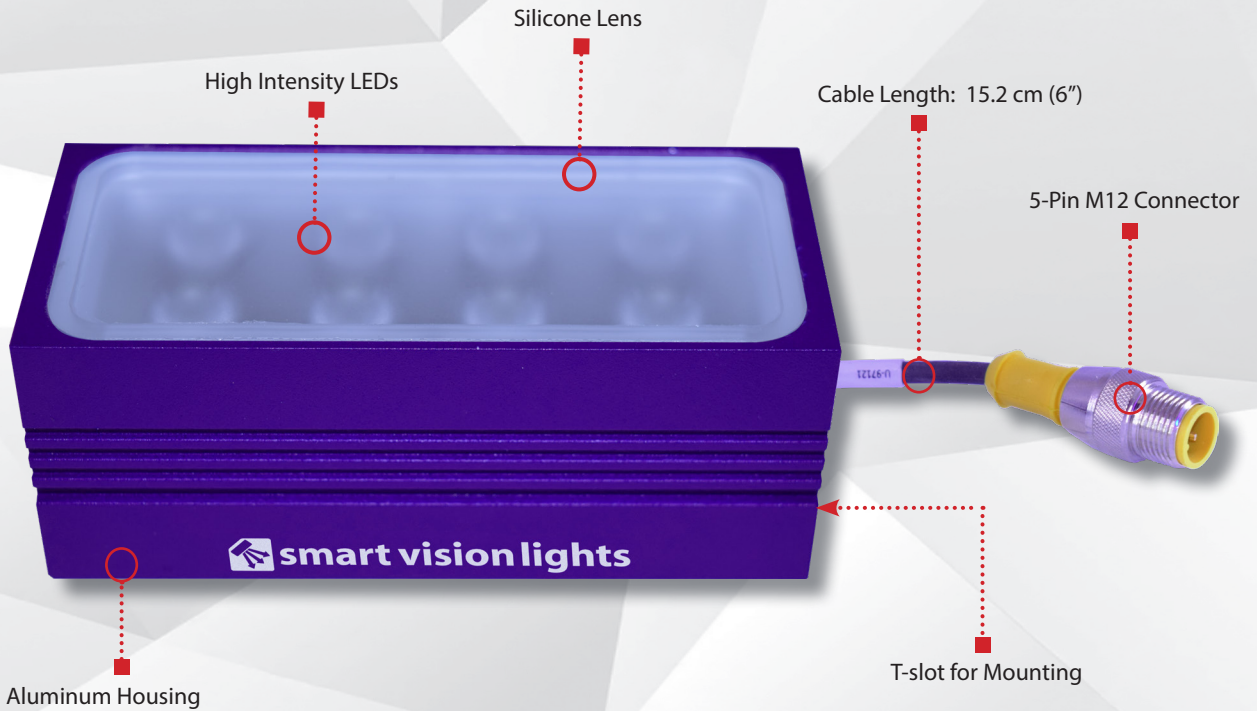




smart vision lights

LMX75 *Miniature "Mini"* LINEAR LIGHT MULTI-DRIVE™

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 65	Connector 5-PIN M12
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PRODUCT HIGHLIGHTS

- ✓ Delivering up to 90,000 LUX in OverDrive™ mode with standard lenses
- ✓ Built-in Multi-Drive™ allows the light to work in Continuous operation or OverDrive™ strobe mode
- ✓ Silicone lens offers high transmission across a broad spectrum
- ✓ PNP and NPN trigger signal input
- ✓ SafeStrobe™ provides over-current protection
- ✓ 5-pin M12 quick connect





PRODUCT DESCRIPTION

The LMX75 compact linear light features Multi-Drive™, which allows the light to operate in continuous operation or OverDrive™ strobe mode, depending on wiring. The light can be mounted via a rear T-slot channel, also offers over-current protection and PNP and NPN strobe input. The silicone lens offers high-transmission across a broad spectrum.



