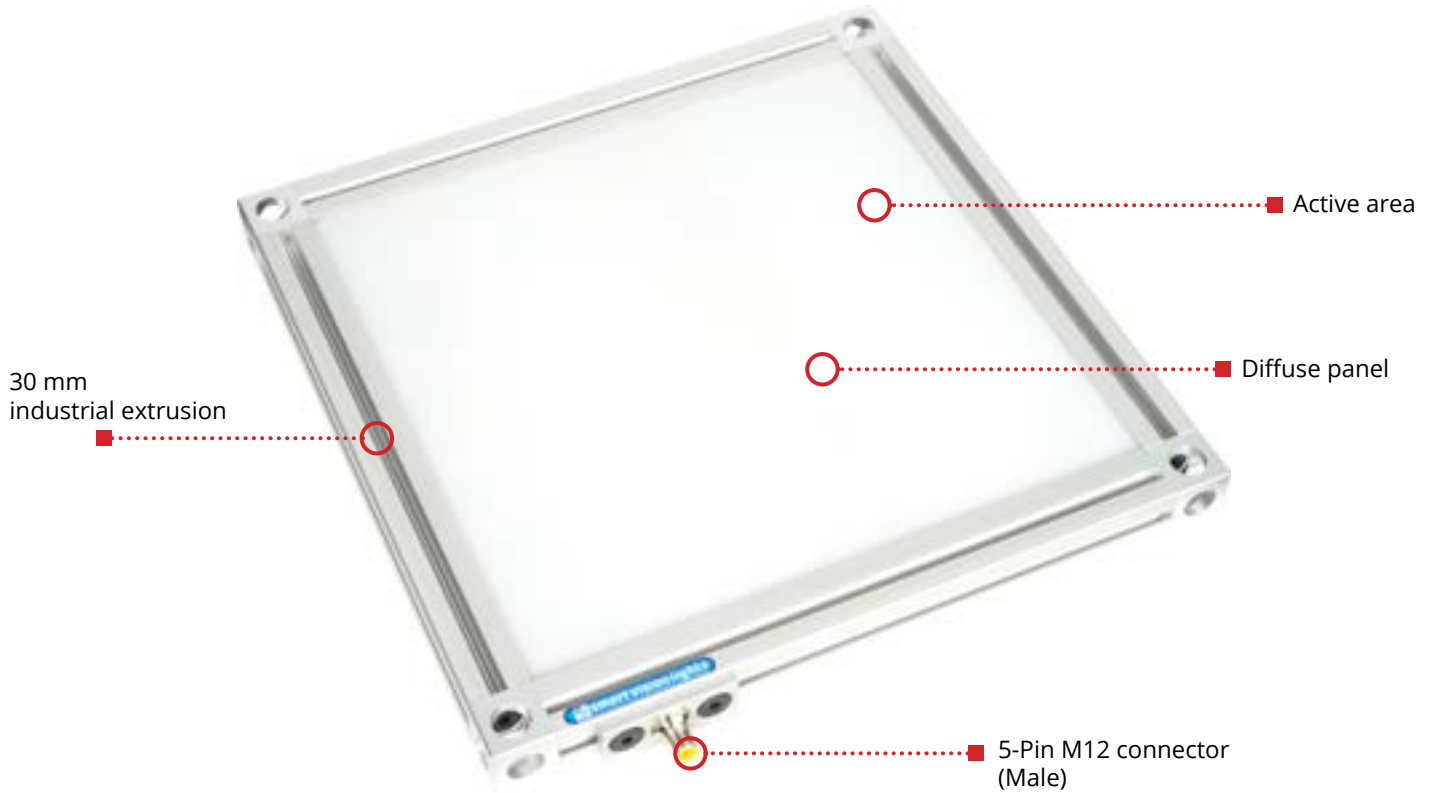


SOBL Series Back Light

STANDARD OUTPUT



The SOBL Backlight Series is an innovative and highly versatile series of lights. SOBL Backlights are evenly lit for a more intense and highly diffuse lighting output. At just 30 mm in depth, the lights can be easily mounted in tight locations. The SOBL Series comes in various standard sizes, with custom sizes available upon request.

