



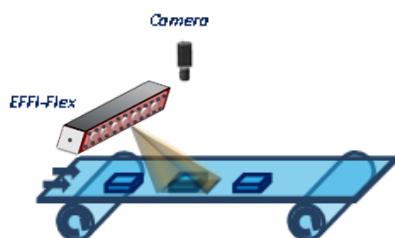
Strobe Version
available



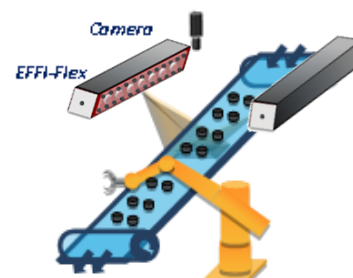
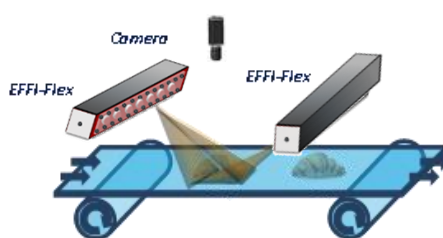
Very intense and uniform illuminated area
Full range of colors: from UV to IR, white, multispectral
Long lifetime and minimal maintenance
Flexible: Different illumination angles (4 angles) & projection windows

	Power supply	24V DC
	Illumination mode	Continuous or strobe mode
	Power consumption	Vary depends on the amount of LEDs
	Electronic mode	Standard Auto-strobe or Dimming control
	Cable	Bare cable (5 or 10 meters) - 5 contacts
Optics	Wavelength	Single (from UV to IR, white) wavelengths - Multispectral
Mechanics	Weight	Vary depends on the amount of LED
	Width x height x length	54mm x 51mm x length (depends on the amount of LEDs)
	Fastener	8 M5 holes
	Material	Device body: 316L Stainless Steel; Window: PMMA
Environment	Working temperature	0°C to 40°C
	IP code	IP68 & IP69K

Applications



Quality control



Pick and place

Part Number



Reference:

EFFI-FLEX-IP69K-**WW**-**XXX**-**YY**-**ZZ**-V-**AA**

WW: Number of LED

WW	5	10	15	20	+5 LED
Standard version	143.5mm	243.5mm	343.5mm	443.5mm	+100mm
1 LED / 2 positions version*	243.5mm	443.5mm	643.5mm	843.5mm	+200mm

*If 1 LED / 2 version, add -L2 (Length X2) after the number of LED

XXX: Color / Wavelength (nm)

● UV 405	● Blue 465	● Green 525	● Red 625	● IR 850	○ White 000 (T°= 5500K ± 500K)
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YY: Windows (if not specified, semi-diffusive window by default)

TR : Transparent	SD : Semi-diffusive	OP : Opaline
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ZZ: Position (if not specified, position P2 by default) / Emission angle according to the lens position

P0 (Without lens)	P1	P2	P3

V: Vent

The vent on our IP69K products equalizes pressure and minimize the condensation.

AA: Cable length (if not specified, 10 meters length by default. Other lengths available upon request)

-L5 : 5 meters	-L10 : 10 meters
Option Linescan (linear lighting or a darkfield lighting)	Option Polarizer (to eliminate glare caused by the lighting)
 Without Linescan With Linescan For linescan, please add -LS in the part number. Part number: EFFI-FLEX-IP69K- WW - XXX - YY - ZZ - AA - LS	 Without polarizer With polarizer For polarizer, please add -POL in the part number. Part number: EFFI-FLEX-IP69K- WW - XXX - YY - ZZ - AA - POL

Option : Food processing (not for UV 365nm version)

For food processing environment, the nickel-plated brass gland can be replaced with stainless steel type and the cable with a certified food & beverage convenient one. For this option, please add **-FOOD** in the part number. Please note that the maximum cable length for this option is 10 meter.

