

## ESP Series

# Anti-light (Strong) Safety Light Curtain



## Product Introduction

ESP series is specially designed for environment with strong light or even under sunshine. Independent dual output with self-diagnosis and overcurrent protection, Special optical lens ensure its long sensing distance up to 20m; Transistor output can be connected with PLC directly; Double-sided chute enclosure support diverse mounting.

## Product Feature

- Great performance against strong light and sunlight;
- Long sensing distance up to 20m;
- Dual output with self-diagnosis achieve high safety performance;
- Good ability against electromagnetic interference of various machine motor;
- Anti-shock circuit and strong aluminum alloy avoid vibration influence;
- Wire-syn against light interference well;
- Multiple mounting for more environment installation.

# Safety Light Curtain

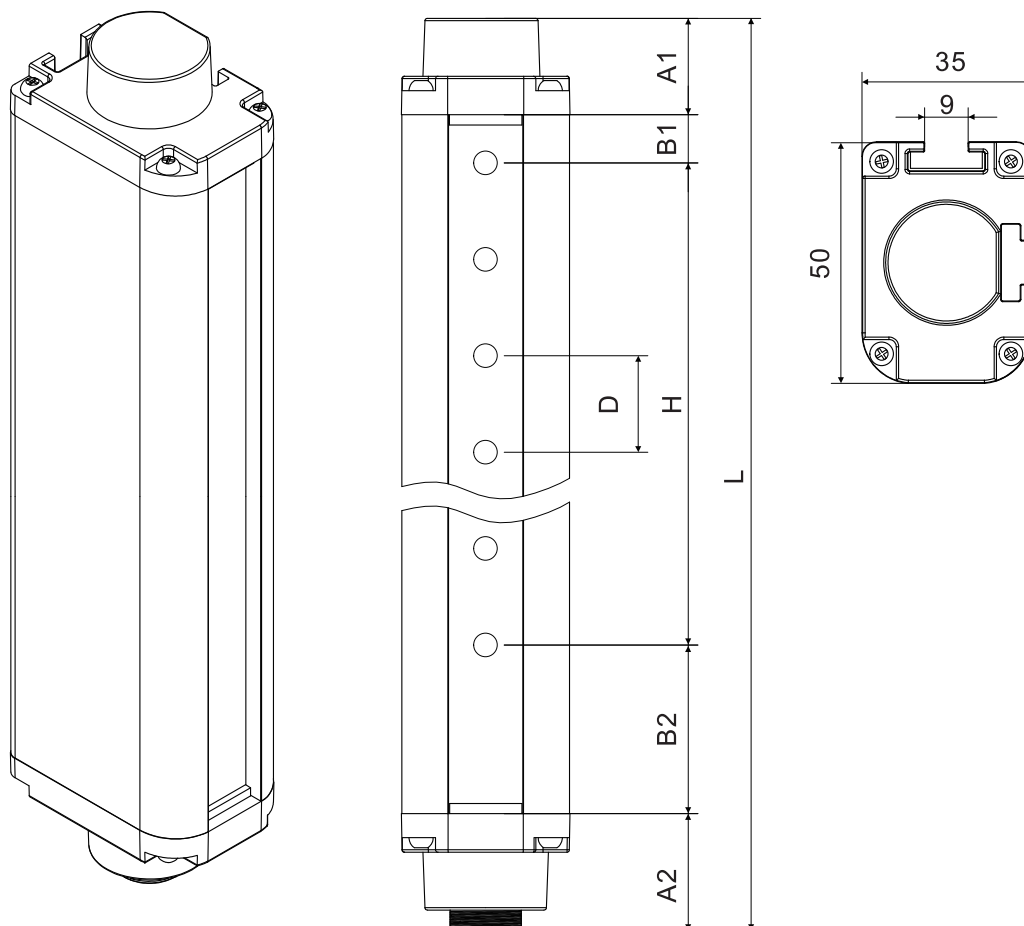
## Product Parameter

|                               |                                                                                                                                          |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Power Supply                  | DC24V±20%                                                                                                                                |
| Capacity                      | <5W                                                                                                                                      |
| Beam Space                    | 20mm, 40mm                                                                                                                               |
| Resolution                    | 30mm, 50mm                                                                                                                               |
| Beams                         | 20mm: 8, 12, 16,...160                                                                                                                   |
|                               | 40mm: 8, 16, 24,...80                                                                                                                    |
| Protective Height             | Protection height=(N-1)*beam space, (N is beams)                                                                                         |
| Light Wavelength              | 940nm                                                                                                                                    |
| Response Time                 | Response Time= (N * 0.1ms) + 0.4ms (N is beams)                                                                                          |
| Safety Output (OSSD)          | PNP or NPN<br>Load current ≤ 200mA, residual voltage ≤ 1V (except for voltage drop caused by cable extension) and leakage current ≤ 1mA. |
| Protective Circuit            | Overvoltage protection, power supply reverse protection and overcurrent protection.                                                      |
| Sensing Distance              | 0.1~2m, 0.1~5m, 0.1~10m, 0.1~20m (Remark: please let us know when with reflectivity)                                                     |
| Against Optical Interference  | 100,000 Lux (angle>5°),                                                                                                                  |
| Sensing Method                | Thru-beam                                                                                                                                |
| Synchronization               | Wire-syn                                                                                                                                 |
| Enclosure Material            | Aluminum alloy                                                                                                                           |
| Enclosure Protection Rate     | IP65                                                                                                                                     |
| Sectional Size                | 35*50mm                                                                                                                                  |
| Vibration Resistance          | Frequency 10Hz-55Hz, amplitude 0.35±0.05mm, 20 times each in X, Y and Z direction.                                                       |
| Ambient Operating Temperature | -10℃~55℃ (no freezing)                                                                                                                   |
| Storage Temperature           | -30℃~70℃ (no freezing)                                                                                                                   |
| Ambient Operating Humidity    | When temperature 20℃, the humidity max. 85%                                                                                              |

## Model Selection (e.g.: ESP1620L1NCC-5)

| Product Series | Beams          | Beam Space   | Bracket                                                                                               | Output           | Sensing Method    | Scanning Mode                                   | Sensing Distance                                                                                            |
|----------------|----------------|--------------|-------------------------------------------------------------------------------------------------------|------------------|-------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>ESP</b>     | <b>16</b>      | <b>20</b>    | <b>L1</b>                                                                                             | <b>N</b>         | <b>C</b>          | <b>C</b>                                        | <b>5</b>                                                                                                    |
|                | 08, 12, 16,... | 20mm<br>40mm | L1: L1 bracket<br>H1: H1 bracket<br>JZ: JZ bracket (Please check bracket sheet for checking details.) | N: NPN<br>P: PNP | C: normally close | No mark: parallel scanning<br>C: cross scanning | 2: 0.1~2m<br>5: 0.1~5m<br>10: 0.1~10m<br>20: 0.1~20m<br>(Remark: please let us know when with reflectivity) |

## Product Size



A1: Upper end cover  
 A2: Bottom cover + aviation terminal  
 B1: Up blind area  
 B2: Bottom blind area  
 D: Beam space (20mm/40mm)  
 H: Protection height  
 L: Total height

A1 is 20mm, A2 is 25mm  
 When D=20mm, B1=10mm, B2=35mm  
 When D=40mm, B1=10mm, B2=35mm  
  
 $H = (\text{Beams} - 1) \times \text{beam space}$   
 $L = A1 + A2 + B1 + B2 + H$

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## ESP Model Selection Table

- Beam space 20mm, resolution 30mm

| Picture                                                                                                                             | Beams<br>(n) | Protection Height<br>(mm) | Total Height<br>(mm) | Model    |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------|----------------------|----------|
