SX30G2 Prox Light
SPOTLIGHT

The SX30G2 is a spot light featuring an integrated Multi-Drive™ driver that can produce up to 300,000 lux. NPN or PNP triggers can be used to trigger the light for either OverDrive™ or continuous operation. Light intensity can be controlled via 1 - 10 VDC analog intensity line or remotely using SmartVisionLink™*.

Warranty	Tested	Compliant	Rated	Connector
10 YEAR	IEC 62471	CE ROHS	IP 65	5-PIN M12

SX30G2 HIGHLIGHTS

- ✔ SmartVisionLink™-enabled for easy intensity adjustment.
- ✔ MultiDrive™ provides both OverDrive™ and continuous mode functionality.
- ✔ Built-in status indicators
- ✔ Available in short wave infrared

**SmartVisionLink requires purchase of the BTM-1000 bluetooth module*

REV 07/14/25

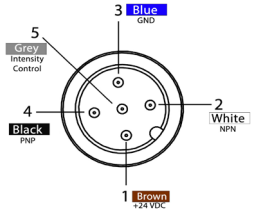
SPECIFICATIONS

	Continuous Operation	OverDrive Operation
Electrical Input	24 VDC +/- 5%	
Input Current	Max. 200 mA	Peak 1.25 A during strobe
Input Power	Max. 6 W	Peak 30 W during strobe
PNP Trigger	2 mA @ 4VDC | 7 mA @ 12VDC | 13.4 mA @ 24VDC	
NPN Trigger	12 mA @ Common (0VDC)	
Trigger Input	PNP > +4 VDC (24 VDC max.) to activate **or** NPN ≥ GND <1VDC to activate **(not both)**	
Mode Control	Connect pin 5 to 1-10 VDC (10 - 100% output); 24 VDC (Max)	Connect pin 5 to GND (See wiring configuration for more information)
Strobe Duration	Min. 30 µs | Max. ∞	Min. 30 µs | Max. 50 ms (see SafeStrobe™ Technology for more information)
Strobe Frequency	Max 4 kHz or 1 / Duty Cycle as calculated, whichever is less.[1]	
Duty Cycle	Not Applicable	Max 10%[1]
Power Indicator	Turns green when powered up	
Status Indicators	Strobe indicator will turn red when on	
Analog Intensity	The output is adjustable from 10% - 100% of intensity limit by a 1 - 10 VDC signal. Jumpering pin 5 to pin 1 will provide maximum intensity. Intensity limit can be remotely adjusted via SmartVisionLink™[2]	
Connection	5-pin M12 connector	
Operating Temperature	-10° to 40° C (14° to 104° F) | RH max 80% non-condensing humidity	
Storage Temperature	-20° to 70° C (-4° to 158° F) | RH max 80% non-condensing humidity	
IP Rating	IP65	
Weight	~150 g	
Compliances	CE, IEC 62471, RoHS	
Warranty	10 years[3]	

[1] *See page 5 for more information*
[2] *SmartVisionLink™ requires the purchase of the BTM-1000 bluetooth module, sold seperately, and the SmartVisionLink™ app, free to download on the Apple App and Google Play stores.*
[3] *See SmartVisionLights.com/warranty for details.*

WIRING CONFIGURATION

CONTINUOUS OPERATION MODE



Pin layout for light (Male Connector)

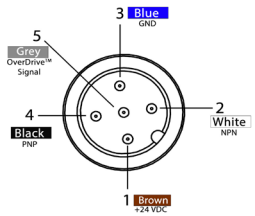
Pins	Function	Signal	Wire Color
1	Power In	+24 VDC	BROWN
2	NPN	Sinking Signal	WHITE
3	GND	Ground	BLUE
4	PNP	Sourcing Signal	BLACK
5	Intensity Control	1-10 VDC	GREY

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).*

For proper light function, apply either a PNP or NPN signal, not both.

