



## product introduction

The XR256 Series High Speed Strobe Light is a high speed, high power, pulse initiated or pulse following strobe with a maximum strobe rate of 5000 SPS and a pulsed energy rating of 2000 Watts. The XR256 offers eight manually controlled settings between a 20 $\mu$ S to 8mS strobe pulse duration, pulse initiated mode, and features a preprogrammed 2% duty cycle. The XR256 Series also features SafeStrobe Technology ensuring the LED's are protected from overheating and premature degradation.



## product features



- Up to 5000 SPS (Strobes per Second)
- Pulse Following or Pulse Initiated Operation
- High Output, High Speed Light
- Pulsed Energy of 2000 Watts
- OverDrive – Strobe Operation Only
- SafeStrobe Technology for protected operation of LED's
- Internal Storage of Power Drive Energy
- 20  $\mu$ S - 8 mS Settable Strobe Pulse



## product specifications

<b>Electrical Input</b>	24 VDC +/- 5%
<b>Current</b>	Max. current 20A for max.15mS
<b>Duty Cycle</b>	Max. 2%
<b>Strobe/Pulse</b>	Light will trigger on leading edge of pulse
<b>Strobe Rate</b>	Max. 5000 Strobes/Sec.
<b>Pulse Initiated Strobe</b>	8 Settings: 20 $\mu$ S – 8mS
<b>Time Delay ON</b>	1 $\mu$ S – Full ON
<b>Pulse Following Strobe</b>	Light will track strobe pulse – Max. strobe of 8mS
<b>Red Indicator LED</b>	LED Strobe Indicator ON = Light Active
<b>Green Indicator LED</b>	ON = Power
<b>Yellow Indicator LED</b>	Over Temperature – Cool down mode active
<b>Connection</b>	5 pin terminal strip type connector
<b>Lifespan</b>	100,000 hrs
<b>Ambient Temp.</b>	-20' -50' C (-4 - 122 F)
<b>IP Rating</b>	IP50
<b>Weight</b>	~1820g
<b>Certifications</b>	CE and RoHS
<b>IEC 62471 Rating</b>	See page 5



## product number key

# XR256 – WHI – XX –» Part Number Key

**Product Family:**  
Strobe Light  
XR256

**Color:**  
470 – Blue  
530 – Green  
625 – Red  
850 – IR  
WHI - WHITE

**Lens:**  
10 – 10 degree  
30 – 30 degree  
60 – 60 degree  
80 – 80 degree

CE and RoHS Compliant



## warnings



### Attention

Please note that the power requirements are 20A at 24VDC. Failure to supply light with up to 20A can result in non-repeatable lighting. Contact Smart Vision Lights for more information.



## additional info and comparison

XR256 high speed strobe light is capable of up to 5000 Strokes per Second (SPS). Light is pulse initiated or pulse following for strobe adding versatility. Pins 2, NPN, is the sinking input in the pulse following mode and Pin 4, PNP, is the sourcing input in the pulse following mode. XR Series of LED lights have storage of electrical energy to pulse the LED's. XR256 has pulsed energy of 2000 Watts when LED's are active. The XR256 light has a pulsed LED die current of 180 Amps.

The XR256 light has 288mm<sup>2</sup> (144 of 2mm<sup>2</sup> high power die) of LED die running at up to 2000 Watts. For comparison a standard LED light for machine vision had on average 6-12mm<sup>2</sup> of LED die running a 6-12 Watts.

XR Series lights have an LED die temperature monitor that will shut down the light if the LED's exceed the maximum running temperature. When the LED die rises above 80 C°, the light will shut down and begin a rest time. LED die will gain heat based on the LED duration and SPS. A high duty cycle or long durations with high SPS will cause the heat to rise in the die.



