TPL VISION
Active LED solutions

BLACK & LIGHT (BNL) STANDARD & OVERDRIVE
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.

IP40 +40°C -10°C 24V ±10%

UNPACKING

Products are packed in our factory, using suitable materials for a safe transport through the usual means of transportation, in France and internationally. However, a damaged package must be reported to the carrier on delivery. Hand-written reservations must be indicated on the delivery order. Moreover, please send a letter or an email to TPL Vision as soon as possible (up to 24 hours after the delivery). If the transportation damage has not been stipulated on the delivery order and reported to TPL Vision in time, the package will not be taken back nor exchanged. 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).

RISK CLASS

The EN-62471 norm about lighting fluxes enables the classification of led lightings in 4 distinct groups, according to their hazardousness degree. Please find below an indicative table, recapitulating the classes of risk for our standard products.

Colour	Class	Risk
White WHI, Green 525 nm, Red 630 nm	0	none
Blue 470 nm, IR 850 nm	1	low

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

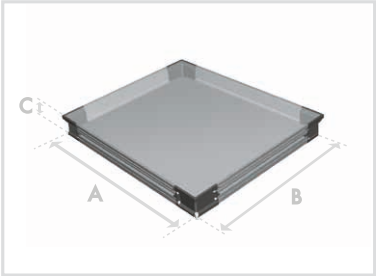
For more information about photobiological risks, do not hesitate to contact us.

TPL Vision can provide guidance notes about the **nominal distance to minimize eye risks**.

BEWARE to the infrared light, invisible to the eyes.
To know if the light is on, please refer to the LED indicators.

DIMENSIONS

Length x Width (mm)	Height (mm)
A x B	C
Min : 200x200 ; Max: 900x900 or 1900x400	45

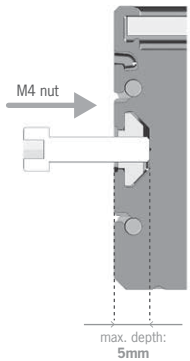


- **Useful surface:** A x B
- **Max. useful surface:** 0.88 m2
- **Max. useful perimeter:** 4.5 m
- **Total surface:** (A + (4mm x 2)) x (B + (4mm x 2))
  (connector excluded)

FIXING

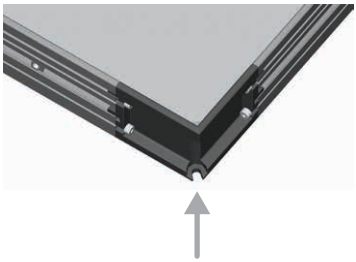
During the set up, the light has to be switched off and unplugged. Please use the fixing groove or holes designed for that purpose. We recommend the using of nuts (supplied) in the groove or M4 screws (not supplied) with a tightening torque from 0.5 to 1.5 Nm. We also recommend the use of a threadlocker (not supplied) to avoid any risk of loosening.

FIXING ON THE LENGTH (groove)



(4 M4 nuts – supplied)

