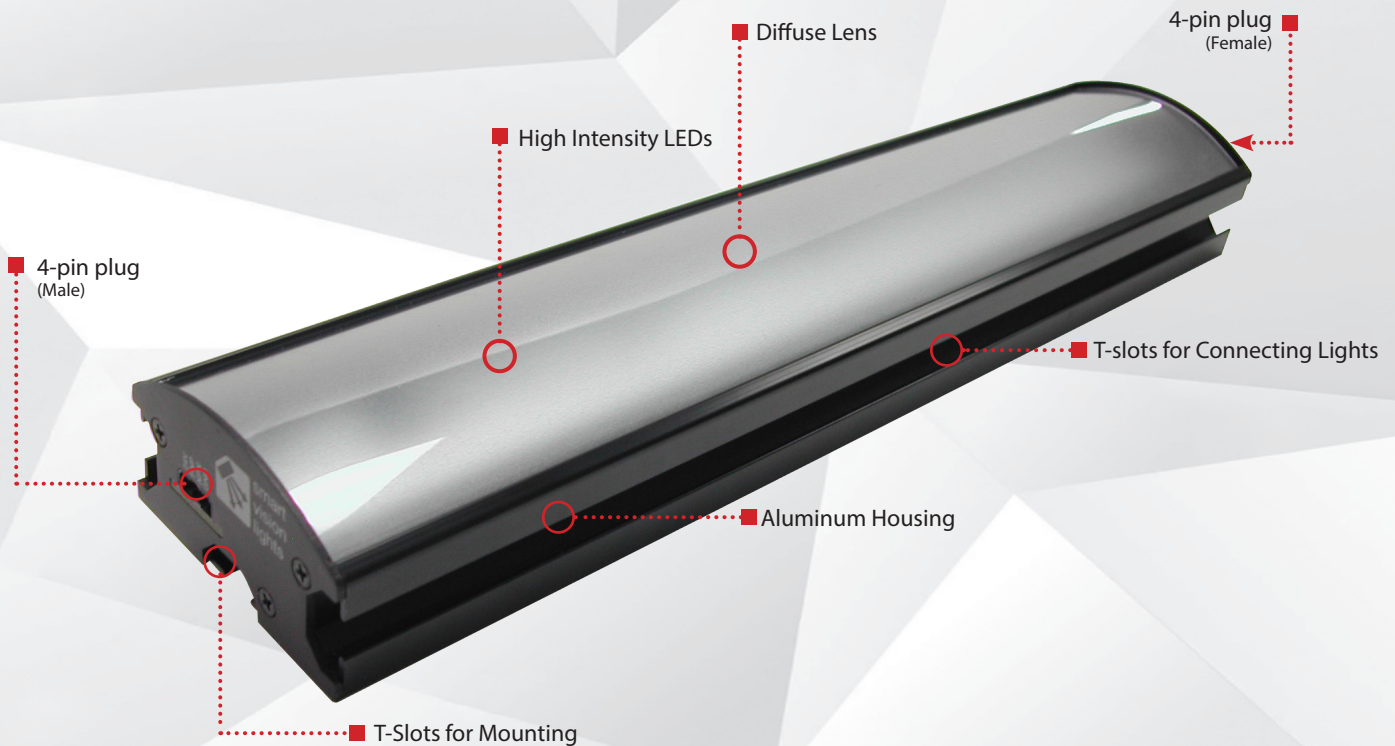


## P R O D U C T D A T A S H E E T



Warranty  
**10**  
YEAR

Compliant  
**IEC**  
62471

Compliant  
**CE**  
RoHS

Rated  
**IP**  
50

Connector  
**5-PIN**  
M12

## PRODUCT HIGHLIGHTS

- ✓ OverDrive™ — Up to five times brighter than a standard fluorescent replacement light
- ✓ Built-in driver, no external wiring needed
- ✓ PNP and NPN strobe input
- ✓ T-Slot for mounting and connecting together
- ✓ Direct connect up to eight lights in a line without loss of uniformity
- ✓ Optional add-ons include 5-pin M12 connectors



