

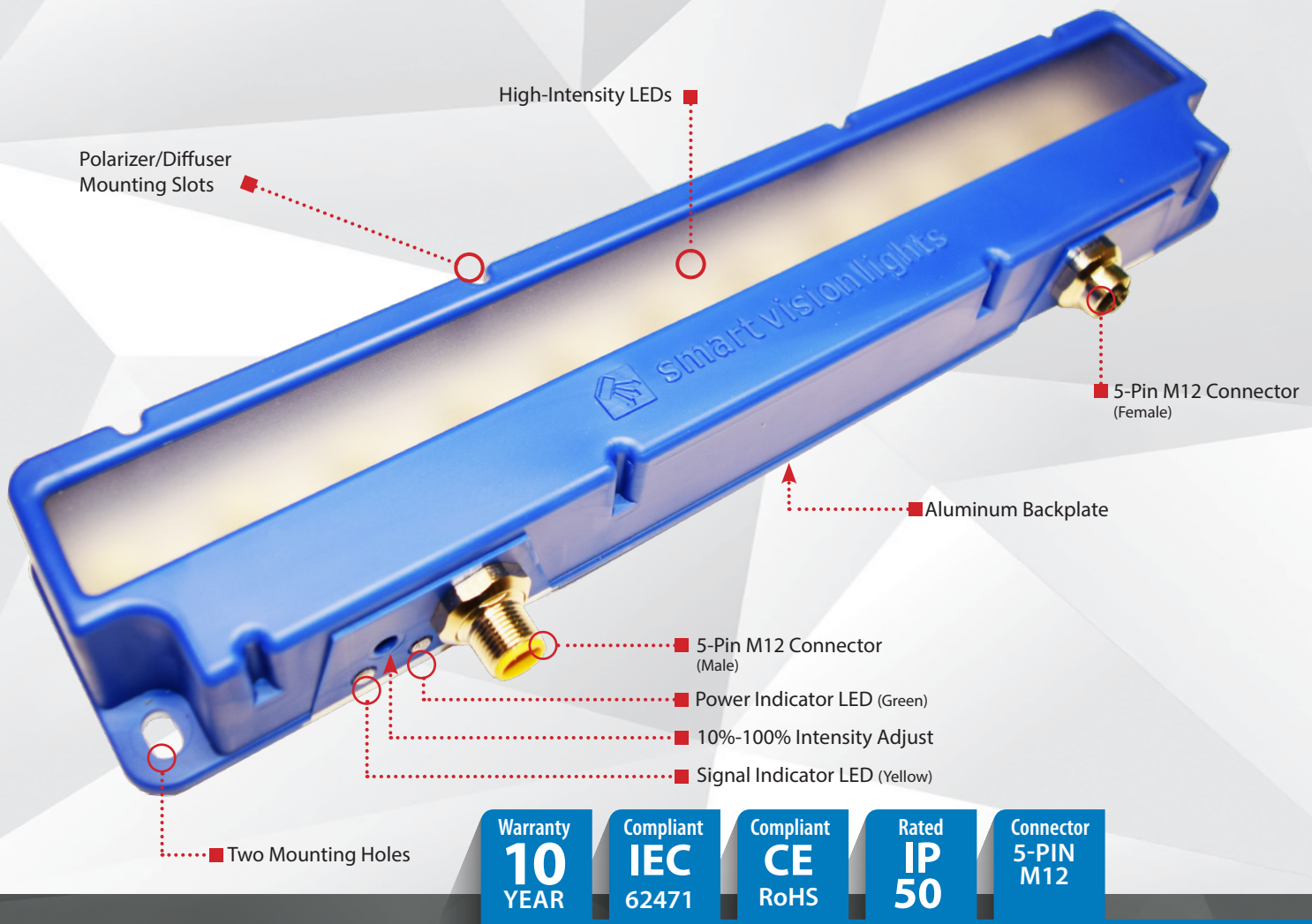


smart
vision lights

L300

Connect-a-Light LINEAR LIGHT

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, no external wiring needed
- ✓ PNP and NPN trigger input signal
- ✓ Daisy-chain up to six L300 linear lights using a standard 5-pin M12 jumper cable





PRODUCT DESCRIPTION

The L300 array utilizes 12 high-intensity LEDs and features an integrated constant current driver built into the light. Connect-a-Light Series of Linear Lights uses 24VDC and can operate in continuous mode. NPN or PNP strobe triggers can be used to control the pulse of the light. Use NPN or PNP strobe triggers to control the light's pulse. Control intensity via a 1–10V remote analog signal or manual potentiometer.

