smart vision lights

*Where Innovation
and Lighting Begin*

PROXLight

PROXLight

PROXLight

PRODUCT CATALOG
smartvisionlights.com

Innovating
Technology
First internal
universal LED driver

Innovating
Trust
Machine vision
industry's only
10-year warranty

Innovating
Safety
All lights compliant
to the IEC62471
safety standard

Innovating
Service
Most standard
products ship
within 3
business days

Innovating
Design
Custom lights
to meet
your needs

smart vision lights

Where Innovation and Lighting Begin

Smart Vision Lights was recently honored as a Michigan 50 Companies to Watch award winner. Michigan 50 Companies to Watch honors second-stage businesses from a range of industries in the state. These companies are selected for their impressive growth in jobs and revenue, as well as strength in leadership, corporate culture, community support and philanthropy, market reach, technology innovations, and other factors that contribute to an outstanding organization. Between 2010 and 2013, these companies collectively added 839 jobs and generated $340 million in revenue. Together they represent Michigan's vibrant entrepreneurial culture.

smart vision lights

Our *Advantages*

- Machine vision industry's only **10-year warranty**

- **Fast Delivery:** Most standard products ship within 3 business days

- In-house LED testing laboratory ensures **products meet IEC62471** human eye and skin safety standards

- More than **75 years** of combined machine vision light experience

What's Inside…

You Are Not a Commodity at Smart Vision Lights

At **Smart Vision Lights**, we believe that putting our customers' needs before our own is part of a continual improvement process and the surest path for success.

That's why **Smart Vision Lights** pioneered the industry's first and only 10-year warranty.*

That's why **Smart Vision Lights** is committed to shipping all standard products within 3 days because we understand that time is money to our customers.

That's why **Smart Vision Lights** is the first LED company in the U.S. to establish an in-house laboratory for testing our lights to the international IEC62471 human light safety standard.

That's why **Smart Vision Lights** never stops innovating when it comes to industrial LED light designs.
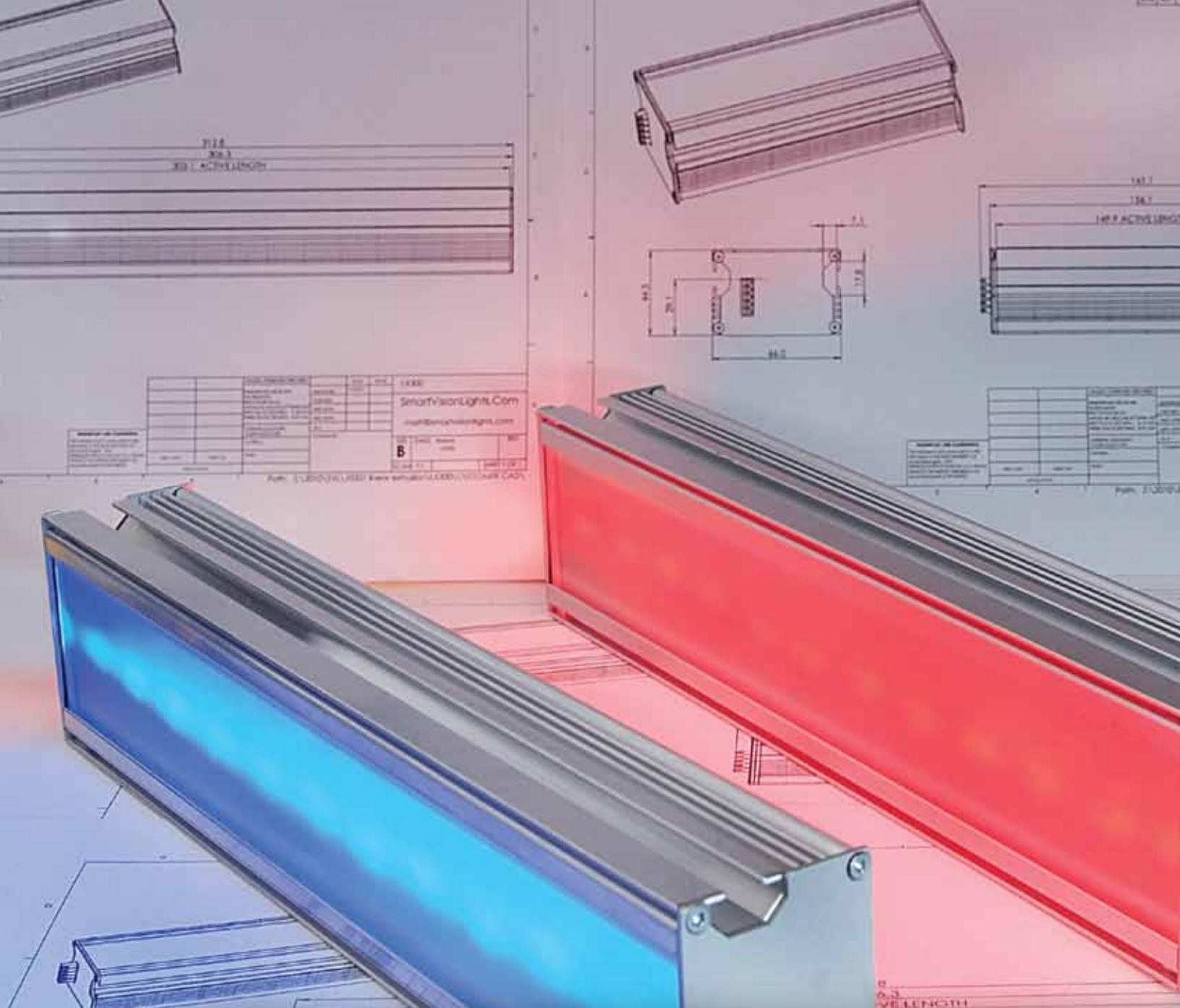
Vision Statement

Smart Vision Lights leads the industry in product innovation and partner support and is fast becoming the premier advanced lighting supplier globally.

With advancements in machine vision and data reading — coupled with the demand from end users for improved, more intense illumination products — you need a dependable partner to deliver, and that's **Smart Vision Lights**.

Smart Vision Lights is committed to the value of servant leadership. This means we put the needs of others before our own. We don't ask, "What's in it for me?" We ask, "How may we serve you?"

This is our commitment to you.

*The full 10-year warranty is available upon registration of product.

Phone: **231-722-1199** | **smartvisionlights.com**

Ordering Made Easy

When ordering products, **Smart Vision Lights** makes it easy to find exactly what you're looking for!

Part Number Key:

L 300 – XXX – X*

Product Family:
Linear Light
L300

Color:
365, 395, 470,
505, 530, 590,
625, 850, 940,
and white (WHI)

Lenses:
N - Narrow
W - Wide
L - Line

*Most lights come standard with narrow lenses. All lights are CE and RoHS compliant.

Smart Vision Lights works with common and nonstandard wavelengths.