## mounting and connector



**T-Nut Kit and 5 pin  
Phoenix Connector**  
(included)



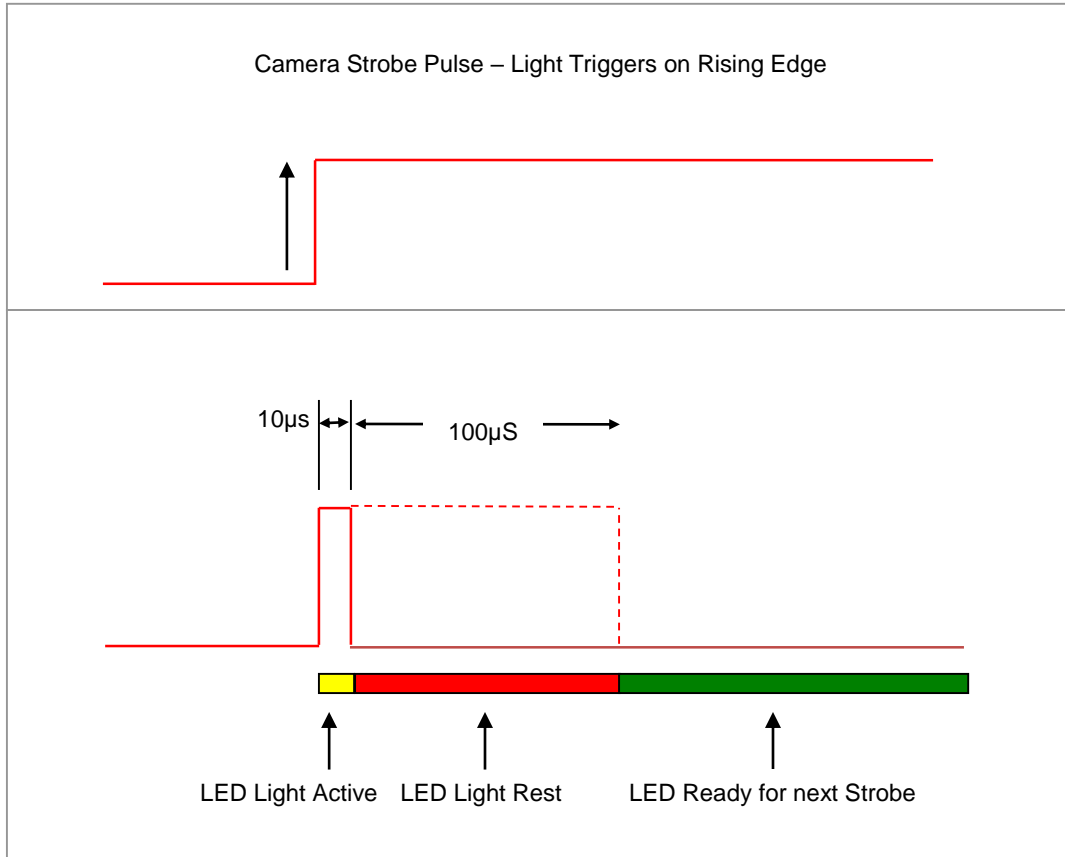
**T-Nut to 1/4 x20  
Mounting Plate Kit**  
(optional)



**XR256**  
Rear View



### Duty Cycle on Performance of Light



**Duty Cycle (D) is defined as the ratio between Strobe Time and Rest Time**

**Maximum Duty Cycle for OD Light with fan is 10% = .1**

Calculating Rest Time - RT

$$RT = \frac{ST}{D}$$

ST is the Strobe Time  
 RT is the Rest Time  
 D is Duty Cycle

**With fan example: Camera exposure of 20µs where Strobe Time is 20µs.**

$$RT = \frac{20\mu s}{.1} = 200\mu s$$

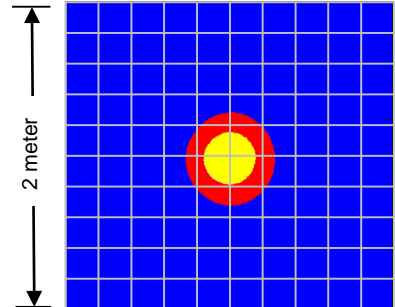
Rest Time is 200µs for 20µs Strobe Time



**XR256-WHI**

Working Distance mm (inches)	Pattern (80%-100% measured intensity) mm (Inches)
1m	360mm(~14") H x 360mm(~14") V
2m	720mm(~28") H x 760mm(30") V

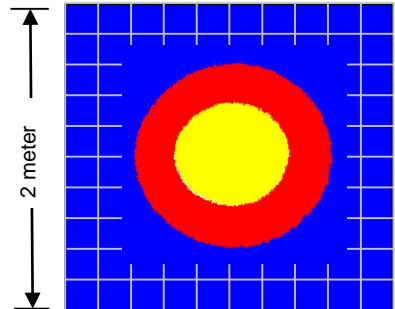
**Brightness Distribution**  
Measured at 1m



**XR256-WHI-20**

Working Distance mm (inches)	Pattern (80%-100% measured intensity) mm (Inches)
1m	
2m	

