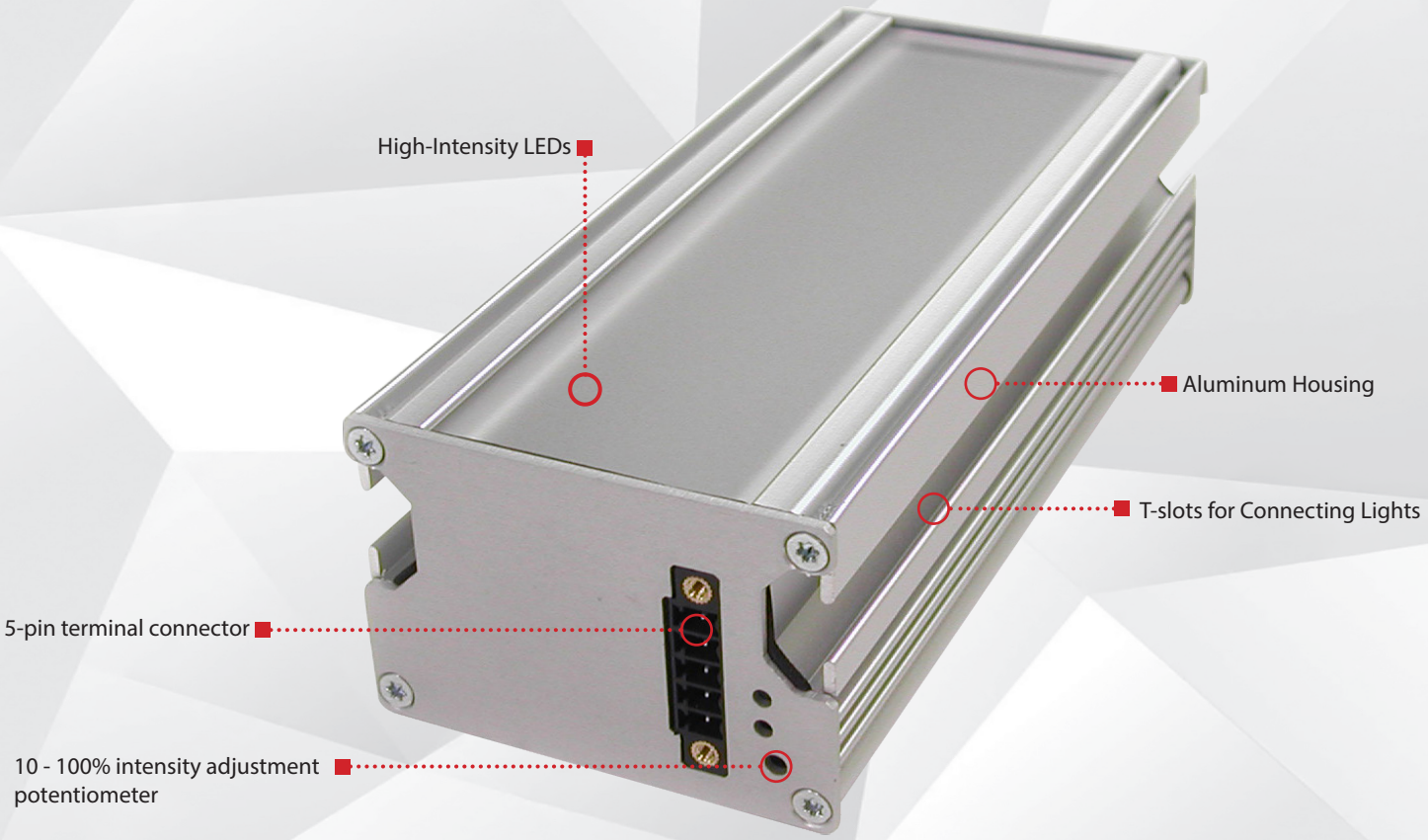
smart vision lights

ODLX150 *Direct Connect*
LINEAR LIGHT
OVERDRIVE™

PRODUCT DATA SHEET



OverDRIVE

Warranty	Compliant	Compliant	Rated	Terminal Connector
10 YEAR	IEC 62471	CE RoHS	IP 50	5-PIN

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 12 units

Rev. 02/21/23

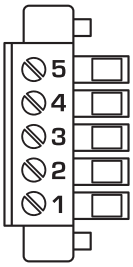
PRODUCT DESCRIPTION

The modular design of the ODLX150 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 150 mm. Direct connect up to twelve ODLX150 together. Compatible with the ODLX300.