WAVELENGTHS

WHITE	6500°K
RED	625nm
RED-ORANGE	615nm
YELLOW	590nm
GREEN	530nm
CYAN	505nm
BLUE	470nm
UV	395nm, 365nm
IR	850nm-940nm

*Contact us for any custom wavelengths.

Bar Light/Direct-Connect Lights

L300 Bar Light

- 12 HB high-current LEDs
- Built-in SMART driver — No external driver needed
- PNP and NPN strobe
- Constant or strobed operation
- Dimmable via built-in potentiometer
- Remote intensity control — Analog 0-10V DC
- Easily connects together
- Mounts on aluminum extrusion

LC300 Bar Light

- Grey Series machine vision light
- 12 high-current LEDs
- M12 quick disconnect
- Built-in SMART driver — No external wiring to a driver
- PNP and NPN strobe input
- Continuous operation or strobe
- Illumination patterns available in standard light, wide expanded, and line
- Now available in blue, green, and IR

ODL300 Bar Light — With OverDrive

- Easily connect lights together
- Highest-power LED lights in the vision industry
- SafeStrobe technology ensures protected operation of LEDs
- Precise current provides stable light intensity
- High speed, fast response
- PNP and NPN strobe control
- OverDrive units are 5x brighter than standard high-current LED lights

LX150 | LX300 Direct-Connect Linear Light

- 12 high-output LEDs
- Built-in SMART driver — No external wiring to a driver
- PNP and NPN strobe input
- Continuous operation or strobe mode
- Dimmable via built-in potentiometer
- Analog intensity 0-10V DC signal
- T-slot for mounting and connecting together
- Easily connect multiple lights with no cables

LHF300 Fluorescent Replacement

The LHF300 Series of lights was designed as a direct LED replacement for standard fluorescent lighting. The plug-and-play design of the Direct-Connect Linear Light Series gives users tremendous flexibility without the concern for additional wiring. The LHF300 array utilizes 30 high-intensity LEDs and features a diffuse lens cover designed to disperse the light in the same fashion as a fluorescent light of equivalent length. It also features an integrated constant current driver built into the light. Direct-Connect Series Linear Lights utilize 24V DC and can operate in continuous or strobe mode. NPN or PNP strobe triggers can be used to control the pulse of the light.

- Diffuse, homogenous light source
- Uniform illumination
- M12 connector option available
- T-Slot for mounting and connecting together
- Easily connect multiple lights with no cables
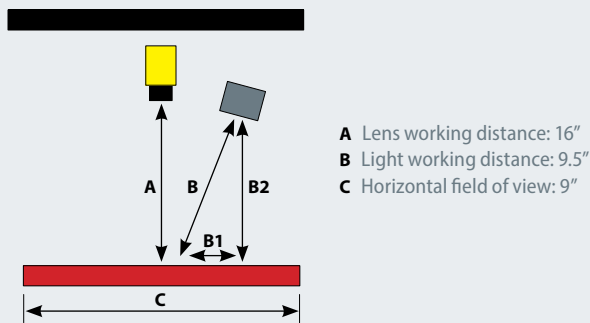- Mounting brackets available

Bar Light Applications

Presence/Absence — Candy Cane Inspection

Customer requests the inspection of completed candy-cane boxes to ensure that the box is full and that the proper sticker/label is on the front of the box. The boxes and canes themselves can be any color or combination of colors. To combat this variation, Smart Vision Lights recommended infrared (IR) illumination. IR light is invisible to humans and also eliminates various colors of objects, providing a grayscale image result. IR light is also used to see through packaging to inspect goods because it penetrates plastic wrappings, eliminating any potential for glare or reflection. With the IR light, all the canes appear very bright white. If a cane is missing, the location where it should be appears dark.

A Lens working distance: 16"
B Light working distance: 9.5"
C Horizontal field of view: 9"

Illumination: L300-850-W
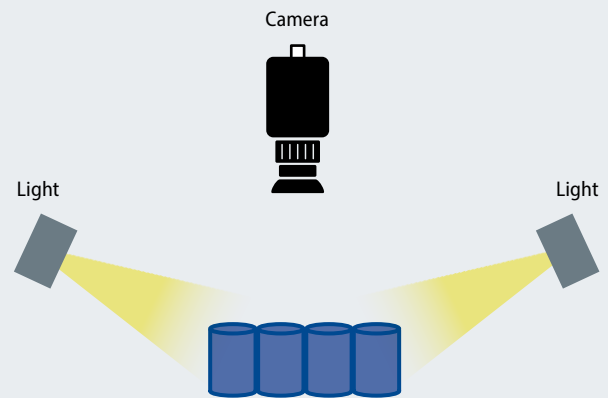[300mm Linear Light 850nm IR—"Connect-A-Light"]

Light angle: 75 degrees across part

Filter: BP850

Palletizing/Packaging — Pick & Place

The goal of this application is to properly illuminate packaged cases of canned and bottled products so that a robot may properly pick up the item and place it correctly on a pallet. Products come in either 6 or 18 packs. Each pack could be wrapped with any color package and marketing material. The goal was to illuminate the 6 or 18 pack so the robot could pick up the item. IR was used to reduce the color issue and enhance contrast. Beta testing at Smart Vision Lights revealed that low-angle lighting provided the best results, and two lights were used to achieve the desired illumination level.

Illumination: (2) L300-850
[300mm Linear Light 850nm IR - "Connect-A-Light"]

Light angle: 25 degrees across case, 300mm from edges, and 200mm above platform the case rests on

Filter: BP850

Spot Lights

S30 Prox Spot Light

- 5W HB high-current LED running up to 1.4A
- Built-in SMART driver — No external driver needed
- PNP and NPN strobe
- Constant or strobed operation
- Manual intensity control — Integrated potentiometer dimming
- Remote intensity control — Analog 0-10V DC

ODS30 Prox Spot Light

With OverDrive

- Highest-power LED lights in the vision industry
- SafeStrobe technology ensures protected operation of LEDs
- 5 times brighter than standard high-current LED lights
- Precise current provides stable light intensity
- High speed, fast response
- NPN and PNP strobe control
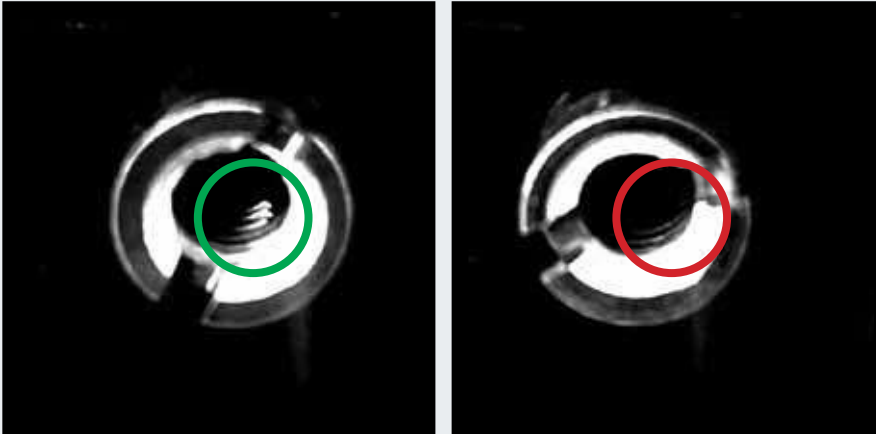- OverDrive units are 5x brighter than standard high-current LED lights

