



RM75 MINIATURE "MINI" RING LIGHT

PRODUCT DATASHEET

 smart vision lights

Cable Length: 6" 

4 T-slots for Mounting 

Optional Camera Adapter 

High Intensity LEDs 



 5Pin M12 Connector



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, No External Wiring to Driver Needed
- ✓ PNP and NPN Strobe Input
- ✓ Multi-Drive™ - Allows the Light to Operate in Continuous Operation or OverDrive™
- ✓ Over-Current Protection



PRODUCT SPECIFICATIONS

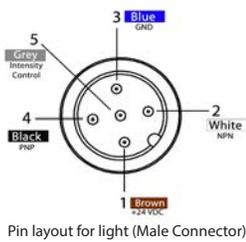
	CONTINUOUS OPERATION	OVERDRIVE™ OPERATION
Electrical Input	24 VDC +/- 5%	
Input Current	Max. 280mA (Actual current will likely be less and will vary depending on wavelength of LEDs)	Max. 2.5A (Actual current will likely be less and will vary depending on wavelength of LEDs)
Wattage	Max. 7.0 W	Max. 63 W
PNP Line	4mA @ 4VDC 10mA @ 12VDC 20mA @ 24VDC	
NPN Line	15mA @ Ground (0VDC)	
Strobe Duration	Not applicable	Max. 50mS
Duty Cycle	Not applicable	Max. 10%
Strobe Input	Not applicable	PNP: +4VDC or greater to activate NPN: GND (<1VDC) to activate 5 μS LED activation time
Continuous Mode	Continuous signal on PNP or NPN line	Not applicable
On / Off Input	PNP: +4VDC or greater to activate NPN: GND (<1VDC) to activate	Not applicable
Connection	5 pin M12 connector	
Ambient Temp.	-18° - 40° C (0° - 104° F)	
IP Rating	IP50	
Weight	134g	
Compliances	CE, RoHS, IEC-62471	

WIRING CONFIGURATION

POWERING LIGHT ON:

- Strobe input cannot be held active during powering on.
- Light is not operable until 15 seconds after powering up.

CONTINUOUS OPERATION MODE



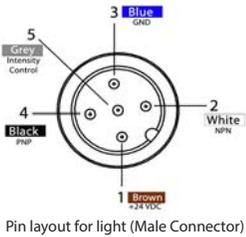
Pins	Function	Signal	Wire Color
1	Power In	+24VDC	BROWN
2	NPN	Sinking Signal	WHITE
3	GND	Ground	BLUE
4	PNP	Sourcing Signal	BLACK
5	Intensity Control	1 - 10 VDC**	GREY*

In order for the light to function properly, apply either a PNP or NPN signal, **not both**.

Failure to supply light with correct input current will result in non-repeatable lighting (see Product Specifications for requirements)

* 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: PNP (pin 4) can be tied to +24VDC (pin 1) **or** NPN (pin 2) can be tied to Ground (pin 3).

OVERDRIVE™ OPERATION MODE



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™ Mode	Ground	GREY*

Failure to supply light with correct input current will result in non-repeatable lighting (see Product Specifications for requirements)