PRODUCT SPECIFICATIONS

Electrical Input	24 V DC +/- 5%
Input Current	Max. 4 A
Wattage	Max. 96 W
Trigger Input	PNP > +4 VDC (24 VDC max.) to activate **or** NPN ≥ GND <1VDC to activate **(not both)**
PNP Trigger	4 mA @ 4VDC | 10 mA @ 12VDC | 20 mA @ 24VDC
NPN Trigger	15 mA @ Ground (0VDC)
Yellow Indicator LED	LED Strobe Indicator ON = Light Active
Green Indicator LED	ON = Power
Strobe Duration	Min. 30 us | Max. 125 ms
Potentiometer	270º 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 terminal connector
Ambient Temperature	-18º–40º C (0º–104º F)
IP Rating	IP50
Weight	~285g
Compliances	CE, RoHS, IEC 62471

WIRING CONFIGURATION



Pin layout for light (Male Connector)

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

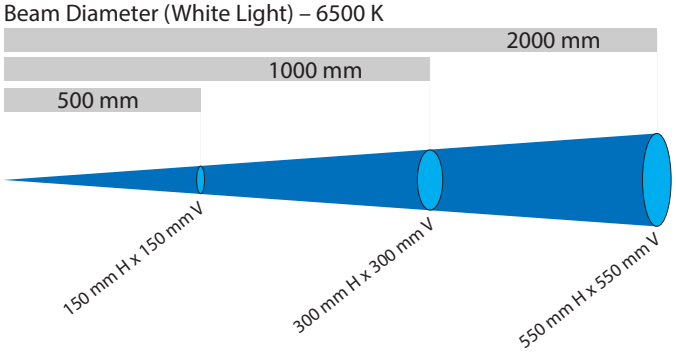
RESOURCE CORNER

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

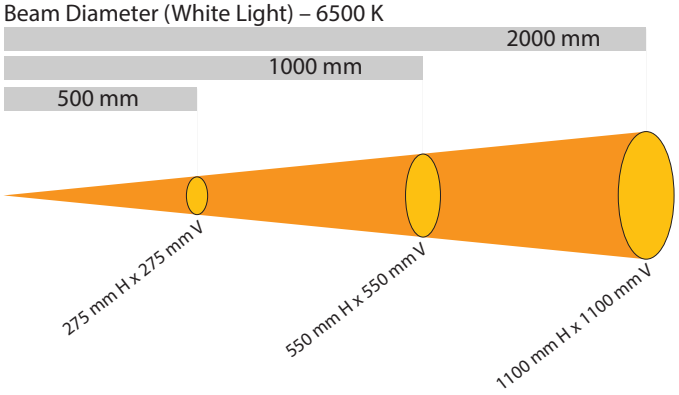
LIGHT PATTERNS

Smart Vision Lights recommends the ODLX150 be used at a working distance between 300 mm to 4000 mm.

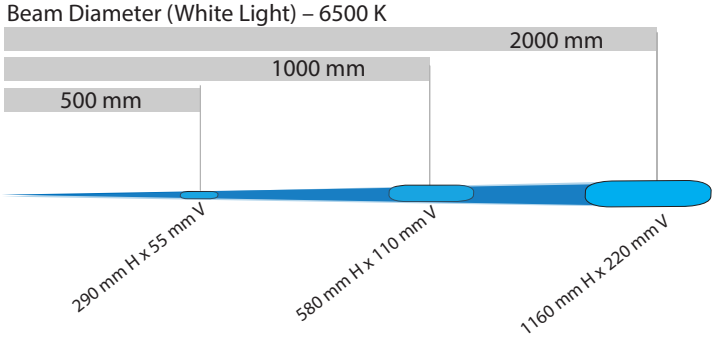
Beam Diameter (White Light) – 6500 K



Beam Diameter (White Light) – 6500 K



Beam Diameter (White Light) – 6500 K



LIGHTING PATTERN FOR THE ODLX150 **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
Illumination measurement taken on White Lights - 6500K	