Failure to supply light with correct input current will result in inconsistent lighting behavior.
(see Product Specifications for requirements)

OVERDRIVE OPERATION MODE



Pin layout for light (Male Connector)

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

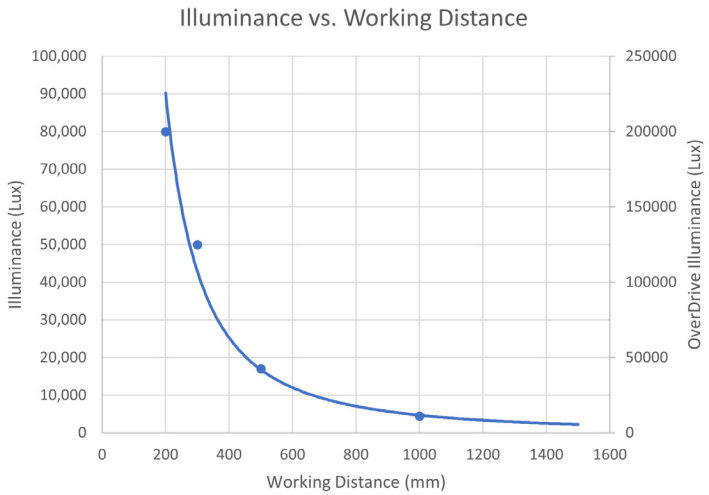
To enable OverDrive™ mode, tie pin 5 to pin 3.

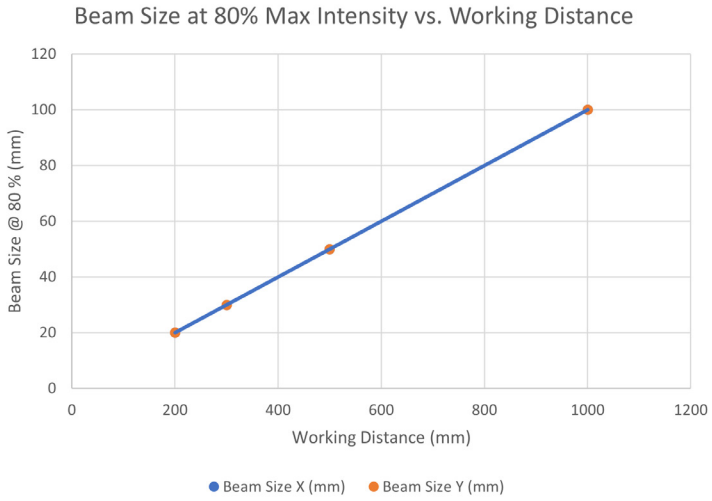
Failure to supply light with correct input current will result in inconsistent lighting behavior.
(see Product Specifications for requirements)

LIGHTING PATTERNS

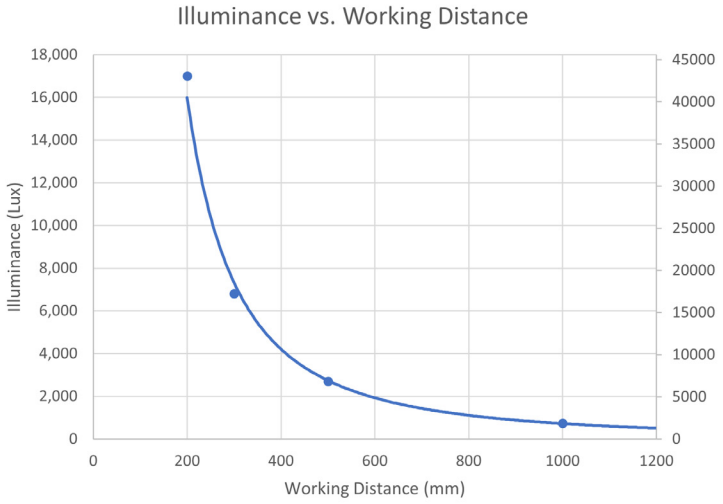
The SX30G2 is recommended to be used at a working distance between 300 mm to 2000 mm. **Illuminance values taken on white light - 5700K**

