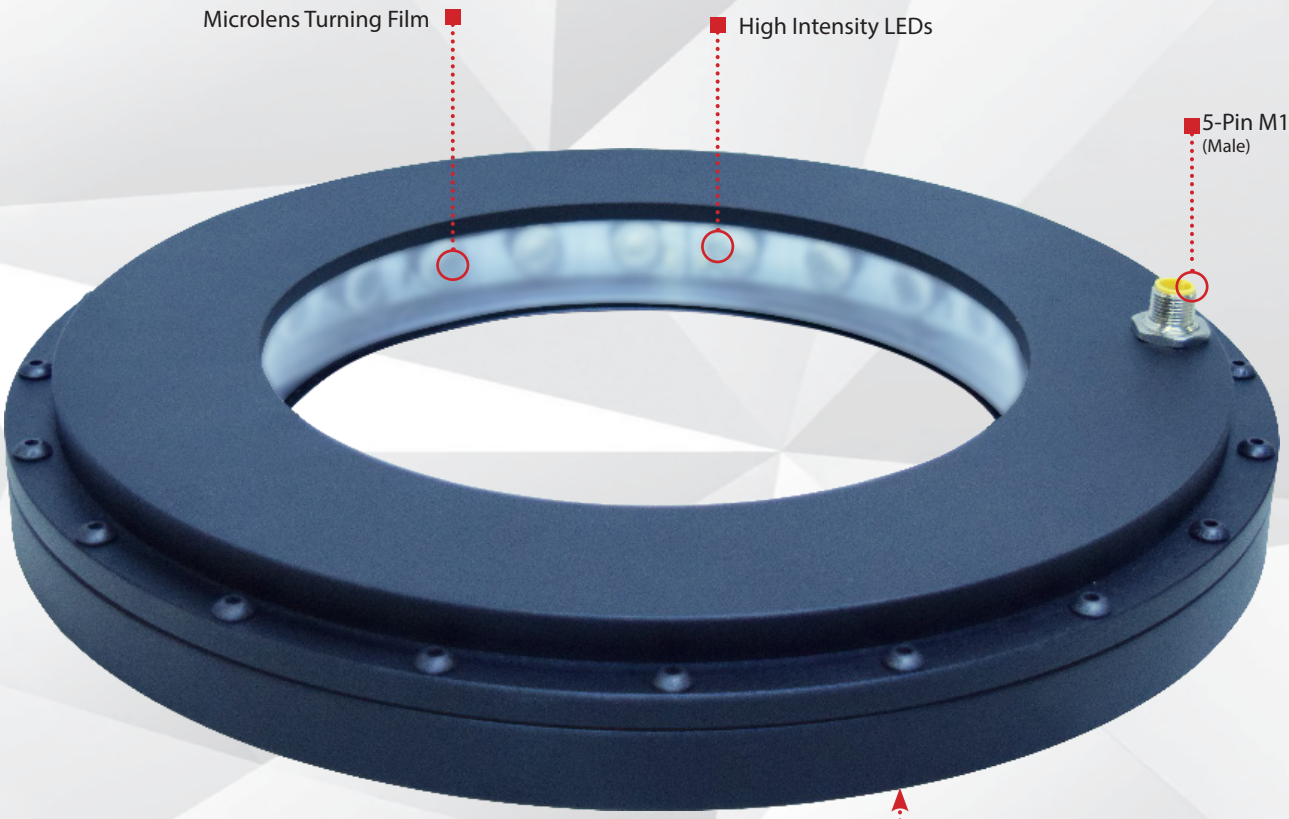
smart vision lights DFLW-200 *Dark Field* RING LIGHT

MULTI-DRIVE™ | WASHDOWN

PRODUCT DATA SHEET



multi drive™

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

PRODUCT HIGHLIGHTS

- ✓ Built-in Multi-Drive™ allows the light to work in continuous operation or OverDrive™ strobe mode
- ✓ Microlens turning film directs a beam of light at a 25° angle towards an object, resulting in a high concentration and uniform field of illumination
- ✓ SafeStrobe™ technology ensures protected operation of LEDs
- ✓ Built–in driver
- ✓ PNP and NPN trigger signal input

PRODUCT DESCRIPTION

The DFLW-200 Dark Field Washdown Ring Light is IP68 rated and comes in an anodized black aluminum housing. The built-in Multi-Drive™ driver allows the light to work in continuous operation or OverDrive™ strobe mode, depending on the wiring configuration. The industry-standard 5-pin M12 connector makes for simple wiring. The 1–10V DC analog signal line gives the user total control over intensity in continuous operation mode. Grounding the analog signal line put the light into OverDrive™ strobe mode.

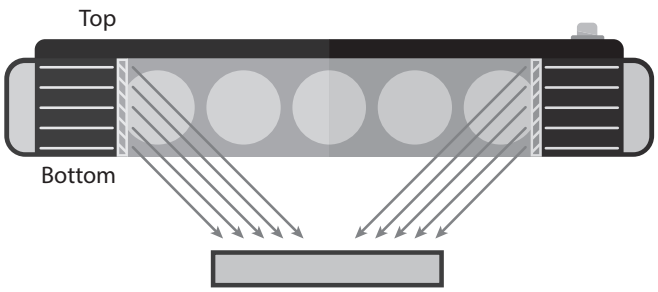
PRODUCT SPECIFICATIONS

	CONTINUOUS OPERATION	OVERDRIVE™ STROBE MODE
Electrical Input	24V DC +/- 5%	
Input Current	Max. 1.48 A	Max. 12.35 A
Wattage	Max. 35.5 W	Max. 296.4 W
PNP Line	4 mA @ 4V DC | 10 mA @ 12V DC | 20 mA @24V DC	
NPN Line	15 mA @ Ground (0 V DC)	
OverDrive™ Strobe Mode	**Not applicable**	Connect pin 5 to GND (see Wiring Configuration for more information)
Strobe Duration	**Not applicable**	Min. 10 µs | Max. 50 ms (see SafeStrobe™ Technology for more information)
Duty Cycle	**Not applicable**	Max. 10%
Strobe Input	**Not applicable**	PNP: +4V DC or greater to activate NPN: GND (<1V DC) to activate
Continuous Operation Mode	NPN can be tied to ground **OR** PNP can be tied to 24V DC (not both)	**Not applicable**
On/Off Input	PNP: +4V DC or greater to activate NPN: GND (<1V DC) to activate	**Not applicable**
Connection	5-pin M12 connector	
Ambient Temperature	0º–45ºC (32º–114ºF)	
IP Rating	IP68	
Weight	120 g	
Compliances	CE, RoHS, IEC 62471	

MICROLENS TURNING FILM

When combined with high-power LEDs, the microlens turning film directs a beam of light at a 25° angle toward the object, resulting in a high concentration and uniform field of illumination. This technique allows for a large-diameter dark field ring light to have an extended working distance while maintaining light intensity and uniformity.

The microlens requires the bottom of the light to be pointed towards the object being inspected. The bottom is the side without the connector.



RESOURCE CORNER

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

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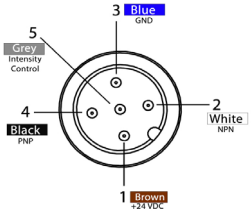
Muskegon, MI 49445
P: +1 231.722.1199 | F: +1 231.722.9922
smartvisionlights.com
techsupport@smartvisionlights.com
Hours: Monday — Friday | 8 am–5 pm ET

WIRING CONFIGURATION

CONTINUOUS OPERATION MODE



Pin layout for light (male connector)

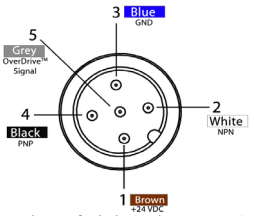
Pins	Function	Signal	Wire Color
1	Power In	+24 V DC	BROWN
2	NPN	Sinking Signal	WHITE
3	GND	Ground	BLUE
4	PNP	Sourcing Signal	BLACK
5	Intensity Control	1-10 V DC**	GREY*

** Some cables use green/yellow for pin 5*
*** For maximum intensity, it is possible to tie pin 5 to pin 1 at +24 V DC.*
*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).*

For the light to function properly, apply either a PNP or NPN signal, not both.

Failure to supply light with correct input current will result in nonrepeatable lighting.
(See Product Specifications for requirement.)

OVERDRIVE™ STROBE MODE



Pin layout for light (male connector)

Pins	Function	Signal	Wire Color
1	Power In	+24 V DC	BROWN
2	NPN	Sinking Signal	WHITE
3	GND	Ground	BLUE
4	PNP	Sourcing Signal	BLACK
5	OverDrive™ Signal	Ground	GREY*

** Some cables use green/yellow for pin 5*

Failure to supply light with correct input current will result in nonrepeatable lighting.
(See Product Specifications for requirement.)

LIGHT PATTERNS

Smart Vision Lights recommends the DFLW-200 be used at a working distance between 20 mm and 75 mm.

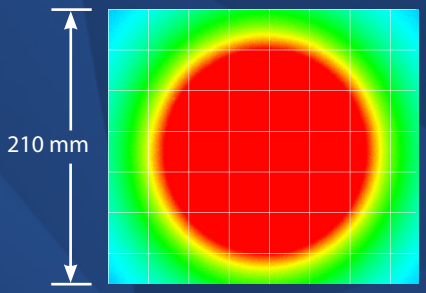
LIGHTING ILLUMINATION FOR THE DFLW-200

Continuous Operation Mode	
Typical Output Performance	Illuminance (Lux)
Distance = 25 mm	60,000
Illuminance measurement taken on White Light, 4800 K	

OverDrive™ Mode	
Typical Output Performance	Illuminance (Lux)
Distance = 25 mm	330,000
Illuminance measurement taken on White Light, 4800 K	

The DFLW-200 Ring Light produces a uniform light pattern.

WD = Working Distance Grid set to 30 mm x 30 mm



WD = 25 mm

MULTI-DRIVE™

Multi-Drive™ offers the best of both worlds. Continuous operation and OverDrive™ mode (HIGH output strobe/pulse) are available in a single light. Other advantages of Multi-Drive™ include faster imaging and capture/freeze motion on high-speed lines.

The Multi-Drive™ feature allows the user to run the light continuously or in OverDrive™ at the maximum allowed intensity by simply setting the product configuration. OverDrive™ strobe mode has **up to eight times** the power of continuous operation.

SAFESTROBE™ TECHNOLOGY

SafeStrobe™ technology is a unique technology that applies safe working parameters to ensure high-current LED's are not damaged by driving them beyond their limits, such as maximum strobe time or duty cycle. This is especially beneficial for overdriving our high-current LED's.

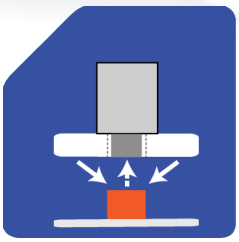
MOUNTING

Mounting options include four M6 threaded holes located on the DFLW-200.

Hardware included with light:
(2) M6 screws (hex)

ILLUMINATION

The DFLW-200 Dark Field Ring Lights works best for:



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 wavelength 625.

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, 530, and WHI.

PART NUMBER

DFLW-200 – □□□ – □□

COLOR:

WHI 470 530 625 850

HOUSING

Leave blank for Anodized Black Aluminum

SS = Stainless Steel

Part Number Examples:

DFLW-200-625 (DFLW-200, 625 nm Red Wavelength)

DFLW-200-625-SS (DFLW-200, 625 nm Red Wavelength, Stainless Steel housing)

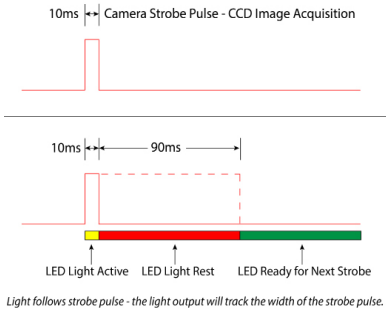
Additional wavelength and lens options available upon request

DUTY CYCLE (OVERDRIVE™ MODE ONLY)

This section applies only if light is in OverDrive™ strobe mode.

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

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



Light follows strobe pulse - the light output will track the width of the strobe pulse.

Calculating Rest Time

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

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

Example

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

Rest Time is 90 ms for 10 ms Strobe Time

Calculating Strobe Rate

$$SR = \frac{D}{ST}$$

SR = Strobe Rate (strobes per second)
ST = Strobe Time (seconds)
D = Duty Cycle

Example

$$1000 = \frac{0.1}{0.0001}$$

Strobe Rate is 1000 strobes per second

Calculating Duty Cycle

$$D = ST \times SR$$

SR = Strobe Rate (strobes per second)
ST = Strobe Time (seconds)
D = Duty Cycle

Example

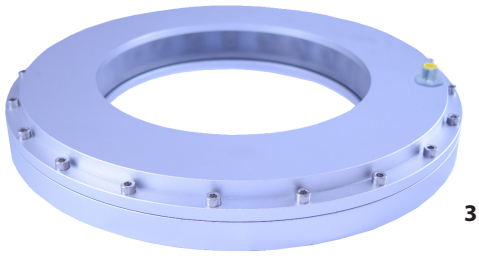
$$0.1 = 0.0001 \times 1000$$

Duty Cycle is 10% (0.1)

Note: Strobe time is limited by the strobe rate.

STAINLESS-STEEL VERSION

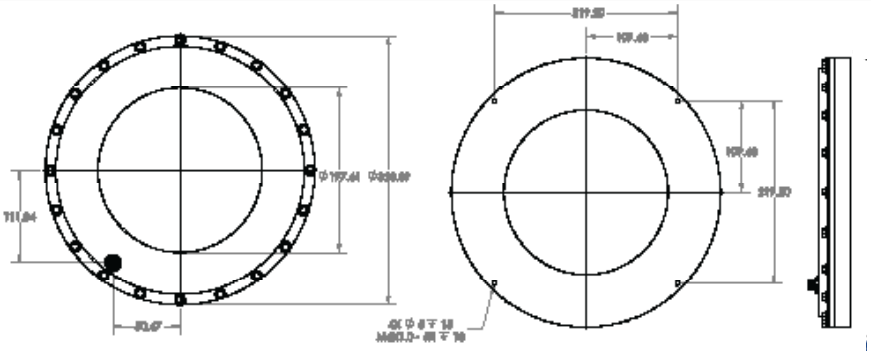
The DFLW-200 is available in a stainless-steel housing. Stainless-steel housing is recommended for any food grade application.
Lead time for the stainless-steel version of the DFLW-200 is longer than that of the anodized black aluminum housing version.



316 Stainless-Steel Housing

Add - SS to end of part number for Stainless-Steel

PRODUCT DRAWING



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

ACCESSORIES

Power Cables

Lengths	Part Number
5 m	5PM12-5
10 m	5PM12-10
15 m	5PM12-15

Power Cables (Washdown)

Lengths	Part Number
15 m	W5PM12-15

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

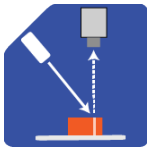
GLOSSARY

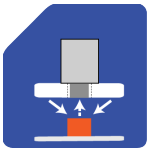
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

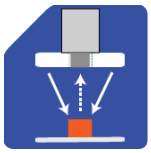
TERMINOLOGY

OverDrive™ Light includes an integrated high-current strobe driver for complete LED light control.
Continuous Operation Light stays on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-current strobe operation) modes into one easy-to-use light.
Built-In Driver The built-in driver allows full function without the need of an external driver.
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.

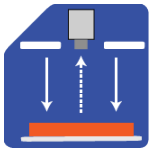
TYPES OF ILLUMINATIONS

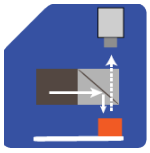

Projector

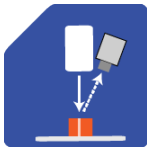

Dark Field

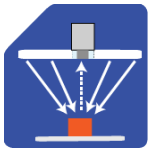

Radial

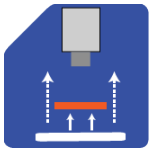

Bright Field


Direct


Axial

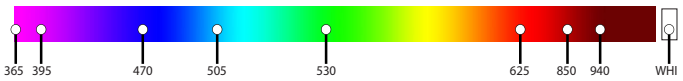

Line


Diffuse Panel


Backlight

COMMON 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.*

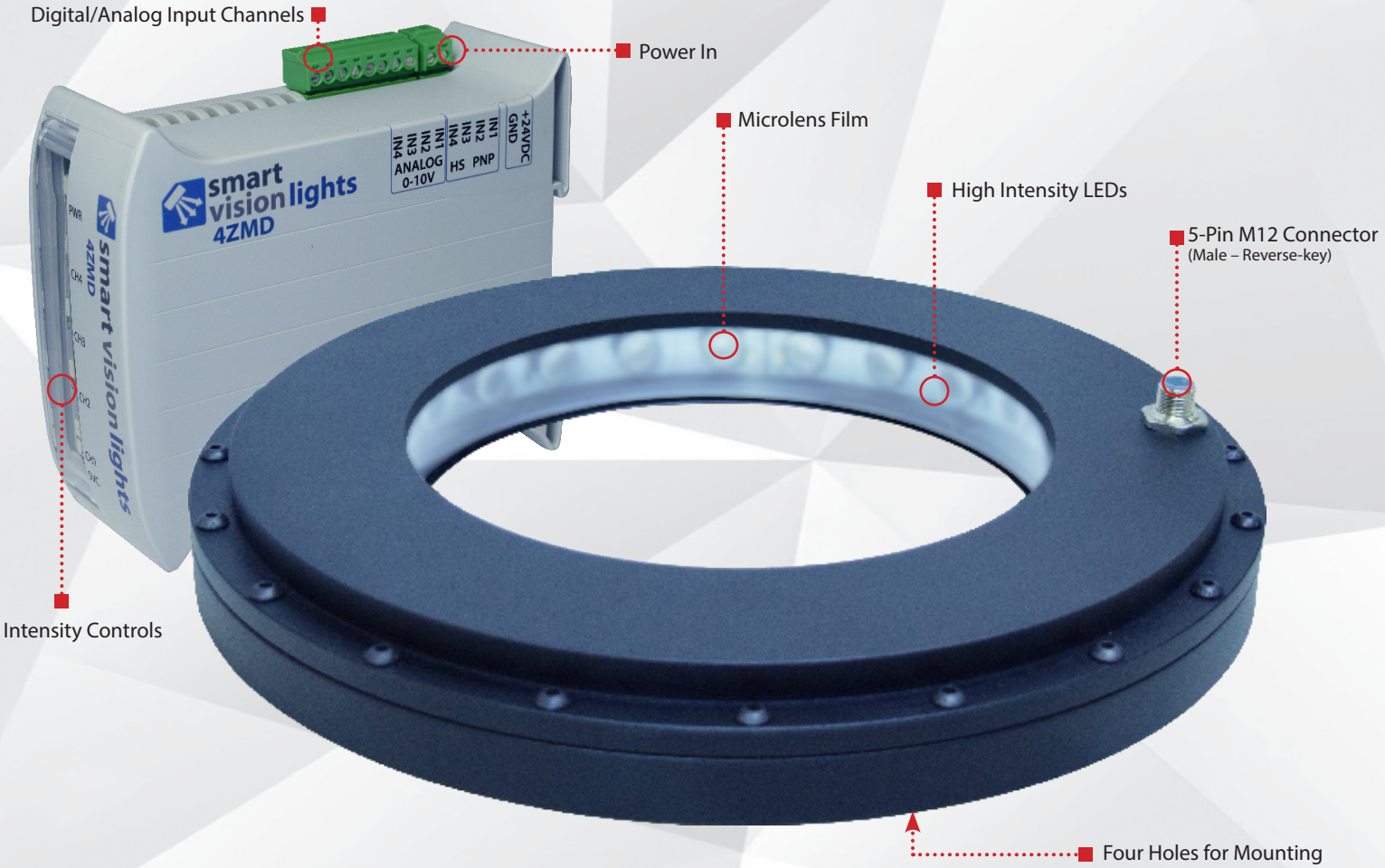
SWIR SHORT WAVE INFRARED

Short Wave Infrared LEDs are available in 1050 nm, 1200 nm, 1300 nm, 1450 nm, and 1550 nm.

smart vision lights DFLW-200-4Z *Dark Field* RING LIGHT KIT

ZONE LIGHT | WASHDOWN

PRODUCT DATA SHEET



multi drive™

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

PRODUCT HIGHLIGHTS

- ✓ Four individual zones built into a single light
- ✓ Kit includes the 4ZMD-750, which allows for continuous operation or OverDrive™ strobe mode for each channel
- ✓ Built-in individual intensity control channels for either continuous operation or OverDrive™ strobe mode
- ✓ Microlens film directs a beam of light at a 25° angle towards an object, resulting in a high concentration and uniform field of illumination

PRODUCT DESCRIPTION

DFLW-200-4Z

The DFLW-200-4Z Dark Field Washdown Ring Light is IP68 rated and comes in an anodized black aluminum housing. The DFLW-200-4Z has four zones, making it a quadrant light in which each individual zone can be controlled independently of each other.

4ZMD-750

The 4ZMD is an external driver that permits control of up to four separate light zones either independently or simultaneously, in any combination. The 4ZMD has independent intensity controls and built-in Multi-Drive™, allowing a range to be set from 10%–100% for continuous operation or OverDrive™ strobe mode. **The maximum continuous current for the 4ZMD-750 is 750 mA when connected to the DFLW-200-4Z.**

When connected to a LED Light Manager (LLM), each individual channel can be set to continuous on, off, or any intensity level in between, and even OverDrive™ strobe mode. **For more information about the LLM, visit smartvisionlights.com/products/llm.**

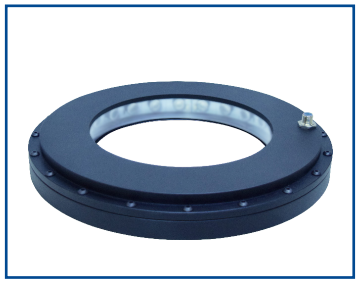
WHAT'S INCLUDED

When you order a DFLW-200-4Z ring light, such as the DFLW-200-4Z-WHI, the following item is included:

DFLW-200-4Z requires an external constant current driver with maximum 750 mA per channel.

DFLW-200-4Z
RING LIGHT

When you order a DFLW-200-4Z ring light kit, such as the DFLW-200-4Z-WHI-KIT, the following items are included:



DFLW-200-4Z
RING LIGHT

+

4ZMD-750
DRIVER

+

5PM12-J2000-KR
CABLE

RESOURCE CORNER

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

PRODUCT SPECIFICATIONS

DFLW-200-4Z

PER CHANNEL	CONTINUOUS OPERATION	OVERDRIVE™ STROBE MODE
Maximum LED Input Current	1.8A	12.0 A
Input Connector	5-pin M12 connector (male — reverse-key)	
Strobe	**Not applicable**	Max. 50 ms
Duty Cycle	**Not applicable**	Max. 10%
Ambient Temperature	0º–45ºC (32º–114ºF)	
IP Rating	IP68	
Weight	~120 g	
Warranty	10 year. For complete warranty information, visit smartvisionlights.com/warranty	
Compliances	CE, RoHS, IEC 62471	

NOTE:
The DFLW-200-4Z requires an external constant current driver, such as the recommended 4ZMD-750.

