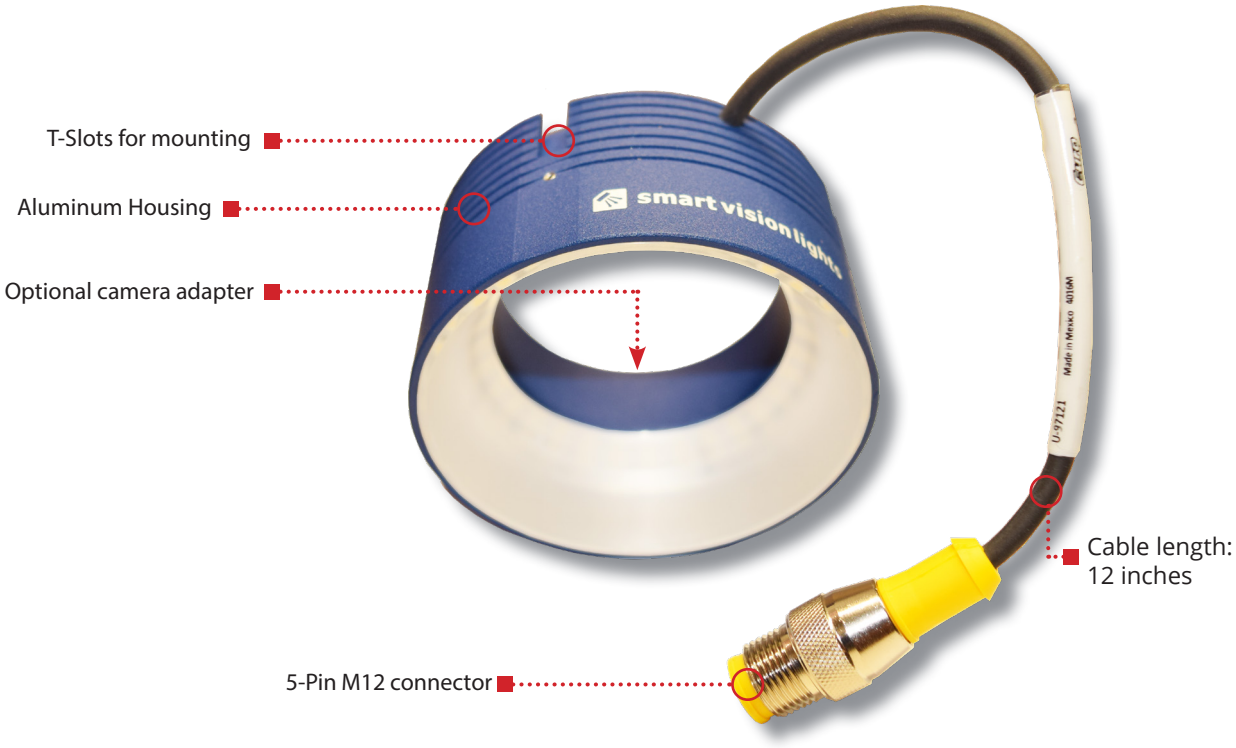
RM75 Miniature Ring Light
LOW-ANGLE | MULTIDRIVE™



The RM75 is a ring light featuring an integrated Multi-Drive™ driver which operates in either continuous or OverDrive™ mode, depending on the input wiring configuration. NPN or PNP triggers can be used to control the light for either strobed or continuous operation. Light intensity can be controlled via the 1 - 10VDC analog intensity line.

Warranty	Tested	Compliant	Rated	Connector
10 YEAR	IEC 62471	CE ROHS	IP 50	5-PIN M12

RM75 HIGHLIGHTS

- ✔ Built-in Multi-Drive™ allows the light to work in continuous or OverDrive™ mode
- ✔ Industrial aluminum housing
- ✔ Low-angle ring light for dark field applications

