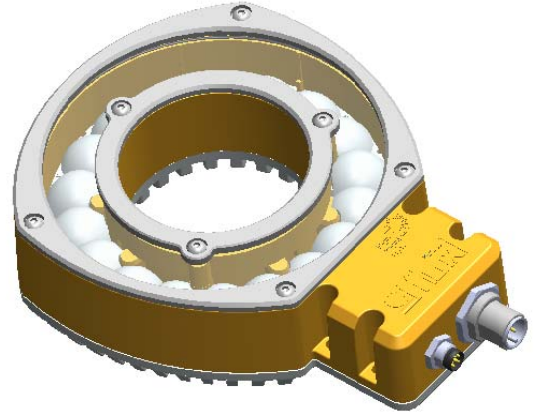


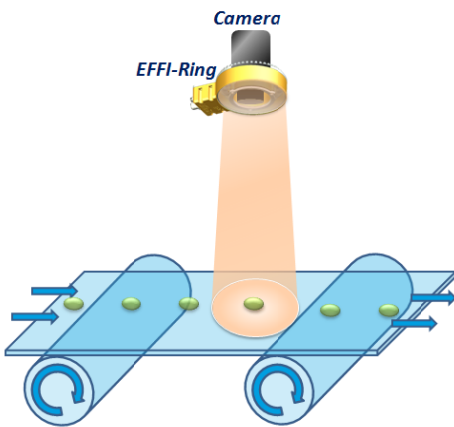
EFFI-Ring

High power LED ring light

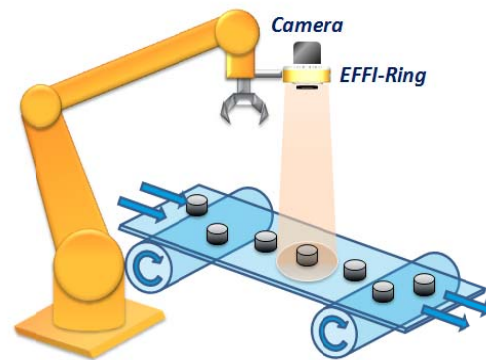
- **Very intense and uniform** illuminated area
- **Full range of colors:** from UV to IR, white, tricolor
- **Long lifetime** and few maintenance
- **Compatible** with most objectives



APPLICATIONS:



Quality control



Pick and place

OVERVIEW OF THE CHARACTERISTICS

Electronics	<i>Connectors</i>	M12 - 5 pins	M8 - 4 pins
	<i>Power supply</i>	24V DC	Direct current (⚠ No driver = No protection)
	<i>Illumination mode</i>	Continuous or strobe mode	Continuous or strobe mode
	<i>Power consumption</i>	72W	Depends on your configuration
Optics	<i>Wavelength</i>	Single (from UV to IR, white) or three different (RGB or WUI) wavelengths	
Mechanics	<i>Weight</i>	400 g	
	<i>Width x length x height</i>	117 mm x 151 mm x 40 mm	
	<i>Inside diameter</i>	58 mm	
	<i>Fastener</i>	M4 screw (4 on heat sink & 4 on outgrowth)	
	<i>Material</i>	Device body : Aluminum alloy & ABS ; Window : PMMA	
Environment	<i>Working temperature</i>	-10°C to 50°C	
	<i>IP code</i>	IP65	

TECHNICAL CHARACTERISTICS

How to create the EFFI-Ring ?

EFFI-Ring XXX(YZ)

Wavelength (nm) → XXX

Window → Y

Lens position → Z

Available wavelengths:

- White : **000**
- Near UV : **405**
- Blue : **465**
- Green : **525**
- Red : **625**
- Far Infrared : **850**
- Red/Green/Blue : **RGB**
- White/UV/IR : **WUI**

Other wavelengths are available upon request

Window:

