

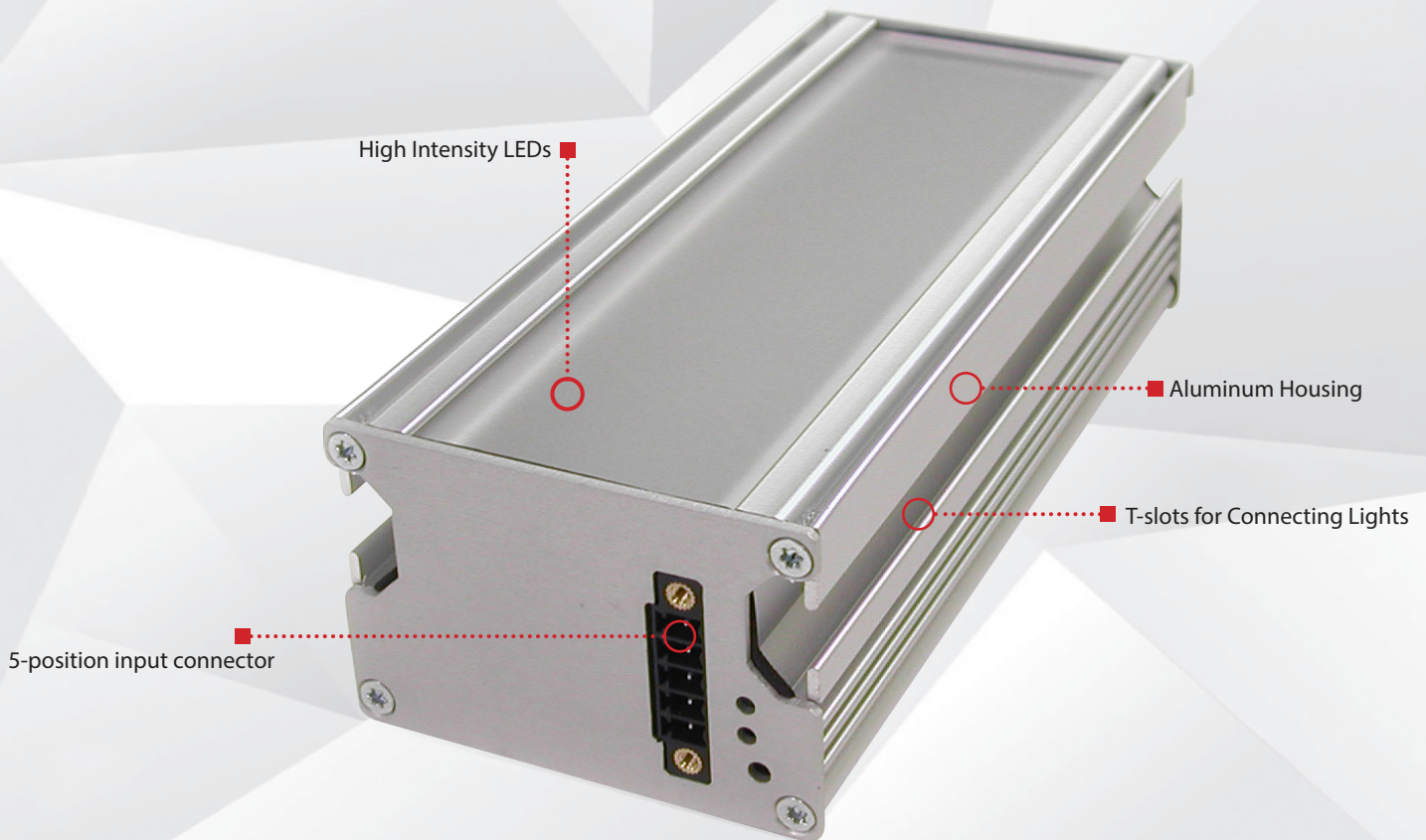


smart  
vision lights

# LXB150

Direct Connect  
**LINEAR LIGHT**  
BACKLIGHT

## PRODUCT DATA SHEET



Warranty  
**10**  
YEAR

Compliant  
**IEC**  
62471

Compliant  
**CE**  
RoHS

Rated  
**IP**  
**50**

Connector  
5-PIN  
M12

## PRODUCT HIGHLIGHTS

- ✓ Built-in driver, no external wiring needed
- ✓ PNP and NPN strobe input
- ✓ T-Slot for mounting and connecting together
- ✓ Direct connect up to 16 units
- ✓ Backlight lens (diffuser) is factory installed



