



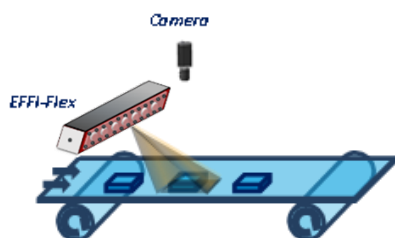
Strobe Version
available



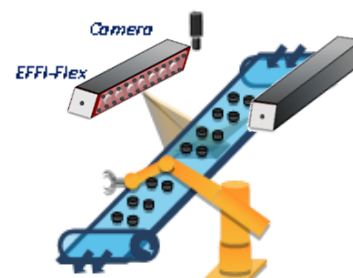
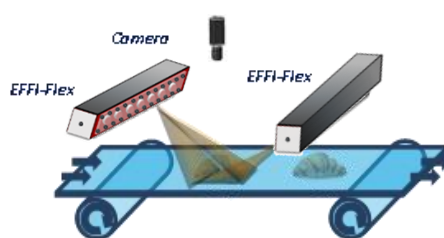
Very intense and uniform illuminated area
Full range of colors: from UV to IR, white, multi and hyperspectral
Long lifetime and minimal maintenance
Flexible: Different illumination angles (4 angles) & projection windows

	Power supply	24V DC
	Illumination mode	Continuous or strobe mode
	Power consumption	Depends on the number of LEDs (<i>see page 3</i>)
	Electronic mode	AutoStrobe or Analog Intensity Control
	Cable	Flying leads (5 or 10 meters) - 5 contacts
Optics	Wavelength	Single wavelength (from UV to IR) / White / Multispectral / Hyperspectral
Mechanics	Weight	Depends on the number of LEDs (<i>see page 6</i>)
	Width x height x length	54mm x 51mm x length – depends on the number of LEDs (<i>see page 2</i>)
	Fastener	8 x M5 holes
	Material	Device body: 316L Stainless Steel; Window: PMMA
Environment	Working temperature	0°C to +40°C
	IP rating	IP69K

Applications



Quality control



Pick and place

Part Number



Reference: EFFI-FLEX-IP69K-XXX-ZZZ-WW-PP-V-AA							
XXX: Number of LED							
XXX		1	3	5	10	15	+5 LED⁽²⁾
Optical length	Standard version	20 mm	60 mm	100 mm	200 mm	300 mm	+100 mm
	1 LED / 2 positions version ⁽¹⁾	-	-	200 mm	400 mm	600 mm	+200 mm
⁽¹⁾ For the 1 LED / 2 positions type, add -L2 (Length x 2) before the number of LEDs [EFFI-FLEX-IP69K-L2-XXX...]							
⁽²⁾ The maximum length of the standard product is 1800mm. For longer size, please contact EFFILUX.							
ZZZ: Color / Wavelength (nm)							
● UV 365	● UV 405	● Blue 465	● Green 525	● Red 625	● IR 850	○ White 000 (T°= 5500K ± 500K)	
WW: Windows (if not specified, default semi-diffusive window)							
TR: Transparent		SD: Semi-diffusive*			OP: Opaline*		
PP: Lens position – Emitting angle (if not specified, default position P2 = 25°)							
P0 (Without lens)		P1*		P2*		P3*	
V: Venting							
-V: Vent to equalize pressure and minimize condensation.				∅: No vent			
AA: Cable length							
-L5: 5 meters				∅: 10 meters			
Option Linescan (linear or darkfield lighting)				Option Polarizer (to eliminate glare)			
<p>Without linescan VS With linescan</p> <p>If linescan filter, add -LS in the reference. Classic configuration with TR window and lens in position P3.</p> <p>Part number: EFFI-FLEX-IP69K-XXX-YYY-WW-PP-(V-)AA-LS</p>				<p>Without polarizer VS With polarizer</p> <p>If polarizer, add -POL in the reference. Possibility to buy the accessory separately.</p> <p>Part number: EFFI-FLEX-IP69K-XXX-YYY-WW-PP-(V-)AA-POL</p> <p>The standard polarizer is not suitable for continuous mode use of blue or white light. For this type of application, the high durability polarizer is necessary.</p> <p>Part number: EFFI-FLEX-IP69K-XXX-YYY-WW-PP-(V-)AA-POL-HDY</p>			
Option Food*							
For food processing environment, the nickel-plated brass gland can be replaced by stainless steel type and the cable by a certified food & beverage type. For this option, please add -FOOD in the part number. Max cable length for this option is 10 meters.							
Please note that the food option is <u>not</u> compatible with the venting (-V) option (the vent is not compatible with food contact).							
Part number : EFFI-FLEX-IP69K-FOOD-XXX-YYY-WW-PP-AA							

