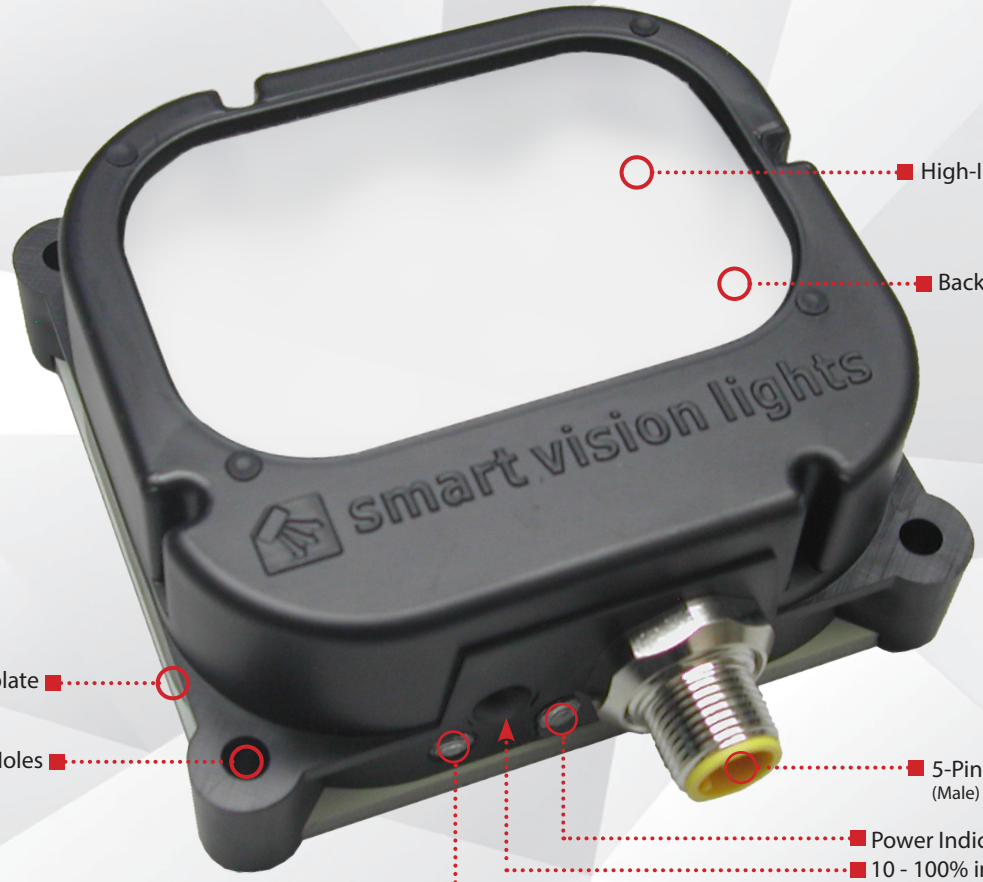
smart vision lights ODSB75 *Brick Light*

OVERDRIVE™ | BACKLIGHT

PRODUCT DATA SHEET



High-Intensity LEDs

Backlight Lens (Diffuser)

Aluminum Backplate

Four Mounting Holes

5-Pin M12 Connector (Male)

Power Indicator LED (Green)

10 - 100% intensity limiting potentiometer

Signal Indicator LED (Yellow)

OverDRIVE

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

PRODUCT HIGHLIGHTS

- ✓ OverDrive™ — Up to five times brighter than a standard SB75 Brick Light
- ✓ 5-pin M12 quick connect
- ✓ Built-in smart driver
- ✓ PNP and NPN trigger signal input
- ✓ Backlight lens (diffuser) is factory installed
- ✓ Intensity adjustable from 10%–100% using built-in potentiometer

Rev. 01/13/2022

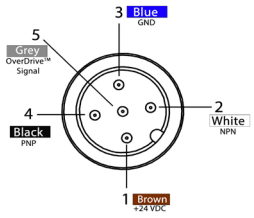
PRODUCT INTRODUCTION

The ODSB75 Brick Light features a smart driver with OverDrive™ strobe mode. The light's diffused lens makes it a viable option for silhouetting objects. The manual potentiometer control allows the intensity to be adjusted from 10%–100%. A user can also adjust the intensity using the 1–10VDC remote analog signal. The ODSB75 has the ability to produce up to 4000 strobes per second at a maximum strobe length of 50 ms when at a 10% maximum duty cycle. Heat is dissipated through the aluminum backplate, allowing the ODSB75 to be run at a high current and great intensity.

