



## product introduction

The ODR80 Series of brick light features an Overdrive driver with NPN or PNP signal options. The all metal construction of the Ring Light Series of lights provides a small particle resistant and all around durable light. Its simple plug and play 5 Pin M12 connector allows for ease of use while allowing for full control. The 0-10 VDC intensity control assists in gaining full control of the light output. A standard 42 mm inner hole diameter allows for use with nearly all camera systems with available step-up and step-down conversion kits adapters.



## product features



- 4-5 times brighter than standard high current LEDs
- SafeStrobe Technology
- T-Slot for mounting
- Conversion adapters for different cameras
- PNP and NPN Strobe input
- OverDrive/Strobe only
- Up to 2000 strobes per second
- Maximum Strobe Time 125mS
- Four, 1mm<sup>2</sup> Die High Current LEDs



## product specifications

<b>Electrical Input</b>	24 VDC +/- 5%
<b>Current</b>	Max. 2A draw during strobe – Max Average 200mA
<b>Wattage</b>	Max. 4.8W
<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. Single Pulse = 125ms
<b>Red Indicator LED</b>	ON = Light 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 Integral QD connector
<b>Ambient Temp.</b>	-20° - 50° C (-4° - 122° F)
<b>IP Rating</b>	IP50
<b>Weight</b>	~183g
<b>Certification</b>	CE and RoHS certified
<b>IEC 62471 Rating</b>	See page 5



## product number key

# ODR80 – XXX – X\* —» Part Number Key

Product Family:  
Ring Light  
ODR80

Color:  
365, 395, 470, 505,  
530, 625, 850, 940  
& WHI (White)

Lenses:  
N - Narrow

\* Lights come standard with Narrow lenses

CE and RoHS Compliant



## warnings

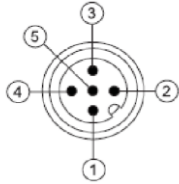


### Attention

Please note that the power requirements are up to 2A at 24VDC. Failure to supply light with up to 2A can result in non-repeatable lighting. Contact Smart Vision Lights for more information.



## wiring configuration



1 – 24V  
2 – NPN  
3 – GND  
4 – PNP  
5 – 0-10V

### Standard M12 mating cable color code:

BROWN  
WHITE  
BLUE  
BLACK  
\*GRAY (GREEN/YELLOW)

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

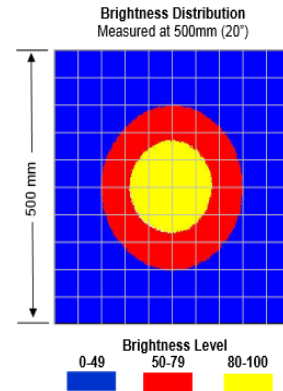
PIN	Wire Color	Function	Signal
1	BROWN	Power	+24 VDC
2	WHITE	NPN Strobe	GND for Active ON
3	BLUE	Ground	GND
4	BLACK	PNP Strobe	4VDC to 30VDC for Active ON
5	GREEN	Analog Intensity Control	0-10 VDC



## optical performance

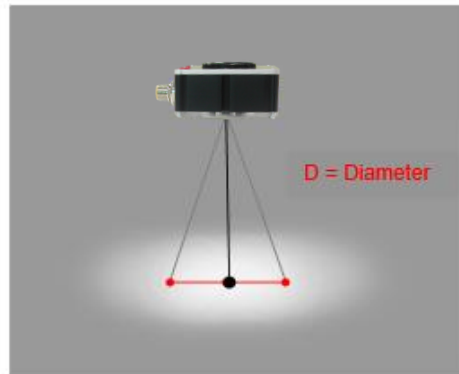
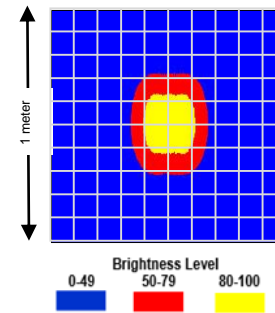
### ODR80-XXX

Working Distance mm (inches)	Pattern (80%-100% measured intensity) mm (Inches)
.25m (10")	90mm(3.5") D
.5m (20")	180mm(7") D
.75m (30")	270mm(10.5") D
1m (40")	360mm(14") D
Typical output performance	
Distance = .5 meter	Illumination (Lux) 18000
<i>Illumination measurement taken on White Lights – 6500K</i>	



### ODR80-XXX-W

Working Distance mm (inches)	Pattern (80%-100% measured intensity) mm (Inches)
.25m (10")	80mm (~3.1")
.5m (20")	90mm (~3.54")
.75m (30")	135mm (~5.3")
1m (40")	190mm (~7.5")
Typical output performance	
Distance = .5 meter	Illumination (Lux) 37000
<i>Illumination measurement taken on White Lights – 6500K</i>	



