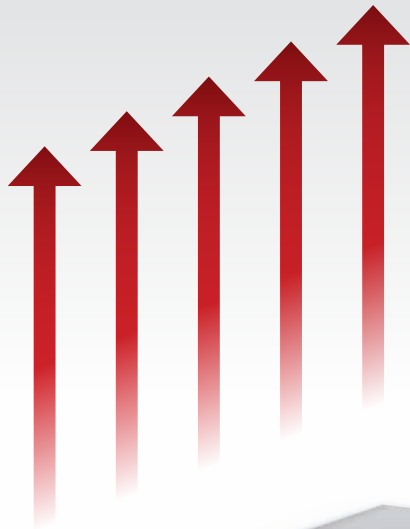# COLLIMATED **CSBACK**

TPL VISION
Active LED solutions
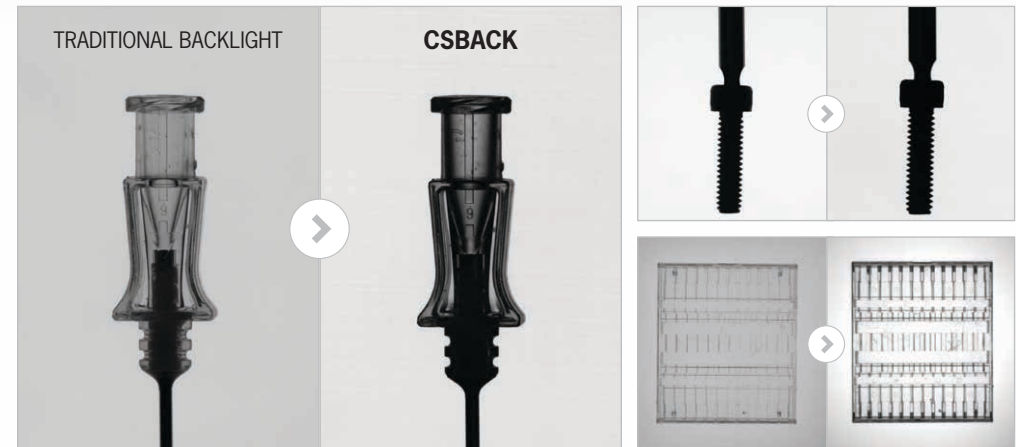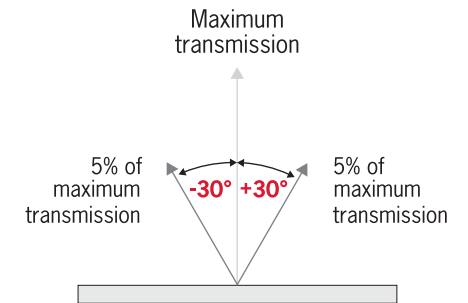
IDEAL LIGHTING for measurement applications or for **inspection** of subtle scratches/dents on **transparent surfaces**

COLLIMATION EFFECT

Maximum transmission

5% of maximum transmission

5% of maximum transmission

-30° +30°

- **PRECISION** LIGHTING
- **50 x 50 mm → 200 x 200 mm**
- **THIN** BORDERS (5 mm)
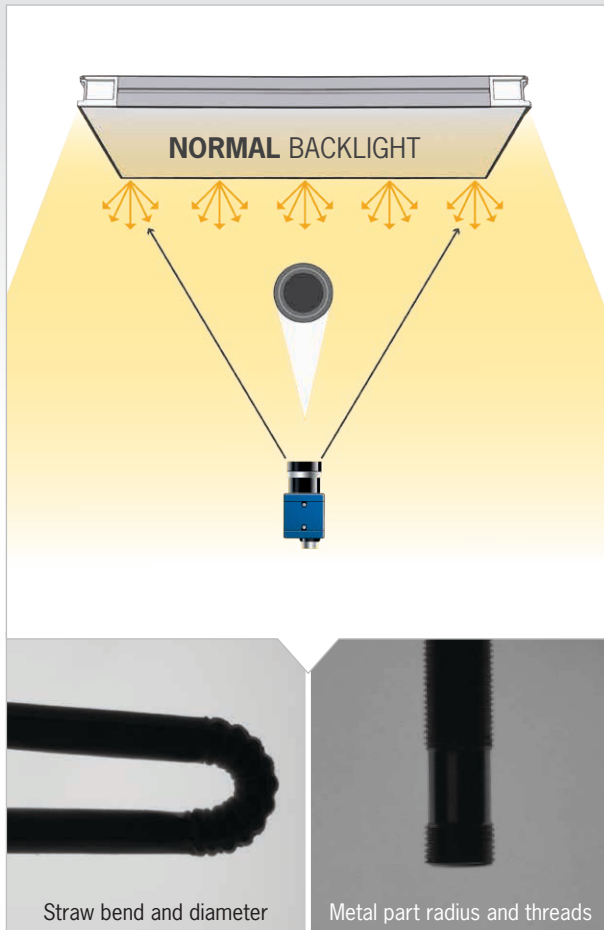- **WHITE, RED, INFRARED, GREEN, BLUE**
- **HIGH** HOMOGENEITY