SOBL HIGHLIGHTS

Warranty 10 YEAR	Tested IEC 62471	Compliant CE ROHS	Rated IP 50	Connector 5-PIN M12
--------------------------------	--------------------------------	---------------------------------	---------------------------	-----------------------------------

- ✓ Bright and even illumination
- ✓ 30 mm industrial extrusion
- ✓ Custom sizes available

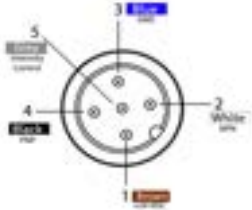
SPECIFICATIONS

Electrical Input	24 VDC +/- 5%
Input Current	SOBL 150 x 100 Max 0.30 A
	SOBL 150 x 150 Max 0.45 A
	SOBL 200 x 150 Max 0.60 A
	SOBL 200 x 200 Max 1.20 A
	SOBL 300 x 150 Max 0.90 A
	SOBL 300 x 200 Max 1.20 A
	SOBL 300 x 300 Max 1.80 A
	SOBL 450 x 450 Max 4.05 A
Input Power	SOBL 150 x 100 Max 3.60 W
	SOBL 150 x 150 Max 10.80 W
	SOBL 200 x 150 Max 14.40 W
	SOBL 200 x 200 Max 28.80 W
	SOBL 300 x 150 Max 21.60 W
	SOBL 300 x 200 Max 28.80 W
	SOBL 300 x 300 Max 43.20 W
	SOBL 450 x 450 Max 97.20 W
PNP Trigger	2.8 mA @ 4 VDC 8.8 mA @ 12 VDC 17.6 mA @ 24 VDC
NPN Trigger	14.4 mA @ Common (0VDC)
Trigger Input	PNP > +4 VDC (24 VDC max.) to activate or NPN > GND (<1VDC) to activate (not both)
Strobe Duration	Min. 30 μ s Max. ∞
Strobe Trigger Latency	10 μ s
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.
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	IP50
Weight	SOBL 150 x 100 ~2.07 lbs (0.94 kgs)
	SOBL 150 x 150 ~2.51 lbs (~1.14 kg)
	SOBL 200 x 150 ~2.91 lbs (~1.32 kg)
	SOBL 200 x 200 ~3.48 lbs (~1.58 kg)
	SOBL 300 x 150 ~4.0 lbs (~1.81 kg)
	SOBL 300 x 200 ~4.49 lbs (~2.04 kg)
	SOBL 300 x 300 ~5.90 lbs (~2.68 kg)
	SOBL 450 x 450 ~10.69 lbs (~4.85 kg)
Compliances	CE, IEC 62471, RoHS
Warranty	10 years ¹

¹See SmartVisionLights.com/warranty for details.

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

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

For continuous mode: PNP (pin 4) can be tied to +24 VDC (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.

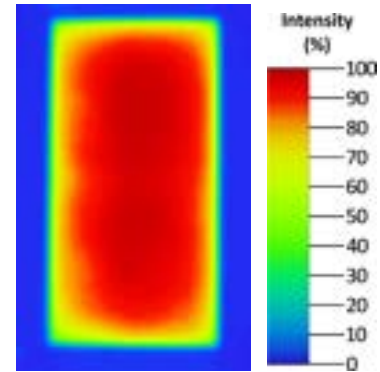
Failure to supply light with correct input current will result in inconsistent lighting behavior.

(see Product Specifications for requirements)

LIGHTING PATTERNS

The SOBL offers a very diffuse lighting pattern. Illuminance values will not change with the size of the light, only the are of illumination will change. Example shown is the SOBL-300x150. **The illuminance value is taken on the surface of the light, using white light - 5700K**

Rating	Illuminance (Lux)
Average Intensity Rating	35,000



MOUNTING

Smart Vision Lights recommends using drop-in T-nuts for mounting a SOBL backlight. The SOBL extrusion has a Bosch size 8 T-nut channel.

NOTE

Removing cover cubes of light may result in voiding of warranty.

Bosch size 8 T-nut channel



EYE SAFETY

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

Notice

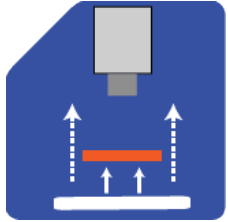
Exempt Group: No photobiological hazard to eyes or skin even for continuous, unrestricted use. Applicable for wavelengths 625 and 850.