4ZMD-750

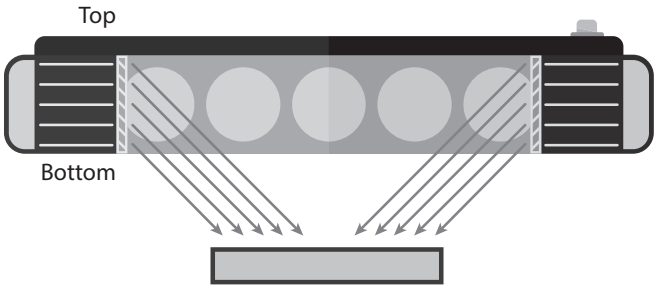
OUTPUT PER CHANNEL	CONTINUOUS OPERATION	OVERDRIVE™ STROBE MODE
Electrical Input	24VDC +/- 5%	
Operating Current (No Load)	70 mA	
Electrical Input Connector	2-position screw terminal block — 14 AWG max wire size	
Number of Input Channels	4	
Input Connector	8-position screw terminal block — 14 AWG max wire (4 for PNP and 4 for analog)	
Input Channel Current	PNP input: 4 mA @ 4VDC | 10 mA @12VDC | 20 mA@ 24VDC	
Strobe Duration	N/A	Min. 10 µs | Max. 50 ms (see SafeStrobe™ Technology for more information)
Duty Cycle	N/A	Max. 10% (see Duty Cycle for more information)
Analog Intensity	The output is adjustable from 10%–100% of intensity by applying 1–10VDC signal	OverDrive™ Strobe Mode: Apply 0VDC
Output Channels	4 channels for light zones	
Output Connector	5-pin M12 connector (female – reverse-key)	
Indicator Lights	Power on = Green light Individual channel = Yellow light Service = Red light	
Mounting	DIN rail	
Ambient Temperature	-18°-40° C (0°-104° F)	
Ambient Humidity	0-95% non-condensing	
Weight	~230g	
Warranty	3 years. For complete warranty information, visit smartvisionlights.com/warranty	
Compliances	CE, RoHS	

TOTAL INPUT PER UNIT (MAX)	CONTINUOUS OPERATION	OVERDRIVE™ STROBE MODE
Input Current	2.1 A	19 A
Input Power	50.4 W	460 W

MICROLENS FILM

When combined with high-power LEDs, the microlens turning film directs a beam of light at a 25° angle toward the object, resulting in a high concentration and uniform field of illumination. This technique allows for a large-diameter dark field ring light to have an extended working distance while maintaining light intensity and uniformity.

The microlens requires the bottom of the light to be pointed towards the object being inspected. The bottom is the side without the connector.



LED COLOR ACCURACY

To ensure accurate color matching between lights, Smart Vision Lights features a color consistent, 3-step MacAdam ellipse LED package with a nominal 5700 K color temperature.

LIGHT PATTERNS

LIGHTING ILLUMINATION FOR THE DFLW-200-4Z

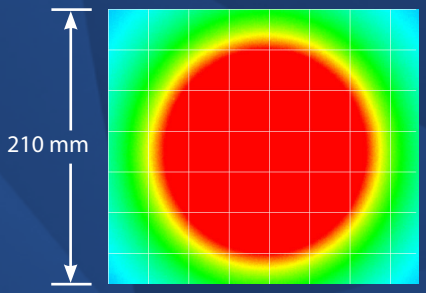
Continuous Operation Mode		
Typical Output Performance	Illuminance (Lux)	
	1 Zone	All Zones
Distance = 100 mm	25,500	102,000

OverDrive™ Mode		
Typical Output Performance	Illuminance (Lux)	
	1 Zone	All Zones
Distance = 100 mm	123,000	495,000

Smart Vision Lights recommends using the DFLW-200-4Z at a working distance between 50 mm and 200 mm.

The DFLW-200 Ring Light produces a uniform light pattern.

WD = Working Distance Grid set to 30 mm x 30 mm



MULTI-DRIVE™

Multi-Drive™ offers the best of both worlds. Continuous operation and OverDrive™ mode (HIGH output strobe/pulse) are available in a single light. Other advantages of Multi-Drive™ include faster imaging and capture/freeze motion on high-speed lines.

The Multi-Drive™ feature allows the user to run the light continuously or in OverDrive™ at the maximum allowed intensity by simply setting the product configuration. OverDrive™ strobe mode has **up to five times** the power of continuous operation.

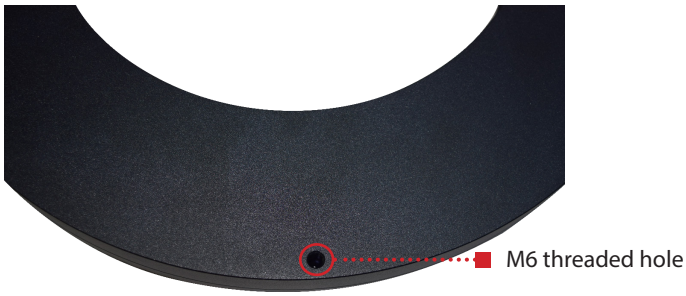
SAFESTROBE™ TECHNOLOGY

SafeStrobe™ technology is a unique technology that applies safe working parameters to ensure high-current LED's are not damaged by driving them beyond their limits, such as maximum strobe time or duty cycle. This is especially beneficial for overdriving our high-current LED's.

MOUNTING

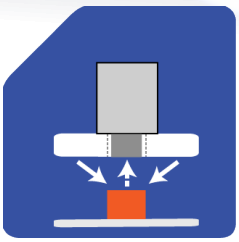
Mounting options include four M6 threaded holes located on the DFLW-200-4Z.

Hardware included with light:
(2) M6 screws (hex)



ILLUMINATION

The DFLW-200-4Z Dark Field Ring Lights works best for:



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 wavelength 625.

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, 530, and WHI.

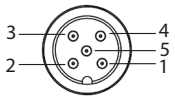
OUTPUT CONFIGURATION

Using the Reverse-Key 5-pin M12 Connector

When connecting a Smart Vision Lights four-zone lights to the 4ZMD, a reverse-key 5-pin M12 cable is required. All Smart Vision Lights four zone lights come equipped with a 5-pin reverse-key connector.

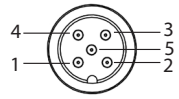
The reverse-key 5-pin M12 connector simplifies connecting lights to the 4ZMD, with very little wiring needed.

4ZMD



Reverse-Key 5-pin M12 Connector (female)

DFLW-200-4Z



Reverse-Key 5-pin M12 Connector (male)

NOTE:

Smart Vision Lights uses reverse-key cables that have a blue-grey tip on the connectors.

5-Pin M12 Connectors (Female) Pin Layout

Pin	Channel	Color
1	Common	Brown
2	1	White
3	2	Blue
4	3	Black
5	4	Green/Yellow

INPUT CONFIGURATION

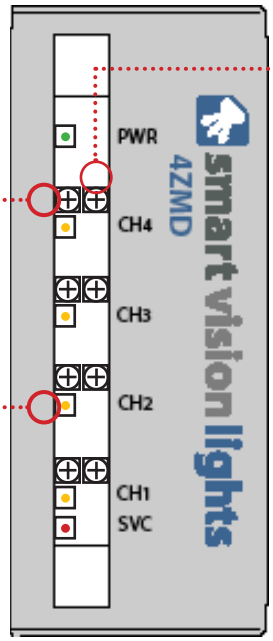
Using Input Terminal Block

Input terminal block is also used when connecting to the LED Light Manager (LLM). Smart Vision Lights recommends using the cable provided (part number: IC-400) to connect the 4ZMD driver to the LLM.

LLM Output Channels	4ZMD Input Channels
DO1	PNP IN1
DO2	PNP IN2
DO3	PNP IN3
DO4	PNP IN4
DO5/AO1	Analog 1
DO6/AO2	Analog 2
DO7/AO3	Analog 3
DO8/AO4	Analog 4

ADJUSTING INTENSITY

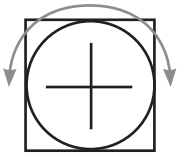
The 4ZMD allows for the control of up to four individual channel intensity levels. Depending on how each channel is wired, its intensity can be adjusted for either continuous operation or OverDrive™ strobe mode. Each channel intensity can be adjusted either in continuous operation or OverDrive™ strobe mode, but not both modes simultaneously. Each channel has a yellow indicator light that will illuminate when the channel is active.



Intensity Control Pot for Continuous Operation

Intensity Control Pot for OverDrive™

Channel Indicator LED (yellow)



270° turn pot
Clockwise = Increase intensity
Counterclockwise = Decrease intensity

NOTE:

When in continuous operation, channel intensity can be individually adjusted using 1–10VDC on the analog input.

NOTE:

When managing the 4ZMD with the LED Light Manager (LLM), turn the intensity pots on the front of the 4ZMD fully clockwise to ensure intensity is completely controlled by the LLM.

UNDERSTANDING ZONES

The DFLW-200-4Z has four individual built-in zones that can act independently. Each zone can be set to continuous on, off, any intensity level in between, and even OverDrive™ strobe mode. Intensity levels can be set by programming a LLM to control the zones or using the intensity controls on the front of the 4ZMD (see Managing Zones and Adjusting Intensity).

The DFLW-200-4Z allows any combination of the four zones to be turned on at the same time, including adjacent and opposing zones.

One Zone | Two Zones | Three Zones | Four Zones | Opposing Zones

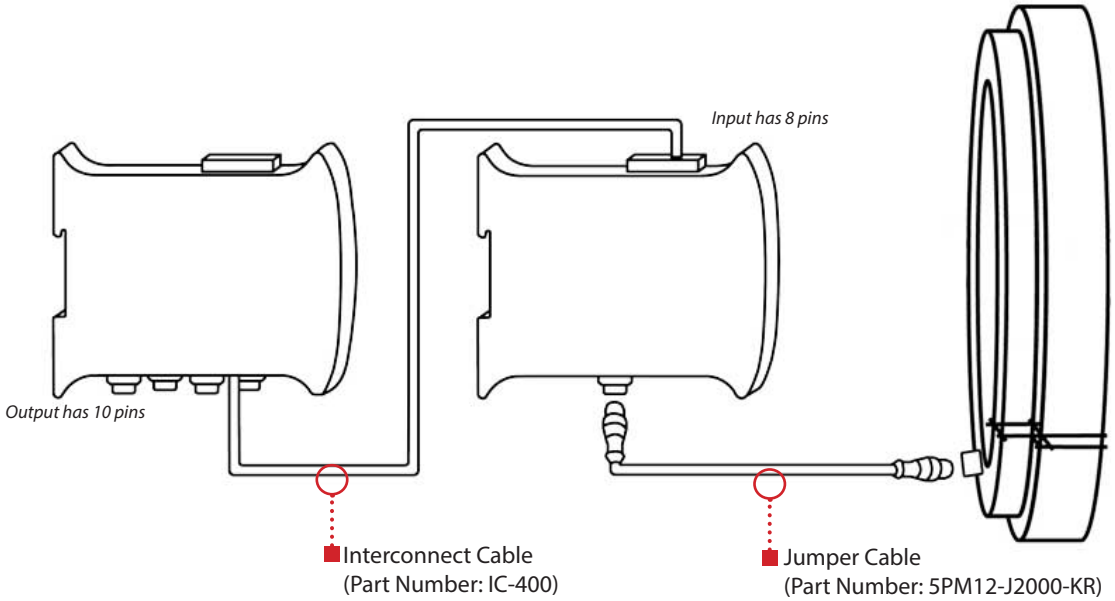
MANAGING ZONES

Connect the LLM to the 4ZMD driver. The LLM allows for easy control of each individual zone. The event programmed within the LLM can contain multiple sequences. Users can set each zone independently to continuous on, off, or any intensity level in between, and even OverDrive™ strobe mode.

For more information about the LLM, visit: smartvisionlights.com/products/llm.

WIRING CONFIGURATION

Input Channels for 4ZMD
Power In — Power source
HS PNP — High-speed PNP strobing/trigger
Analog 0–10 V — Input for setting intensity for continuous mode (1–10VDC) or OverDrive™ strobe mode (0VDC)



PART NUMBER

DFLW-200-4Z – □□□ – □□ – □□□

COLOR:

WHI, 470, 530, 625, 850

HOUSING

Leave blank for Anodized Black Aluminum

SS = Stainless Steel

KIT

Leave blank for only light.

KIT = Kit Includes light, cable and external driver

Additional wavelength available upon request

Part Number Examples:

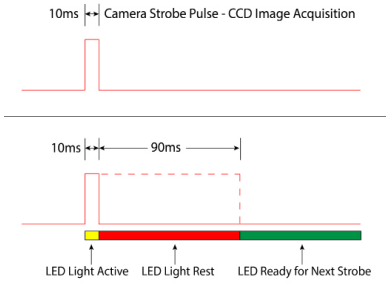
DFLW-200-4Z-625	DFLW-200-4Z, 625 nm red wavelength, standard housing light only
DFLW-200-4Z-WHI-KIT	DFLW-200-4Z, WHI, KIT white, standard housing, light, cable and external driver
DFLW-200-4Z-WHI-SS-KIT	DFLW-200-4Z, WHI, KIT white, stainless steel housing, light, cable and external driver

DUTY CYCLE (OVERDRIVE™ MODE ONLY)

This section applies only if light is in OverDrive™ strobe mode.

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

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



Light follows strobe pulse - the light output will track the width of the strobe pulse.

Calculating Rest Time

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

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

Example

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

Rest Time is 90 ms for 10 ms Strobe Time

Calculating Strobe Rate

$$SR = \frac{D}{ST}$$

SR = Strobe Rate (strobes per second)
ST = Strobe Time (seconds)
D = Duty Cycle

Example

$$1000 = \frac{0.1}{0.0001}$$

Strobe Rate is 1000 strobes per second

Calculating Duty Cycle

$$D = ST \times SR$$

SR = Strobe Rate (strobes per second)
ST = Strobe Time (seconds)
D = Duty Cycle

Example

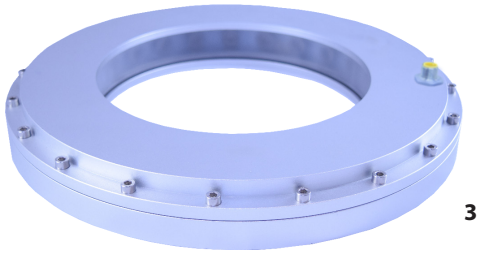
$$0.1 = 0.0001 \times 1000$$

Duty Cycle is 10% (0.1)

Note: Strobe time is limited by the strobe rate.

STAINLESS-STEEL VERSION

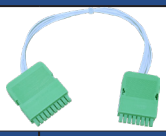
The DFLW-200-4Z is available in a stainless-steel housing. Stainless-steel housing is recommended for any food grade application.
Lead time for the stainless-steel version of the DFLW-200 is longer than that of the anodized black aluminum housing version.



316 Stainless-Steel Housing

Add - SS to end of part number for Stainless-Steel

ACCESSORIES

Interconnect Cable	
	
Lengths	Part Number
400 mm	IC-400

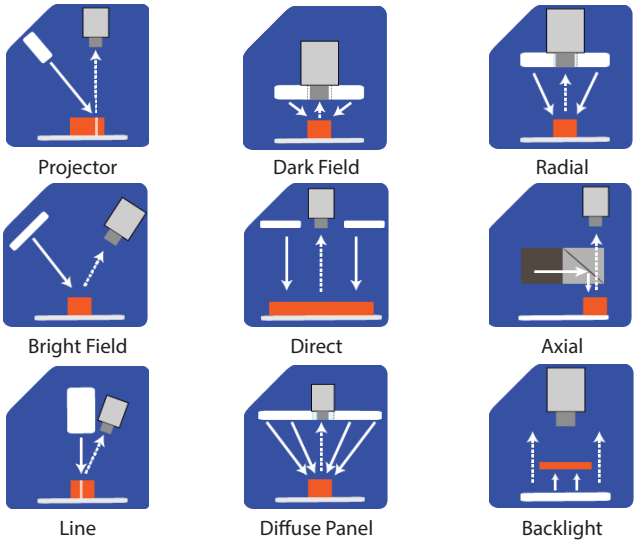
GLOSSARY

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

TERMINOLOGY

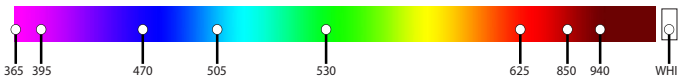
OverDrive™ Light includes an integrated high-current strobe driver for complete LED light control.
Continuous Operation Light stays on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-current strobe operation) modes into one easy-to-use light.
Built-In Driver The built-in driver allows full function without the need of an external driver.
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 ILLUMINATIONS



COMMON 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.*

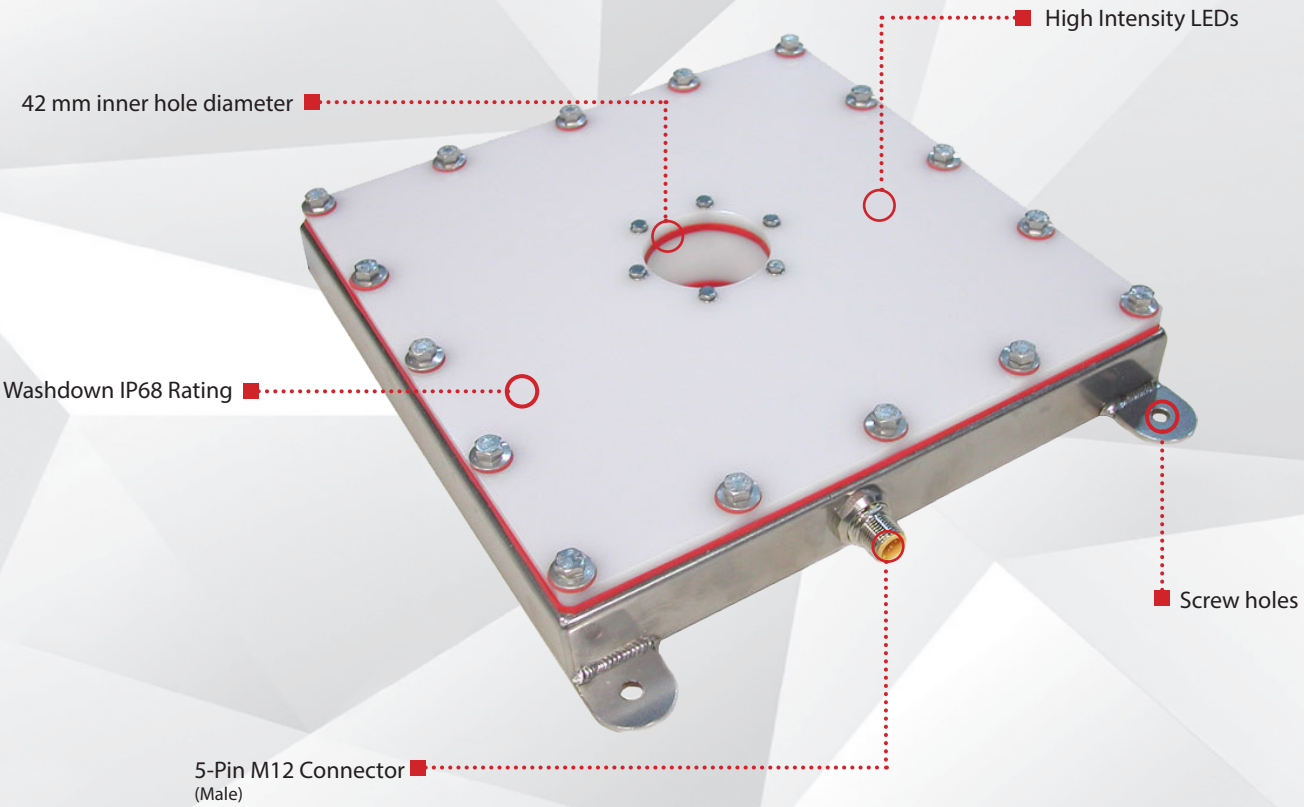
SWIR SHORT WAVE INFRARED

Short Wave Infrared LEDs are available in 1050 nm, 1200 nm, 1300 nm, 1450 nm, and 1550 nm.

smart vision lights

DLPW Diffuse Panel RING 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 strobe input
- ✓ Washdown IP68 rating
- ✓ 30mm Industrial extrusion

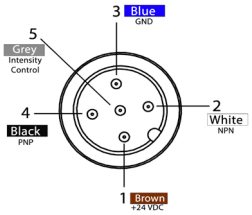
PRODUCT DESCRIPTION

The DLPW Diffused Light Panel Washdown Series is designed for front lighting and harsh environment applications. The innovative and highly versatile lights can be customized for wavelength options. The series provides intense and highly diffuse area lighting. The DFLW has a 65 mm camera hole in the center for easy viewing. Active area measurements include 190 mm x 190 mm, 300 mm x 300 mm, and 600 mm x 600 mm.

PRODUCT SPECIFICATIONS

Electrical Input	24 V DC +/- 5%
Input Current	Max. 300 mA
Wattage	Max. 7.5 W
On / Off Input	PNP > +4VDC or greater to activate | NPN > GND (< VDC) to activate
PNP Line	4 mA @ 4VDC | 10 mA @ 12VDC | 20 mA @ 24VDC
NPN Line	15 mA @ Ground (0 V DC)
Yellow Indicator LED	LED Strobe Indicator ON = Light Active
Green Indicator LED	ON = Power
Continuous Mode	NPN can be tied to ground **OR** PNP can be tied to 24VDC (not both)
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 5 to pin 1 will provide maximum intensity).
Connection	5-pin M12 connector
Ambient Temperature	-18º–40º C (0º–104º F)
IP Rating	IP68
Weight	Based on size. Contact Smart Vision Lights.
Compliances	CE, RoHS, IEC-62471
Warranty	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*

OPTIONAL

For maximum intensity, analog intensity may be connected to +VDC (24VDC) - Jumper pin 5 to pin 1

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

RESOURCE CORNER

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

PART NUMBER

DLPW– □□□x□□□ – □□□

SIZE:
- 190x190
- 300x300
- 600x600

COLOR:
WHI, 470, 530, 625, 850

Part Number Examples:

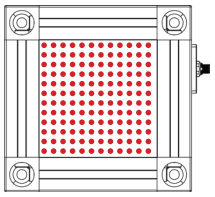
DLPW-190x190-625	DLPW, 190 mm x 190 mm, 625 Red Wavelength

Additional wavelengths options available upon request.

AREA LIT

LEDs are placed to produce uniform intensity throughout the lighted surface area.

