



## product introduction

The ODSP30 Series Projector Light offers the most intense projected spot size offered from a single source LED. This light features an Overdrive driver with NPN or PNP signal options. The 9mm<sup>2</sup> die size emits 5x the intensity as a constant current SP30. The housing is constructed of 6061-T6 aluminum designed to dissipate as much heat as possible therefore allowing the LED to be run at a much higher current than the standard 1mm<sup>2</sup> die LED's. Multiple interchangeable pattern styles are available along with optional custom patterns. The ODSP30 Series is able to project a much thinner and define pattern of light compared to laser projectors making the ODSP30 a more accurate and better light.



## product features



- Multiple Interchangeable Patterns
- SafeStrobe Technology
- PNP and NPN Strobe Input
- Dimmable Via Built In Potentiometer
- Analog Intensity 0-10VDC Signal
- Up to 5000 Strokes Per Second
- 5x The Intensity Of The SP30
- Maximum Strobe Time 50mS
- One, 9mm<sup>2</sup> Die High Current LEDs



## product specifications

<b>Electrical Input</b>	24 VDC +/- 5%
<b>Current</b>	Max. 10A draw during strobe – Max. Average 1A
<b>Wattage</b>	Max. 240W during strobe – Max. Avg. 24W
<b>Strobe Input</b>	PNP ► +4VDC or greater to activate.   NPN ► GND (<1VDC) to activate
<b>PNP Line</b>	3.7mA @ 3VDC   6.2mA @ 5VDC   12.6mA @ 10VDC   30.4mA @ 24 VDC
<b>NPN Line</b>	22mA @ Common (0VDC)
<b>Duty Cycle</b>	Max. 10%
<b>Strobe/Pulse Time</b>	Max. 5000 SPS (Strokes Per Second)   Max. Single Pulse = 50ms
<b>Red Indicator LED</b>	ON = LED Rest (LED inactive) OFF = LED/Light Ready
<b>Green Indicator LED</b>	ON = Power
<b>Potentiometer</b>	10 turn pot – Intensity control of 10% to 100% Clockwise increases intensity
<b>Analog Intensity</b>	The output is adjustable from 10 -100% of brightness by a 0 -10 VDC signal
<b>Connection</b>	5 pin M12 connector
<b>Ambient Temp.</b>	-20° - 50° C (-4° - 122° F)
<b>IP Rating</b>	IP50
<b>Weight</b>	~290g
<b>Compliances</b>	CE and RoHS
<b>IEC 62471 Rating</b>	See page 6



## product number key

# ODSP30 – XXX –» Part Number Key

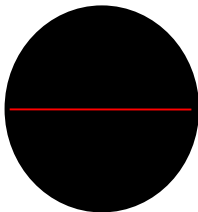
Product Family:  
Projector Light  
ODSP30

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

CE and RoHS Compliant

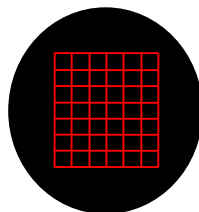
Standard patterns are available and custom patterns can be etched. Patterns can be changed.

Line



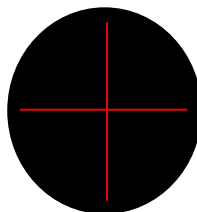
SP-PO-1LN

Grid



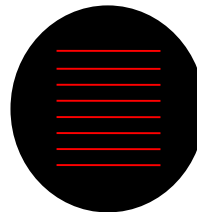
SP-PO-8x8GRID

Cross



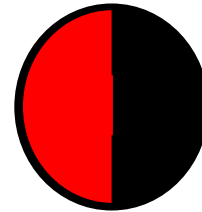
SP-PO-CH

Multiple Line



SP-PO-8LN

Half Sphere



SP-PO-HS



## warnings



### Attention

Please note that the power requirements are 10A at 24VDC. Failure to supply light with 10A will result in non-repeatable lighting. Contact Smart Vision Lights for more information.