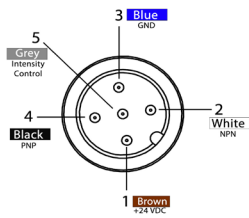


PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/-5%
Input Current	Max. 700 mA
Wattage	Max. 17 W
On/Off Input	PNP: +4VDC to activate NPN: GND (<1VDC) to activate
PNP Line	4 mA @ 4VDC 10 mA @ 12VDC 20 mA @ 24VDC
NPN Line	15 mA @ ground (0 V DC)
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 increase intensity.
Analog Intensity	Brightness output is adjustable from 10%–100% via a 1–10VDC signal (Jumping 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	~370 g
Compliances	CE, RoHS, IEC 62471
Warranty	10 years. For complete warranty information, visit smartvisionlights.com/warranty .



WIRING CONFIGURATION



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*

* Some cables use green/yellow for pin 5

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

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

OPTIONAL

For maximum intensity, connect analog intensity to +V DC (24VDC) — jumper pin 5 to pin 1.



RESOURCE CORNER

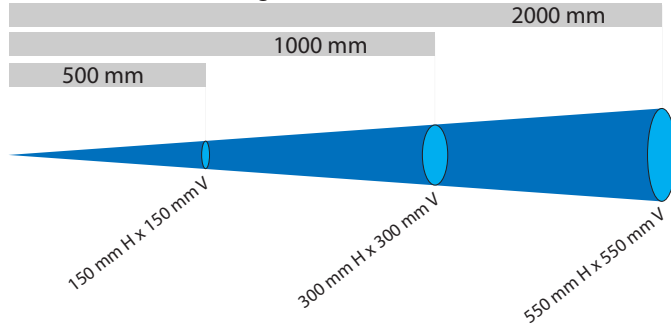
Additional resources, including CAD files, videos, and application examples, are available on our website.



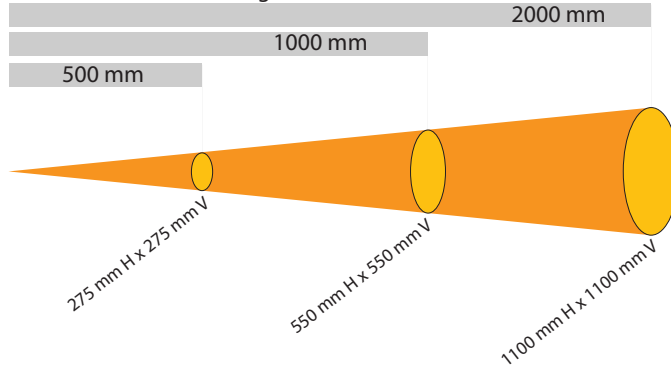
LIGHT PATTERNS

Smart Vision Lights recommends the L300 be used at a working distance between 300 mm and 4000 mm.

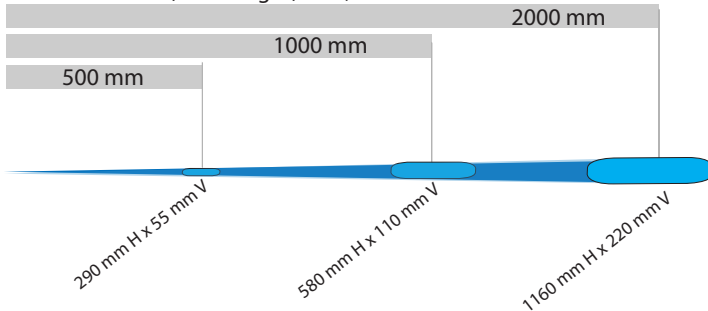
Beam Diameter (White Light) — 5,700 K



Beam Diameter (White Light) — 5,700 K



Beam Diameter (White Light) — 5,700 K



LIGHTING PATTERN FOR THE L300 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
Illuminance measurement taken on White Lights — 5,700 K	

