



smart  
vision lights

# ODLX300 *Direct Connect* LINEAR LIGHT OVERDRIVE™

## P R O D U C T D A T A S H E E T



High Intensity LEDs

5-position input connector

T-slots for Connecting Lights

Aluminum Housing

10 - 100% intensity adjustment potentiometer



|                               |                                  |                                |                                 |   |
|-------------------------------|----------------------------------|--------------------------------|---------------------------------|---|
| Warranty<br><b>10</b><br>YEAR | Compliant<br><b>IEC</b><br>62471 | Compliant<br><b>CE</b><br>RoHS | Rated<br><b>IP</b><br><b>50</b> | Connector<br><b>5-PIN</b><br><b>M12</b> |
|-------------------------------|----------------------------------|--------------------------------|---------------------------------|---|

### PRODUCT HIGHLIGHTS

- ✓ OverDrive™ — Up to five times brighter than a standard Direct Connect Linear Light
- ✓ Built-in driver
- ✓ PNP and NPN strobe input
- ✓ T-Slot for mounting and connecting together
- ✓ Direct connect up to 6 units



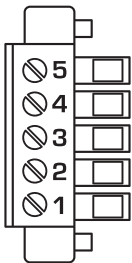
## PRODUCT DESCRIPTION

The modular design of the ODLX300 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 light operates in OverDrive™ strobe mode. 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 300 mm. Direct connect up to six ODLX300 together. Compatible with the ODLX150.

## PRODUCT SPECIFICATIONS

|                      |   |
|----------------------|---|
| Electrical Input     | 24VDC +/- 5%  |
| Input Current        | Max. 700 mA   |
| Wattage              | Max. 17 W   |
| On / Off Input       | PNP > +4 VDC (24 VDC max.) to activate or NPN ≥ GND <1VDC to activate ( <b>not both</b> )   |
| PNP Line             | 4 mA @ 4VDC   10 mA @ 12VDC   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 3 to pin 1 will provide maximum intensity) |
| Connection           | 5-pin M12 connector   |
| Ambient Temperature  | -18°–40° C (0°–104° F)  |
| IP Rating            | IP50  |
| Weight               | ~540g   |
| Compliances          | CE, RoHS, IEC 62471   |

## WIRING CONFIGURATION



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

*For maximum intensity, it is possible to tie pin 3 to pin 1 at +24VDC.*

**OPTIONAL**  
For maximum intensity, it is possible to jumper pin 3 to pin 1

Pin layout for light (Male Connector)



## RESOURCE CORNER

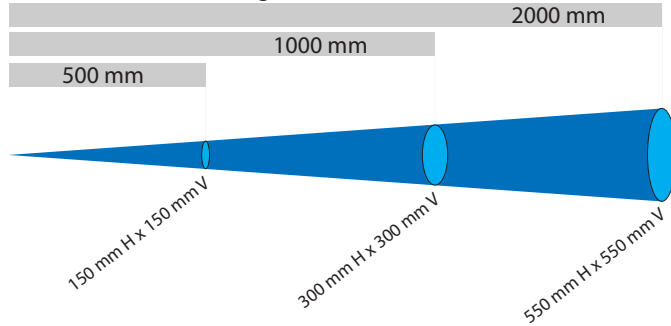
Additional resources are available on our website, including CAD files, videos, and application examples.



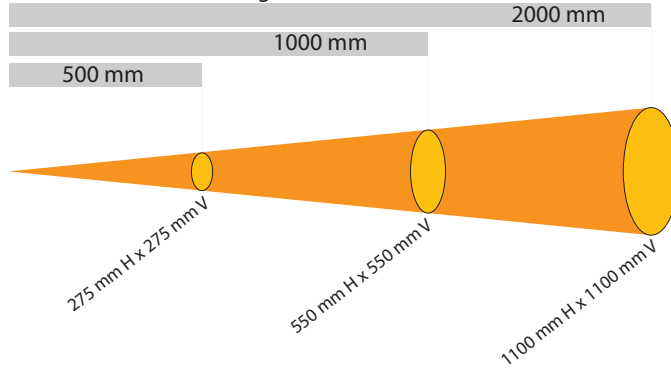
## LIGHT PATTERNS

Smart Vision Lights recommends the ODLX300 be used at a working distance between 300 mm to 4000 mm.