## PRODUCT DESCRIPTION

The ODLHF300 Series of lights was designed as a direct LED replacement for standard fluorescent lighting. The plug n' play design of the Direct-Connect Linear Light Series gives users tremendous flexibility without the concern for additional wiring. The ODLHF300 array utilizes 30 high intensity LEDs and features a diffuse lens cover designed to disperse the light a uniform and homogenous pattern the same as a fluorescent light of equivalent length. It also features an integrated constant current driver built into the light. Direct-Connect Series Linear Lights utilize 24 V DC and can operate in constant ON or strobing mode. NPN or PNP strobe trigger can be used to control the pulse of the light..

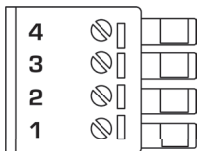


## PRODUCT SPECIFICATIONS

Electrical Input	24 V DC +/- 5%
Input Current	Max. 2A
Wattage	Max. 48 W
On / Off Input	PNP > +4 V DC or greater to activate   NPN > GND (<1 V DC) to activate
PNP Line	4 mA @ 4 V DC   10 mA @ 12 V DC   20 mA @ 24 V DC
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 24 V DC (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 1–10V DC 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	~455g
Compliances	CE, RoHS, IEC 62471



## WIRING CONFIGURATION



Pin layout for light (Male Connector)

Pins	Function	Signal	Wire Color
4	Ground	GND	BLUE
3	NPN Strobe	GND for active ON	WHITE
2	PNP Strobe	+24 V DC for active on	BLACK
1	Power in	+24 V DC	BROWN



## RESOURCE CORNER

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

### Smart Vision Lights

2359 Holton Road  
Muskegon, MI 49445  
P: +1 231.722.1199 | F: +1 231.722.9922  
[smartvisionlights.com](http://smartvisionlights.com)  
techsupport@smartvisionlights.com  
Open: Monday – Friday | 8am–5pm ET

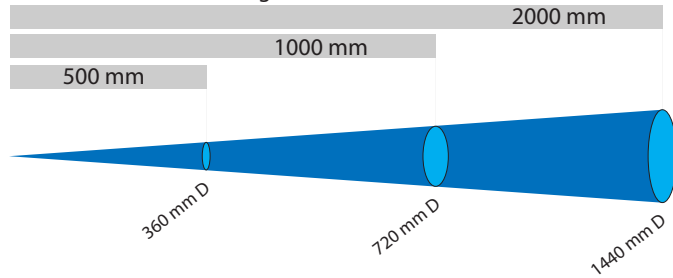




## LIGHT PATTERNS

Smart Vision Lights recommends the ODLHF300 be used at a working distance between 150 mm to 2000 mm.

Beam Diameter (White Light) – 6500 K



LIGHTING PATTERN FOR THE ODLHF300

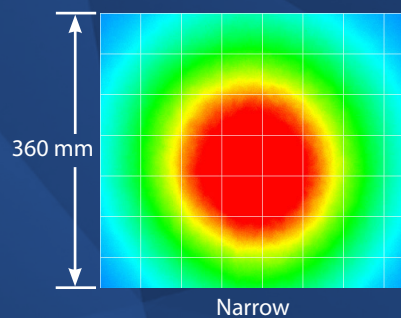
Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
500 mm (19.7")	360 mm D
1000 mm (39.4")	720 mm D
2000 mm (78.8")	1440 mm D

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	1680
<i>Illumination measurement taken on White Lights - 6500K</i>	

The ODLHF300 Linear Light produces a uniform light pattern.