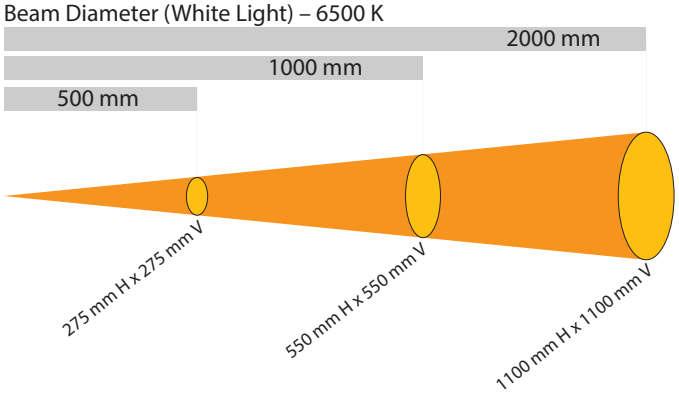
(LED size and spacing not shown to scale)



LIGHT PATTERNS

Smart Vision Lights recommends the DLPW be used at a working distance between 500 mm to 4000 mm.

Beam Diameter (White Light) – 6500 K



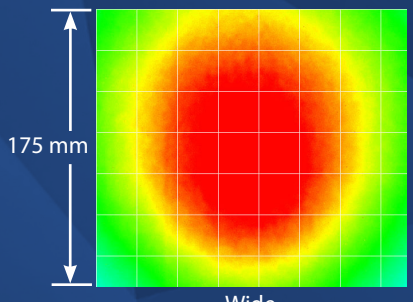
LIGHTING PATTERN FOR THE DLPW-190x190

Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
500 mm (19.7")	80mm (~3.1")
1000 mm (39.4")	90mm (~3.54")
2000 mm (78.8")	135mm (~5.3")

Typical Output Performance	Illuminance (Lux)
190x190	44,000
300x300	32,000
450x450	32,000
600x600	32,000
Illumination measurement taken on White Lights - 6500K	

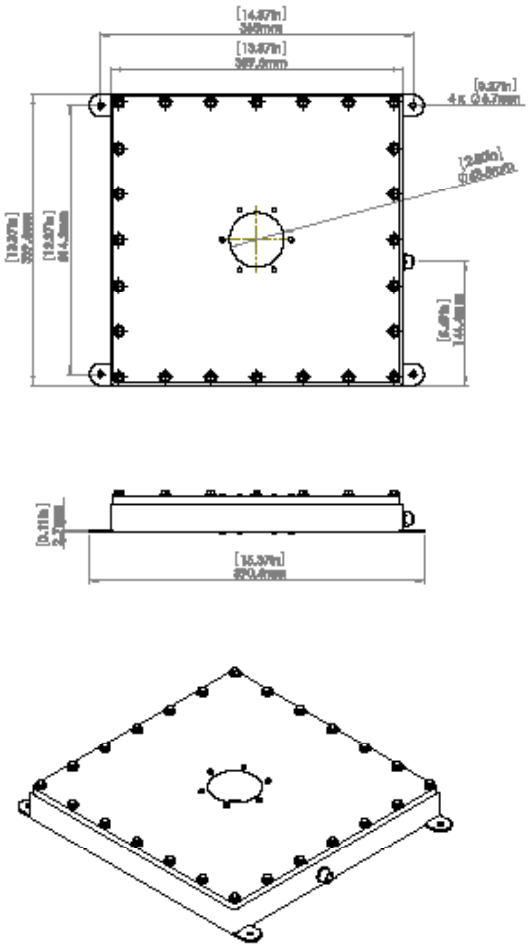
The DLPW Ring Light produces a uniform light pattern.

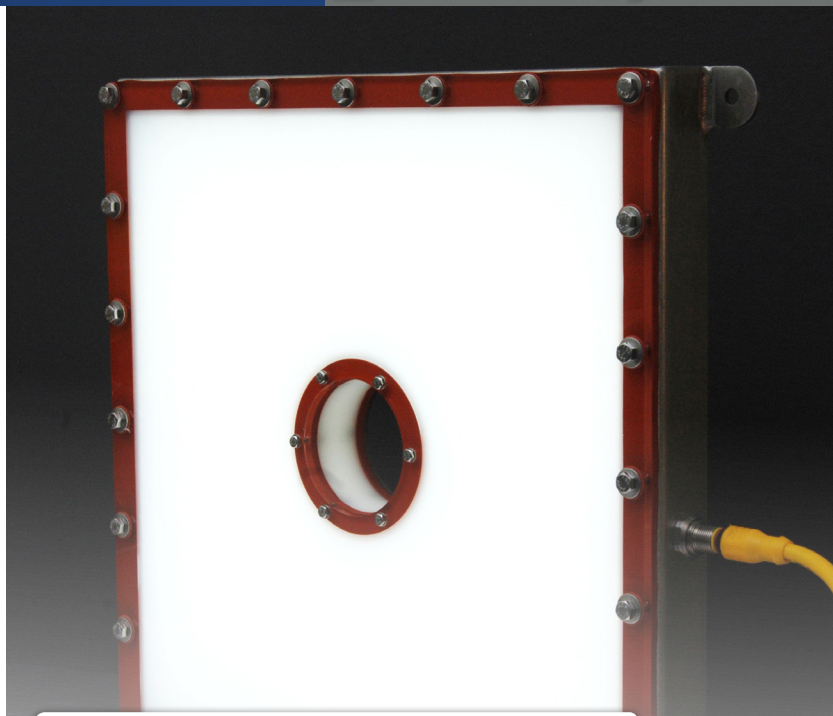
Working Distance = 500 mm Grid set to 25 mm x 25 mm



PRODUCT DRAWING

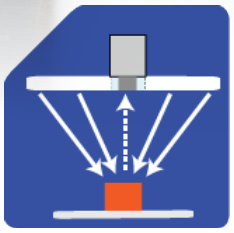
CAD files available on our website.
Dimensic



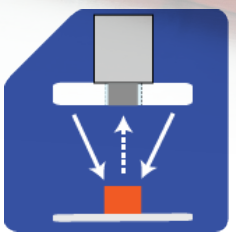


ILLUMINATION

DLPW Series of Diffused Lights works best for:



Diffuse Panel



Radial

EYE SAFETY

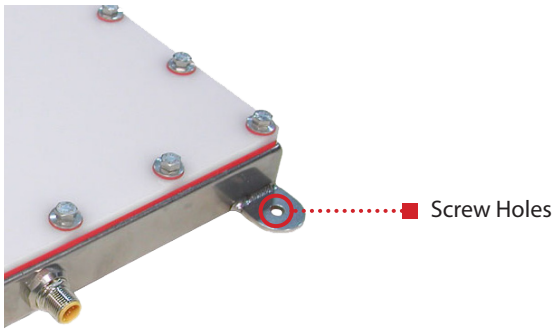
According to IEC 62471:2006. Full documentation available upon request.

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 four 30 mm industrial extrusions on the DLPW diffuse ring light pan.

Optional Mounting Hardware:
T-Slots = M5 x 0.8 mm T-Nut
Threaded screw Holes = M4 screws



ACCESSORIES

Power Cables

Length	Part Number
5 m	5PM12-5
10 m	5PM12-10
15 m	5PM12-15

Camera Mount

Description	Part Number
DLPW-190	BKT0005
DLPW-300	BKT0006
DLPW-450	BKT0013
DLPW-600	BKT0014

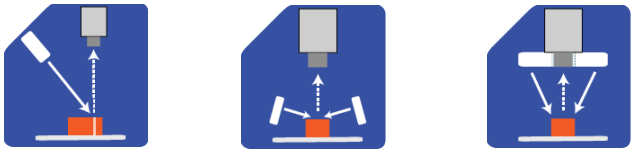
GLOSSARY

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

TERMINOLOGY

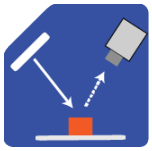
OverDrive™ Lights include an integrated high-pulse driver for complete LED light control.
Continuous Operation Light stays on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-pulse operation) mode into one easy-to-use light.
Built-in Driver The built-in driver allows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

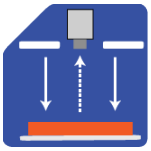
TYPES OF ILLUMINATION

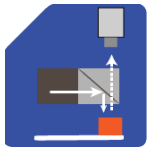

Projector

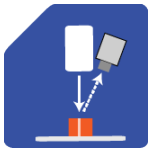
Dark Field

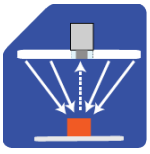
Radial

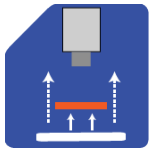

Bright Field


Direct


Axial

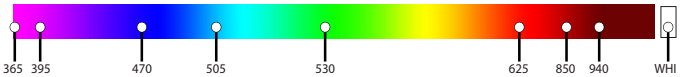

Line


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 SHORT WAVE **INFRARED**

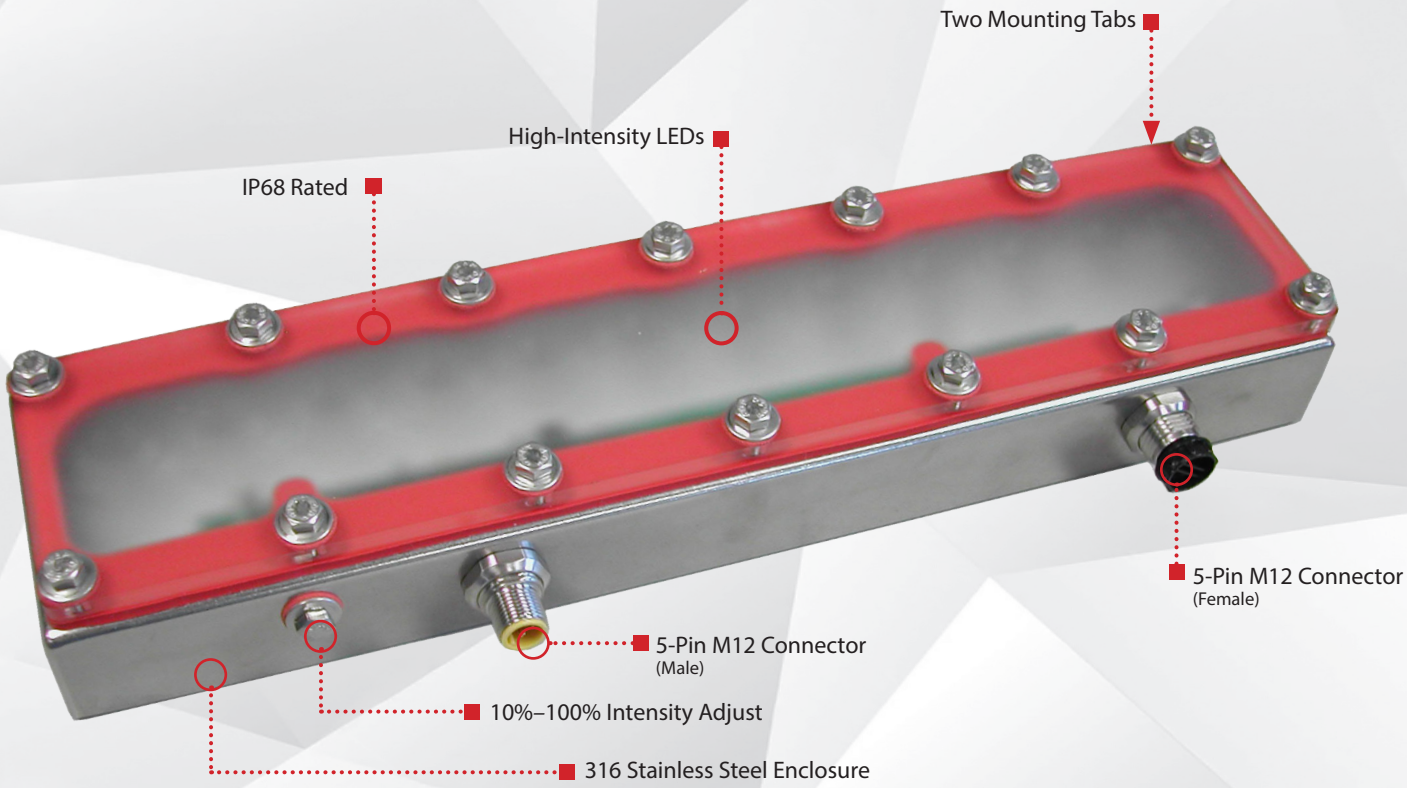
Shortwave Infrared LEDs are available in 1050 nm, 1200 nm, 1300 nm, 1450 nm, and 1550 nm.*

Check Part Number section to see if **this light's is available in SWIR wavelengths.*

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

Rev. 2020/06/04

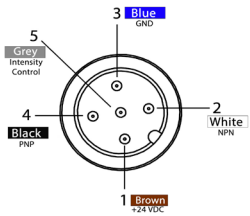
PRODUCT DESCRIPTION

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.

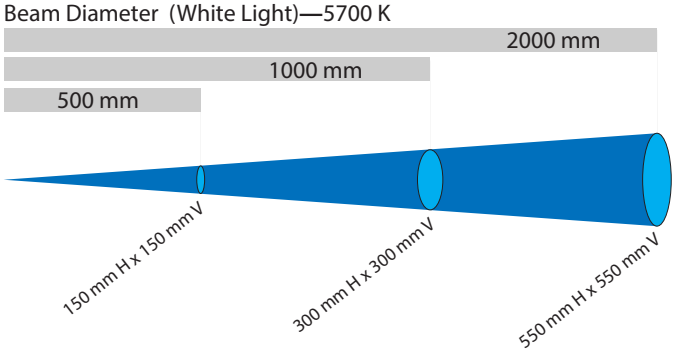
RESOURCE CORNER

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

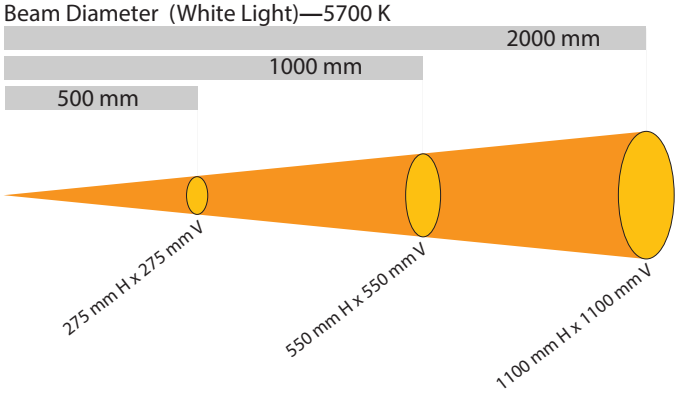
LIGHT PATTERNS

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

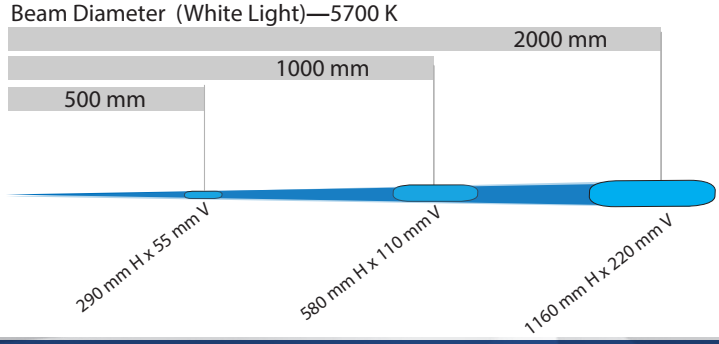
Beam Diameter (White Light)—5700 K



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)
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
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)
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	8000
Illuminance measurement taken on White Lights)—5700K	

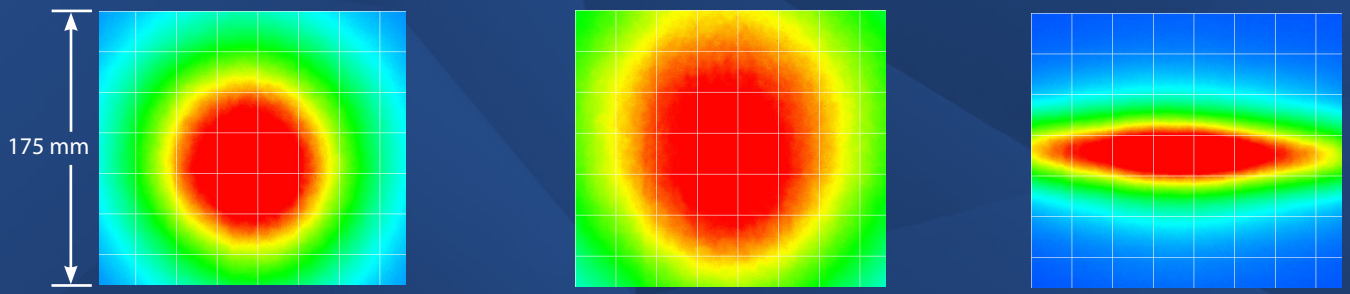
LIGHTING PATTERN FOR THE LW300 **with Line (L) Lenses**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
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
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 25 mm

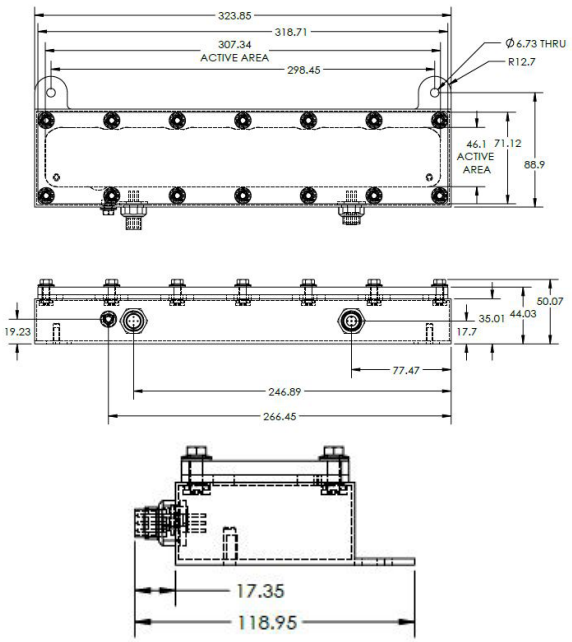


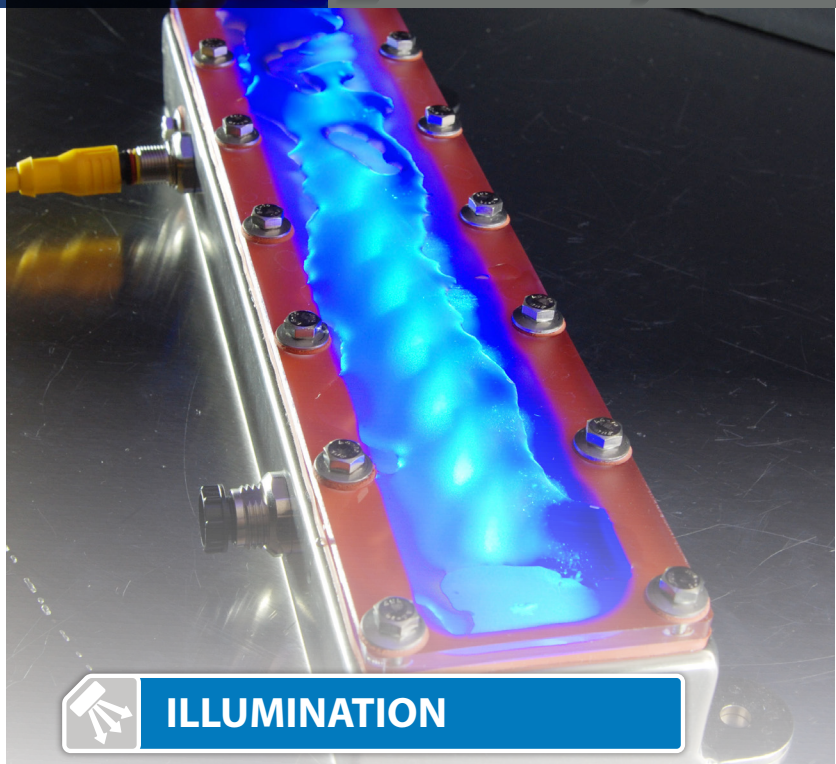
DAISY-CHAIN LIGHTS

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

PRODUCT DRAWING

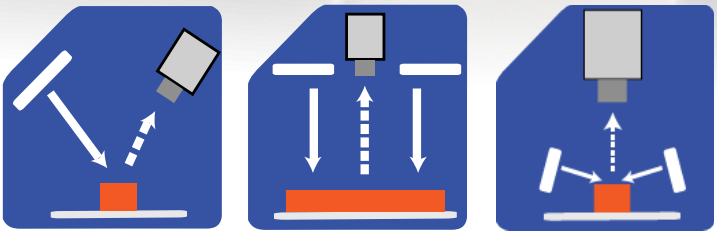
CAD files available on our website.
Dimensions are in mm.





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.

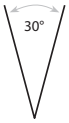
1050 nm | 1200 nm | 1300 nm | 1450 nm | 1550 nm

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

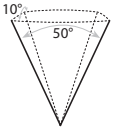
STANDARD LENS OPTICS

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.

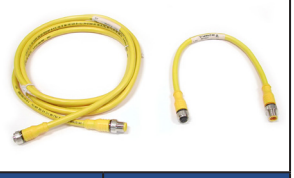
WARNING: Running a light in continuous operation while using a standard polarizer with certain wavelengths (ex. white, blue) may result in burning of the polarizer.

ACCESSORIES

Power Cables (Washdown)

Length	Part Number
5 m	W5PM12-5
10 m	W5PM12-10
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).