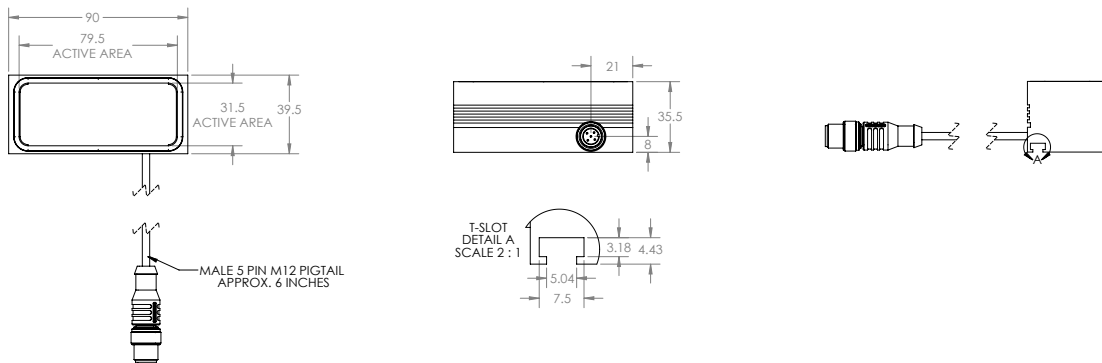
PRODUCT SPECIFICATIONS

	CONTINUOUS OPERATION	OVERDRIVE™ OPERATION
Electrical Input	24V DC +/- 5%	
Input Current	Max. 275 mA	Max. 3.1 A
Wattage	Max. 6.3 W	Max. 70 W
PNP Line	4 mA @ 4V DC 10 mA @ 12V DC 20 mA @ 24V DC	
NPN Line	15 mA @ Common (0V DC)	
OverDrive™ Mode	Not applicable	Connect pin 5 to GND (see Wiring Configuration for more information)
Strobe Duration	Not applicable	Min. 10 μs Max. 50 ms
Duty Cycle	Not applicable	Max. 10%
Strobe Input	Not applicable	PNP > +4V DC or greater to activate NPN > GND (<1V DC) to activate
Continuous Operation Mode	NPN can be tied to ground OR PNP can be tied to 24V DC (not both)	Not applicable
On/Off Input	PNP > +4V DC or greater to activate NPN > GND (<1V DC) to activate	Not applicable
Connection	5-pin M12 connector	
Ambient Temperature	-18°–40° C (0°–104° F)	
IP Rating	IP65	
Weight	220g	
Compliances	CE, RoHS, IEC 62471	



PRODUCT DRAWING

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



RESOURCE CORNER

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

Smart Vision Lights

2359 Holton Road
Muskegon, MI 49445
P: +1 231.722.1199 | F: +1 231.722.9922

SmartVisionLights.com

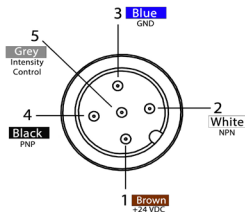
techsupport@SmartVisionLights.com
Hours: Monday – Friday | 8am–5pm ET





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	1-10 V DC**	GREY

* Some cables use green/yellow for pin 5

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

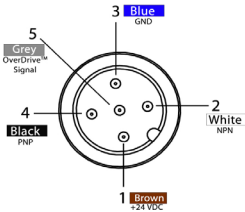
For continuous mode: PNP (pin 4) can be tied to +24 V DC (pin 1) or NPN (pin 2) can be tied to Ground (pin 3).

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 requirement.)

OVERDRIVE™ STROBE 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

* Some cables use green/yellow for pin 5

Failure to supply light with correct input current will result in non-repeatable lighting

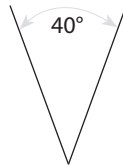
(See Product Specifications for requirement.)