LIGHTING PATTERN FOR THE L300 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	8000
Illuminance measurement taken on White Lights — 5,700 K	

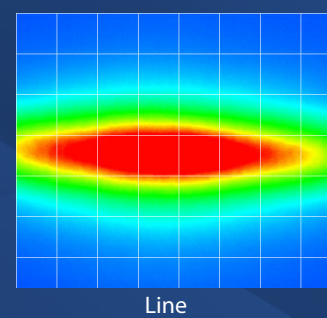
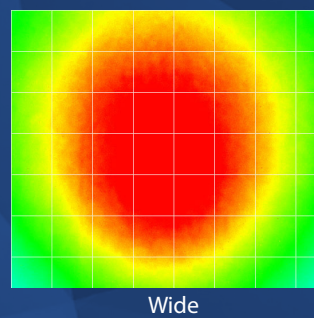
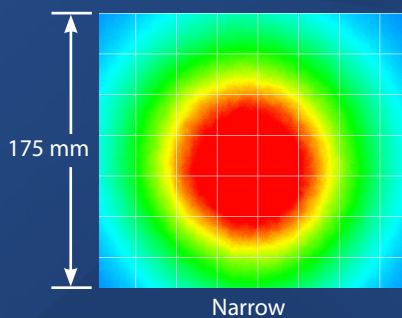
LIGHTING PATTERN FOR THE L300 with Line (L) Lenses

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
Illuminance measurement taken on White Lights — 5,700 K	

The L300 Linear Light produces a uniform light pattern.

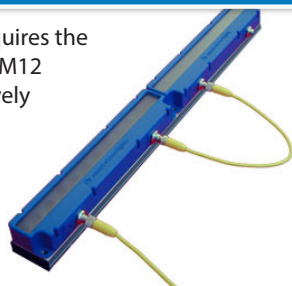
Working Distance = 500 mm Grid set to 25 mm x 25 mm



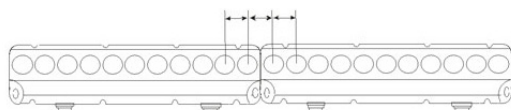


DAISY-CHAIN LIGHTS

L300 Series of lights requires the use of a standard 5-pin M12 jumper cable to effectively parallel up to six L300 lights.

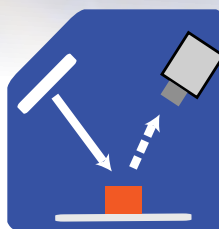


There is consistent spacing between LEDs as lights are connected together.

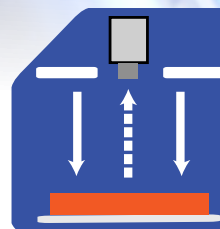


ILLUMINATION

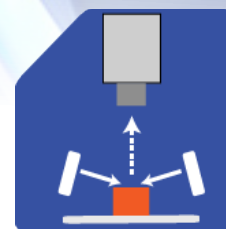
L300 Series of Linear Lights works best for:



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, 940, 1050, 1200, 1300, 1450, and 1550.

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

L300 —



COLOR:



LENS:

Leave blank for Standard (Narrow)

W = Wide

L = Line

LINEAR POLARIZER:

Leave blank for none

LPI = Factory Installed

Part Number Examples:

L300-625 L300, 625 nm Red Wavelength, Standard (Narrow) Lens

L300-WHI-L L300, White, Line Lens

L300-470-W-LPI L300, 470 nm Blue Wavelength, Wide Lens, with Linear Polarizer Installed



This light is available in our SWIR LEDs.