Part number : EFFI-FLEX-IP69K-**FOOD**-**XXX**-**YYY**-**ZZZ**

Electronical considerations



Contact arrangement

The EFFI-FLEX-IP69K is supplied with a 24V constant voltage. Please make sure that the flying leads output of the cable is in a sealed area. The TRIG (or AIC) contact needs to be connected.

Standard version cable: Weather, bio oil, detergent and hot water resistant cable
Core insulation made of modified PP / Outer sheath made of special TPE / Sheath colour: black

Conductor N°	EFFI-FLEX-IP69K
1	+24V
2	n.c.
3	GND
4	PNP TRIGGER⁽¹⁾ (trigger for rising edge) for Auto-strobe Light ON if $V_{PNP} > 5V$ DC Max 24V DC – Analog Voltage
5	n.c.

(1) Or AIC : Analog Intensity Control for Dimming Control if ELS version

Power supply

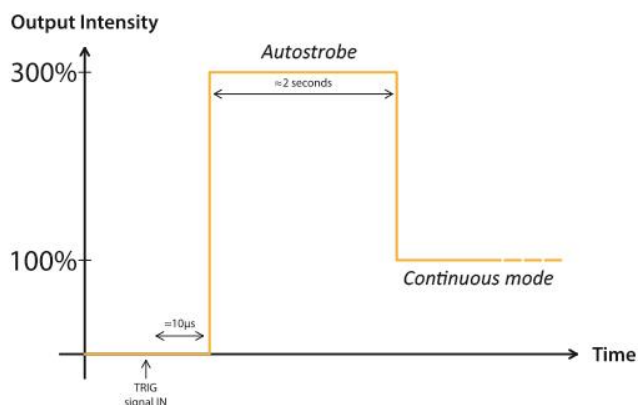
Please refer to below electrical power consumption table for the power of each product according to different dimensions. For specific configurations, please contact EFFILUX for more information.

Amount of LED (N)	Standard version		ELS 350mA
	P_{Peak_2s}	P_{CW}	
5	20	10	10
10	40	15	15
15	60	20	20
20	80	30	30
50	190	65	65
100	380	130	130
150	570	195	195

$$P_{CW} = P_{ELS\ 350} \approx 1,3 \times N$$

$$P_{Peak_2s} \approx 4 \times N$$

Default Version : Auto-strobe



Keep duty cycle lower than 30%

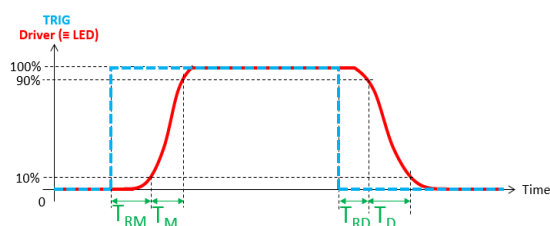
ELS Version : Dimming control

Part Number	ELS-VVV-24V	ELS-IN-VVV-24V
	<p>Output Intensity vs AIC Signal IN</p> <p>100% 20%</p> <p>5V 24V</p> <p>OFF : 0-5V & ON : 5V-24V Max signal consumption = 2mA every 5 LEDs @24V</p>	<p>Output Intensity vs AIC Signal IN</p> <p>100%</p> <p>24V</p> <p>OFF : 0-5V & ON : 5V-24V Max consumption = 2mA every 5 LEDs @24V</p>
<p>ELS is also available with 5V and 10V versions :</p> <ul style="list-style-type: none"> - ELS-350-5V: Output intensity rising between 1.5 and 5V - ELS-IN-350-5V: Output intensity decreasing between 0 and 5V - ELS-350-10V: Output intensity rising between 5 and 10V - ELS-IN-350-10V: Output intensity decreasing between 0 and 10V 		