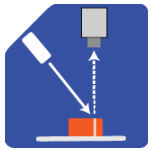
GLOSSARY

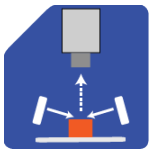
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

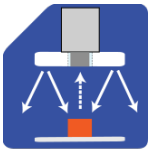
TERMINOLOGY

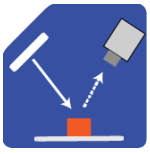
OverDrive™ Lights include an integrated high-pulse driver for complete LED light control.
Continuous Operation Lights stay on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-pulse operation) mode into one easy-to-use light.
Built In Driver The built-in driver allows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

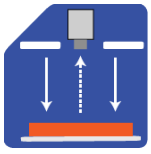
TYPES OF ILLUMINATIONS

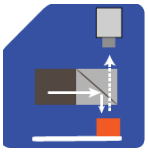

Projector

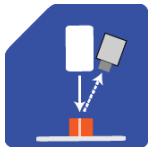

Dark Field

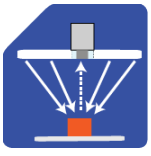

Radial

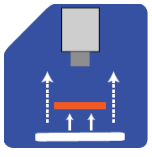

Bright Field


Direct


Axial

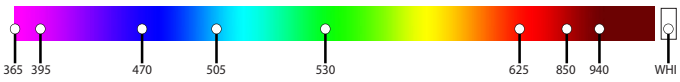

Line


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**

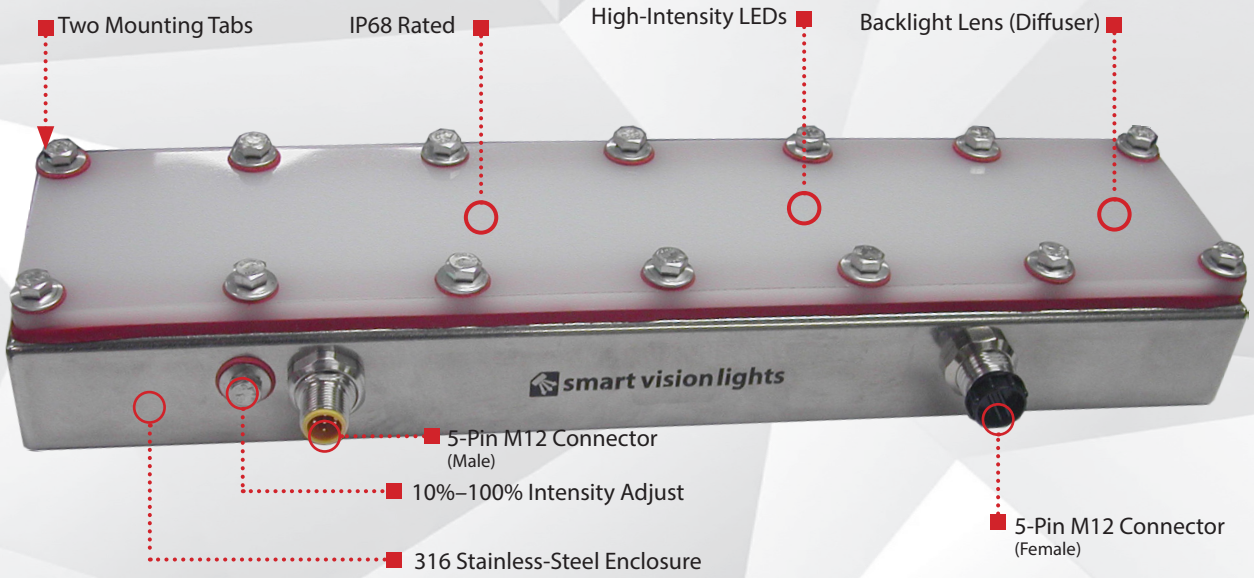
Shortwave infrared LEDs are available in 1050 nm, 1200 nm, 1300 nm, 1450 nm, and 1550 nm.
*Check Part Number section to see if **this light** is available in SWIR wavelengths.

smart vision lights LWB300 *Connect-a-Light*

LINEAR LIGHT

WASHDOWN | BACKLIGHT

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 input signal
- ✓ Washdown light with 316 stainless-steel enclosure
- ✓ Daisy-chain up to six LWB300 linear lights using a 5-pin M12 washdown jumber cable

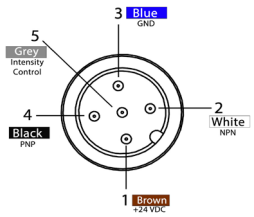
PRODUCT DESCRIPTION

The LWB300 series features a 100% waterproof stainless-steel enclosure specially designed for food industry and washdown environments where water and harsh detergents are present. The LWB300 features an integrated constant-current driver built into the light and runs in continuous operation. NPN or PNP trigger signal input can be used to control the turning on/off input of the light. Intensity of the light can be controlled via a 1–10VDC remote analog signal line or manual potentiometer. Daisy-chain up to six LWB300 together.

PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/–5%
Input Current	Max. 700 mA
Wattage	Max. 17 W
On/Off Input	PNP: +4VDC 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	270º turn pot — Intensity control of 10%–100%. Turn clockwise to increase intensity.
Analog Intensity	Brightness output is adjustable from 10%–100% via a 1–10VDC signal. (Jumpering pin 5 to pin 1 will provide maximum intensity.)
Connection	5-pin M12 connector
Ambient Temperature	-18º–40ºC (0º–104ºF)
IP Rating	IP68
Weight	~1430 g
Compliances	CE, RoHS, IEC 62471
Warranty	10 years. 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*

OPTIONAL

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

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

RESOURCE CORNER

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

PART NUMBER

LWB300 – □□□

COLOR:

WHI | 470 | 505 | 530 | 625 | 850 940

Part Number Example:

LWB300-625 LWB300, 625 Red Wavelength

SWIR SHORTWAVE **INFRARED**

This light is available in our SWIR LEDs.

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

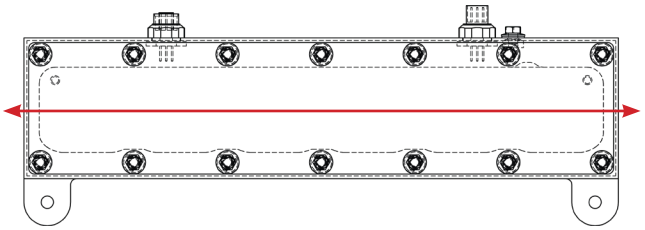
Additional wavelengths available upon request.

OPTICAL PERFORMANCE

The LWB300 offers a very diffuse light pattern.

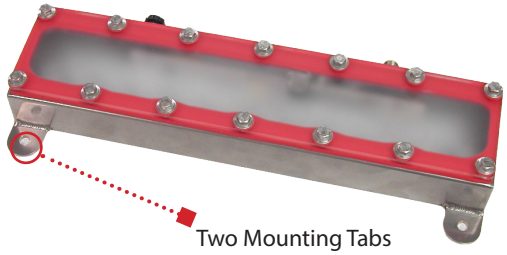
OPICTAL PERFORMANCE FOR THE LWB300

Rating	Illumination (Lux)
Average Intensity Rating	42,000
Illuminance measurement taken at surface of LWB300	



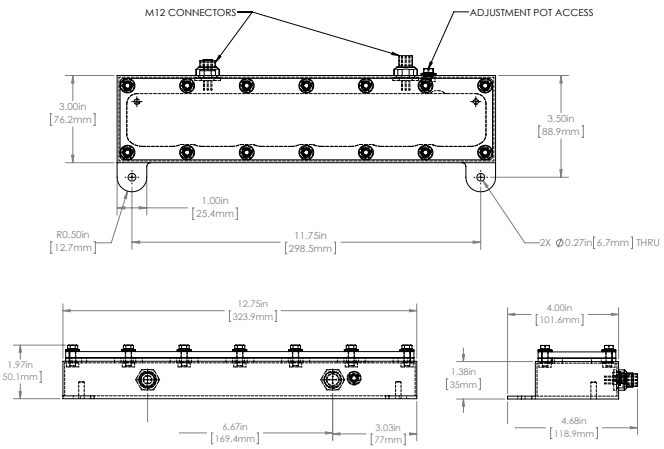
MOUNTING

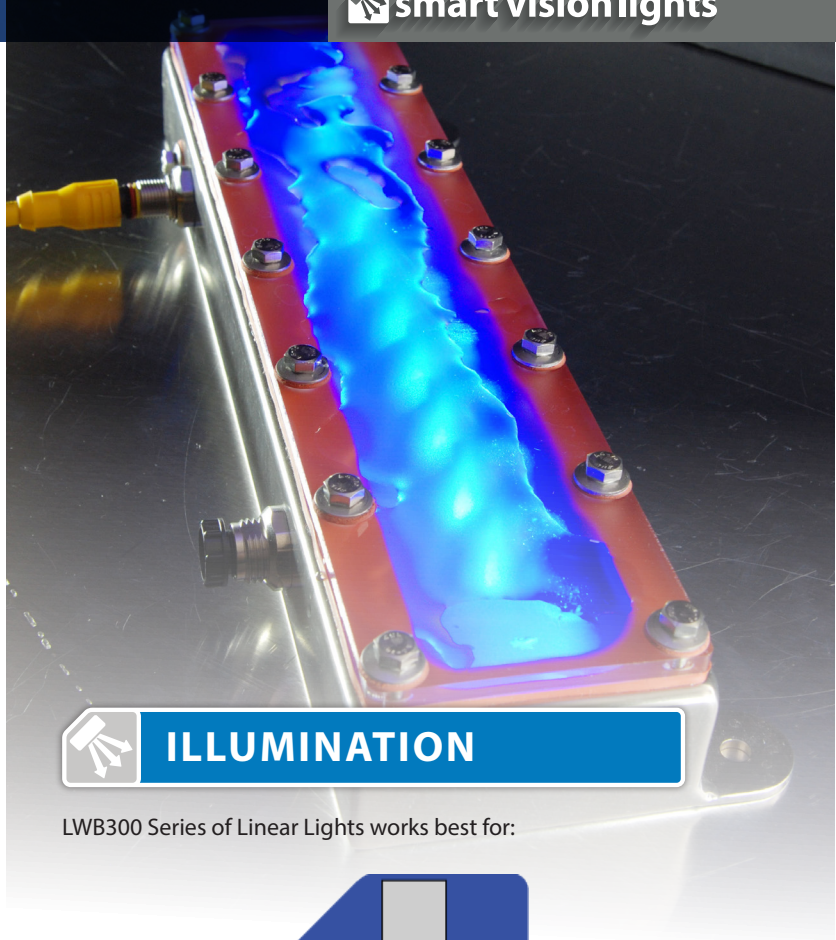
The LWB300 Series features two stainless-steel tabs welded directly to the housing for simple yet versatile mounting options.



PRODUCT DRAWING

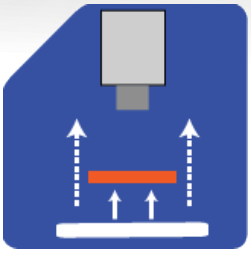
CAD files available on our website.
Dimensions are in mm.





ILLUMINATION

LWB300 Series of Linear Lights works best for:



Backlight

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.

ACCESSORIES

Power Cables (Wash-down)

Length	Part Number
10 m	W5PM12-10
15 m	W5PM12-15

Jumper Cables (Daisy-Chain) (Washdown)

Length	Part Number
300 mm	W5PM12-J300
2000 mm	W5PM12-J2000
2 m	W5PM12-J2000

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

GLOSSARY

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Continuous Operation Lights stay on continuously.
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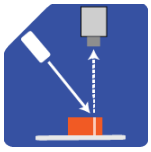
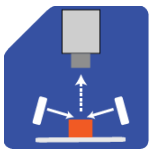
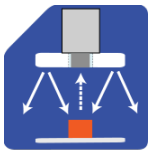
Camera to Light Connect the light directly to the camera, without the need for additional controllers or equipment.
Polarizers Filters that reduce reflections on specular surfaces.
Diffuser Used to widen the angle of light emission, reduce reflections, and increase uniformity.

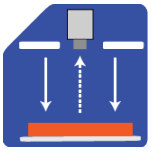
TYPES OF ILLUMINATION

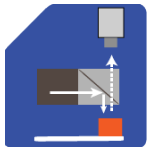

Projector

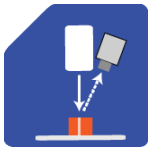

Dark Field

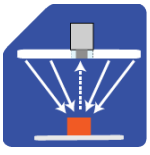

Radial

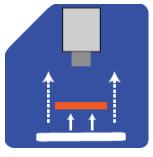

Bright Field


Direct


Axial

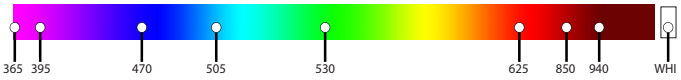

Line


Diffuse Panel


Backlight

COMMON 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 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.*

smart vision lights

LWE150 *Mini-Light* LINEAR LIGHT WASHDOWN

PRODUCT DATA SHEET

multi drive™

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

PRODUCT HIGHLIGHTS

- ✓ Built-in Multi-Drive™ allows the light to work in continuous operation or OverDrive™ strobe mode
- ✓ SafeStrobe™ technology ensures protected operation of LEDs
- ✓ Washdown light with 316 stainless-steel enclosure
- ✓ 5-pin M12 quick connect
- ✓ Built-in driver
- ✓ PNP and NPN trigger signal input

PRODUCT DESCRIPTION

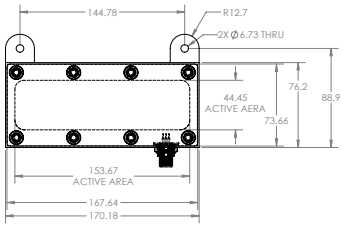
The LWE150 features a stainless-steel enclosure specially designed for food industry and washdown environments where water and harsh detergents are present. The LWE150 has an integrated Multi-Drive™ constant-current driver that operates continuous operation or in OverDrive™ strobe mode, depending on wiring configuration. NPN or PNP trigger signals can be used to control the pulse of the light. Intensity of the light can be controlled via 1–10VDC analog signal line.

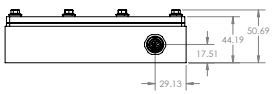
PRODUCT SPECIFICATIONS

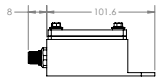
	CONTINUOUS OPERATION	OVERDRIVE™ OPERATION
Electrical Input	24VDC +/- 5%	
Input Current	Max. 412 mA	Max. 2.80 A
Wattage	Max. 10 W	Max. 68 W
PNP Line	4 mA @ 4VDC | 10 mA @ 12VDC | 20 mA @24VDC	
NPN Line	15 mA @ Common (0 VDC)	
OverDrive™ Mode	**Not applicable**	Connect pin 5 to GND (see Wiring Configuration for more information)
Strobe Duration	**Not applicable**	Min. 10 µs | Max. 50 ms (see SafeStrobe™ Technology for more information)
Duty Cycle	**Not applicable**	Max. 10%
Strobe Input	**Not applicable**	PNP: +4VDC or greater to activate NPN: GND (<1VDC) to activate
Continuous Operation Mode	NPN can be tied to ground **OR** PNP can be tied to 24VDC (not both)	**Not applicable**
On/Off Input	PNP: +4VDC or greater to activate NPN: GND (<1VDC) to activate	**Not applicable**
Connection	5-pin M12 connector	
Ambient Temperature	0º–40ºC (32º–104ºF)	
IP Rating	IP68	
Weight	760 g	
Compliances	CE, RoHS, IEC 62471	

PRODUCT DRAWING

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





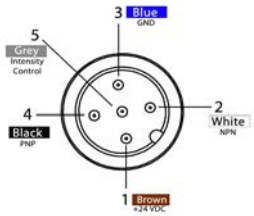


RESOURCE CORNER

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

WIRING CONFIGURATION

CONTINUOUS OPERATION MODE



Pin layout for light (male connector)

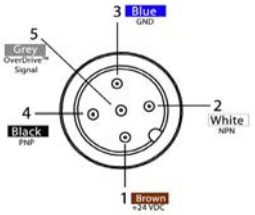
Pins	Function	Signal	Wire Color
1	Power In	+24VDC	BROWN
2	NPN	Sinking Signal	WHITE
3	GND	Ground	BLUE
4	PNP	Sourcing Signal	BLACK
5	Intensity Control	1-10VDC**	GREY*

** 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: PNP (pin 4) can be tied to +24VDC (pin 1) **or** NPN (pin 2) can be tied to Ground (pin 3).*

For the light to function properly, apply either a PNP or NPN signal, not both.

Failure to supply light with correct input current will result in non-repeatable lighting.
(See Product Specifications for requirement.)

OVERDRIVE™ STROBE MODE



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	OverDrive™ Signal	Ground	GREY*

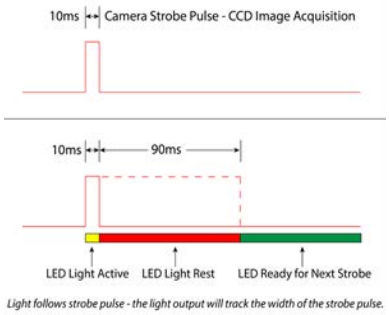
** Some cables use green/yellow for pin 5*

Failure to supply light with correct input current will result in non-repeatable lighting
(See Product Specifications for requirement.)

DUTY CYCLE (OVERDRIVE™ MODE ONLY)

This section applies only if light is in OverDrive™ strobe mode.

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



Light follows strobe pulse - the light output will track the width of the strobe pulse.

Calculating Rest Time

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

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

Example

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

Rest Time is 90 ms for 10 ms Strobe Time

Calculating Strobe Rate

$$SR = \frac{D}{ST}$$

SR = Strobe Rate (strobes per second)
ST = Strobe Time (seconds)
D = Duty Cycle

Example

$$1000 = \frac{0.1}{0.0001}$$

Strobe Rate is 1000 strobes per second

Calculating Duty Cycle

$$D = ST \times SR$$

SR = Strobe Rate (strobes per second)
ST = Strobe Time (seconds)
D = Duty Cycle

Example

$$0.1 = 0.0001 \times 1000$$

Duty Cycle is 10% (0.1)

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

Note: Strobe time is limited by the strobe rate.

MULTI-DRIVE™

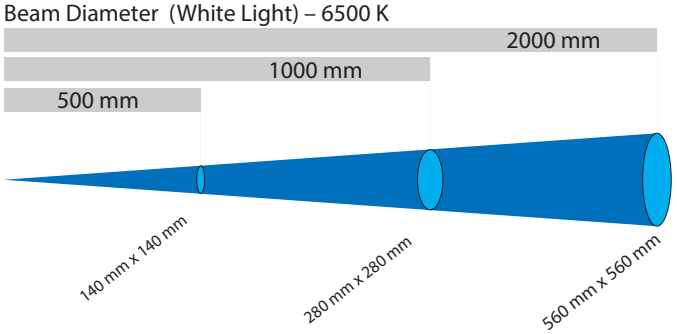
Multi-Drive™ offers the best of both worlds. Continuous operation and OverDrive™ mode (HIGH output strobe/pulse) are available in a single light. Other advantages of Multi-Drive™ include faster imaging and capture/freeze motion on high-speed lines.

The Multi-Drive™ feature allows the user to run the light continuously or in OverDrive™ at the maximum allowed intensity by simply setting the product configuration. OverDrive™ strobe mode has **up to eight times** the power of continuous operation.

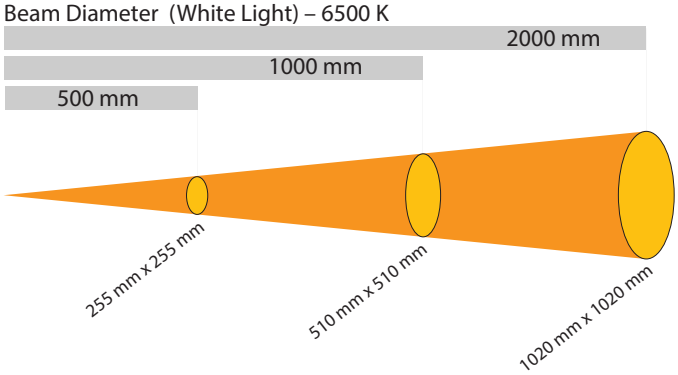
LIGHT PATTERNS

Smart Vision Lights recommends the LWE150 be used at a working distance between 300 mm and 4000 mm.

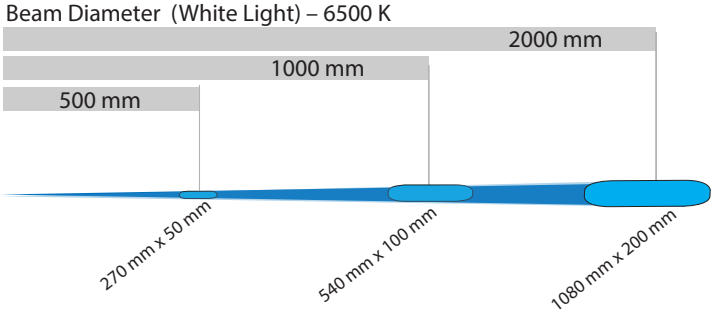
Beam Diameter (White Light) – 6500 K



Beam Diameter (White Light) – 6500 K



Beam Diameter (White Light) – 6500 K



LIGHTING PATTERN FOR THE LWE150 **with Narrow (Standard) Lenses**

Working Distance	Pattern (80% - 100% measured intensity) (H = Horizontal, V = Vertical)
500 mm (19.7")	140 mm (~5.5") H x 140 mm (~5.5") V
1000 mm (39.4")	280 mm (~11") H x 280 mm (~11") V
2000 mm (78.8")	560 mm (~22") H x 560 mm (~22") V

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	6600
Illuminance measurement taken on White Lights, 5700 K	

LIGHTING PATTERN FOR THE LWE150 **with Wide (W) Lenses**

Working Distance	Pattern (80% - 100% measured intensity) (H = Horizontal, V = Vertical)
500 mm (19.7")	255 mm (~10") H x 255 mm (~10") V
1000 mm (39.4")	510 mm (~20") H x 510 mm (~20") V
2000 mm (78.8")	1020 mm (~40") H x 1020 mm (~40") V

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	4800
Illuminance measurement taken on White Lights, 5700 K	

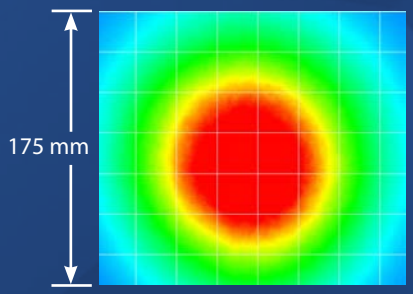
LIGHTING PATTERN FOR THE LWE150 **with Line (L) Lenses**

Working Distance	Pattern (80% - 100% measured intensity) (H = Horizontal, V = Vertical)
500 mm (19.7")	270 mm (~10.6") H x 50 mm (~2") V
1000 mm (39.4")	540 mm (~21.3") H x 100 mm (~4") V
2000 mm (78.8")	1080 mm (~42.6") H x 200 mm (~8") V

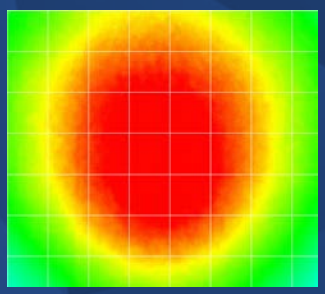
Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	11,400
Illuminance measurement taken on White Lights, 5700 K	

The LWE150 Linear Light produces a uniform light pattern.