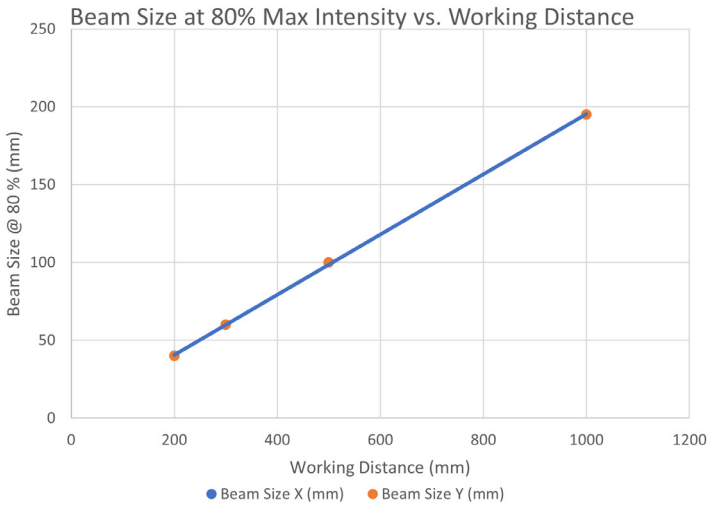
Standard (10°) lighting patterns





Wide (30°) lighting patterns



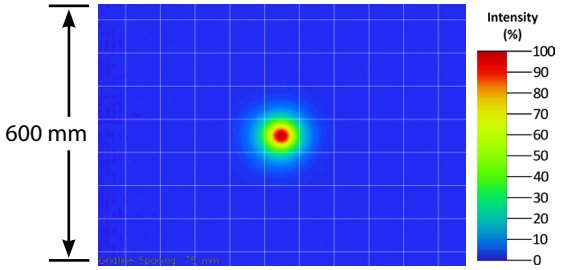


BEAM PATTERNS

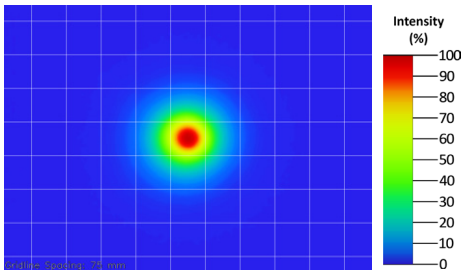
The SX30G2 is recommended to be used at a working distance between 300 mm to 2000 mm. **Illuminance values taken on white light - 5700K**