* Some cables use green/yellow for pin 5

RESOURCE CORNER



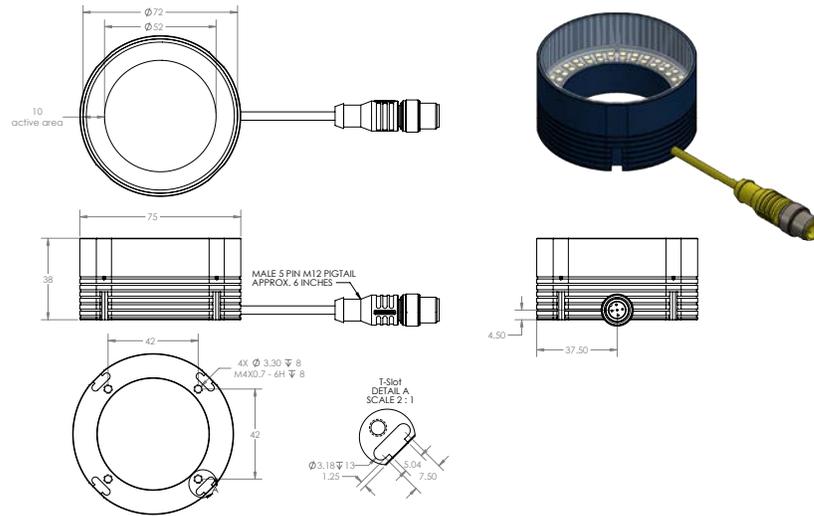
Additional resources available on our website including CAD files, videos and application examples.

Smart Vision Lights

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smartvisionlights.com
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 Opened: Monday - Friday | 8am - 5pm EST



PRODUCT DRAWING



LIGHT PATTERNS

Smart Vision Lights recommends the RM75 be used at a working distance between 50mm to 200mm.

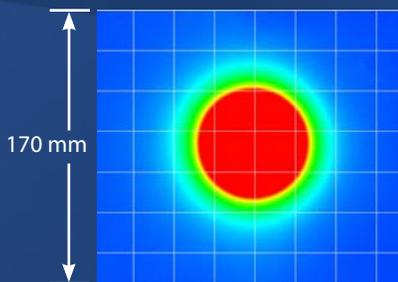
LIGHTING ILLUMINATION FOR THE RM75

Continuous Operation Mode	
Typical Output Performance	Illumination (Lux)
Distance = 100 mm	18,000
<i>Illumination measurement taken on White Light - 4800K</i>	

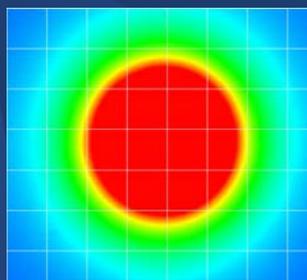
OverDrive™ Mode	
Typical Output Performance	Illumination (Lux)
Distance = 100 mm	149,400
<i>Illumination measurement taken on White Light - 4800K</i>	

The RM75 Mini Ring Light produces a uniform light pattern.

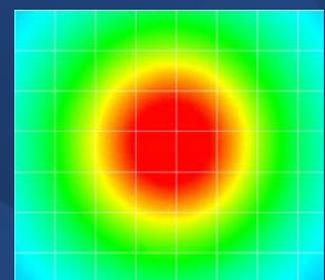
WD = Working Distance



WD = 50 mm



WD = 100 mm



WD = 200 mm

(Grid set to 25 x 25 mm)

MULTI-DRIVE™

Multi-Drive™ offers the best of both worlds. Continuous operation can be used with the option of HIGH output strobe/ pulse operation. Other advantages of Multi-Drive™ include faster imaging and capture/freeze motion on high-speed lines.

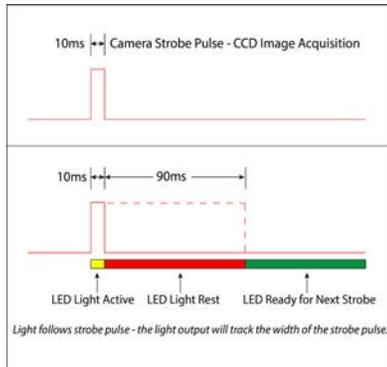


The Multi-Drive™ controller allows the user to run the product in continuous operation or pulse/strobe the light at the maximum allowed intensity by simply setting the product parameters. OverDrive™ operation is **five times or more** the power vs. continuous operation.

DUTY CYCLE (OVERDRIVE™ MODE ONLY)

This section applies only if light is in OverDrive™ Mode.