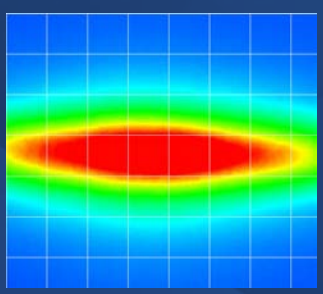
Working Distance = 500 mm Grid set to 25 mm x 25 mm



Narrow



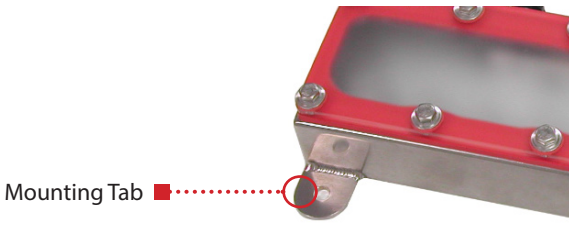
Wide

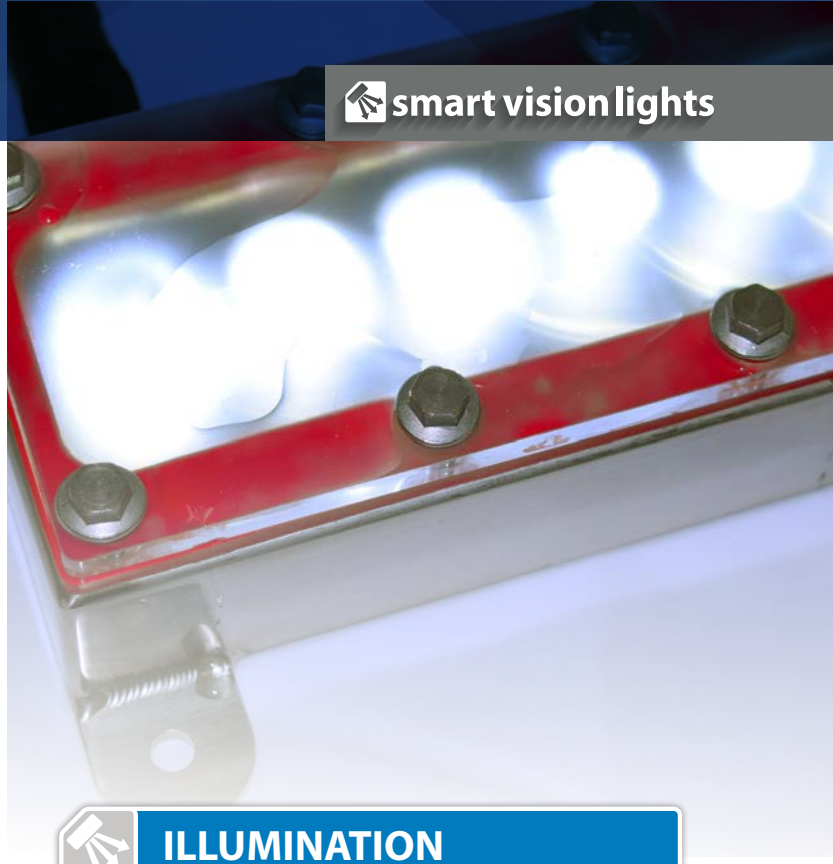


Line

MOUNTING

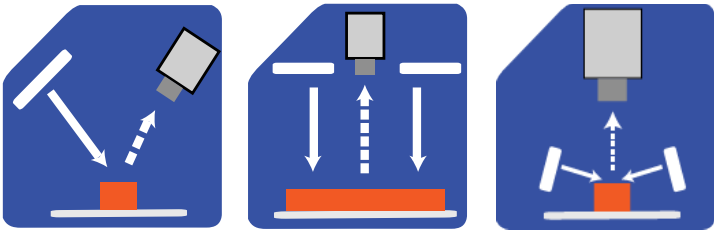
The LWE150 features 2 stainless-steel tabs welded directly to the housing for simple yet versatile mounting options.





ILLUMINATION

LWE150 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 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

LWE150 – □□□ – □ – □□□

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:

LWE150-625	LWE150, 625 nm Red Wavelength, Standard (Narrow) Lenses
LWE150-WHI-L	LWE150, White, Line Lenses
LWE150-470-W-LPI	LWE150, 470 nm Blue Wavelength, Wide Lenses, with Linear Polarizer installed

SWIR SHORT WAVE INFRARED

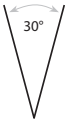
This light is available in our SWIR LEDs
(1050 nm, 1200 nm, 1300 nm, 1450 nm, 1550 nm)

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

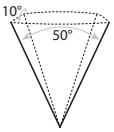
STANDARD LENS OPTICS

NARROW
Narrow lenses are standard.
Narrow 14° angle cone lenses are standard. Standard lenses 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.*

SAFESTROBE™ TECHNOLOGY

SafeStrobe™ technology is a unique technology that applies safe working parameters to ensure high-current LED's are not damaged by driving them beyond their limits, such as maximum strobe time or duty cycle. This is especially beneficial for overdriving our high-current LED's.

When to Use a Linear Polarizer?

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.

ACCESSORIES

Power Cables

Lengths	Part Number
5 m	5PM12-5
10 m	5PM12-10
15 m	5PM12-15

Jumper Cables (Daisy Chain)

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

Power Cables (Washdown)

Lengths	Part Number
15 m	W5PM12-15

Jumper Cables (Daisy Chain) (Washdown)

Lengths	Part Number
300 mm	W5PM12-J300
2000 mm	W5PM12-J2000

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

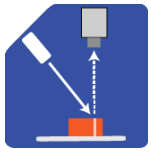
GLOSSARY

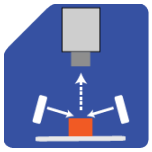
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

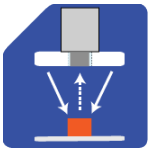
TERMINOLOGY

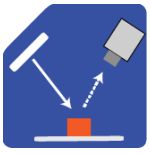
OverDrive™ Light includes an integrated high-current strobe driver for complete LED light control.
Continuous Operation Light stays on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-current strobe operation) modes into one easy-to-use light.
Built-In Driver The built-in driver allows full function without the need of an external driver.
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.

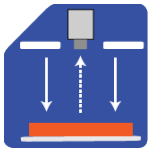
TYPES OF ILLUMINATIONS

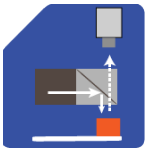

Projector

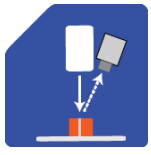

Dark Field

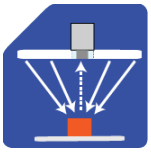

Radial

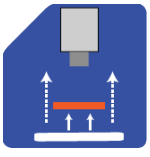

Bright Field


Direct


Axial

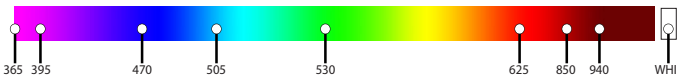

Line


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.*

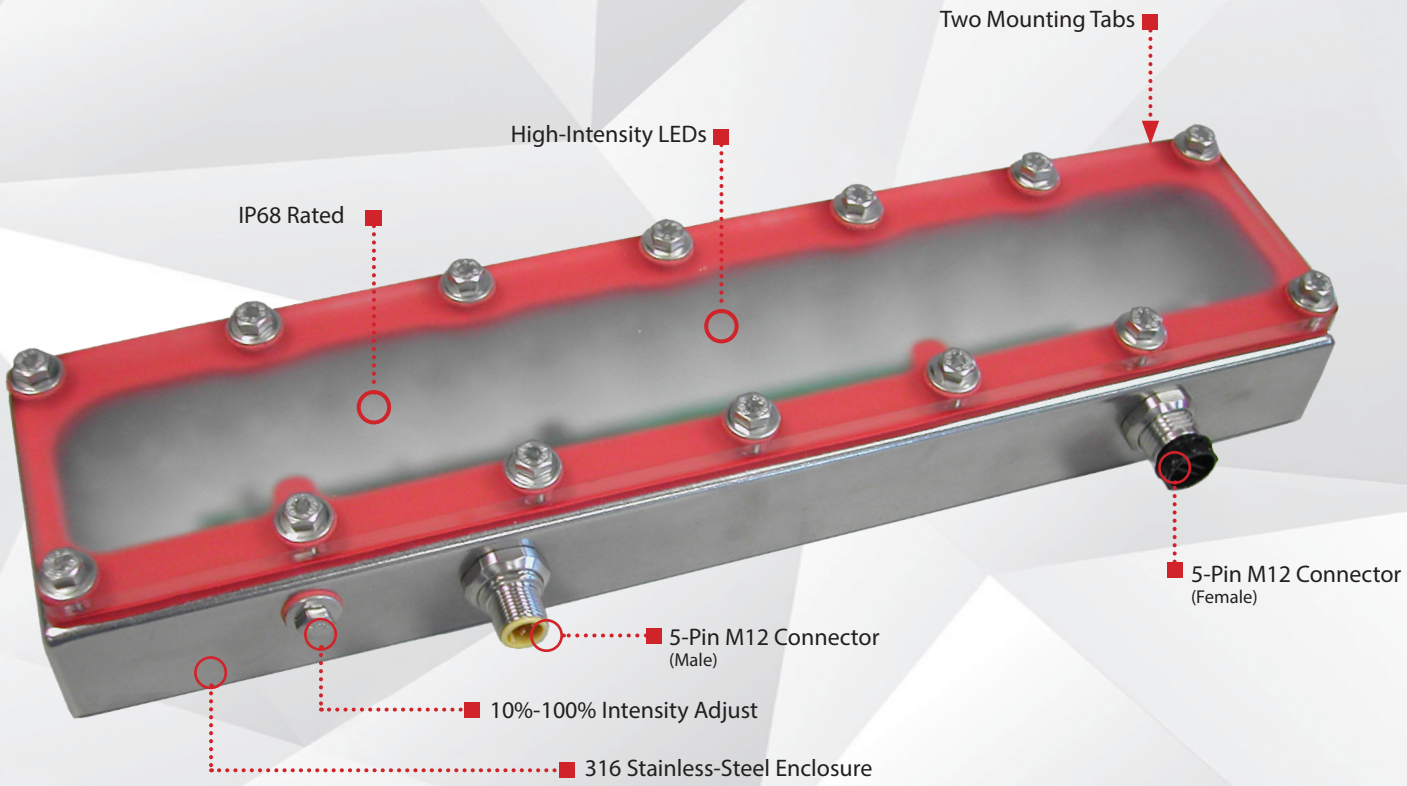
smart vision lights

ODLW300 *Connect-a-Light*

LINEAR LIGHT

WASHDOWN | OVERDRIVE™

PRODUCT DATA SHEET



OverDRIVE™

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

PRODUCT HIGHLIGHTS

- ✓ OverDrive™ — up to five times brighter than a standard linear Connect-a-Light
- ✓ Built-in driver
- ✓ PNP and NPN trigger input signal
- ✓ Washdown light with 316 stainless-steel enclosure
- ✓ Daisy-chain up to six ODLW300 linear lights using a 5-pin M12 washdown jumper cable

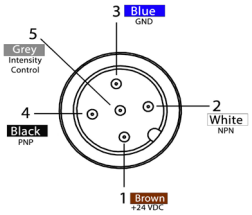
PRODUCT DESCRIPTION

The ODLW300 Series features a 100% waterproof stainless-steel enclosure specially designed for food industry and washdown environments where water and harsh detergents are present. The integrated OverDrive™ driver allows for a maximum strobe rate of 5000 strobes per second. NPN or PNP trigger signal input can be used to control the pulse 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 ODLW300 lights together.

PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/–5%
Input Current	Max. 4.6 A draw during strobe | Max. average 460 mA
Wattage	Max. 110 W during strobe | Max. average 11 W
Strobe Input	PNP > +4VDC or greater to activate | NPN > GND (<1VDC) to activate
PNP Line	4mA @ 4VDC | 10mA @ 12VDC | 20mA @ 24VDC
NPN Line	15mA @ ground (0VDC)
Duty Cycle	Max. 10%
Strobe / Pulse Time	Max. 5000 SPS (Strobes Per Second) | Max. Single Pulse = 125ms
Potentiometer	270º turn pot — intensity control of 10%–100%. Turn clockwise to increases intensity.
Analog Intensity	The output is adjustable from 10%–100% of brightness by a 1 – 10VDC signal.
Connection	5-pin M12 connector
Ambient Temperature	-18º–40ºC (0º–104ºF)
IP Rating	IP68
Weight	~1430 g
Power Supply	A separate power supply for OverDrive™ (high-pulse operation) is recommended. See Input Current for value.
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)

Pin	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, tie pin 5 to pin 1 at +24VDC.

OPTIONAL

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

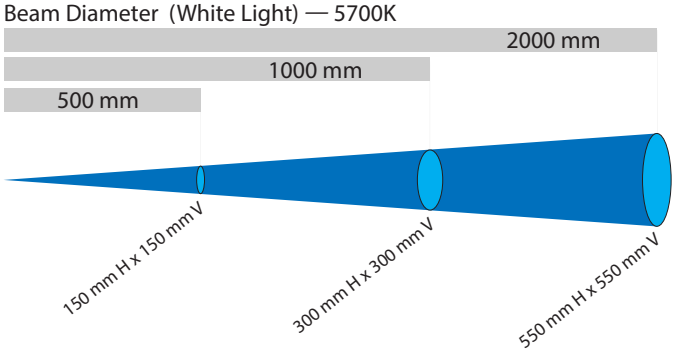
RESOURCE CORNER

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

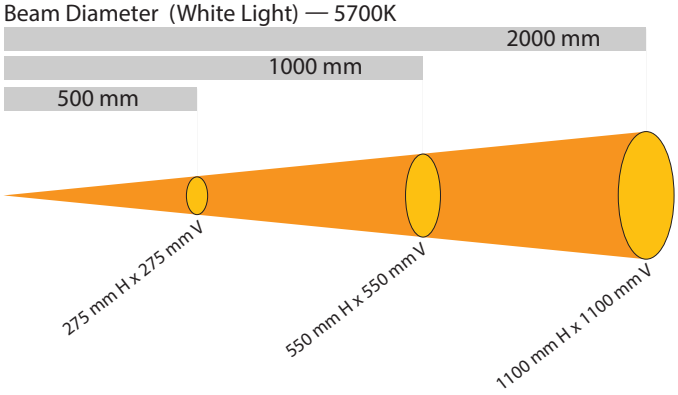
LIGHT PATTERNS

Smart Vision Lights recommends the ODLW300 be used at a working distance between 300 mm and 4000 mm.

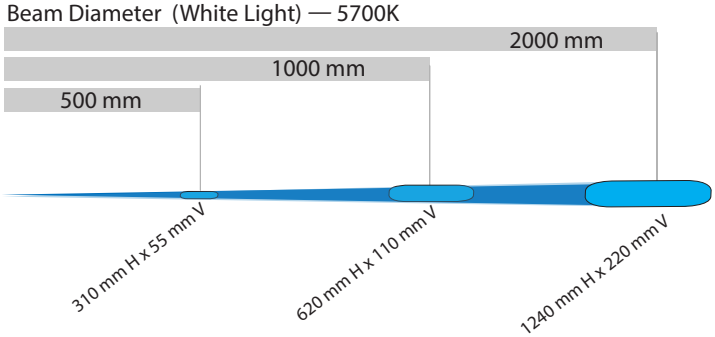
Beam Diameter (White Light) — 5700K



Beam Diameter (White Light) — 5700K



Beam Diameter (White Light) — 5700K



LIGHTING PATTERN FOR THE ODLW300 **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	55,000
Illuminance measurement taken on White Lights — 5700K	

LIGHTING PATTERN FOR THE ODLW300 **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	40,000
Illuminance measurement taken on White Lights — 5700K	

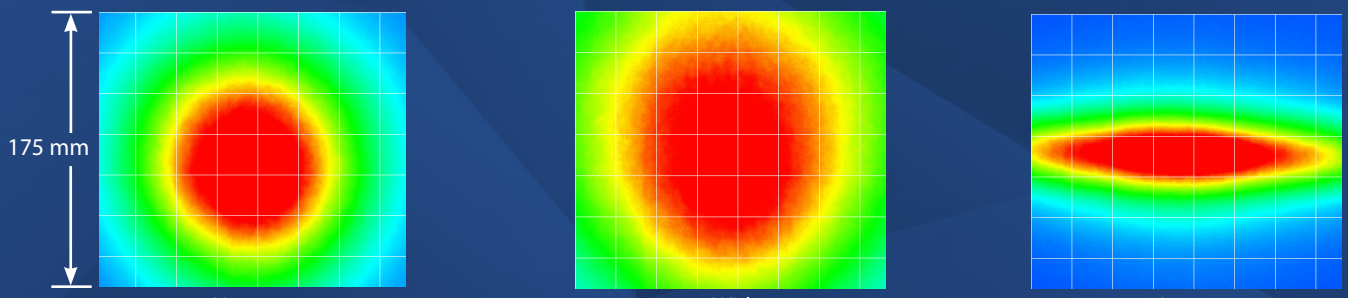
LIGHTING PATTERN FOR THE ODLW300 **with Line (L) Lenses**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
500 mm (19.7")	310 mm (~12.2") H x 55 mm (~2.1") V
1000 mm (39.4")	620 mm (~24.4") H x 110 mm (~4.3") V
2000 mm (78.8")	1240 mm (~48.8") H x 220 mm (~8.6") V

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	95,000
Illuminance measurement taken on White Lights — 5700K	

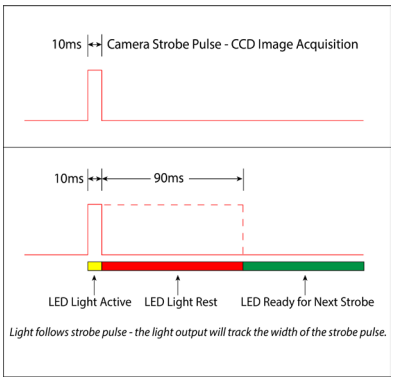
The ODLW300 Linear Light produces a uniform light pattern.

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



DUTY CYCLE (OVERDRIVE™ MODE ONLY)

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

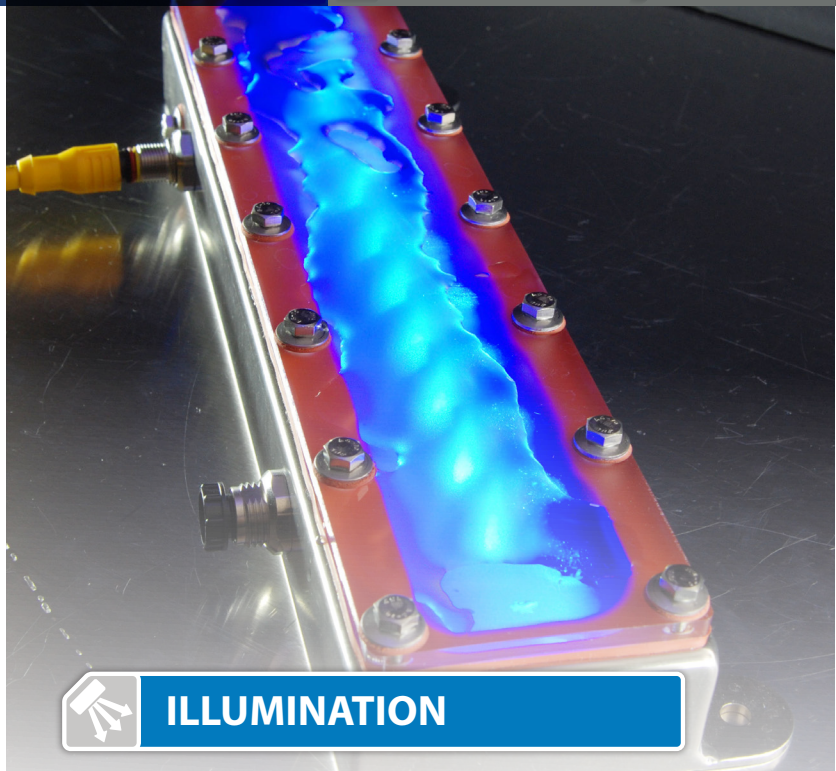
$$RT = \frac{10\ ms}{0.1} - 10\ ms = 90\ ms$$

Rest Time is 90 ms for 10 ms Strobe Time

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

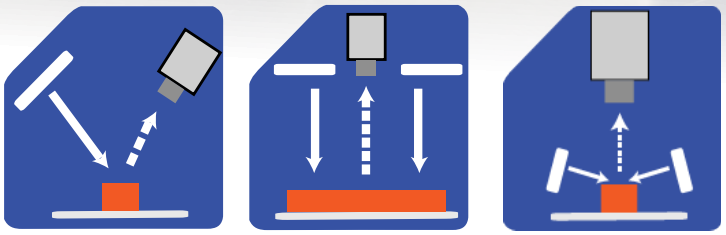
DAISY-CHAIN LIGHTS

ODLW300 Series light requires the use of a standard 5-pin M12 jumper cable to effectively parallel up to six (6) ODLW300 lights.



ILLUMINATION

ODLW300 Series of Linear Lights works best for:



Bright Field | Direct Lighting | Dark Field

EYE SAFETY

SMART VISION LIGHTS IEC 62471 COMPLIANT

According to IEC 6247: 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

ODLW300 – □□□□ – □

COLOR:

WHI | 365 395 | 470 | 505 | 530 | 625 | 850 940

LENS:

Leave blank for Standard (Narrow)

W = Wide

L = Line

Part Number Examples:

ODLW300-625 ODLW300, 625 nm Red Wavelength, Standard (Narrow Lens)

ODLW300-WHI-L ODLW300, White, Line Lens

SWIR SHORTWAVE INFRARED

This light is available in our SWIR LEDs.

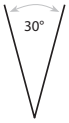
1050 nm | 1200 nm | 1300 nm | 1450 nm | 1550 nm

Additional wavelength and lens options available upon request.

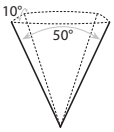
LENS OPTICS

NARROW (STANDARD)
Narrow, 16° 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 and 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.

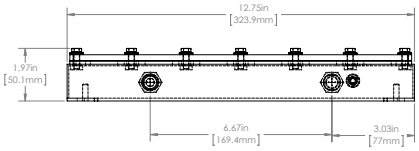
MOUNTING

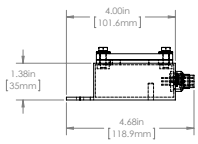
The ODLW300 series features two 316 stainless-steel tabs welded directly to the housing for simple yet versatile mounting options.

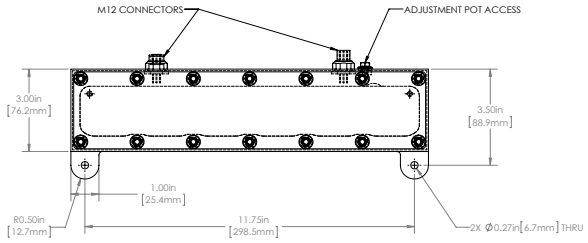
Two Mounting Tabs

PRODUCT DRAWING

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





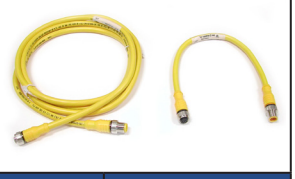


ACCESSORIES

Power Cables (Wash-down)

Length	Part Number
10 m	W5PM12-10
15 m	W5PM12-15

Jumper Cables (Daisy Chain) (Washdown)



Length	Part Number
300 mm	W5PM12-J300

Washdown cables have a 316 Stainless-Steel connector(s).

