TPL VISION
Active LED solutions

ESSENTIAL EBAR+ EXTERNAL CONTROL
USER GUIDE

PREAMBLE

This notice includes all the advice and warnings that enables a correct set up and a safe use of the product. TPL Vision can not be responsible for the bad use of the notice. If so, TPL Vision cancels the guarantee's effects.

IP65 +40°C -10°C

DO NOT CONNECT TO 24VDC.
YOU NEED A CONTROL CURRENT DRIVE !

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
Green 525 nm, Red 630 nm	0	none
White WHI, 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 calculation notes about **the nominal distance of eye risks** (security distance).

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

NOTE Optical Safety Risk Assessments have been carried out assuming safe operation of the device within the defined thermal limits described in this document. As this is an unrestricted device, any operation beyond the limits defined in this document are at the users risk.

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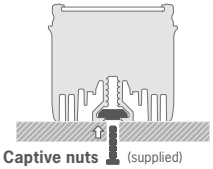
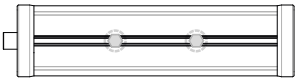
DIMENSIONS

	Length (mm)	Height (mm)	Width (mm)
	A	B	C
EBAR+ 125	158	45	47.6
EBAR+ 250	283	45	47.6
EBAR+ 375	408	45	47.6
EBAR+ 500	533	45	47.6
EBAR+ 625	658	45	47.6
EBAR+ 750	783	45	47.6
EBAR+ 875	909	45	47.6
EBAR+ 1000	1034	45	47.6

* Total length, without connector.

FIXING

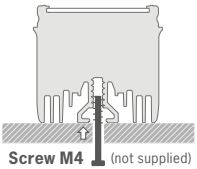




- Length (Lg) < 500 mm: **2** captive nuts M4
- 500 mm ≤ Lg < 1000 mm: **4** captive nuts M4
- Length (Lg) = 1000 mm: **6** captive nuts M4

Please use all the captive nuts. **NEVER REMOVE THEM FROM THE BAR.**

During the set up, the light has to be switched off and unplugged. Please use M4 screws and insert them in the captive nuts located in the back of the light. The light will be better fixed if you spread the attachment points symmetrically along the bar.



You can also use M4 screws (not supplied) fastened directly into Aluminium profile with a tightening torque from 0.5 to 1.5 Nm. We also recommend the use of a thread-locker (not supplied) to avoid any risk of loosening.

LED INDICATORS

ON : LED indicator **LED ON**

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WIRING

Power connector : 12A max per contact.

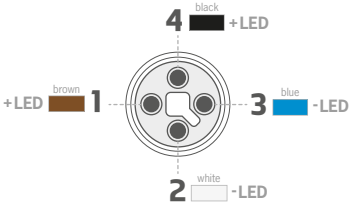
Front view

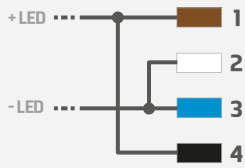
Top view

Adapted cables : cable M12 female 4 points high power **T-coding*** (ref. C-M12-4P-T-2M).
BEWARE: new type of cable for more power, not compliant with the standard M12 wires 4 points.

CONNECTION

M12 Connector 4 male points - T Coding





Connect the brown and the black wires together
and the white and the blue wires together.

VOLTAGE DROP

Dimensions	125	250	375	500	625	750	875	1000
Max voltage drop in the bar (V) under max current	0.01	0.04	0.09	0.17	0.26	0.38	0.51	0.67
Power supply cable : 4x1,5² max length for acceptable voltage drop (m)*	52	25	16	12	9	7	5	4

* For longer power supply cable, increase the section of the copper wire.

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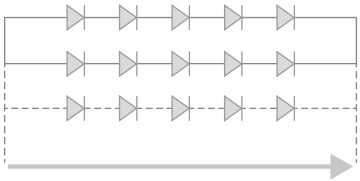
LED CONNECTION IN THE PRODUCT



Row length: 125 mm = 5 leds

The LED are connected in series (row of 5 LED). All rows of 5 LED are then connected in parallel.

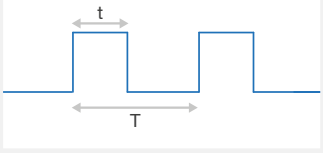
LED FEATURES

Voltage at the LED terminals according to current and colours :

	Red	Infrared	Blue & White	Green
Current «I» /LED	**Voltage «Vf» (±20%)/LED**	**Voltage «Vf» (±20%)/LED**	**Voltage «Vf» (±20%)/LED**	**Voltage «Vf» (±20%)/LED**
CW up to 350 mA	2.15	2.85	3.0	2.7
Limit: 2500 mA	3.73	3.7	4.45	4.1

	UV 405	UV 385	UV 365
Current «I» /LED	**Voltage «Vf» (±20%)/LED**	**Voltage «Vf» (±20%)/LED**	**Voltage «Vf» (±20%)/LED**
CW up to 350mA	3.7	3.6	3.8
Limit: 1500 mA	4.05	3.9	4.25

Current «I» /LED	Duty cycle «D» max (%)	Pulse time «t» max
Up to 350 mA	100	infinite
500 mA	75	30s
700 mA	50	5s
1050 mA	30	50ms
1500 mA	10	10ms
2000 mA*	5	1.5ms
2500 mA*	1	100µs



$$D \text{ (duty cycle)} = \frac{t \text{ (time)}}{T \text{ (period)}}$$

Min current: 100mA. **LED rising time:** 400 nanoseconds (0.4µs).
Voltage to keep at the product input (entry of the cable): Vf x 5 + 2.5VDC.

*Not for UV.

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EXAMPLE OF CURRENT CONTROL DIMENSIONING

Product dimension: 875mm – red light.
LED number: 35 LED → 7 rows of 5 LED.

Max admissible current: 875 = 7 x 2.5A → 17.5A

If you do not require the maximum current from the lighting device for your application, we would advice lowering the current limit defined in the software for the TPL-Control interface, or alternative current controller.

OPERATING CONDITIONS

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

USER SECURITY

Do 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.
- 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, as for eye irritation is concerned.
- In any case, ensure that the chosen means properly reduce the exposition quantities (features of screens or glasses to be chosen, according to the wavelengths that the operators are exposed to).

WARRANTY: for products supplied without an embedded current control drive, the 3-year warranty covers manufacturing defects only. Damage resulting from operation outside the product datasheet specifications (incl. overcurrent, incorrect voltage, or reverse polarity) is excluded. Compliance with datasheet electrical specifications is the customer's responsibility.

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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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Features and presentations liable to changes without notice.

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