LENSES

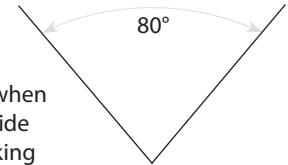
STANDARD (NARROW)

Standard lenses project a narrower beam of illumination. They can be used when long working distances are needed. Standard are 40° angle lenses. Best used for working distance between 200 mm and 1000 mm.



WIDE (W)

Wide lenses project a large area of illumination. Wide lenses can be used when short working distances are needed. Wide are 80° angle lenses. Best used for working distance between 50 mm and 1000 mm.



NARROW 16° (N16)

Narrow, 16° angle lenses project a narrower beam of illumination. They can be used when longer distances are needed. Best used for working distance between 300 mm and 2000 mm.



NARROW 25° (N25)

Narrow, 25° angle lenses project a narrower beam of illumination. They can be used when longer distances are needed. Best used for working distance between 300 mm and 2000 mm.



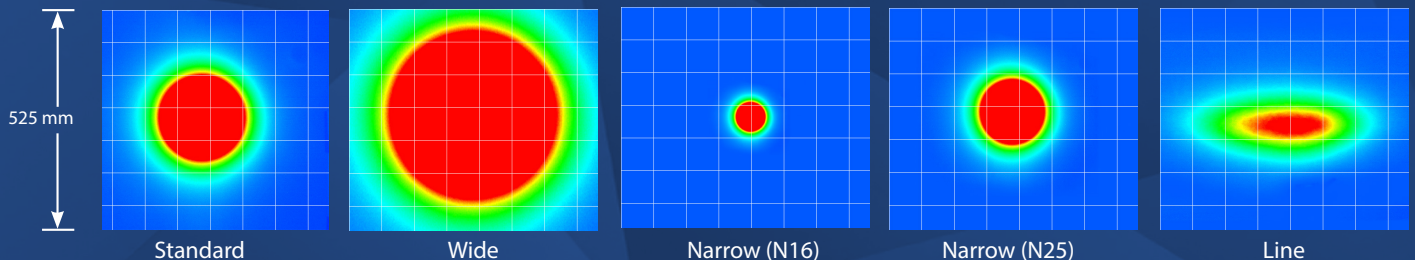
LINE

Line, with a 10° width and a 50° fan angle projects a thin, narrow beam of illumination.

Additional lens options available upon request.

The LMX75 Mini Linear Light produces a uniform light pat-

Working Distance = 500 mm (Grid set to 75 mm x 75 mm)





LIGHT PATTERNS

Smart Vision Lights recommends the LMX75 be used at a working distance between 50 mm to 2000 mm.

LIGHTING PATTERN FOR THE LMX75 with Standard 40° Lenses

Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
250 mm (9.84")	120 mm (~4.7") H x 120 mm (~4.9") V
500 mm (19.7")	240 mm (~9.4") H x 240 mm (~9.4") V

Continuous Operation Mode	
Typical Output Performance	Illuminance (Lux)
Distance = 250 mm	9000
<i>Illumination measurement taken on White Light - 5700K</i>	

OverDrive™ Mode	
Typical Output Performance	Illuminance (Lux)
Distance = 250 mm	90,000
<i>Illumination measurement taken on White Light - 5700K</i>	

LIGHTING PATTERN FOR THE LMX75 with Wide 80° Lenses (W)

Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
250 mm (9.84")	240 mm (~4.7") H x 240 mm (~4.7") V
500 mm (19.7")	480 mm (~18.9") H x 480 mm (~18.9") V

Continuous Operation Mode	
Typical Output Performance	Illuminance (Lux)
Distance = 250 mm	3200
<i>Illumination measurement taken on White Light - 5700K</i>	

OverDrive™ Mode	
Typical Output Performance	Illuminance (Lux)
Distance = 250 mm	32,000
<i>Illumination measurement taken on White Light - 5700K</i>	

LIGHTING PATTERN FOR THE LMX75 with Narrow 16° Lenses (N16)

Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
500 mm (19.7")	75 mm (~3") H x 75 mm (~3") V
1000 mm (39.4")	150 mm (~5.9") H x 150 mm (~5.9") V

