

**Uniform**

**Flexibility**

**Very intense**

**IP69K**



# effiFLEX-IP69K

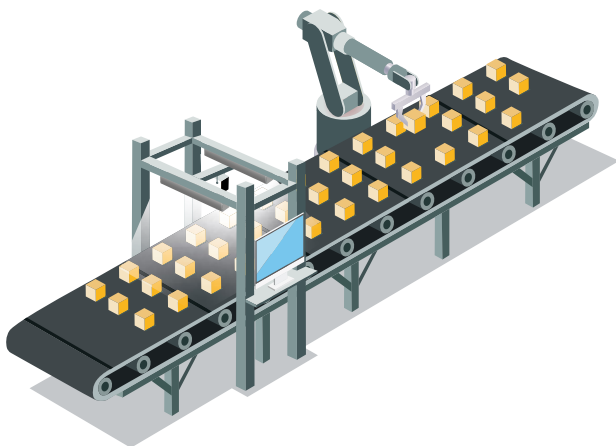
Waterproof agri-food LED bar resistant to washing chemicals

# INTRODUCTION

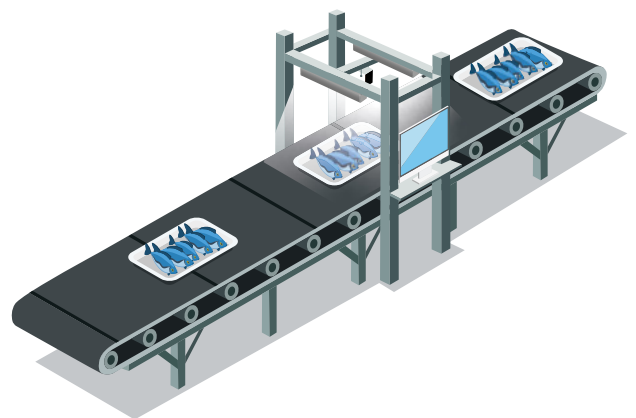
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## APPLICATIONS



Quality control



Pick and place

## RELATED PRODUCT

See the product datasheets below for more information.

### EFFI-FLEX



Adjustable beam angle LED bar

### EFFI-FLEX-CPT



IP67 version

### EFFI-FLEX2-IP69K



Multi-mode LED bar with high resistance and maximum waterproofing

# PART NUMBERING

## STANDARD VERSION

EFFI-FLEX-IP69K - <b>XXX</b>		- <b>ZZZ</b>	- <b>WW</b>	- <b>PP</b>	- <b>CCC</b>
	<b>Number of LED</b>	<b>Wavelength</b>	<b>Windows</b>	<b>Lens position</b>	<b>Connectors</b>
	<b>1</b> (20 mm)	● <b>365*</b> (UV)	<b>TR:</b> Transparent	<b>P0</b>	<b>FL2 (Standard):</b> XXX > 55 LEDs
	<b>3</b> (60 mm)	● <b>405</b> (UV)	<b>SD:</b> Semi-diffuse	<b>P1</b>	<b>IN2 (FOOD):</b> XXX > 20 LEDs
	<b>5</b> (100 mm)	● <b>465</b> (Blue)	<b>OP:</b> Opaline	<b>P2</b>	
	<b>10</b> (200 mm)	● <b>525</b> (Green)		<b>P3</b>	
	... Every 5 LED (every 100mm)	● <b>625</b> (Red)			
	<b>145</b> (2900mm)	● <b>850</b> (Infrared)			
		○ <b>000</b> (White 5500K)			

(\*) The UV 365nm wavelength is a specific configuration. Refer to the optical specifications.