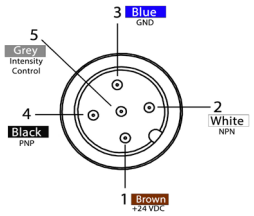
SPECIFICATIONS

	Continuous Operation	OverDrive™ Strobe Mode
Electrical Input	24 VDC +/- 5%	
Input Current	Max. 290 mA	Max. 2.5 A
Input Power	Max. 7.0 W	Max. 63 W
PNP Trigger	4 mA @ 4VDC | 10 mA @ 12VDC | 20mA @ 24VDC	
NPN Trigger	15 mA @ Common (0VDC)	
Trigger Input	PNP > +4 VDC (24 VDC max.) to activate **or** NPN ≥ GND <1VDC to activate **(not both)** (see Wiring Configuration for more information)	
Strobe Duration	Min. 1 µs | Max. ∞	Min. 10 | Max. 50 ms (See SafeStrobe™ technology for more information)
Connection	5-pin M12 connector	
Operating Temperature	-10° - 40° C (14° - 104° F) | RH max 80% non-condensing humidity	
Storage Temperature	-20° to 70° C | RH max 80% non-condensing humidity	
IP Rating	IP50	
Weight	~134 g	
Compliances	CE, IEC 62471, RoHS	
Warranty	10 years*	

**See SmartVisionLights.com/warranty for details*

WIRING CONFIGURATION

CONTINUOUS OPERATION MODE



Pin layout for light (Male Connector)

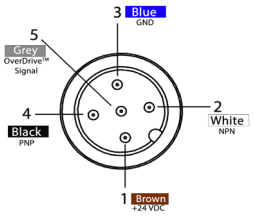
Pins	Function	Signal	Wire Color
1	Power In	+24VDC	BROWN
2	NPN	Sinking Signal	WHITE
3	GND	Ground	BLUE
4	PNP	Sourcing Signal	BLACK
5	Intensity Control	1-10VDC	GREY*

For 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)

For maximum intensity, tie pin 5 to pin 1 at +24VDC.
*For continuous mode: PNP (pin 4) can be tied to +24 V DC (pin 1) **or** NPN (pin 2) can be tied to Ground (pin 3).*

OVERDRIVE™ OPERATION MODE



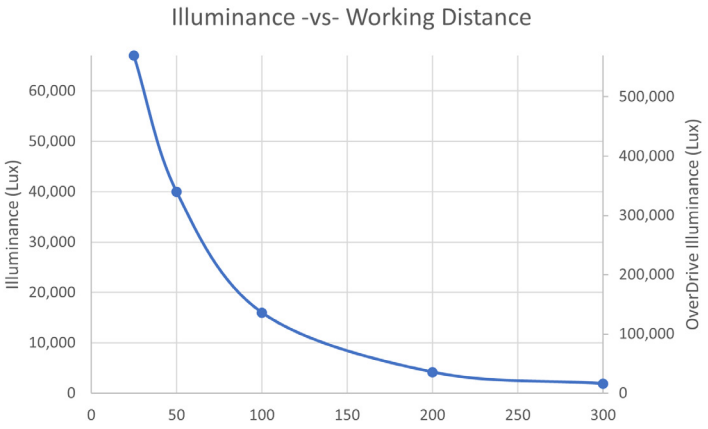
Pin layout for light (Male Connector)

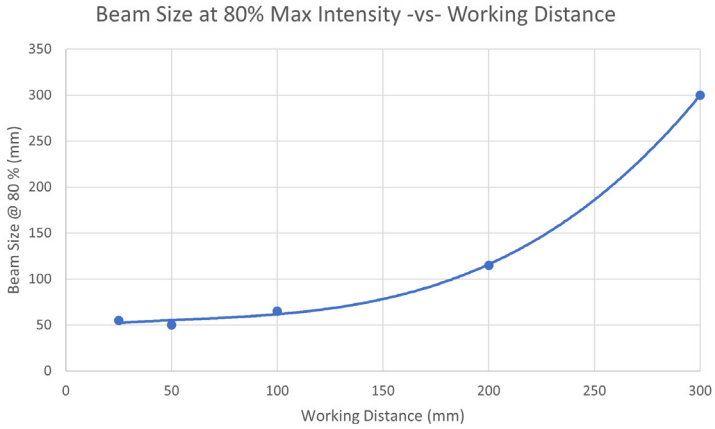
Pins	Function	Signal	Wire Color
1	Power In	+24VDC	BROWN
2	NPN	Sinking Signal	WHITE
3	GND	Ground	BLUE
4	PNP	Sourcing Signal	BLACK
5	OverDrive™ Signal	Ground	GREY*

