



Intense and homogeneous (>90%) illumination

Standard connections and fasteners

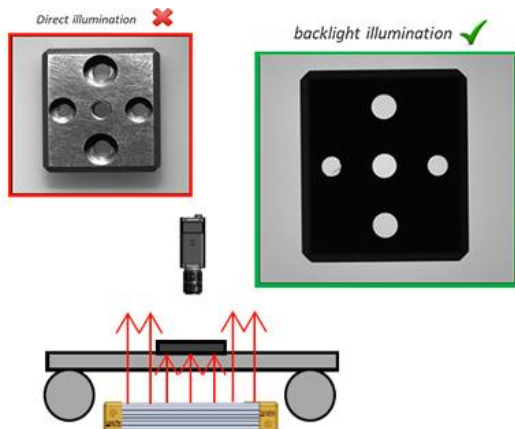
Anti-reflection coating on the diffusive window

Available from 50x50 mm<sup>2</sup> to 1450x1450 mm<sup>2</sup> (square) and 1450x2950 mm<sup>2</sup> (rectangular)

Long lifetime and minimal maintenance

<b>Electronics</b>	Connectors	M12 - 5 pins or M12 Power – 4 pins (depending on power consumption)
	Power supply	24V DC
	Illumination mode	Continuous with a AIC (Analog Intensity Control) feature [0-24V] – Analog voltage or Strobe mode
	Power consumption	Related to the dimensions (page 3)
	Cable length	500mm
<b>Optics</b>	Wavelength	Single wavelength (from Blue to IR, white)
<b>Mechanics</b>	Weight	Related to the dimensions
	Thickness	43.2mm (40mm with thin edge option)
	Dimensions	Any multiple of 50mm
	Fastener	Built-in M6 T-nut slot profile
	Material	Device body: Aluminum alloy & ABS; Window: Acrylic
<b>Environment</b>	Working temperature	0°C to 50°C
	IP code	IP50 (IP69K Version: Refer to EFFI-BL-IP69K documentation)

## Applications



### Inspection:

Highlighting the edges of the object (maximum contrast between the background and the form) for dimension control  
Inspect absence / presence of holes  
Ideal for transparent and translucent materials (glass, fabric, printed circuit...)  
Liquid level control of bottle  
And many other machine vision applications.

### Robotics:

Object localization to pick and place

## Part Number



### Reference:

EFFI-BL-**XXX**-**YYY**-**ZZZ**-**VVVV**

**XXX**: Optical width (mm) & **YYY**: Optical length (mm) (**XXX** ≤ **YYY**)

Dimensions are available for every 50mm steps, from 50mm x 50mm 1450x1450 mm<sup>2</sup> (square) and 1450x2950 mm<sup>2</sup> (rectangular)

**ZZZ**: Color / Wavelength (nm) (other wavelengths available on request)

● Blue 465

● Green 525

● Red 625

● IR 850

○ White 000  
(T° = 5700 K ± 700 K)

### VVVV: Connector Version

According to the electrical power, there one or several connectors. They can be M12 or M12P. Refer to the electrical power consumption table (page 3) to know the power of the product according to the dimensions.

Electrical Power	Amount & type of connectors	M12 Male connector	M12P Male connector
≤ 70 W	1X M12	VVVV = <b>XM12</b> With <b>X</b> = number of connectors	VVVV = <b>XM12P</b> With <b>X</b> = number of connectors
75W - 145W	2X M12 OR 1X M12 Power		
150W - 270W	3X M12 OR 1X M12 Power		
275W - 560W	2X M12 Power		
> 560W	Specific configuration. Contact EFFILUX for more information		

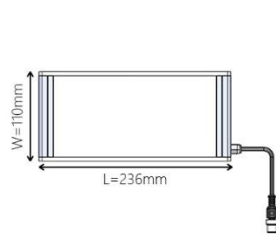
### Option: Thin Edges

Advantages: Less bulky / Thickness / Dust accumulation prevented (smooth walls)

