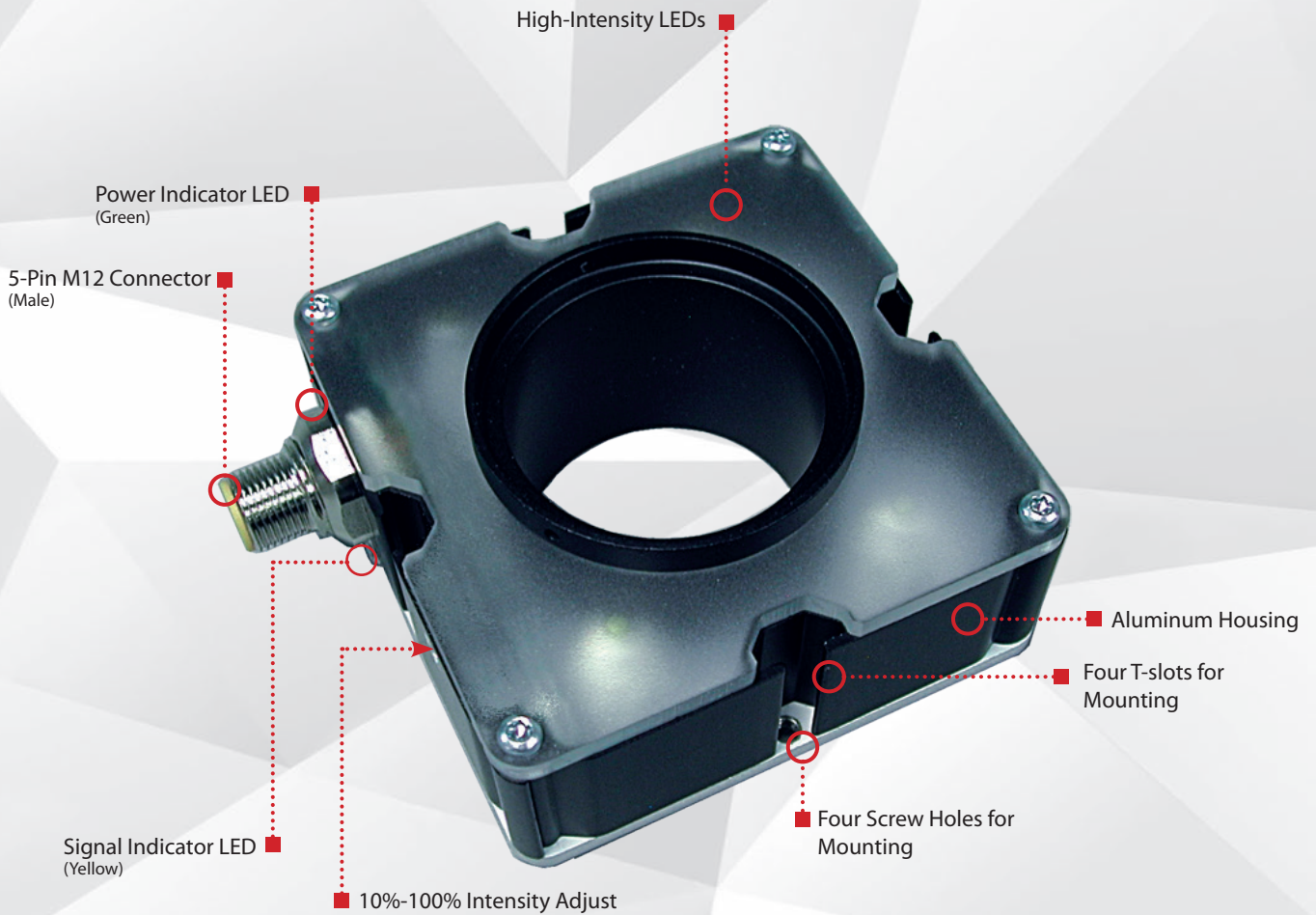


P R O D U C T D A T A S H E E T



Warranty
10
YEAR

Compliant
IEC
62471

Compliant
CE
RoHS

Rated
IP
50

Connector
5-PIN
M12

PRODUCT HIGHLIGHTS

- ✓ 5-pin M12 quick connect
- ✓ Built-in driver
- ✓ PNP and NPN trigger input signal
- ✓ Conversion adapters for different cameras available



PRODUCT DESCRIPTION

The R80 is an all-around durable light. Its simple plug-and-play 5-pin M12 connector is easy to use. The R80 operates with either an NPN or a PNP signal and runs on an industry-standard 24VDC. The 10%-100% intensity control gives users full control over 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 kit adapters.