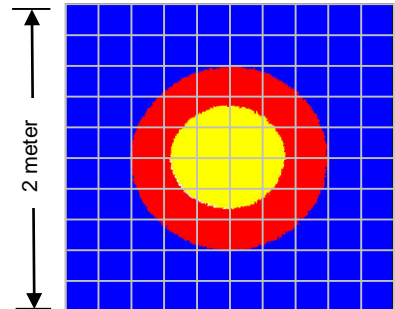
**Brightness Distribution**  
Measured at 1m



**XR256-WHI-30**

Working Distance mm (inches)	Pattern (80%-100% measured intensity) mm (Inches)
1m	780mm(~31") H x 780mm(~31") V
2m	1300mm(~51") H x 1300mm(~51") V

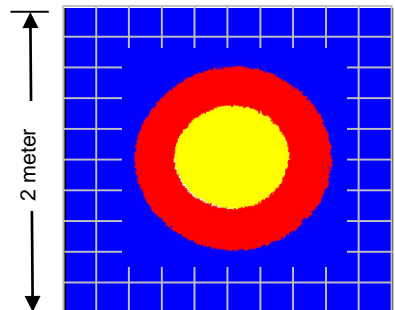
**Brightness Distribution**  
Measured at 1m



**XR256-WHI-50**

Working Distance mm (inches)	Pattern (80%-100% measured intensity) mm (Inches)
1m	
2m	

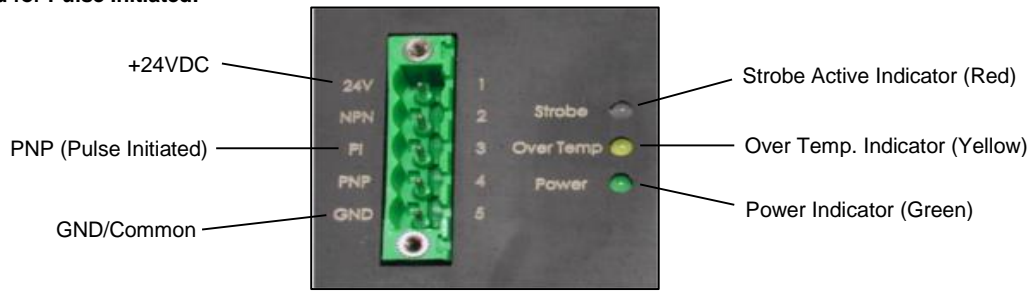
**Brightness Distribution**  
Measured at 1m





## wire configuration

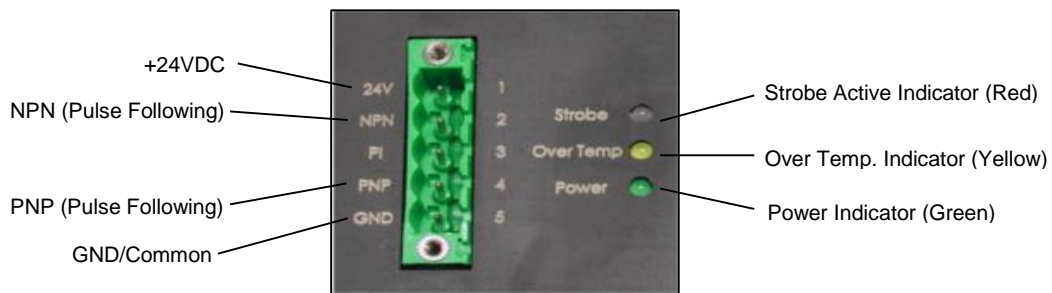
### • Wired for Pulse Initiated:



\*Signal input must be a sourcing PNP input.

\*Strobe duration controlled by adjustment dial.

### • Wired for Pulse Following:



\*Signal input can be sinking NPN or sourcing PNP.

\*Strobe Duration Dial  
(Pulse Initiated Mode)



**Strobe durations include:**

- 20 $\mu$ S pulse
- 50 $\mu$ S pulse
- 100 $\mu$ S pulse
- 250 $\mu$ S pulse
- 500 $\mu$ S pulse
- 750 $\mu$ S pulse
- 1mS pulse



## risk group

According to IEC 62471:2006. Full documentation upon request.

### Notice

Exempt Group: No photobiological hazard to eyes or skin even for continuous, unrestricted use.  
Applicable for wavelengths: 625 and 850.

### Caution

**Risk Group 1:** Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp. May be harmful to eye. Safe for most applications except prolonged exposures.  
Applicable for wavelengths: 470, 530, WHI.