Caution

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

ILLUMINATION

The SOBL Series works best for:

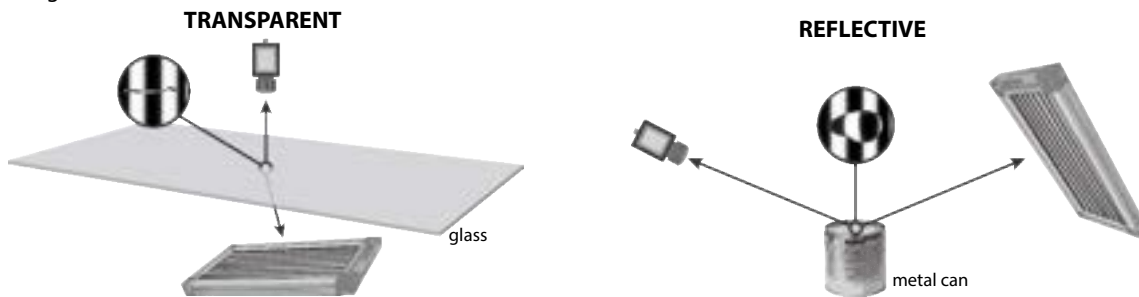


Backlight

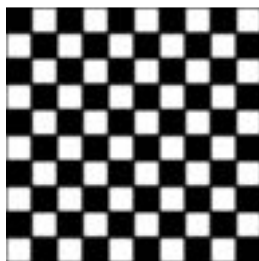
PATTERNED AREA LIGHTING

How to use PAL

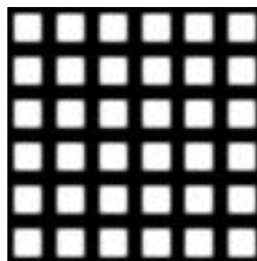
- For backlighting a transparent object, the light is positioned beneath the object.
- For front lighting, position the light where the light pattern will be directed on the surface at an angle.
- A camera is positioned to capture the reflection of the light source.
- The camera lens is adjusted to focus on the surface defect.
- The camera should also image the light source pattern, but the pattern does not need to be in tight focus.
- The depth of field for the lens should be adjusted to include both the light source pattern and the defect in one image.



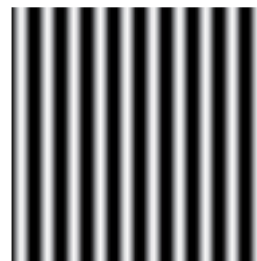
Patterned Area Lighting Examples



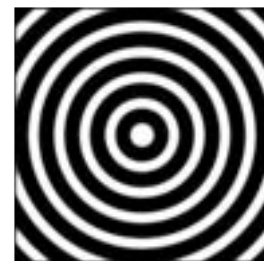
Pattern: Checker Board
Size: 50 mm x 50 mm box



Grid
50 mm line width



Gradient Lines
50 mm line width



Circles
50 mm circle width

Customized pattern sizes available upon request.

NOTE

Smart Vision Lights can customize just about any pattern needed to meet application requirements.


PART NUMBER GUIDE

SOBL – X – –

Please contact a representative if ordering
Pattern Area Lighting: +1 (231) 722-1199

SIZE (L x W):
 150 x 100
 150 x 150
 200 x 200
 300 x 150
 300 x 200
 300 x 300
 450 x 450
 Custom sizes upon request

COLOR:



PATTERN AREA LIGHTING™:
 Leave blank for no pattern

Part Number Examples:

SOBL-150x150-625 SOBL, 150 x 150 mm, 625 nm Red Wavelength

SOBL-300x150-WHI SOBL 300 x 150 mm, white,

PATTERN AREA LIGHTING:

TYPE	DARK LINE	LIGHT GAP	GRADIENT
1 - Line	01 - 1 mm	01 - 1 mm	Leave blank for no gradient
2 - Grid	02 - 2 mm	02 - 2 mm	
3 - Checker Board	05 - 5 mm	05 - 5 mm	10 - 10%
4 - Circles	10 - 10 mm	10 - 10 mm	15 - 15%
	15 - 15 mm	15 - 15 mm	20 - 20%
	20 - 20 mm	20 - 20 mm	25 - 25%
	25 - 25 mm	25 - 25 mm	50 - 50%

Dark Line - Printed dark line size in millimeters
Light Gap - Light gap width in millimeters
Gradient - Percentage of dark line to be gradient