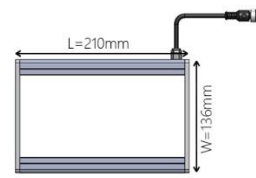
If **thin edges**: add **T** after the dimension which the thinner edge (Contact EFFILUX for any CAD request)

Part number: EFFI-BL-**XXX**T-**YYY**-**ZZZ**-**VVVV** or EFFI-BL-**XXX**-**YYY**T-**ZZZ**-**VVV**

Exemple 1 : EFFI-BL-100-200T



Exemple 2 : EFFI-BL-100T-200



### Option: Polarized Version (Not available for IR) (maximum size: 400-YYY)

The polarizer is used to highlight solder, hole or thickness differences in transparent materials.

For an integrated polarizer, add **-POL** in the part number: EFFI-BL-**XXX**-**YYY**-**ZZZ**-**VVVV**-**POL**

Effilux also proposes a polarizer kit accessory to install the polarizer directly on top of the product: **EFFO-BL-POL-XXX-YYY-KIT**

### Option: Collimated Version (maximum size: 300-300)

The collimation film allows you to collimate the light and reduce the emission angle.

For integrated collimation films, add **-2XLCF** or **-1XLCF** (2 or 1 film(s)): EFFI-BL-**XXX**-**YYY**-**ZZZ**-**VVVV**-**2XLCF** or EFFI-BL-**XXX**-**YYY**-**ZZZ**-**VVVV**-**1XLCF**.

Effilux also propose a kit accessory: **EFFO-BL-2XLCF-XXX-YYY-KIT** or **EFFO-BL-1XLCF-XXX-YYY-KIT**

### Option: Power version (x3)

If Power version (only available in white), add **-S150** at the end of the reference. Use with a duty cycle < 30% (mandatory).

Part number: EFFI-BL-**XXX**-**YYY**-**000**-**VVVV**-**S150**

## Electronical considerations



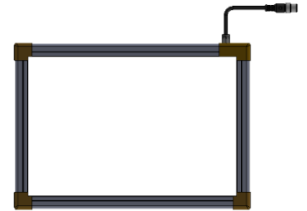
### Contact arrangement

The EFFI-BL is supplied with 24V DC. Depending on the size, the EFFI-BL come with different types and number of connectors, see table below:

**Important notes:**

- The AIC pin needs to be connected.
- In the case of multiple connectors, the AIC (DIM) contact is on the first connector, the one closer to the edge.  
(The AIC contact on the other connectors is not assigned)

Contact arrangement of connectors	Number	Color Contact	Designation
<p>M12 (A-coded) Male      M12 Power (T-coded) Male</p> <p><b>Connector depends on electrical power consumption</b></p>	1	Brown	+24V
	2	White	N/A
	3	Blue	GND
	4	Black	AIC: Analog Control of Intensity Max 24V DC
	5*	Grey	N/A