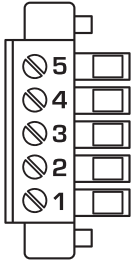
## PRODUCT DESCRIPTION

The modular design of the LXB150 linear light, part of the Direct Connect Linear Light Series, offers integrated light-to-light connectors, eliminating the need for cable connectors to string lights together. The LXB150 features a factory installed 2447 diffuser backlight lens and is a viable option for silhouetting objects. The light operates in continuous operation. This innovative design requires power connection to the first light but eliminates the need for jumper cables to pass power through to the next, enabling tailored-length solutions in increments of 150 mm. Direct connect up to sixteen LXB150 together. Compatible with the LXB300.

## PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/- 5%
Input Current	Max. 700 mA
Wattage	Max. 17 W
On / Off Input	PNP > +4VDC or greater to activate   NPN > GND (<1VDC) to activate
PNP Line	4 mA @ 4VDC   10 mA @ 12 V DC   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 <b>OR</b> PNP can be tied to 24VDC (not both)
Potentiometer	270° turn pot – Intensity control of 10% to 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	~285g
Compliances	CE, RoHS, IEC 62471

## WIRING CONFIGURATION



Pins	Function	Signal	Wire Color
5	GND	Ground	BLUE
4	PNP	4VDC to 30VDC for active on	BLACK
3	Intensity Control	1-10VDC	GREY*
2	NPN Strobe	GND for active ON	WHITE
1	Power	+24VDC	BROWN

**OPTIONAL**  
For maximum intensity, analog intensity may be connected to +VDC (24VDC) - Jumper pin 5 to pin 1

\* 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).

Pin layout for light (Male Connector)



## RESOURCE CORNER

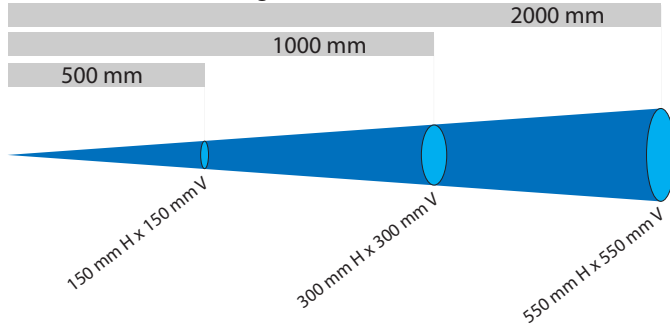
Additional resources are available on our website, including CAD files, videos, and application examples.



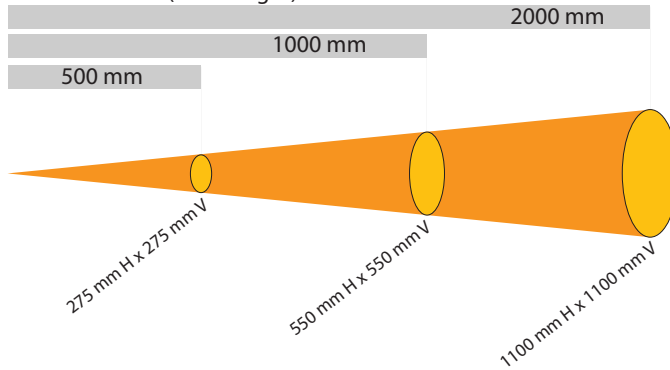
# LIGHT PATTERNS

Smart Vision Lights recommends the LXB150 be used at a working distance between 300 mm to 4000 mm.

