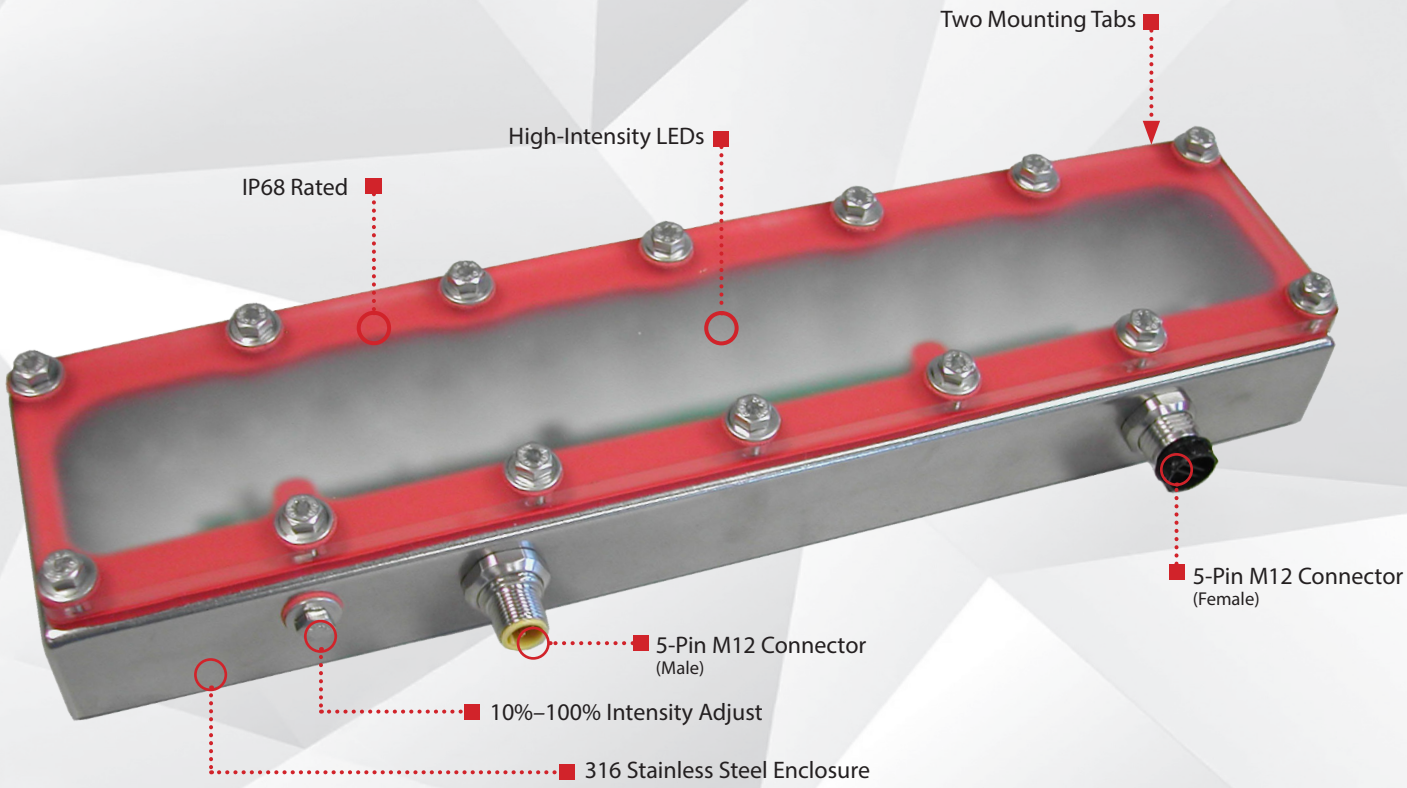
smart vision lights

LW300 Connect-a-Light LINEAR LIGHT WASHDOWN

PRODUCT DATA SHEET



Warranty	Compliant	Compliant	Rated	Connector
10 YEAR	IEC 62471	CE RoHS	IP 68	5-PIN M12