- **T** : Transparent
- **D** : Semi-diffuse
- **O** : Opaline

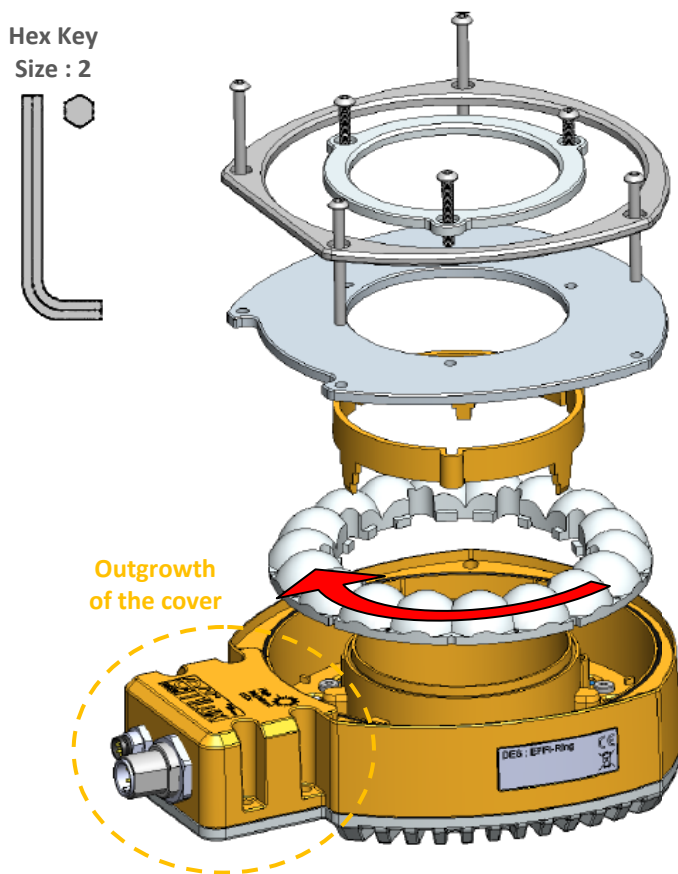
Lens position:

- **0** : 90° (Without lens)
- **1** : 45°
- **2** : 25°
- **3** : 10°

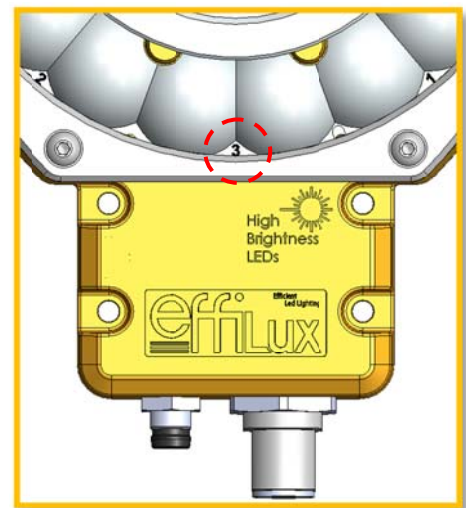
Available options : Add '**_Pol**' to integrate a polarizer

How to use the EFFI-Ring ?

The numbers 1, 2 and 3 are inscribed in the lens and correspond to the lens position. Match the number of the desired position lens with the outgrowth of the cover.



Example : Lens position n°3



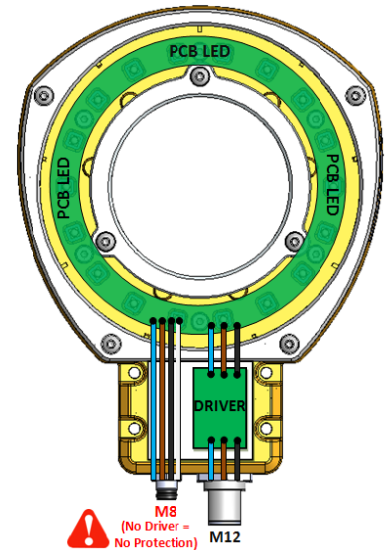
Electrical characteristics

Connectors

M12 CONNECTOR – Driver control

The EFFI-Ring is supplied with a 24V constant voltage source

Pin number	Contact arrangement	Cable color	Designation	
			Single Color Version	RGB/WUI Version
1		Brown	+24V (common)	+24V (common)
2		White	n.a.	DIM Blue/White - max 24V
3		Blue	GND	GND
4		Black	DIM - max 24V	DIM Red/UV - max 24V
5		Grey	n.a.	DIM Green/IR - max 24V



M8 CONNECTOR – Direct control



A current source, with the correct settings can be used to supply EFFI-Ring with M8 connector