Continuous Operation Mode	
Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	10,500
<i>Illumination measurement taken on White Light - 5700K</i>	

OverDrive™ Mode	
Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	105,000
<i>Illumination measurement taken on White Light - 5700K</i>	

LIGHTING PATTERN FOR THE LMX75 with Wide 25° Lenses (N25)

Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
500 mm (19.7")	170 mm (~6.7") H x 170 mm (~6.7") V
1000 mm (39.4")	340 mm (~13.4") H x 340 mm (~13.4") V

Continuous Operation Mode	
Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	5600
<i>Illumination measurement taken on White Light - 5700K</i>	

OverDrive™ Mode	
Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	56,000
<i>Illumination measurement taken on White Light - 5700K</i>	

LIGHTING PATTERN FOR THE LMX75 with Line Lenses

Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
500 mm (19.7")	330 mm (~13") H x 120 mm (~4.7") V
1000 mm (39.4")	660 mm (~26") H x 240 mm (~9.4") V

Continuous Operation Mode	
Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	4400
<i>Illumination measurement taken on White Light - 5700K</i>	

OverDrive™ Mode	
Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	44,000
<i>Illumination measurement taken on White Light - 5700K</i>	



MULTI-DRIVE™

Multi-Drive™ offers the best of both worlds. Continuous operation and OverDrive™ mode (HIGH output strobe/pulse) are available in a single light. Other advantages of Multi-Drive include faster imaging and capture/freeze motion on high-speed lines.



The Multi-Drive feature allows the user to run the light continuously or in OverDrive at the maximum allowed intensity by simply setting the product configuration. OverDrive operation has **up to ten times** the power of continuous operation.



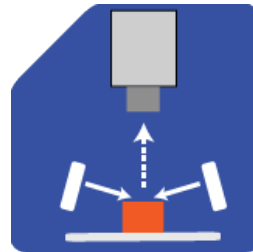
SAFESTROBE™

SafeStrobe™ tec 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.

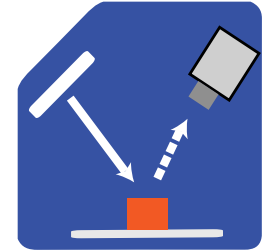


ILLUMINATION

LMX75 Series of Mini Linear Lights works best for:



Dark Field



Bright Field



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, and 850.

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.



PART NUMBER

LMX75 — —

COLOR:
WHI 470
530 625 850

LENS:
 Leave blank for Standard (40°)
 W = Wide (80°)
 N16 = Narrow (16°)
 N25 = Narrow (25°)
 L = Line

Part Number Examples:

- LMX75-625** (LMX75, 625 Red Wavelength)
- LMX75-WHI-W** (LMX75, White Wavelength, Wide Lenses)
- LMX75-470-N25** (LMX75, 470 Blue Wavelength, Narrow 25° Lenses)

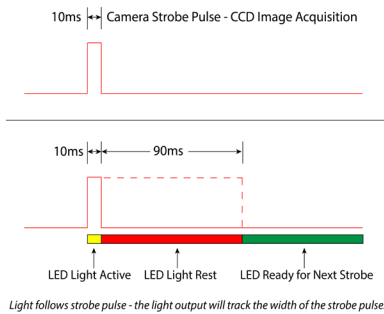


DUTY CYCLE (OVERDRIVE™ MODE ONLY)

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

Maximum Duty Cycle for OverDrive™ light is 10% (0.1)
 Note: Strobe time is limited by the strobe rate.

