

▷ 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

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

HPBACK SIZE

From **200x200 mm**
to **500x500 mm**
or **1000x200 mm**

LIGHTING METHOD

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 **500 x 500mm** or **1000 x 200mm**. 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 95%**.

(*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** (or 30k working hours).

HOW TO CHOOSE YOUR BACKLIGHT

GUIDE: SIZE OF THE FIELD OF VIEW \approx 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	HPBACK	HPBACK	HPBACK	HPBACK	HPBACK	HPBACK	HPBACK	HPBACK	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+
	30	MBACK+	HPBACK	HPBACK	HPBACK	HPBACK	HPBACK	HPBACK	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+
	40	MBACK+	MBACK+	HPBACK	HPBACK	HPBACK	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+
	50	MBACK+	MBACK+	MBACK+	HPBACK	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+
	60	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+
	70	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+
	80	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+
	90	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+	MBACK+

	HPBACK
	MBACK+

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 μ s
Maximum falling time	10 μ s
Control	Connector M12 5 Poles
Connector pin configuration	1: 24VDC / 2: NPN / 3: GND / 4: PNP / 5: DIM 0-10V
Power supply cable(s) max length	10m
Maximum consumption	96W (continuous mode)

Optics

Colour	White (5700k), Red (630nm) and Infrared (850nm)
Surface homogeneity	85% \pm 10%

Mechanics

Thickness	45mm
Lighting surface	Minimum: 0.2 x 0.2 m / Maximum Surface: 0.25m ² / Maximum Length: 1m / Maximum Perimeter: 2.4m
Weight	23.2 Kg/m ² \pm 15%
Materials	Aluminum and loaded ABS
Diffuser	White PMMA
Fixing	4 M4 nuts (supplied) to insert in the groove or 4 M3x20 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

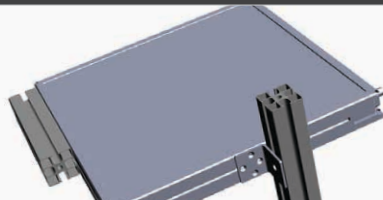
EXTRAS

M12 female 5 pins cable



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

Light mounting bracket



Ref: TPL-MOUNT-MBACK-SQUARE1

Safety glasses



Ref: EYE-PROTECT

FOR OVERDRIVE AND EXPERT VERSIONS, SEE **MBACK+**



HOW TO BUILD YOUR REFERENCE

HPB	L LENGTH (CM)	W WIDTH (CM)	COLOUR	WIRING	
	20	20	WHI <input type="checkbox"/>	TYPE	POSITION
	30	30	630 <input type="checkbox"/>	N CONNECTOR M12*	1
	40	40	850 <input type="checkbox"/>	*M12 5P Connector See wiring diagram	2
	50	50			3
	60				4
	70				
	80				
	90				
	100				

The **first figure** shall always be the **biggest one**.

! Please refer to the chart in «**How to choose your Backlight**» to see the size limitations.

POSITION CHOICE	REFERENCE EXAMPLES
<p>Diffuser side overview</p>	<p>HPBACK, 30 x 20cm, White LEDs, connector M12 5P in position N°4 ➔ HPB-3020-WHI-N4</p> <p>HPBACK, 50 x 40cm, Red LEDs, connector M12 5P in position N°2 ➔ HPB-5040-630-N2</p> <p>HPBACK, 51 x 35cm, IR LEDs, connector M12 5P in position N°1 ➔ HPB-5135-850-N1</p>

CUSTOM CAPABILITIES AVAILABLE:

MORE COLOURS

SPECIFIC SIZES

HIGHER HOMOGENEITY

OVERDRIVE

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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

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High Power HPBACK