Please, contact EFFILUX technical support for complete details



Pin number	Contact arrangement	Cable color	Designation	
			Single Color Version	RGB/WUI Version
1		Brown	6*LED Forward Voltage (common) ¹	6*LED Forward Voltage (common) ¹
2		White	GND 1	GND Red/UV
3		Blue	GND 2	GND Blue/White
4		Black	GND 3	GND Green/IR

Be aware that the maximum current for a given frequency and a given T_{pulse} , in the following table, cannot be exceeded

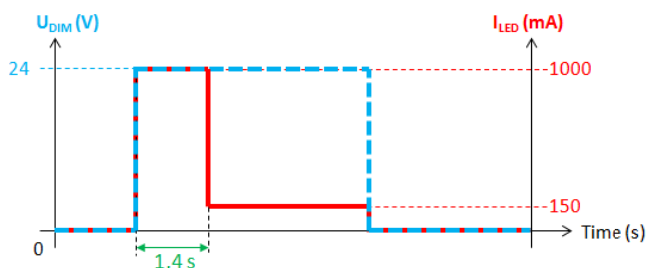
T_{pulse} (μ s)	F (Hz)				
	1	5	10	15	20
100 000	1.0 A				
50 000	1.2 A				
10 000	1.5 A		1.0 A		
1 000	2.0 A				
100	2.5 A				

(1) See ANNEX for more information

Dimming control (M12 connector)

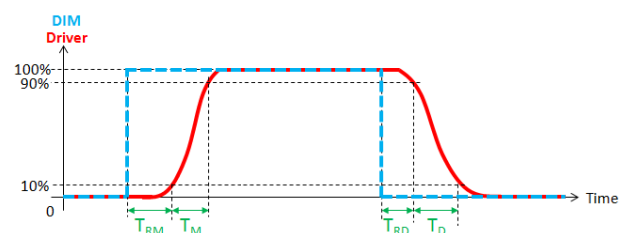
DIM Voltage U_{DIM} (V)	Light intensity	DIM consumption
0 – 3	OFF	0,1mA@3V
5 – 24	ON	0,8mA @24V

Strobe mode : Respect a duty cycle lower than 0.15



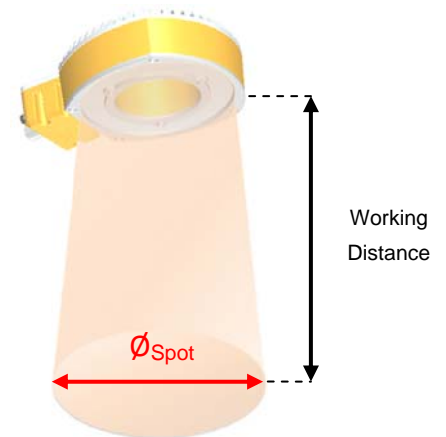
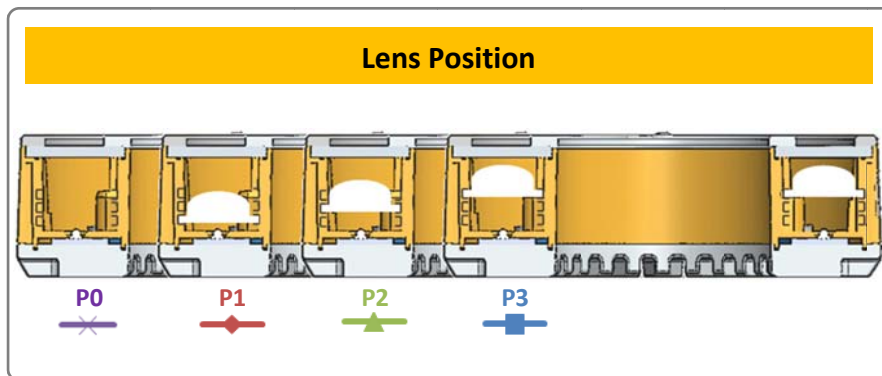
Characteristics of the pulse(M12 connector)#

Designation	Time (μ s)
Rise Time (T_M) ^{1,5}	4-15
Response Rise Time (T_{RM}) ²	25
Fall Time (T_D) ³	10
Response Fall Time (T_{RD}) ⁴	5