| <p>Front View</p> <p>Top View</p>                                                                                                   | 08           | 140                       | 230                  | ESP0820  |
|                                                                                                                                     | 12           | 220                       | 310                  | ESP1220  |
|                                                                                                                                     | 16           | 300                       | 390                  | ESP1620  |
|                                                                                                                                     | 20           | 380                       | 470                  | ESP2020  |
|                                                                                                                                     | 24           | 460                       | 550                  | ESP2420  |
|                                                                                                                                     | 28           | 540                       | 630                  | ESP2820  |
|                                                                                                                                     | 32           | 620                       | 710                  | ESP3220  |
|                                                                                                                                     | 36           | 700                       | 790                  | ESP3620  |
|                                                                                                                                     | 40           | 780                       | 870                  | ESP4020  |
|                                                                                                                                     | 44           | 860                       | 950                  | ESP4420  |
|                                                                                                                                     | 48           | 940                       | 1030                 | ESP4820  |
|                                                                                                                                     | 52           | 1020                      | 1110                 | ESP5220  |
|                                                                                                                                     | 56           | 1100                      | 1190                 | ESP5620  |
|                                                                                                                                     | 60           | 1180                      | 1270                 | ESP6020  |
|                                                                                                                                     | 64           | 1260                      | 1350                 | ESP6420  |
|                                                                                                                                     | 68           | 1340                      | 1430                 | ESP6820  |
|                                                                                                                                     | 72           | 1420                      | 1510                 | ESP7220  |
|                                                                                                                                     | 76           | 1500                      | 1590                 | ESP7620  |
|                                                                                                                                     | 80           | 1580                      | 1670                 | ESP8020  |
|                                                                                                                                     | 84           | 1660                      | 1750                 | ESP8420  |
| <p>H is protection height=(beams-1)*beam space<br/>L is total height=end covers+ up &amp; bottom blind area + protection height</p> | 88           | 1740                      | 1830                 | ESP8820  |
|                                                                                                                                     | 92           | 1820                      | 1910                 | ESP9220  |
|                                                                                                                                     | 96           | 1900                      | 1990                 | ESP9620  |
|                                                                                                                                     | 100          | 1980                      | 2070                 | ESP10020 |
|                                                                                                                                     | 104          | 2060                      | 2150                 | ESP10420 |
|                                                                                                                                     | 108          | 2140                      | 2230                 | ESP10820 |
|                                                                                                                                     | 112          | 2220                      | 2310                 | ESP11220 |
|                                                                                                                                     | 116          | 2300                      | 2390                 | ESP11620 |
|                                                                                                                                     | 120          | 2380                      | 2470                 | ESP12020 |
|                                                                                                                                     | 124          | 2460                      | 2550                 | ESP12420 |
|                                                                                                                                     | 128          | 2540                      | 2630                 | ESP12820 |
|                                                                                                                                     | .....        | .....                     | .....                | .....    |
|                                                                                                                                     | 160          | 3180                      | 3270                 | ESP16020 |