## mounting & accessories

Standard industrial T-slots on each side accept T-nuts



Front mounting of Lens to Ring Light



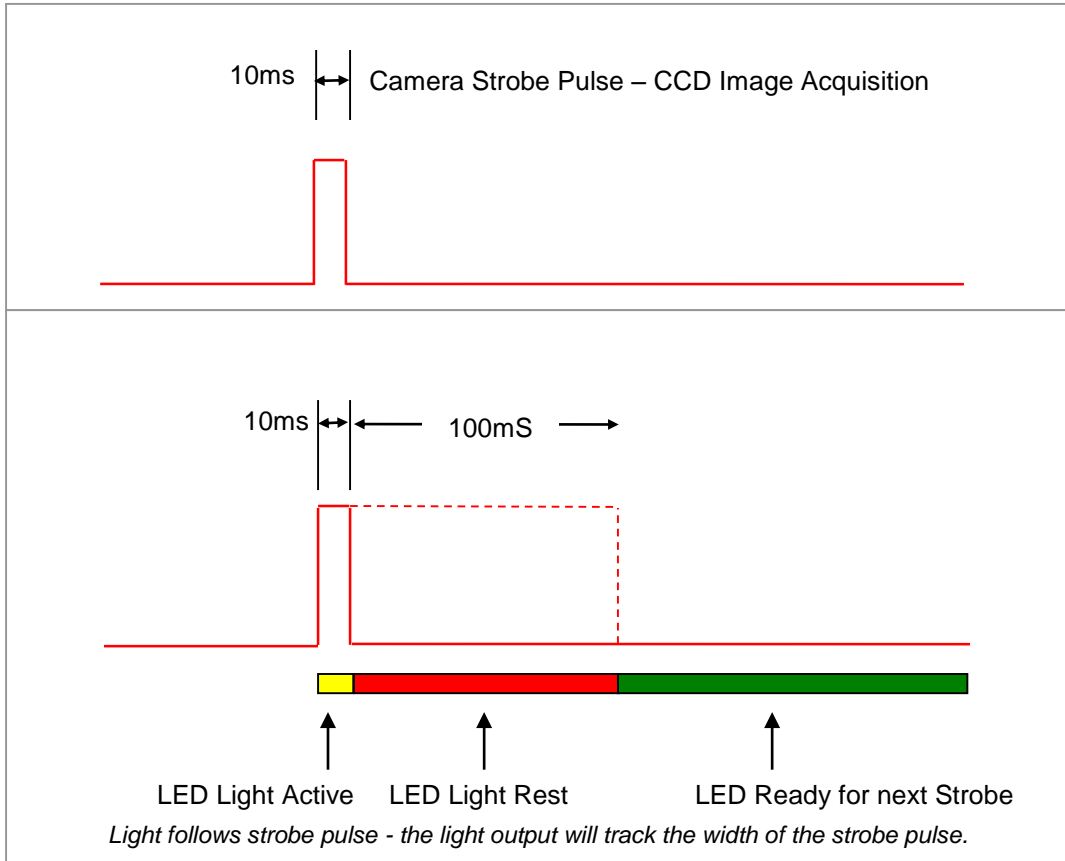
Rear mounting of Lens to Ring Light





### 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 - RT

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

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

**Example: Camera exposure of 10mS where Strobe Time is 10mS.**

$$RT = \frac{10ms}{.1} = 100mS$$

Rest Time is 100ms for 10ms Strobe Time



### Standard Adapter Kit – Part # SU46-25.5-27

Adapter Kit includes 2 step up rings (25.5 and 27), 6 set screws and hex tool. 6 set screws – 3 for mounting step up ring to light and 3 additional for lens. Some locking thumbscrews may prevent the lens from fitting through the center of the R80, extra low-profile replacement set screws are included, allowing the protruding thumbscrews to be removed.



### Step Up Adapter Kits

Step Up Adapter Kits includes step up rings, 6 set screws and hex tool. Lenses can be mounted to front or back of ring light. Filters



M46 step-up	Lens thread size	Part #
46-	25.5	SU46-25.5/27
46-	27	SU46-25.5/27
46-	30.5	SU46-30.5
46-	34	SU46-34
46-	37	SU46-37
46-	37.5	SU46-37.5
46-	39	SU46-39
46-	40.5	SU46-40.5
46-	43	SU46-43

### Step Down Adapter Rings

Step Down rings mount large lenses to light. Step Down rings mount lenses to back of ring light. Filters can also be installed.



M46 step-down	Lens thread size	Part #
46-	49	SD46-49
46-	52	SD46-52
46-	55	SD46-55
46-	58	SD46-58
46-	62	SD46-62
46-	67	SD46-67
46-	72	SD46-72



- 0-10 VDC Intensity Adjust
- Rest Indicator LED (Red)
- Power Input Plug
- Power Indicator LED (Green)



## 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, 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