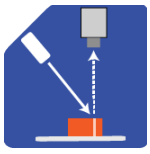
GLOSSARY

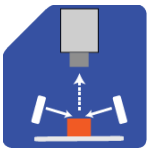
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

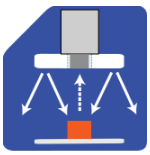
TERMINOLOGY

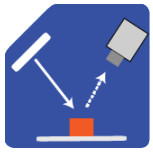
OverDrive™ Lights include an integrated high-pulse driver for complete LED light control.
Continuous Operation Lights stay on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-pulse operation) mode into one easy-to-use light.
Built-In Driver The built-in driver allows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

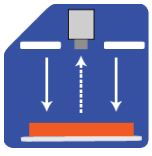
TYPES OF ILLUMINATIONS

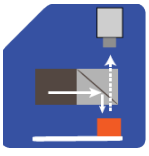

Projector

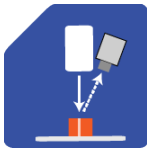

Dark Field

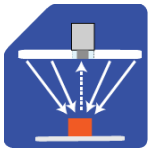

Radial

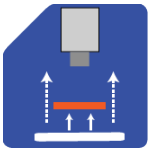

Bright Field


Direct


Axial

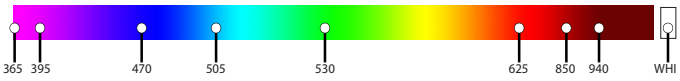

Line


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.*

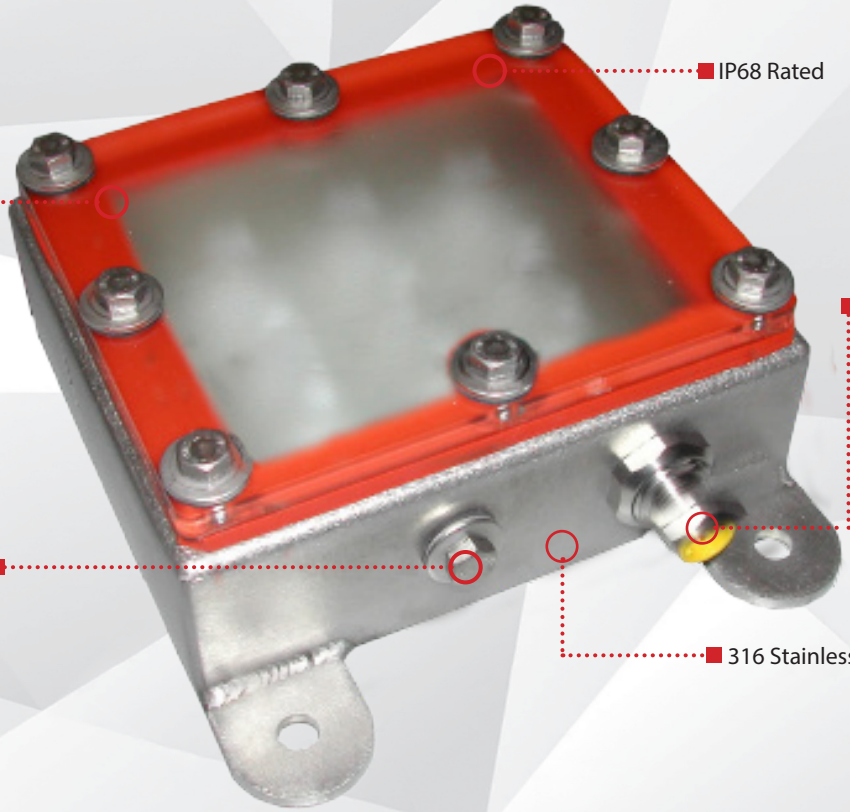
smart vision lights

ODSW75 *Brick Light*

SPOT LIGHT

OVERDRIVE™ | WASHDOWN

PRODUCT DATA SHEET



OverDRIVE™

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

PRODUCT HIGHLIGHTS

- ✓ OverDrive™ — Up to five times brighter than a standard Brick Light
- ✓ Stainless-steel 316 housing
- ✓ Built-in driver
- ✓ PNP and NPN trigger signal input
- ✓ Maximum 5000 strobes per second

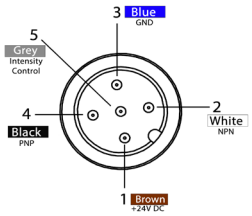
PRODUCT INTRODUCTION

The ODSW75 Brick Light Series features a 316 stainless-steel IP68 rated enclosure specially designed for food industry and washdown environments where water and harsh detergents are present. NPN or PNP trigger signals can be used to control the pulse of the light. Intensity of the light can be controlled via 1–10VDC analog signal line or by adjusting the built-in manual potentiometer.

PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/–5%
Input Current	Max. 2.5 A draw during strobe | Max Average 250 mA
Wattage	Max. 96 W during strobe | Max. Avg. 9.6 W
Strobe 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 @ Common (0VDC)
Duty Cycle	Max. 10%
Strobe/Pulse Time	Max 5000 SPS (strobes per second) | Max. Single Pulse = 125 ms (see SafeStrobe™ Technology for more information)
Potentiometer	270º turn pot — intensity control of 10%–100%. Turn clockwise to increases intensity.
Analog Intensity	The output is adjustable from 10%–100% of brightness by a 1–10VDC analog signal.
Connection	5-pin M12 connector
Ambient Temperature	-18º–40ºC (0º–104ºF)
IP Rating	IP68
Weight	~760 g
Compliances	CE, RoHS, IEC 62471
Warranty	10 years. For complete warranty information, visit smartvisionlights.com/warranty.

WIRING CONFIGURATION



Pin layout for light (Male Connector)

Pin	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*

OPTIONAL

For maximum intensity, connect pin 5 to pin 1 at 24VDC. Potentiometer intensity needs to be set to 100%.

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

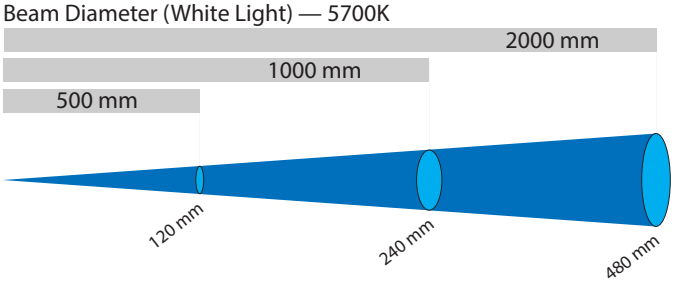
RESOURCE CORNER

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

LIGHT PATTERNS

Smart Vision Lights recommends that the ODSW75 be used at a working distance between 300 mm and 4000 mm.

Beam Diameter (White Light) — 5700K

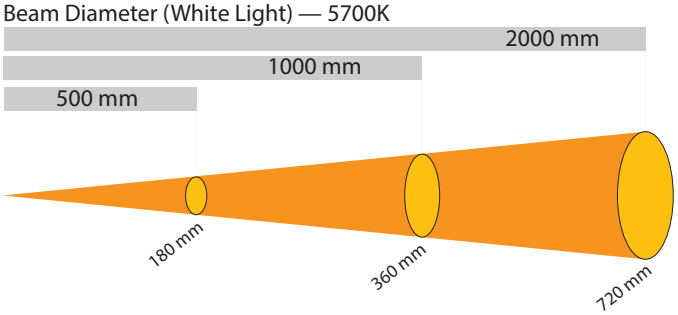


LIGHTING PATTERN FOR THE ODSW75 **with Narrow (Standard) Lenses**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
500 mm (19.7")	120 mm (~4.7") D
1000 mm (39.4")	240 mm (~9.4") D
2000 mm (78.8")	480 mm (~18.9") D

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	38,000
Illuminance measurement taken on White Lights — 5700K	

Beam Diameter (White Light) — 5700K

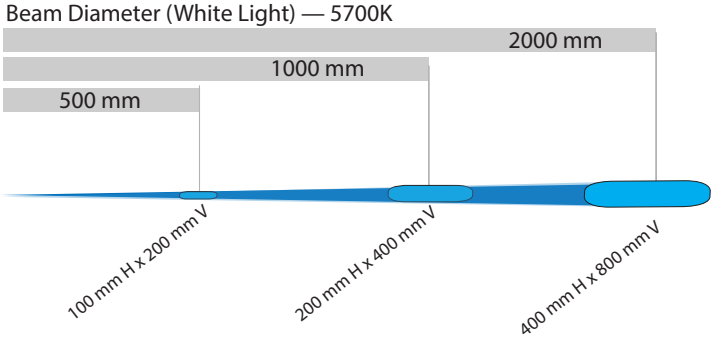


LIGHTING PATTERN FOR THE ODSW75 **with Wide (W) Lenses**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
500 mm (19.7")	180 mm (~7") D
1000 mm (39.4")	360 mm (~14.2") D
2000 mm (78.8")	720 mm (~28.3") D

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	32,500
Illuminance measurement taken on White Lights — 5700K	

Beam Diameter (White Light) — 5700K



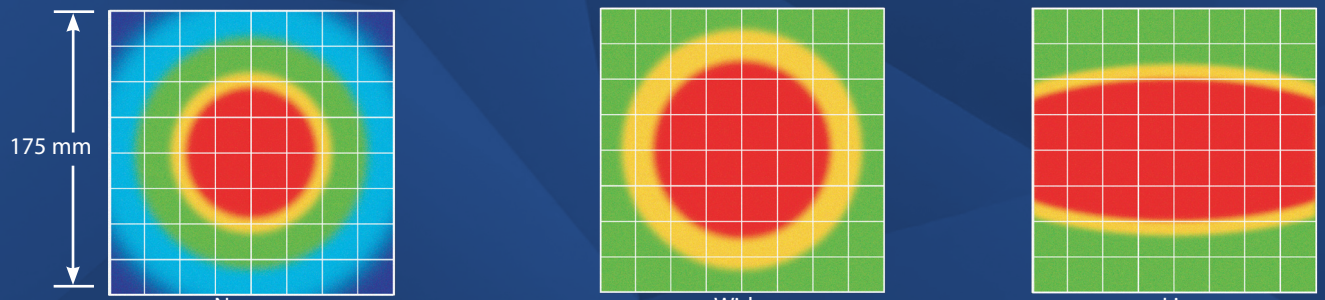
LIGHTING PATTERN FOR THE ODSW75 **with Line (L) Lenses**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
500 mm (19.7")	100 mm (~3.9") H x 200 mm (~7.8") V
1000 mm (39.4")	200 mm (~7.8") H x 400 mm (~15.7") V
2000 mm (78.8")	400 mm (~15.7") H x 800 mm (~31.5") V

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	49,000
Illuminance measurement taken on White Lights — 5700K	

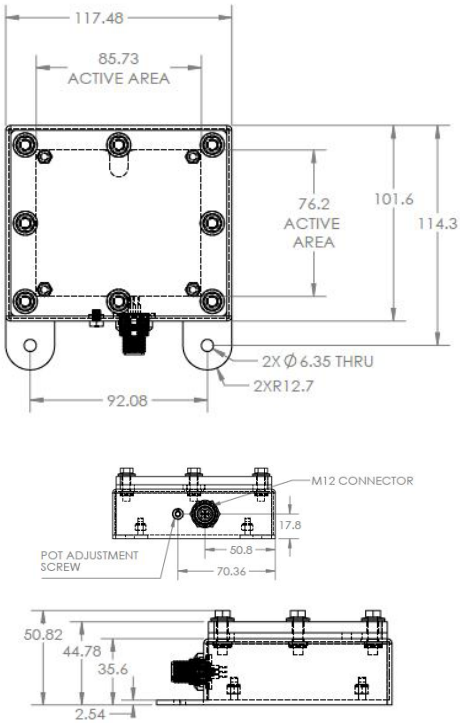
The ODSW75 Brick Light produces a uniform light pattern.

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



PRODUCT DRAWING

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

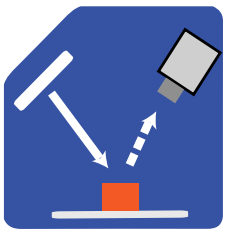


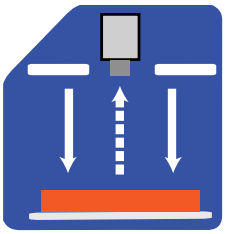
SAFESTROBE™ TECHNOLOGY

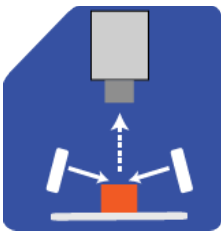
SafeStrobe™ technology applies safe working parameters to ensure high-current LEDs are not damaged when driving them beyond their limits, such as maximum strobe time or duty cycle. This unique technology is especially beneficial for overdriving our high-current LEDs.

ILLUMINATION

ODSW75 Series of Brick Lights works best for:


Bright Field


Direct Lighting


Dark Field

EYE SAFETY

SMART VISION LIGHTS IEC 62471 COMPLIANT

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.

PART NUMBER

ODSW75 – □□□□ – □

COLOR:

WHI | 470 | 505 | 530 | 625 | 850 940

LENS:

Leave blank for Standard (Narrow)

W = Wide

L = Line

Part Number Examples:

ODSW75-625 ODSW75, 625 Red Wavelength, Standard (Narrow) Lens

ODSW75-WHI-L ODSW75, White, Line Lens

ODSW75-470-W-LPI ODSW75, 470 Blue Wavelength, Wide Lens, with Linear Polarizer installed

Additional wavelengths and lens options available upon request.

SWIR SHORTWAVE INFRARED

This light is available in our SWIR LEDs.

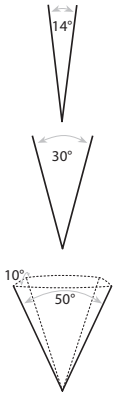
1050 nm | 1200 nm | 1300 nm | 1450 nm | 1550 nm

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.

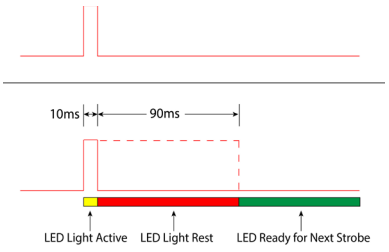
LINE
Line, with a 10° width and a 50° fan angle, projects a thin, narrow beam of illumination.



** Additional lens options available upon request.*

DUTY CYCLE

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



Light follows strobe pulse - the light output will track the width of the strobe pulse.

Calculating Rest Time

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

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

Example

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

Rest Time is 90 ms for 10 ms Strobe Time

Calculating Strobe Rate

$$SR = \frac{D}{ST}$$

SR = Strobe Rate (strobes per second)
ST = Strobe Time (seconds)
D = Duty Cycle

Example

$$1000 = \frac{0.1}{0.0001}$$

Strobe Rate is 1000 strobes per second

Calculating Duty Cycle

$$D = ST \times SR$$

SR = Strobe Rate (strobes per second)
ST = Strobe Time (seconds)
D = Duty Cycle

Example

$$0.1 = 0.0001 \times 1000$$

Duty Cycle is 10% (0.1)

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

Note: Strobe time is limited by the strobe rate.

ACCESSORIES

Power Cables

Length	Part Number
5 m	W5PM12-5
10 m	W5PM12-10
15 m	W5PM12-15

Power Cables (Washdown)

Length	Part Number
15 m	W5PM12-15

Washdown cable has a 316 stainless-steel connector.

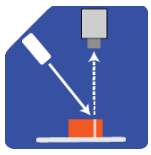
GLOSSARY

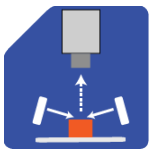
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

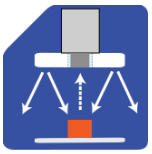
TERMINOLOGY

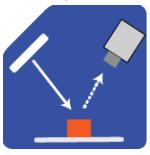
OverDrive™ Light includes an integrated high-current strobe driver for complete LED light control.
Continuous Operation Light stays on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-current strobe operation) modes into one easy-to-use light.
Built-In Driver The built-in driver allows full function without the need for an external driver.
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.

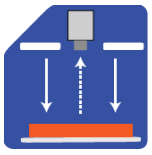
TYPES OF ILLUMINATIONS

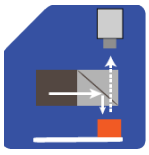

Projector

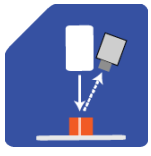

Dark Field

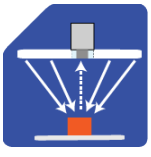

Radial

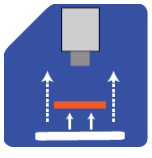

Bright Field


Direct


Axial

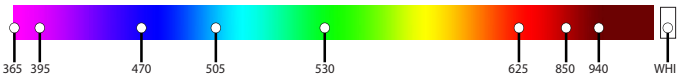

Line


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 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.*

smart vision lights

ODSXW30 *Prox Light* SPOTLIGHT

WASHDOWN | OVERDRIVE™

PRODUCT DATA SHEET

OverDRIVE

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

PRODUCT HIGHLIGHTS

- ✓ OverDrive™ — Up to 2.5 times brighter than a standard SXW30 Prox Light
- ✓ 5-pin M12 quick connect
- ✓ Built-in driver, no external wiring to driver needed
- ✓ PNP and NPN strobe input
- ✓ Washdown IP68 Rating.
- ✓ Standard optics provides tight focused light

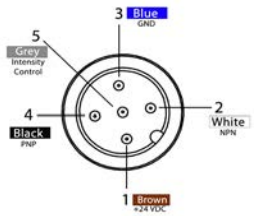
PRODUCT DESCRIPTION

The ODSXW30 Series of Prox Lights feature a single high current LED enclosed in a 30mm Washdown IP68 Barrel Style Housing. The ODSXW30 Series features an NPN and PNP strobe signal with a 1–10VDC analog intensity control signal for added versatility. The ODSXW30 Series also has multiple mounting options allowing for ease of install. Operation mode is strobe only with 5-6x the intensity of the standard SXW30.

PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/- 5%
Input Current	Max. 175 mA
Wattage	Max. 6 W
Strobe 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)
Red Indicator LED	LED Strobe Indicator ON = Light Active
Green Indicator LED	ON = Power
Analog Intensity	The output is adjustable from 10%–100% of brightness by a 1–10VDC signal. (Jumpering pin 5 to pin 1 will provide maximum intensity).
Connection	5-pin M12 connector
Ambient Temperature	-18º–40º C (0º–104º F)
IP Rating	IP68
Weight	~266g
Compliances	CE, RoHS, IEC 62471

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 1-10V adjustment

If Analog 1–10VDC is not used to control light intensity;

+VDC (24VDC) must be connected to Analog Input - Jumper pin 5 to pin 1

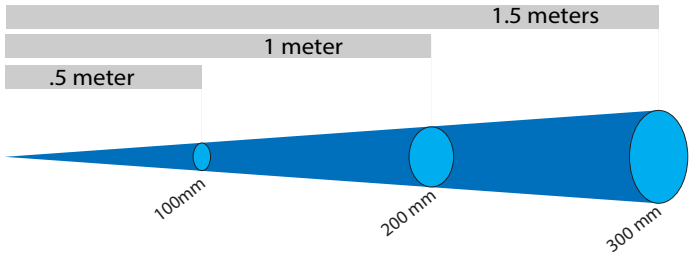
RESOURCE CORNER

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

LIGHT PATTERNS

Smart Vision Lights recommends the ODSXW30 be used at a working distance between .5M to 4M.

Illumination measurement taken on White Light - 6500K

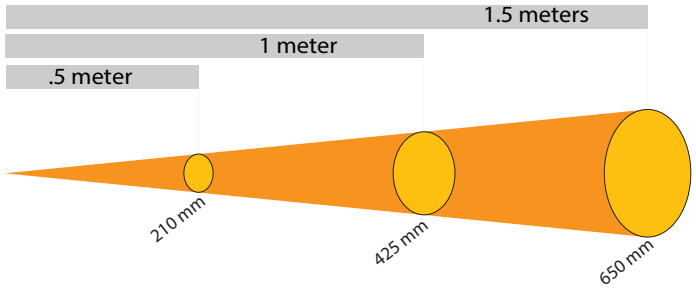


LIGHTING PATTERN FOR THE ODSXW30

Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
.5m (19.7")	100mm (~4") D
1m (39.4")	200mm (~8") D
1.5m (59")	300mm (~12") D

Typical Output Preformance	Illumination (Lux)
Distance = .5 meter	9,600
Illumination measurement taken on White Lights - 6500K	

Illumination measurement taken on White Light - 6500K

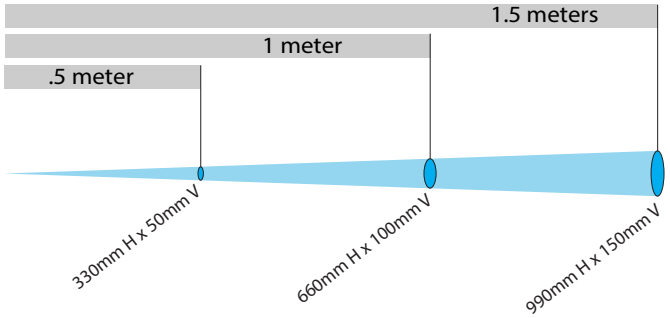


LIGHTING PATTERN FOR THE ODSXW30

Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
.5m (19.7")	210mm (~6")
1m (39.4")	425mm (~17")
1.5m (59")	650mm (~22")

Typical Output Preformance	Illumination (Lux)
Distance = .5 meter	6,300
Illumination measurement taken on White Lights - 6500K	

Illumination measurement taken on White Light - 6500K



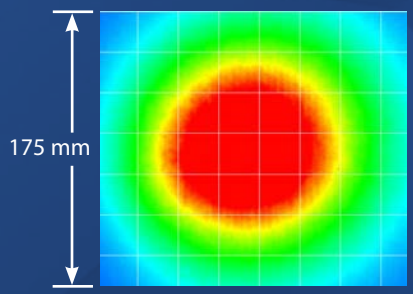
LIGHTING PATTERN FOR THE ODSXW30

Working Distance mm (inches)	Pattern (80% - 100% measured intensity) mm (inches)
.5m (19.7")	330mm (~13") H x 50mm (~2") V
1m (39.4")	660mm (~26") H x 100mm (~4") V
1.5m (59")	990mm (~39") H x 150mm (~6") V

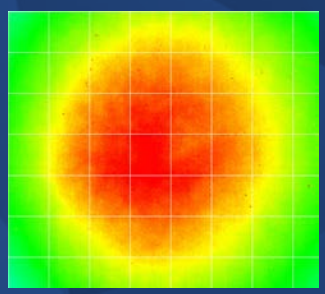
Typical Output Preformance	Illumination (Lux)
Distance = .5 meter	10,000
Illumination measurement taken on White Lights - 6500K	

The ODSXW30 Prox Light produces a uniform light pattern.