Failure to supply light with correct input current will result in inconsistent lighting behavior.
(see Product Specifications for requirements)

LIGHTING PATTERNS

The RM75 is recommended to be used at a working distance between 50 mm to 200 mm. **Illuminance values taken on white light - 5700K**

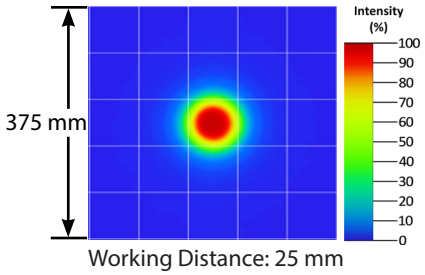




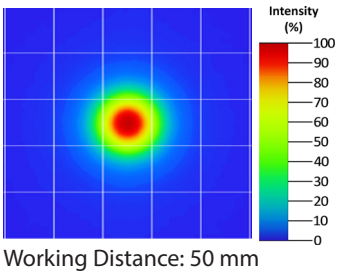
BEAM PATTERNS

The RM75 is recommended to be used at a working distance between 50 mm to 200 mm. **Illuminance values taken on white light - 5700K**

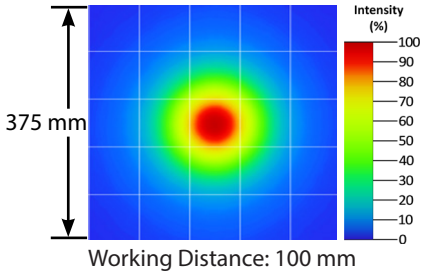
Grid set to 75 mm



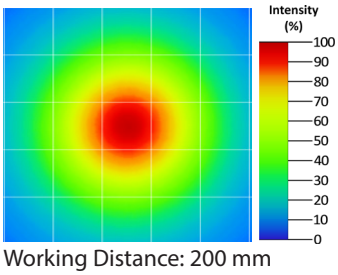
Working Distance: 25 mm



Working Distance: 50 mm



Working Distance: 100 mm



Working Distance: 200 mm

EYE SAFETY

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

Notice

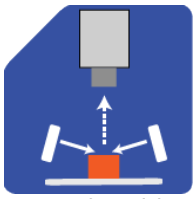
Exempt Group: No photobiological hazard to eyes or skin even for continuous, unrestricted use. Applicable for wavelengths 625

Caution

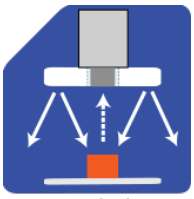
Risk Group 1: Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp. May be harmful to eyes. Safe for most applications except prolonged exposure. Applicable for wavelengths 470, 530, and WHI.

ILLUMINATION

The RM75 works best for:



Dark Field

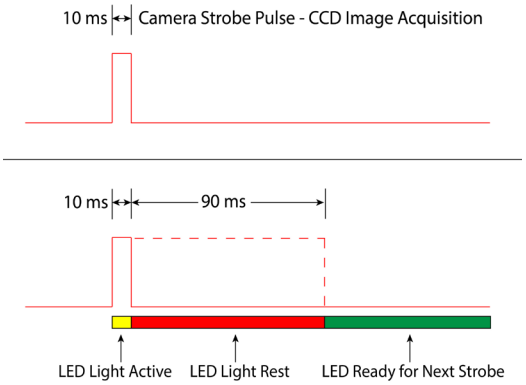


Radial

DUTY CYCLE

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

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



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

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

Rest Time is 90 ms for 10 ms Strobe Time

MULTI-DRIVE™

Multi-Drive provides both continuous and OverDrive™ modes from a single integrated driver. Users can select the lighting mode via the input wiring configuration. With OverDrive, the light can be strobed at up to 10 times the intensity* of continuous mode.

*See lighting section for more information on this light's OverDrive values.