Electronical characteristics

Designation	Time (driver on the cable)
Rise time (T_M) ¹	11,5 μ s
Response rise time (T_{RM}) ²	6,5 μ s
Fall time (T_D) ³	7 μ s
Response fall time (T_{RD}) ⁴	0,5 μ s

- (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 TRIG signal to 10% of the peak value of driver signal
- (4) From the ending of the TRIG signal to 90% of the peak value of driver signal



Signal consumption

Amount of LED	Signal consumption (mA)				
	TRIG (default version)			AIC (Analog Intensity Control)	
	@5V	@10V	@24V	ELS-IN-350	ELS-350
5	0.05	0.1	0.25	1.5	0.2
20	0.1	0.2	0.45	6	0.8
50	0.2	0.4	0.9	15	2
100	0.35	0.65	1.55	30	4
150	0.45	0.9	2.2	45	6

Optical considerations

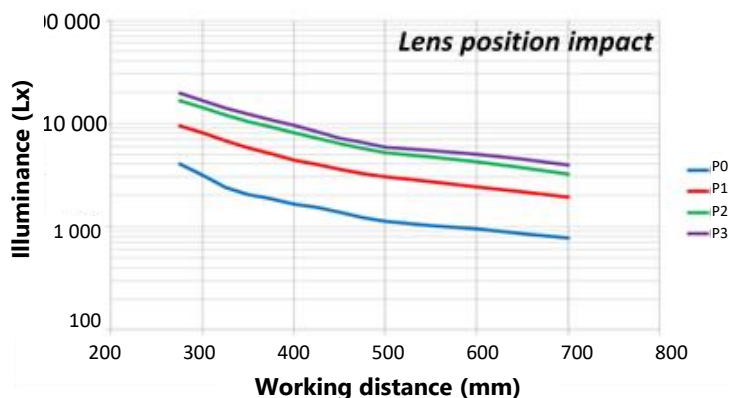


Illuminance vs Working Distance

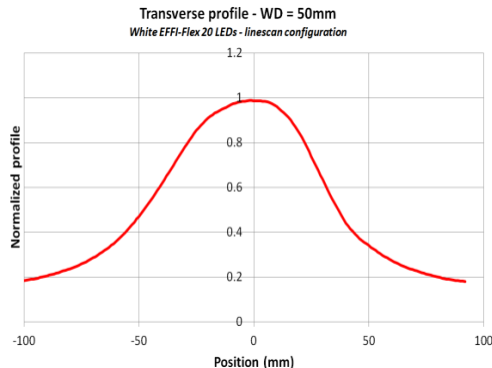
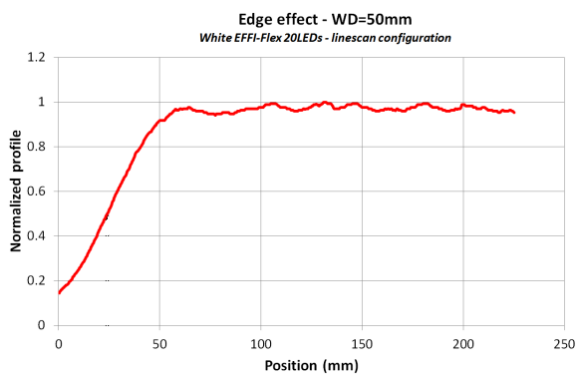
The following measurements are made with white EFFI-FLEX-IP69K.