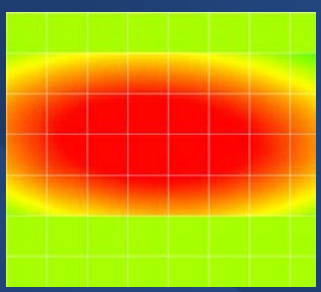
Working Distance = 500 mm Grid set to 25 mm x 25 mm



Narrow



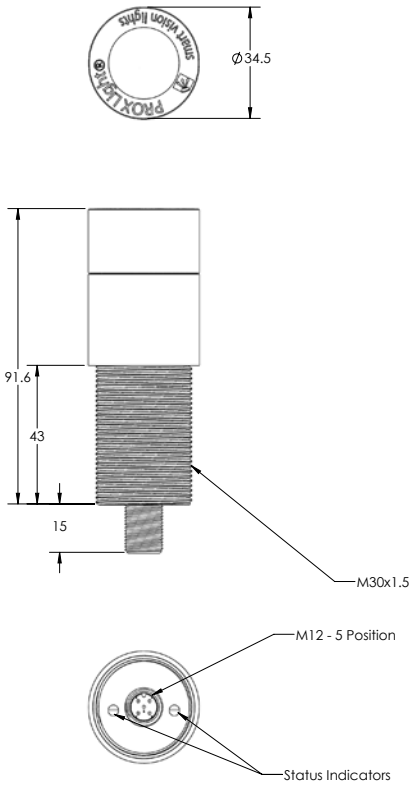
Wide



Line

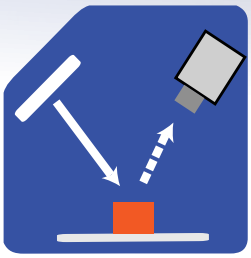
PRODUCT DRAWING

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

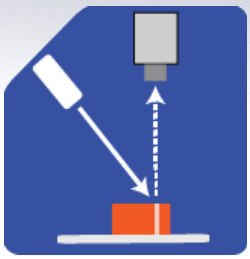


ILLUMINATION

ODSXW30 series of Prox Lights works best for:



Bright Field



Projector

EYE SAFETY

SMART VISION LIGHTS IEC 62471 COMPLIANT

According to IEC-62471:2006. Full documentation 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 eye. Safe for most applications except prolonged exposures. 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

PART NUMBER

ODSXW30 – □□□ – □

COLOR:

WHI | 365 395 | 470 | 505 | 530 | 625 | 850 940

LENS:

Leave blank for standard (narrow)

W = Wide

L = Line

Part Number Examples:

ODSXW30-625 ODSXW30, 625 nm Red Wavelength, Standard (Narrow) Lenses

ODSXW30-WHI-L ODSXW30, White, Line Lenses

Additional wavelengths options available upon request

SWIR SHORT WAVE INFRARED

This light is available in our SWIR LEDs

(1050 nm, 1200 nm, 1300 nm, 1450 nm, 1550 nm)

STANDARD LENS OPTICS

NARROW

Narrow lens are standard.

Standard lenses create a narrow beam of illumination. They can be used when long working distances are needed. Narrow are 10° angle lenses.

WIDE

Wide lenses create a large area of illumination. Wide lenses can be used when short working distances are needed. Wide lenses create a flood light effect. Wide are 25° angle cone lenses.

LINE

Line lenses create a thin narrow beam of illumination. Line lenses create a line of light when used on the L300 linear light. Line are 10° and 50° angle cone lenses.

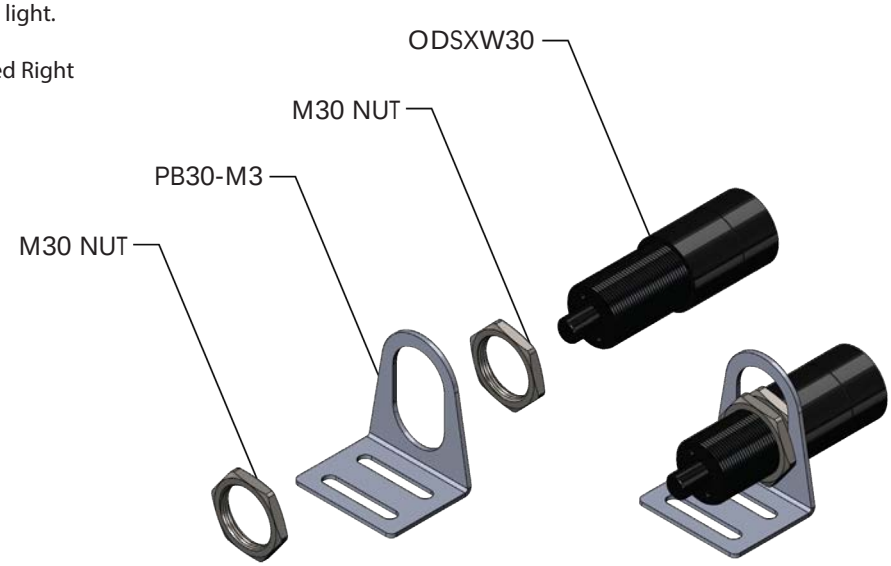
** Additional lens options available upon request.*

MOUNTING

Two M30 nuts for mounting are included with the light.

Example of the ODSXW30 shown using the Slotted Right Angle mount (**Part Number: PB30-M3**).

See accessories for additional mounting options.



ACCESSORIES

Mount

Description	Part Number
Swivel Mount	PB30-M1

Mount

Description	Part Number
Slotted Block Mount	PB30-M2

Mount

Description	Part Number
Slotted Right Angle	PB30-M3

Mount

Description	Part Number
Blot-on Block Mount	PB30-M6

Power Cables

Lengths	Part Number
5 m	5PM12-5
10 m	5PM12-10
15 m	5PM12-15

Power Cables (Wash-down)

Lengths	Part Number
10 m	W5PM12-10
15 m	W5PM12-15

Washdown cables have a 316 Stainless Steel connector(s).

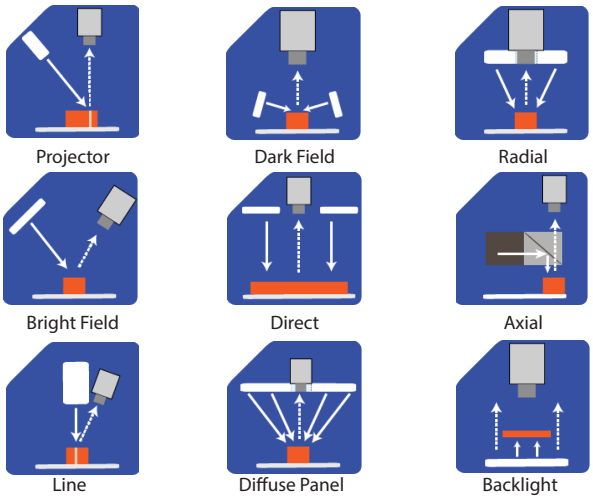
GLOSSARY

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

TERMINOLOGY

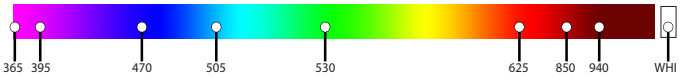
OverDrive™ Lights include an integrated high-pulse driver for complete LED light control.
Continuous Operation Lights stay on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-pulse operation) mode into one easy-to-use light.
Built-in Driver The built-in driver allows full function without the need 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 ILLUMINATIONS



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.*

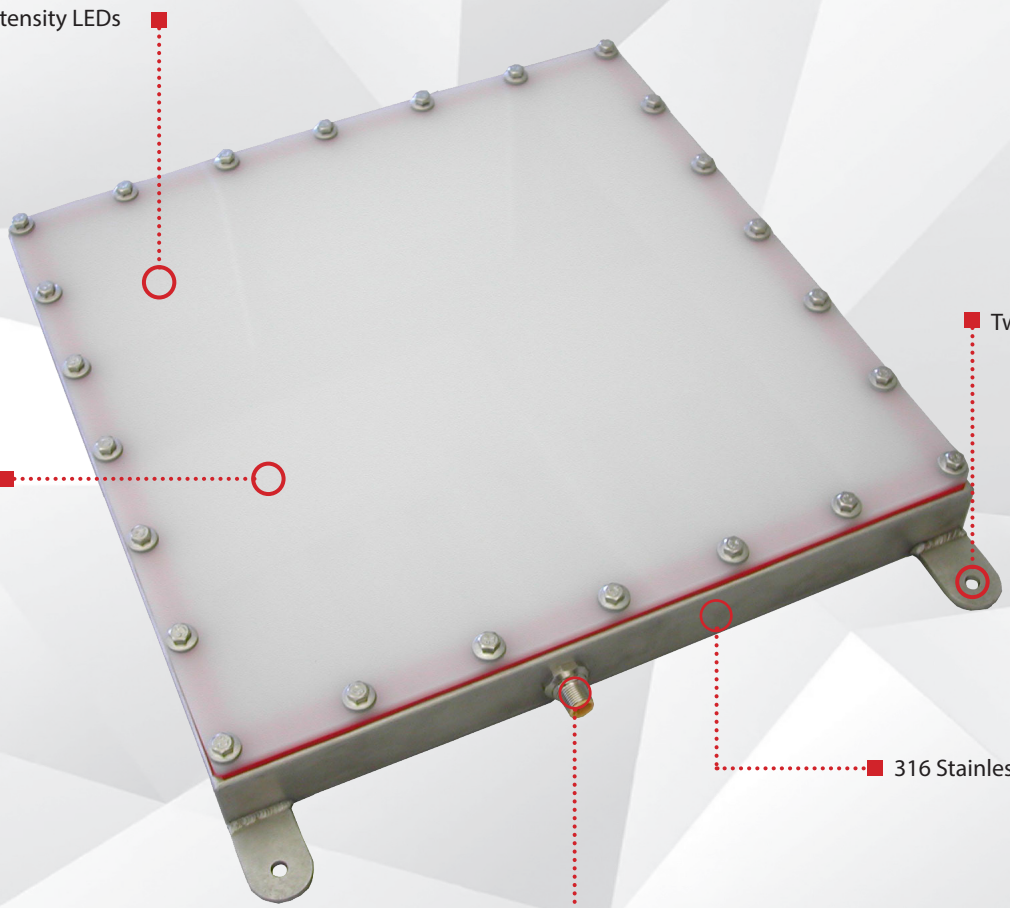
SWIR SHORT WAVE INFRARED

Shortwave Infrared LEDs are available in 1050 nm, 1200 nm, 1300 nm, 1450 nm, and 1550 nm.

smart vision lights

SOBLW *Standard Output*
BACKLIGHT
WASHDOWN

PRODUCT DATA SHEET



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

PRODUCT HIGHLIGHTS

- ✓ Built-in driver
- ✓ PNP and NPN trigger signal input
- ✓ 316 stainless-steel enclosure
- ✓ 5-pin M12 quick connect
- ✓ FDA food-grade compliant

PRODUCT DESCRIPTION

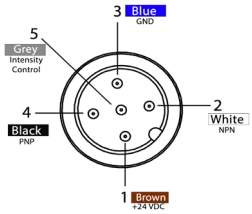
The SOBLW Series features a stainless-steel IP68-rated enclosure with sealed bolts and a waterproof connector for food industry and washdown environment applications where water and harsh detergents are present. The lights are highly versatile, with many custom sizes available. The series provides intense and highly diffuse area lighting with a built-in driver, so no external driver is needed. Active area dimensions (mm) include but are not limited to 150 x 150, 190 x 190, 300 x 150, 300 x 300, and 450 x 300.

PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/–5%
On/Off Input	PNP: +4VDC or greater to activate | NPN: GND (<VDC) 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)
Analog Intensity	The output is adjustable from 10%–100% of brightness by a 1–10VDC signal. (Jumpering pin 5 to pin 1 will provide maximum intensity)
Connection	5-pin M12 connector
Ambient Temperature	-18º–40º C (0º–104º F)
IP Rating	IP68
Compliances	CE, RoHS, IEC 62471
Warranty	10 year. For complete warranty information, visit smartvisionlights.com/warranty

Standard Light Sizes	Input Current	Wattage	Weight
150 mm x 150 mm	0.45 A	10.8 W	–
190 mm x 190 mm	1.20 A	28.8 W	–
300 mm x 150 mm	0.90 A	21.6 W	–
300 mm x 300 mm	1..80 A	43.2 W	4.30 kg
450 mm x 300 mm	2.70 A	64.8 W	–

WIRING CONFIGURATION



Pin layout for light (Male Connector)

Pin	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, tie pin 5 to pin 1 at +24VDC.
*For continuous mode, PNP (pin 4) can be tied to +24VDC (pin 1) **or** NPN (pin 2) can be tied to Ground (pin 3).*

OPTIONAL

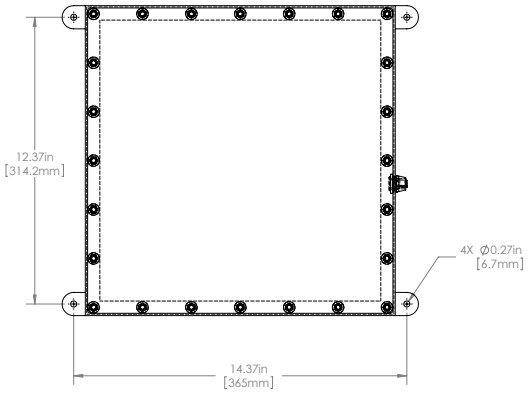
For maximum intensity, connect pin 5 to pin 1 at 24VDC.

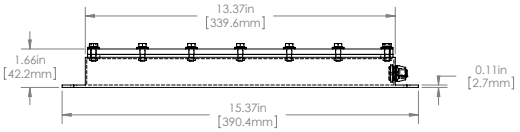
RESOURCE CORNER

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

PRODUCT DRAWING

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

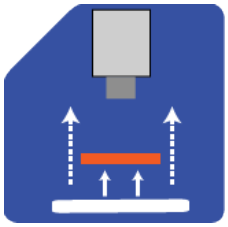




SOBLW–300x300 shown
CAD files for all standard-size SOBLW lights are available at smartvisionlights.com.

ILLUMINATION

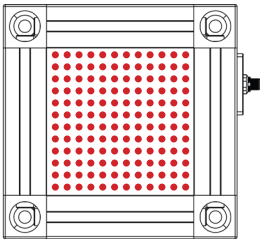
SOBLW Series of Backlights works best for:



Backlight

AREA LIT

LEDs are placed to produce uniform intensity throughout the lighted surface area.



SOBLW–150x150 mm shown
(LED size and spacing not shown to scale)

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 for prolonged exposure. Applicable for wavelengths 470, 505, 530, and WHI.

PART NUMBER

SOBLW – □□□ X □□□ – □□□

SIZE (L x W):

150 x 150
190 x 190
300 x 150
300 x 300
450 x 300
Custom sizes upon request

COLOR:

The 5-pin M12 connector is located on the wide side of the light.
Sizes listed are in millimeters.
Additional wavelengths and sizes available upon request.

Part Number Examples:

SOBLW-150x150-625	SOBLW, 150 mm x 150 mm, 625 nm Red Wavelength
SOBLW-300x150-WHI	SOBLW, 300 mm x 150 mm, White
SOBLW-450x150-470	SOBLW, 450 mm x 150 mm, 470 nm Blue Wavelength

CUSTOM SIZE

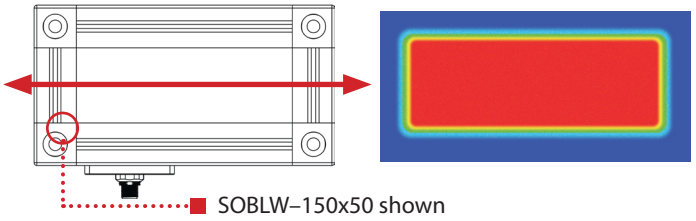
Smart Vision Lights can customize a SOBLW to the size you need. When requesting a custom SOBLW include the following: size (length x width) in millimeters, what side the 5-pin M12 connector should be placed on, and desired wavelength (color).

OPTICAL PERFORMANCE

The SOBLW offers a very diffuse light pattern.

OPTICAL PERFORMANCE FOR THE SOBLW

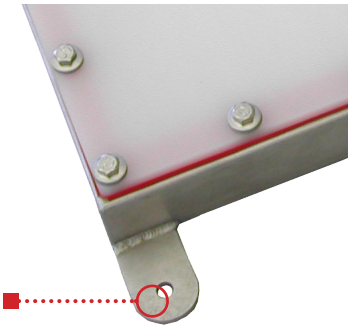
Rating	Illuminance (Lux)
Average Intensity Rating	42,000
Illuminance measurement taken at surface of SOBLW	



SOBLW–150x50 shown

MOUNTING

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



ACCESSORIES

Power Cables

Length	Part Number
5 m	5PM12-5
10 m	5PM12-10
15 m	5PM12-15

Power Cables (Washdown)

Length	Part Number
15 m	W5PM12-15

Variable Control Pot

Description	Part Number
Variable Control Pot	IVP-C1

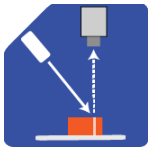
GLOSSARY

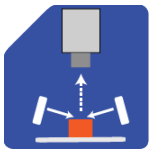
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

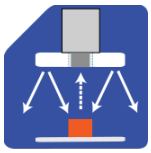
TERMINOLOGY

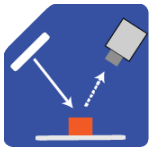
OverDrive™ Lights include an integrated high-pulse driver for complete LED light control.
Continuous Operation Lights stay on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-pulse operation) mode into one easy-to-use light.
Built-In Driver The built-in driver allows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

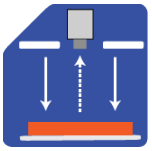
TYPES OF ILLUMINATION

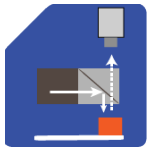

Projector

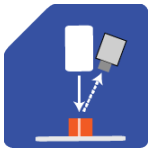

Dark Field

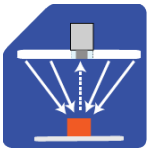

Radial

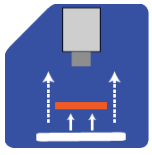

Bright Field


Direct


Axial

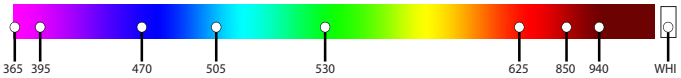

Line


Diffuse Panel


Backlight

COMMON COLOR/WAVELENGTHS LEGEND

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 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.*

smart vision lights

SW75 *Brick Light* SPOT LIGHT

WASHDOWN

PRODUCT DATA SHEET

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

PRODUCT HIGHLIGHTS

- ✓ IP68 standards
- ✓ Stainless-steel 316 housing with a silicone gasket
- ✓ Acrylic and polycarb window options
- ✓ PNP and NPN trigger signal input
- ✓ FDA complian for food manufacturing and corrosive environments

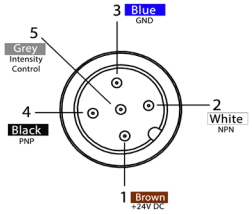
PRODUCT INTRODUCTION

The SW75 Brick Light spot light features a stainless-steel IP68 rated enclosure specially designed for food industry and washdown environments where water and harsh detergents are present. NPN or PNP trigger signals can be used to control the pulse of the light. The light's intensity can be controlled via 1–10VDC analog signal line or by adjusting the built-in manual potentiometer.

PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/–5%
Input Current	Max. 375 mA
Wattage	Max. 9.0 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)
Yellow Indicator LED	LED strobe indicator ON = light active
Green Indicator LED	ON = power
Continuous Mode	NPN can be tied to ground **OR** PNP can be tied to 24VDC (not both).
Potentiometer	270º turn pot — intensity control of 10%–100%. Turn clockwise to increases intensity.
Analog Intensity	The output is adjustable from 10%–100% of brightness by a 1–10VDC signal. (Jumpering pin 5 to pin 1 will provide maximum intensity.)
Connection	5-pin M12 connector
Ambient Temperature	-18º–40ºC (0º–104ºF)
IP Rating	IP68
Weight	~760 g
Compliances	CE, RoHS, IEC 62471
Warranty	10 year warranty. For complete warranty information, visit smartvisionlights.com/warranty.

WIRING CONFIGURATION



Pin layout for light (male connector)

Pin	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*

OPTIONAL

For maximum intensity, connect pin 5 to pin 1 at +24VDC. Potentiometer intensity needs to be set to 100%.

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

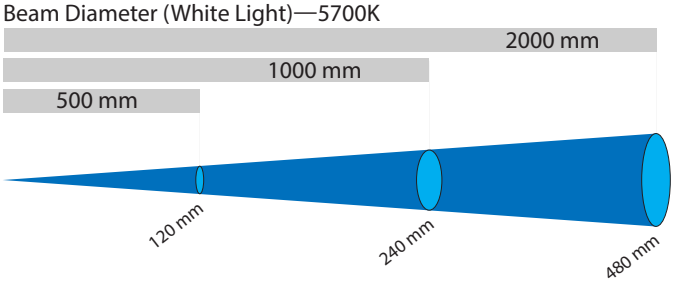
RESOURCE CORNER

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

LIGHT PATTERNS

Smart Vision Lights recommends that the SW75 be used at a working distance between 300 mm and 4000 mm.