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



Calculating Rest Time

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

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

Example

Camera exposure of 10mS where Strobe Time is 40mS

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

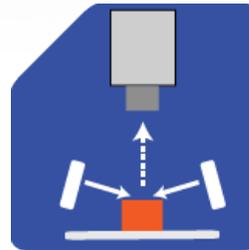
Rest Time is 90mS for 10mS Strobe Time

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

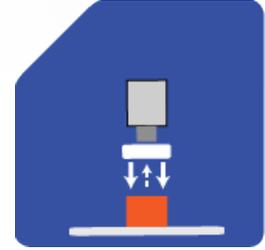


ILLUMINATION

RM75 series of Mini Ring Lights works best for:



Dark Field



Direct Lighting

EYE SAFETY

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: 470, 505, 530, and WHI.



PART NUMBER

RM75 - COLOR

470	Blue	
530	Green	
625	Red	
WHI	White	

Part Number Examples:

RM75-625 (RM75, 625 Red Wavelength)

** Additional wavelengths available upon request



MOUNTING

Mounting options include four T-slots and four M4 threaded holes on the RM75.

Hardware included with light:

- (2) M4x8 screws (Hex)
- (2) M5x10 screws (Hex)
- (2) T-Nuts



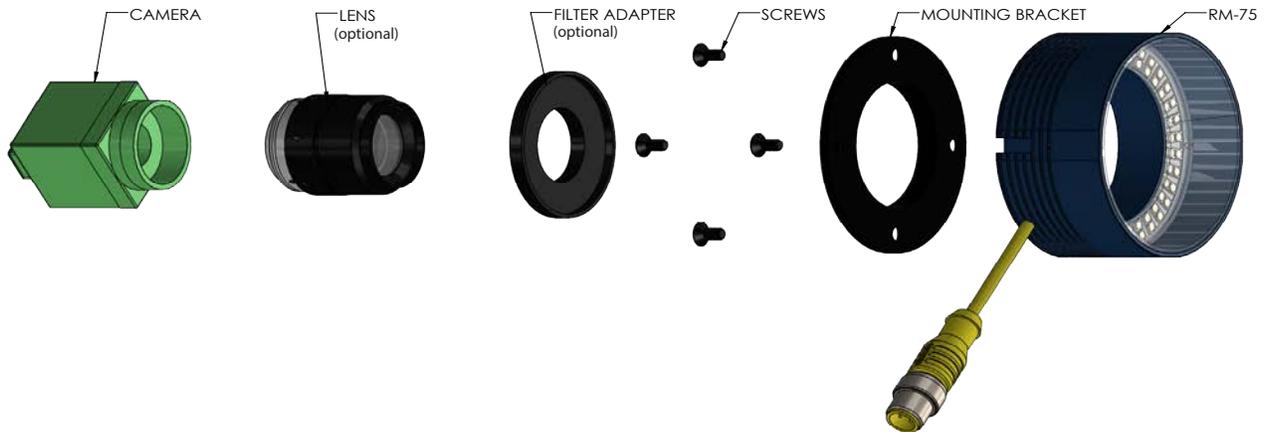
Optional Mounting Adapter



The **optional ADP0001** can be used to mount a camera, filter adapter or a lens directly to the RM75.



CAMERA MOUNTING ADAPTER





ACCESSORIES

Step Up Kits *



Len 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

* Additional sizes available

Step Down Kits



Len 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
5M	5PM12-5
10M	5PM12-10

Mounting Bracket



Description	Part Number
Camera Mount	ADP0001



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 includes an integrated strobe driver for complete LED light control. OverDrive™ lights part number starts with OD.

Multi-Drive™ - Controller combines two drives into one with Constant ON operation and OverDrive high-pulse operation.

Built-in Driver - Built-in drivers allow the light to fully function without the need of an external controller.

Camera to Light - Connecting the light directly to the camera without the need for additional controllers or equipment.

Polarizers - Polarizing filters can reduce reflections on specular surfaces.

Diffusers - Diffusers can widen the angle of light emission and reduce reflections