## AVAILABLE VERSIONS & OPTIONS

VERSIONS	
L2: Economical version	EFFI-FLEX-IP69K- <b>L2</b> -XXX-ZZZ-WW-PP-CCC 1 LED every 40mm vs 1 LED every 20mm for standard
ELS	EFFI-FLEX-IP69K-XXX-ZZZ-WW-PP- <b>ELS-VVV-UUU</b> -CCC Specific configuration for continuous mode with AIC (Analog Intensity Control). The standard configuration is in Autostrobe mode. VVV corresponds to the intensity current sent per LED (350, 500, 700 or 1000 mA). UUU correspond to the voltage range used for intensity control (24, IN-24 or IN-5).
Food	EFFI-FLEX-IP69K- <b>FOOD</b> -XXX-ZZZ-WW-PP-CCC For food processing environment, the nickel-plated brass gland is replaced by stainless steel type and the standard cable by a certified food & beverage. The food option is not compatible with the venting option.
OPTICAL OPTIONS	
Polarizer	EFFI-FLEX-IP69K-XXX-ZZZ-TR-PP- <b>POL2</b> -CCC Eliminate glare from the workpiece making it easier to acquire a suitable image for the application with no hot spot. Must be used with a transparent window
Linescan film	EFFI-FLEX-IP69K-XXX-ZZZ- <b>TR-P3-LS</b> -CCC Transforms the EFFI-Flex light into a uniform line light ideal for either brightfield or dark-field illumination. Classic configuration with TR window and lens in position P3.
MECHANICAL OPTIONS	
Venting option	EFFI-FLEX-IP69K-XXX-ZZZ-WW-PP- <b>V</b> -CCC Vent to equalize pressure and minimize condensation

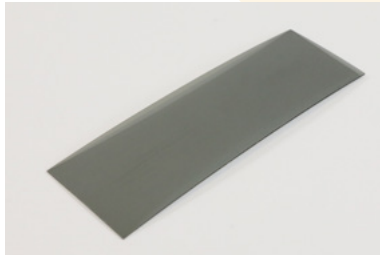
# GENERAL SPECIFICATIONS

## effiFLEX-IP69K

<b>Illumination Mode</b>	AutoStrobe or Continuous with AIC (Analog Intensity Control)	
<b>Wavelengths</b>	Single wavelength (from UV to IR) / White / Multispectral / Hyperspectral	
<b>Power Supply</b>	24V DC	
<b>Connector(s)</b>	<b>Cable with flying leads</b>	<b>Cable with M12 - 5pins</b>
<b>Power Consumption</b>	Depends on the number of LEDs	
<b>Weight</b>	Depends on the number of LEDs	
<b>Dimensions</b>	54mm x 51mm x length depends on the number of LEDs	
<b>Material</b>	Device body: Stainless Steel; Window: PMMA	
<b>Fastener</b>	8 x M5 holes	
<b>IP rating</b>	IP69K	
<b>Operation environment</b>	Temperature: 0°C to 40°C - Humidity: 20 to 85%RH (with no condensation) - Altitude: Up to 2000m	
<b>Storage environment</b>	Temperature: -20° to 60°C - Humidity: 20 to 85%RH (with no condensation)	
<b>Informations</b>	Overvoltage category I - Protective class III - Pollution degree 3	
<b>Regulations &amp; Marking</b>	CE - UKCA	
<b>Environmental Standards</b>	RoHS Directives (2011/65/EU, 2015/863/EU and China RoHS) - REACH Regulation - WEEE Regulation	
<b>Country of Origin</b>	France	

# OPTICAL SPECIFICATIONS

## POLARIZER



Using polarizers, on the Efflux light and on the camera, it is possible to eliminate glare from your workpiece making it easier to acquire a suitable image for the application. The user can insert directly the polarizer inside the EFFI-Flex, under the window.



Without polarizer

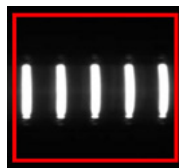


With polarizer

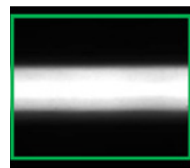
### Important notes:

- The polarization is optimal with a TR window, the use of diffuser (SD or OP) can depolarize the light.
- This option isn't available for UV365.

## LINESCAN FILM (TR-P3-LS)



Without Linescan film

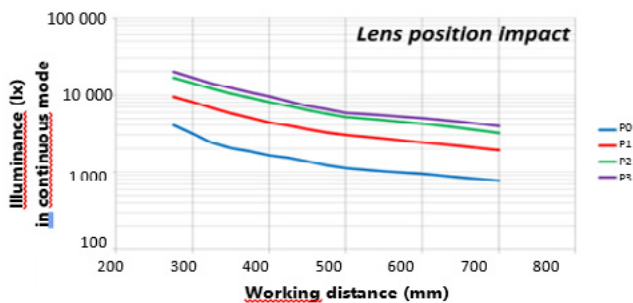


With Linescan film

Notes: The linescan option isn't available for UV365.