TRADITIONAL BACKLIGHT

CSBACK

24V ±5%

CE

RoHS

TPL Vision is an **ISO 9001** certified manufacturer.
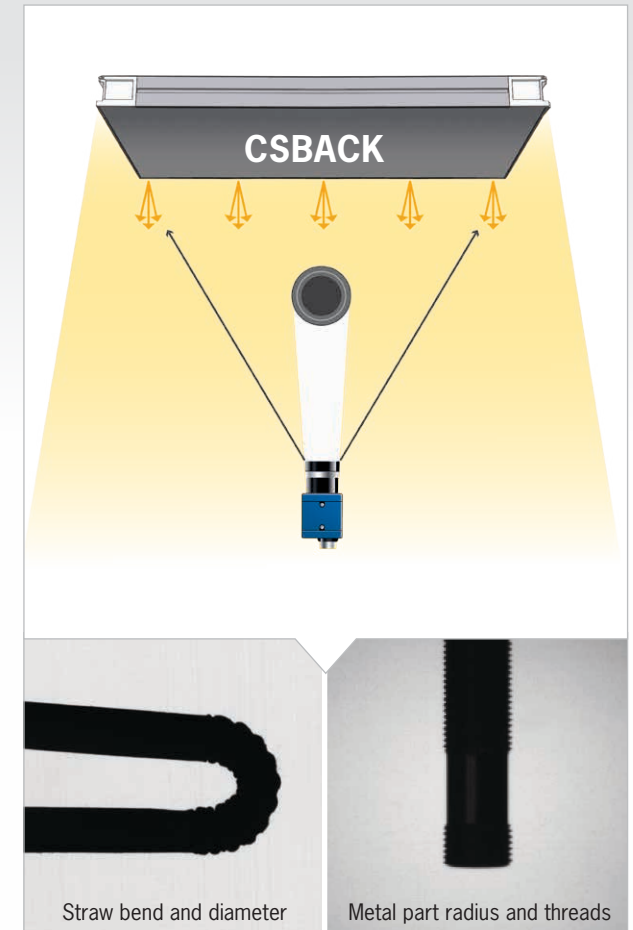
COLLIMATED **CSBACK**

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NORMAL BACKLIGHT

CSBACK

HIGH EDGE DEFINITION
ON ROUND PARTS

(light from sides of the collimated backlight
doesn't wrap around the object)

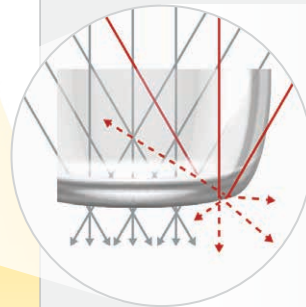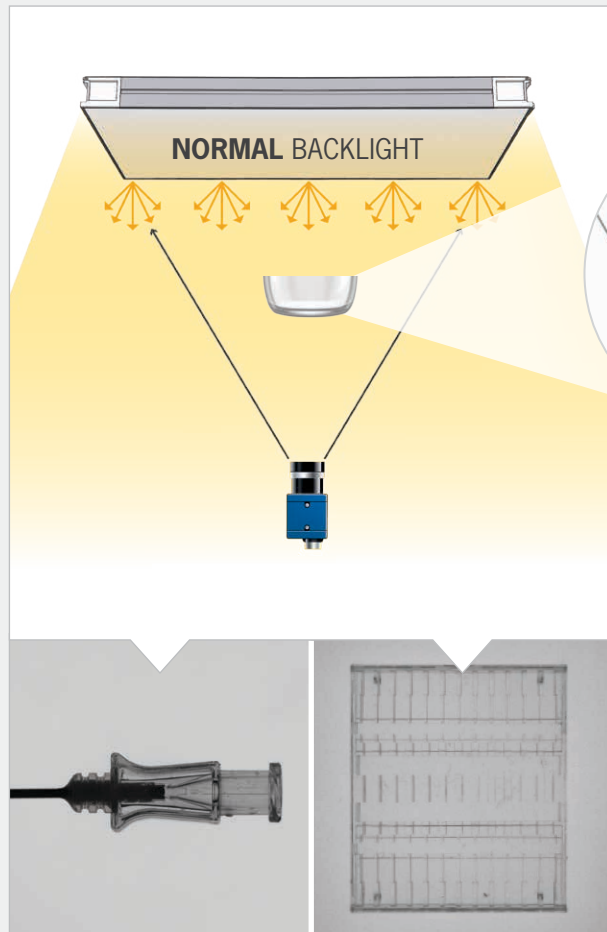LIGHT AT **±30 deg** FROM
THE NORMAL IS REDUCED IN
INTENSITY TO **5%**