SA30 Prox Spot Light

- Produces a uniform homogenous pattern of light
- Sliding barrel provides adjustable spot size
- Optics provide tight-focused adjustable light
- 30mm-style housing
- Built-in SMART driver — No external wiring to a driver
- PNP and NPN strobe input
- Continuous operation or strobe mode
- Dimmable via built-in potentiometer
- Analog intensity via 0-10V DC signal

SF30 Fiber Light

- 30mm barrel-style housing
- M12 quick disconnect
- Built-in SMART driver — No external wiring to a driver
- PNP and NPN strobe input
- Dimmable via built-in potentiometer
- Special optics for focus into a fiber
- Adapters for many different sized fibers — Contact us for details
- Fiber is included — Plastic fiber can be easily cut to any required length
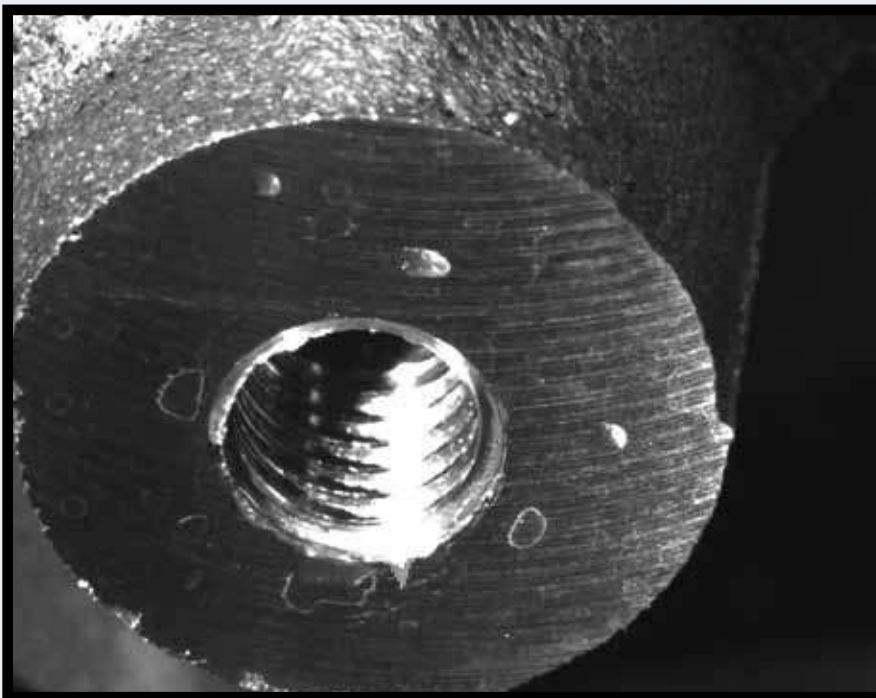
Spot Light Applications

Images showing threaded hole and chamfer area.

Illumination: SP30 Prox Spot Light

Multiple Inspection Checks for Threaded Holes

This application was to check threaded holes in metal parts for thread count and uniformity, chamfer of the machined area for the recessed fastener head, and the possible presence of test fluid in the threaded area. Application testing in Smart Vision Lights' in-house laboratory determined that a spot proximity light provided sufficient collimation of the light to achieve all three goals, including thread analysis deep within the machined hole.
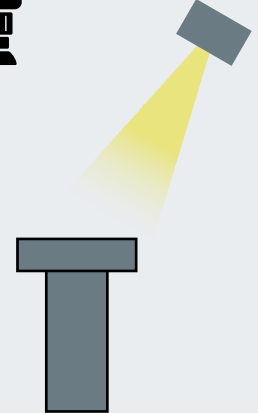

Threaded hole with white test fluid inside, potentially yielding false-negative result.
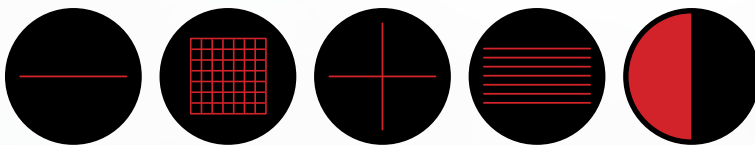
Structured Light Pattern Projectors

SP30 Series LED Pattern Projector Light

Smart Vision Lights can design the SP30 Prox Spot light structured light to project any 2D pattern you wish, from standard crosshair and grid patterns to your company name, logo, or any other shape you desire.

- The SP30 projector uses a 5W LED. SP30 is available in light outputs of white, red, amber, blue, green, cyan, UV, and IR. SP30 includes an integrated constant current driver with a built-in strobe input with the option for PNP or NPN trigger control.

- Standard patterns etched with line thickness of 0.1mm

- 0.05mm etched line thickness available upon request

- Requires an external standard C-mount lens for pattern focus

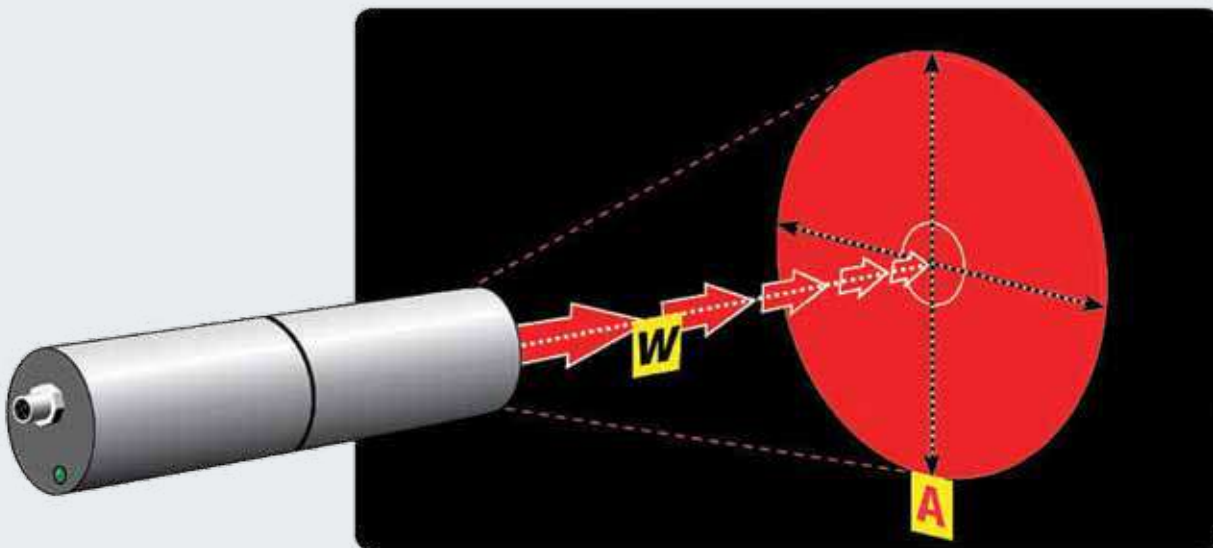▲ SP30 projector pattern options

Pattern Projector Light Applications

Images above show custom patterns.