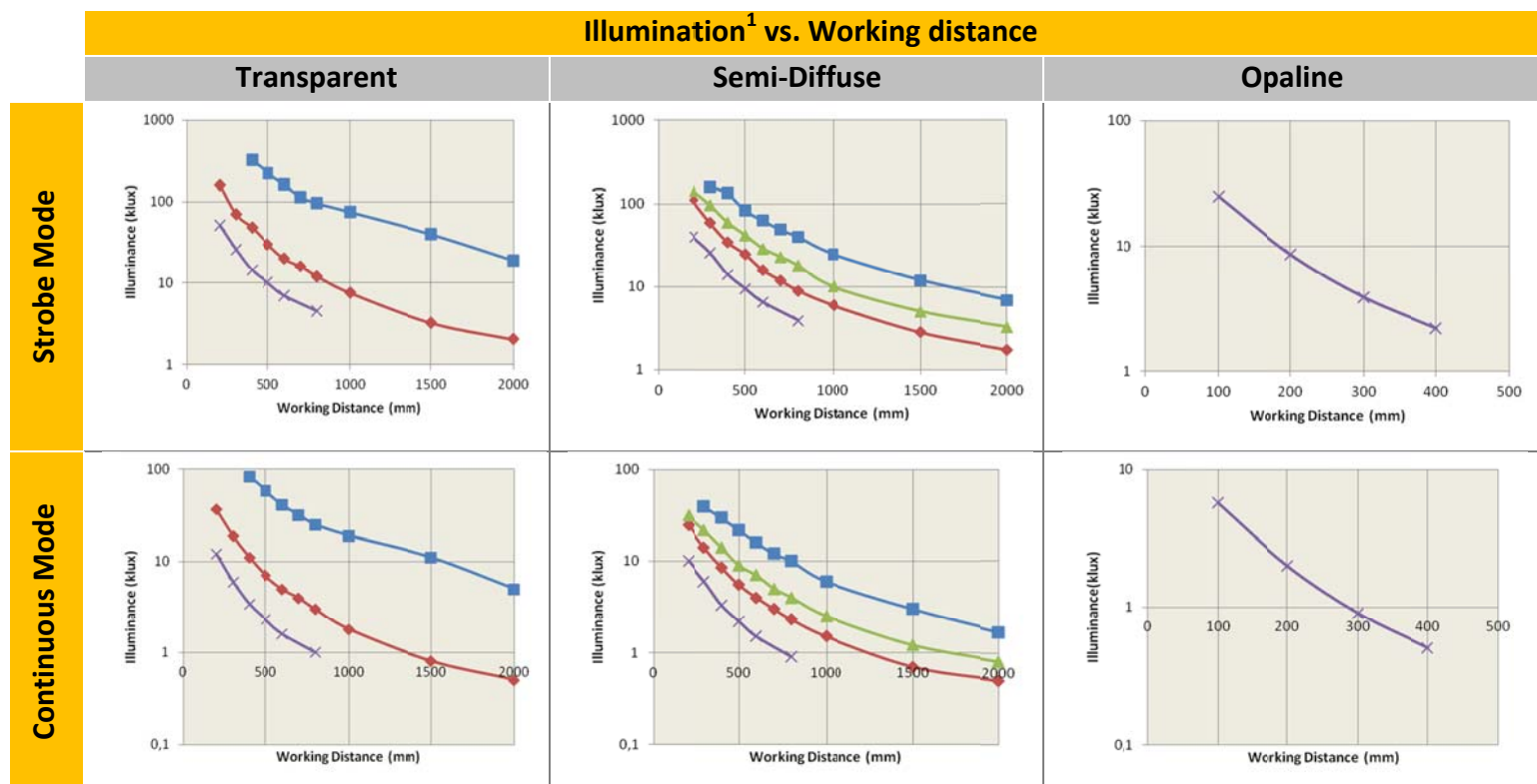


- (1) From 10% to 90% of the peak value of driver signal
- (2) From 90% to 10% of the peak value of driver signal
- (3) From the beginning of the DIM signal to 10% of the peak value of driver signal
- (4) From the ending of the DIM signal to 90% of the peak value of driver signal
- (5) T_M increases when U_{DIM} or/and the frequency increases

