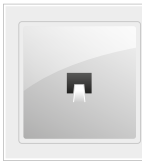
TPL VISION
Active LED solutions



MODULAR M30 SPOTLIGHT
TECHNICAL USER GUIDE

PREAMBLE

This Technical User Guide contains warnings and guidance for correct and safe operation of the product. These instructions must be followed at all times. TPL Vision will not be held responsible for problems caused by using the product contrary to these instructions and the Warranty will be deemed invalid.

UNPACKING

This product is packed at the factory using suitable materials for safe transport. To open the package, do not use any cutting blade to avoid damaging the product(s). Please use the delivered accessories if needed. (Do not use any other products or equivalents to replace the delivered accessories).

In the event of damage occurring during shipping, it must be reported to the carrier at time of delivery (including noting the damage in writing on the delivery documents). It is also your responsibility to notify TPL Vision in writing of the damage within 24 hours of receipt of the package. If these instructions are not followed, TPL Vision reserves the right not to accept requests for return and exchange of damaged products.

RISK CLASS

The applicable Standard EN-62471 classifies LED Lighting into 4 classes according to their degree of hazard severity. The table below summarises the risks associated with our standard products.

Colour	Class	Risk
Green 525 nm, Red 630 nm, IR 850 nm	1	low
White WHI (5700K), Blue 470 nm, UV 365 nm, UV 385 nm, UV 405 nm	2	moderate

TPL Vision can provide **guidance notes to minimise photo-biological risks**, including the nominal minimum operating distance. Please contact TPL Vision through your **usual representative** for this information.

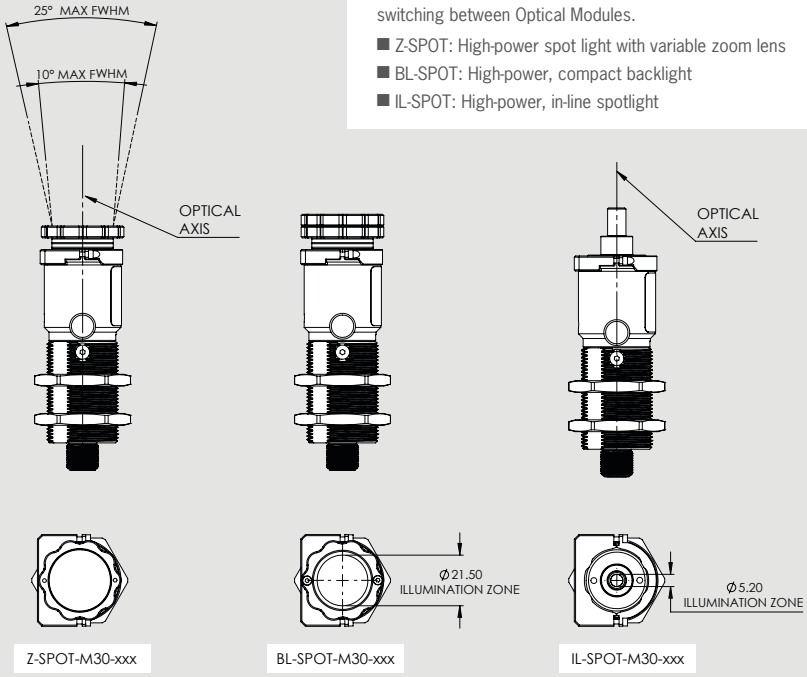
In all cases, TPL Vision recommends the use of **the protection glasses** that are listed in its catalog.

Please be careful with the variable optics on this product. With the minimum beam angle (lens at maximum height) the light is extremely focused. This presents an eye safety issue, particularly with direct emissions from a short working distance.

OVERVIEW

Product function and lighting effect can be changed by switching between Optical Modules.