## ILLUMINANCE VS WORKING DISTANCE

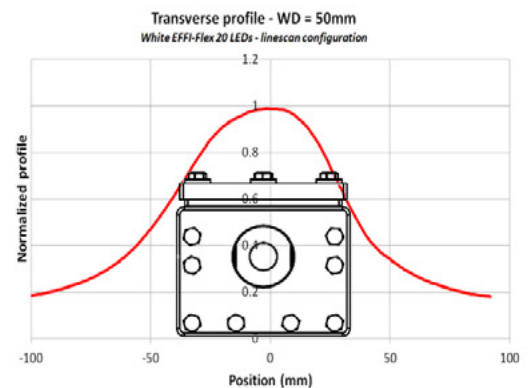
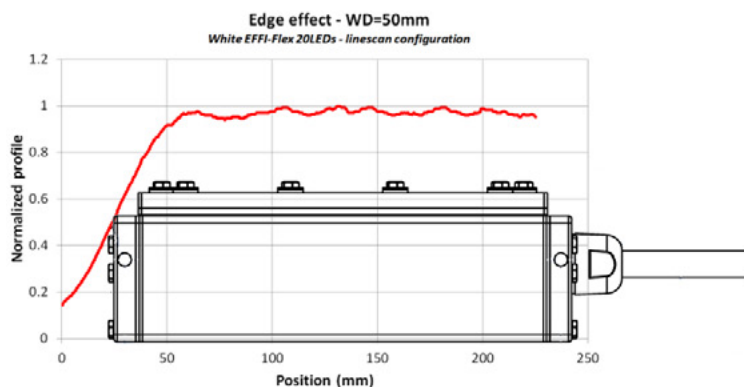
### EFFI-FLEX-IP69K 5 LEDs – Semi-diffusive window



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.

## PROFILE



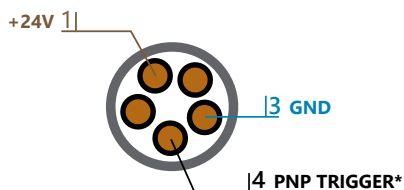
# ELECTRONICAL SPECIFICATIONS

## WIRING LAYOUT

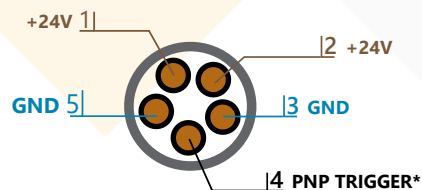
Depending on the product size and the chosen options, the light comes with different connectors. (See the Power Consumption section)

### Standard IP69K version

#### Flying lead - 1 input

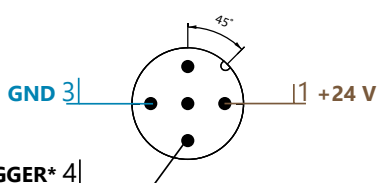


#### Flying lead - 2 inputs (FL2)

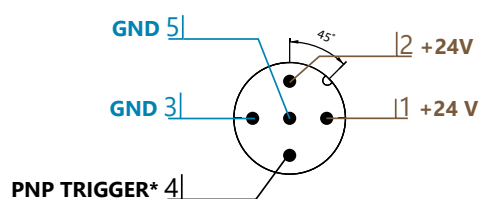


### Food version

#### M12 5pins - 1 input



#### M12 5pins - 2 inputs (IN2)



#### Notes:

- (\*) AIC (Analog Intensity Control) for the ELS version.
- The EFFI-FLEX-IP69K requires 24V DC input power.
- PNP trigger pin **needs to be connected** either to a trigger signal for AutoStrobe and Strobe or to a continuous signal for Continuous mode. Light is ON if VPNP > 4.5V DC.
- The standard cable included is resistant to detergent, hot water, bio-oil, harsh environment and can be used outdoor.
- For the FL2 and IN2 layouts, the power has been duplicated. Make sure **wire 2 and 5 are also connected to a power supply** or the cable may be damaged. **Both GND must be connected together.**