Configurable to Any Working Distance

Pattern projectors must utilize a standard C-mount lens for pattern focus. **Smart Vision Lights** recommends 2/3-inch or larger format lenses. Telecentric lenses also can be used for telecentric pattern projection. Standard format lenses with pattern area sizes and working distances are listed in the chart below. Chart sizes are approximations due to differences in lens manufacturers. For more information, contact **Smart Vision Lights**.

W = Working Distance

A = Diameter of Area	100mm	150mm	200mm	300mm	400mm	500mm	600mm	750mm	1000mm	1500mm	2000mm
60mm			25			50					
100mm	8	12	16	25	35	35	50	50			
150mm	6	8	12	16	25	25	35	35	50	75	
200mm		6	8	12	16	16	25	25	35	50	100
300mm			6	8	12	12	16	16	25	35	50
400mm				6	8	8	12	12	16	25	35
500mm					6		8	12	16	25	25

Number in box represents the focal length of lens. (Example: 6 is a 6mm focal length lens.)

Back/Edge-Lit Lights

MOBL Series High-Power Back Lights

The MOBL series of LED back lights provides high-output diffuse light. Lights are specifically engineered for high-speed packaging and bottling lines. The MOBL is an area light that can contain thousands of LED lights (depending on the size).

- Thin profile at only 45mm. Housing is constructed in industry aluminum extrusion to dissipate heat. Standard T-slot channel is used on light for ease of mounting.

ODMOBL Back Lights

With OverDrive

The ODMOBL series of LED back lights is the strobe-only version of the MOBL series. The ODMOBL OverDrive or strobe back light is up to 10x brighter than the high-output MOBL. ODMOBL features extreme output for freezing motion on high-speed applications or when a back light has to produce a vast amount of light to burn through a product. Housing is constructed in industry aluminum extrusion to dissipate heat. Standard T-slot channel is used on light for ease of mounting.

- OverDrive units are 5x brighter than standard high-current LED lights

SOBL Series Back Lights

Thin profile at only 30mm. Housing is constructed in industry aluminum extrusion to dissipate heat. Standard T-slot channel is used on light for ease of mounting. The SOBL is an area light that can contain up to thousands of LED lights (depending on the size).

- Built-in SMART driver
- 24V DC
- NPN and PNP strobe
- Red 625nm, IR 850nm, and white
- SOBLs come in a variety of sizes from 150mm x 50mm to 1200mm x 150mm

LLP Edge-Lit Back Light

Our new second-generation LLP back lights and large diffuse ring light panels feature four-sided, edge-lit LED illumination for twice the intensity of our original versions. As always, second-generation LLPs feature a built-in driver with NPN-PNP triggering and analog intensity control, with the ability to run the light in constant or strobe mode. Standard sizing is available from 300mm x 300mm to 1800mm x 1200mm. Custom sizes are also available. Standard light colors are red (625) and white (WHI). Also available in blue (470).

SB75 Back Light

- High-power LED back light
- Extremely uniform
- Active area of 66mm x 44mm (2.6" x 1.8")

ODLLP Back Light
ODLLP Edge-Lit Back Light

The ODLLP is a higher-output edge-lit back light than our standard LLP back light and is available in strobe only. Standard sizing is available from 300mm x 300mm to 1800mm x 1200mm. Custom sizes are also available.
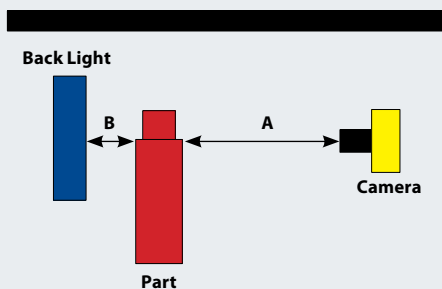
Back Light Applications
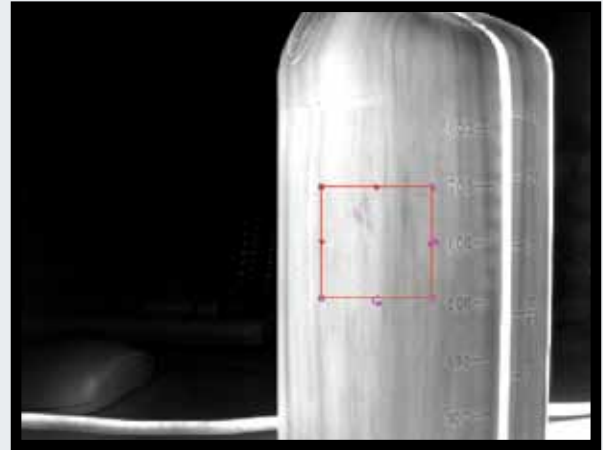

Water Bottle Cap Seal and Fill Inspection

The subject of this application is to inspect multiple points on a plastic water bottle. The inspection includes the verification of an ink-based lot and date code, presence of the bottle cap, the proper application of the bottle cap, the safety seal, and fill level. The inspection for the bottle cap, fill level, and safety seal are clearly visible to the camera with a back light placed behind the bottle. With this arrangement, the system can easily pass correctly fitted caps and proper safety seals, as well as view fill levels. Improperly fitted caps, questionable safety seals, and inaccurate fill levels are failed by the vision system.

A 19 ½" from the tip of the lens to the inspection area of the part
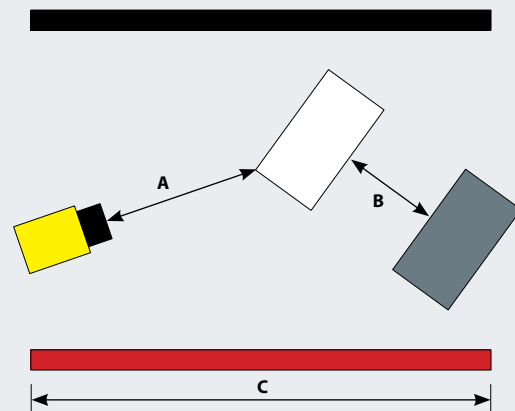**B** 3" from the front of the light to the side of the part

Illumination:
SOBL-150x100-WHI (6x4) active area LED back light

Surface Defects on Plastic Bottle

The goal of this application is to inspect plastic quart-sized motor oil bottles to determine if there are any streak defects. IR lighting can be very useful when looking at different plastic applications. By lighting the bottle with an intense IR light, the streaks show up. A "good" bottle appears very white, almost washed out, while a "bad" bottle shows dark streaks. The trick is to evenly illuminate the bottle without creating hot spots. In this application, a linear light was supplemented with a high-power back light to create more even lighting.