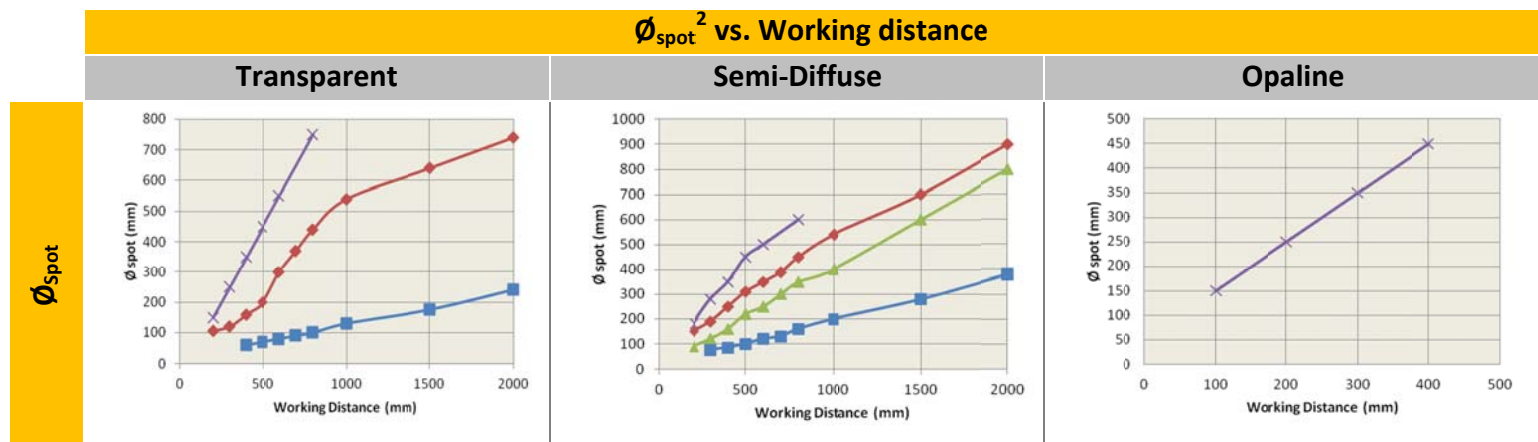
Optical characteristics



Illumination¹ vs. Working distance

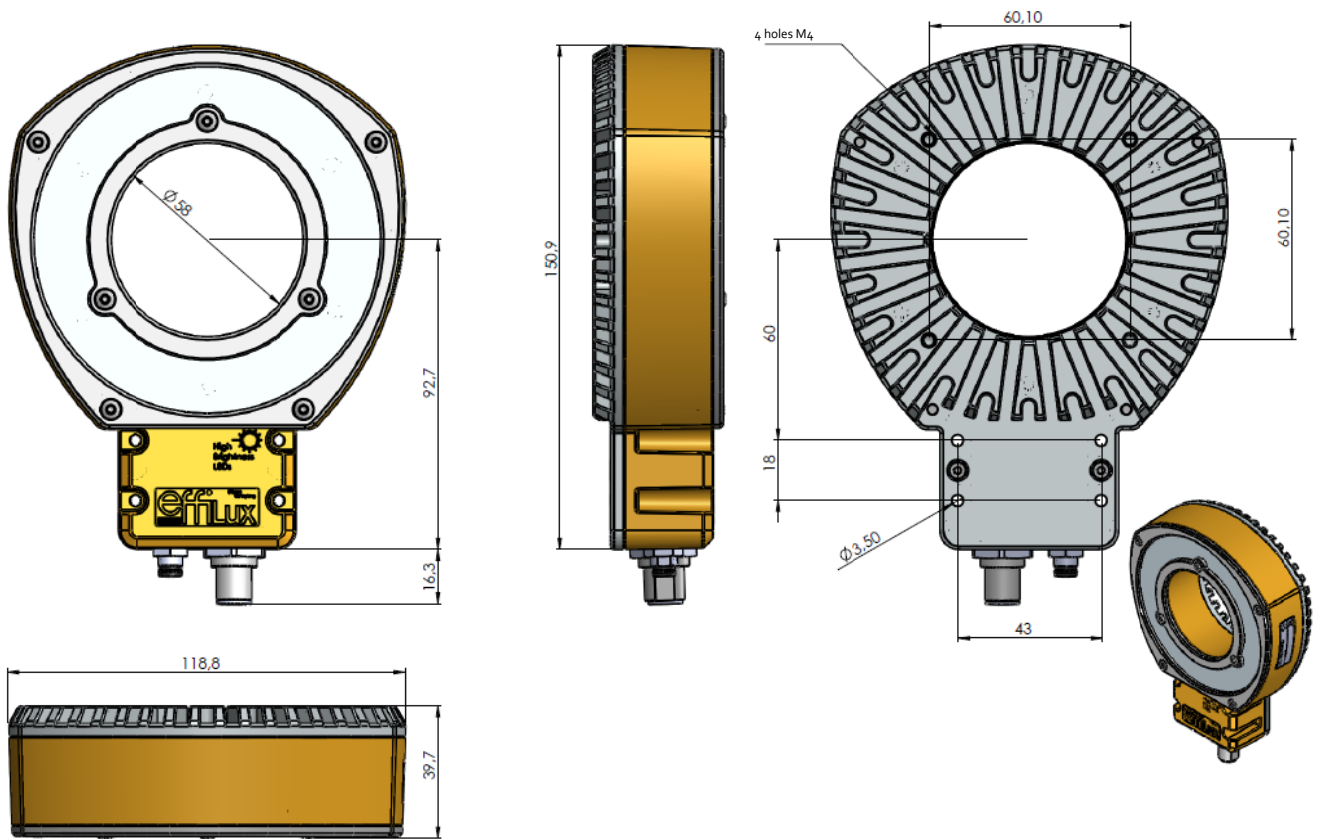


Ø_{spot}² vs. Working distance




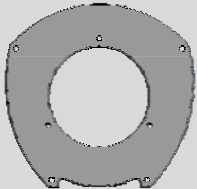


- (1) Maximum illumination at the center of the spot
- (2) From 50% to 100% of the peak value of illumination

Mechanical considerations

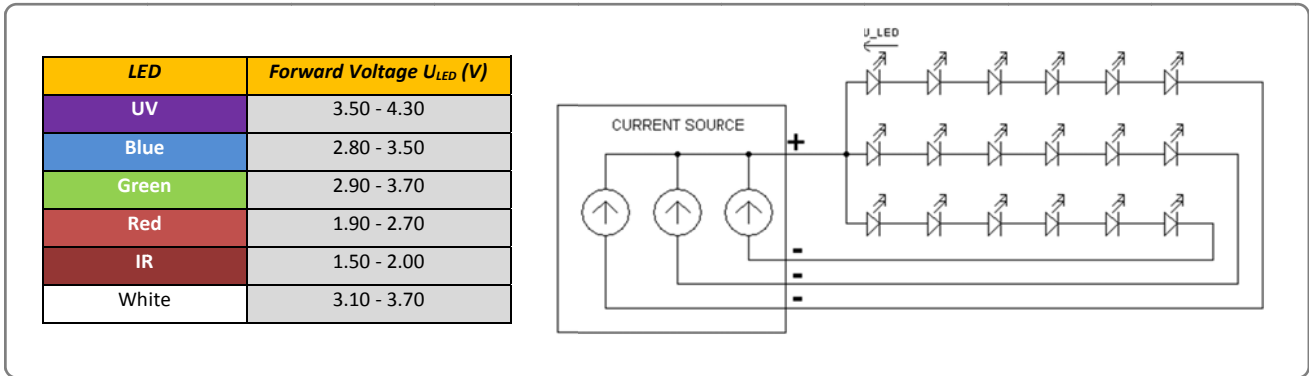


ACCESSORIES

	EFFILUX reference	Description
Mechanics	EFFM_	Camera bracket
	EFFM_	Camera bracket
	EFFM_	Camera bracket
Electronics	EFFC-Cable_M12_000X Binder : 79-3440-12-05	 M12 cable – 5 pins – 2m long
	EFFC-Cable_M12_000X Binder : 79-3440-15-05	 M12 cable – 5 pins – 5m long
	EFFC-Cable_M8_0005 Binder : 79 3382 42 04	 Female Cable M8 – straight – 4 pins – 2m long
Optics	EFFO-Polariser_0006	 Optical sheet to polarize the output light

ANNEX

Block circuit diagram of M8 connector #



Block circuit diagram of M12 connector #

