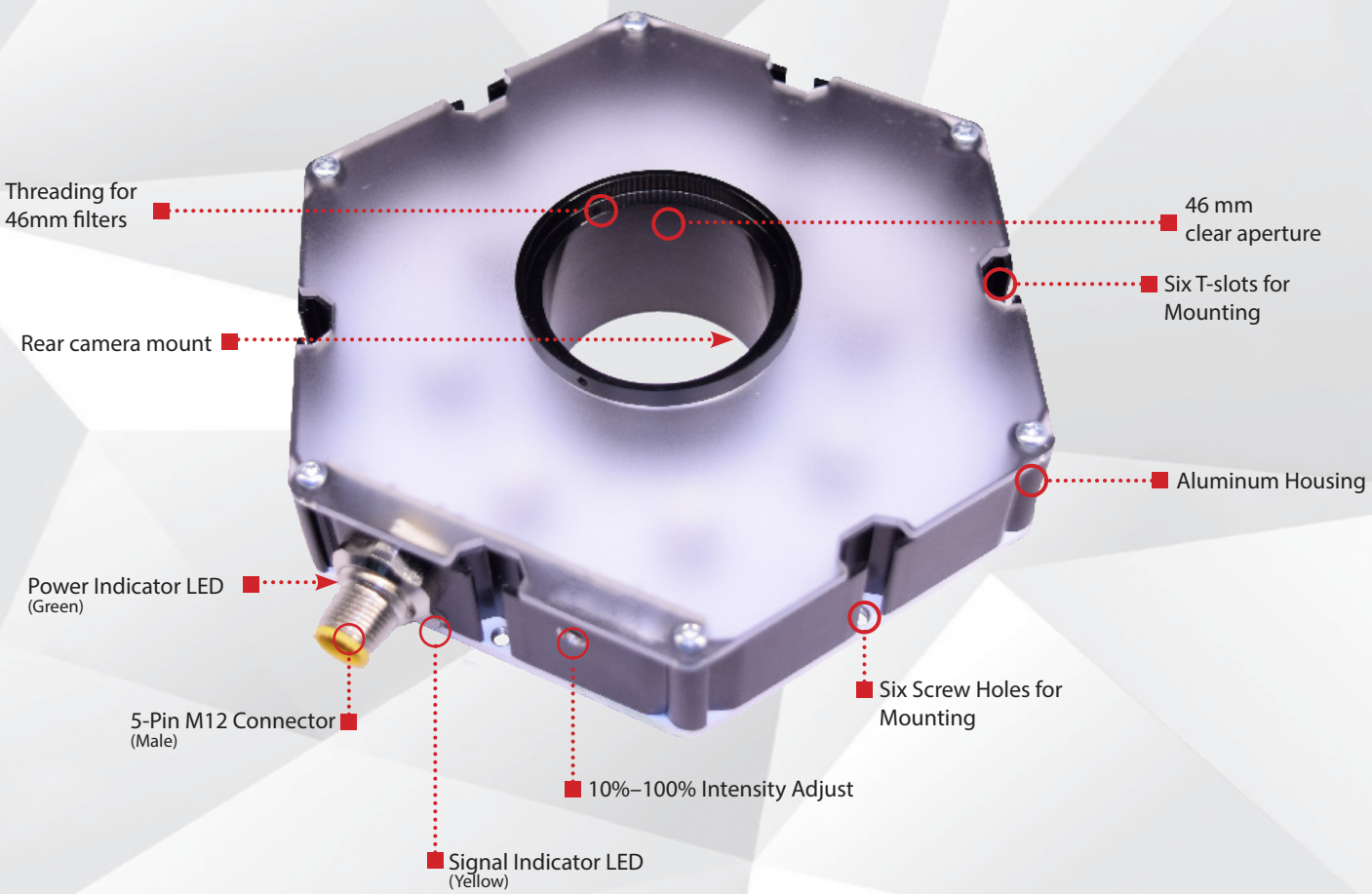
smart vision lights ODR130 EZ Mount RING LIGHT OVERDRIVE™