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
 $90 \text{ ms} = \frac{10 \text{ ms}}{.1} - 10 \text{ ms}$
 Rest Time is 90 ms for 10 ms Strobe Time

Calculating Strobe Rate

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

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

Example
 $1000 = \frac{0.1}{0.0001}$
 Strobe Rate is 1000 strokes per second

Calculating Duty Cycle

$$D = ST \times SR$$

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

Example
 $0.1 = 0.0001 \times 1000$
 Duty Cycle is 10% (0.1)



MOUNTING

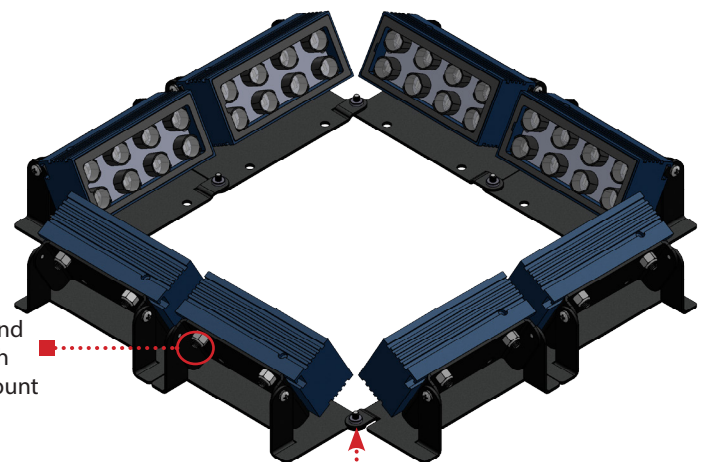
Mounting options include T-slot on bottom of light.

Hardware includes:

- (2) M4 x 16 screws
- (2) M4 nylon nuts



Easily connect together multiple LMX75 using the BKT0026 bracket. The unique design of the BKT0026 bracket allows for any combination of lights to be easily connected together.



Use screws and nuts to attach LMX75 to mount

One M3 x 5 mm screw connects the mounts

Optional Mounting Equipment



The optional BKT0026 can be used to mount the LMX75.



ACCESSORIES

Power Cables	
Lengths	Part Number
5 m	5PM12-5
10 m	5PM12-10
15 m	5PM12-15
10 m	HF5PM12-10 (High Flex)

Splitter	
Description	Part Number
5-pin 2 way splitter	5PM12-2WS

Jumper Cables (Used with Splitter)	
Lengths	Part Number
300 mm	5PM12-J300
1000 mm	5PM12-J1000
2000 mm	5PM12-J2000

Mounting Bracket	
Description	Part Number
LMX75 Mount	BKT0026



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.

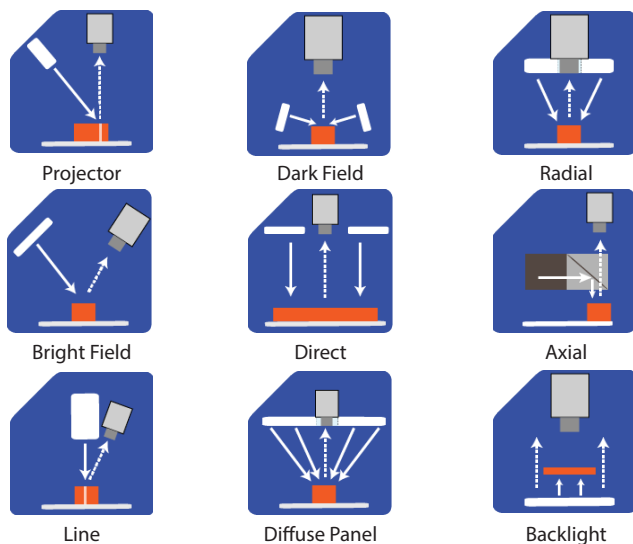
Built-in Driver The built-in driver allows full function without the need of an external controller.

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.

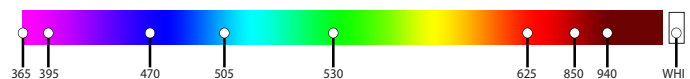
Diffusers Used to widen the angle of light emission, reduce reflections, and increase uniformity.

TYPES OF ILLUMINATIONS



COMMON COLOR/WAVELENGTHS LEGEND

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



*See Part Number section for **this light's** 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.