Standard (10°) beam patterns

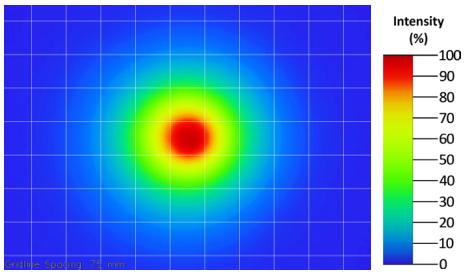
Grid set to 75 mm



300 mm working distance



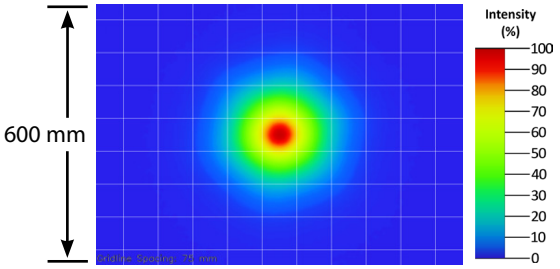
500 mm working distance



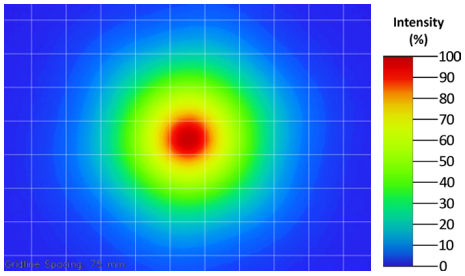
1000 mm working distance

Wide (30°) beam patterns

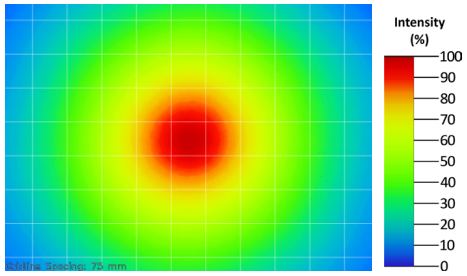
Grid set to 75 mm



300 mm working distance



500 mm working distance

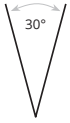


1000 mm working distance

LENS OPTICS

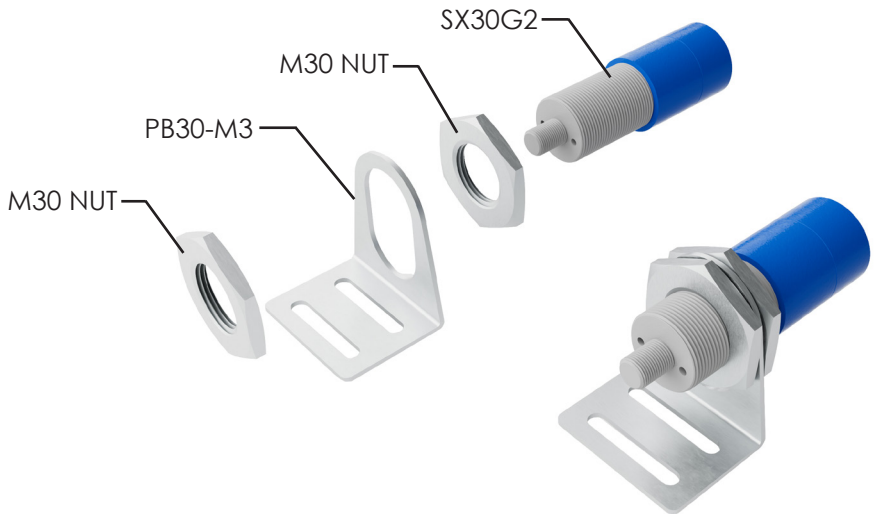
NARROW (Standard)
Narrow, 10° angle-cone lenses are standard. Standard lenses create a narrow beam of illumination and are used for long working distances.

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.



MOUNTING

Two M30 nuts for mounting are included with the light. Example of the SX30G2 shown using the Slotted Right Angle mount (Part Number: PB30-M3).
See accessories for additional mounting options.



EYE SAFETY

According to IEC 62471:2006. Full documentation available upon request with purchase of product.

Notice

Exempt Group: No photobiological hazard to eyes or skin even for continuous, unrestricted use. Applicable for wavelengths 625, 1050, 1200, 1300, 1450, 1550, and 1650.

Caution

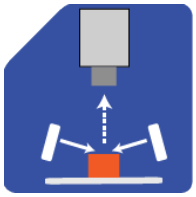
Risk Group 1: Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp. May be harmful to eyes. Safe for most applications except prolonged exposure. Applicable for wavelengths 470, 505, 530, 850, 940, and WHI.

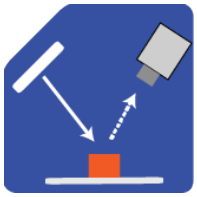
Warning

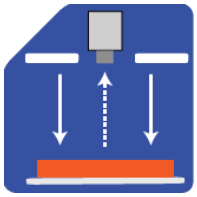
Risk Group 2: UV emitted from this product. Eye or skin irritation may result from exposure. Use appropriate shielding. Applicable for wavelengths 365 and 395.

ILLUMINATION

The SX30G2 works best for:


Dark Field

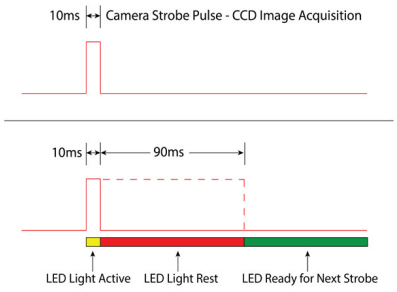

Bright Field


Direct Lighting

DUTY CYCLE

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

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

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)

Maximum Strobe Frequency is 1/ calculated duty cycle or 4,000 strobes per second, whichever is less.

MULTI-DRIVE™

Multi-Drive provides both continuous and OverDrive™ modes from a single integrated driver. Users can select the lighting mode via the input wiring configuration. With OverDrive, the light can be strobed at up to 10 times the intensity* of continuous mode.