PRODUCT DATA SHEET



OverDRIVE™

Warranty	Tested	Compliant	Connector
10 YEAR	IEC 62471	CE RoHS	5-PIN M12

PRODUCT HIGHLIGHTS

- ✓ OverDrive™ — Up to five times brighter than a standard EZ Mount Ring Light
- ✓ SafeStrobe™ technology ensures protected operation of LEDs
- ✓ T-slot for mounting
- ✓ Conversion adapters for different cameras available

Rev. 10/14/26

PRODUCT INTRODUCTION

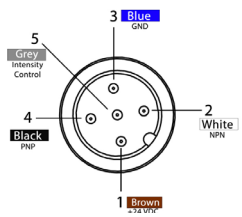
The ODR130 is an all-around durable ring light that also features an OverDrive™ driver with NPN or PNP signal options. Its simple plug-and-play 5-pin M12 connector is easy to use. The 10%–100% intensity control gives users full control over light output. A standard 46 mm inner hole diameter allows for use with nearly all camera systems with available step-up and step-down conversion kit adapters.

PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/–5%
Input Current	Peak 4 A during strobe
Input Power	Peak 96 W during strobe
PNP Trigger	2.8 mA @ 4VDC | 8.8 mA @ 12VDC | 17.6 mA @ 24VDC
NPN Trigger	14.4 mA @ Common (0VDC)
Trigger Input	PNP > +4 VDC (24 VDC max.) to activate or NPN ≥ GND <1VDC to activate (not both)
Strobe Trigger Latency	6 µs
Strobe Duration	Min. 30 us | Max. 125 ms
Strobe Frequency	Max 4 kHz or 1 / Duty Cycle as calculated, whichever is less*
Power Indicator	Turns green when powered up
Status Indicators	Strobe indicator will turn red while resting and turn off when ready
Intensity Limit	270º turn pot. Turn clockwise to increases intensity limit.
Analog Intensity	The output is adjustable from 10%–100% of intensity limit by a 1 – 10VDC signal.
Connection	5-pin M12 connector
Operating Temperature	-10° to 40° C (14° to 104° F) | RH max 80% non-condensing humidity
Storage Temperature	-20° to 70° C (-4° to 158° F) | RH max 80% non-condensing humidity
Weight	~325 g
Compliances	CE, RoHS, IEC 62471
Warranty	UV LEDs have a 2 year warranty, all other LEDs have a 10 year warranty. For complete warranty information, visit smartvisionlights.com/warranty.

*See page 5 for more information

WIRING CONFIGURATION



Pin layout for light (Male Connector)

Pins	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	1–10VDC	GREY*

For maximum intensity, tie pin 5 to pin 1 at +24VDC.

For proper light function, apply either a PNP or NPN signal, not both. Failure to supply light with correct input current will result in inconsistent lighting behavior. (see Product Specifications for requirements

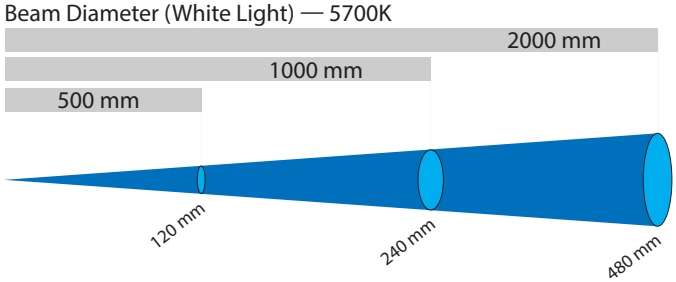
RESOURCE CORNER

Additional resources, including CAD files, videos, and application examples, are available on our website.

OPTICAL PERFORMANCE

Smart Vision Lights recommends the ODR130 be used at a working distance between 300 mm and 4000 mm.

