

# RING LIGHT

## RL-120

Universal illumination for the majority of your applications.



HOMOGENOUS LIGHT FIELD

COMPACT DESIGN

UNIVERSAL MOUNTING

## 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 10-24 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 10-24 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.

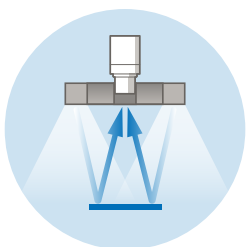
### STROBE MODE

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 10-24 V to the pin number 4, the light works at its maximum intensity. The maximum PWM frequency is  $\leq 40$  kHz.

## WAYS OF USE



\*Applies for devices with wavelength UV405, UV395, UV385 and UV365. This type of a light has a source of ultra violet radiation. Avoid direct exposure of eyes and unprotected parts of skin. Install the light in a safe way to avoid accidental or deliberate damage of unprotected human skin by UV light radiation. Mark room/area of use with a warning sign.

## ORDERING CODE

example of the ordering code

**RL - 120 B**

Ring Light      Ø of Active Area      Wavelength

## CONFIGURATION

Model	Wavelength [nm]	LED Beam Angle [°]
RL-120W	White	80
RL-120HIR	940	90
RL-120IR	850	90
RL-120HR	660	90
RL-120R	625	80
RL-120G	528	80
RL-120B	470	80
RL-120UV	405   395   385   365	120

## LIGHTING INTENSITY

Distance [mm]	Intensity [lx]
100	36 320
200	13 360
300	6 550
500	2 410

## ELECTRIC PARAMETERS

Model	RL-120W	RL-120HIR	RL-120IR	RL-120HR	RL-120R	RL-120G	RL-120B	RL-120UV
$U_n$ Voltage Span	16-28 V	16-28 V	16-28 V	16-28 V	16-28 V	16-28 V	16-28 V	16-28 V
$U_{jm}$ Nominal Voltage	24 V	24 V	24 V	24 V	24 V	24 V	24 V	24 V
$I_{jm}$ Nominal Current	420 mA	420 mA	420 mA	400 mA	400 mA	400 mA	400 mA	420 mA
<b>P</b> Input	10 W	10 W	10 W	9.6 W	9.6 W	9.6 W	9.6 W	10 W

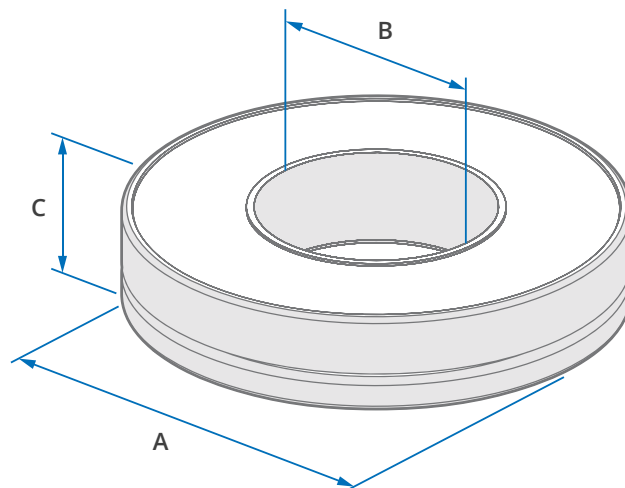
$U_{trig}$ Trigger Voltage	≥ 10 - 24 V	<sup>2</sup>	$I_{trig}$ Trigger Current	2.3 mA	<sup>2</sup>	$U_{EN}$ Analogue Dimming	≥ 2.7 .. ≤ 10 V	<sup>2</sup>
$U_{str}$ Strobe Voltage	3 - 24 V	<sup>3</sup>	$I_{str}$ Strobe Current	1.9 mA	<sup>3</sup>	$I_{EN}$ PWM Dimming	> 10 V .. ≤ 24 V	<sup>1</sup>

<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

<b>A</b> Outer Ø [mm]	118
<b>B</b> Inner Ø [mm]	60
<b>C</b> Height [mm]	20
<b>Weight [g]</b>	255

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

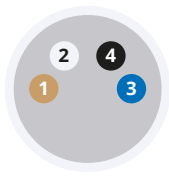


## TECHNICAL DATA

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 (10-24 V)

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

## ACCESSORIES

✓ Straight Cable M8-4PIN (5 m)

✓ Diffusion glass of 67-68% and 48-50% transparency

## OPTIONAL ACCESSORIES

+ Angular Cable M8-4PIN (5 m)

+ Diffusion glass of 36-38% transparency

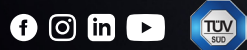
+ Polarizing Foil

+ Controller **Smart Light CT-SL4D**

+ Controller **CM-01**

 SmartView

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VISION  
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