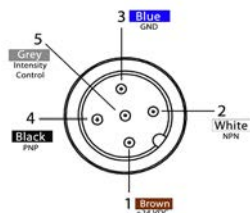


PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/-5%
Input Current	Max. 350 mA
Wattage	Max. 8.4 W
On/Off Input	PNP > +4VDC or greater to activate NPN > GND (<1VDC) to activate
PNP Line	4 mA @ 4VDC 10 mA @ 12VDC 20 mA @ 24VDC
NPN Line	15 mA @ ground (0VDC)
Yellow Indicator LED	LED Strobe Indicator ON = Light Active
Green Indicator LED	ON = Power
Continuous Mode	NPN can be tied to ground OR PNP can be tied to 24VDC (not both)
Potentiometer	270° turn pot – intensity control of 10%–100%. Turn clockwise to increases intensity.
Analog Intensity	The output is adjustable from 10%–100% of brightness by a 1–10VDC signal. (Jumpering pin 5 to pin 1 will provide maximum intensity.)
Connection	5-pin M12 connector
Ambient Temperature	-18°–40°C (0°–104°F)
IP Rating	IP50
Weight	~183 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 .



WIRING CONFIGURATION



Pin layout for light (Male Connector)

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	1–10VDC	GREY*

Some cables use green/yellow for pin 5.

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

*For continuous mode: Tie PNP (pin 4) to +24VDC (pin 1) **or** tie NPN (pin 2) to ground (pin 3).*

NOTICE

If Analog 1–10VDC is not used to control light intensity, analog input must be connected to +VDC (24VDC) — jumper pin 5 to pin 1.



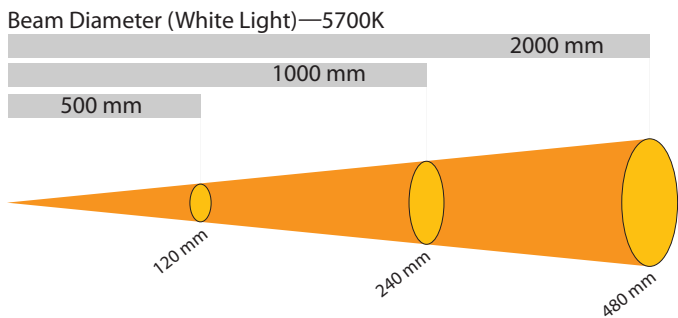
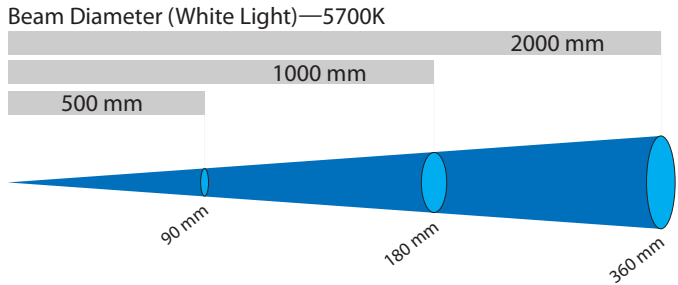
RESOURCE CORNER

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



LIGHT PATTERNS

Smart Vision Lights recommends the R80 be used at a working distance between 500 mm and 4000 mm.



