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

smartvisionlights.com
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

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Input</td>
<td>24VDC +/- 5%</td>
</tr>
<tr>
<td>Input Current</td>
<td>Max. 700 mA</td>
</tr>
<tr>
<td>Wattage</td>
<td>Max. 17 W</td>
</tr>
<tr>
<td>On/Off Input</td>
<td>PNP: +4VDC to activate</td>
</tr>
<tr>
<td>PNP Line</td>
<td>4 mA @ 4VDC</td>
</tr>
<tr>
<td>NPN Line</td>
<td>15 mA @ ground (0 V DC)</td>
</tr>
<tr>
<td>Yellow Indicator LED</td>
<td>LED strobe indicator</td>
</tr>
<tr>
<td>Green Indicator LED</td>
<td>ON = Power</td>
</tr>
<tr>
<td>Continuous Mode</td>
<td>NPN can be tied to ground OR PNP can be tied to 24VDC (not both)</td>
</tr>
<tr>
<td>Potentiometer</td>
<td>270º turn pot — Intensity control of 10%–100%. Turn clockwise to increase intensity.</td>
</tr>
<tr>
<td>Analog Intensity</td>
<td>Brightness output is adjustable from 10%–100% via a 1–10VDC signal (Jumpering pin 5 to pin 1 will provide maximum intensity.)</td>
</tr>
<tr>
<td>Connection</td>
<td>5-pin M12 connector</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>-18º–40ºC(0º–104ºF)</td>
</tr>
<tr>
<td>IP Rating</td>
<td>IP50</td>
</tr>
<tr>
<td>Weight</td>
<td>~370 g</td>
</tr>
<tr>
<td>Compliances</td>
<td>CE, RoHS, IEC 62471</td>
</tr>
<tr>
<td>Warranty</td>
<td>10 years. For complete warranty information, visit smartvisionlights.com/warranty.</td>
</tr>
</tbody>
</table>

WIRING CONFIGURATION

<table>
<thead>
<tr>
<th>Pins</th>
<th>Function</th>
<th>Signal</th>
<th>Wire Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power In</td>
<td>+24VDC</td>
<td>BROWN</td>
</tr>
<tr>
<td>2</td>
<td>NPN</td>
<td>Sinking Signal</td>
<td>WHITE</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
<td>Ground</td>
<td>BLUE</td>
</tr>
<tr>
<td>4</td>
<td>PNP</td>
<td>Sourcing Signal</td>
<td>BLACK</td>
</tr>
<tr>
<td>5</td>
<td>Intensity Control</td>
<td>1–10VDC</td>
<td>GREY</td>
</tr>
</tbody>
</table>

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

**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:**
- WHI
- 595
- 635
- 470
- 505
- 530
- 625
- 850
- 940

**LENS:**
- Leave blank for Standard (Narrow) Lens
- 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

*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.*

**PRODUCT DRAWING**

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

**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.
## ACCESSORIES

### Power Cables

<table>
<thead>
<tr>
<th>Length</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 m</td>
<td>SPM12-5</td>
</tr>
<tr>
<td>10 m</td>
<td>SPM12-10</td>
</tr>
<tr>
<td>15 m</td>
<td>SPM12-15</td>
</tr>
</tbody>
</table>

### Jumper Cables (Daisy Chain)

<table>
<thead>
<tr>
<th>Length</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 mm</td>
<td>SPM12-J300</td>
</tr>
<tr>
<td>1000 mm</td>
<td>SPM12-J1000</td>
</tr>
<tr>
<td>2000 mm</td>
<td>SPM12-J2000</td>
</tr>
</tbody>
</table>

### Mount

- 3-Axis Pan and Tilt Mount: PB300-M5

### Mounting Rails

<table>
<thead>
<tr>
<th>Length</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 mm</td>
<td>LEXT300</td>
</tr>
<tr>
<td>600 mm</td>
<td>LEXT600</td>
</tr>
<tr>
<td>900 mm</td>
<td>LEXT900</td>
</tr>
<tr>
<td>1200 mm</td>
<td>LEXT1200</td>
</tr>
</tbody>
</table>

### Diffuser

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diffuser Kit</td>
<td>L300-DKIT</td>
</tr>
</tbody>
</table>

### Linear Polarizer

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear Polarizer Kit</td>
<td>L300-LP</td>
</tr>
</tbody>
</table>

### Power Adapters *

- 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 Part Number for 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**
- **Axial**
- **Line**
- **Direct**
- **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.