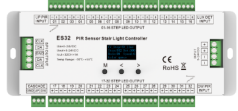


## Technical Parameters

Input and Output		Sensor data		Safety and EMC	
Input voltage	5-24VDC	Sensitive Beld	≤3m	EMC standard (EMC)	ETSI EN 301 489-1 V2.2.3 ETSI EN 301 489-17 V3.2.4
Output voltage	32 x (5-24)VDC	Sensitivity angle	20°~40°	Safety standard(LVD)	EN 62368-1:2020+A11:2020
Output current	32CH, 1A/CH	<b>Environment</b>		Certification	CE,EMC,LVD
Output power	32 x (5-24)W	Operation temperature	Ta: -30°C ~ +55°C	<b>Package</b>	
Output type	Constant voltage + SPI(TTL)	Case temperature (Max.)	Tc: +85°C	Size	L256 x W120 x H46mm
<b>Warranty and Protection</b>		IP rating	IP20	Gross weight	0.52kg
Warranty	5 years				

## Packing List



LED controller  
1 pcs



User manual  
1 pcs



Daylight sensor(30cm)  
1 pcs



PIR sensor  
2 pcs



PIR sensor extension line(5m)  
2 pcs

## Outsourced accessories



Switching power supply



Single color constant voltage LED strip  
(for steps)



RGB SPI LED strip  
(for ladder)

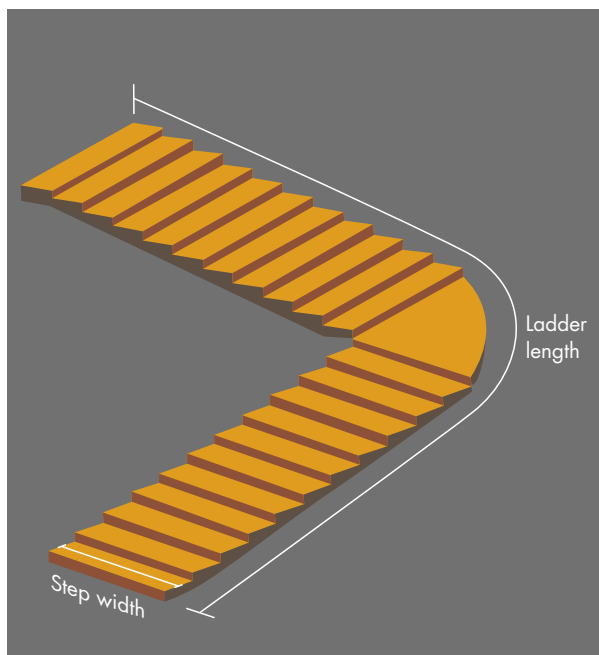


Connecting wire  
(Need to be cut)

### Note:

- The output voltage of the switching power supply needs to be the same as the supply voltage of the LED strip, and the output power of the power supply needs to be  $\geq 1.25$  times the total output power of all connected LED strips.  
Example: 12V strip, 5m/1 roll 60W, 3 rolls total 180W, then select 12V switching power supply, output power  $\geq 225W$ .
- When the single-color constant voltage LED strip needs to extend the connection distance, it is recommended to use more than  $0.3mm^2$  wire.  
When the RGB SPI LED strip needs to extend the connection distance, it is recommended to use more than  $0.8mm^2$  wire.

## Installation steps

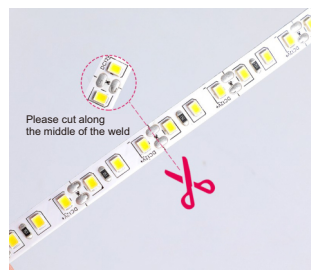


**1** Measure the step width and ladder length according to the installation staircase scenario, and based on the test results, select the appropriate switching power supply, single color constant voltage LED strip, RGB SPI LED strip.

Example: Step number: 20, Step width: 1.5m, ladder length: 10m  
12V switching power supply

