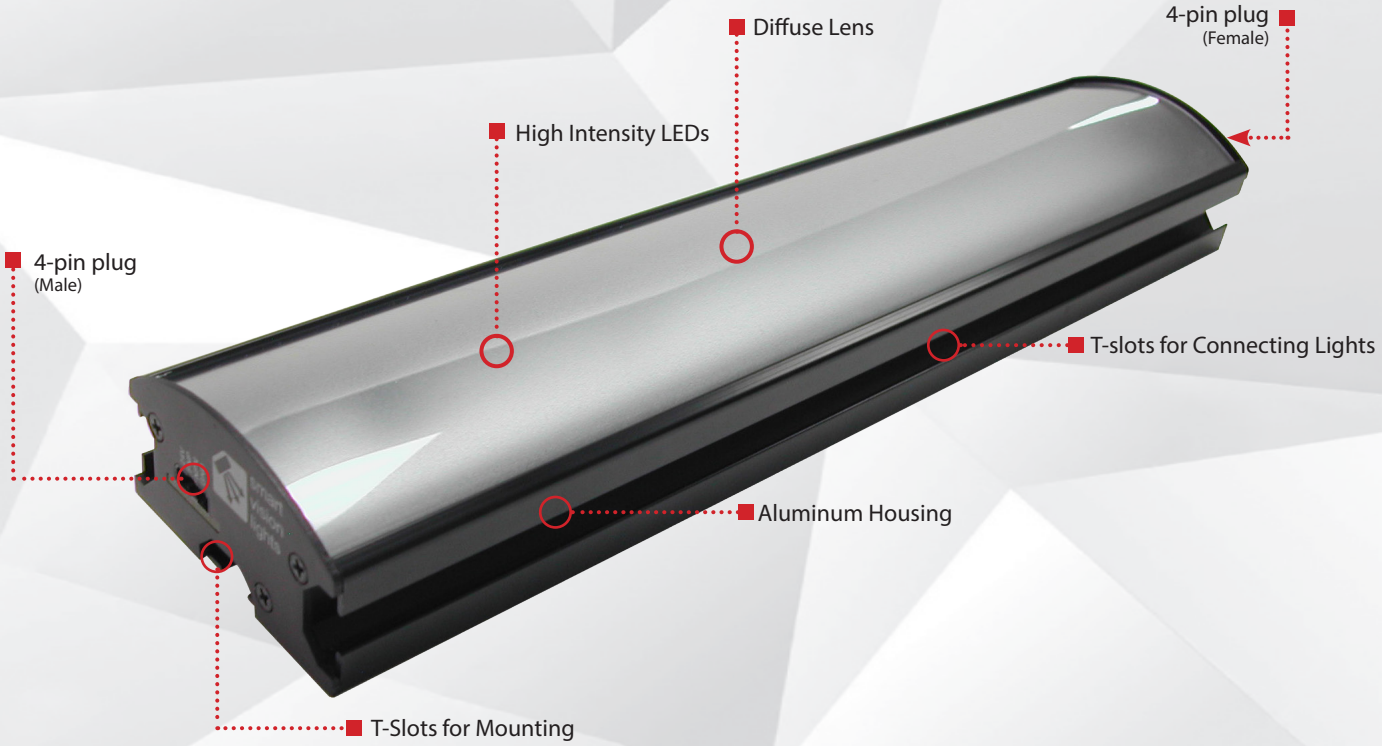
smart vision lights

ODLHF300 *Direct Connect*

LINEAR LIGHT

FLOURESCENT REPLACEMENT
OVERDRIVE™

PRODUCT DATA SHEET



OverDRIVE™

Warranty	Compliant	Compliant	Rated	Connector
10 YEAR	IEC 62471	CE RoHS	IP 4X	5-PIN M12

PRODUCT HIGHLIGHTS

- ✓ OverDrive™
- ✓ SafeStrobe™ technology
- ✓ Built-in driver
- ✓ PNP and NPN trigger signal input
- ✓ T-Slot for mounting and connecting together
- ✓ Direct connect up to six lights in a line without loss of uniformity

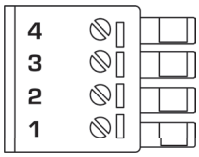
PRODUCT DESCRIPTION

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.

PRODUCT SPECIFICATIONS

Electrical Input	24 V DC +/- 5%
Input Current	Max. 2A
Wattage	Max. 48 W
Trigger Input	PNP > +4 VDC (24 VDC max.) to activate **or** NPN ≥ GND <1VDC to activate **(not both)**
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
Strobe Duration	Min. 30 us | Max. 125 ms
Analog Intensity	The output is adjustable from 10–100% of brightness by a 1–10 V DC signal. (Jumpering pin 5 to pin 1 will provide maximum intensity)
Connection	4-pin plug connector
Ambient Temperature	-18º–40º C (0º–104º F)
IP Rating	IP4X
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.