*See lighting section for more information on this light's OverDrive™ values.

SAFESTROBE™

SafeStrobe™ is a unique technology that applies safe working parameters to ensure high current LEDs 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 LEDs.

SMARTVISIONLINK™

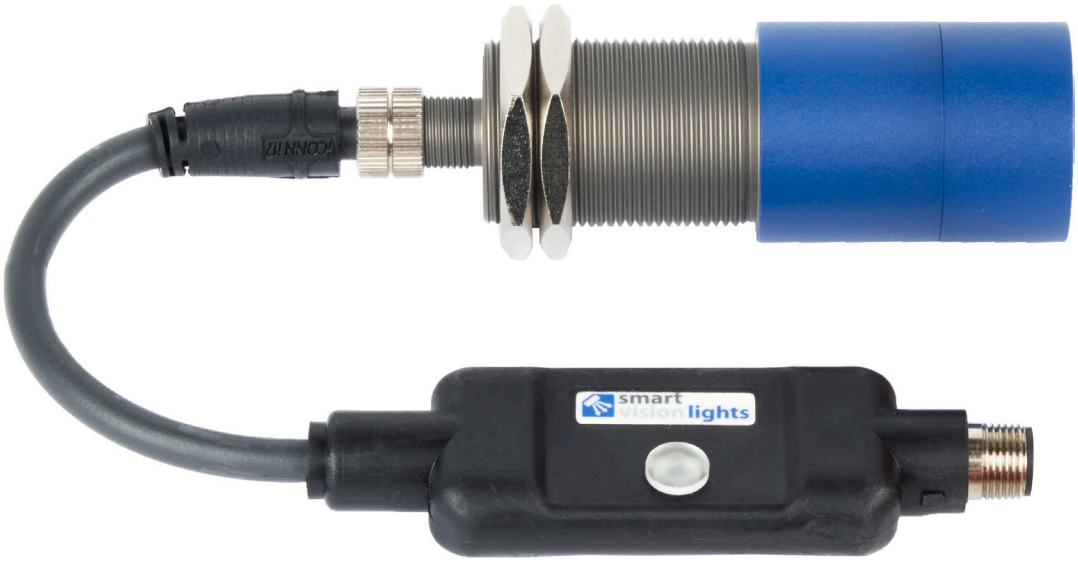
The SX30G2 series is SmartVisionLink™-enabled and is designed so intensity can be adjusted using the SmartVisionLink™ app.

SmartVisionLink™ provides a way for a light to communicate with an app on a mobile device or tablet. This technology allows users to adjust the intensity of the light in both continuous operation and OverDrive™ strobe mode. By connecting the BTM-1000 Bluetooth module to a light that is SmartVisionLink™-enabled, a user can adjust parameters for the light. The SmartVisionLink™ app is available free to download in the Apple App and Google Play Stores.

CONNECTING A BTM-1000

The BTM-1000 can be connected directly to a light or attached to a jumper cable that is connected to a light. Once the light's intensity is set to a desired level, the BTM-1000 can be removed from the light or cable.

The pigtail end of the BTM-1000 is connected directly to the light or to the cable attached to the light - sold separately.



PART NUMBER GUIDE

SX30G2 – □□□□ – □

COLOR:

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

LENS:

Leave blank for Standard (Narrow 10°)

W = Wide (30°)

Part Number Examples

SX30G2-625	SX30G2, 625 nm Red Wavelength, Standard (10° Narrow) lenses
SX30G2-WHI-W	SX30G2, White Wavelength, Wide Lenses
SX30G2-470-W-LPI	SX30G2, 470 nm Blue Wavelength, Wide Lenses, Linear Polarizer Installed.