*Not available for UV 365nm version

Electronical considerations



Contact arrangement

The EFFI-FLEX-IP69K requires 24V DC input power. Note the trigger pin **needs to be connected** either to the 24V DC signal for Continuous mode or to a PNP Trigger signal⁽¹⁾ for Overdrive strobe mode.

Contact arrangement	Number	Color	Designation ⁽¹⁾
<p>Standard Version Flying Leads</p> <p>Food Version M12 5Pins</p>	1	Brown	+24V
	2	White	N/A
	3	Blue	GND
	4	Black	PNP TRIGGER⁽¹⁾ Light ON if $V_{PNP} > 4.5V$ DC Max 24V DC – Analog Voltage
	5	Green/Yellow	N/A

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

Note: Standard cable resistant to detergent, hot water, bio oil, harsh environment and external use. Core insulation made of modified PP / Outer sheath made of special TPE / Sheath color: black

Power consumption

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.

STANDARD					
Max power consumption (White – 10m cable)					
Number of LEDs	Standard version		ELS-350	ELS-500	ELS-700
	P _{Peak 2s}	P _{CW}			
5	20	10	10	10	15
10	40	15	15	20	25
15	55	20	20	30	40
20	75	25	25	40	50
50	180	65	65	90	125
55 ⁽¹⁾	195	70	70	100	135
80 ⁽²⁾			100	145	200
100			125	180	
115 ⁽³⁾			145	205	
120 ⁽⁴⁾			150		

FOOD VERSION					
Max power consumption (White – 10m cable)					
Number of LEDs	Standard version		ELS-350	ELS-500	ELS-700
	P _{Peak 2s}	P _{CW}			
5	20	10	10	10	15
10	40	15	15	20	25
15	55	20	20	30	40
20 ⁽¹⁾	75	25	25	40	50
25 ⁽²⁾			35	45	65
40 ⁽³⁾			50	70	
50			65		
55 ⁽⁴⁾			70		

⁽¹⁾: Maximum optical length for standard EFFI-FLEX-IP69K

⁽²⁾: Maximum optical length for ELS-700 configuration

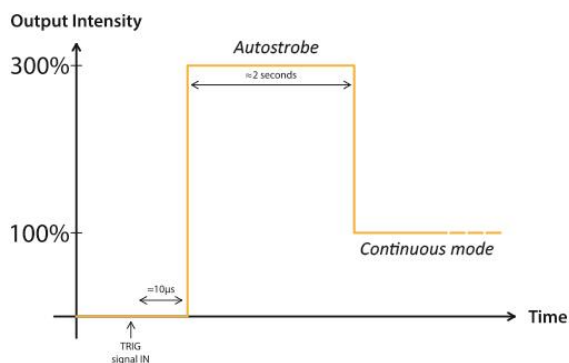
⁽³⁾: Maximum optical length for ELS-500 configuration

⁽⁴⁾: Maximum optical length for ELS-350 configuration

Signal consumption

Signal consumption (mA)					
Amount of LED	PNP Trigger Signal (Standard AutoStrobe version)			AIC Signal @24V (ELS version)	
	@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

Standard Version: AutoStrobe



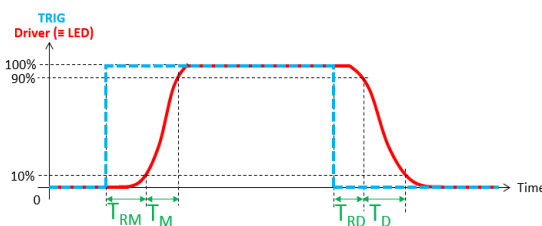
Note: Use a duty cycle lower than 30% in strobe mode.