PERFECT
FOR **MEASUREMENT**
APPLICATIONS

Straw bend and diameter   Metal part radius and threads

Straw bend and diameter   Metal part radius and threads

COLLIMATED **CSBACK**

Normal Backlight vs CSBACK | **TRANSPARENT PARTS**

NORMAL BACKLIGHT

Since the light comes from all directions on a normal backlight, the light that hits any curve or edge will transmit a lot of the light and **make it difficult to see the contrast** where the edge is (the edge is whitewashed).

CSBACK

The light from the Collimated CSBACK is more linear and direct than a traditional backlight. This means a lot of the light will **reflect away from the camera due to internal reflection** in the areas where there are curves or changes in geometry, resulting in **higher contrast and sharper images**.

COLLIMATED **CSBACK**

TPL **VISION**
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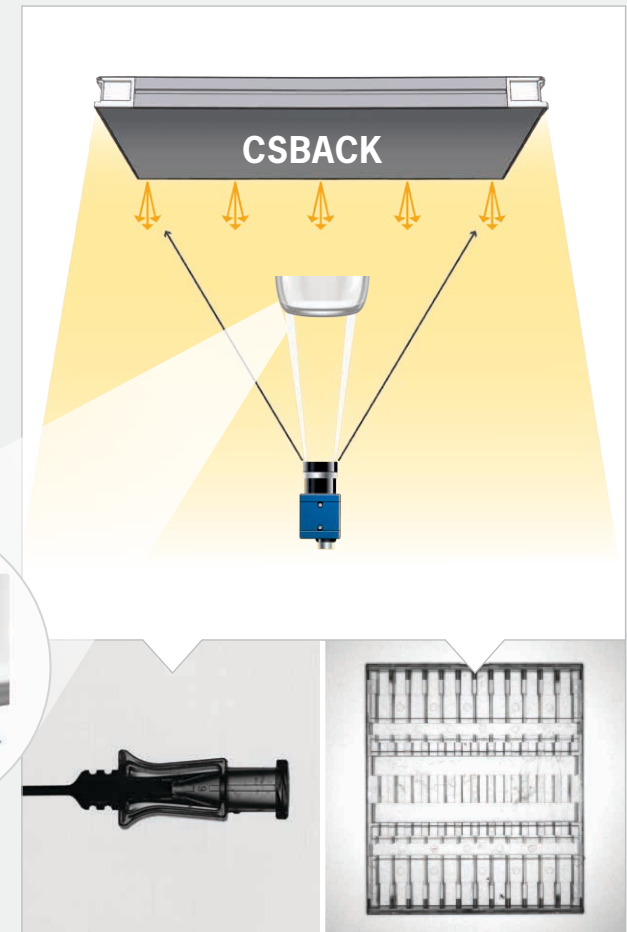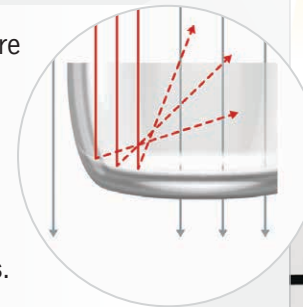
SETTING UP the CSBACK

DO I NEED A TELECENTRIC LENS?

No. A telecentric lens works well with this product, **but it is not essential**. It will reduce the effects of parallax and allow the camera to see the real shape of round and tall parts. Telecentric lenses are particularly useful when the camera is placed very close to the part.

A telecentric lens will also improve the **perceived** homogeneity of the light because of the collimation effect.

EXAMPLE WITH AND WITHOUT TELECENTRIC LENS:

With Telecentric lens

Without Telecentric lens

CSBACK

WORKING DISTANCE IS CRITICAL.