Beam Diameter (White Light) — 5700K

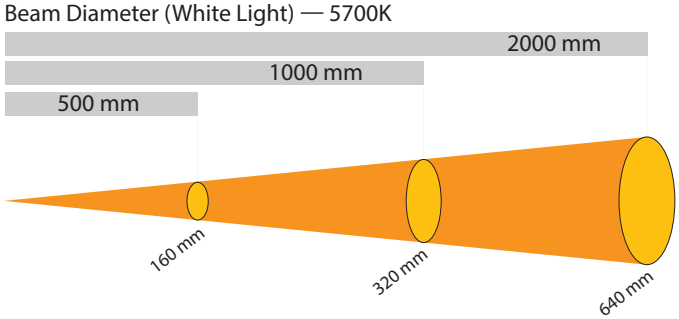


LIGHTING PATTERN FOR THE ODR130-**XXX-N**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
500 mm (19.7")	120 mm (~4.8")
1000 mm (39.4")	240 mm (~9.5")
2000 mm (78.8")	480 mm (~18.9")

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	58,000
Illuminance measurement taken on White Lights — 5700 K	

Beam Diameter (White Light) — 5700K



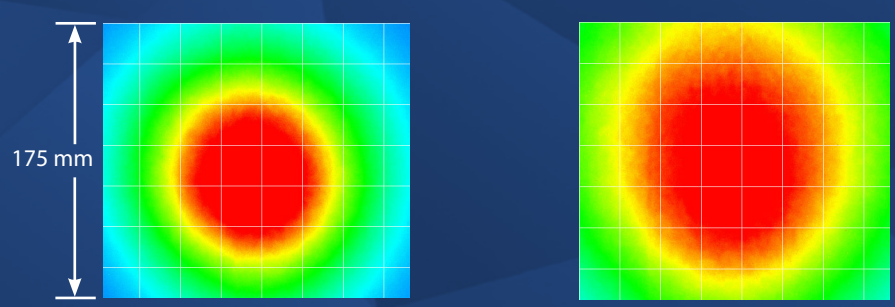
LIGHTING PATTERN FOR THE ODR130-**XXX**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
500 mm (19.7")	160 mm (~6.3")
1000 mm (39.4")	320 mm (~12.6")
2000 mm (78.8")	640 mm (~25.2")

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	40,000
Illuminance measurement taken on White Lights — 5700K	

The ODR130 Ring Light produces a uniform light pattern.

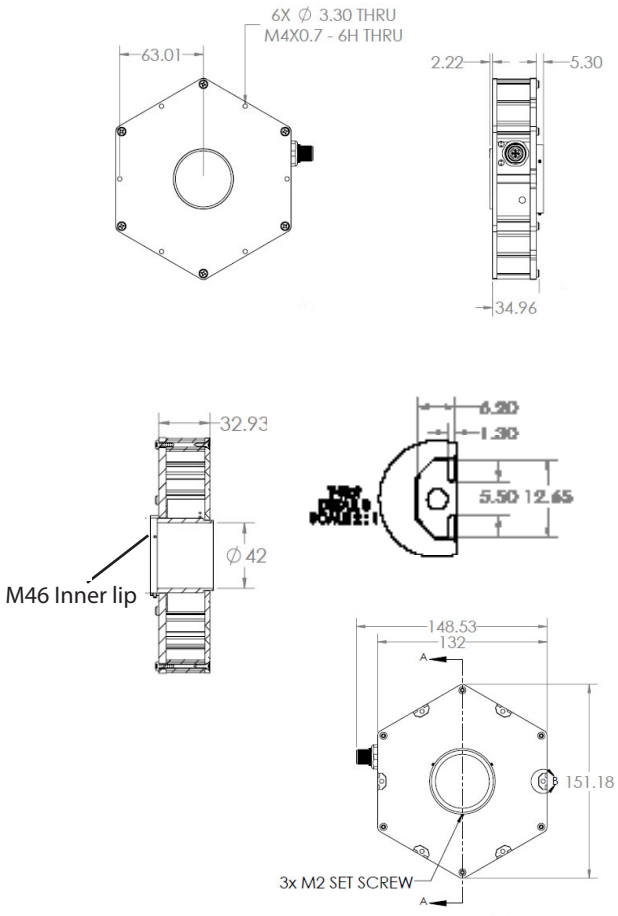
Working Distance = 500 mm Grid set to 25 mm x 25 mm



Narrow Wide

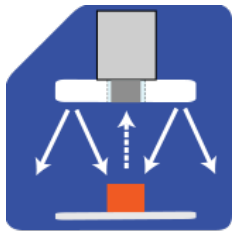
PRODUCT DRAWING

CAD files available on our website.
Dimensions are in mm.