Length M12 cable (Cable gland → Connector): 500mm

\*Exists only with M12 - 5 pins not on M12 Power

### Power supply

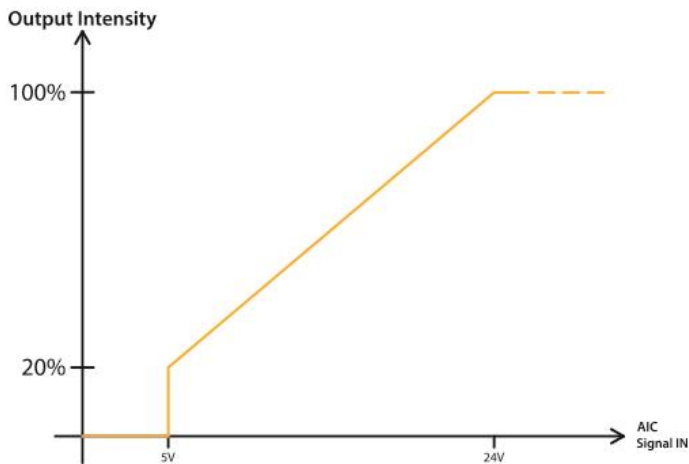
Electrical Power consumption (W) for standard EFFI-BL																							
		Optical length (mm)																					
		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1500	
Optical width (mm)	50	5	5	10	10	10	15	15	15	20	20	20	25	25	25	30	30	30	35	35	35	55	
	100	5	10	15	15	20	25	25	30	35	35	40	45	45	50	55	55	60	65	65	70	105	
	150	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	155	
	200	10	15	25	30	35	45	50	55	65	70	80	85	90	100	105	110	120	125	130	140	210	
	250	10	20	30	35	45	55	60	70	80	90	95	105	115	120	130	140	150	155	165	175	260	
	300	15	25	35	45	55	65	75	85	95	105	115	125	135	145	155	165	175	185	195	210	310	
	350	15	25	40	50	60	75	85	100	110	120	135	145	160	170	180	195	205	220	230	240	360	
	400	15	30	45	55	70	85	100	110	125	140	155	165	180	195	210	220	235	250	260	275	415	
	450	20	35	50	65	80	95	110	125	140	155	170	185	205	220	235	250	265	280	295	310	465	
	500	20	35	55	70	90	105	120	140	155	175	190	210	225	240	260	275	295	310	325	345	515	
	550	20	40	60	80	95	115	135	155	170	190	210	230	245	265	285	305	320	340	360	380	565	
	600	25	45	65	85	105	125	145	165	185	210	230	250	270	290	310	330	350	370	390	415	620	
	650	25	45	70	90	115	135	160	180	205	225	245	270	290	315	335	360	380	405	425	445	670	
	700	25	50	75	100	120	145	170	195	220	240	265	290	315	340	360	385	410	435	455	480	720	
	750	30	55	80	105	130	155	180	210	235	260	285	310	335	360	385	415	440	465	490	515	770	
800	30	55	85	110	140	165	195	220	250	275	305	330	360	385	415	440	470	495	520	550	825		
850	30	60	90	120	150	175	205	235	265	295	320	350	380	410	440	470	495	525	555	585	875		
900	35	65	95	125	155	185	220	250	280	310	340	370	405	435	465	495	525	555	585	620	925		
950	35	65	100	130	165	195	230	260	295	325	360	390	425	455	490	520	555	585	620	650	975		
1000	35	70	105	140	175	210	240	275	310	345	380	415	445	480	515	550	585	620	650	685	1030		
1500	55	105	155	210	260	310	360	415	465	515	565	620	670	720	770	825	875	925	975	1030	1540		

For the consumption (W) of the EFFI-BL with **power option** (EFFI-BL-XXX-YYY-ZZZ-S150): **Multiply by 3** the values in the array above.

For the consumption (W) of the EFFI-BL with **high power option** (EFFI-BL-XXX-YYY-ZZZ-S600): **Multiply by 12** the values in the array above.

Electrical Power	Corresponding color	Amount & type of connectors
≤70 W		1X M12
75W - 145W		2X M12 OR 1X M12 Power
150W - 270W		3X M12 OR 1X M12 Power
275W - 560W		2X M12 Power
> 560W		Specific configuration - Contact EFFILUX for more information