SAFESTROBE™

SafeStrobe™ is a unique technology that applies safe working parameters to ensure high current LEDs are not damaged by driving them beyond their limits, such as maximum strobe time or duty cycle. This is especially beneficial for overdriving our high current LEDs.

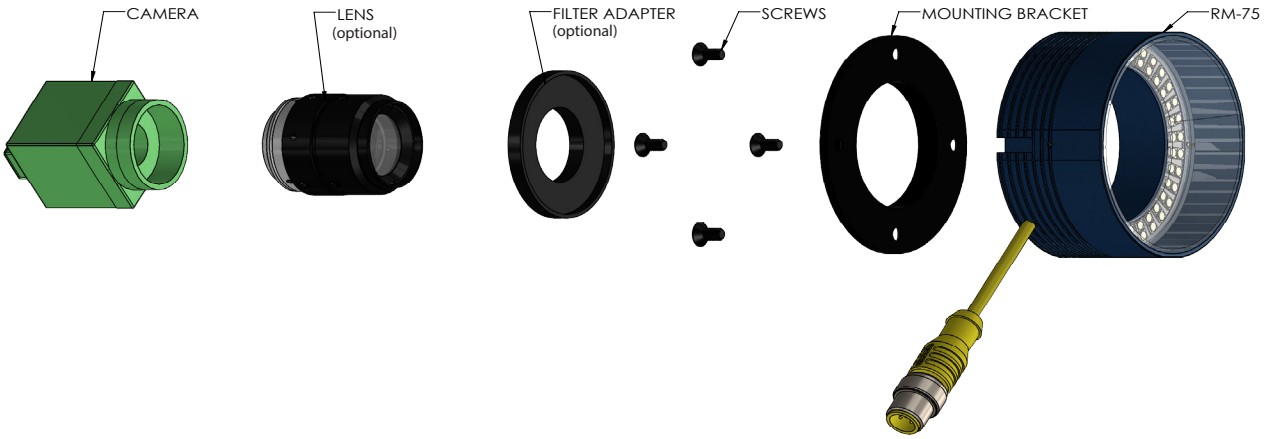
MOUNTING

Mounting options include four (4) Tslots and four (4) M4 threaded holes on the RM75 mini ring light.

Hardware included with light:
(2) M4 x 8 mm screws (Hex)
(2) M5 x 10 mm screws (Hex)
(2) M5 T-Nuts

Optional Camera Mounting Adapter	
	The optional ADP0001-KIT can be used to mount a camera or lens directly to the RM75.

CAMERA MOUNTING ADAPTER



PART NUMBER GUIDE

RM75 – □□□

COLOR:

WHI 470 530 625

Additional wavelengths available upon request

Part Number Examples:

RM75-625 (RM75, 625 Red Wavelength)

ACCESSORIES

Step-Up Kits *

Lens Thread Size	Part Number
25 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