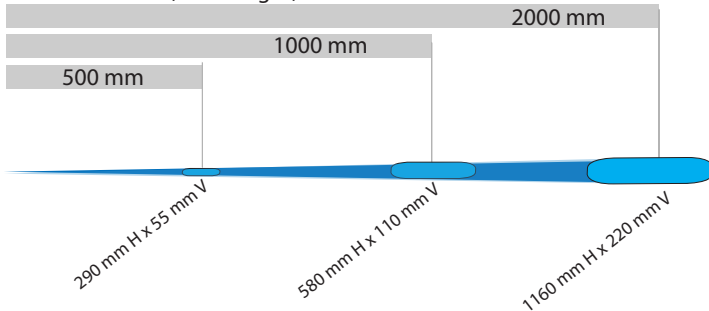
Beam Diameter (White Light) – 6500 K



Beam Diameter (White Light) – 6500 K



Beam Diameter (White Light) – 6500 K



### LIGHTING PATTERN FOR THE ODLX300 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 ODLX300 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> |                   |

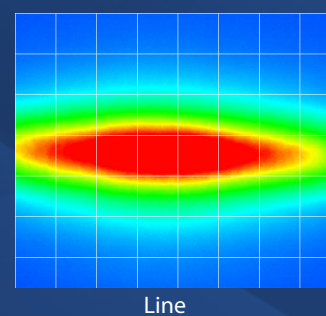
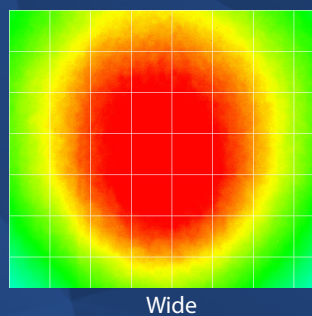
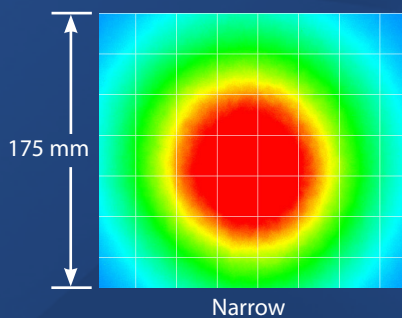
### LIGHTING PATTERN FOR THE ODLX300 with Line (L) Lenses

| 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> |                   |

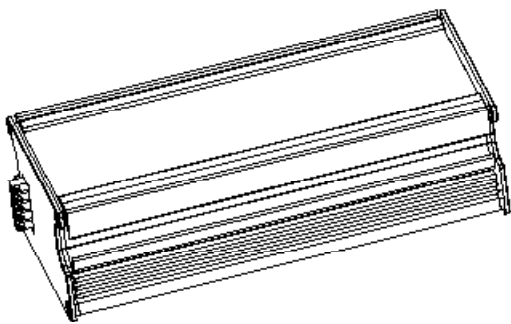
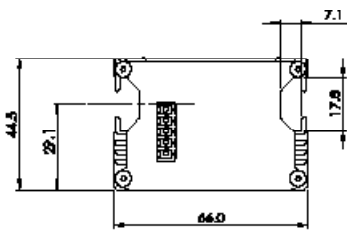
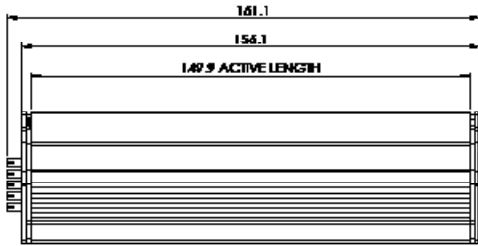
The ODLX300 Linear Light produces a uniform light pattern.

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



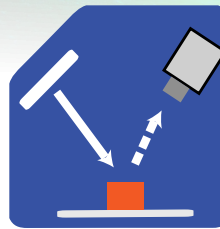
## PRODUCT DRAWING

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

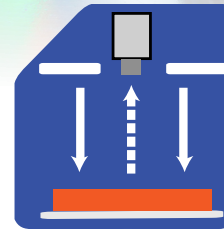


## ILLUMINATION

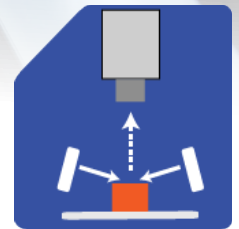
ODLX300 Series of Linear Lights works best for:



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: WHI, 470, 505, 530, 625, 850, and 940.

