

# FLAT DOME LIGHT

## FL2-160-D50

Designed for incident, homogenous illumination including surface inspection, homogenous PCB boards, incident illumination of glossy objects & surfaces and large area lighting.



ROUGH, METAL HOUSING

ANALOG ILLUMINATION INTENSITY CONTROL

DIGITALLY CONTROLLED TIMING OF STROBE PULSES

## LIGHT OPERATING MODES

### PERMANENT ILLUMINATION MODE

This light is designed for both the permanent and light-triggering mode. For permanent illumination bring the voltage of 12-24 V to the pin number 4 (black wire). The light is ON during the time when the 24 V EN signal is activated. Use a PCL, camera or another binary signal source. For the light intensity control, please see the text bellow.

### LIGHT TRIGGERING MODE

Light triggering mode saves energy and extends the lifetime of the light. Trigger operation mode is recommended when a parallel operation of 2 or more lights might affect the quality of the acquired image. To start using a triggering mode, bring the pin number 4 (black wire) to a 12-24 V signal. The light is ON when a voltage of 24 V is present at pin number 4 then. Use a PCL, camera, or another binary signal source for triggering. For the light intensity control, please see the text bellow.

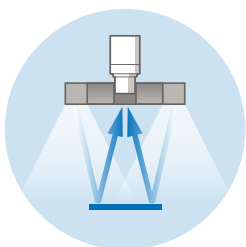
### STROBE MODE

Strobe function significantly multiplies the maximum intensity of the light. The strobing function saves energy, extends the light lifetime and in many cases improves the stability of the entire inspections system. Pin number 2 (white wire) of the M8 connector is used to activate the strobe function. The maximum strobe pulse time is 10 ms, while the light idle time must be at least 10 times longer, which in this case makes 100 ms. Bringing a permanent logical 1 signal (10-24 V voltage) to a light strobe input, the light standardly operates in a 10 ms ON and 100 ms OFF cycle. The strobe operation pulse might be chosen in the time span of 1-10 ms. Please do not use a trigger mode during strobing function, do not bring a voltage to the pin number 3.

### LIGHT SOURCE INTENZITY REGULATION

The light intensity might be regulated by an analogue voltage, PWM signal or an external controller. In case of using an analogue signal, the light intensity might be regulated in a linear way at a pin number 4 by the voltage span of 2.7 -10 V. Bringing a voltage of 12-24 V to the pin number 4, the light works at its maximum intensity. The maximum PWM frequency is  $\leq 40$  kHz.

## WAYS OF USE



## ORDERING CODE

example of the ordering code

FL2	-	160	B	-	D50
Flat Light		Active Area	Wavelength		Ø of Hole for Camera

## CONFIGURATION


Model	Wavelength [nm]	Active Area [mm]	Ø of Hole for Camera [mm]
FL2-160W	CTR 5700 k	160 x 160	50
FL2-160IR	850	160 x 160	50
FL2-160HR	660	160 x 160	50
FL2-160R	625	160 x 160	50
FL2-160G	524	160 x 160	50
FL2-160B	470	160 x 160	50

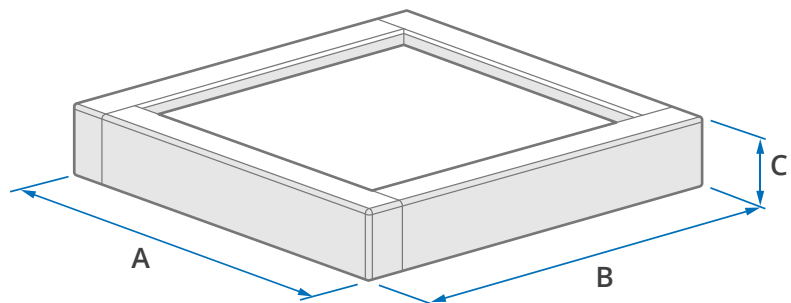
## ELECTRIC PARAMETERS

Model	FL2-160W	FL2-160IR	FL2-160HR	FL2-160R	FL2-160G	FL2-160B
$U_n$ Voltage Span	12-28 V	12-28 V	12-28 V	12-28 V	12-28 V	12-28 V
$U_{jm}$ Nominal Voltage	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC
$I_{jm}$ Nominal Current	1 A	1 A	750 mA	750 mA	1 A	1 A
P Input	24 W	24 W	18 W	18 W	24 W	24 W
$U_{trig}$ Trigger Voltage	≥ 12 - 24 V <sup>2</sup>	$I_{trig}$ Trigger Current	2.4 mA <sup>2</sup>	$U_{EN}$ Analogue Dimming	≥ 2.7 .. ≤ 10 V <sup>2</sup>	
$U_{str}$ Strobe Voltage	5 - 28 V <sup>3</sup>	$I_{str}$ Strobe Current	4.7 mA <sup>3</sup>	$I_{EN}$ PWM Dimming	> 12 .. ≤ 24 V <sup>1</sup>	

<sup>1</sup> PWM maximal rate is ≤ 40 kHz <sup>2</sup> EN (Enable) trigger signal values, M8 connector - pin number 4 <sup>3</sup> Driving voltage and current M8 connector - pin number 2

## DIMENSIONS & WEIGHT

A	Length [mm]	192
B	Width [mm]	192
C	Height [mm]	28
	Weight [g]	1368



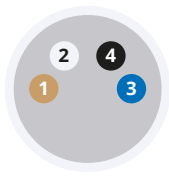
**i** For more details please see our 2D drawings.

## TECHNICAL DATA

IP Category: <b>IP50</b>	Protection Category: <b>III</b>	Ambient Temperature: <b>-20 - +40 °C</b>	Isolation Resistance: <b>500 V</b>	Housing Material: <b>Aluminium alloy</b>
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## CONNECTOR M8-4PIN ASSIGNMENT

light connector front view



1	Brown	+	+24 V
2	White		EN
3	Blue	-	0 V
4	Black		EN

... 2  ENABLE - strobe mode (+24 V)

... 4  ENABLE

**A** permanent lighting or trigger signal (12-24 V)

**B** light intensity regulation: analogue signal 2.7-10 V or PWM  $\leq$  40 kHz

## ACCESSORIES

✓ Straight Cable M8-4PIN (5 m)

✓ Slotted Mounting Nut M6 (4 pcs)

## OPTIONAL ACCESSORIES

+ Angular Cable M8-4PIN (5 m)

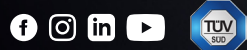
+ Light Polarization

+ Controller **Smart Light CT-SL4D**

+ Controller **CM-01**

 SmartView

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