## AIC: Analog Intensity Control



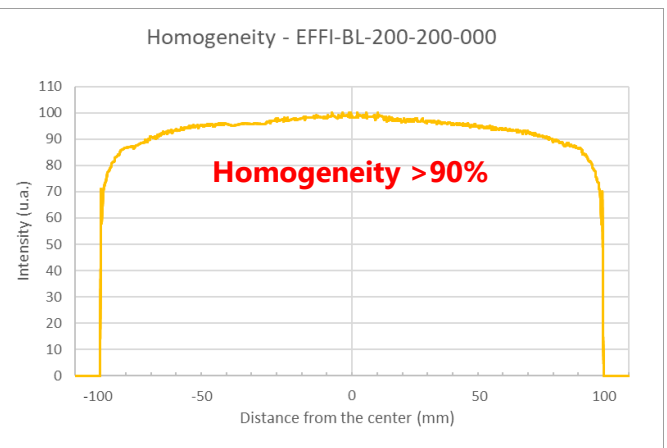
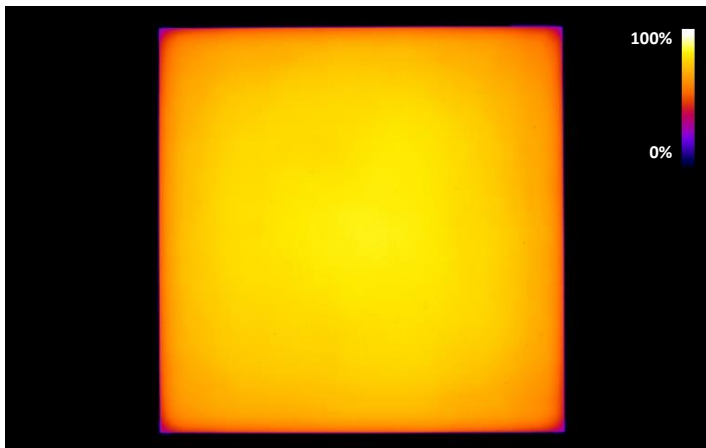
		AIC consumption (mA) for EFFI-BL standard							
		Optical length (mm)							
		50	100	200	300	400	500	1000	1500
Optical width (mm)	50	0.3	0.6	1.2	1.8	2.4	3	6	9
	100	0.6	0.3	0.6	0.9	1.2	1.5	3	4.5
	150	0.9	0.9	1.8	2.7	3.6	4.5	9	13.5
	200	1.2	1.2	1.2	1.8	2.4	3	6	9
	250	1.5	1.5	2.4	3.6	4.8	6	12	18
	300	3	0.9	1.8	2.7	3.6	4.5	9	13.5
500	3	1.5	3	4.5	6	7.5	15	22.5	

Other range of control for the AIC (0-5V or 0-10V instead of 0-24V) are available upon request.

## Optical considerations



### Homogeneity



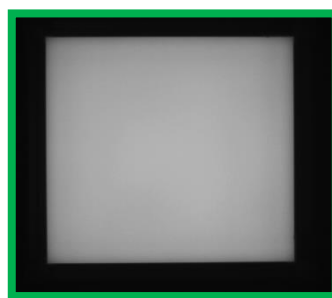
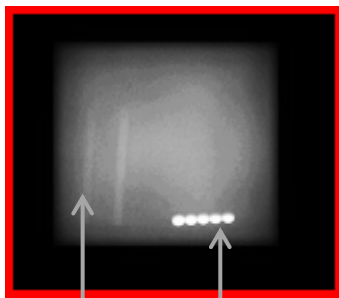
Product: EFFI-BL-200-200-000

Homogeneity:  $1 - (I_{max} - I_{min}) / (I_{max} + I_{min})$

Please note that the homogeneity is calculated on the optical area (5mm of edge effect).

