E4
	Receiver	N.O.									
	N.C.	SL2-24NC-C2	SL2-24PC-C2		SL2-24NC-E4	SL2-24PC-E4	SL2-28NC-C2	SL2-28PC-C2		SL2-28NC-E4	SL2-28PC-E4
	N.C.+N.O.			SL2-24RS-C2					SL2-28RS-C2		

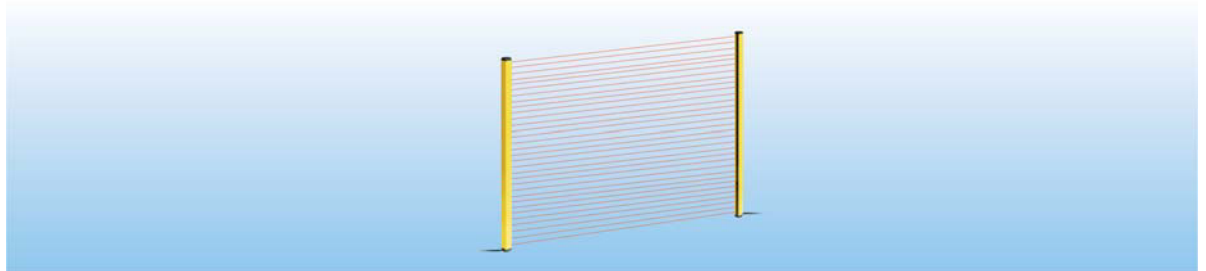


Sensing height	460mm	540mm				
Sensing range	8m					
Beam pitch	20mm					
Sensing object	Ø30mm or more opaque object					
Supply voltage	12 to 24V DC 10% Ripple p-p 10% or less					
Current consumption(at DC 12V)	Emitter: 20.5mA, Receiver: 100mA	Emitter: 21mA, Receiver: 117mA				
Output	NPN	NPN open-collector transistor, Max.load current:100mA; Votage Drop: <1.5V				
	PNP	PNP open-collector transistor, Max.load current:100mA; Votage Drop: <1.5V				
	Relay	Relay SPDT, 5A/250VAC, 5A/30VDC				
Output operation	ON when all beams are received, OFF when one or more beams are interrupted.					
Short-circuit protecton	Incorporated					
Response time for NPN/PNP type	10ms or less					
Indicators	Emitter	Power indicator: green LEDx2(light up when the power is ON; emission frequency A or B is indicated by the number of LEDs lighting up)				
	Receiver	Operation indicator: Red LED(lights up when one or more beams are interrupted), Stable indicator: Green LED(lights up when all beams are stably received)				
Interference prevention function	Incorporated					
Ambient temperature	-10 to +55 °C, Storage:-10 to +60 °C					
Ambient humidity	35 to 85 % RH, Storage: 35 to 85 % RH					
Ambient illuminance	Sunlight: 10,000lx at the light -receiving face, Incandescent light: 3,000lx at the light-receiving face					
EMC immunity	RFI>10V/m(in 30-1000MHZ), EFT>1KV, ESD>4KV(contact)					
Voltage withstand ability	1,000 V AC for one min. between all supply terminals connected together and enclosure					
Insulation resistance	20 MΩ, or more, with 250 V DC megger between all supply terminals connected together and enclosure					
Vibration resistance	10 to 150 Hz frequency, 0.75 mm 0.030 in amplitude in X, Y and Z directions for two hours each					
Shock resistance	490m/s ² , acceleration(50G approx) in X, Y and Z directions for three times each					
Emitting element	Infrared LED					
Material	Enclosure: Aluminum, lens: polyester					
Cable or pigtail	Ø 5.0 PVC 2m, 4x0.5mm ²	Ø 5.0 PVC 2m, 6x0.25mm ²	Ø 5.0 PVC 2m, with m12 Euro style connector	Ø 5.0 PVC 2m, 4x0.5mm ²	Ø 5.0 PVC 2m, 6x0.25mm ²	Ø 5.0 PVC 2m, with m12 Euro style connector
Weigh(approx.)	452.3g	462.3g	442.3g	508g	518g	498g



SL2 SERIES PHOTOELECTRIC AREA SENSOR

Number of beam channels		32 beam channels				
Connect		Cable			Pigtail	
Output		NPN output	PNP output	Relay SPDT	NPN output	PNP output
Emitter		SL2-32ES-C2	SL2-32ES-C2	SL2-32ES-C2	SL2-32ES-E4	SL2-32ES-E4
Receiver		SL2-32NO-C2	SL2-32PO-C2		SL2-32NO-E4	SL2-32PO-E4
N.O.		SL2-32NC-C2	SL2-32PC-C2		SL2-32NC-E4	SL2-32PC-E4
N.C.				SL2-32RS-C2		
N.C.+N.O.						



Sensing height		620mm		
Sensing range		8m		
Beam pitch		20mm		
Sensing object		Ø30mm or more opaque object		
Supply voltage		12 to 24V DC 10% Ripple p-p 10% or less		
Current consumption(at DC 12V)		Emitter:21.9mA, Receiver:130mA		
Output	NPN	NPN open-collector transistor, Max.load current:100mA; Votage Drop: <1.5V		
	PNP	PNP open-collector transistor, Max.load current:100mA; Votage Drop: <1.5V		
	Relay	Relay SPDT, 5A/250VAC, 5A/30VDC		
Output operation		ON when all beams are received, OFF when one or more beams are interrupted.		
Short-circuit ptotecton		Incorporated		
Response time for NPN/PNP type		10ms or less		
Indicators	Emitter	Power indicator: green LEDX2(light up when the power is ON; emission frequency A or B is indicated by the number of LEDs lighting up)		
	Receiver	Operation indicator: Red LED(lights up when one or more beams are interrupted), Stable indicator: Green LED(lights up when all beams are stably received)		
Interference prevention function		Incorporated		
Ambient temperature		-10 to +55 , Storage:-10 to +60		
Ambient humidity		35 to 85 % RH, Storage: 35 to 85 % RH		
Ambient illuminance		Sunlight: 10,000lx at the light -receiving face, Incandescent light: 3,000lx at the light-receiving face		
EMC immunity		RFI>10V/m(in 30-1000MHZ), EFT>1KV, ESD>4KV(contact)		
Voltage withstand ability		1,000 V AC for one min. between all supply terminals connected together and enclosure		
Insulation resistance		20 M , or more, with 250 V DC megger between all supply terminals connected together and enclosure		
Vibration resistance		10 to 150 Hz frequency, 0.75 mm 0.030 in amplitude in X, Y and Z directions for two hours each		
Shock resistance		490m/s ² , acceleration(50G approx) in X, Y and Z directions for three times each		
Emitting element		Infrared LED		
Material		Enclosure: Aluminum, lens: polyester		
Cable or pigtail		Ø5.0 PVC 2m, 4x0.5mm ²	Ø5.0 PVC2m, 6x0.25mm ²	Ø5.0 PVC 2m, with m12 Euro style connector
Weigh(approx.)		563g	573g	553g