LIGHTING PATTERN FOR THE R80-XXX-N

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
500 mm (19.7")	90 mm (~3.5")
1000 mm (39.4")	180 mm (~7.1")
2000 mm (78.8")	360 mm (~14.2")

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	6500
<i>Illuminance measurement taken on White Lights—5700K</i>	

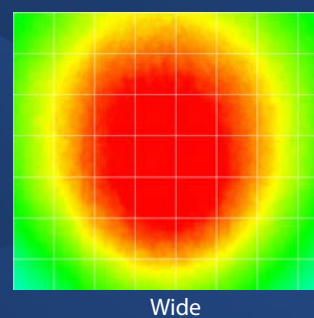
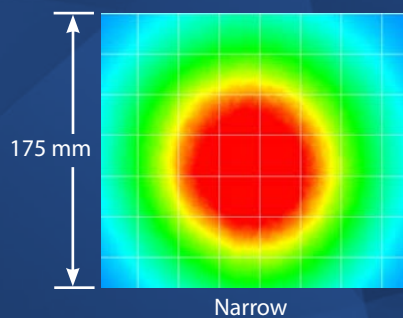
LIGHTING PATTERN FOR THE R80-XXX

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	4900
<i>Illuminance measurement taken on White Lights—5700K</i>	

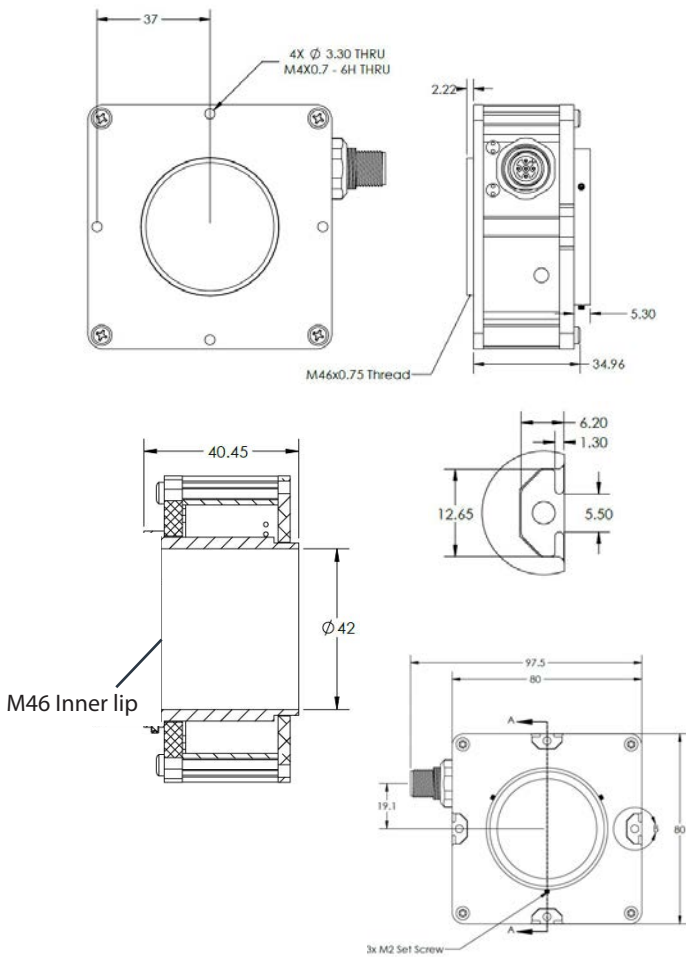
The R80 Ring Light produces a uniform light pattern.

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



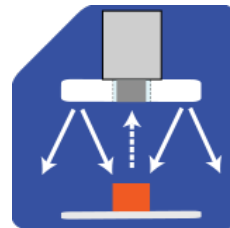
PRODUCT DRAWING

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



ILLUMINATION

R80 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.

Notice

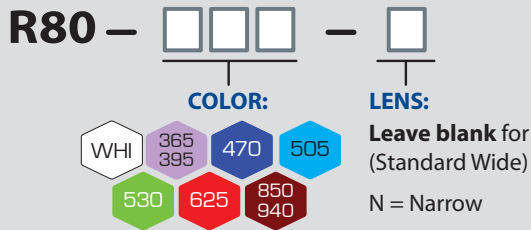
Risk Group 1: UV emitted from this product. Minimize exposure to eyes and skin. Use appropriate shielding. Safe for most applications except prolonged exposures. Applicable for wavelength 395.