PRODUCT HIGHLIGHTS

- ✓ 5-pin M12 quick connect
- ✓ Built-in driver, no external wiring needed
- ✓ PNP and NPN trigger signal input
- ✓ Washdown light with 316 stainless-steel enclosure
- ✓ Daisy-chain up to six LW300 linear lights using a 5-pin M12 washdown jumper cable

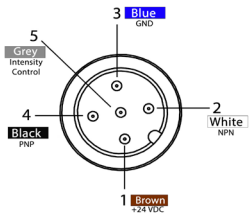
PRODUCT DESCRIPTION

The LW300 series features a 100% waterproof stainless-steel enclosure specially designed for food industry and washdown environments where water and harsh detergents are present. The LW300 features an integrated constant-current driver built into the light and runs in continuous operation mode. NPN or PNP trigger signals can be used to control the on/off input of the light. Intensity of the light can be controlled via 1–10VDC analog signal line or the manual potentiometer. Daisy-chain up to six LW300 lights together.

PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/−5%
Input Current	Max. 700 mA
Wattage	Max. 17 W
On/Off Input	PNP: +4VDC or greater to activate | NPN: GND (<1VDC) to activate
PNP Line	4 mA @ 4VDC | 10 mA @ 12VDC | 20 mA @ 24VDC
NPN Line	15 mA @ Ground (0VDC)
Continuous Mode	NPN can be tied to ground **OR** PNP can be tied to 24VDC (not both)
Potentiometer	270° turn pot—Intensity control of 10%–100%. Turn clockwise to increase intensity.
Analog Intensity	Brightness output adjustable from 10%–100% via a 1–10VDC signal
Connection	5-pin M12 connector
Ambient Temperature	-18°–40°C(0°–104°F)
IP Rating	IP68
Weight	~1430 g
Compliances	CE, RoHS, IEC 62471
Warranty	UV LEDs have a 2 year warranty, all other LEDs have a 10 year warranty. For complete warranty information, visit smartvisionlights.com/warranty.

WIRING CONFIGURATION



Pin layout for light (Male Connector)

Pins	Function	Signal	Wire Color
1	Power In	+24VDC	BROWN
2	NPN	Sinking Signal	WHITE
3	GND	Ground	BLUE
4	PNP	Sourcing Signal	BLACK
5	Intensity Control	1–10VDC	GREY*

** Some cables use green/yellow for pin 5*
For maximum intensity, it is possible to tie pin 5 to pin 1 at +24VDC.
*For continuous mode: Tie PNP (pin 4) to +24VDC (pin 1) **or** tie NPN (pin 2) to ground (pin 3).*

OPTIONAL

For maximum intensity, connect pin 5 to pin 1 at 24VDC.

