

DEFECTOSCOPY

LIGHT

FLDB-160

Lighting for detecting defects on glossy, semi-transparent and transparent surfaces. The projection of a structured pattern onto the target object makes surface defects visible to the camera system. Depending on the application, patterns of different shapes and sizes can be used.



DIGITALLY CONTROLLED TIMING OF STROBE PULSES

ANALOG ILLUMINATION INTENSITY CONTROL

SHAPE & SIZE OF PATTERNS ACCORDING TO YOUR OWN REQUIREMENTS

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 below.

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 below.

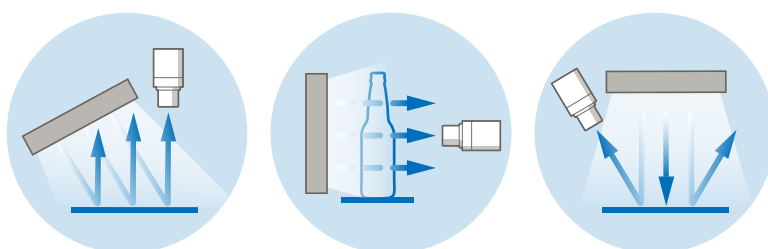
STROBE MODE

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 (12-24 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 INTENSITY 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 ≤ 40 kHz.

WAYS OF USE



ORDERING CODE

example of the ordering code

FLDB - **160** **B** - **3030**

Flat Light
Defectoscopy
Bands

Active Area

Wavelength

Module Size In Tenth Of Millimetres
(3 mm Band, 3 mm Gap)

CONFIGURATION

Model	Wavelength [nm]	Active Area [mm]
FLDB-160W	CTR 5000 k	160 x 160
FLDB-160IR	850	160 x 160
FLDB-160R	625	160 x 160
FLDB-160G	528	160 x 160
FLDB-160B	470	160 x 160

ELECTRIC PARAMETERS

Model	FLDB-160W	FLDB-160IR	FLDB-160R	FLDB-160G	FLDB-160B
U_n Voltage Span	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
I_{jm} Nominal Current	1 A	1 A	750 mA	1 A	1 A
P Input	24 W	24 W	18 W	24 W	24 W
U_{trig} Trigger Voltage	$\geq 12 - 24$ V ²	U_{trig} Trigger Current	2.4 mA ²	U_{EN} Analogue Dimming	$\geq 2.7 .. \leq 10$ V ²
U_{str} Strobe Voltage	5 - 28 V ³	I_{str} Strobe Current	4.7 mA ³	I_{EN} PWM Dimming	$> 12 .. \leq 24$ V ¹

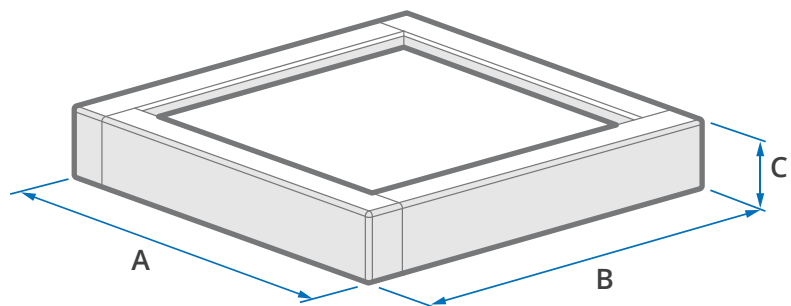
¹ PWM maximal rate is ≤ 40 kHz

² EN (Enable) trigger signal values, M8 connector - pin number 4

³ 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



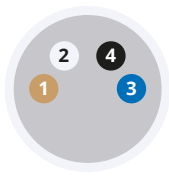
i For more details please see our 2D drawings.

TECHNICAL DATA

IP Category: **IP50** Protection Category: **III** Ambient Temperature: **-20 - +40 °C** Isolation Resistance: **500 V** Housing Material: **Aluminium alloy**

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

OPTIONAL ACCESSORIES

+ Angular Cable M8-4PIN (5 m)

+ Light Polarization

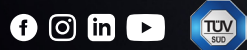
+ Controller **Smart Light CT-SL4D**

+ Controller **CM-01**

+ **Interchangeable Defectoscopy Module** Based On Your Own Requirements

 SmartView

**YOUR
VISION
PARTNER**



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