

POWERFUL & HOMOGENEOUS SEMI-COLLIMATED BACKLIGHT

COLLIMATED MEDIUM CMBACK +

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

POWERFUL SEMI-COLLIMATED BACKLIGHT, HOMOGENEOUS AND EASY TO INCORPORATE

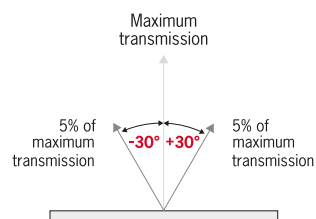


- ✓ homogeneous powerful backlight,
- ✓ deletion of non-perpendicular beams,
- ✓ ultra-thin borders.

OVERDRIVE
VERSION

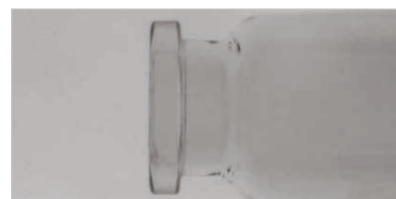
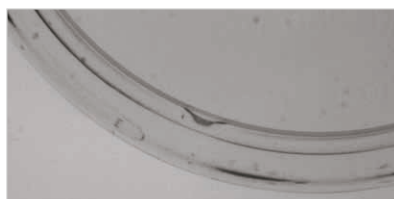
Power customisable by
the user, overdrive up to **x3**

COLLIMATION EFFECT

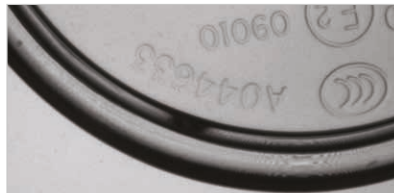
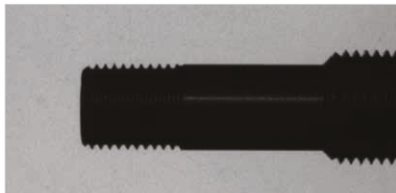


USAGE EXAMPLES

STANDARD



SEMI-COLLIMATED



TECHNICAL SPECIFICATIONS

	CMBACK+	CMBACK+ OVERDRIVE
Electronics		
Power supply	24 VDC ±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	No	Yes
Strobe Conditions (On time, duty cycle)	No restriction	3ms @ 10% at max power
Dimming	Potentiometer 30-100%	
Maximum rising time	25 µs	
Maximum falling time	15 µs	
Wiring	1 connector M12 T-Power 12A 4 poles or 1 cable 4x1,5²	1 connector M12 T-Power 12A 4 poles or 1 cable 4x1,5²
Power supply cable(s) max length	Wire M12 : 10m (not supplied)	Wire M12 : 10m (not supplied)
Max consumption	1,32W par 25cm² in peak and on average	3W/25cm² in peak max 0,43W/25cm² max on average (3ms@10%)
Optics		
Colour	White, Red, Green, Blue, Infrared	
Mechanics		
Thickness (mm)	45mm	
Surface	Mini 200x200mm – Max 400x400mm	
Weight	23.2 Kg/m² ±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	

AVAILABLE DIMENSIONS

CMBACK+ (Standard & Overdrive)			
Length \ Width	200	300	400
200	✓	✓	✓
300		✓	✓
400			✓

PRESENTATION

The CMBACK+ is a backlight both powerful and very diffuse, dedicated to many machine vision applications. Thanks to high powerful LED and specific lenses, it creates very intense luminous flux, that helps cameras to see workpieces shapes. The Collimated Medium CMBACK+ is also manufactured with filters, which enable to delete the non-perpendicular beams (>30° compared to the vertical axis of the lighting surface). This collimation helps to get highly contrasted images. This product is recommended for the edge detection of round

or thick workpieces, and also for the detection of markings or material defects on transparent workpieces (made of glass or plastic).

Equipped with a strobe entry and a potentiometer, it enables to vary the lighting power. Besides the STANDARD version, there is an OVERDRIVE version that offers more power.

Either in continuous or in strobe mode, it has short rising and falling times: 25 µs and 15 µs. Thanks to its thin edges, the Collimated Medium CMBACK+ uniformly illuminates from the whole

useful surface. Moreover, the connector can be placed on any side, so that the light 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 Collimated Medium CMBACK+ is available in various wavelengths and also in various dimensions.

2 VERSIONS AVAILABLE

STANDARD version:

The STANDARD version is very easy to use: you don't have to adjust anything, only to plug the light. The STANDARD version works in continuous and strobe mode, with rising and falling times especially short: 25 µs and 15 µs. The STANDARD version generates a high powerful light, that fits most machine vision applications. Moreover, some LED, close to the connector, show if the light is powered, and if the strobe mode is on, for a better use of the product.

OVERDRIVE version:

The OVERDRIVE version is just as easy to set and to use as the STANDARD 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.

LED BIN

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

RELATED PRODUCTS

Cable – M12 female 4 pins T-Power



2 meters	Ref: C-M12-4P-T-2M
5 meters	Ref: C-M12-4P-T-5M
10 meters	Ref: C-M12-4P-T-10M

Safety glasses



Ref: EYE-PROTECT

HOW TO BUILD YOUR REFERENCE

CMBACK

-

VERSION

STANDARD

0 OVERDRIVE

-

L

LENGTH (CM)

20

30

40

-

W

WIDTH (CM)

20

30

40

-

COLOUR

WHI

630

525

470

850

-

WIRING

TYPE

POSITION

M

CONNECTOR M12

1

A

CABLE 2.5 m

2

B

CABLE 5 m

3

C

CABLE 10 m

4

The first figure shall always be the biggest one.

WIRING

STANDARD

Connector

M12 T-Power

OR

Cable

2.50m

OR

5m

OR

10m

OVERDRIVE

Connector

M12 T-Power

OR

Cable

2.50m

OR

5m

OR

10m

POSITION CHOICE

Length

L

Width

W

1

2

3

4

Top view (diffuser side)

REFERENCE EXAMPLES:

CMBACK+ STANDARD 30x20 cm White LED Connector M12 T-Power position n°4:
➔ CMBACK-3020-WHI-M4

CMBACK+ OVERDRIVE 40x40 cm Red LED Cable 5 meters position n°2
➔ CMBACK-O-4040-630-B2

Features and presentations liable to modifications without prior notice. Ref.TS-020201-F4, 2025/02 Edition.