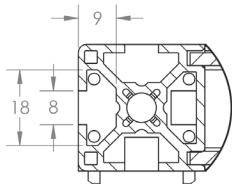
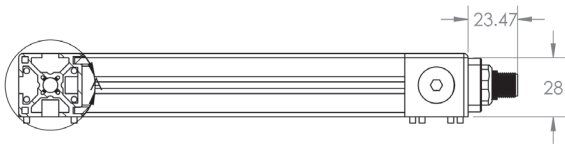
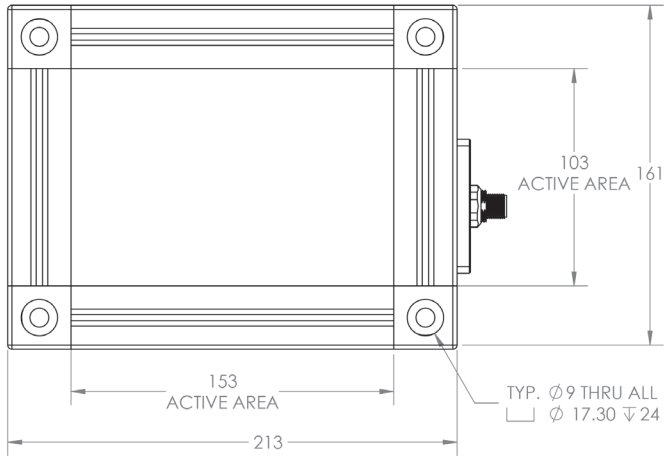
*The 5-pin M12 connector is located on the wide side of the light.
 Sizes listed are in millimeters.
 Additional wavelengths and sizes available upon request.*

ACCESSORIES

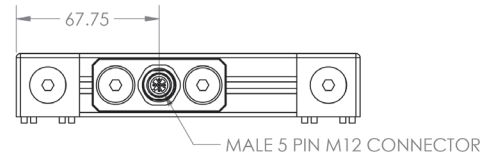
Power Cables	
	
Lengths	Part Number
5 m	5PM12-5
10 m	5PM12-10
15 m	5PM12-15

PRODUCT DRAWINGS (SOBL-150x100)

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

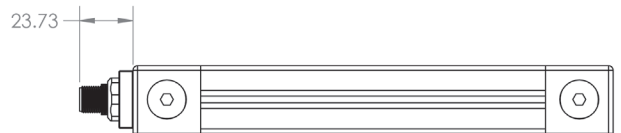
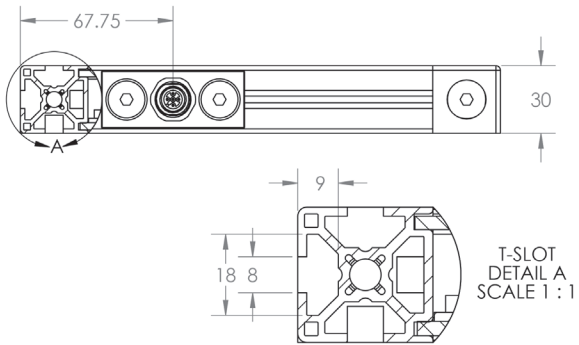
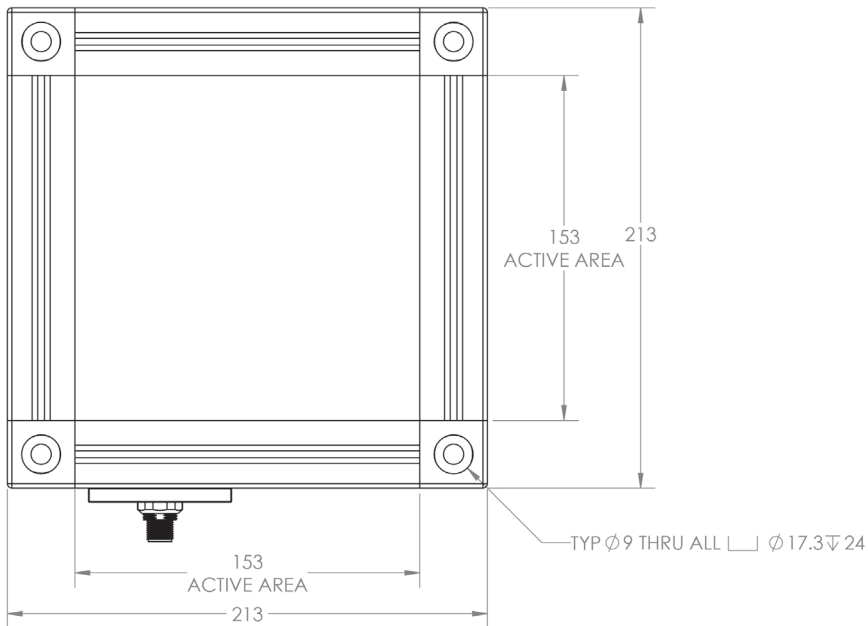