- Z-SPOT: High-power spot light with variable zoom lens
- BL-SPOT: High-power, compact backlight
- IL-SPOT: High-power, in-line spotlight

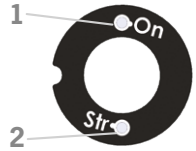


Z-SPOT-M30-xxx | BL-SPOT-M30-xxx | IL-SPOT-M30-xxx

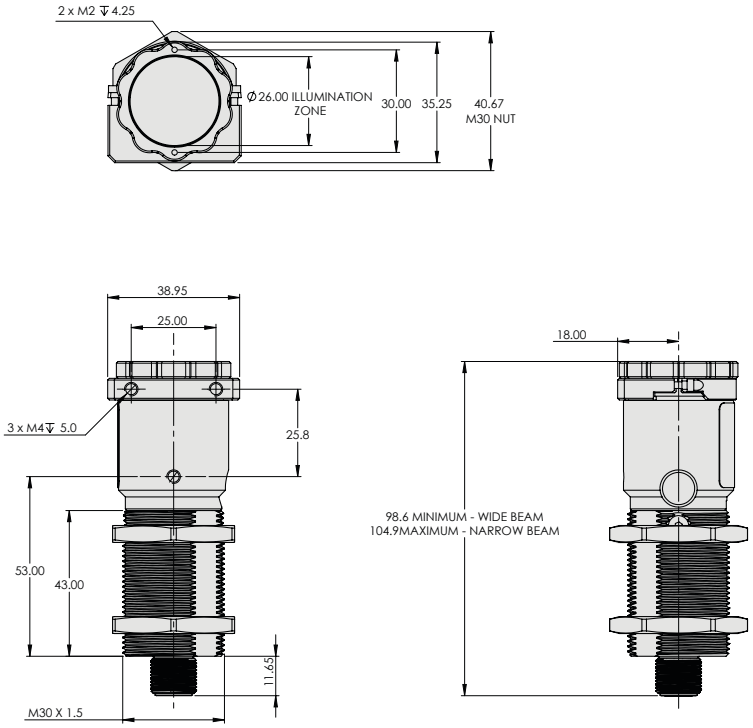
LED INDICATORS

The power supply is equipped with 2 LED indicators :

- **N°1:** indicates that the light is powered but the LEDs are not turned ON with this indicator alone.
- **N°2:** indicates that the LEDs are switched on.

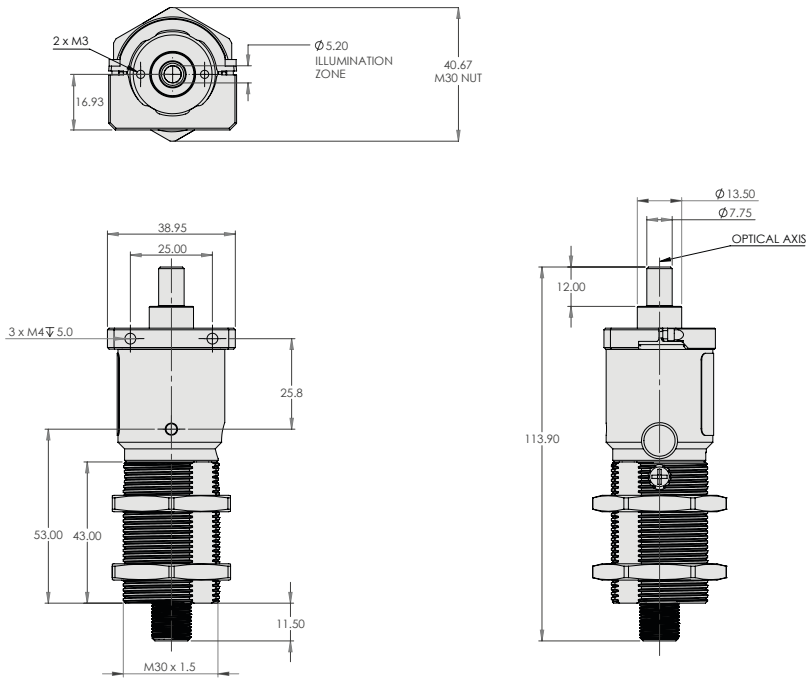


DIMENSIONS: ZOOM SPOTLIGHT



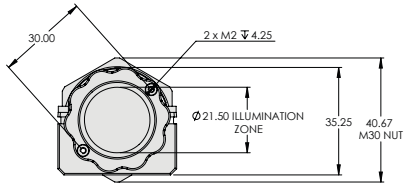
	Max length	Min length	Width
Z-SPOT	104.9 mm	98.6 mm	40.67 mm