## POWER CONSUMPTION

### Standard IP69K version

MAX POWER CONSUMPTION IN WATTS +/-5% - White LED - 10m cable																		
Number of LEDs		5	10	20	25	30	40	50	55	60	70	80	90	100	110	115	120	130
Standard (Autostrobe)	P <sub>Peak,2s</sub>	20	40	80	95	115	155	190	210	230	265	305	340	380	415			
	P <sub>cw</sub>	8	15	30	35	50	55	65	70	75	90	100	115	125	140			
ELS	ELS-700	15	30	55	70	80	110	135	150	160	190	220	245	270	295	320	345	370
	ELS-500	10	20	40	50	60	80	95	105	115	135	155	175	195	215	235	255	275
	ELS-350	10	15	30	35	40	55	70	75	80	95	105	120	130	145	155	170	180

Flying lead - 1 input
  Flying lead - 2 input

**Notes:** For larger products with the ELS option, please contact us.

# FOOD Version

MAX POWER CONSUMPTION IN WATTS +/-5% - White LED - 10m cable																		
Number of LEDs		5	10	20	25	30	40	50	55	60	70	80	90	100	110	115	120	130
Standard (Autostrobe)	P <sub>Peak_2s</sub>	20	40	80	95	115	155											
	P <sub>cw</sub>	8	15	30	35	50	55											
ELS	ELS-700	15	30	55	70	80	110	135										
	ELS-500	10	20	40	50	60	80	95	105	115	135	155						
	ELS-350	10	15	30	35	40	55	70	75	80	95	105	120	130	145			

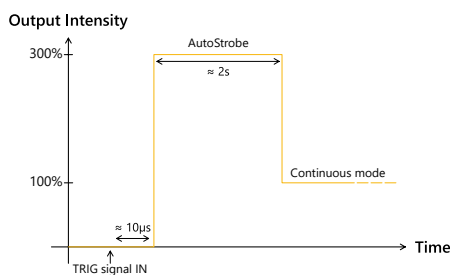
M12 5 pins - 1 input
  M12 5 pins - 2 inputs

**Notes:** These values are maximum values. The consumption may vary according to the wavelength and software. For the wavelengths 365 nm and 405 nm, you need to account for an additional 25% power consumption.

## DRIVER VERSIONS

### Standard version : Autostrobe driver

EFFI-FLEX-IP69K-XXX-ZZZ-WW-PP(-V)

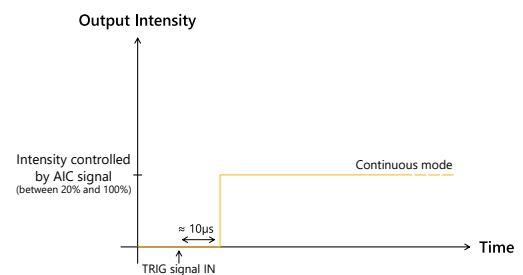


**Notes:** Respect a duty cycle lower than 30% in strobe mode.

### Dimmable version : ELS driver

(AIC instead of PNP)

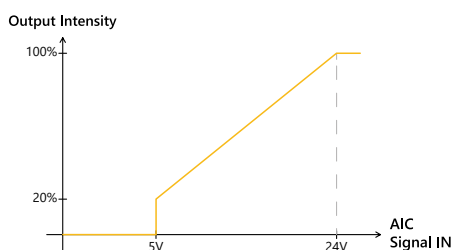
EFFI-FLEX-IP69K-XXX-ZZZ-WW-PP-ELS-VVV-UUU(-V)



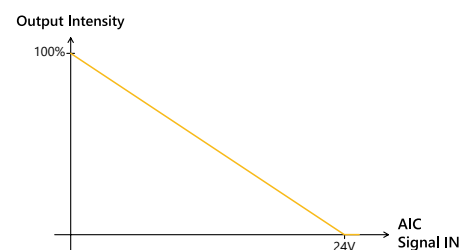
## ELS DRIVER VARIANTS

### AIC control range (UUU)

Standard 0-24V  
ELS-VVV-24V



Inverse 0-24V  
ELS-IN-VVV-24V



ELS is also available with 5V and 10V versions:

- ELS-350-5V: Output intensity rising between 0-5V / ELS-350-10V: Output intensity rising between 0-10V.
- ELS-IN-350-5V: Output intensity decreasing between 0-5V / ELS-IN-350-10V: Output intensity decreasing between 0-10V.

