

MEDIUM MBACK+ OVERDRIVE

DIFFUSE AND HOMOGENEOUS BACKLIGHT

▷ QUALITY CONTROL WITH CAMERA

▷ MACHINE VISION SYSTEM

▷ HIGH POWERFUL LED

▷ ULTRA-THIN BORDERS

▷ HOMOGENEOUS LIGHTING SYSTEM

POWERFUL LARGE BACKLIGHT, HOMOGENEOUS AND EASY TO INCORPORATE



The **Medium MBACK+ Overdrive** is a backlight both powerful and very diffuse, dedicated to many machine vision applications. Thanks to the high powerful LED inside, it creates intense luminous flux, that helps cameras to see the workpieces shapes thanks to the shadow puppet effects. You can even decrease the light power when necessary. It works in continuous and strobe mode, with very short rising and falling times: 25 µs and 15 µs.

Equipped with very thin edges, the Medium MBACK+ uniformly illuminates from the whole useful surface, included from the edges. No hot spot to notice ! The connector can be placed on any side

of the Medium MBACK+, which can then be set up on any kind of conveyor belts. At the basis of the connector, 2 LED show if the product is powered and if the strobe mode is on. The Medium MBACK+ is perfectly adapted to quality control tasks, such as: presence/absence, edge defects, material lack. It can also be used as a direct diffuse lighting solution, to inspect shiny workpieces.

The Medium MBACK+ is available in various wavelengths, and also in various dimensions. For specific sizes, that don't belong to the standard range, you can call TPL Vision for customized products.

OVERDRIVE VERSION

Equipped with specific electronics, it gives the opportunity for users to overdrive on their own the lighting power. The OVERDRIVE version is dedicated to specialists who want to customize the luminous flux very precisely, so as to get the most reliable results.

AVAILABLE COLOURS:



AVAILABLE DIMENSIONS

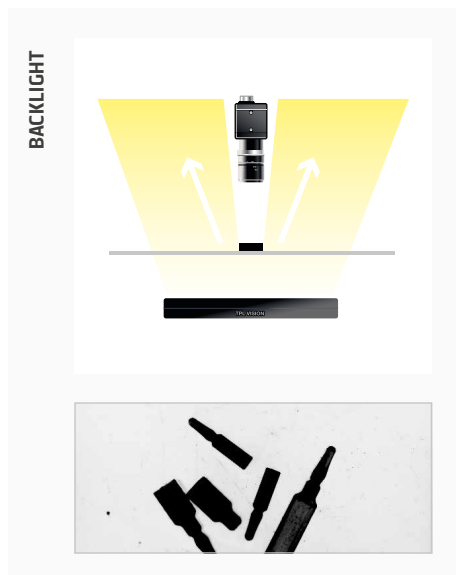
		MBACK+ OVERDRIVE																	
WIDTH \ LENGTH		200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900
200		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
300			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
500					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
600						✓	✓	✓	✓	✓	✓	✓	✓						
700							✓	✓	✓	✓	✓	✓							
800								✓	✓	✓	✓								
900									✓										

LIGHTING POWER

**MBACK+
OVERDRIVE**

61 KLux

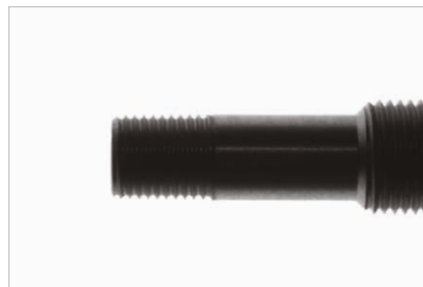
Lighting power measured on the diffusing plate – White LED colour.



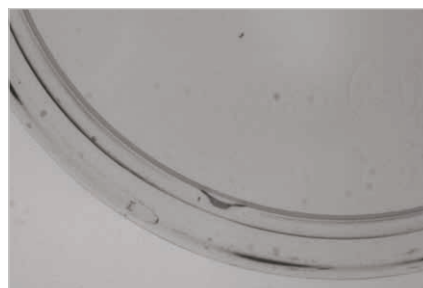
EXAMPLES

For particular cases, TPL Vision can develop specific lights (see images below).