EFFI-FLEX-IP69K 5 LEDs

Imaging system P0 to P3 diffusing window – 350 mA

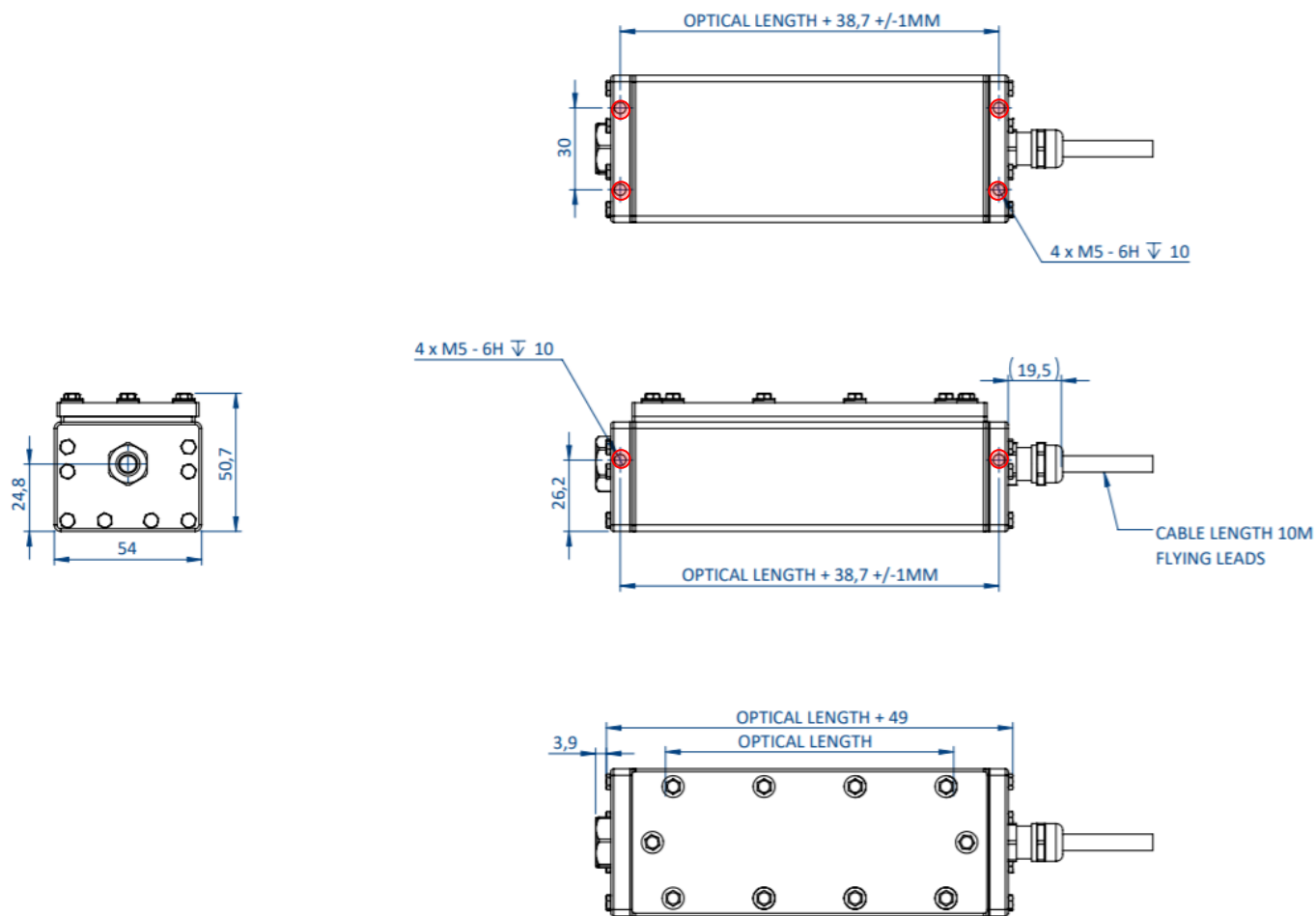


Profiles



The border of the EFFI-FLEX-IP69K is at 25 mm on the left graph.

Mechanical considerations (Dimensions in mm)



! To avoid water retention, the gaps of stainless steel screws have to be filled in (x8)

Optical Length	$L_{op} = [20 \times N]$ if N LED
Optical Length (for L2 Version)	$L_{op} = [40 \times N]$ if N LED
Mechanical Length	$L_{mecha} = L_{op} + 49\text{mm}$