Line lens optic not available for UV wavelengths.
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 | 1650 nm

ACCESSORIES

Power Cables

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

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

Mount

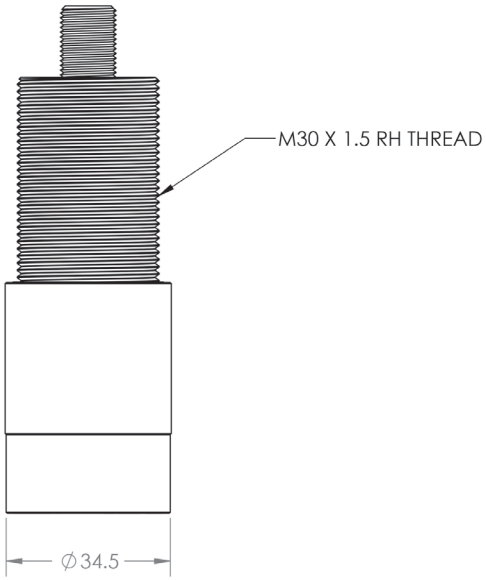
Description	Part Number
Swivel Mount	PB30-M1

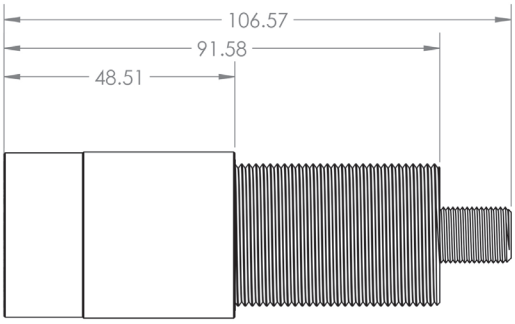
Diffuser & Polarizer

Description	Part Number
Diffuser & Polarizer Kit	SX30-DKIT-LP

PRODUCT DRAWINGS

*CAD files available on our website
Drawings are in mm





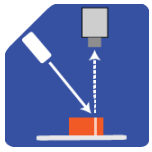
GLOSSARY

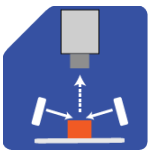
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

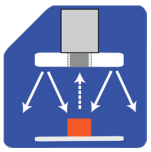
TERMINOLOGY

Continuous Operation The light stays on continuously.
OverDrive™ Integrated driver that produces a high-current strobe to the LEDs to drive them beyond their nominal continuous operation output.
Multi-Drive™ Integrated driver that combines continuous operation and OverDrive™ strobe mode
NanoDrive™ Integrated driver that provides fast switching where the light can go from off to on in less than 500 ns.
Built-in Driver The driver contained within the light that controls the current to the LEDs and provides PNP, NPN, and analog dimming controls.
SmartVisionLink™ Integrated feature that enables lighting control through the Bluetooth module and app.
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.
Diffusers Widens the angle of emission by scattering light in all directions.
Pattern Area Lighting Modulated lighting pattern placed over a backlight's surface used to enhance defect detection on transparent and glossy surfaces
SafeStrobe Limiter to keep the light in safe working parameters.
Direct Connect Connect lights in a series without the use of cables.
Daisy-Chain Connect lights in a series with the use of cables.

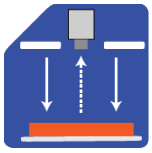
TYPES OF ILLUMINATION

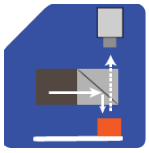

Projector

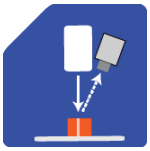

Dark Field

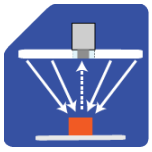

Radial

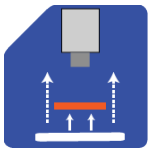
Bright Field

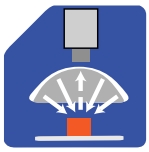

Direct


Axial


Line

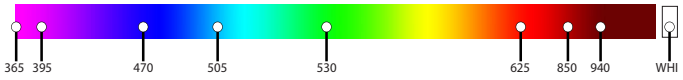

Diffuse Panel


Backlight


Dome
"Light Tent"

COMMON COLOR / WAVELENGTHS LEGEND

Wavelengths options range from 365 nm to 1650 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, 1550 nm, and 1650 nm.*

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

ASR American Systems Registrar
ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17021-1 MANAGEMENT SYSTEMS CERTIFICATION BODY
ISO 9001:2015 Certified QMS

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