ILLUMINATION

ODR130 Series of Ring Lights works best for:



Radial

EYE SAFETY

According to IEC 62471: 2006. Full documentation available 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 eyes. Safe for most applications except prolonged exposure. Applicable for wavelengths 470, 505, 530, and WHI.

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 and 395.

PART NUMBER

ODR130 – □□□ – □

COLOR:

WHI · 365 395 · 470 · 505 · 530 · 625 · 850 940

LENS:

Leave blank for Standard (Wide)

N = Narrow

Part Number Examples:

ODR130-625	ODR130, 625 Red Wavelength, Standard (Wide) Lens
ODR130-WHI-N	ODR130, White, Narrow Lens

Additional wavelength and lens options available upon request.

LENS OPTICS

NARROW
Narrow, 14° angle cone lenses project a narrow beam of illumination and are used for long working distances.

WIDE (STANDARD)
Wide, 30° angle cone lenses project a large area of illumination. They create a floodlight effect, can be used for short working distances.

** Additional lens options available upon request.*

When to Use a Linear Polarizer?

Polarizing filters can reduce reflections on specular (Dielectric or nonmetal)surfaces.

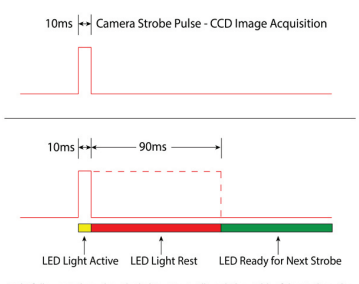
A Linear Polarizer has a typical transmission of 38 percent while blocking 62 percent of the light not in the polarization plane.

WARNING: Running a light in continuous operation while using a standard polarizer with certain wavelengths (e.g. white, blue) may burn the polarizer.

DUTY CYCLE

This section applies only if light is in OverDrive™ strobe mode.

The Duty Cycle (D) is related to the Strobe Time (ST) and Rest Time (RT).



Light follows strobe pulse - the light output will track the width of the strobe pulse.

Calculating Rest Time

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

RT = Rest Time
ST = Strobe Time
D = Duty Cycle

Example

$$90\text{ ms} = \frac{10\text{ ms}}{.1} - 10\text{ ms}$$

Rest Time is 90 ms for 10 ms Strobe Time

Calculating Strobe Rate

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

SR = Strobe Rate (strobes per second)
ST = Strobe Time (seconds)
D = Duty Cycle

Example

$$1000 = \frac{0.1}{0.0001}$$

Strobe Rate is 1000 strobes per second

Calculating Duty Cycle

$$D = ST \times SR$$

SR = Strobe Rate (strobes per second)
ST = Strobe Time (seconds)
D = Duty Cycle

Example

$$0.1 = 0.0001 \times 1000$$

Duty Cycle is 10% (0.1)

Maximum Duty Cycle for OverDrive™ light is 10% (0.1)

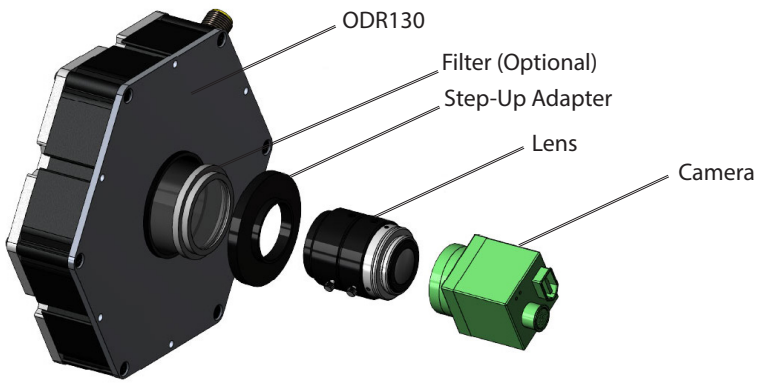
Maximum Strobe Frequency is 1/ calculated duty cycle or 4,000 strobes per second, whichever is less.