Working Distance = 500 mm Grid set to 50 mm x 50 mm



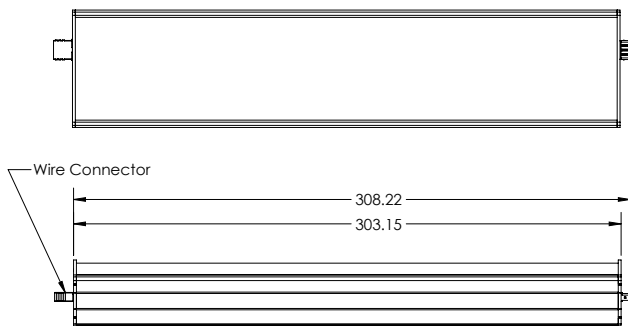
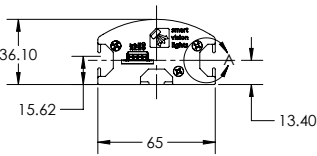
## DAISY CHAIN LIGHTS

The ODLHF300 series allows for connecting lights together with no additional cables. Lights are directly connected together, with no space between the lights. UP to eight LHF300 lights can be directly connected together. The LXJ-2DTN is required to directly connect two ODLHF300 lights together.



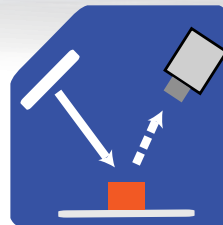
## PRODUCT DRAWING

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

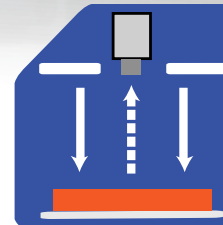


## ILLUMINATION

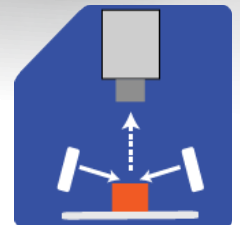
ODLHF300 Series of Linear Lights works best for:



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



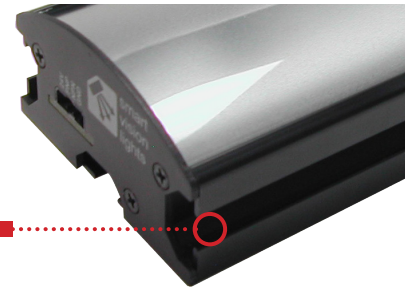


## MOUNTING

Mounting options include three T-slots (two along the sides and one along the bottom) on the ODLHF300 fluorescent replacement light.

### Optional Mounting Hardware:

T-Slots = M5 x 0.8 mm T-Nut



T-Slots



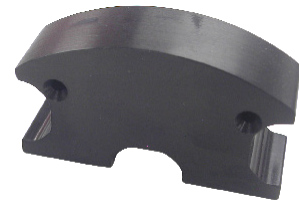
## ADD-ONS



M12 Male Adapter  
Part# LHF300-E-PKIT

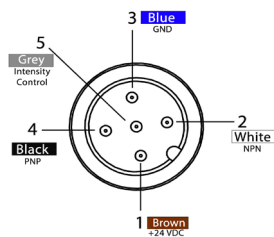


M12 Female Adapter  
Part# LHF300-E-PKIT



M12 Cover Adapter  
Part# LHF300-EC

## WHEN USING CONNECTOR ADAPTERS



Pin layout for light (Male Connector)

### Wiring Configuration For the 5-pin M12 Adapter:

Pins	Function	Signal	Wire Color
1	Power in	+24 V DC	BROWN
2	NPN Strobe	GND for active ON	WHITE
3	Ground	GND	BLUE
4	PNP Strobe	+24 V DC for active on	BLACK
5	NOT USED	NOT USED	GREY

For continuous mode: PNP (pin 4) can be tied to +24 V DC (pin 1) or NPN (pin 2) can be tied to Ground (pin 3).

When a ODLHF300 light has a M12 male adapter and a M12 female adapter installed, the light can be daisy-chained with another ODLHF300 light. The one being daisy-chained too does require having at least a M12 male adapter. A standard jumper cable is required when daisy-chaining lights (Part Number: 5PM12-J300, 5PM12-J1000, or 5PM12-J2000).