LIGHTING PATTERN FOR THE ODLX150 **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
Illumination measurement taken on White Lights - 6500K	

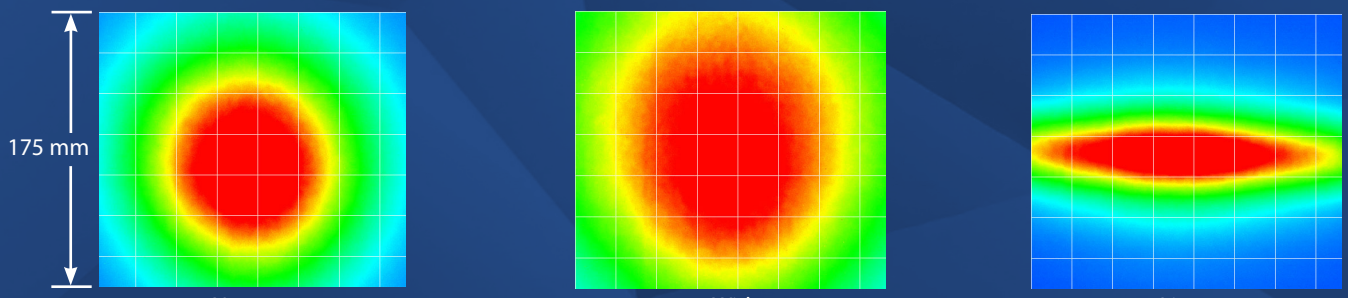
LIGHTING PATTERN FOR THE ODLX150 **with Line (L) Lenses**

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
Illumination measurement taken on White Lights - 6500K	

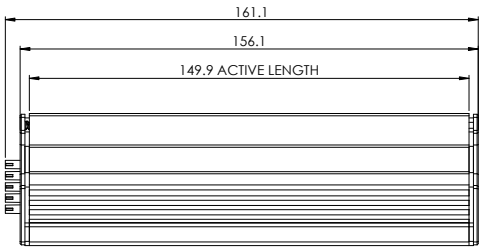
The ODLX150 Linear Light produces a uniform light pattern.

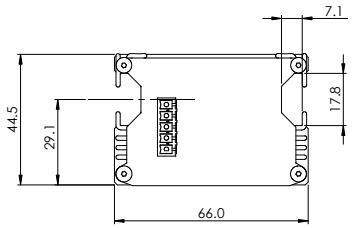
Working Distance = 500 mm Grid set to 25 mm x 25 mm