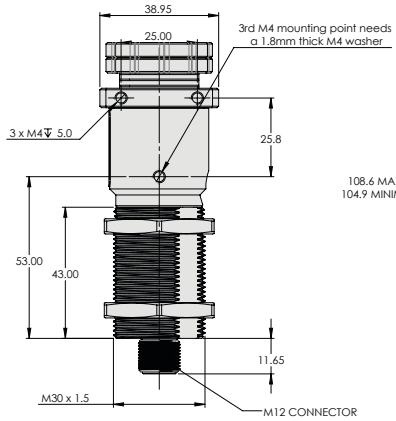
DIMENSIONS: IN-LINE SPOTLIGHT

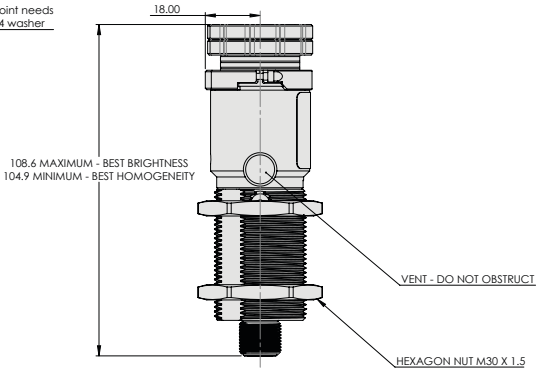


	Length	Width
IL-SPOT	113.9 mm	40.67 mm

DIMENSIONS: BACKLIGHT SPOTLIGHT



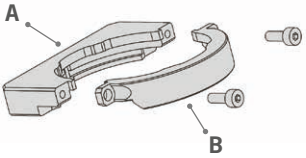




	Max length	Min length	Width
BL-SPOT	108.6 mm	104.9 mm	40.67 mm

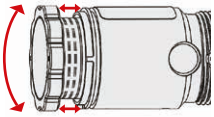
LOCKING RING FOR THE ADJUSTABLE OPTICAL MODULE

NOTE: Rotating the Optical Module requires significant force but should be possible by hand. This is due to the product's robust construction designed to meet the IP67 rating.

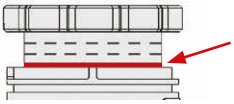


The **MODULAR M30 SPOTLIGHT** comes with a locking ring which enables the user to lock the position of the Optical Module.

The **MODULAR M30 SPOTLIGHT** and the locking ring are delivered within the same package, they need to be assembled.

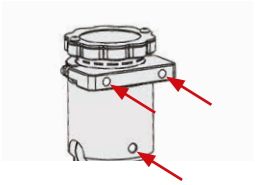


1) Begin by setting the desired working distance of the light by rotating the Optical Module.

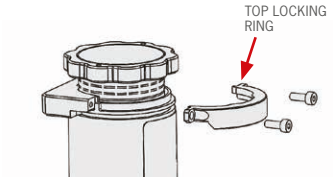


2) Be careful to not rotate the zoom lens past the final distance indication line, unless swapping modules.

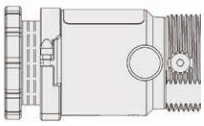
3) To correctly position the locking ring on the MODULAR M30 SPOTLIGHT locate the central key indicated in red and align with notch in locking ring A.



4) Validate the correct orientation of the locking ring by visually checking that all three M4 fastening points are aligned on the same side.



5) Complete the assembly of the locking ring by connecting the remaining fasteners and top locking ring. Tighten the locking ring screw with a 1.5mm Allen key.

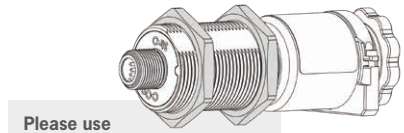


6) This adjustment will only need to be made once. Once the lens has been adjusted and locked using the locking ring, it will be fixed in place. The working distance of the product cannot be altered until manually adjusted.

DO NOT HOLD THE M12 CONNECTOR WHEN ROTATING THE LENS.

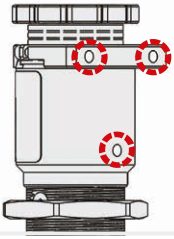
IP67 +40°C -10°C 24V ±10%

FIXING: M30 X 1.5mm NUTS



As part of the setup process, it is imperative to ensure the light is switched off and unplugged for safety and proper installation.