### LED current & maximum duty cycle

Part number: <b>VVV</b>	Output current (mA) [0-100%]	Max duty cycle EFFI-FLEX-IP69K	Max duty cycle EFFI-FLEX-IP69K-L2
<b>350</b> (standard)	0-350 mA	100%	100%
<b>500</b>	0-500 mA	70%	
<b>700</b>	0-700 mA	50%	

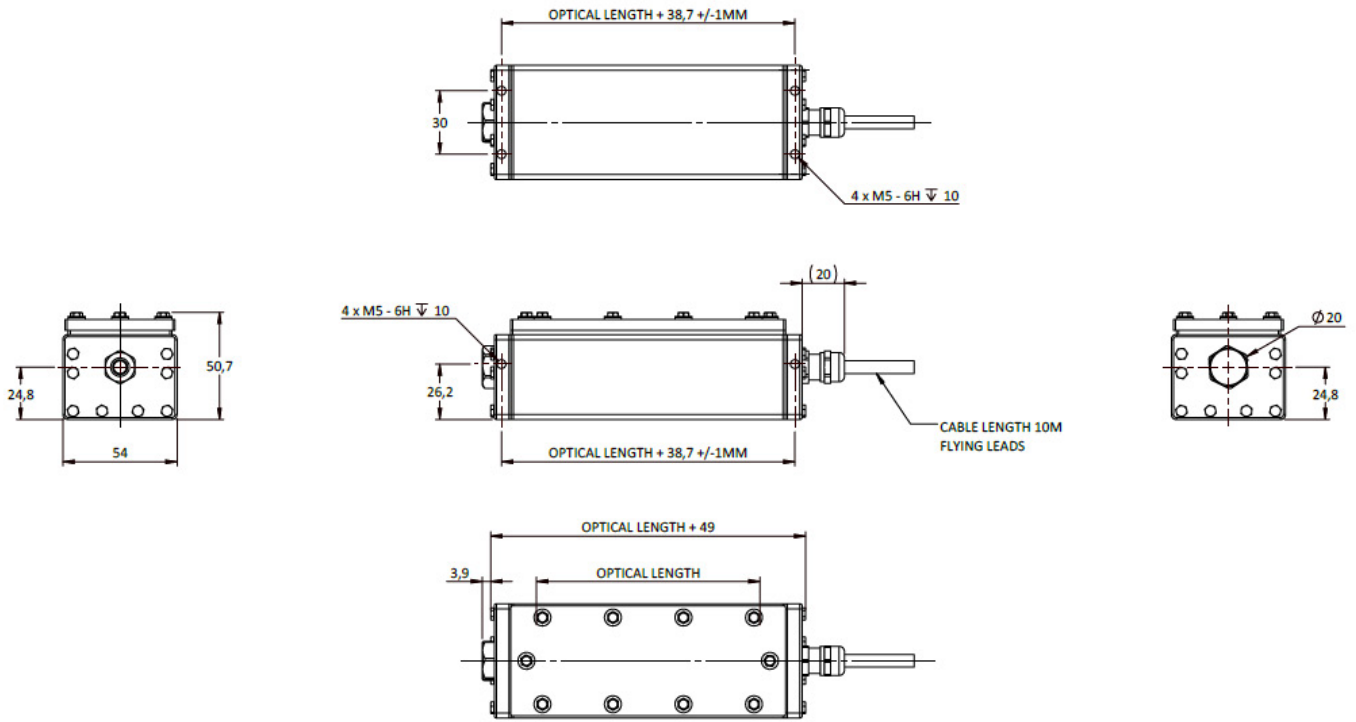
## SIGNAL CONSUMPTION

### Signal consumption (mA)

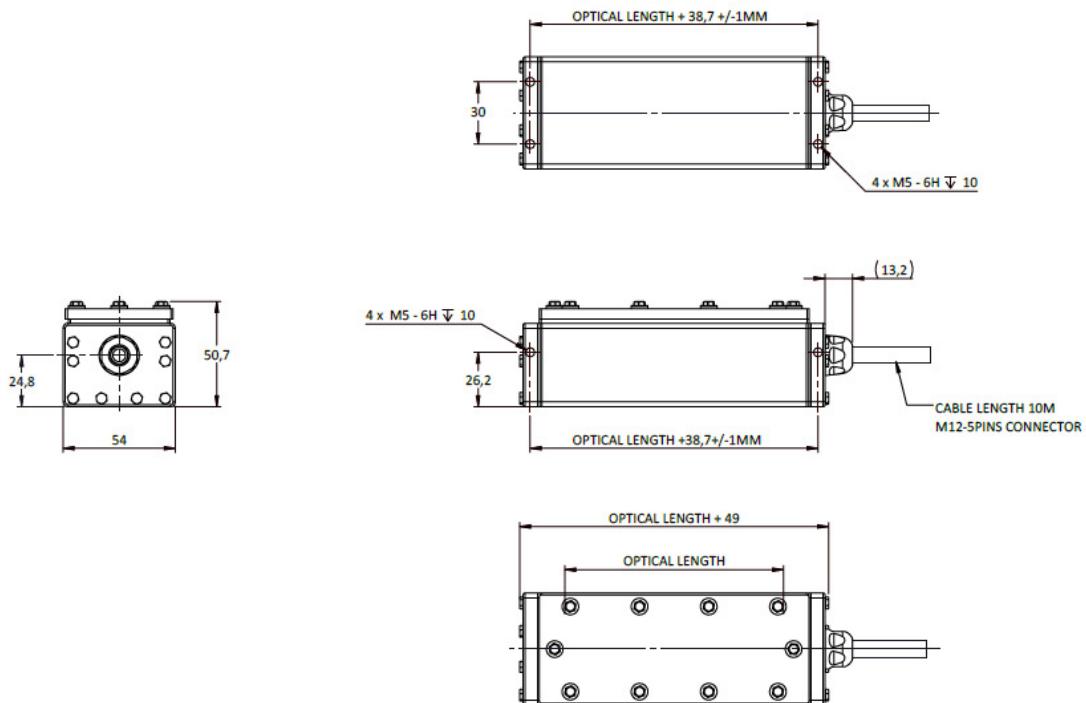
Amount of LED	PNP Trigger Signal (Standard AutoStrobe version)			AIC Signal 24V (ELS version)	
	5V	10V	24V	ELS-IN-350	ELS-350
<b>5</b>	0.05	0.1	0.25	1.5	0.2
<b>20</b>	0.1	0.2	0.45	6	0.8
<b>50</b>	0.2	0.4	0.9	15	2
<b>100</b>	0.35	0.65	1.55	30	4
<b>150</b>	0.45	0.9	2.2	45	6

# MECHANICAL SPECIFICATIONS (DIMENSIONS IN MM)

## EFFI-FLEX-IP69K-XXX-ZZZ-WW-PP-V



## EFFI-FLEX-IP69K-FOOD-XXX-ZZZ-WW-PP



# ACCESSORIES

Please refer to the specific documentation for additional information on the accessories of the EFFI-FLEX-IP69K.



**Camera Filters**

EFFO-FLR-...



**Fasteners**

Clamping: EFFM-1-0001  
Pivot joint: EFFM-1-0009  
Tripod adapter: EFFM-1-0027



**Extension cables**

2meters: EFFC-CAB-M12P-F-4-D-L2  
5meters: EFFC-CAB-M12P-F-4-D-L5  
10meters: EFFC-CAB-M12P-F-4-D-L10

# CONTACT INFORMATION

Please refer to the specific documentation (datasheet, user manual and drawing) for complementary information. Contents of this document are based on information available as of April-2025 and may be changed without prior notice.



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