### 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 365 and 395





## PART NUMBER

**ODLX300** -



**COLOR:**



**LENS:**

Leave blank for standard (narrow)  
W = Wide  
L = Line



**LINEAR POLARIZER:**

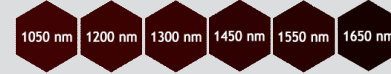
Leave blank for none  
LPI = Factory Installed

### Part Number Examples:

- ODLX300-625** ODLX300, 625 nm Red Wavelength, Standard (Narrow) Lenses
- ODLX300-WHI-L** ODLX300, White, Line Lenses
- ODLX300-470-W-LPI** ODLX300, 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, and 1650 nm)



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



## STANDARD LENS OPTICS

### NARROW

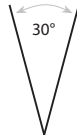
**Narrow lenses are standard.**

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



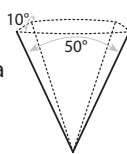
### WIDE

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



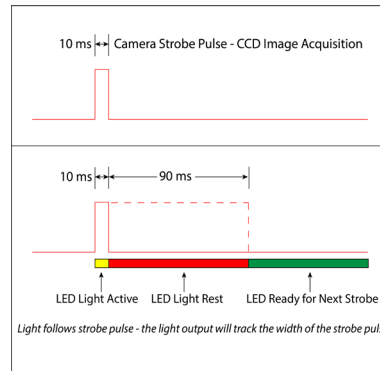
### LINE

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



## DUTY CYCLE

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



Maximum Duty Cycle for OverDrive™ light is 10% (0.1)

Calculating Rest Time

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

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

Example

$$RT = \frac{10 \text{ ms}}{.1} - 10 \text{ ms} = 90 \text{ ms}$$

Rest Time is 90 ms for 10 ms Strobe Time



## ACCESSORIES

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

| No Direct Connect End Cap |             |
|---------------------------|-------------|
|                           |             |
| Description               | Part Number |
| No Direct Connect End Cap | PLT0146-CLR |

| Replacement Terminal Block Plugs         |             |
|--|-------------|
|  |             |
| Description                              | Part Number |
| Male to female terminal block connectors | LX-2CON-KIT |

| Power Connector |             |
|-----------------|-------------|
|                 |             |
| Length          | Part Number |
| 300 mm          | 5PM12-LXP   |



## 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.

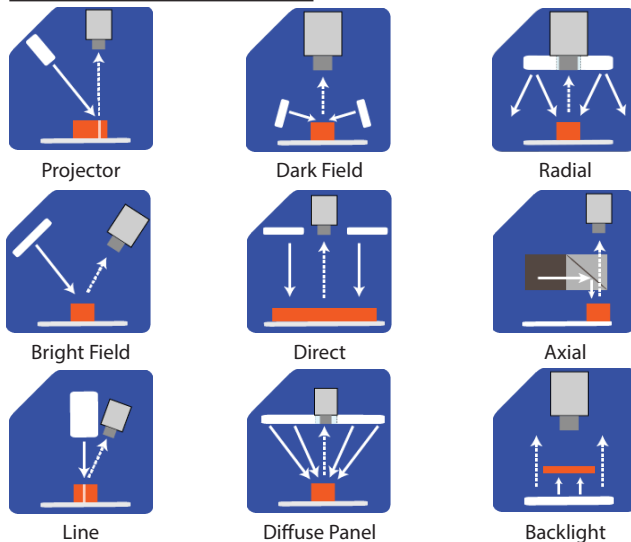
**Built-in Driver** The built-in driver allows full function without the need of an external controller.

**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.

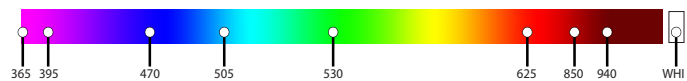
**Diffuser** Used to widen the angle of light emission, reduce reflections, and increase uniformity.

### TYPES OF ILLUMINATION



### 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.