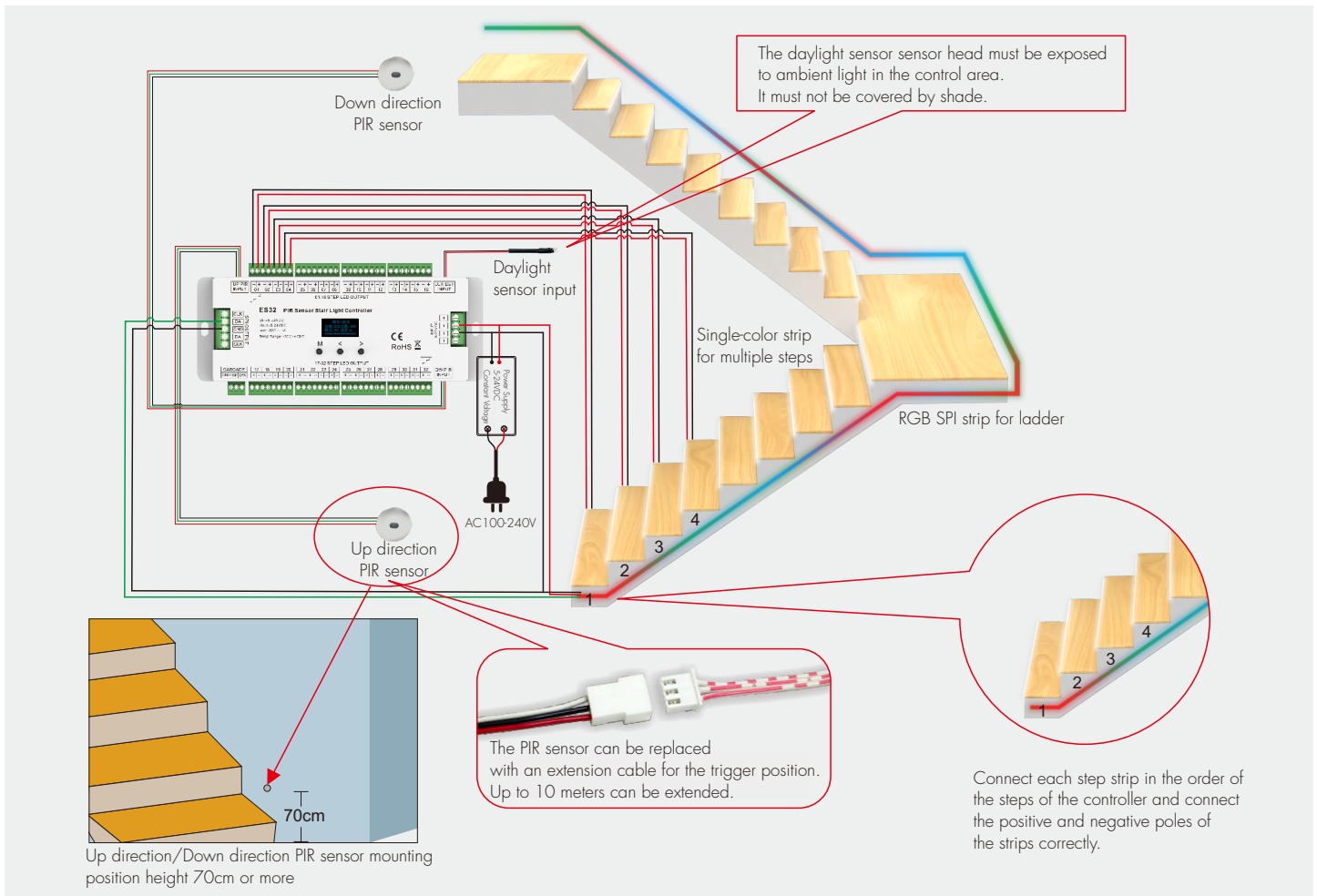
Number of rolls of 12V single color constant voltage strip = (step number x step width)/5m,  
That is  $(20 \times 1.5) / 5m = 6$  rolls (5m/1 roll), the strip needs to be cut to 1.5m per section.

Number of rolls of 12V RGB SPI strip = ladder length/5m, i.e.  $10/5m = 2$  rolls (5m/1 roll).



Please cut the LED strip from the marked line according to the installation requirements.

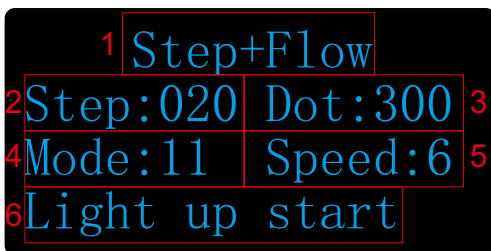
## 2 Confirmation of the mounting positions of the switching power supply, ES32 controller, single-color constant voltage strip, SPI strip, PIR sensor, and daylight sensor



### Note:

1. If the SPI LED strip is a single wire control mode, the DATA and CLK signal line outputs of the controller are the same, and one controller can connect 4 LED strips.
2. Two or more sets of SPI strip signal lines cannot share the same SPI output port.
3. Note the signal direction indication on the SPI strip, connect the head end, not the end.
4. If the SPI strip voltage is not the same as the single color constant voltage strip voltage, the SPI strip must be powered from a separate switching power supply.
5. The upstairs PIR sensor is connected to the DW PIR INPUT port and the downstairs PIR sensor is connected to the UP PIR INPUT port.
6. When the distance of PIR or daylight sensor extension cable is not enough, and you need to cut the cable to lengthen the connection, pay attention to the wire sequence can not be reversed, otherwise it will damage the sensor head.

## 3 OLED screen and key operations



1. Set Step + Flow output mode, SPI strip chip type, daylight detection:  
Press and hold the M button for 2 seconds to sequentially set the Step + Flow output mode, SPI strip chip type (e.g. TM1809) and daylight detection threshold.
2. Set steps number.  
Short press M button to start setting the steps number (20),  
Continue to press the M button to set ladder length, ladder color effect and speed level sequentially.
3. Set ladder length, i.e. the number of SPI strip pixel points.  
Number of dots = number of pixels per meter x length of ladder.  
Assuming 1 meter 30 LED beads, i.e. 30 pixel points,  
the number of points corresponding to a 10 meter ladder length is 300.
4. Set ladder color effect  
A total of 12 mode effects, of which mode 11 is color float mode.
5. Set speed level  
A total of 8 speeds are selectable,  
the running speed of the step strip and ladder strip change at the same time.

### 6.

#### (1) Manual sensing testing:

Used to manually test the lighting effect of step strips and ladder strips to confirm that the strips are connected and the above settings are correct.

Press and hold the M and > button at the same time for 2 seconds, the step strip and ladder strip will light up step by step from the bottom to the top, and the screen will display "Light up test".

Press and hold the M and < button at the same time for 2 seconds, the step strip and ladder strip will light up step by step from the top to the bottom, and the screen will display "Light down test".

#### (2) Auto-sensing:

When a person walks from downstairs to upstairs, it triggers the upward PIR sensing, the step strip and ladder strip light up step by step from bottom to top, and the screen will display "Light up start".

When a person walks from upstairs to downstairs, it triggers the downward PIR sensing, the step strip and ladder strip light up step by step from top to bottom, and the screen will display "Light down start".

If auto-sensing does not operate, check the PIR sensor and daylight sensor wiring, or if the daylight detection threshold is set correctly.