PRODUCT SPECIFICATIONS

Electrical Input	24VDC +/–5%
Input Current	Peak 3 A draw during strobe
Input Power	Peak 72 W during strobe
PNP Trigger	2.8 mA @ 4VDC | 8.8 mA @ 12VDC | 17.6 mA @ 24VDC
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. 1 µs | Max. 50 ms
Strobe Frequency	Max 4 kHz or 1 / Duty Cycle as calculated, whichever is less*
Duty Cycle	Max 10%*
Red Indicator LED	ON = Light Rest (LED inactive) | OFF = LED/Light Ready
Green Indicator LED	ON = Power
Intensity Limit	270º turn pot — intensity control of 10%–100%. Turn clockwise to increases intensity.
Analog Intensity	The output is adjustable from 10%–100% of intensity limit by a 1–10 V DC signal.
Connection	5-pin M12 connector
Ambient 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	~155 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)

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.

SAFESTROBE™ TECHNOLOGY

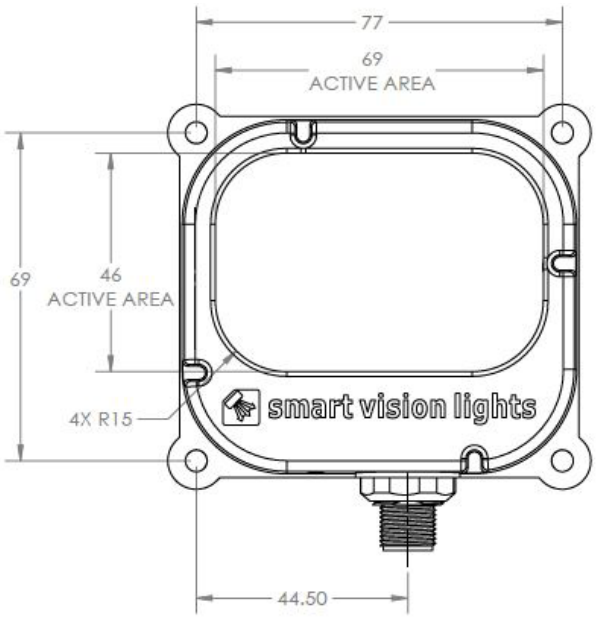
SafeStrobe™ technology applies safe working parameters to ensure high-current LEDs are not damaged when driving them beyond their limits, such as when using maximum strobe time or duty cycle. SafeStrobe™ is especially beneficial when overdriving our high-current LEDs.

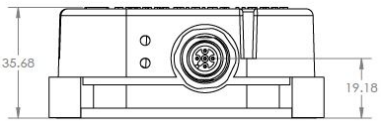
RESOURCE CORNER

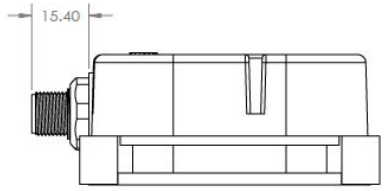
Additional resources, including CAD files, videos, and application examples, are available on our website.

PRODUCT DRAWING

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

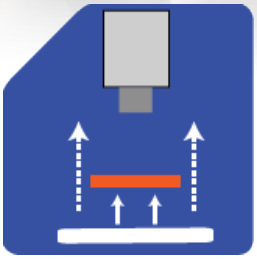






ILLUMINATION

ODBS75 series of Brick Lights works best for:



Direct Lighting

EYE SAFETY

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 eyes. Safe for most applications except prolonged exposure. Applicable for wavelengths 470, 505, 530, and WHI.

PART NUMBER

ODSB75 – □□□

COLOR:

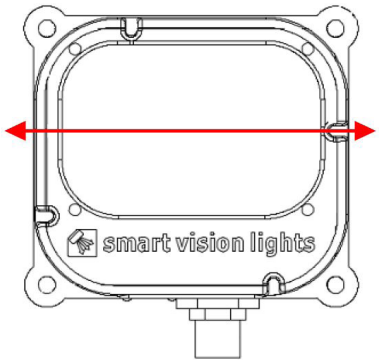
WHI 470 505 530 625 850 940

Additional wavelengths available upon request.

Part Number Example:
ODSB75-625 (ODSB75, 625 Red Wavelength)

OPTICAL PERFORMANCE

Smart Vision Lights recommends the ODSB75 be used at a working distance between 50 mm and 300 mm.