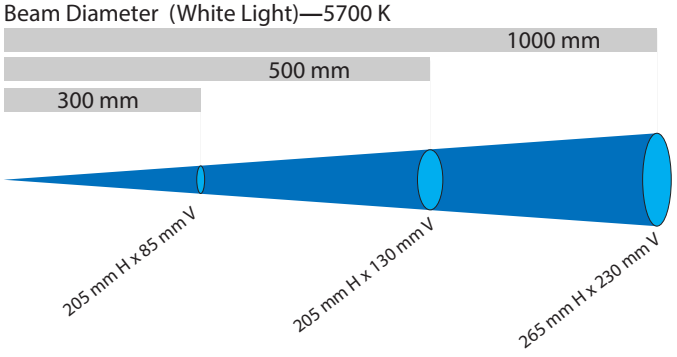
RESOURCE CORNER

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

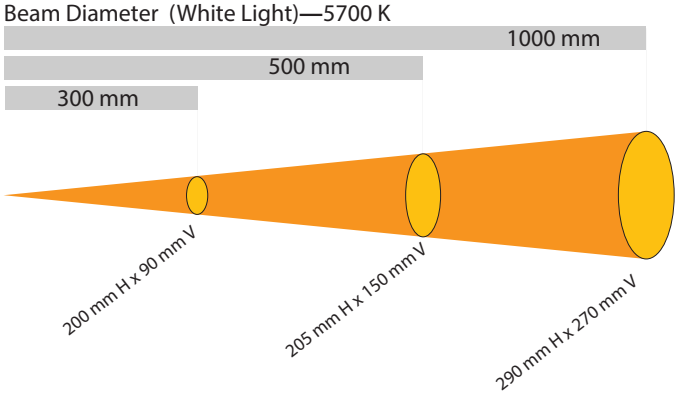
LIGHT PATTERNS

Smart Vision Lights recommends the LW300 be used at a working distance between 300 mm and 4000 mm.

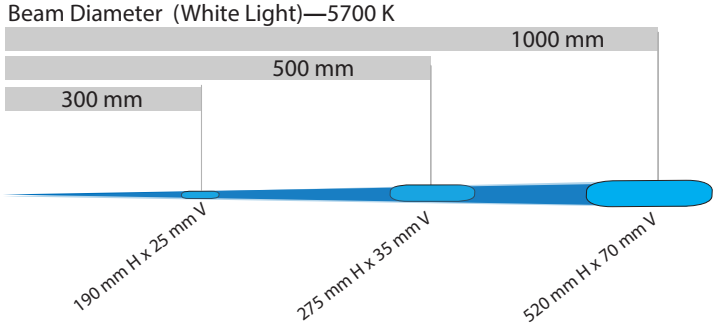
Beam Diameter (White Light)—5700 K



Beam Diameter (White Light)—5700 K



Beam Diameter (White Light)—5700 K



LIGHTING PATTERN FOR THE LW300 **with Narrow (Standard) Lenses**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
300 mm (19.7")	205 mm H x 85 mm V
500 mm (39.4")	205 mm H x 130 mm V
1000 mm (78.8")	265 mm H x 230 mm V

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	9,000
Illuminance measurement taken on White Lights—5700K	

LIGHTING PATTERN FOR THE LW300 **with Wide (W) Lenses**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
300 mm (19.7")	200 mm H x 90 mmV
500 mm (39.4")	205 mm H x 150 mm V
1000 mm (78.8")	290 mm H x 270 mmV

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	6,900
Illuminance measurement taken on White Lights)—5700K	

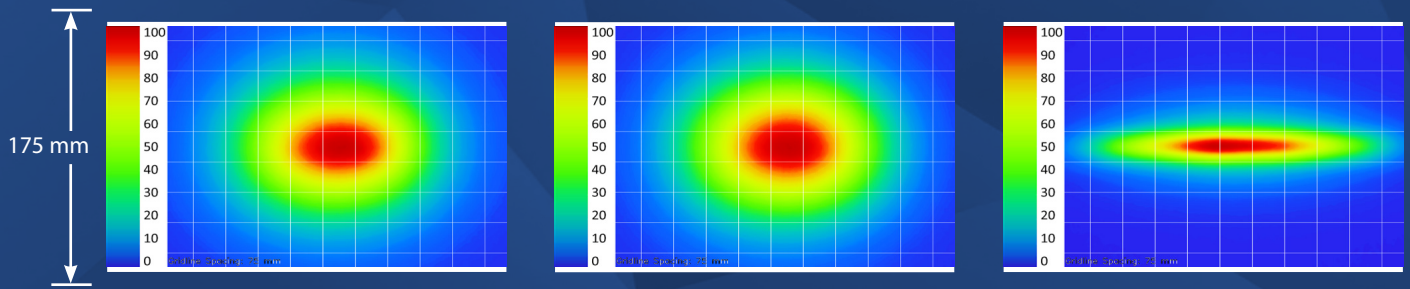
LIGHTING PATTERN FOR THE LW300 **with Line (L) Lenses**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
300 mm (19.7")	190 mm H x 25 mm V
500 mm (39.4")	275 mm H x 35 mm V
1000 mm (78.8")	520 mm H x 70 mm V

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	25,000
Illuminance measurement taken on White Lights — 5700K	

The LW300 Linear Light produces a uniform light pattern.