Remark: Beside above models, other light curtains can be customized



- Beam space 40mm, resolution 50mm

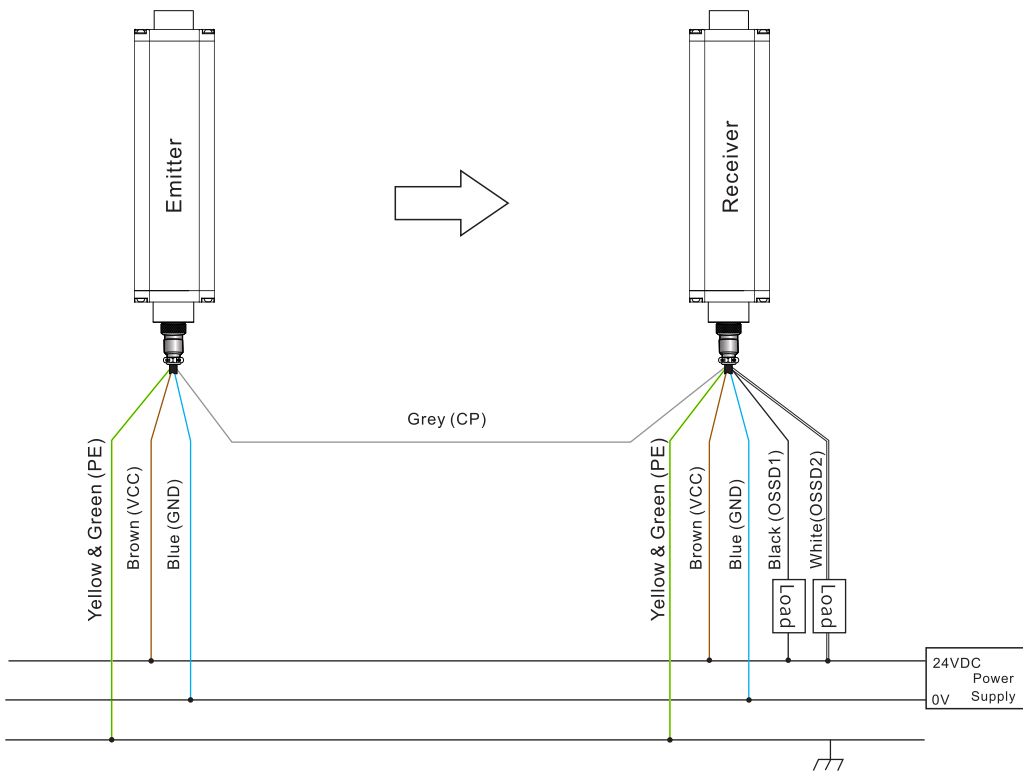
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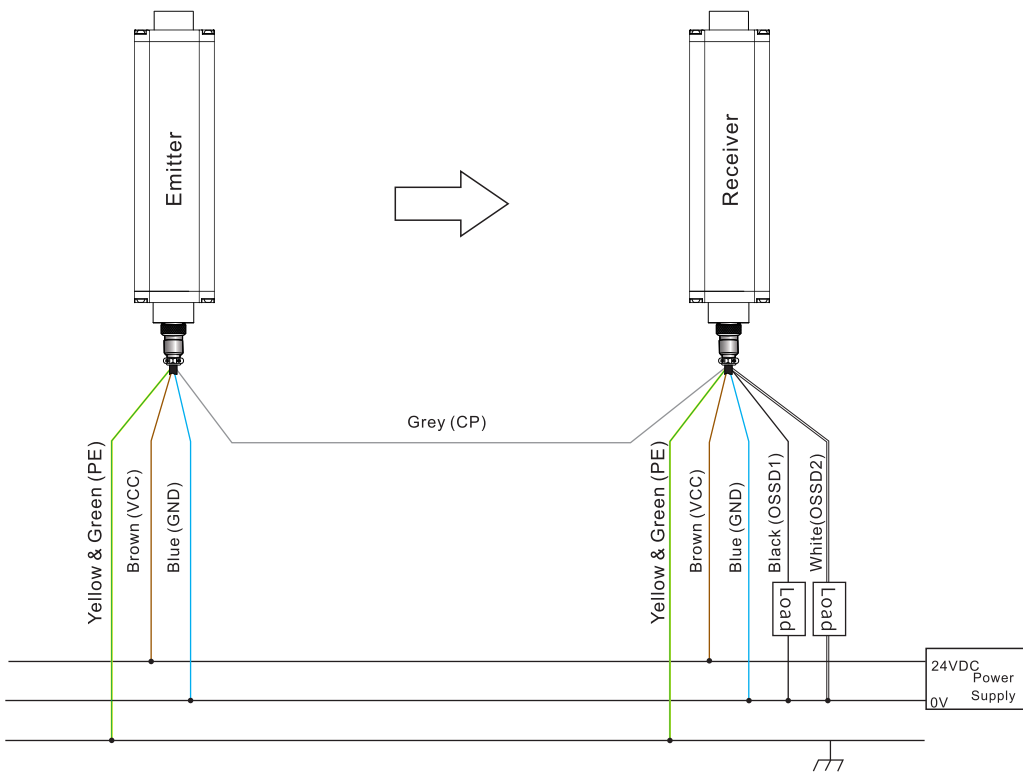
# Safety Light Curtain

