

# DEFECTOSCOPY

## LIGHT

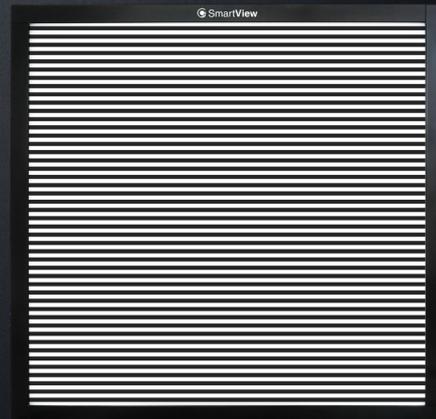
### FLDB-320

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.

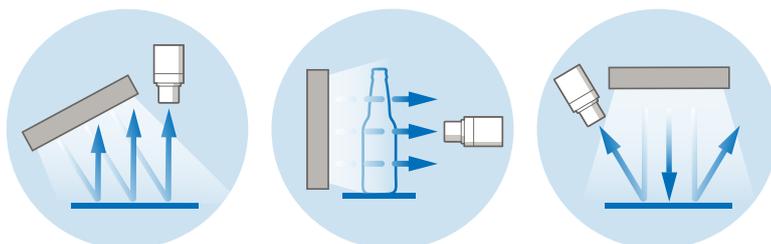
### STROBE MODE

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  $\leq 40$  kHz.

## WAYS OF USE



## ORDERING CODE

example of the ordering code

<b>FLDB</b>	-	<b>320</b>	<b>B</b>	-	<b>3030</b>
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-320W	CTR 5000 k	320x320
FLDB-320IR	850	320x320
FLDB-320HR	660	320x320
FLDB-320R	630	320x320
FLDB-320G	528	320x320
FLDB-320B	470	320x320

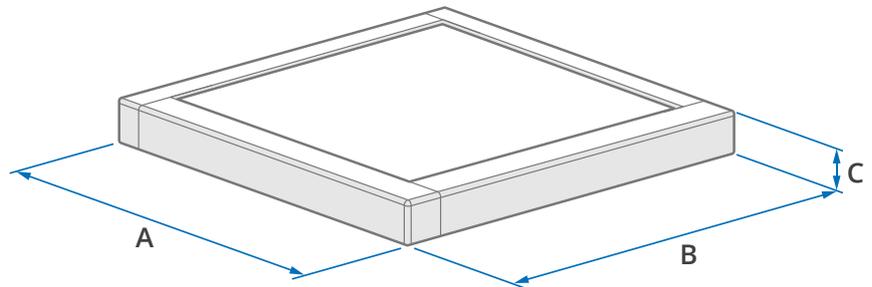
## ELECTRIC PARAMETERS

Model	FLDB-320W	FLDB-320IR	FLDB-320HR	FLDB-320R	FLDB-320G	FLDB-320B
$U_n$ Voltage Span	23-28 V	23-28 V	23-28 V	23-28 V	23-28 V	23-28 V
$U_{jrn}$ Nominal Voltage	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC
$I_{jn}$ Nominal Current	3.2 A	3 A	3 A	3 A	3 A	3 A
$P$ Input	77 W	72 W	72 W	72 W	72 W	72 W
$U_{trig}$ Trigger Voltage	$\geq 12 - 24$ V <sup>2</sup>	$I_{trig}$ Trigger Current	2.4 mA <sup>2</sup>	$U_{EN}$ Analogue Dimming	$\geq 2.7 .. \leq 10$ 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	$> 12 .. \leq 24$ V <sup>1</sup>	

<sup>1</sup> PWM maximal rate is  $\leq 40$  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

<b>A</b> Length [mm]	352
<b>B</b> Width [mm]	352
<b>C</b> Height [mm]	28
<b>Weight [g]</b>	-



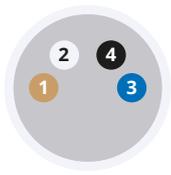
**i** For more details please see our 2D drawings.

## 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 Nuts M6 (4 pcs)

## 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

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VISION  
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### COMPANY OFFICE

Smart View s.r.o.  
Nivy 313  
765 02 Otrokovice  
Česká republika

+420 601 575 797  
+420 602 457 497

info@smartview.cz  
www.smartview.cz

### OUR SALES PARTNERS SLOVAKIA

MTS, spol. s r.o.  
Krivá 53  
027 55 Krivá  
Slovensko

+421 43 5819 111

mts@mts.sk  
www.mts.sk