T-SLOT
DETAIL A
SCALE 1 : 1



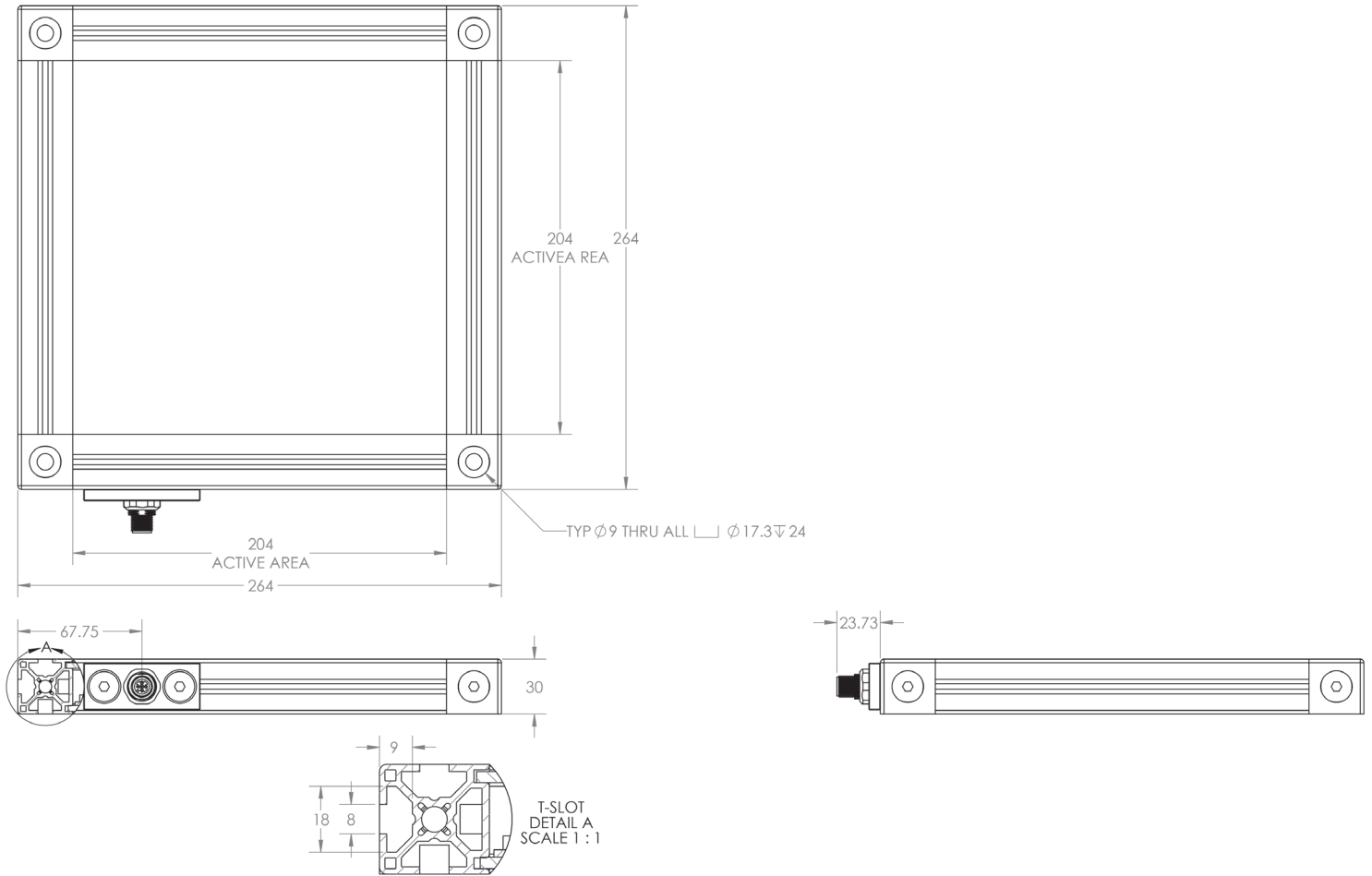
PRODUCT DRAWINGS (SOBL-150x150)

