



SWIR range



Dimming  
Control

**Intense and uniform** illuminated area  
**Full range of wavelengths:** From 1000nm to 1700nm  
Ideal for InGaAs cameras

**Long lifetime** and minimal maintenance

**Standard** connections and fasteners

**Flexible:** adjustable illumination angles & different window options

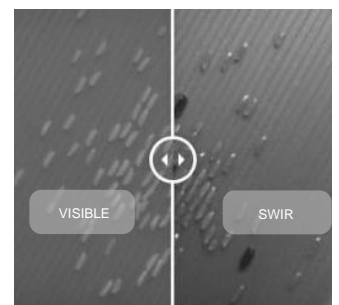
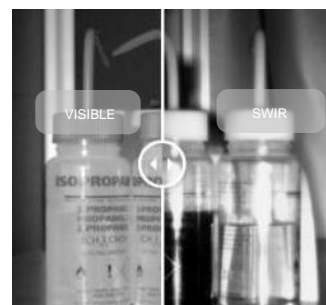
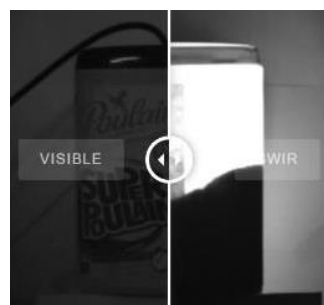
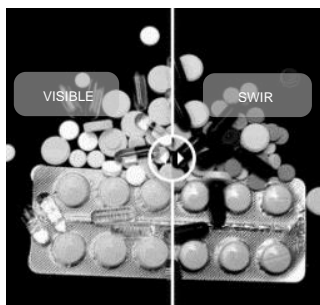
<b>Electronics</b>	Connectors	M12 – 4 Pins
	Power supply	24V DC
	Illumination mode	Continuous with a DIM process [0-24V] – Analog voltage or Strobe mode
	Power consumption	Depends on the amount of LEDs (page 4)
<b>Optics</b>	Wavelength	1050 nm   1200 nm   1300 nm   1450 nm   1550 nm   1650nm Multispectral version available on request
<b>Mechanics</b>	Weight	60g + 60g per LED
	Width x height x length	51mm x 49mm x length depends on the amount of LEDs
	Fastener	One T-slot on the back for 8mm T-nut (M6 recommended), and one slot on the side for M6 hex nut
	Material	Device body: Aluminum alloy; Window: PMMA
<b>Environment</b>	Working temperature	0°C to 50°C
	IP code	IP50 (option IP67 → Refer to EFFI-FLEX-CPT and IP69K → Refer to EFFI-FLEX-IP69K)

## Applications



### Typical SWIR applications:

Water detection  
Silicon inspection  
Vision through smoke  
...



## Part Number



<i>Reference:</i> EFFI-FLEX- <b>XXX</b> - <b>ZZZZ</b> - <b>WW</b> - <b>PP</b> - <b>ELS</b> - <b>VVV</b> - <b>UUU</b>							
<b>XXX</b> : Number of LED							
<b>XXX</b>		<b>1</b>	<b>3</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>+5LED</b>
Optical length	Standard version	20 mm	60 mm	100 mm	200 mm	300 mm	+100 mm
	1 LED / 2 positions version*	-	-	200 mm	400 mm	600 mm	+200 mm
* If 1 LED / 2 version, add -L2 (Length X 2) before the number of LED							
<b>ZZZZ</b> : SWIR Wavelengths (Short Wave InfraRed) (nm)							
<b>1050</b> nm	<b>1200</b> nm	<b>1300</b> nm	<b>1450</b> nm	<b>1550</b> nm	<b>1650</b> nm		
<b>WW</b> : Windows (if not specified, semi-diffusive window by default)							
<b>TR</b> : Transparent		<b>SD</b> : Semi-diffusive		<b>OP</b> : Opaline			
+ Powerful						+ Homogeneous	
<b>PP</b> : Lens position – Emitting angle (if not specified, default position P2 = 25°)							
<b>P0</b> (without lens)		<b>P1</b>		<b>P2</b>		<b>P3</b>	
<b>ELS-VVV-UUU</b> : Electronical version - Analog Intensity Control							
VVV = <b>600</b> for 1050nm, 1200nm, 1300nm, 1650nm and <b>1000</b> for 1450nm and 1550nm (VVV = max current in mA)							
<b>ELS-VVV-5V</b>		<b>ELS-VVV-10V</b>			<b>ELS-VVV-24V</b>		
0-5V Intensity control range		0-10V Intensity control range			0-24V Intensity control range		
Option Linescan (linear lighting or a darkfield lighting)				Option cylindrical lens (linear lighting or a darkfield lighting)			
<p>Without linescan</p>		<p>With linescan</p>					
If linescan, add <b>-LS</b> in the part number. Possibility to buy only the accessory. Part number: EFFI-FLEX- <b>XXX</b> - <b>ZZZZ</b> - <b>TR</b> - <b>P3</b> - <b>LS</b> - <b>ELS</b> - <b>VVV</b> - <b>UUU</b>				If cylindrical lens, add <b>-CYL</b> in the part number. Part number: EFFI-FLEX- <b>XXX</b> - <b>ZZZZ</b> - <b>TR</b> - <b>P3</b> - <b>LS</b> - <b>CYL</b> - <b>ELS</b> - <b>VVV</b> - <b>UUU</b> *Standard with 1050nm /1450nm /1550nm *Special glass lens with 1200nm /1300nm /1650nm – Please contact Effilux			
Option KIT (with all diffusers)							
		If KIT version, replace WW-PP by <b>-KIT</b> in the reference. The light will be delivered as a package including TR, SD and OP windows, and assembled in the default configuration with the lens plate positioned at P2 and the SD diffuser. Only available for sizes ≤ 40LED. Part number: EFFI-FLEX- <b>XXX</b> - <b>ZZZZ</b> - <b>KIT</b>					