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



LENS OPTICS

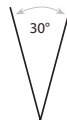
NARROW (STANDARD)

Narrow, 16° angle-cone lenses are standard. Standard lenses project a narrow beam of illumination and are used for long working distances.



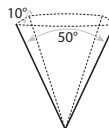
WIDE

Wide, 30° angle-cone lenses project a large area of illumination. They create a floodlight effect and 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.



Additional lens options available upon request.

When to Use a Linear Polarizer

Polarizing filters can reduce reflections on specular (dielectric or nonmetal) surfaces.

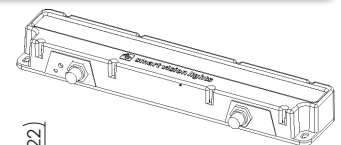
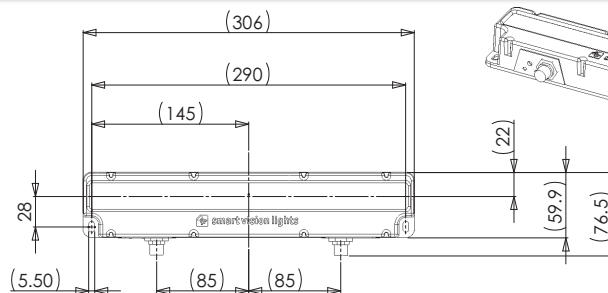
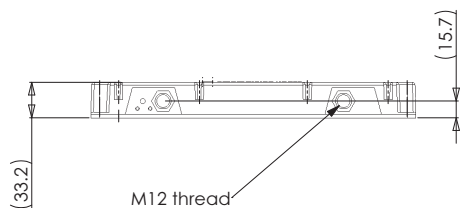
A Linear Polarizer has a typical transmission of 38% while blocking 62% of the light not in the polarization plane.

WARNING: Running a light in continuous operation while using a standard polarizer with certain wavelengths (e.g., white, blue) may burn the polarizer.



PRODUCT DRAWING

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





ACCESSORIES

Power Cables



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

Jumper Cables (Daisy Chain)



Length	Part Number
300 mm	5PM12-J300
1000 mm	5PM12-J1000
2000 mm	5PM12-J2000

Mount



Description	Part Number
3-Axis Pan and Tilt Mount	PB300-M5

Mounting Rails



Length	Part Number
300 mm	LEXT300
600 mm	LEXT600
900 mm	LEXT900
1200 mm	LEXT1200
Custom sizes available	

Diffuser



Description	Part Number
Diffuser Kit	L300-DKIT

Linear Polarizer



Description	Part Number
Linear Polarizer Kit	L300-LP

Power Adapters *



Description	Part Number
AC, 24 V, 1.7 A	T1 Power Supply
24 V DC, 9 A / AC input	T2 Power Supply

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



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.

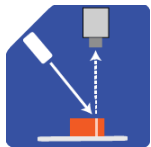
Built-In Driver The built-in driver allows full function without the need for an external controller.

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

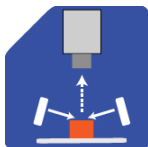
Polarizers Filters that reduce reflections on specular surfaces.

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

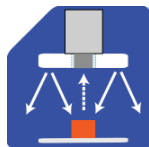
TYPES OF ILLUMINATION



Projector



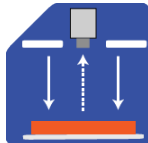
Dark Field



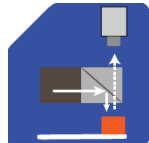
Radial



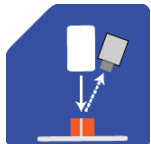
Bright Field



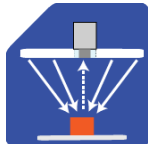
Direct



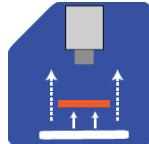
Axial



Line



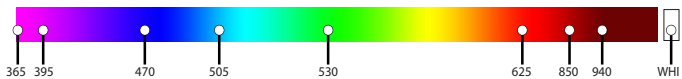
Diffuse Panel



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'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.