

▷ QUALITY CONTROL WITH CAMERA ▷ MACHINE VISION SYSTEM ▷ HIGH POWERFUL LED ▷ ULTRA-THIN BORDERS ▷ HOMOGENEOUS LIGHTING SYSTEM

## HIGH POWER BACKLIGHT, HOMOGENEOUS AND EASY TO INTEGRATE

**30% BRIGHTNESS INCREASE** ✓  
in continuous working\*

**STANDARD M12 5 PIN CONNECTOR** ✓  
with remote dimming control

**CUSTOM SIZES** available ✓  
**1 CM STEPS**

\* When compared to equivalent MBACK+ (standard version)

**STANDARD M12 5 PIN CONNECTOR**

5 grey DIM 0-10V  
4 black Strobe PNP  
3 blue GND  
2 white Strobe NPN  
1 brown +24V

**HPBACK SIZE**

From **200x200 mm**  
to **900x900 mm**  
or **1900x400 mm**

**LIGHTING METHOD**

Brightness level: up to **45 kLux\***

\* in continuous working, measured at the surface with the WHITE LED version of the product.

The **HPBACK** is a **high-power backlight solution** for Machine Vision applications. This product is the **next evolution** of TPL Vision's high running MBACK+ product, carrying **significant product enhancements**. Including: **30% brightness increase\*** in continuous working, **new connector** making it easier and more cost effective to integrate, **improved rising and falling times of 15µs and 10µs** respectively and **custom sizes available in 1cm steps**.

The robust Aluminium casing of the product can be manufactured to sizes from **200 x 200mm** up to **900 x 900mm** or **1900 x 400mm**. This range topping backlight solution is perfect for **high speed backlighting applications** that require **intense luminous flux**. Available in Red, White and Infrared, all with extremely **high brightness** and **surface homogeneity of up to 85%**.

(\*When compared to equivalent sizes Standard MBACK+)

This is the solution for all **backlighting applications** and **quality control** tasks, such as: presence/absence, analysing edge defects, liquid fill level measurement and silhouetting.

The **HPBACK** has exceptionally **small borders, 4mm thick**, making the useful illumination area of the light **easy to integrate** into your system. The LEDs are mounted with **highly efficient lenses**, engineered to distribute the **highest brightness** and **uniformity balance** available for Machine Vision backlights.

As with all TPL Vision products, the HPBACK comes with **current control integrated** and are **guaranteed for 3 years**.

## DIMENSIONS

### GUIDE: SIZE OF THE FIELD OF VIEW ≈ SIZE OF THE BACKLIGHT

		LENGTH (cm)																	
		20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190
WIDTH (cm)	20	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
	30	White	Orange	Orange	Orange	Orange	Orange	Orange	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
	40	White	White	Orange	Orange	Orange	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
	50	White	White	White	Orange	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	White
	60	White	White	White	White	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	White	White	White	White	White
	70	White	White	White	White	White	Blue	Blue	Blue	Blue	Blue	Blue	White	White	White	White	White	White	White
	80	White	White	White	White	White	White	Blue	Blue	Blue	Blue	White	White	White	White	White	White	White	White
	90	White	White	White	White	White	White	White	Blue	White	White	White	White	White	White	White	White	White	White

 **1 connector**

 **1 connector + 1 additional power cable**

**Custom sizes in centimetre steps** available on request anywhere in the **ORANGE** zones.  
For smaller sizes please see **SBACK II**.