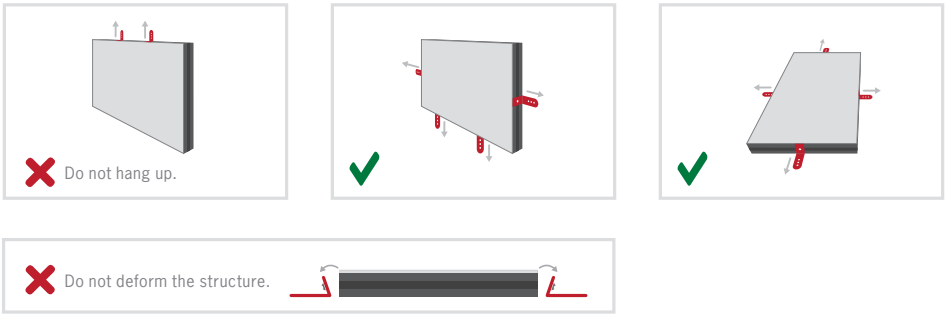
FIXING ON THE CORNER



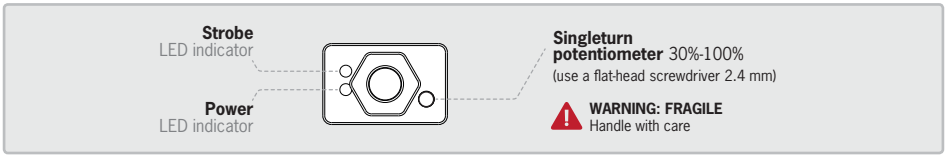
(CHC screw M4x20 – not supplied)

IP40 +40°C -10°C 24V ±10%

BE CAREFUL WHEN USING ANGLE BRACKETS (TPL Vision ref: TPL-MOUNT-HPB-SQUARE1).



LED INDICATORS & POTENTIOMETER



OVERDRIVE: in continuous mode, set the potentiometer at the minimum (30%).

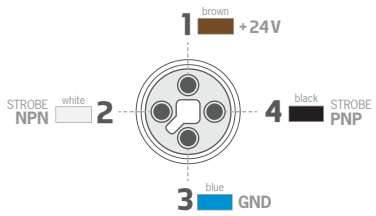
WIRING

STANDARD VERSION		OVERDRIVE VERSION	
SURFACE ≤ 0.5M² : 1 wiring	SURFACE > 0.5M² : 2 wirings	SURFACE ≤ 0.25M² : 1 wiring	0.25M² < SURFACE < 0.88M² : 2 wirings
M12 connector	M12 connector	M12 connector	M12 connector
or	and	or	and
Cable	Cable	Cable	Cable

CONNECTION

M12 Connector 4 male points

POWER CONNECTOR - T CODING



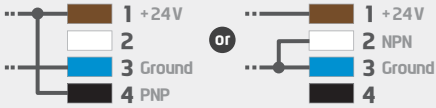
STROBE mode :

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

STROBE PNP :

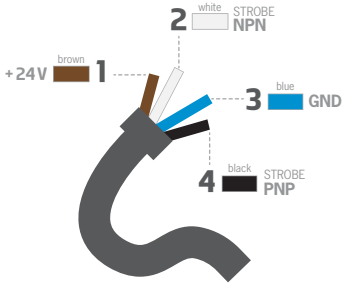
STROBE NPN :

CONTINUOUS MODE :



Voltage drop for Connector M12 + wire 10 meters: (Minimum Voltage at the product input: 20VDC)	1.15V @ 5A	2.3V @ 10A	3.5V @ 15A	4.6V @ 20A	MAX 20A

Cable 4 wires



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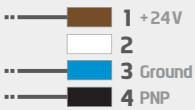
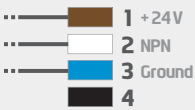
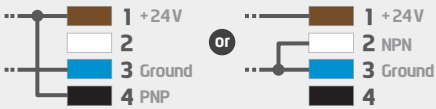
STROBE PNP :



STROBE NPN :



CONTINUOUS MODE :



Voltage drop for Cable 10 meters: (Minimum Voltage at the product input: 20VDC)	1.15V @ 5A	2.3V @ 10A	3.5V @ 15A	4.6V @ 20A	MAX 20A