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



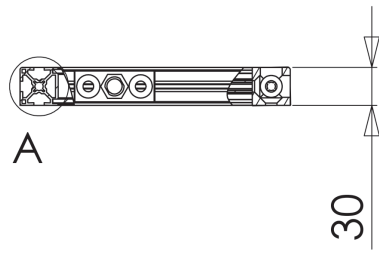
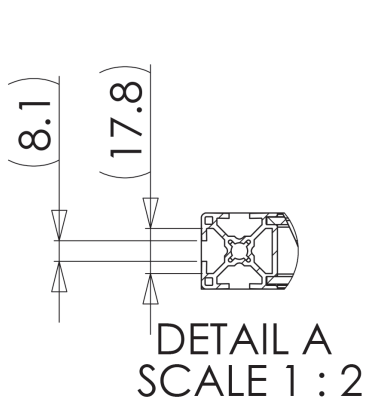
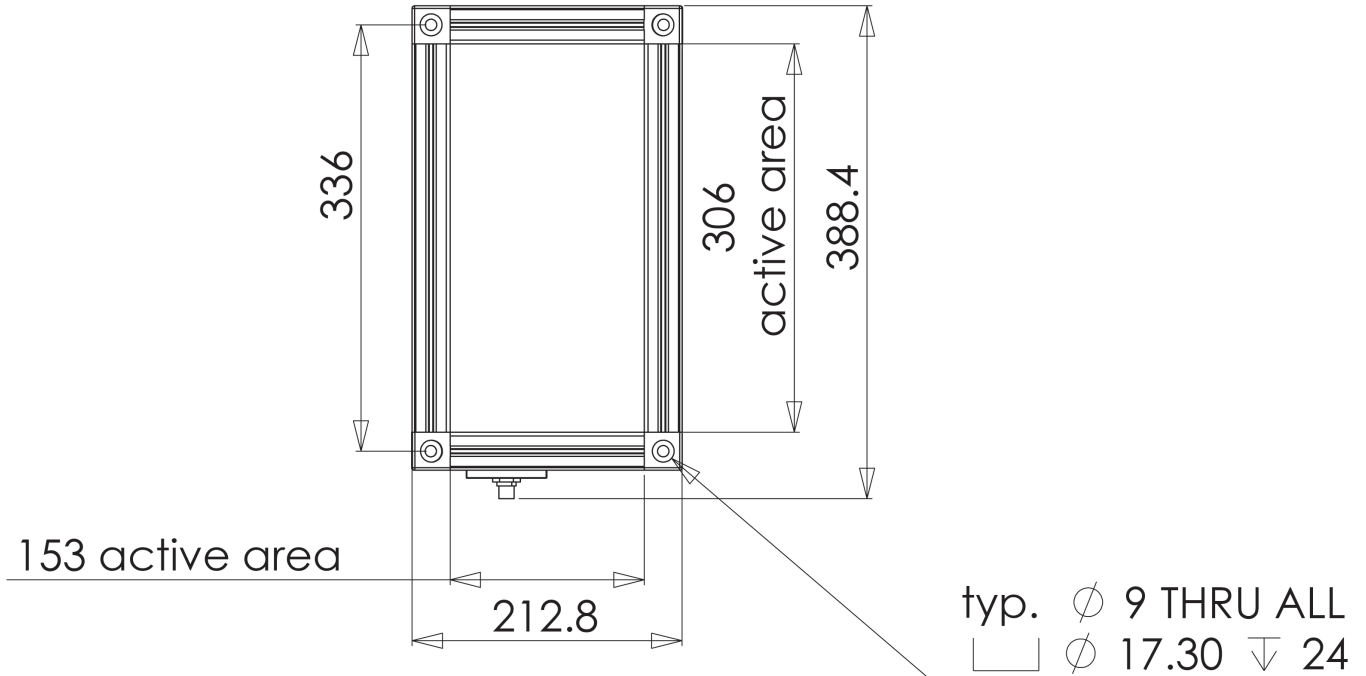
PRODUCT DRAWINGS (SOBL-200x200)