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



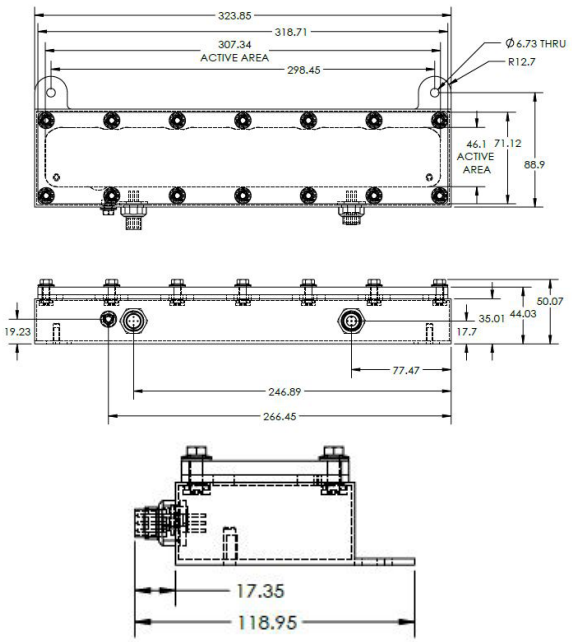
Narrow Wide Line

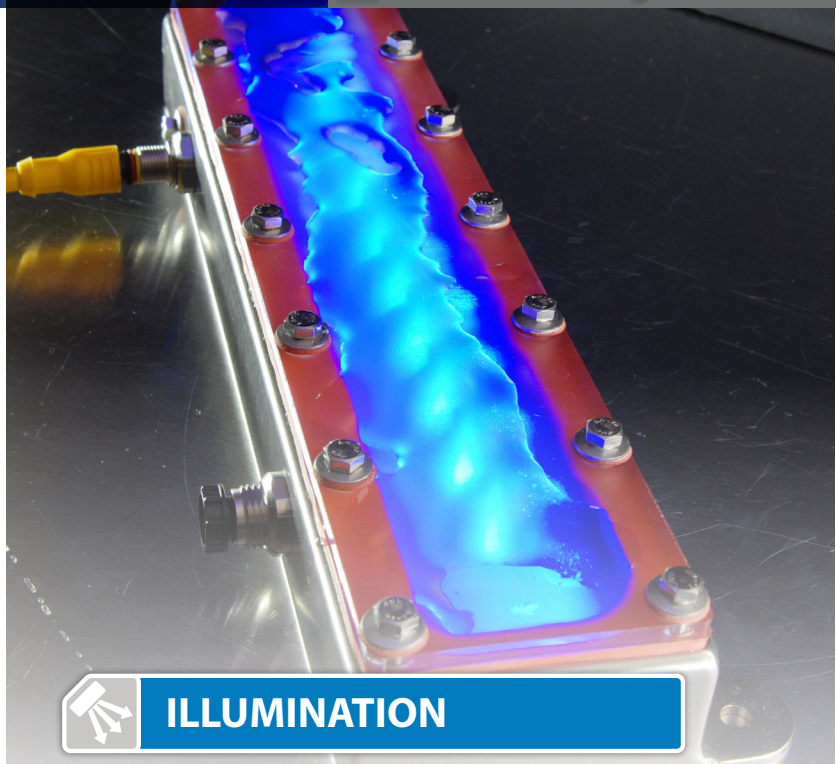
DAISY-CHAIN LIGHTS

LW300 series of lights require the use of a 5-pin M12 jumper cable to effectively parallel up to six LW300 lights.

PRODUCT DRAWING

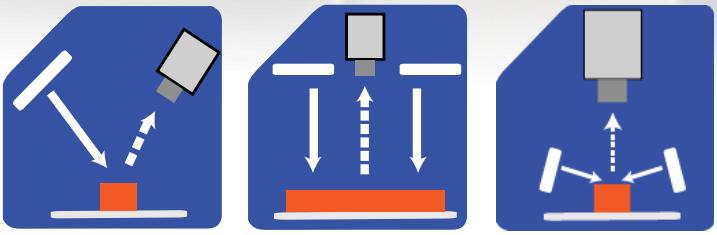
CAD files available on our website.
Dimensions are in mm.