ELS Version: Dimming control

Part Number	ELS-VVV-24V	ELS-IN-VVV-24V
	<p>OFF : 0-5V & ON : 5V-24V Max signal consumption = 2mA every 5 LEDs @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	11,5µs
Response rise time (T_{RM}) ²	6,5µs
Fall time (T_D) ³	7µs
Response fall time (T_{RD}) ⁴	0,5µs



(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

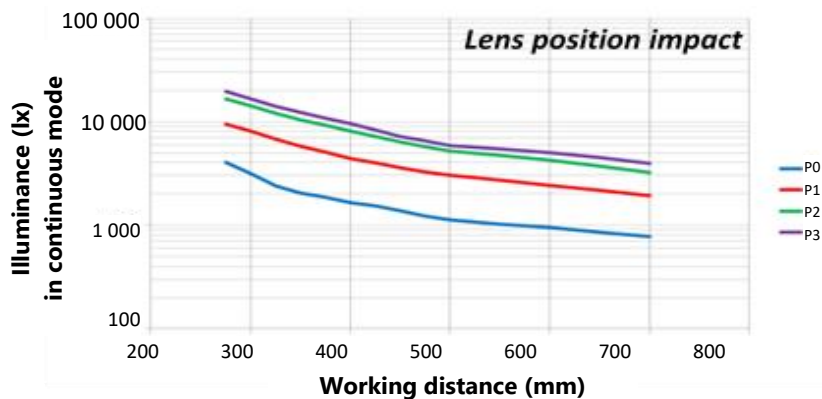
Optical considerations



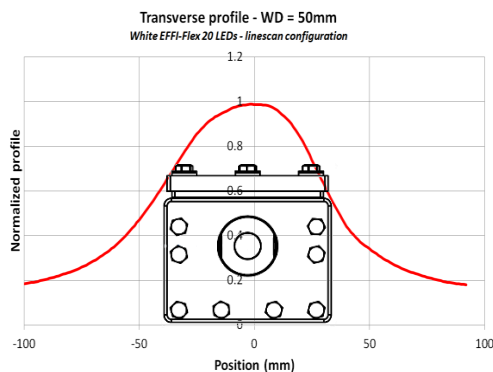
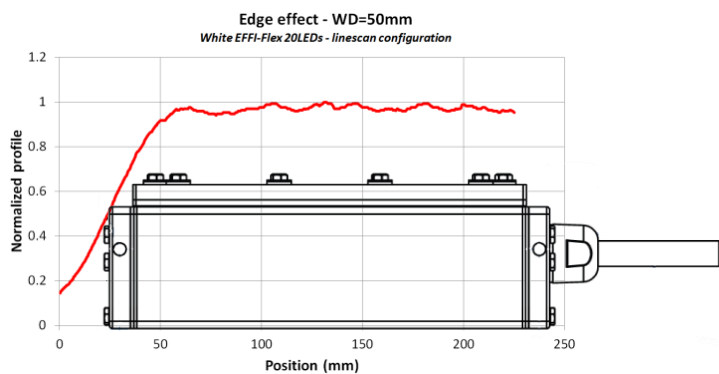
Illuminance vs Working Distance

The following measurements are made with a white EFFI-FLEX-IP69K, in continuous mode. Using the Overdrive mode of the AutoStrobe driver allows to **increase by 300%** these values.