Beam Diameter (White Light)—5700K

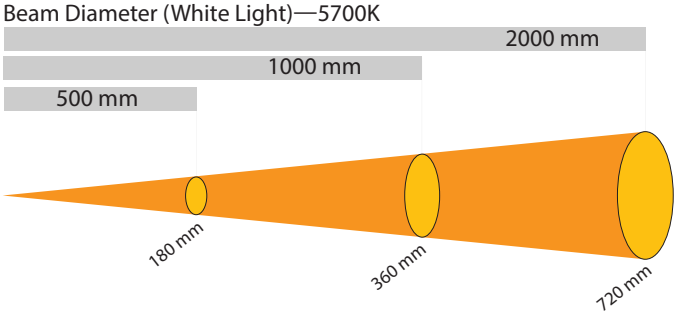


LIGHTING PATTERN FOR THE SW75 **with Narrow (Standard) Lenses**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
500 mm (19.7")	120 mm (~4.7") D
1000 mm (39.4")	240 mm (~9.4") D
2000 mm (78.8")	480 mm (~18.9") D

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	7250
Illuminance measurement taken on White Lights—5700K	

Beam Diameter (White Light)—5700K

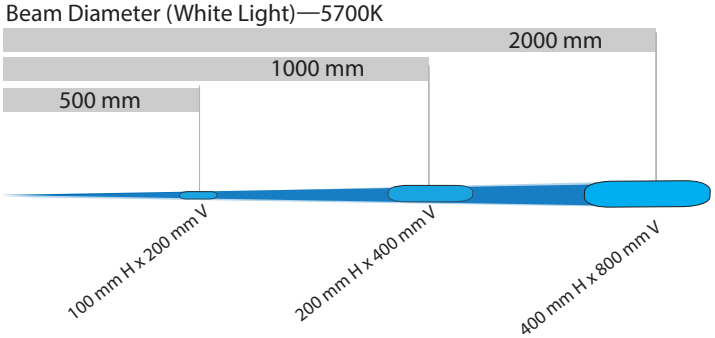


LIGHTING PATTERN FOR THE SW75 **with Wide (W) Lenses**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
500 mm (19.7")	180 mm (~7") D
1000 mm (39.4")	360 mm (~14.2") D
2000 mm (78.8")	720 mm (~28.3") D

Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	6500
Illuminance measurement taken on White Lights—5700K	

Beam Diameter (White Light)—5700K



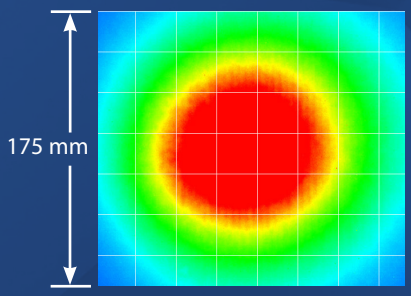
LIGHTING PATTERN FOR THE SW75 **with Line (L) Lenses**

Working Distance mm (inches)	Pattern (80%–100% measured intensity) mm (inches)
500 mm (19.7")	100 mm (~3.9") H x 200 mm (~7.8") V
1000 mm (39.4")	200 mm (~7.8") H x 400 mm (~15.7") V
2000 mm (78.8")	400 mm (~15.7") H x 800 mm (~31.5") V

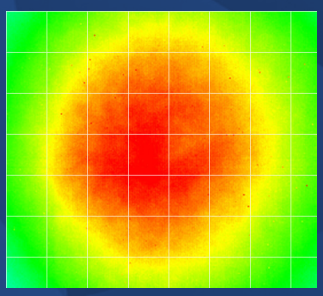
Typical Output Performance	Illuminance (Lux)
Distance = 500 mm	9800
Illuminance measurement taken on White Lights—5700K	

The SW75 Brick Light produces a uniform light pattern.

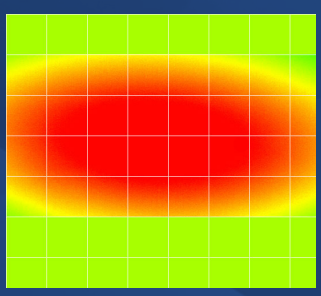
Working distance = 500 mm Grid set to 25 mm x 25 mm



Narrow



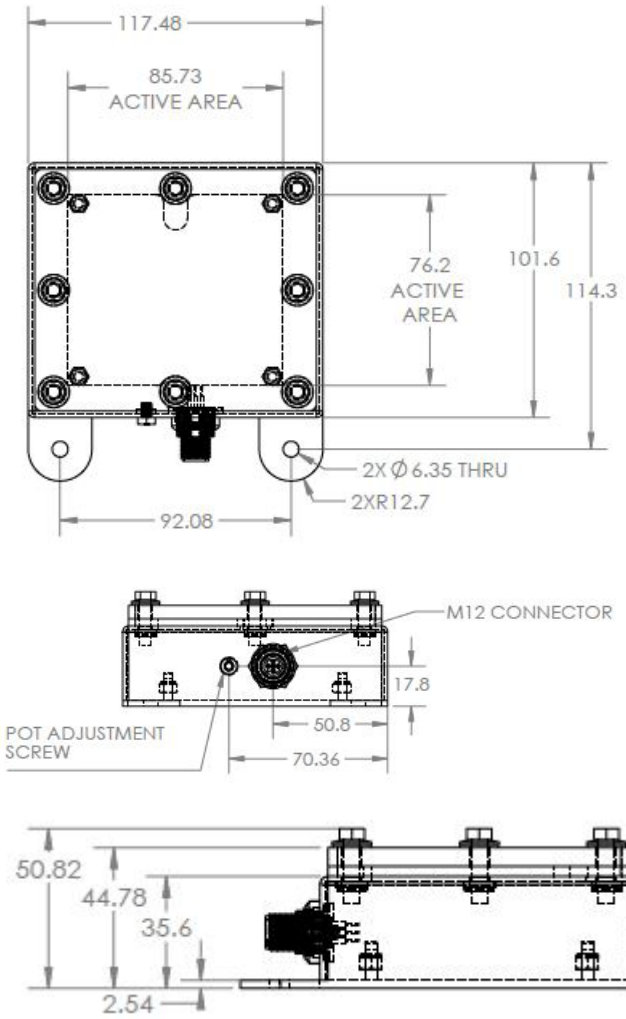
Wide



Line

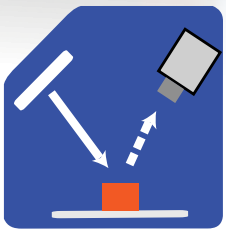
PRODUCT DRAWING

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

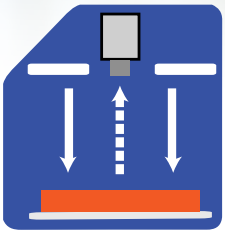


ILLUMINATION

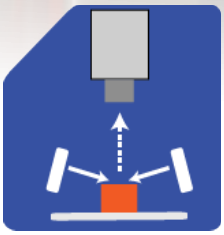
SW75 Series of Brick Lights works best for:



Bright Field



Direct Lighting



Dark Field

EYE SAFETY

SMART VISION LIGHTS IEC 62471 COMPLIANT

According to IEC 6247: 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 for prolonged exposure. Applicable for wavelengths 470, 505, 530, and WHI.

PART NUMBER

SW75 – □□□□ – □

COLOR:

WHI | 365 395 | 470 | 505 | 530 | 625 | 850 940

LENS:

Leave blank for Standard (Narrow)

W = Wide

L = Line

Additional wavelengths options available upon request.

Part Number Examples:

SW75-625 SW75, 625 nm Red Wavelength, Standard (Narrow) Lens

SW75-WHI-L SW75, White, Line Lens

SWIR SHORTWAVE INFRARED

This light is available in our SWIR LEDs.

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

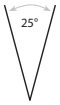
LENS OPTICS

NARROW (STANDARD)

Narrow, 10° angle-cone lenses are standard. Standard lenses project a narrow beam of illumination and are used for long working distances.

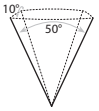
WIDE

Wide, 25° 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.



Additional lens options available upon request.

ACCESSORIES

Power Cables

Length	Part Number
5 m	5PM12-5
10 m	5PM12-10
15 m	5PM12-15

Power Cables (Washdown)

Length	Part Number
15 m	W5PM12-15

Washdown cable has a 316 Stainless-steel connector.

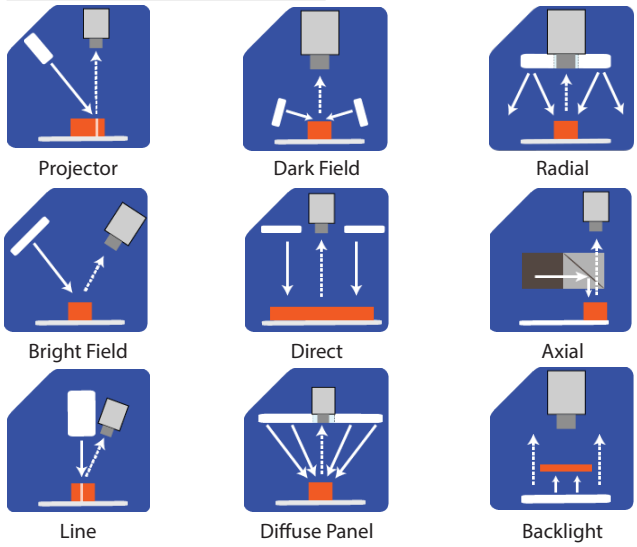
GLOSSARY

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

TERMINOLOGY

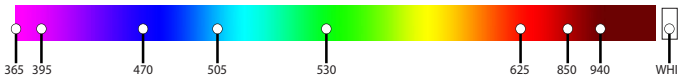
OverDrive™ Light includes an integrated high-current strobe driver for complete LED light control.
Continuous Operation Light stays on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-current strobe operation) modes into one easy-to-use light.
Built-In Driver The built-in driver allows full function without the need for an external driver.
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



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 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.*

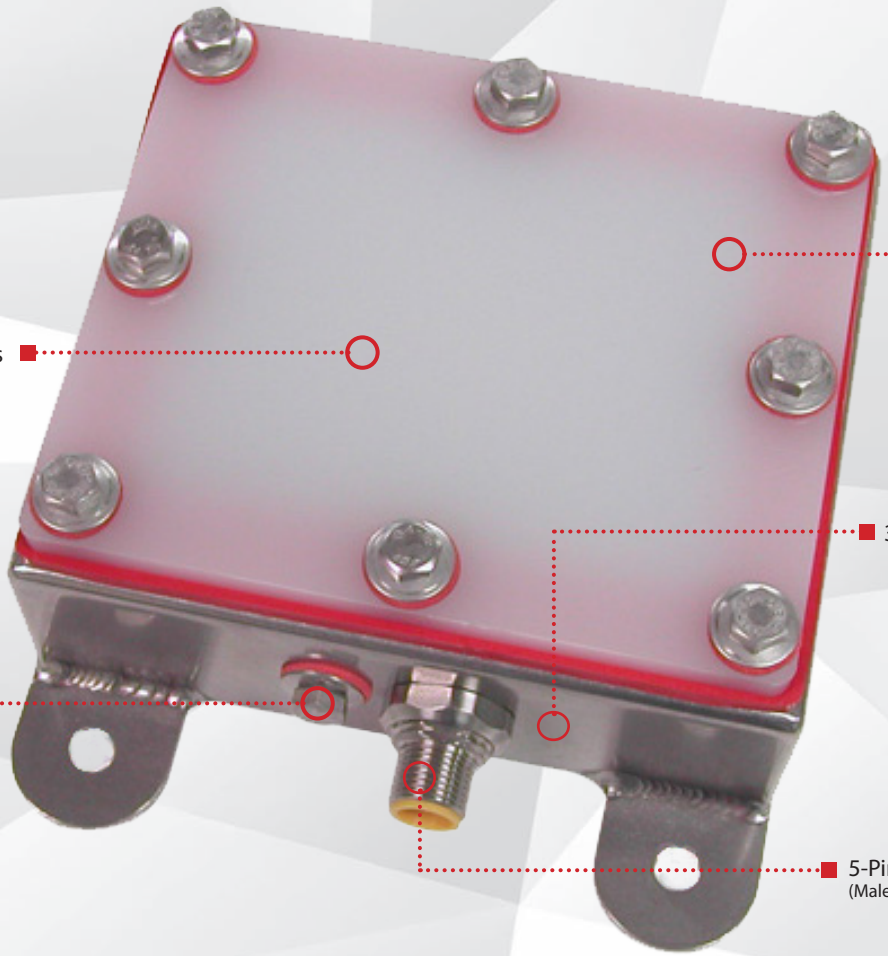
smart vision lights

SWB75 *Brick Light*

SPOT LIGHT

WASHDOWN | BACKLIGHT

PRODUCT DATA SHEET



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

PRODUCT HIGHLIGHTS

- ✓ IP68K standards
- ✓ Stainless-steel 316 housing
- ✓ Built-in driver; no external wiring needed
- ✓ PNP and NPN trigger input signal
- ✓ Perfect for food manufacturing and washdown environments

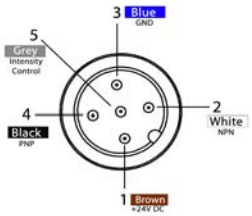
PRODUCT INTRODUCTION

The SWB75 Brick Light spot light features a stainless-steel IP68K-rated enclosure specially designed for food industry and washdown environments where water and harsh detergents are present. The SWB75 features a diffused lens and is a viable option for silhouetting objects. NPN or PNP trigger signals can be used to control the pulse of the light. Intensity of the light can be controlled via 1–10VDC analog signal line or by adjusting the built-in manual potentiometer

PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/–5%
Input Current	Max. 375 mA
Wattage	Max. 9.0 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)
Yellow Indicator LED	LED strobe indicator ON = light active
Green Indicator LED	ON = power
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 increases intensity.
Analog Intensity	The output is adjustable from 10%–100% of brightness by a 1–10VDC signal. (Jumpering pin 5 to pin 1 will provide maximum intensity.)
Connection	5-pin M12 connector
Ambient Temperature	-18°–40°C (0°–104°F)
IP Rating	IP68K
Weight	~155 g
Compliances	CE, RoHS, IEC 62471
Warranty	10 years. For complete warranty information, visit smartvisionlights.com/warranty.

WIRING CONFIGURATION



Pin layout for light (male connector)

Pin	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, tie pin 5 to pin 1 at +24VDC.

*For continuous mode: Tie PNP (pin 4) can be tied to +24VDC (pin 1) **or** tie NPN (pin 2) can be tied to Ground (pin 3).*

OPTIONAL

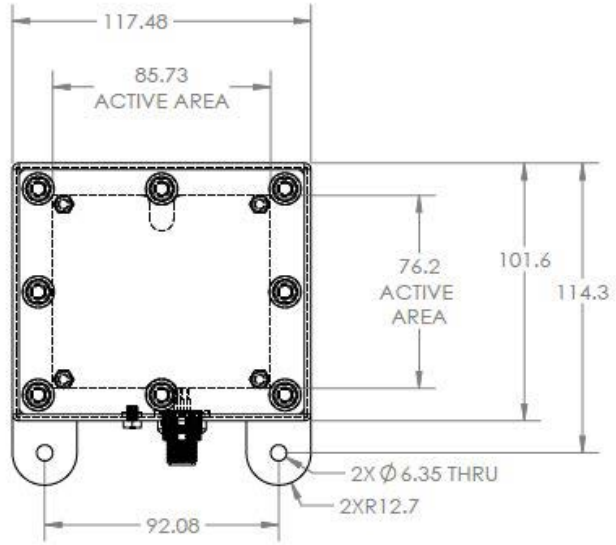
For maximum intensity, connect pin 5 to pin 1 at 24VDC. Potentiometer intensity needs to be set to 100%.

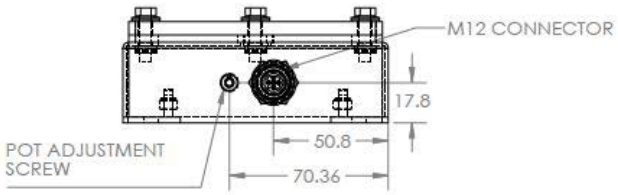
RESOURCE CORNER

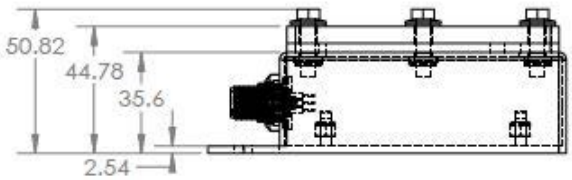
Additional resources, including CAD files, videos, and application examples, are available on our website.

PRODUCT DRAWING

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

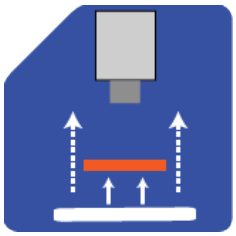






ILLUMINATION

SWB75 Series of Brick Lights works best for:



Backlight

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 for prolonged exposure. Applicable for wavelengths 470, 505, 530, and WHI.

PART NUMBER

SWB75 – □□□□

COLOR:

WHI | 470 | 505 | 530 | 625 | 850 940

Additional wavelengths options available upon request.

Part Number Example:

SWB75-625 SWB75, 625 nm Red Wavelength, Standard (Narrow) Lens

SWIR SHORTWAVE INFRARED

This light is available in our SWIR LEDs.

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

ACCESSORIES

Power Cables

Length	Part Number
5 m	5PM12-5
10 m	5PM12-10
15 m	5PM12-15

Power Cables (Washdown)

Length	Part Number
15 m	W5PM12-15

Washdown cable has a 316 stainless-steel connector.

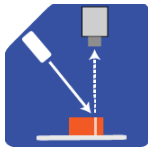
GLOSSARY

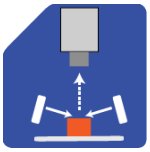
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

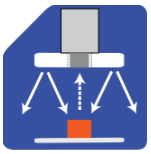
TERMINOLOGY

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.

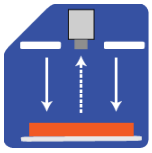
TYPES OF ILLUMINATIONS

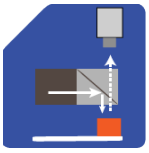

Projector

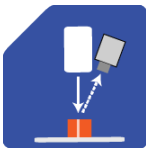

Dark Field

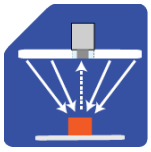

Radial

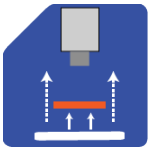

Bright Field


Direct


Axial

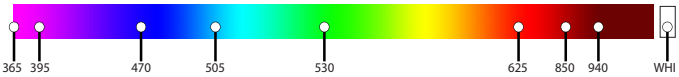

Line


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 SHORTWAVE **INFRARED**

Shortwave infrared LEDs are available in 1050 nm, 1200 nm, 1300 nm, 1450 nm, and 1550 nm.

PRODUCT DATA SHEET

SXW30 Series | **SPOT LIGHT** | Washdown Prox Light

product introduction

The SXW30 Series of Prox Lights feature a single high current LED enclosed in a 30mm Washdown IP68 Barrel Style Housing. The SXW30 Series feature an NPN and PNP strobe signal with a 0-10VDC analog intensity control signal for added versatility. The SXW30 Series has multiple mounting options allowing for ease of install.

product features

- 30mm Barrel Style Housing
- M12 Quick Disconnect
- Driver built in – No External wiring to a driver
- PNP and NPN Strobe input
- Continuous operation or Strobe mode
- Analog intensity 0-10VDC signal
- Washdown IP68 Rating

product specifications

Electrical Input	24VDC +/- 5%
Current	Max. 250mA
Wattage	Max. 6W
Strobe Input	PNP ► +4VDC or greater to activate. | NPN ► GND (<1VDC) to activate
PNP Line	3.7mA @ 3VDC | 6.2mA @ 5VDC | 12.6mA @ 10VDC | 30.4mA @ 24VDC
NPN Line	22mA @ Common (0VDC)
Red Indicator LED	LED Strobe Indicator ON = Light Active
Green Indicator LED	ON = Power
Continuous Mode	Light will be in continuous mode by leaving signal on strobe input active
Analog Intensity	The output is adjustable from 10%-100% of brightness by a 0-10VDC signal
Connection	5 pin M12 connector
Ambient Temperature	-20º - 50º C (-4º - 122º F)
Lifespan	100,000 hrs
IP Rating	IP68
Compliances	CE and RoHS
Weight	~99g
IEC 62471 Rating	See page 4

product number key

SXW30 – XXX – X* —» Part Number Key

Product Family:
Prox Light
SWX30

Color:
365, 395 – UV
470 – Blue
505 – Cyan
530 – Green
625 – Red
850, 940 – IR
WHI - White

Lenses:
W – Wide
L - Line

* Lights come standard with narrow lenses

CE and RoHS Compliant

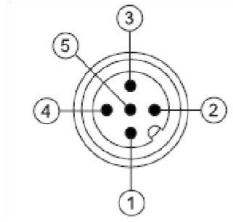
warnings

Attention

Please note that the power requirements are 250mA at 24VDC. Failure to supply light with 250mA will result in non-repeatable lighting. Contact Smart Vision Lights for more information.

wiring configuration

If Analog 0-10VDC is not used to control light intensity;
+VDC (24VDC) must be connected to Analog Input - Jumper pin 5 to pin 1



Pin	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	0-10VDC	GREY [1]

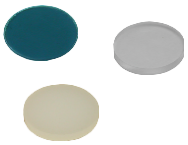
[1] Some cables use green with yellow stripe for 0-10V adjustment

mounting & accessories

Power Cables
5m, 10m, 15m

PB30-M2
Slotted Block Mount

PB30-M6
Bolt-on Block Mount

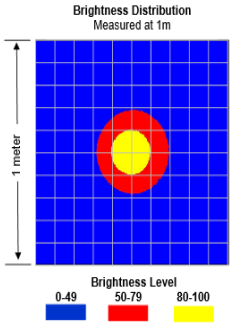


Diffuser Kits
Available

optical performance

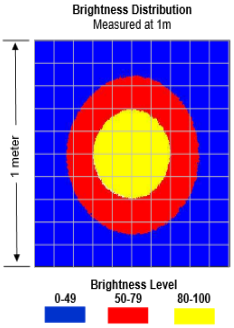
SXW30-XXX

Working Distance mm (inches)	Pattern (80%-100% measured intensity) mm (Inches)
.5m (19.7")	80mm(~3") D
1m (39.4")	185mm(~7") D
Typical output performance	Illumination (Lux)
Distance = .5 meter	4200
Illumination measurement taken on White Lights – 6500K	



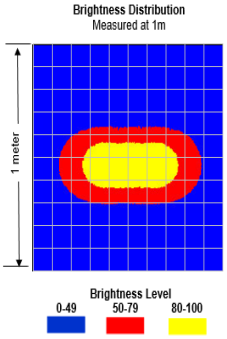
SXW30-XXX-W

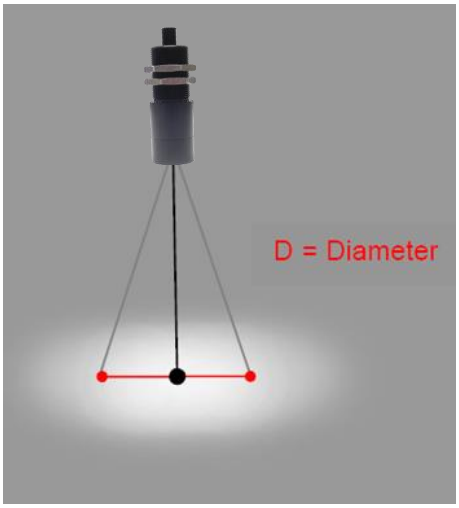
Working Distance mm (inches)	Pattern (80%-100% measured intensity) mm (Inches)
.5m (19.7")	205mm(~8") D
1m (39.4")	415mm(~16") D
Typical output performance	Illumination (Lux)
Distance = .5 meter	1300
Illumination measurement taken on White Lights – 6500K	



SXW30-XXX-L

Working Distance mm (inches)	Pattern (80%-100% measured intensity) mm (Inches)
.5m (19.7")	255mm(~10") H x 115mm(~4.5") V
1m (39.4")	460mm(~18") H x 250mm(~10") V
Typical output performance	Illumination (Lux)
Distance = .5 meter	1900
Illumination measurement taken on White Lights – 6500K	





risk group

According to IEC 62471:2006. Full documentation upon request.

Notice

Exempt Group: No photo biological 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 eye. Safe for most applications except prolonged exposures.
Applicable for wavelengths: 395, 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