### Anti-reflection system

EFFI-BL : no reflection ✓

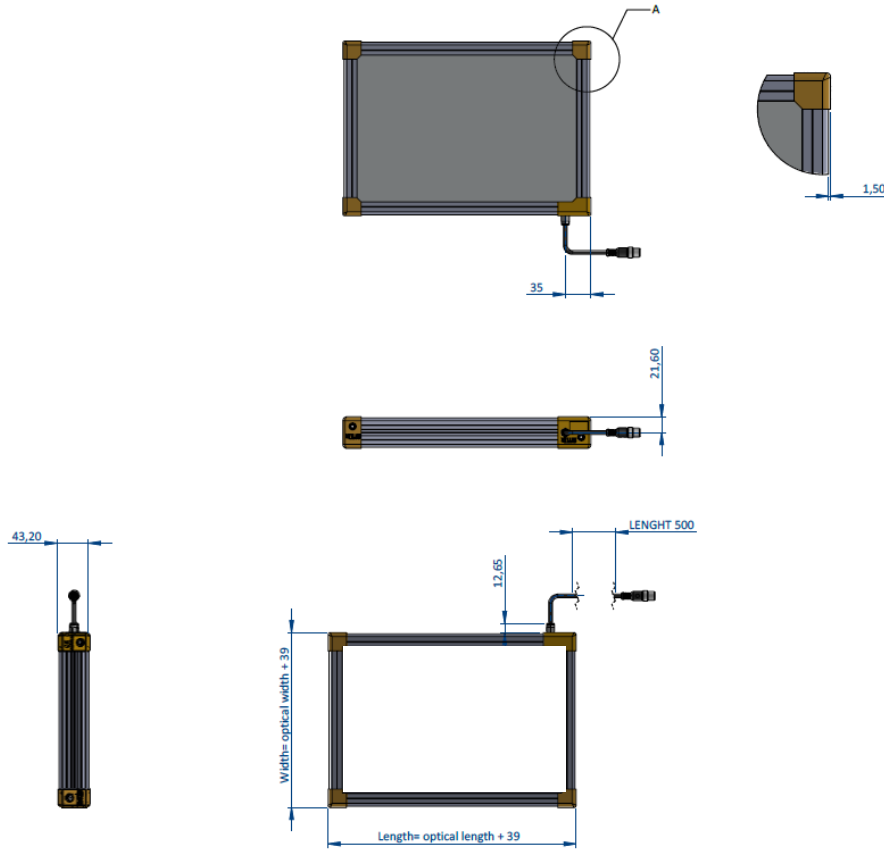


Anti-reflection system that absorbs the reflections of "parasitic" lighting around the system.

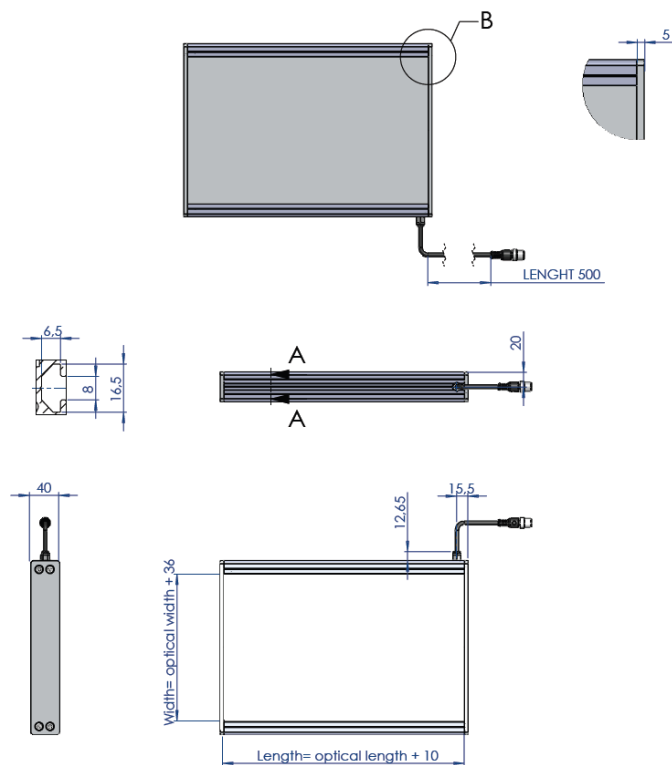
Mechanical considerations (Dimensions in mm)



Standard Version



Thin Edges Version



## Connector Positions

Number of connectors	Connector type	Connector position (s)	
		EFFI-FD Standard: On the longest side	EFFI-FD Thin Edges: On the longest side with standard edges
1	M12 Standard	35 mm from edge of the product 	15mm from the edge of the product 
	M12 Power	90mm from the edge of the product 	75mm from the edge of the product 
Many	M12 Standard or M12 Power	First 90mm connector Space between 2 cable glands: 60mm 	First 75mm connector Space between 2 cable glands: 60mm 

Other position of connector(s) upon request