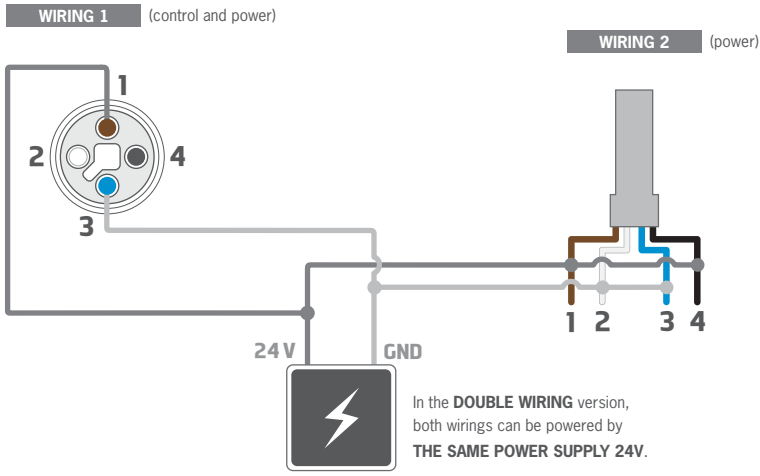
OVERDRIVE: in continuous mode, set the potentiometer at the minimum (30%).

IP40 +40°C -10°C 24V ±10%

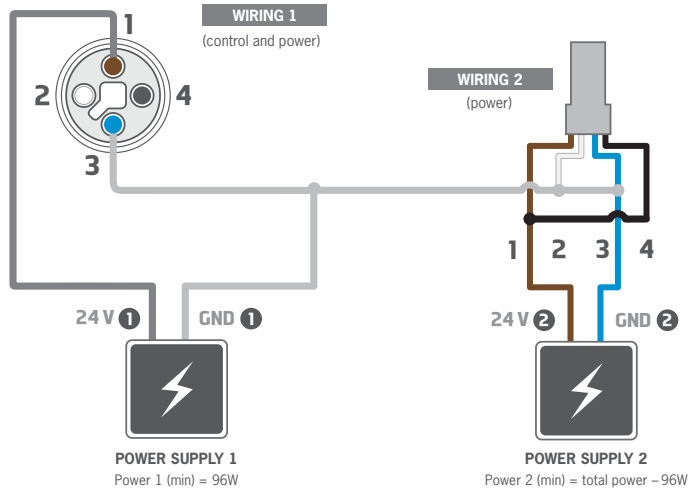
TECHNICAL INFORMATION

FEATURES	BNL	BNL Overdrive
Consumption	1,32W par 25cm² in peak and on average	3W/25cm² in peak max 0,43W/25cm² max on average (3ms@10%)
Min. functioning Voltage	20V in the light input	
Normal functioning Voltage	24V in the light input (±10%)	
Max. functioning Voltage	30V in the light input	
Max. consumption Strobe signal	5mA	
Operating temperature	-10° to +40°C / 80% of humidity without condensation No thermal shock (max temperature variation: 10°C in 24h)	

Double Wiring Version Wiring recommendation



Double Wiring Version using 2 supplies recommendation (for >0.25m² products only)



POTENTIOMETER SETTING

STANDARD VERSION:

- Lowest level of the potentiometer: 30% of the power.
- Highest level of the potentiometer: 100% of the power.

OVERDRIVE VERSION:

When the product is delivered, the potentiometer is set at 30%, and the product can be used in continuous mode. To use it in Overdrive (lighting power x3 when the potentiometer is set at 100%), you must **absolutely respect** a maximum lighting time of 3ms and a maximum duty cycle of 10%.

OPERATING CONDITIONS

Not for outdoor use.

USER SECURITY

Please respect the power supply voltages and the connection terminals.
Do not modify or dismantle all or part of the product.
Do not connect or clean when power is on.
Do not watch the lighting source directly, and follow the advice below :

- If the workstation enables it, interpose a filter that will stop the lighting radiation under fixed or adjustable frame between the source and the operator.
- When these measures cannot be implemented, supply the operators with glasses (class 4) available for sale at TPL Vision, or with a dedicated protective mask.
- Forbid or limit the direct access to the lighting source (exposure into the radiation axis).
- Establish a security perimeter so as to prevent the operators from approaching the lighting source beyond the recommendations of the manufacturer, where eye irritation is concerned.
- Ensure that the chosen means properly reduce the exposure level (e.g. features of screens or glasses to be chosen, according to the wavelengths that the operators are exposed to).

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.

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TPL VISION
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