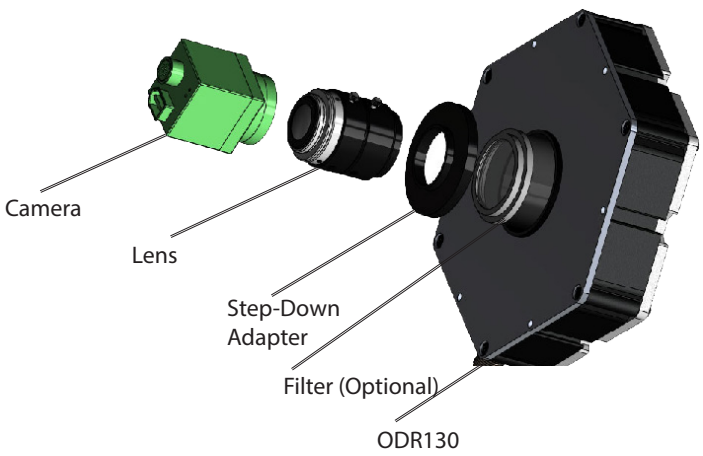
STEP-UP/STEP-DOWN ADAPTER KITS

Step-Up/Step-Down Adapter Kits allow the M46 thread on ring lights to be mounted directly to the threads found on the front-end of most popular lenses.

Step-Up Adapters allow for mounting a lens that is smaller in diameter to an EZ Mount Ring Light, while Step-Down Adapters allow for mounting a larger lens to an EZ Mount Ring Light.

These kits include: a set of screws and a hex wrench.





STEP-UP/STEP-DOWN ADAPTER KITS PART NUMBERS

STEP-DOWN ADAPTER

SD– □□ – 46

LENS THREAD SIZE	RING LIGHT THREAD SIZE
49	
52	
55	
58	
62	
67	
72	

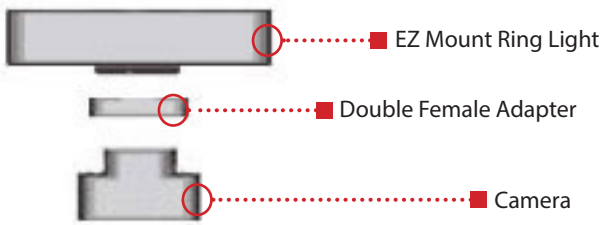
STEP-UP ADAPTER

SU– □□□□ – 46

LENS THREAD SIZE	RING LIGHT THREAD SIZE
25.5	
27	
30.5	
34	
35.5	
37	
39	
40.5	
43	

CAMERA MOUNTING ADAPTERS

When mounting a camera directly on to an EZ Mount Ring Light, a Double Female (DF) threaded camera adapter is used.



DOUBLE-FEMALE ADAPTER

DF – □□□□ – 46

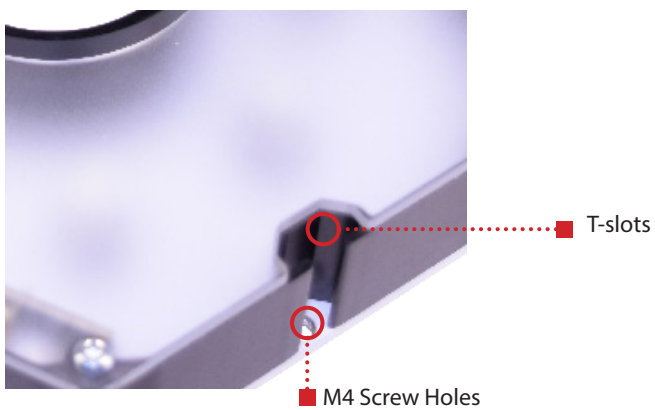
CAMERA THREAD SIZE	RING LIGHT THREAD SIZE
34.9	
55	
60	

*When mounting an EZ Mount Ring Light, a double-female adapter is used.