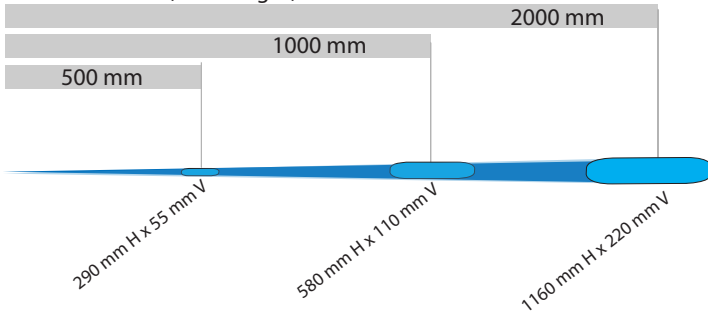
Beam Diameter (White Light) – 6500 K



Beam Diameter (White Light) – 6500 K



Beam Diameter (White Light) – 6500 K



## LIGHTING PATTERN FOR THE LXB150 with Narrow (Standard) Lenses

Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
500 mm (19.7")	150 mm (~5.9") H x 150 mm (~5.9") V
1000 mm (39.4")	300 mm (~11.8") H x 300 mm (~11.8") V
2000 mm (78.8")	550 mm (~21.6") H x 550 mm (~21.6") V

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	11,000
<i>Illumination measurement taken on White Lights - 6500K</i>	

## LIGHTING PATTERN FOR THE LXB150 with Wide (W) Lenses

Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
500 mm (19.7")	275 mm (~10.8") H x 275 mm (~10.8") V
1000 mm (39.4")	550 mm (~21.6") H x 550 mm (~21.6") V
2000 mm (78.8")	1100 mm (~43") H x 1100 mm (~43") V

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	8,000
<i>Illumination measurement taken on White Lights - 6500K</i>	

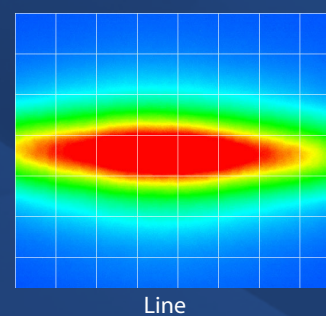
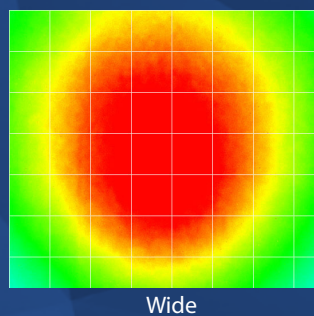
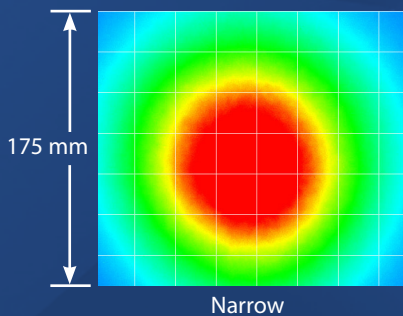
## LIGHTING PATTERN FOR THE LXB150 with Line (L) Lenses

Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
500 mm (19.7")	290 mm (~12.2") H x 55 mm (~2.1") V
1000 mm (39.4")	580 mm (~24.4") H x 110 mm (~4.3") V
2000 mm (78.8")	1160 mm (~48.8") H x 220 mm (~8.6") V

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	19,000
<i>Illumination measurement taken on White Lights - 6500K</i>	

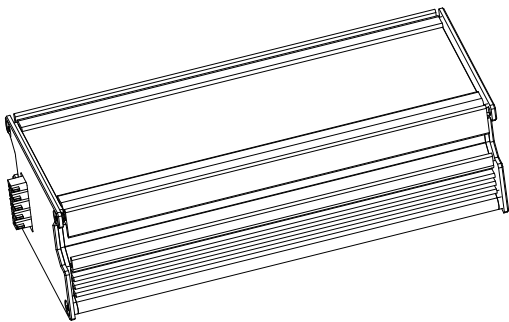
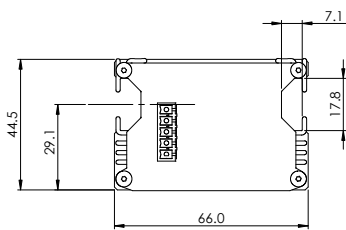
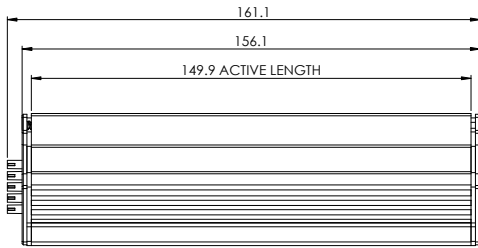
The LXB150 Linear Light produces a uniform light pattern.