# TECHNICAL SPECIFICATIONS

## HPBACK

### Electronics

Power supply	24 VDC $\pm$ 10%
Functioning mode	Continuous or strobed
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	No
Strobe conditions (On time, duty cycle)	No restriction
Dimming	Pin 5 (M12 5Pole Connector): 0-10V = 100-30% Respectively
Maximum rising time	15 $\mu$ s
Maximum falling time	10 $\mu$ s
Control	Connector M12 5 Poles
Connector pin configuration	1: 24VDC / 2: NPN / 3: GND / 4: PNP / 5: DIM 0-10V
Consumption	White: 1.35W per 25cm <sup>2</sup> / Red: 1.41W per 25cm <sup>2</sup> / IR: 1.72W per 25cm <sup>2</sup>

### Optics

Colour	White (6500k), Red (630nm) and Infrared (850nm) – Other colours: please contact us
Brightness level at surface	Up to 45000 lux in continuous working (measured with the WHITE LED version of the product)

### Mechanics

Thickness	45mm
Lighting surface	Minimum: 0.2 x 0.2 m / Maximum Surface: 0.88m <sup>2</sup> / Maximum Length: 1.9m / Maximum Perimeter: 4.6m
Weight	23.2 Kg/m <sup>2</sup> $\pm$ 15%
Materials	Aluminum and loaded ABS
Diffuser	White PMMA
Fixing	4 M4 nuts (supplied) to insert in the groove or 4 M4x20 screws (not supplied) applied to the corner slots

### Environment

Operating temperature	-10° C to +40° C / 80% of humidity without condensation / No thermal shock (maximum temperature variation: 10 DegC in 24h)
Storage temperature	-20° C to +60° C / 80% of humidity without condensation / No thermal shock (maximum temperature variation: 10 DegC in 24h)
IP protection	IP 40
Labels	RoHS-CE-WEEE

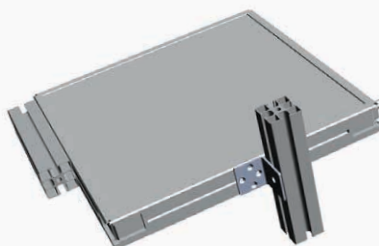
## EXTRAS

### M12 female 5 pins cable



<b>2 meters</b>	Ref: C-M12-5P-2M
<b>5 meters</b>	Ref: C-M12-5P-5M
<b>10 meters</b>	Ref: C-M12-5P-10M

### Light mounting bracket



Ref: TPL-MOUNT-HPB-SQUARE1

### Safety glasses



Ref: EYE-PROTECT

# HOW TO BUILD YOUR REFERENCE

HPB	L LENGTH (CM)	W WIDTH (CM)	COLOUR	WIRING 1		WIRING 2	
				TYPE 1	POSITION	TYPE 2	POSITION
	20	20	WHI	N CONNECTOR M12*	1	A CABLE 2.5 m	1
	30	30	630		2	B CABLE 5 m	2
	40	40	850		3	C CABLE 10 m	3
	50	50			4		4
	60	60					5
	70	70					6
	80	80					7
	90	90					8
	100						
	110						
	120						
	130						
	140						
	150						
	160						
	170						
	180						
	190						

\*M12 - 5 pins connector

OTHER COLOURS   
Please contact us.

The first figure shall always be the biggest one.

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.

■ SURFACE ≤ 0.25 m<sup>2</sup> → 1 connector M12 5 pins  
■ SURFACE > 0.25 m<sup>2</sup> → 1 connector M12 5 pins + 1 additional power cable

POSITION CHOICE

1 WIRING	2 WIRINGS
<p>Diffuser side overview</p>	<p>Diffuser side overview</p>

**REFERENCE EXAMPLES:**

HPBACK 30x20 cm White LED Connector M12 5 pins position n°4:  
→ HPB-3020-WHI-N4

HPBACK 80x50 cm Red LED Connector M12 5 pins position n°1  
+ additional power cable 2.50 meters position n°3:  
→ HPB-8050-630-N1A3

## 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
- Red LEDs: BP 635 (<http://midopt.com/filters/bp635/>)
- Infrared LEDs: LP 830 (<http://midopt.com/filters/lp830/>)

We advise using bandpass filters from MidOpt: [www.midopt.com](http://www.midopt.com)

Features and presentations liable to modifications without prior notice. Ref.TS-020301-D1, 2023/03 Edition.

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High Power HPBACK