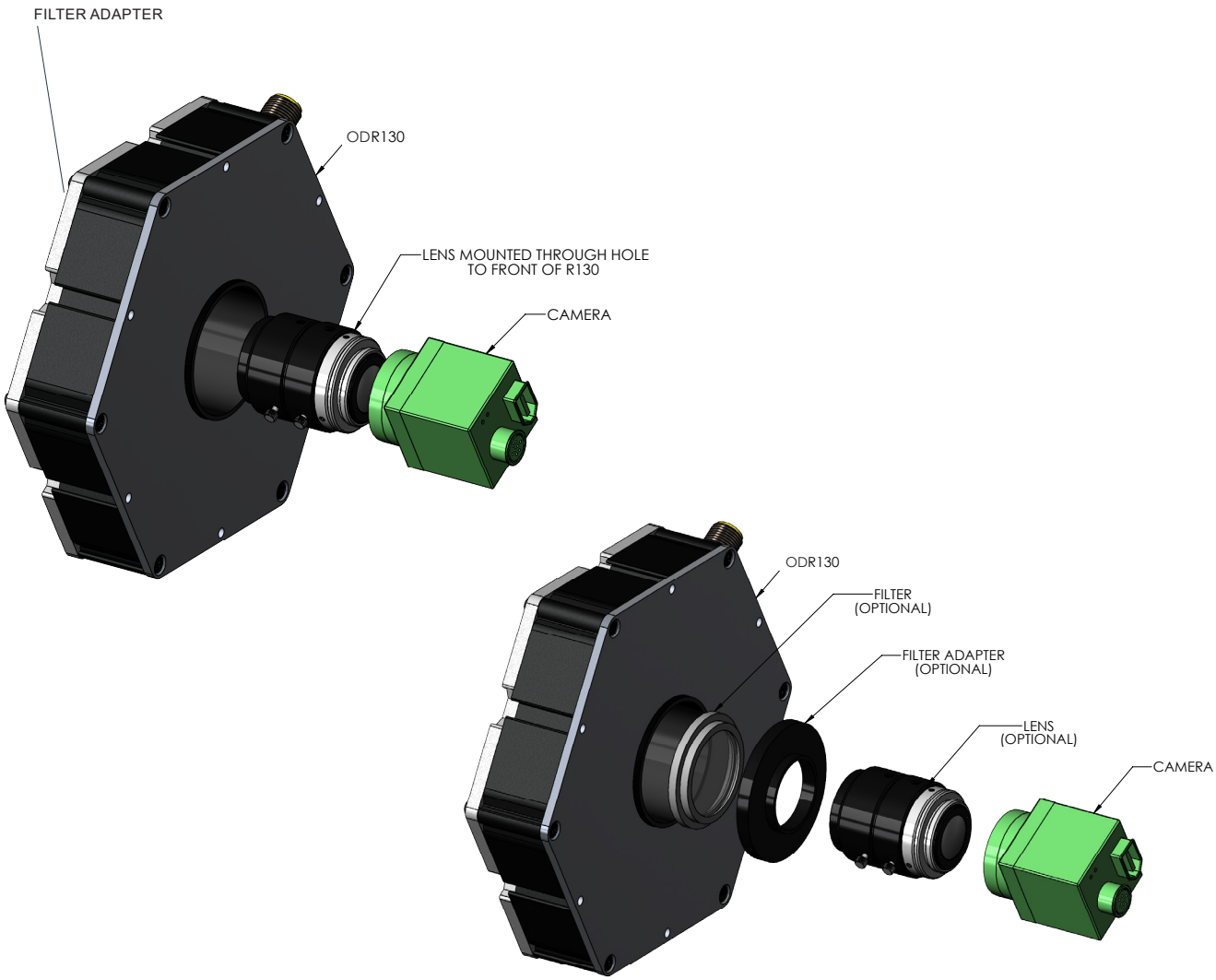
MOUNTING

Mounting options on the ODR130 EZ Mount Ring Light include six T-slots and six M4 threaded holes.