EFFI-FLEX-IP69K 5 LEDs – Semi-diffusive window



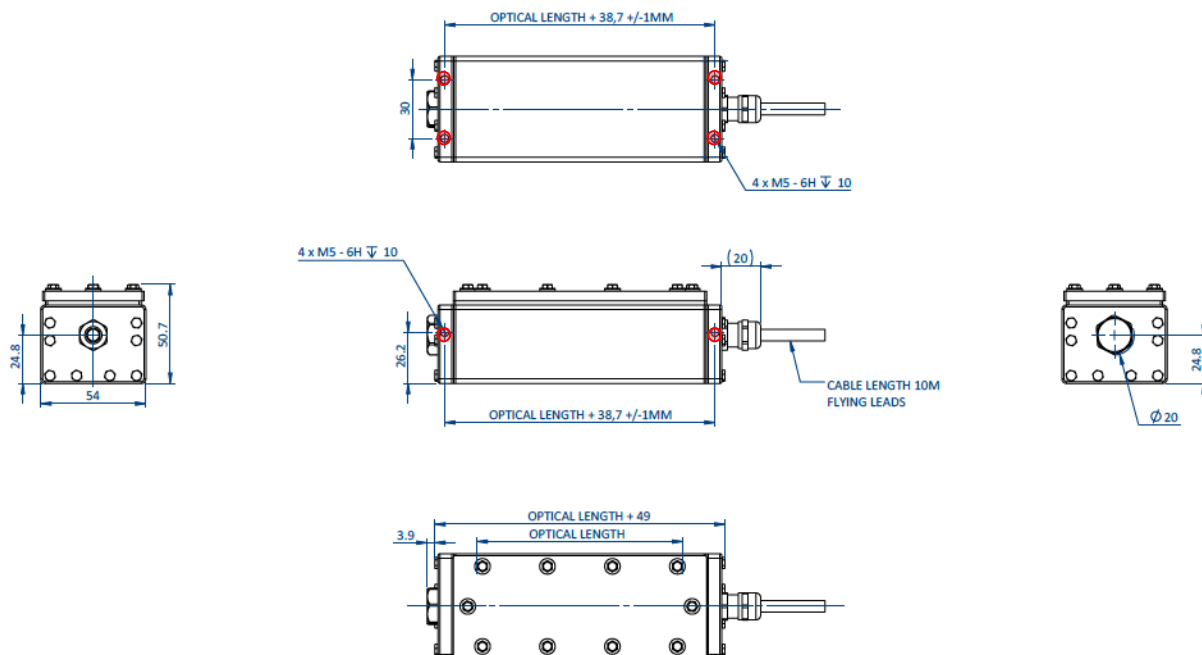
Profiles



Mechanical considerations (Dimensions in mm)

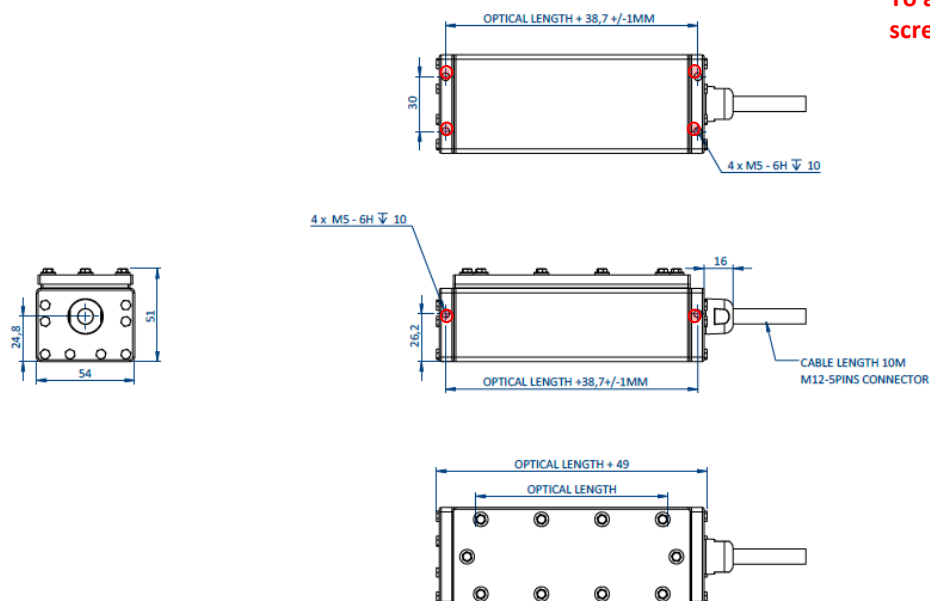


EFFI-FLEX-IP69K-XXX-YYY-WW-PP-V (with vent option)



EFFI-FLEX-IP69K-FOOD-XXX-YYY-WW-PP

To avoid water retention, the 8 mounting screws must be screwed in completely.



Number of LEDs (XXX) – Standard Version	Optical length (mm)	Product length (mm)	Weight (kg)
5	100	148.5	0.8
10	200	248.5	1.2
15	300	348.5	1.5
20	400	448.5	1.9
25	500	548.5	2.3
...	XXX x 20	XXX x 20 + 48.5	≈ 0.078 x XXX + 0.5