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



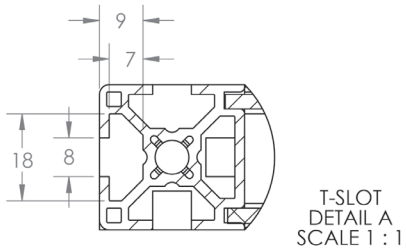
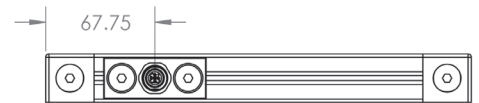
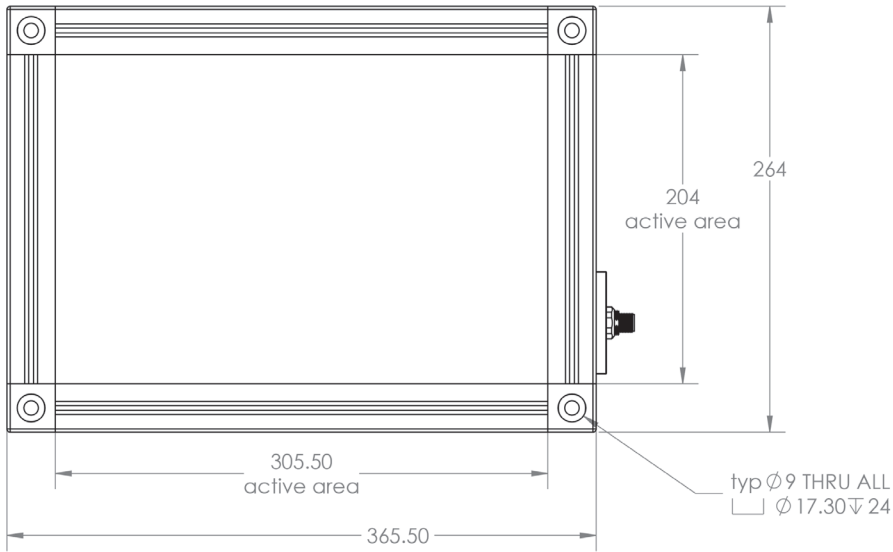
PRODUCT DRAWINGS (SOBL-300x150)

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



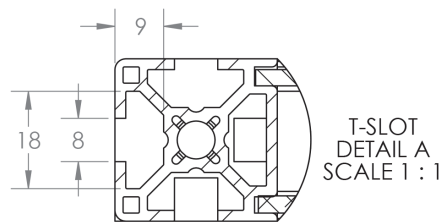
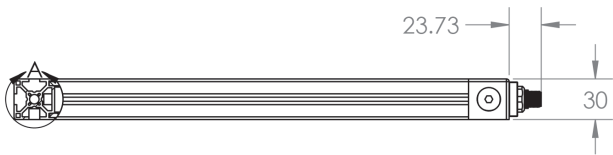
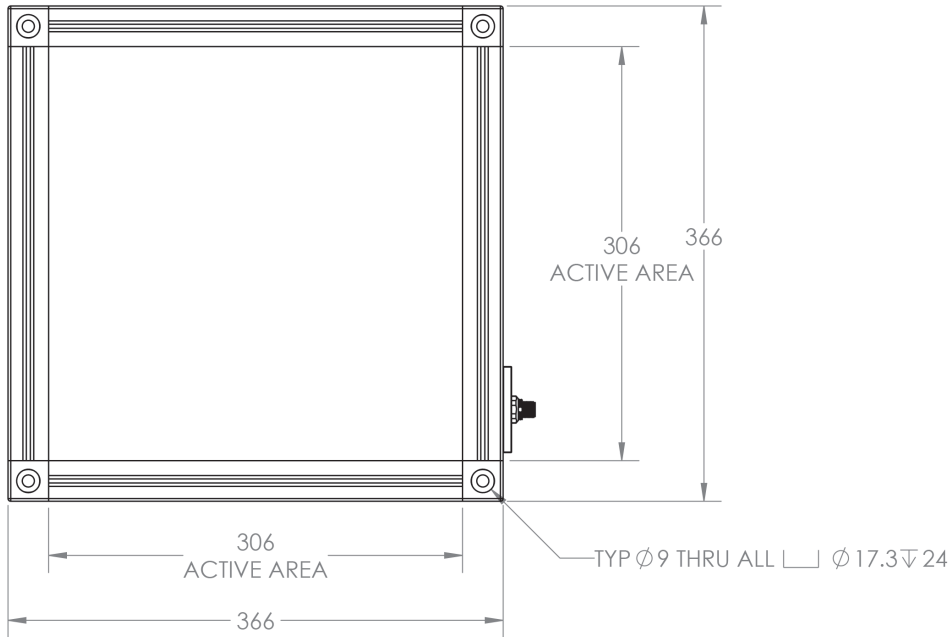
PRODUCT DRAWINGS (SOBL-300x200)