ILLUMINATION

LW300 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

LW300– □□□□ – □ – □□□

COLOR:
WHI, 365 395, 470, 505, 530, 625, 850 940

LENS:
Leave blank for Standard (Narrow)
W = Wide
L = Line

LINEAR POLARIZER:
Leave blank for none
LPI = Factory Installed

Part Number Examples:

LW300-625	LW300, 625 nm Red Wavelength, Standard (Narrow) Lens
LW300-WHI-L	LW300, White, Line Lens
LW300-470-W-LPI	LW300, 470 nm Blue Wavelength, Wide Lens, with Linear Polarizer Installed

SWIR SHORTWAVE INFRARED

This light is available in our SWIR LEDs
(1050 nm, 1200 nm, 1300 nm, 1450 nm, 1550 nm, and 1650)

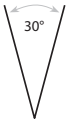
1050 nm | 1200 nm | 1300 nm | 1450 nm | 1550 nm | 1650 nm

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

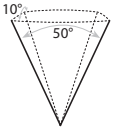
STANDARD LENS OPTICS

NARROW(STANDARD)
Narrow, 14° angle-cone lenses are standard. Standard lenses create a narrow beam of illumination and are used for long working distances.

WIDE
Wide, 30° angle-cone lenses create 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.



** Additional lens options available upon request.*

MOUNTING

The LW300 Series features two stainless-steel tabs welded directly to the housing for simple yet versatile mounting options.

When to Use a Linear Polarizers?

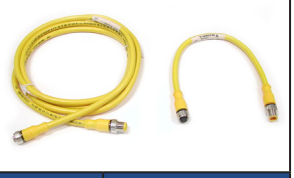
Polarizing filters can reduce reflections on specular (Dielectric or non-metal) surfaces.

A Linear Polarizer has a typical transmission of 38 percent while blocking 62 percent 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.

ACCESSORIES

Power Cables (Washdown)	
Length	Part Number
15 m	W5PM12-15

Jumper Cables (Daisy-Chain,Washdown)	
	
Length	Part Number
300 mm	W5PM12-J300
2000 mm	W5PM12-J2000

Washdown cables have a 316 stainless-steel connector(s).

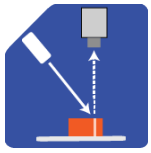
GLOSSARY

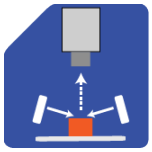
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

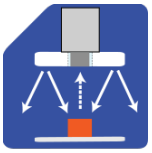
TERMINOLOGY

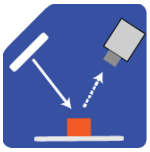
OverDrive™ Lights include an integrated high-pulse driver for complete LED light control.
Continuous Operation Lights stay on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-pulse operation) mode into one easy-to-use light.
Built In Driver The built-in driver allows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

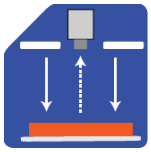
TYPES OF ILLUMINATIONS

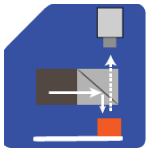

Projector

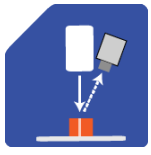

Dark Field

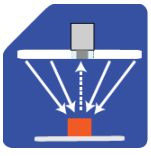

Radial

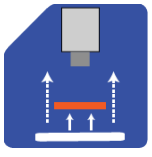

Bright Field


Direct


Axial

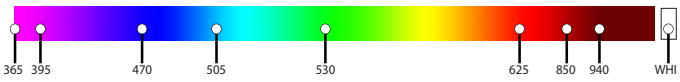

Line


Diffuse Panel


Backlight

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.*

SWIR SHORT WAVE 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.