## wiring configuration

If Analog 0-10 VDC is not used to control light intensity;  
+VDC (24VDC) must be connected to Analog Input - Jumper pin 5 to pin 1

	Pin	Function	Signal	Wire Color
	1	Power In	+24VDC	BROWN
	2	NPN	Sinking Signal	WHITE
	3	GND	Ground	BLUE
	4	PNP	Sourcing Signal	BLACK
	5	Intensity Control	0-10VDC	GREY †

† Some cables use green with yellow stripe for 0-10V adjustment



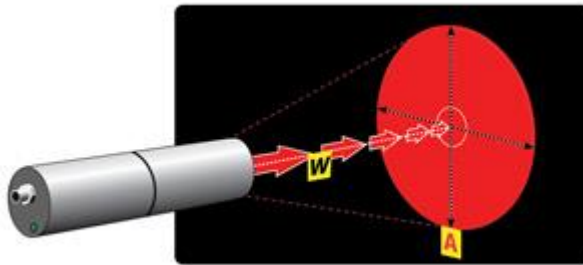
## optical performance

W = Working Distance

A = Diameter of Area

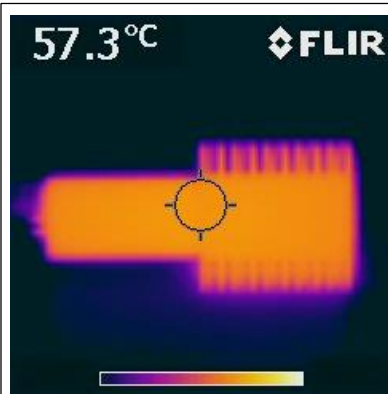
	100mm	150mm	200mm	300mm	400mm	500mm	600mm	750mm	1000mm	1500mm	2000mm
60mm			25			50					
100mm	8	12	16	25	35	35	50	50			
150mm	6	8	12	16	25	25	35	35	50	75	
200mm		6	8	12	16	16	25	25	35	50	100
300mm			6	8	12	12	16	16	25	35	50
400mm				6	8	8	12	12	16	25	35
500mm					6		8	12	16	25	25

Number in box represents the focal length of lens (example - 6 is a 6mm focal length lens)



## thermal analysis

In constant operation the housing on ODSP30 series lights will run at 50 C° in an ambient temperature of 25 C°.



ODSP30 series aluminum enclosures designed to transfer heat away from the high power LED.

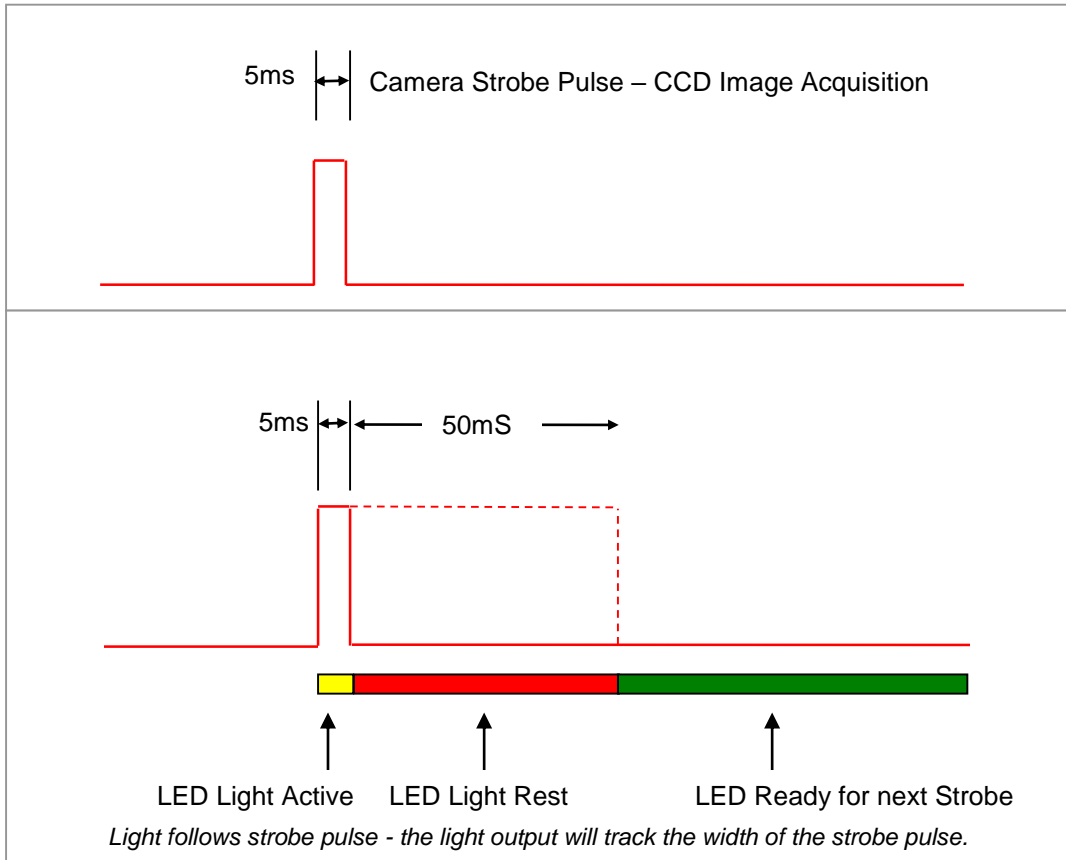
Additional heat sinking recommended in ambient air temperatures above 25°C.