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 wavelength 365.



PART NUMBER



Part Number Examples:

- R80-625** R80, 625 Red Wavelength, Standard (Wide) Lens
- R80-WHI** R80, White, Standard (Wide) Lens

Additional wavelengths and lens options available upon request.



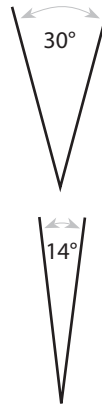
LENS OPTICS

WIDE (STANDARD)

Wide, 30° angle-cone lenses are standard. They project a large area of illumination. They create a floodlight effect, can be used for short working distances.

NARROW

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



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.

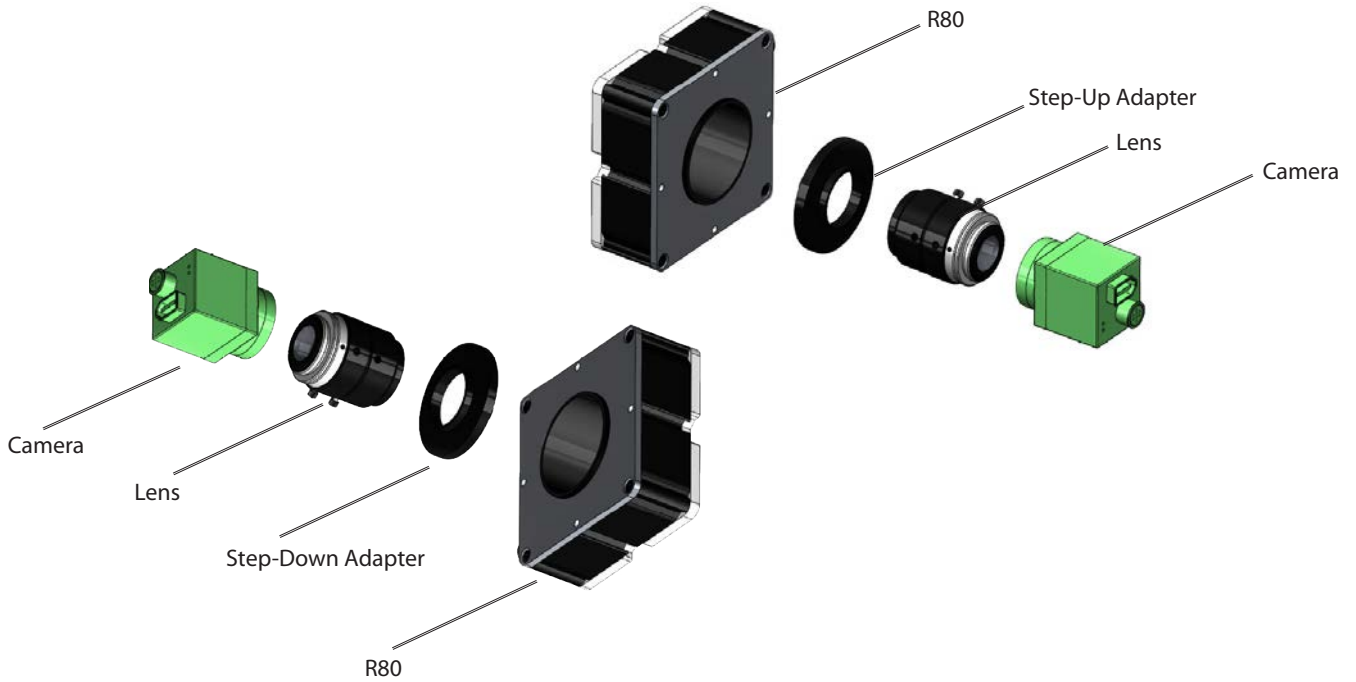