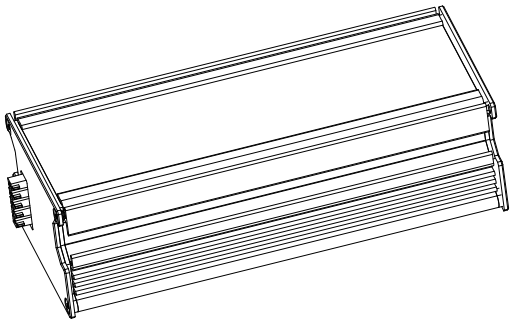


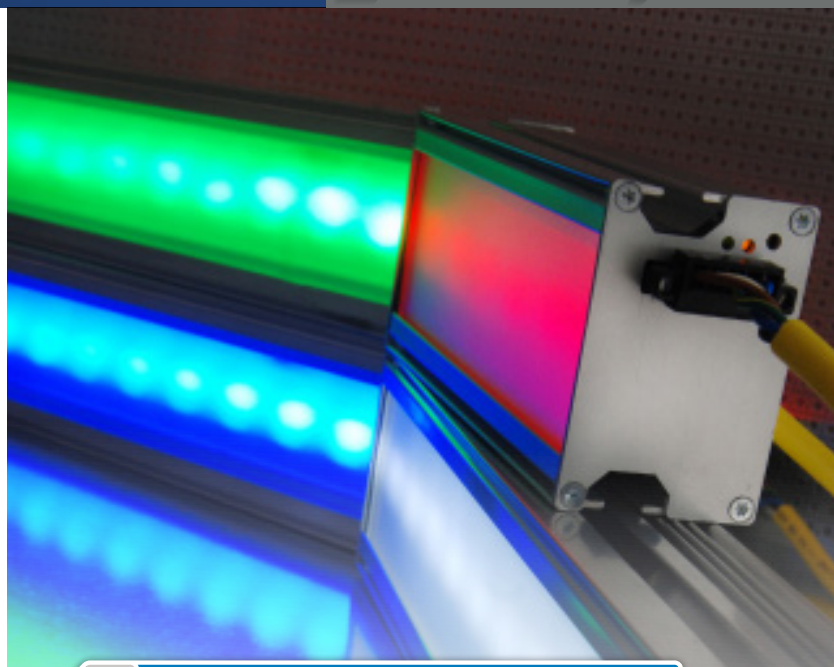
PRODUCT DRAWING

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



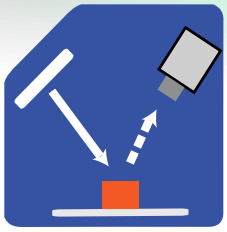




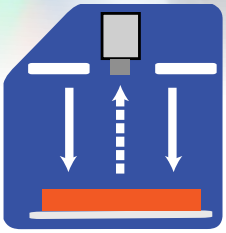


ILLUMINATION

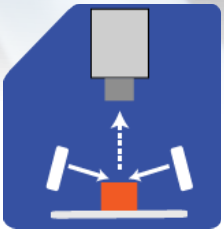
ODLX150 Series of Linear Lights works best for:



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

ODLX150 – □□□ – □ – □□□

COLOR:

LENS:

Leave blank for standard (narrow)

W = Wide

L = Line

LINEAR POLARIZER:

Leave blank for none

LPI = Factory Installed

Part Number Examples:

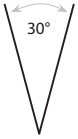
ODLX150-625	ODLX150, 625 nm Red Wavelength, Standard (Narrow) Lenses
ODLX150-WHI-L	ODLX150, White, Line Lenses
ODLX150-470-W-LPI	ODLX150, 470 nm Blue Wavelength, Wide Lenses, with Linear Polarizer installed

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

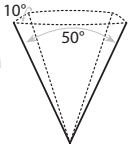
STANDARD LENS OPTICS

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

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

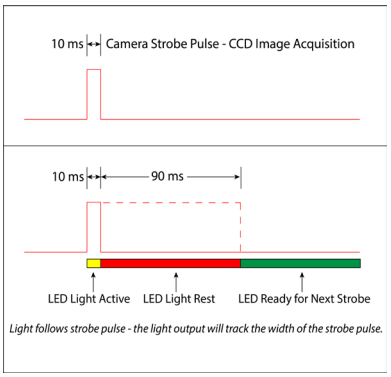


LINE
Line, with a 10° width and a 50° fan angle projects a thin, narrow beam of illumination.



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

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

Rest Time is 90 ms for 10 ms Strobe Time

ACCESSORIES

Connector (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

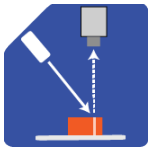
GLOSSARY

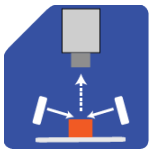
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

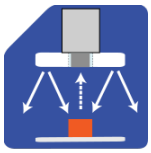
TERMINOLOGY

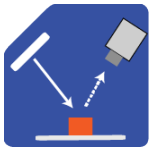
OverDrive™ Lights include an integrated high-pulse driver for complete LED light control.
Continuous Operation Lights stay on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-pulse operation) mode into one easy-to-use light.
Built-in Driver The built-in driver allows 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.

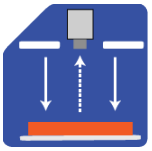
TYPES OF ILLUMINATION

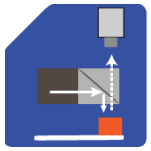

Projector

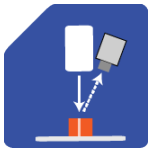

Dark Field

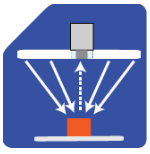

Radial

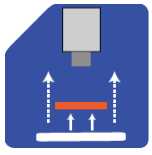

Bright Field


Direct


Axial

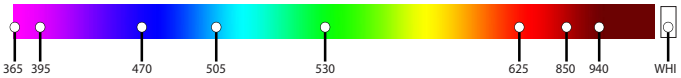

Line


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.*

SWIR SHORTWAVE **INFRARED**

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.*