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



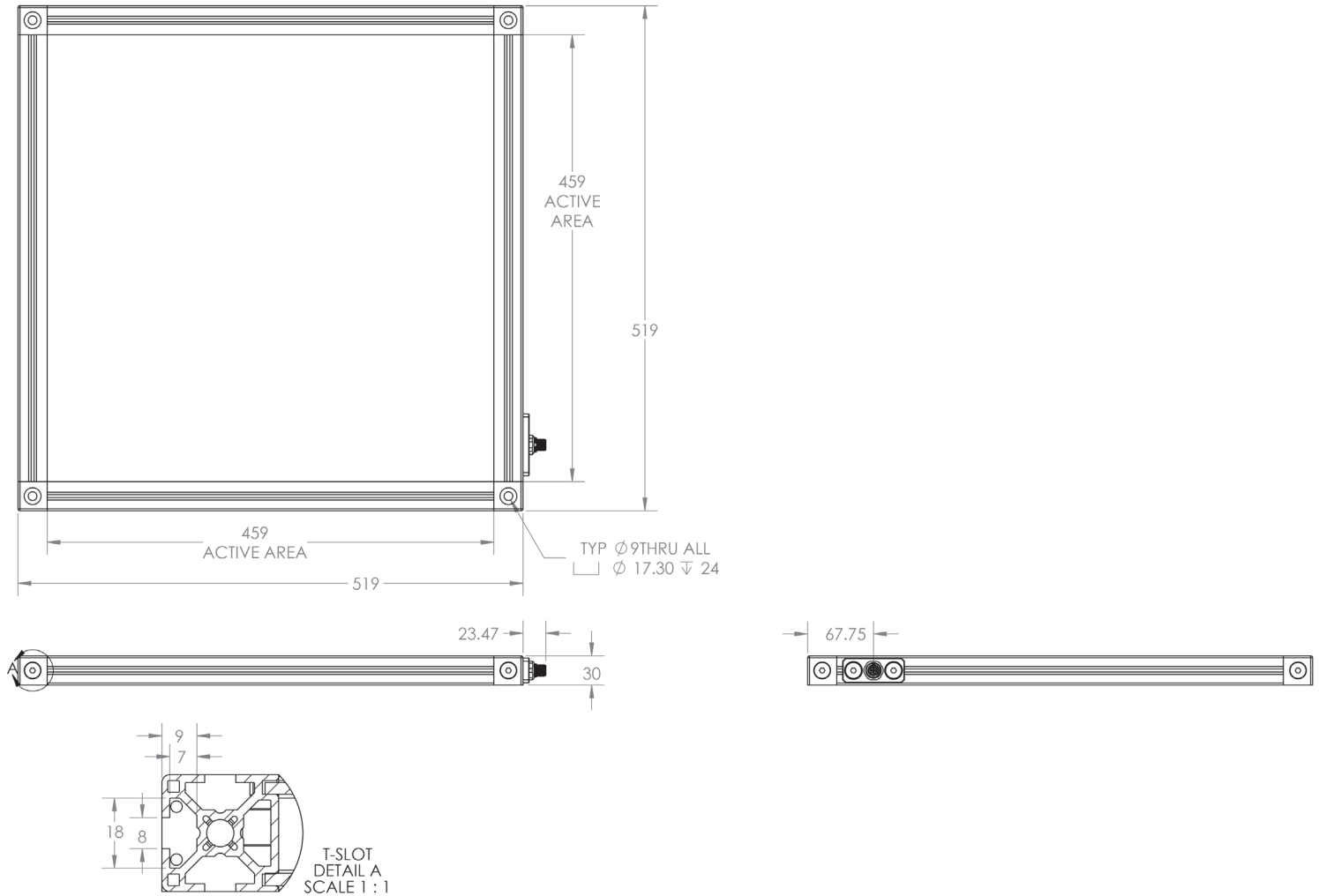
PRODUCT DRAWINGS (SOBL-300x300)

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



PRODUCT DRAWINGS (SOBL-450x450)

CAD files are 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



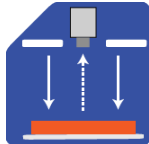
Dark Field



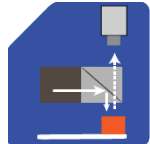
Radial



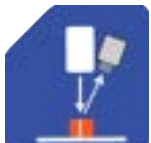
Bright Field



Direct



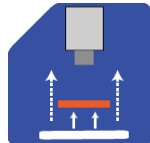
Axial



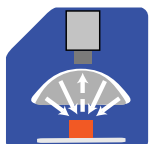
Line



Diffuse Panel



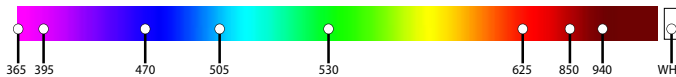
Backlight



Dome
"Light Tent"

COMMON COLOR / WAVELENGTHS LEGEND

Wavelength 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.



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.



ISO 9001:2015 Certified QMS