## Wire Diagram

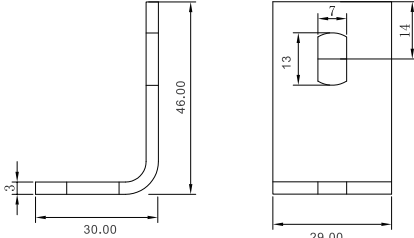
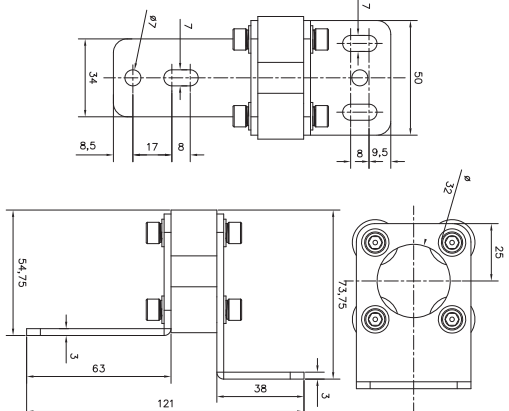
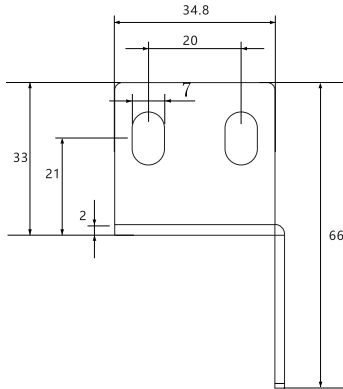
### NPN



### PNP



## Option of Bracket

| Picture                                                                             | Name                           | Accessories                                                                                                                      | Size                                                                                  |
|-------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|    | L1 bracket                     | L1 bracket (4pcs)<br>Slider (4pcs)<br>M6 gasket (4pcs)<br>M6 spring washer (4pcs)<br>M6*16 screw (4pcs)<br>M6*8 screw (4pcs)     |     |
|   | JZ vibration absorbing bracket | Assembled bracket (4pcs)<br>Slider (8pcs)<br>M6 pad (8pcs)<br>M6 spring washer (8pcs)<br>M6*16 screw (8pcs)<br>M6*8 screw (8pcs) |    |
|  | H1 end mounting                | L bracket (4pcs)<br>Slider (4pcs)<br>M6 pad (4pcs)<br>M6 spring washer (4pcs)<br>M6*16 screw (4pcs)<br>M6*8 screw (4pcs)         |  |

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## Application