STEP-UP/STEP-DOWN ADAPTER KITS

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 RINGLIGHT THREAD SIZE

49
52
55
58
62
67
72

STEP-UP ADAPTER

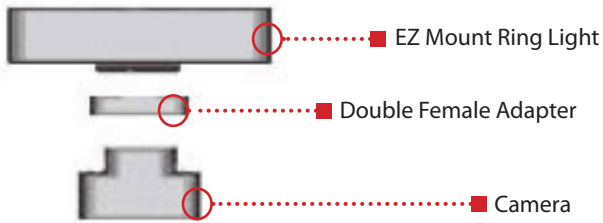
SU- - 46

LENS THREAD SIZE RINGLIGHT THREAD SIZE

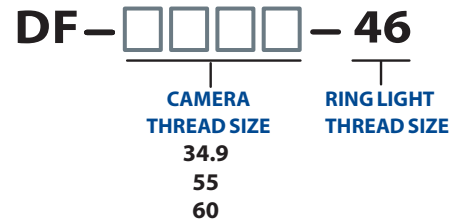
25.5
27
30.5
34
35.5
37
39
40.5
43

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



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

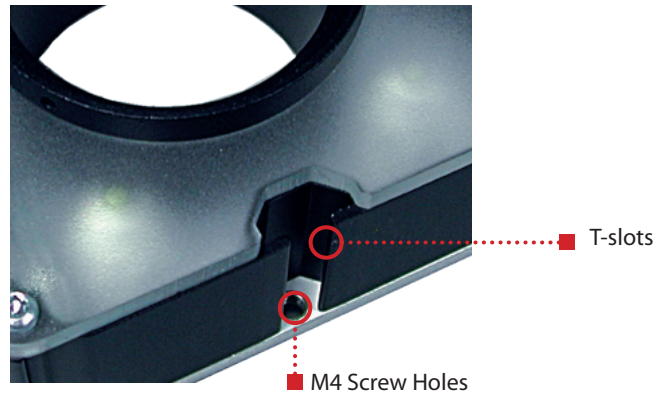
MOUNTING

Mounting options on the R80 EZ Mount Ring Light include four T-slots and four M4 threaded holes.

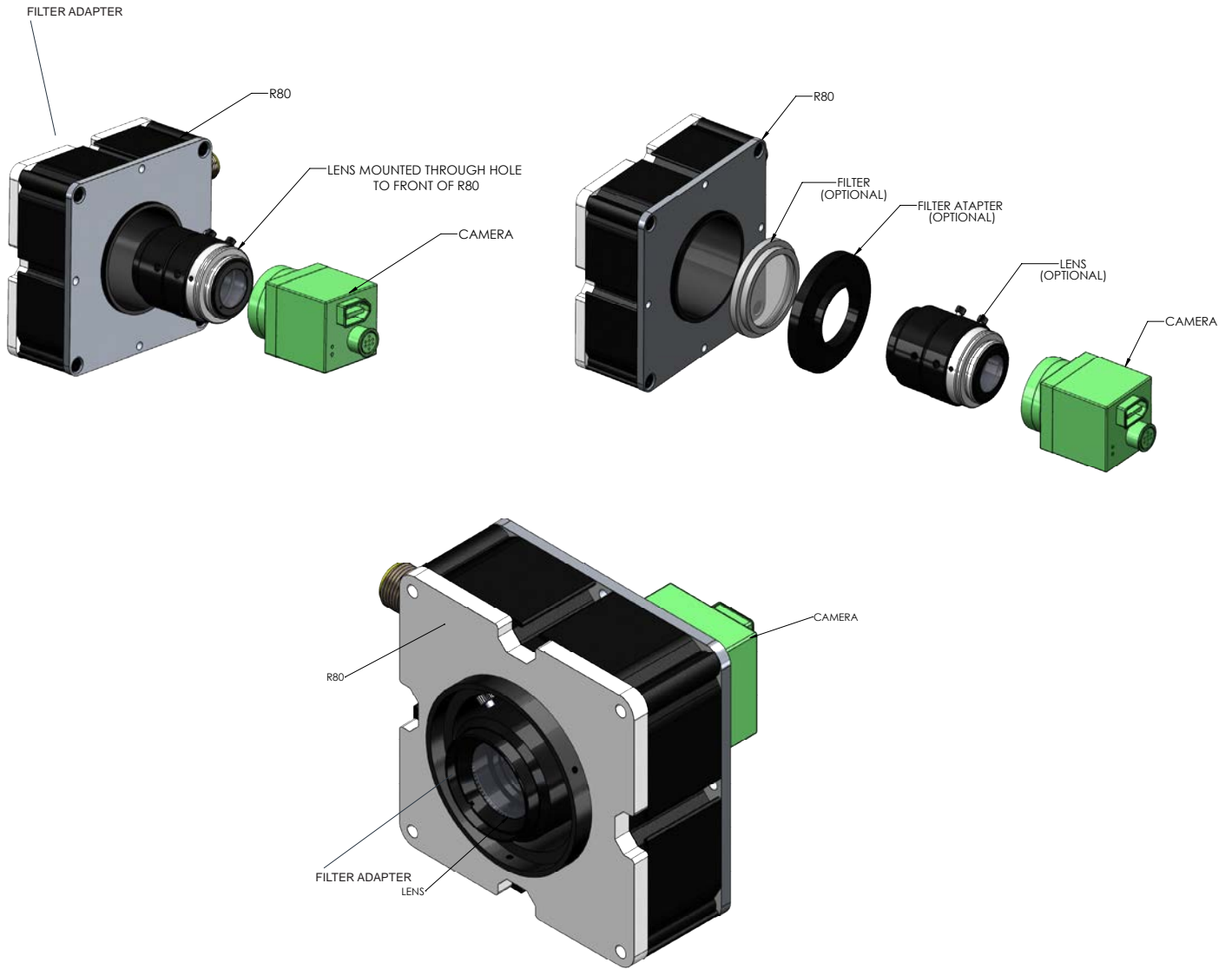
Optional Mounting Hardware:

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
40.5 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

Camera Adapters



Camera Thread Size	Part Number
55 mm	DF55-46
60 mm	DF60-46
34.5 mm	DF34.5-46

Power Cables



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

Power Adapters *



Description	Part Number
AC, 24 Volt, 1.7 Amp	T1 Power Supply

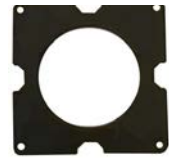
* European Versions Available (Add -EURO to end of T1. Example T1-EURO Power Supply)

Variable Control Pot



Description	Part Number
Controls the intensity of the light	IVP-C1

Linear Polarizer



Description	Part Number
Linear Polarizer Kit	R80-LP

Diffuser



Description	Part Number
Diffuser Kit	R80-DKIT



GLOSSARY

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

TERMINOLOGY

OverDrive™ Lights include 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.

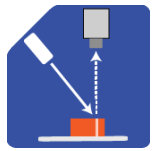
Built-In Driver The built-in driver allows full function without the need for an external controller.

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

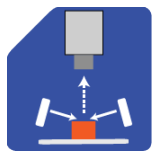
Polarizers Filters that reduce reflections on specular surfaces.

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

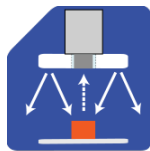
TYPES OF ILLUMINATION



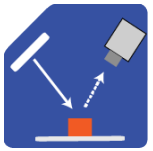
Projector



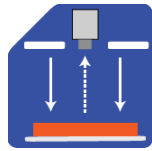
Dark Field



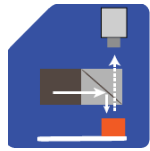
Radial



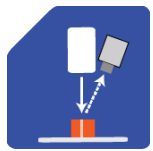
Bright Field



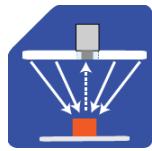
Direct



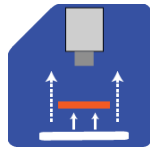
Axial



Line



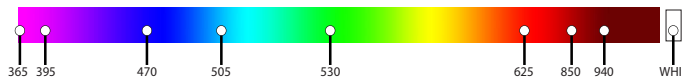
Diffuse Panel



Backlight

COMMON 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.



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.