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



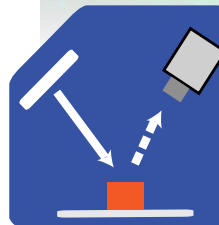
## PRODUCT DRAWING

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

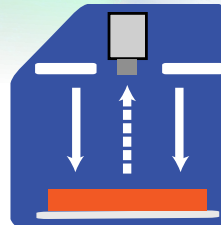


## ILLUMINATION

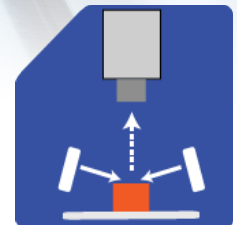
LXB150 Series of Linear Lights works best for:



Bright Field



Direct Lighting



Dark 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, 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 wavelengths: 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 wavelengths: 365



## PART NUMBER

LXB150



COLOR:



LENS:

Leave blank for standard (narrow)

W = Wide

L = Line



LINEAR POLARIZER:

Leave blank for none

LPI = Factory Installed

### Part Number Examples:

**LXB150-625** LXB150, 625 nm Red Wavelength, Standard (Narrow) Lenses

**LXB150-WHI-L** LXB150, White, Line Lenses

**LXB150-470-W-LPI** LXB150, 470 nm Blue Wavelength, Wide Lenses, with Linear Polarizer installed



This light is available in our SWIR LEDs (1050 nm, 1200 nm, 1300 nm, 1450 nm, 1550 nm)



\* Line lens optic not available for UV wavelengths  
Additional wavelengths and lens options available upon request



## STANDARD LENS OPTICS

### NARROW

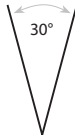
**Narrow lenses are standard.**

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



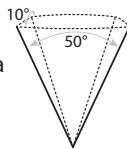
### WIDE

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



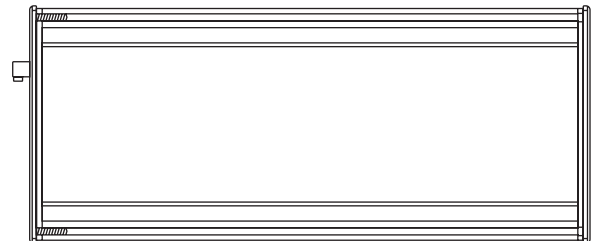
### LINE

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



## OPTICAL PERFORMANCE

Smart Vision Lights recommends the LXB150 be used at a working distance between 150 mm to 450 mm.



### OPTICAL PERFORMANCE FOR THE LXB150

Rating	Illumination (Lux)
Average Intensity Rating	69,000
<i>Lux measurement taken at surface of SB75</i>	



## ACCESSORIES

Connector (Only for Direct Connect)	
Description	Part Number
Set of 2 Connectors	LXJ-2DTN



## 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** Lights stay on continuously.

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

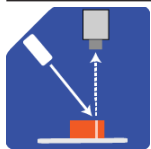
**Built-in Driver** The built-in driver allows full function without the need of an external controller.

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

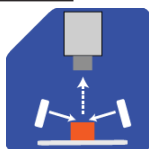
**Polarizers** Filters that reduce reflections on specular surfaces.

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

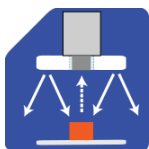
### TYPES OF ILLUMINATION



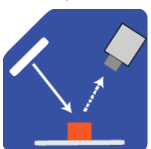
Projector



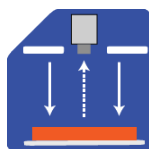
Dark Field



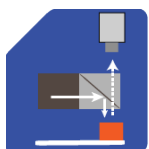
Radial



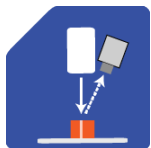
Bright Field



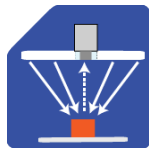
Direct



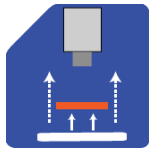
Axial



Line



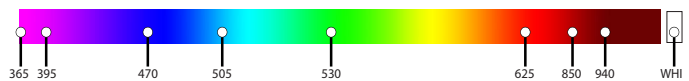
Diffuse Panel



Backlight

### COMMON COLOR/WAVELENGTHS LEGEND

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.