Standard light



Special light



TECHNICAL SPECIFICATIONS

MBACK+ OVERDRIVE

Electronics

Power supply	24 VDC \pm 10%	
Functioning mode	Continuous or strobe	
Strobe input	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.	
Overdrive	61 KLux (Standard :32 Klux)	
Strobe Conditions (On time, duty cycle)	3ms @ 10% at max power	
Dimming	Potentiometer 30-100%	
Maximum rising time	25 μ s	
Maximum falling time	15 μ s	
Wiring	Surface \leq 0.25m ² : 1 connector M12 T-Power 12A 4 poles or 1 cable 4x1.5 ²	0.25m ² < Surface < 0.88m ² : 1 connector M12 T-Power 12A 4 poles and 1 cable 4x1.5 ²
Power supply cable(s) max length	Wire M12 : 10m (not supplied) ; Cable : 10m	
Max consumption	3W/25cm ² in peak max 0.43W/25cm ² max on average (3ms@10%)	

Optics

Colour	White, Red, Green, Blue, Infrared
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Mechanics

Thickness	45mm
Surface	Mini 200x200mm – Max surface 0.88m ² Max length 1.9m - Max perimeter 4.5m
Weight	23.2 Kg/m ² \pm 15%
Body materials	Aluminum and loaded ABS
Diffuser	White PMMA
Fixing	4 M4 nuts (supplied) to insert in the groove or 4 M4x20 screws (not supplied)

Environment

Operating temperature	-10° to +40°C / 80% of humidity without condensation / No thermal shock (max temperature variation: 10°C in 24h)
Storage temperature	-20° to +60°C / 80% of humidity without condensation / No thermal shock (max temperature variation: 10°C in 24h)
IP protection	IP 50

Information

Labels	RoHS / CE / UKCA / WEEE
Country of Origin	Made in France
Tariff Number	94054990

TPL VISION IS EXTREMELY CAREFUL ABOUT BIN SORTING IN THE SELECTION OF LEDS FOR THEIR PRODUCTS.

The human eye is particularly sensitive to color variations. Two products of the same color may appear different in the eyes of the user. However, **the maximum variation of the wavelength DOES NOT EXCEED 10 NM.**

Here are the following bandpass camera filters we recommend:

- White LEDs: no filter required
- Infrared LEDs: LP 830 (<http://midopt.com/filters/lp830/>)
- Red LEDs: BP 635 (<http://midopt.com/filters/bp635/>)
- Cyan LEDs: BP 505 (<http://midopt.com/filters/bp505/>)

We advise using bandpass filters from MidOpt: www.midopt.com

HOW TO BUILD YOUR REFERENCE





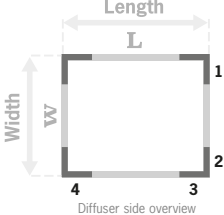
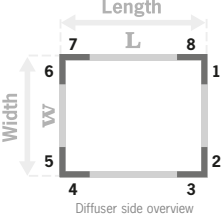
MBACK	VERSION	L LENGTH (CM)	W WIDTH (CM)	COLOUR	
	O OVERDRIVE	20	20	WHI	<input type="checkbox"/>
		30	30	630	<input type="checkbox"/>
		40	40	525	<input type="checkbox"/>
		50	50	470	<input type="checkbox"/>
		60	60	850	<input type="checkbox"/>
		70	70		
		80	80		
		90	90		
		100			
		110			
		120			
		130			
		140			
		150			
		160			
		170			
		180			
		190			

The first figure shall always be the biggest one.

WIRING 1	
TYPE 1	POSITION
M CONNECTOR M12	1
A CABLE 2.5 m	2
B CABLE 5 m	3
C CABLE 10 m	4

WIRING 2	
TYPE 2	POSITION
A CABLE 2.5 m	1
B CABLE 5 m	2
C CABLE 10 m	3
	4
	5
	6
	7
	8

The position of wiring 2 must be different from the position of wiring 1. It must be on a different corner and cannot be diagonally across the product, it must be on the same side profile.

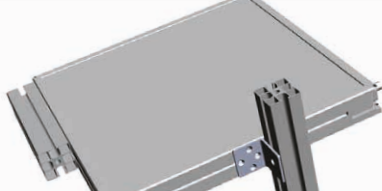
WIRING		POSITION CHOICE	
SURFACE ≤ 0.25M² 1 wiring	0.25M² < SURFACE < 0.88M² 2 wirings	1 WIRING	2 WIRINGS
 Connector M12 T-Power OR  Cable 2.50m OR 5m OR 10m	 Connector M12 T-Power +  Cable 2.50m OR 5m OR 10m	 <p>Diffuser side overview</p>	 <p>Diffuser side overview</p>

REFERENCE EXAMPLES:

MBACK+ OVERDRIVE 80x50 cm Red LED Connector M12 T-Power position n°1 Cable 2.50 meters position n°3 → **MBACK-O-8050-630-M1A3**

RELATED PRODUCTS

M12 female T-POWER 4 pins cable	
	
2 meters	Ref: C-M12-4P-T-2M
5 meters	Ref: C-M12-4P-T-5M
10 meters	Ref: C-M12-4P-T-10M

Light mounting bracket

Ref: TPL-MOUNT-HPB-SQUARE1

Safety glasses

Ref: EYE-PROTECT

Features and presentations liable to modifications without prior notice. Ref.TS-020402-A5, 2025/02 Edition.

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Other available documents :

- PDF, DWG, DXF, IGS, STEP & X_Y DRAWINGS
- USER'S GUIDE

MBACK+ Overdrive