A Lens working distance: 12"
B Light working distance: 7"
C Horizontal field of view: 8"

Illumination: SOBL-300x50-850

Light at same angle as bottle

Filter: BP850

Ring Lights

EZ Mount LED Ring Light
With OverDrive

- Multiple EZ Mount Ring Light models, including R80, R130, ODR80, and ODR130
- Ring light mounts directly to all models of CCTV lenses
- Mounting options include front, back, and small camera configurations
- Adapter rings for all lens sizes
- Also can be mounted by T-slot with T-nut
- High-output LEDs occupying small industrial housing
- Built-in SMART driver with NPN & PNP control
- Intensity control by analog 0-10V DC or integrated pot
- Industrial standard M12-style quick disconnect
- OverDrive units are 5x brighter than standard high-current LED lights

▲ R80 EZ Mount Ring Light
▲ ODR80 EZ Mount Ring Light with OverDrive

▲ R130 EZ Mount Ring Light
▲ ODR130 EZ Mount Ring Light with OverDrive

▲ Front Mount   ▲ Reverse Mount   ▲ Small Camera Mount

Large Ring Light
With OverDrive

- Multiple Large Ring Light models, including RL200/ODRL200 (40 LEDs) and RL300/ODRL300 (128 LEDs)
- Different lenses available
- Built-in SMART driver – No external wiring to a driver
- Continuous operation or strobe mode
- Analog intensity via 0-10V DC signal
- PNP and NPN strobe input
- ODRL models come in 45mm industrial frame with T-slot
- OverDrive units are 5x brighter than standard high-current LED lights

▲ RL200 Large Ring Light
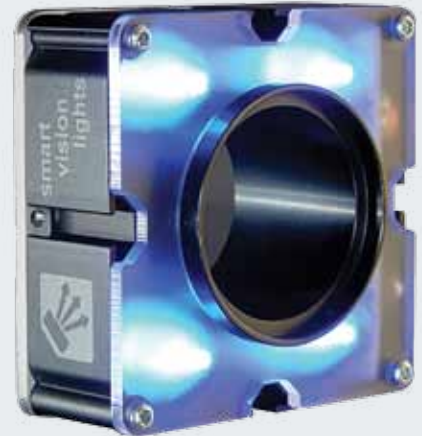

▲ RL300 Large Ring Light

smart vision lights

Ring Lights

All EZ Mount LED Ring Lights Mount Directly to a Camera Lens

The EZ Mount LED Ring Light can be quickly and easily adapted to any vision system with any of the four standard mounting options that are provided with each unit. First, there is a standard M46 thread protruding from the back of the EZ Mount LED Ring Light. Using readily available step-up or step-down rings, it can be mounted directly to the threads found on the front end of most lenses.
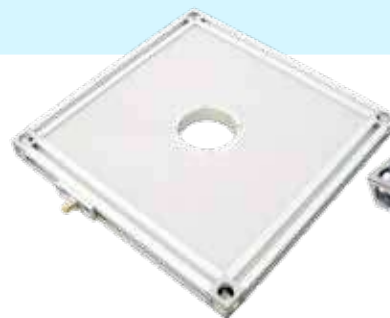
Second is the ability to mount the lens at the front end of the EZ Mount LED Ring Light. Once again, an off-the-shelf M46 step ring can be used to adapt lenses with M43 or smaller filter-mounting threads. A flange at the front end of the EZ Mount LED Ring Light holds the step ring with three set screws, and the camera lens is inserted through the center of the EZ Mount LED Ring Light and threaded onto the step ring. In those few cases in which the lens' locking thumbscrews may prevent the lens from fitting through the center of the EZ Mount LED Ring Light, extra low-profile replacement set screws are included, allowing the protruding thumbscrews to be removed. Third is a T-slot on all sides. Standard industrial T-nuts can be dropped into the slot for mounting. The fourth way to mount the light is using the threaded M4 holes on the back plate of the light.

The EZ Mount LED Ring Light is a high-output LED light in an aluminum housing. Housing uses industry-standard T-slots for ease of mounting. Ring lights are available in light outputs of white, red, amber, blue, green, cyan, IR, and UV. Ring lights include an integrated constant current driver with a built-in strobe input with the option for PNP or NPN trigger control. No need for an external driver to control the light. The integrated driver also includes variable light intensity control. Light can be controlled by a manual potentiometer or a 0-10V DC analog signal.

DLP Series Front Light

With OverDrive

- 30mm industrial extrusion
- Built-in SMART driver — No external wiring to a driver
- PNP and NPN strobe input
- Continuous operation or strobe mode
- Analog intensity 0-10V DC signal
- 53mm or 78mm diameter center camera hole
- Offered in white, red, green, blue, and IR
- OverDrive units are 5x brighter than standard high-current LED lights
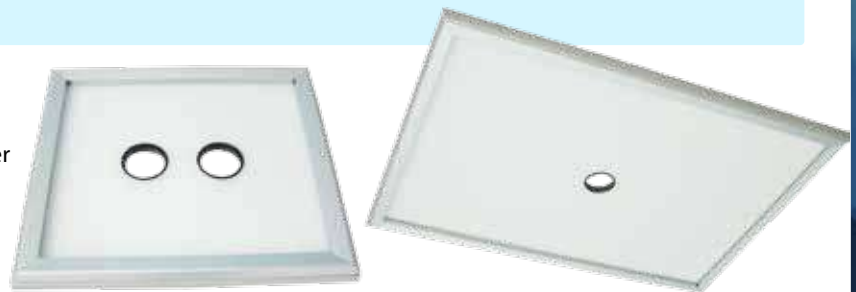
▲ DLP300 Front Light   ▲ ODDLP300 Front Light