Increasing this distance will improve the results further.
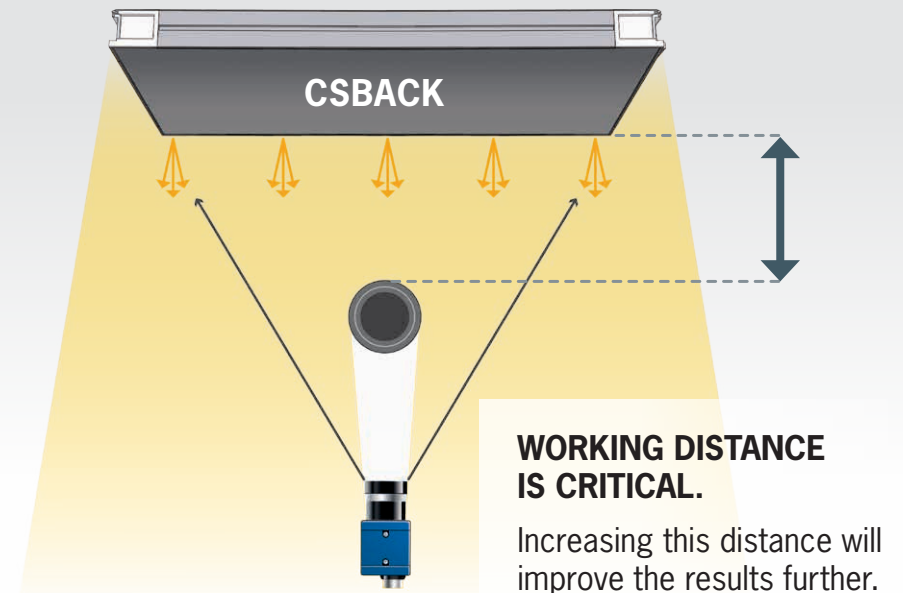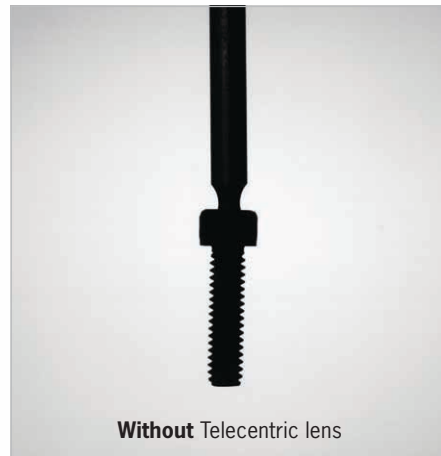
SEE OUR TECHNOTE
FOR A FULL GUIDE TO SET UP THE CSBACK

COLLIMATED **CSBACK**

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CSBACK **SPECIFICATIONS**

COLOUR OPTIONS

- White (6000K)
- Red (630nm)
- IR (880nm)
- Green (525nm)
- Blue (470nm)

M12 4P A-coded Connector

MOUNTING POINTS ON ALL SIDES
(except the connector side on xx05 versions)

LOW **21mm** THICKNESS & NARROW **5mm** BORDERS

HIGH HOMOGENEITY LIGHTING

ORDERING CODES

CSBACK –	DIMENSIONS (cm)	–	COLOUR
	0505		WHI (white)
	1005		630 (red)
	1505		880 (infrared)
	2005		525 (green)
	1010		470 (blue)
	1510		
	2010		
	1515		
	2015		
	2020		

EXAMPLE:

- Collimated CSBACK 10x10cm white LED ➡ CSBACK-1010-WHI
- Collimated CSBACK 20x15cm Infrared LED ➡ CSBACK-2015-880

24V ±5%   CE   RoHS

TPL Vision is an **ISO 9001** certified manufacturer.

COLLIMATED **CSBACK**

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TECHNICAL DATA

CSBACK-XXXX	0505	1005	1505	2005	1010	1510	2010	1515	2015	2020
Power Supply	24 VDC ±10%									
Consumption (W)	3	6	9	12	12	18	24	25	36	45
Connector	M12 – 4 pins [24 VDC / GND / STROBE & DIM]									
Lighting Area (mm)	51x51	102x51	153x51	204x51	102x102	153x102	204x102	153x153	204x153	204x204
Overall Size (mm) (without connector)	61x61	112x61	163x61	214x61	112x112	163x112	214x112	163x163	214x163	214x214
Product Thickness	21.1 mm									
Rise Time	1.5 ms									
Fall Time	1 ms									
Operating temperature	0 - 40°C									
Storage temperature	0 - 60°C									
Dimming Levels	100 % to 20% brightness									
Colours	White, Red, Infrared, Green, Blue									
Running Modes	Continuous & Strobe (non-Overdrive)									
Housing Material	Aluminium (black anodised) / PMMA / PC / Brass									
IP Rating	IP40									
Labels	CE, RoHS, WEEE, UKCA									