Optional Mounting Hardware:
T-slots = M5 x 0.8 mm T-nut
Threaded screw holes = M4 screws



CAMERA MOUNTING EXAMPLES



ACCESSORIES

Step Up Kits

Lens Thread Size	Part Number
25.5 mm	SU25.5-46
27 mm	SU27-46
30.5 mm	SU30.5-46
34 mm	SU34-46
35.5 mm	SU35.5-46
37 mm	SU37-46
39 mm	SU39-46
40.55 mm	SU40.5-46
43 mm	SU46-46

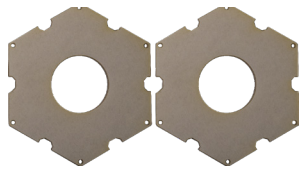
Step-Down Kits

Lens Thread Size	Part Number
49 mm	SD49-46
52 mm	SD52-46
55 mm	SD55-46
58 mm	SD58-46
62 mm	SD62-46
67 mm	SD67-46
72 mm	SD72-46

Power Cables

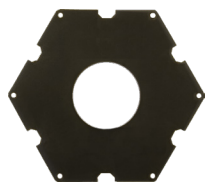
Length	Part Number
5 m	5PM12-5
10 m	5PM12-10
15 m	5PM12-15

Diffuser



Description	Part Number
Diffuser Kit	R130-DKIT

Linear Polarizer



Description	Part Number
Linear Polarizer Kit	R130-LP

Camera Adapters

Camera Thread Size	Part Number
55 mm	DF55-46
60 mm	DF60-46
34.9 mm	DF34.9-46

GLOSSARY

This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

TERMINOLOGY

OverDrive™ Light includes an integrated high-pulse driver for complete LED light control.

Continuous Operation Light stays on continuously.

Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-pulse operation) mode into one easy-to-use light.

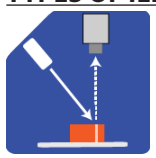
Built-In Driver The built-in driver allows full function without the need for an external controller.

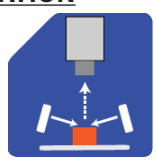
Camera to Light Connect the light directly to the camera, without the need for additional controllers or equipment.

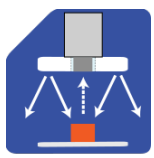
Polarizers Filters that reduce reflections on specular surfaces.

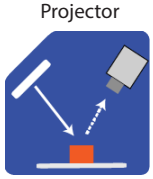
Diffusers Used to widen the angle of light emission, reduce reflections, and increase uniformity.

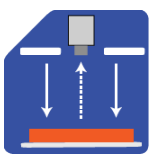
TYPES OF ILLUMINATION

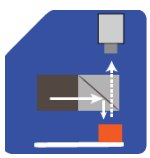

Projector

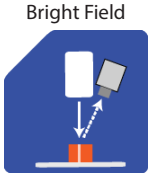

Dark Field

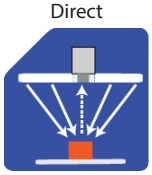

Radial

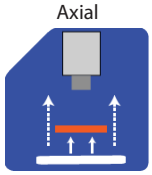

Bright Field


Direct


Axial

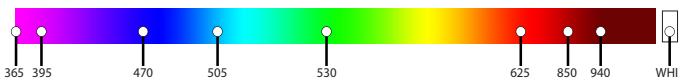

Line


Diffuse Panel


Backlight

COLOR/WAVELENGTHS LEGEND

Wavelength options range from 365 nm to 1550 nm.*
Additional wavelengths available for many light families.



See Part Number section for **this light available standard wavelengths.*

SWIR SHORT WAVE **INFRARED**

Shortwave infrared LEDs are available in 1050 nm, 1200 nm, 1300 nm, 1450 nm, and 1550 nm.*

Check Part Number section to see if **this light is available in SWIR wavelengths.*