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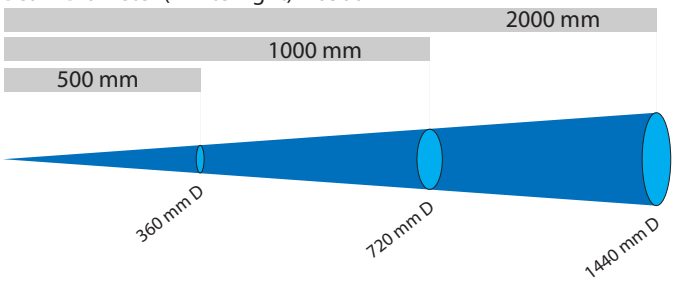
smartvisionlights.com
techsupport@smartvisionlights.com
Open: Monday – Friday | 8am–5pm ET

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



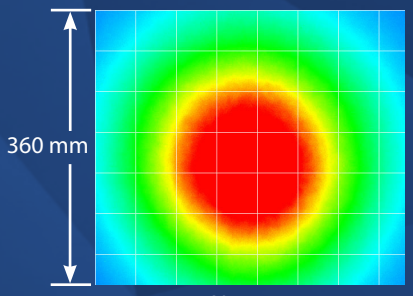
LIGHTING PATTERN FOR THE ODLHF300

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
Illumination measurement taken on White Lights - 6500K	

The ODLHF300 Linear Light produces a uniform light pattern.

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



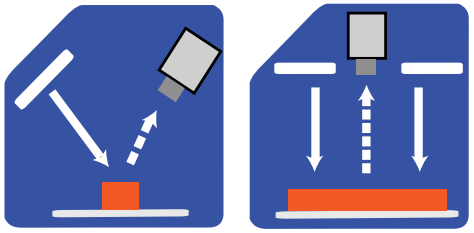
Narrow

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 six ODLHF300 lights can be directly connected together. The LXJ-2DTN is required to directly connect two ODLHF300 lights together.

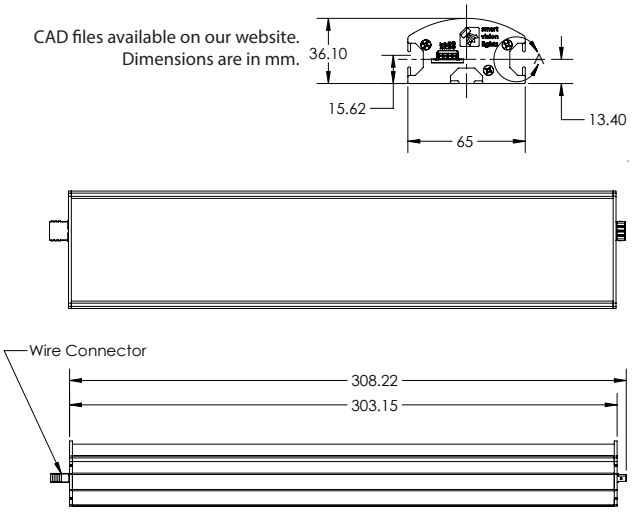
ILLUMINATION

ODLHF300 Series of Linear Lights works best for:



PRODUCT DRAWING

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



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 and 850

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 and WHI.

MOUNTING

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

Optional Mounting Hardware:
T-Slots = M5 x 0.8 mm T-Nut

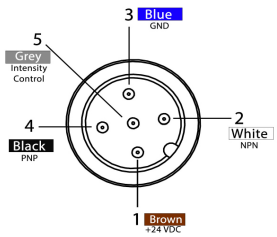
ADD-ONS

M12 Male Adapter
Part# LHF300-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

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 to requires having an 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:

WHI 470 625 850

LINEAR POLARIZER:

Leave blank for none

LPI = Factory Installed

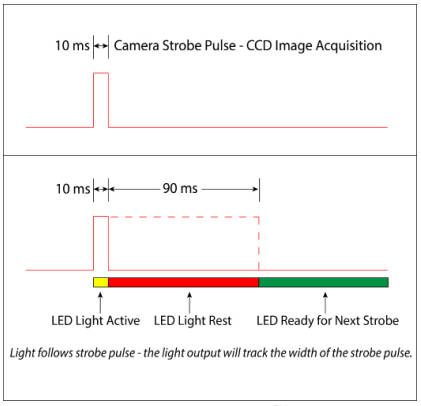
Part Number Examples:

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

Additional wavelengths and lens options available upon request

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

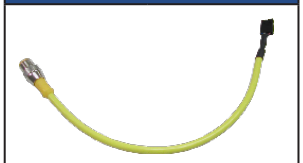
Example

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

Rest Time is 90 ms for 10 ms Strobe Time

ACCESSORIES

M12 Pigtail cable



Description	Part Number
Pigtail cable	5PM12-LHFP

Connector (Only for Direct Connect)

Description	Part Number
Set of 2 Connectors	LXJ-2DTN

Swivel Mount

Description	Part Number
Swivel mount	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.

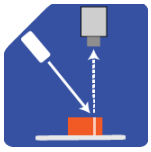
GLOSSARY

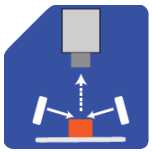
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

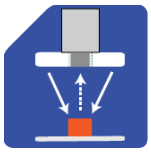
TERMINOLOGY

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.

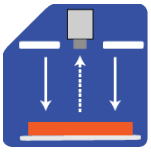
TYPES OF ILLUMINATION

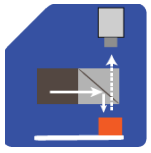

Projector

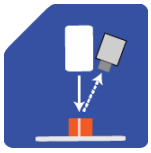

Dark Field

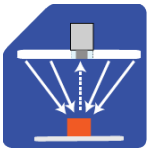

Radial

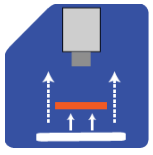
Bright Field


Direct


Axial

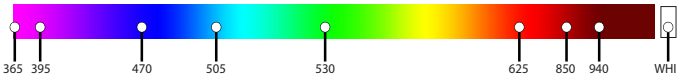

Line


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.