Power Cables

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

Camera Mounting Adapter

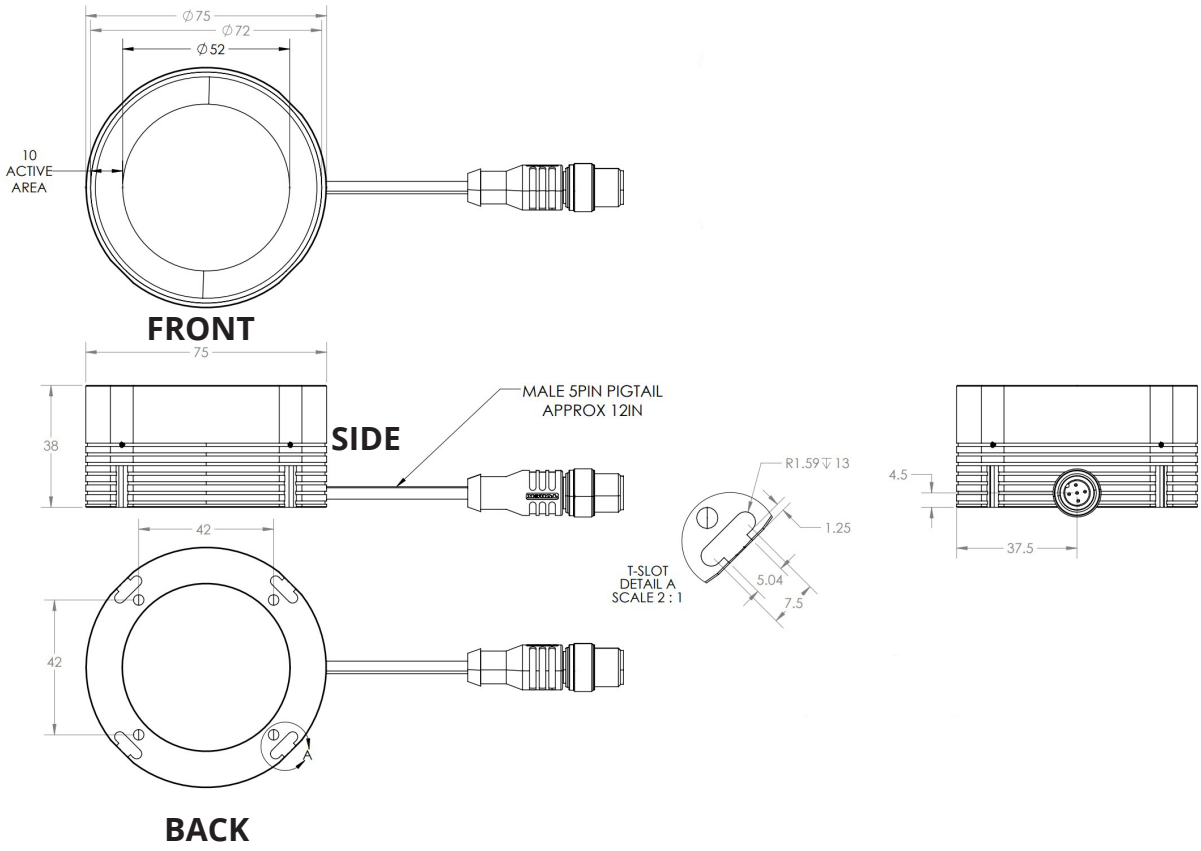
Description	Part Number
Adapter	ADP0001-KIT

Camera Adapter

Description	Part Number
Camera Adapter	DF34.9-46
Camera Adapter	DF55-46
Camera Adapter	DF60-46
Camera Adapter	DF60.75-46

PRODUCT DRAWINGS

*CAD files available on our website
Drawings are in mm



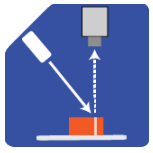
GLOSSARY

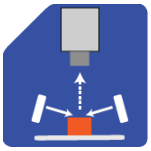
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

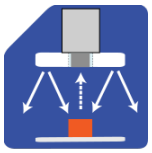
TERMINOLOGY

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 of 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.

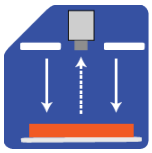
TYPES OF ILLUMINATION

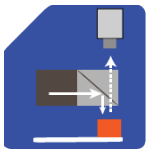

Projector

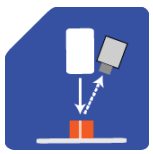

Dark Field

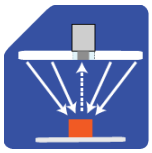

Radial

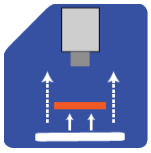

Bright Field


Direct


Axial

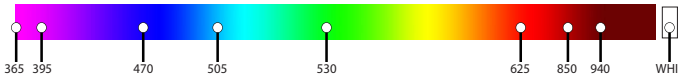

Line


Diffuse Panel


Backlight

COMMON COLOR/WAVELENGTHS LEGEND

Wavelengths options range from 365 nm to 1650 nm.*
Additional wavelengths available for many light families.



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

SWIR SHORTWAVE **INFRARED**

Shortwave Infrared LEDs are available in 1050 nm, 1200 nm, 1300 nm, 1450 nm, 1550 nm, and 1650 nm.*

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

ASR American Systems Registrar
ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17021-1 MANAGEMENT SYSTEMS CERTIFICATION BODY
ISO 9001:2015 Certified QMS

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