LLP-H Series Light Panel

- Large LED back light with thin profile
- M12 quick disconnect
- Built-in SMART driver — No external wiring to a driver
- Edge Lite white LED panel
- Available in custom designs
- PNP and NPN strobe input
- Continuous operation or strobe mode
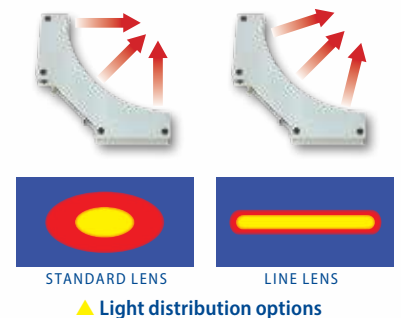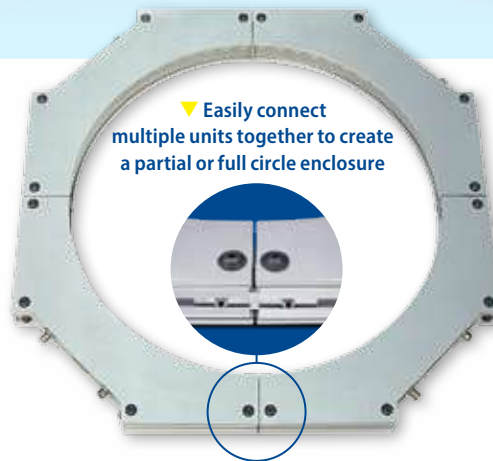
▲ LLP-H Series Light Panels

Curved Linear/Dark Field Lights

DFL460 Dark Field Lights

- Built-in SMART driver — No external driver needed
- Ability to **wrap light around curved surfaces**
- Connect up to 4 lights together
- Continuous operation or strobe mode
- PNP and NPN strobe input
- Analog intensity via 0-10V DC signal
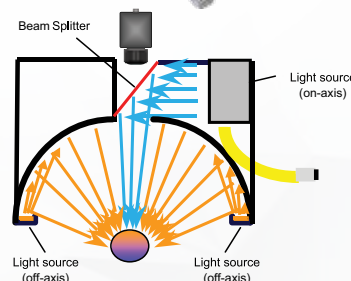- Lenses create thin-focused uniform line of light

▼ **Easily connect multiple units together to create a partial or full circle enclosure**

STANDARD LENS   LINE LENS

▲ **Light distribution options**

Tube/Blister Pack Lights

TL305 Tube Light

The TL300 Series was designed as a pharmaceutical blister pack inspection light with a built-in individual on-axis and off-axis intensity control lighting system. Exceptional uniformity and an intense output, combined with a "cloudy day illuminator" design, make the TL300 Series a perfect lighting solution for blister pack inspection, solder joint inspection, or any inspection of products with a highly reflective finish.

- 5-pin M12 quick disconnect
- Built-in SMART driver — No external wiring to a driver
- Simple 24V DC and GND hook-up
- Continuous operation or strobe mode
- Individual intensity control via two built-in potentiometers
- Analog intensity 0-10V DC signal

Beam Splitter

Light source (on-axis)

Light source (off-axis)   Light source (off-axis)

*Intensity Control Module Included

LED Light Bar/T-Slot Extrusion Lights

TSLOT300

- LED lighting slides into the extrusion; no extra mounting of additional lighting needed
- Low-voltage 24V DC keeps installation green
- Able to direct-connect up to 6 modules with one 24V power supply
- Homogenous, uniform LEDs are a cost- and energy-saving replacement for fluorescent lighting
- Simple to mount and easy to use
- Suitable for use in applications to illuminate robotic work cells by embedding in gating
- Ideal for use in limited-distance or tight areas such as control panels and under-conveyor needs
- Can be used in welding areas where light is simple to change
- May be substituted for legacy hanging fixtures
- Mounts into most popular T-slot extrusions
- M8, M12 pigtail available for connecting around extrusion corners
- Available in 12" or 300mm lengths
- Available in white
- IP-50 rated

TSLOT300 is compatible with the following models of 80/20 brand aluminum extrusion:

Fractional T-Slotted
1501, 1501-LS, 1502, 102-LS,1503, 1503-LS, 1504, 1504-LS, 1515-Lite, 1515-LS,1515UL, 1515-ULS,1515-L-Black, 1547,1517, 1517-LS, 1534-Lite, 3034-Lite,1530-L-Black, 3030-Lite, 3030-LS

Metric Profiles
40-4001, 40-4002, 40-4003, 40-4004, 40-4040-Lite, 40-4040-UL, 40-4030-Lite, 40-4093, 40-94, 40-4096, 40-408—Lite, 40-4080-UL,40-4082-Lite, 40-4083-Lite, 40-4084-Lite, 40-4085-Lite, 45-4545-Lite, 45-90
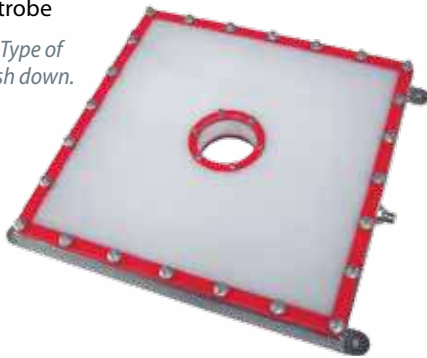
▲ **Uniform LED replacement for fluorescent lighting**

Wash-Down/Harsh Environment Lights

DLPW Light Diffuse Ring Light

- Several models up to 300mm x 300mm (12" x 12"); larger custom sizes available
- IP68 standards — Meets FDA compliancy
- 316 stainless steel
- Built-in SMART driver — No external driver needed
- PNP and NPN strobe

Light Tent or Dome-Type of illumination for wash down.

LW300 Linear Light* ODLW300 With OverDrive

- IP68 standards — Meets FDA compliancy
- 316 stainless steel
- Designed to operate in food applications
- Corrosion-resistant
- Built-in SMART driver — No external driver needed
- PNP and NPN strobe
- Easily connect together
- OverDrive units are 5x brighter than standard high-current LED lights

*Linear Light wash down is available in 2 versions: standard linear series LW300 or OverDrive ODL300 version. The OverDrive version is a high-output strobe only.

SW75 Brick Spot Light ODSW75 With OverDrive

- IP68 standards — Meets FDA compliancy
- 316 stainless steel
- Designed to operate in food applications
- Corrosion-resistant
- OverDrive units are 5x brighter than standard high-current LED lights

Brick wash down is available in 2 versions: standard spot series SW75 or OverDrive™ ODSW75 version. The OverDrive™ version is a high-output strobe-only model.

SW30 Prox Spot Light

- IP68 standards — Meets FDA compliancy
- 316 stainless steel
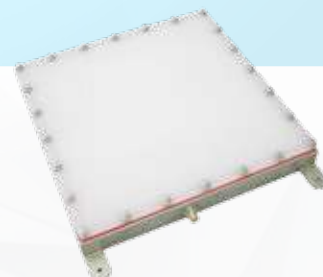- Designed to operate in food applications
- Corrosion-resistant

The Prox Light® has one 5W high-output, high-current LED in a small 30mm barrel sensor housing. Housing is an industry-standard M30 barrel-style used for proximity and photoelectric sensors.

SOBLW Wash-Down Back Light

- Several sizes up to 450mm x 300mm (18"x12"); larger custom items available
- Highest level of uniformity
- IP68 rated — Meets FDA requirements
- 316 stainless steel
- Built-in SMART driver — No external driver needed

Homogenous back light solution for harsh environments. Can operate in strobe or continuous mode.