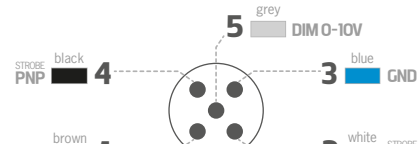
MOUNTING POINTS



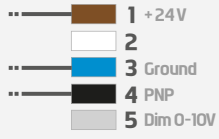
The MODULAR M30 SPOTLIGHT features three M4 mounting points spaced along its body, providing versatile options for securely attaching and mounting the product. For the lower M4 mounting point, a 1.8mm thick M4 washer is required to ensure proper installation and stability.

CONNECTION

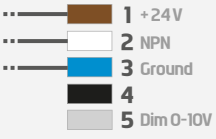
M12 Connector 5 male points



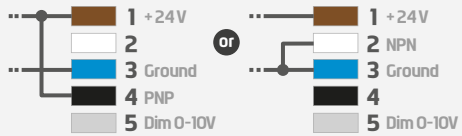
STROBE **PNP** :



STROBE **NPN** :

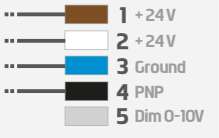


CONTINUOUS MODE :

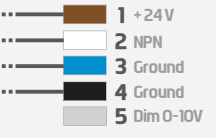


EMC IMMUNITY CONNECTIONS: for greater EMC immunity when using the light under Strobe operation, configure the signal connections as illustrated here. For Dimming, the Pin (5) should be connected to a voltage between 0V and 10V to ensure light output is correctly configured.

STROBE **PNP** :



STROBE **NPN** :



CONTROL

The product is optimised for a lifespan >50kh in a 40°C (104°F) atmosphere.
In strobe mode, the strobing time is directly equivalent to the time during which the strobe entry is activated.

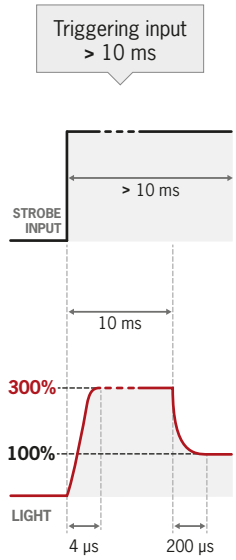
STROBE PNP & NPN:

- **PNP :** from 5 to 24V for 100% ON. From 0 to 2V for 100% OFF.
- **NPN :** less than 1V for 100% ON. Above 1.5V for 100% OFF. Max 20V.

Brightness	D max	t max	f max
30% to 100%	N/A	CW	N/A
100% to 300%	20%	10 ms	700Hz

CW : Continuous Working
D : Duty Cycle
t : pulse duration
f : frequency

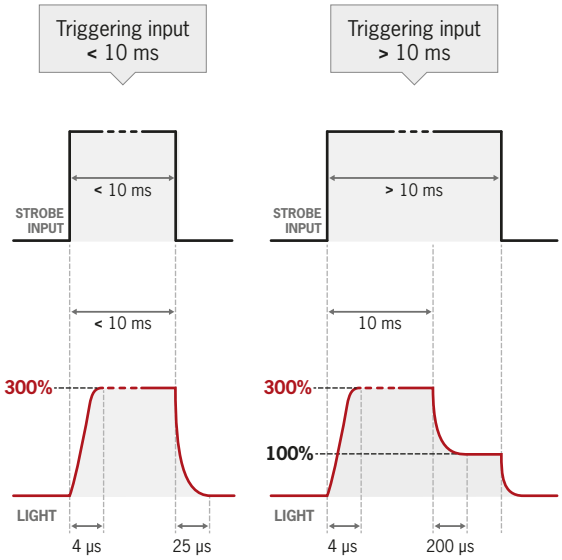
CONTINUOUS OPERATION



LEDs are supplied with maximum current (300%).

After 10ms, the embedded control brings the LEDs down to a continuous operating brightness (100%).

STROBE OPERATION



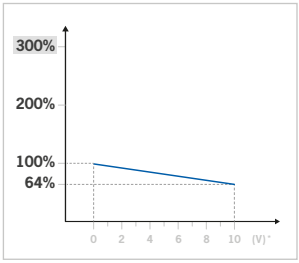
After 10ms, LED are automatically at 100% level.