### Optical considerations



#### How to change the lens positions of the EFFI-FLEX



1 Unscrew the M4 screws

2 Slide out the window

3 Slide out all lenses

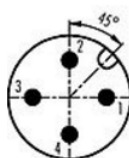
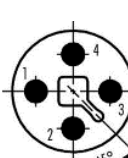
4 Replace the window and lenses in desired configuration

### Electronical considerations



#### Contact arrangement

The Effi-Flex requires 24V DC input power. Note the AIC pin needs to be connected.

Connector pinout	Number	Color Contact	Designation
  <p>M12 Standard (A-coded) Male      M12 Power (T-coded) Male</p> <p><b>Connector depends on electrical power consumption</b> (See page 4)</p>	1	Brown	+24V
	2	White	N/A
	3	Blue	GND
	4	Black	AIC: Analog Intensity Control for dimming - Analog Voltage Max 24V DC

## Analog Intensity Control

### ELS version (AIC): EFFI-FLEX-XXX-ZZZZ-WW-PP-ELS-VVV-24V

Part number (VVV = 600/1000)	ELS-VVV-5V	ELS-VVV-10V	ELS-VVV-24V
Signal			<p>OFF : 0-5V &amp; ON : 5V-24V</p>



Maximum ELS version is ELS-600-UUU for 1050nm, 1200nm, 1300nm and 1650nm.

Maximum ELS version is ELS-1000-UUU for 1450nm and 1550nm

## Power supply

Amount of LED	Max Electrical power consumption (W)	
	ELS 600mA	ELS 1000mA*
1	5	5
3	5	5
5	10	10
10	10	15
15	15	20
20	20	30
25	25	35
30	30	40
35	35	50
40	35	55
45	40	60
50	45	65



M12 Male connector

For longer products, please contact EFFILUX.

\*Only for 1450nm and 1550nm

## Signal consumption

AIC signal consumption	
ELS version (DIM)	ELS-VVV-UUU (VVV = 600 or 1000)
DIM consumption (mA)	2mA @24V every 5 LEDs

## Mechanical considerations (Dimensions in mm)



Nb of LEDs	Designation	Mechanical Length L(mm)	Optical Length Lop(mm)
		Standard: $L(\text{mm}) = [20 \times \text{nb\_of\_LED}] + 35\text{mm}$ L2: $L(\text{mm}) = [40 \times \text{nb\_of\_LED}] + 35\text{mm}$	Standard: $L_{op}(\text{mm}) = 20 \times \text{nb\_of\_LED}$ L2: $L_{op}(\text{mm}) = 40 \times \text{nb\_of\_LED}$
1	EFFI-FLEX-1-ZZZ-WW-PP	55	20
3	EFFI-FLEX-3-ZZZ-WW-PP	95	60
5	EFFI-FLEX-5-ZZZ-WW-PP	135	100
	EFFI-FLEX-L2-5-ZZZ-WW-PP	235	200
10	EFFI-FLEX-10-ZZZ-WW-PP	235	200
	EFFI-FLEX-L2-10-ZZZ-WW-PP	435	400
15	EFFI-FLEX-15-ZZZ-WW-PP	335	300
	EFFI-FLEX-L2-15-ZZZ-WW-PP	635	600
20	EFFI-FLEX-20-ZZZ-WW-PP	435	400
	EFFI-FLEX-L2-20-ZZZ-WW-PP	835	800
25	EFFI-FLEX-25-ZZZ-WW-PP	535	500
	EFFI-FLEX-L2-25-ZZZ-WW-PP	1035	1000
30	EFFI-FLEX-30-ZZZ-WW-PP	635	600
	EFFI-FLEX-L2-30-ZZZ-WW-PP	1235	1200
50	EFFI-FLEX50-ZZZ-WW-PP	1035	1000
	EFFI-FLEX-L2-50-ZZZ-WW-PP	2035	2000
70	EFFI-FLEX-70-ZZZ-WW-PP	1435	1400
	EFFI-FLEX-L2-70-ZZZ-WW-PP	2835	2800

For mechanical drawings please contact Effilux