Wash-Down Light Applications

Wash-Down Diffuse Panel Ring Light — Uniform Light for Reflective Applications

This application required the machine vision system to read a barcode and inspect the graphic image on a curved reflective food package. All components had to be wash-down-compatible to meet U.S. Food and Drug Administration (FDA) regulations. Smart Vision Lights is the only manufacturer of a wash-down diffuse ring light panel that mimics a "light tent" or dome light for harsh environments. The diffuse ring light panel minimized the hot spots and reflections from the plastic package, allowing the vision system to successfully read the barcode and graphic detail on the plastic packaging.
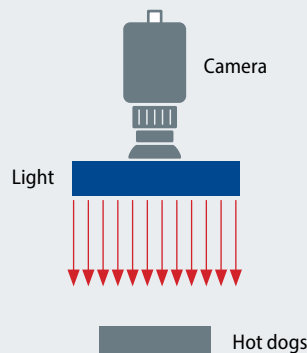
Illumination:
DLPW Wash-Down Light Panel

▲ **Original packaging shown under normal lighting conditions**

▲ **Example shown without Wash-Down Dome Light**

▲ **Example shown with Wash-Down Dome Light**

Camera

Light

Hot dogs

Brick Lights

Brick Light® has 6 high-output, high-current LEDs in a small housing. Brick Light® is available in light outputs of white, red, amber, blue, green, cyan, IR, and UV. Brick Light® includes an integrated constant current driver with a built-in strobe input with the option for PNP or NPN trigger control. No need for an external driver to control the light. The integrated driver also includes variable light intensity control. Light can be controlled by a manual potentiometer or a 0-10V DC analog signal.

S75 Spot Lights

- 6 HB high-current LEDs
- Built-in SMART driver — No external driver needed
- PNP and NPN strobe
- Constant or strobed operation
- Integrated potentiometer dimming
- Remote intensity control — Analog 0-10V DC

ODS75 Strobe-Only Spot Lights **With OverDrive**

- Highest-power LED lights in the vision industry
- SafeStrobe technology ensures protected operation of LEDs
- 5 times brighter than standard high-current LED Lights
- Precise current provides stable light intensity
- High speed, fast response
- NPN and PNP strobe control
- OverDrive units are 5x brighter than standard high-current LED lights

SB75 Back Light

- High-power LED back light
- Extremely uniform
- Active area of 66mm x 44mm (2.6" x 1.8")

SC75 Brick Light

- 6 high-current LEDs
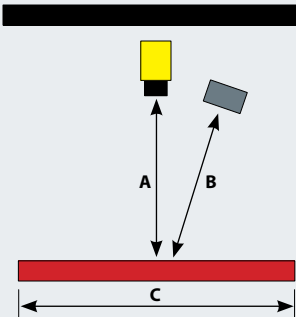- M12 quick disconnect
- PNP and NPN strobe input

Brick Light Applications

Gasket Inspection

The goal of this application was to inspect the head gaskets on an automotive engine to ensure that the correct number of gaskets were present by counting the edges of the gaskets under a cylinder head cover. Due to the small size of the gasket edges, machine vision could do a far better job than human inspectors, reducing potential oil leaks and warranty work down the road. An engineering feasibility study determined that a blue brick light, placed slightly off the camera-engine axis, and matching bandpass filter on the camera would provide the best edge contrast between the gaskets and metal cylinder cover. To acquire images with sufficient resolutions to repeatedly identify the gasket edges while still using a low-cost VGA-resolution camera, our engineers opted for an 8-in. stand-off between light, camera, and cylinder head, which provided a 0.5-in. field of view at the camera. This was more than sufficient to put several pixels across each gasket edge, increasing the vision accuracy during the gasket counting operation.
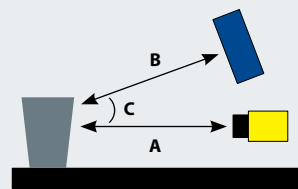
A Lens working distance: ~8"
B Light working distance: ~8"
C Horizontal field of view: ~0.5"

Illumination: S75-505
[75mm Spot Light 505nm Cyan - "Brick Light"]

Lens: 50mm Fujinon Lens

Filter: BP505-25.5

Extras: Spacer Kit

Ink-Printed Lot/Date Code on Pudding Cups

Check for the presence of black ink-jet printing on the exterior of white and clear pudding cups with multiple colored puddings already in the cup. The main challenges of this application are reflection and contrast. Smart Vision Lights testing revealed the application required a light source that did not produce a large amount of reflection while highlighting the ink against the different package backgrounds. By utilizing white light, desirable contrast was created to read the ink clearly. However, a diffuse light source also was required. By applying diffused soft illumination on the cup, reflections are drastically reduced. The exposure of the camera rate will need to be turned down when taking an image of both the clear cup with vanilla and the white cup in comparison to the clear cup with chocolate.

A Lens working distance: 150mm
B Light working distance: 170mm
C Light mounting angle: 30 degrees

Illumination: SB75-WHI
[75mm Spot Light WHI white - "Brick Back Light"]

Lens Filter: NONE

High-Speed Strobe Lights

High-Speed Strobe Lights (High Speed/Extreme Output)

Are pulse-initiated or pulse-following for strobe, adding versatility. Pin 2, NPN, is the sinking input in the pulse-following mode, and Pin 4, PNP, is the sourcing input in the pulse-following mode. The XR Series of LED lights has storage of electrical energy to pulse the LEDs. XR256 has pulsed energy of 2000 watts when LEDs are active. The XR256 light has a pulsed LED die current of 180 amps.

The XR256 light has 256mm^2 (256 of 1x1 high power die) of LED die running at up to 2000 watts. For comparison, a standard LED light for machine vision has on average 6-12mm^2 of LED die running at 6-12 watts.

XR Series lights have an LED die temperature monitor that will shut down the light if the LEDs exceed the maximum running temperature. When the LED die rises above 80°C, the light will shut down and begin a rest time. The LED die will gain heat based on the LED duration and SPS. A high-duty cycle or long durations with high SPS will cause the heat to rise in the die.

Outdoor Imaging Lights

LXH1200-SR40 Outdoor Series

Developed for outdoor imaging applications and environments with large temperature swings, the LXH1200-DSR40 is designed specifically for applications in homeland security and defense installations, intelligent transportation systems (ITS), and traffic and transportation applications.

- Long Linear LED lights for security and traffic
- Outdoor-compatible
- Tested -40°C to 50°C (-40°F to 122°F)
- Environmentally sealed IP67
- Built-in driver — No external wiring to a driver
- PNP and NPN strobe input
- Continuous operation or strobe mode
- 1mm² die high-current LEDs
- Available in 1200mm lengths
- Fault current durability of 32v/100A
- Peak pulse power capability of 3000W
- ESD protected to 8kV contact

Accessories

Smart Color Box
Test Light Multicolor Tester

The Smart Color Box is an important tool for testing the different colors that work best on your vision application.