## PART NUMBER

ODLHF300 – [ ] [ ] [ ] – [ ] [ ] [ ] – [ ] [ ] [ ]

**CONNECTOR:**

Leave blank for 4-pin plug (male)

M12 = 5-pin M12 (male)

**COLOR:**



**LINEAR POLARIZER:**

Leave blank for none

LPI = Factory Installed

**Part Number Examples:**

**ODLHF300-625** ODLHF300, 4-pin plug connector, 625 nm Red Wavelength

**ODLHF300-M12-WHI** ODLHF300, 5-pin M12 (male), WHI white

**ODLHF300-470-LPI** ODLHF300, 4-pin plug connector, 470 nm Blue Wavelength, with Linear Polarizer installed

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

### When to Use a Linear Polarizers?

Polarizing filters can reduce reflections on specular (Dielectric or non-metal) surfaces.

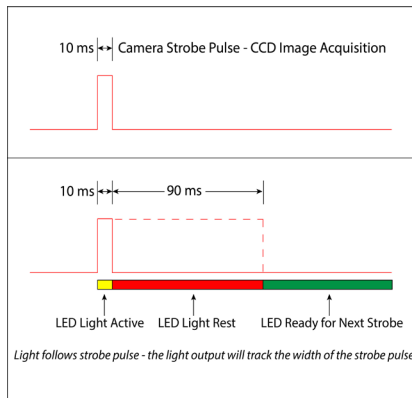
A Linear Polarizer has a typical transmission of 38% while blocking 62% of the light not in the polarization plane.

**WARNING:** Running a light in continuous operation while using a standard polarizer with certain wavelengths (ex. white, blue) may result in burning of the polarizer.



## DUTY CYCLE

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



### 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

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




## ACCESSORIES

**M12 Pigtail cable**



Description	Part Number
	5PM12-LHFP

**Connector  
(Only for Direct Connect)**



Description	Part Number
Set of 2 Connectors	LXJ-2DTN

**Swivel Mount**



Description	Part Number
	LHF300-BKT

**M12 Cover Adapter**



Description	Part Number
Cover Adapter	LHF300-EC

**M12 Male Adapter**




Description	Part Number
Male Adapter	LHF300-PKIT

**M12 Female Adapter**



Description	Part Number
Female Adapter	LHF300-E-PKIT

**Jumper Cables**



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

\* Only used when connecting LHF300 with male & female adapters installed.



## 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.

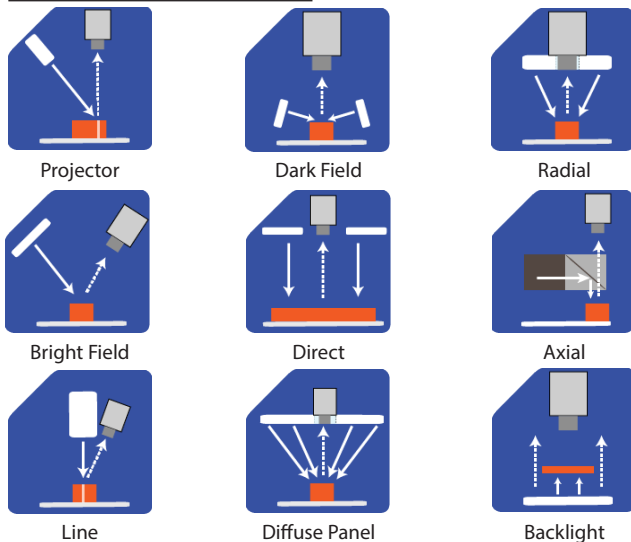
**Built-in Driver** The built-in driver allows full function without the need of an external controller.

**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.

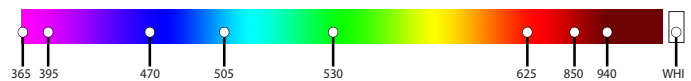
**Diffuser** Used to widen the angle of light emission, reduce reflections, and increase uniformity.

### 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.