POWER SUPPLY

	MODULAR M30 SPOTLIGHT
Consumption CW mode	6W
Consumption Strobe mode*	13.2W
Min. functioning Voltage	20V in the light input
Normal functioning Voltage	24V in the light input (±10%)
Max. functioning Voltage	27V in the light input
Max. consumption Strobe and Dimming signal	10mA

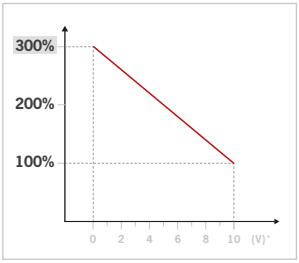
*Strobed with 20% duty cycle – this is the peak consumption. You must use a power supply with this rating.

DIMMING 0-10V ON PIN 5



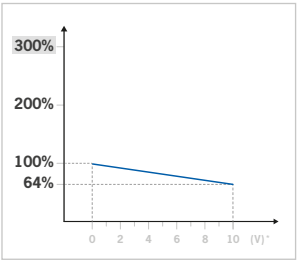
CONTINUOUS WORKING

Dimming during continuous working (CW) operation



STROBE OVERDRIVE ≤10ms ON TIME

Dimming during strobe mode ≤10ms maximum on time



STROBE >10ms ON TIME

Dimming during strobe mode after LEDs are ON for more than 10ms

* Voltage applied to PIN 5.

OPERATING CONDITIONS

-10° to +40°C (14° to +104°F) / 80% of humidity without condensation.
No thermal shock (max temperature variation: 10°C (18°F) in 24h). Not for outdoor use.

ADDITIONAL ACCESSORIES

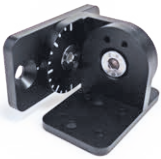
Polariser

Secure the polarizer attachment in place using the two supplied M2 screws

Ref: TPL-POL-Z-SPOT**

** Not for use with UV 405nm, 385nm and 365nm options.

Mounting Accessory



Ref: SWIVEL-MOUNT-T ***

*** Requires TPL-MOUNT-Z-SPOT or TPL-MOUNT-M30 for compatibility.

Mounting Plate

M4 screws supplied, to securely attach the mounting plate to the body of the Modular M30 Spotlight.

Ref: TPL-MOUNT-Z-SPOT

Extra M30 Nuts

Ref: TPL-NUT-M30

ALSO AVAILABLE:

Mounting Accessory

Ref: TPL-MOUNT-M30

Mounting Accessory

Ref: TPL-MOUNT-M30-ROD

M12 5 pins cables

2 meters: C-M12-5P-2M
5 meters: C-M12-5P-5M
10 meters: C-M12-5P-10M

USER SAFETY

Do not modify or dismantle all or part of the product.

Respect the power supply voltages and the connection terminals.

Ensure power supply is switched off whilst connecting product and turn on only once product is fully connected. Failure to do this may damage the product and invalidate the Warranty

Do not stare at the lighting source directly.

Follow advice below for installation to minimise operator exposure to the light source.

INSTALLATION GUIDANCE:

- Forbid or limit the direct access to the lighting source (exposure into the radiation axis).
- Establish a security perimeter to prevent the operators from approaching the lighting source beyond the recommendations of the manufacturer.
- If the workstation permits it, introduce a filter that will stop the lighting radiation under a fixed or adjustable frame between the source and the operator. When these measures cannot be implemented, supply the operators with glasses (class 4) available from TPL Vision.

It is the responsibility of the persons installing this product to ensure that all means possible (such as those stated above) have been implemented to reduce exposure of the machine operators to the light emitted from this product.

High ambient temperatures and insufficient heat dissipation can lead to hot housing surfaces. Do not touch the light during operation. Keep a minimum distance of 20 mm between the light and thermally insulating surfaces or mount the light on a thermally conductive surface.

EQUIPMENT MAINTENANCE

CLEANING (when the product is switched off)

Please use a soft and dry cloth. Do not use any abrasive material. Do not use any cleaning solvent or aggressive chemical product. TPL Vision recommends to use isopropyl alcohol.

Ref.UG-040901-B2, 2025/09 edition.

Features and presentations liable to changes without notice.

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Active LED solutions

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