Thermal image taken after 2 hours of continuous ON operation at 25°C.



### Duty Cycle on Performance of Light

All lights are pulse following



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

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

Calculating Rest Time -  $R_T$

$$R_T = \frac{S_T}{D}$$

$S_T$  is the Strobe Time  
 $R_T$  is the Rest Time  
 $D$  is Duty Cycle

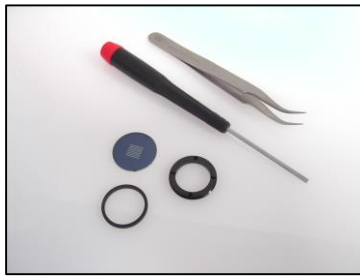
**Example: Camera exposure of 5mS where Strobe Time is 5mS.**

$$R_T = \frac{5ms}{.1} = 50ms$$

Rest Time is 50ms for 5ms Strobe Time



## pattern replacement



Tools: small screwdriver or tweezers

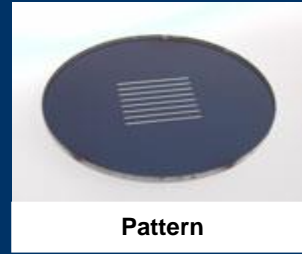


Pattern

Retaining Ring



Retainer Ring

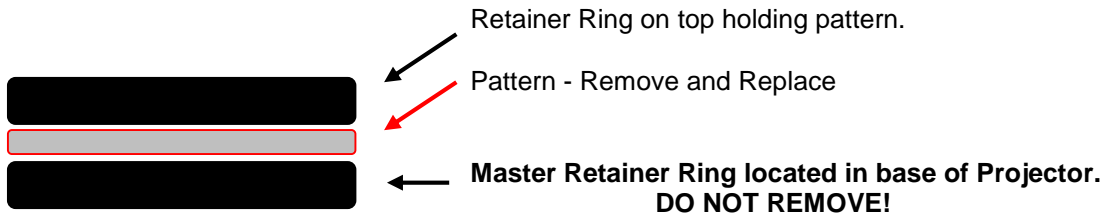


Pattern

### Removal of Retaining Ring

Screwdriver or Tweezers to remove retaining ring. Retaining Ring will turn Clockwise to install and Counter-Clockwise to remove. There are 2 small holes and 2 slots in ring to install/remove.

### Arrangement of Retainer Ring and Pattern.





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

**Notice**

Exempt Group: No photo biological hazard to eyes or skin even for continuous, unrestricted use.  
Applicable for wavelengths: 625, 850, and 940.

**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: 395, 470, 505, 530, and WHI.

**Notice**

Risk Group 1: UV emitted from this product. Minimize exposure to eyes and skin. Use appropriate shielding. Safe for most applications except prolonged exposures.  
Applicable for wavelengths: 395

**Caution**

Risk Group 2: UV emitted from this product. Eye or skin irritation may result from exposure. Use appropriate shielding. Does not pose optical hazard if aversion responses limit exposure.  
Applicable for wavelengths: 365