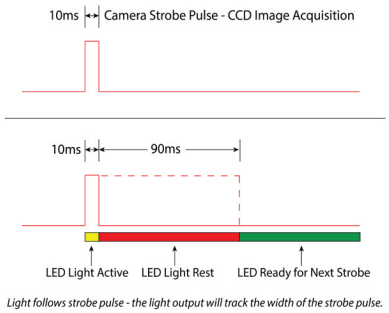


OPTICAL PERFORMANCE FOR THE ODSB75

Rating	Illuminance (Lux)
Average Intensity Rating	32,500
Illuminance measurement taken at surface of ODSB75	

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

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

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)

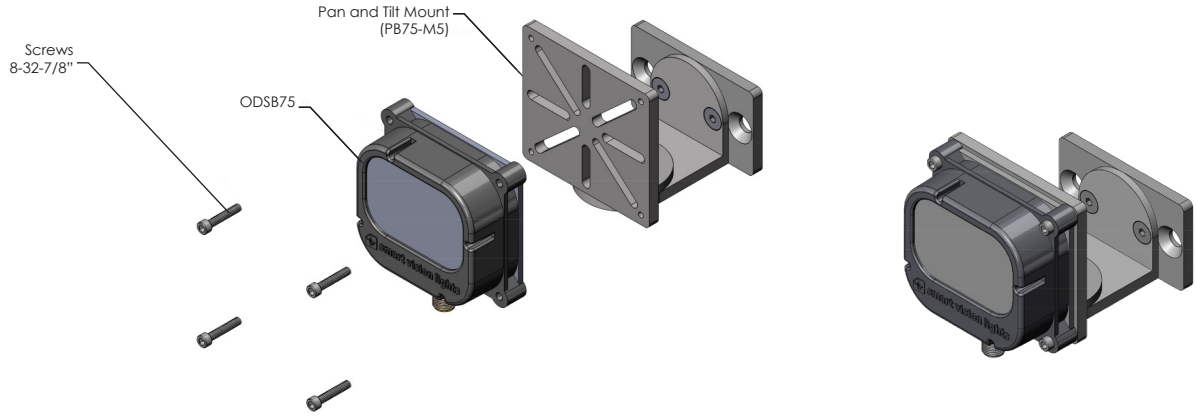
Maximum Duty Cycle for OverDrive™ light is 10% (0.1)

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

MOUNTING

Mounting options on the ODBS75 Series Brick Light include four holes. See Accessories for additional mounting options.

Example of the ODSB75 shown using the Pan and Tilt Mount (**Part Number: PB75-M5).**



ACCESSORIES

Mount

Description	Part Number
Pan and Tilt Mount	PB75-M5

Power Cables

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

Mounting Rails

Length	Part Number
300 mm	LEXT300
600 mm	LEXT600
900 mm	LEXT900
1200 mm	LEXT1200
Custom sizes available	

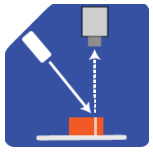
GLOSSARY

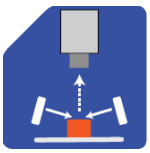
This glossary covers all Smart Vision Lights product families; some content in this section may not apply to this specific light.

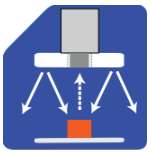
TERMINOLOGY

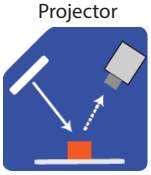
OverDrive™ Light includes an integrated high-current strobe driver for complete LED light control.
Continuous Operation Light stays on continuously.
Multi-Drive™ Combines continuous operation and OverDrive™ strobe (high-current strobe operation) modes into one easy-to-use light.
Built-In Driver The built-in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

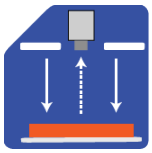
TYPES OF ILLUMINATIONS

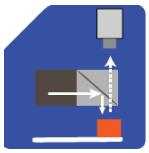

Projector

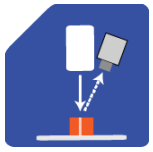

Dark Field

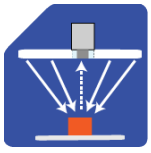

Radial

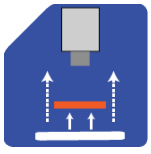

Bright Field


Direct


Axial

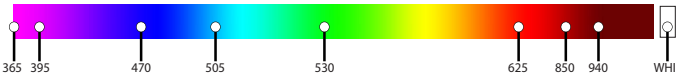

Line


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.