Great for field testing on a vision application or use in a vision lab. Simple to use: just push the button for the desired color. Smart Color Box works with standard CCD or CMOS cameras.

Materials respond to color in different ways. Sometimes the only way to know the color or wavelength that works the best is by testing different color lights. Purchasing each color LED light can be very expensive. The Smart Color Box is 1/10th the cost of buying 6 different colors of LED lights.

- 6 high-current LEDs: white, red 625nm, blue 470nm, green 530nm, UV 395nm, and IR 850nm
- Li-ion battery with integrated charger/Up to 2 hours of operation before recharging
- Recharges in 6 hours/Includes recharging power adapter
- Push-button testing for LED on/off
- High-power, high-current LEDs

S75-SCB-UV UV Color Box

- UV LEDs — 365nm, 375nm, 385nm, 395nm, and 405nm
- Li-ion battery with integrated charger/Up to 2 hours of operation before recharging
- Recharges in 6 hours/Includes recharging power adapter
- Push-button testing for LED on/off

PGM Stroboscope Module

The PGM Stroboscope Module is a free-running pulse generator that causes any attached light to strobe at the set pulse rate. This independent unit provides a strobe signal allowing any Smart Vision Lights product to strobe at a set frequency without the presence of an NPN or PNP trigger. This unit easily integrates between your power source and the LED array using a male-to-female M12 connection. It operates at a 10% duty cycle, meaning that the light will be active for 10% of the period and inactive for 90%. The pulse rate can be set to any frequency from 12 to 3200 Hz with 2 rotary dials. The first dial has 8 positions consisting of 12, 25, 50, 100, 200, 400, 800, and 1600 Hz. The second dial allows the user to finely adjust the frequency set by the first dial. This dial can be set up to 2 times the frequency of the first dial. The Stroboscope Module can be used on standard or OverDrive LED lights.

*Din rail mountable

T1 Power Supply

- Tabletop 110V AC power supply for lights
- 1.9 amps
- M12 connection

smart vision lights

Travel Kit

The SVL Travel Kit is a great tool to take along on sales demonstrations and for lab testing. SVL Travel Kits can be tailored for you by specifying what color lights to be included in your kit. The kit contains lights and accessories, including:

- S30 Prox Light
- S75 Brick Light
- R80 Ring Light
- L300 Linear Connect-A-Light
- S75-SCB Smart Color Box
- SU46-25.5/27 Ring Light Adapter Kit
- T1 power supply
  (optional T2 power supply in place of the T1)
- Carrying case

PTM Module

Smart Vision Lights products are pulse-following and will track the camera's lighting strobe signal. Some cameras are pulse-initiated and are not pulse-following. High-speed cameras operate by initiating with a strobe pulse but then expect the light to hold output for a set time or duration. The Pulse-Initiated Timing Module accepts a pulse of 5 µs or longer and holds the pulse for the selected duration. The PTM allows the user to select a pulse length from 8 preset durations of 20, 50, 100, 250, 500, 750, or 1000 microseconds. The module has a male M12 connector input that will connect to the camera and a female M12 output that will connect to Smart Vision Lights.

*Din rail mountable

T2 Power Supply

- Desktop 24V DC power supply
- 9 amps
- M12 connection

IVP-C1 Variable Control Pot

- Variable control remote pot for controlling the intensity of a Smart Vision Light.

Safety Standard Compliance

Smart Vision Lights Comply with All International Human Safety Eye and Skin Standards… and We Can Prove It!

All LED lamps sold with CE Mark must be tested to international standard IEC/EN 62471 to prove that levels of UV and IR light do not pose a hazard to human eyes and skin.

In countries around the globe, IEC/EN 62471 compliance tests must be conducted by a Certified Body (CB) test lab before the manufacturer can legally apply a CE, CCC, or other conformity code.
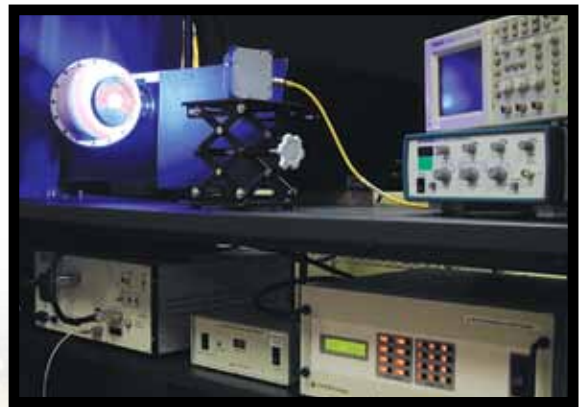
Companies that place an LED light into service without IEC/EN 62471 compliance documentation run the risk of seizure and fines, among other potential liabilities.

100% of Smart Vision Lights are IEC compliant. We can make that guarantee because Smart Vision Lights is one of the few industrial LED manufacturers to have its own IEC Light Testing Laboratory, certified by a National Certification Body (NCB).

Don't take risks. Let Smart Vision Lights help keep your customers and revenue stream safe through our extensive line of IEC/EN 62471-compliant lights.

"Cognex products needed to have a UL certification, and in order to obtain this, UL required Cognex to have our products IEC62471/RP27 compliant. Smart Vision Lights provided this proof of compliancy, further demonstrating their value as a lighting supplier in the machine vision industry."

— **Nathan Caughel, Product Marketing Specialist, Cognex Corporation**

SMART VISION LIGHTING
10 YR
WARRANTY

smart vision lights

All **Smart Vision Lights** products are meticulously designed, assembled, and tested thoroughly before being shipped. Every **Smart Vision Lights** product is covered under our limited warranty for a period of 10 years* (upon registration) from the date of shipping. We guarantee our products to be free of manufacture defects, both in the assembly process and the materials included in the design of our product. In the unfortunate case that a problem should occur during the warranty period, please contact the distributor that the light was purchased from or **Smart Vision Lights** directly as soon as possible. The appropriate steps will be taken to either repair or replace your product (at our option) at no charge. Failure to register the product will result in warranty defaulting to 5 years.

Smart Vision Lights will not assume responsibility for the misuse, obvious abuse, special, supplementary, consequential, or indirect damages of our products under this provision. Products showing any sign of disassembly or alteration, upon our inspection, are null and void of any warranty rights. Warranty is nontransferable. If the product inspected for warranty is deemed a manufacturer defect and covered under warranty, **Smart Vision Lights** will only cover ground shipping expenses for return of the item. **Smart Vision Lights** will not pay for expedited return shipping requests. If expedited return shipping is required, it must be paid for by another party.

*All ultraviolet products are only
 subject to a 2-year limited warranty.

Smart Vision Lights is committed to being the global leader in innovative design, engineering, and manufacturing of the highest-quality products in the specialty lighting industries.

Learn more today at **smartvisionlights.com**.

Smart Vision Lights

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