

Standard



Homogeneous

**Anti-reflexion
coating**



Long lifetime



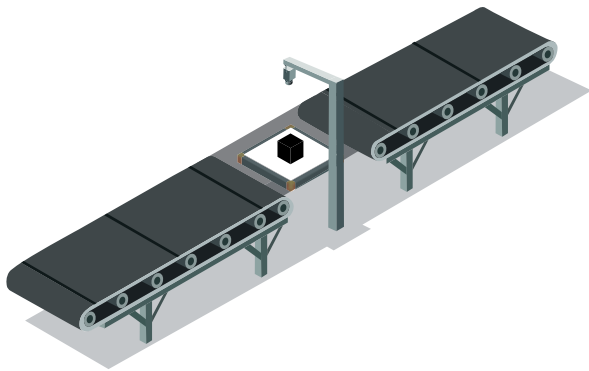
effiBL

High power & uniformity LED Backlight

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APPLICATIONS



Inspection:

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

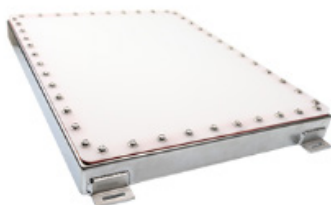
Robotics:

- Object location for pick and place.

RELATED PRODUCT

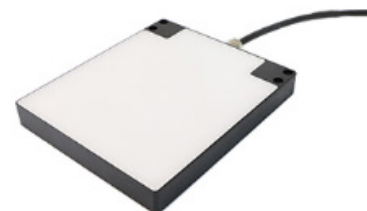
Refer to the datasheets of the products below for more details on those related products.

EFFI-BL-IP69K



IP69K version for
Food Industry & Washdown Environments

EFFI-SBL



IP67 Compact version

PART NUMBERING

STANDARD VERSION

EFFI-BL	- XXX	- YYY	- ZZZ	- VVVV
	Optical width (mm)	Optical length (mm)	Wavelength (nm)	Connector
	50	50	● 465 (Blue)	1M12
	100	100	● 525 (Green)	2M12
	150	150	● 625 (Red)	3M12
	...Every 50mm steps	...Every 50mm steps	● 850 (Infrared)	1M12P
	1450	2950	● 940 (Infrared)	2M12P
			○ 000 (White 5500K)	

IMPORTANT NOTE: YYY must be larger than XXX in the part number.

AVAILABLE VERSIONS & OPTIONS

VERSION	
Power version S150 (3x output power)	EFFI-BL-XXX-YYY-000-VVV-S150 Max duty cycle: 30% (mandatory) with max 1' time ON. Only available in white.
OPTICAL OPTIONS	
Polarizer (maximum size: 600-600)	EFFI-BL-XXX-YYY-ZZZ-VVVV-POL2 Eliminate glare from the workpiece making it easier to acquire a suitable image for the application with no hot spot. Effilux also proposes a polarizer kit accessory to install the polarizer directly on top of the product: EFFO-BL-POL2-XXX-YYY-KIT
Collimated option (maximum size: 500-500)	EFFI-BL-XXX-YYY-ZZZ-VVVV-1XLCF or 2XLCF The collimation film allows you to collimate the light and reduce the emission angle. Effilux also proposes a collimated film accessory to install on top of the product: EFFO-BL-1XLCF-XXX-YYY or EFFO-BL-2XLCF-XXX-YYY
Zebra	EFFI-BL-XXX-YYY-ZZZ-VVV-ZB-MMM The zebra mask is used by EFFILUX in metrology and deflectometry to reveal defects (stripe, impact, or positioning, etc.) on reflective, transparent, or semi-transparent surfaces. Effilux also proposes a zebra mask accessory to install on top of the product: EFFO-BL-XXX-YYY-ZZZ-ZB-TR-MMM
MECHANICAL OPTION	
Thin edges	EFFI-BL-XXX T -YYY-ZZZ-VVVV or EFFI-BL-XXX-YYY T -ZZZ-VVVV This option decrease the thickness on the side indicated with T in the part-numbering. Advantages: Less bulky / Thickness / Dust accumulation prevented (smooth walls). For dimensions larger than 1m, contact Effilux.
Width Side Connector (WSC)	EFFI-BL-XXX-YYY-ZZZ-VVV- WSC Moves the connector on the width side (XXX).

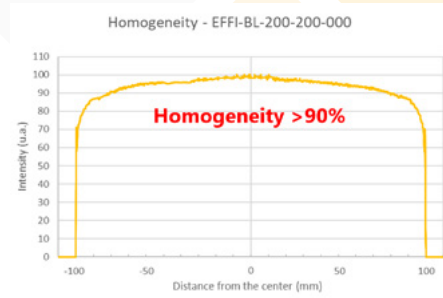
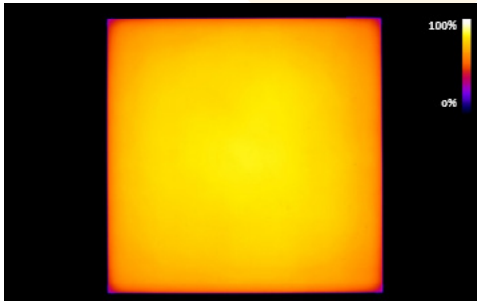
GENERAL SPECIFICATIONS



Illumination Mode	Continuous with AIC (Analog Intensity Control)	
Wavelengths	465nm, 525nm, 625nm, 850nm, 940nm, White (5500K ±500K)	
Power Supply	24V DC	
Connector(s)	M12 - 5 pins (x1, x2 or x3)	M12 Power - 4 pins (x1 or x2)
Power Consumption	Related to the dimensions	
Analog Intensity Control (AIC)	The output optical power is adjustable from 20% to 100% by applying a signal from [5V-24V DC] Total voltage range [0V-24VDC] / Don't exceed 24V DC / Max. signal consumption: 4mA	
Weight	Related to the dimensions	
Thickness	43.2mm (40mm with thin edge option)	
Dimensions	Any multiple of 50mm	
Material	Device body: Aluminum alloy & ABS	
Fastener	Built-in M6 T-nut slot profile	
IP rating	IP5X	
Operation environment	Temperature: 0°C to 50°C - Humidity: 20 to 85%RH (with no condensation) - Altitude: Up to 2000m	
Storage environment	Temperature: -20° to 60°C - Humidity: 20 to 85%RH (with no condensation)	
Informations	Overvoltage category I - Protective class III - Pollution degree 3	
Regulations & Marking	CE - UKCA	
Environmental Standards	RoHS Directives (2011/65/EU, 2015/863/EU and China RoHS) - REACH Regulation - WEEE Regulation	
Country of Origin	France	

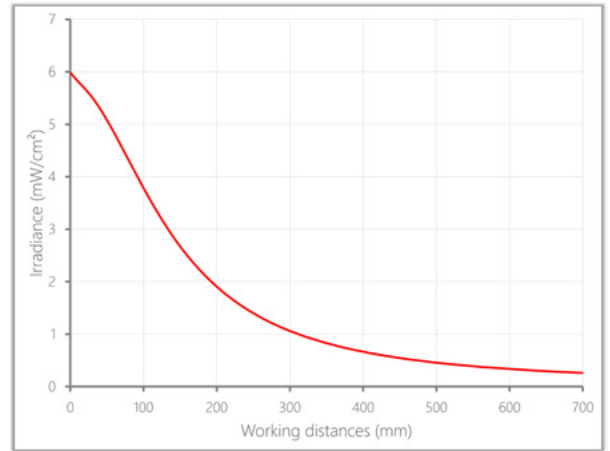
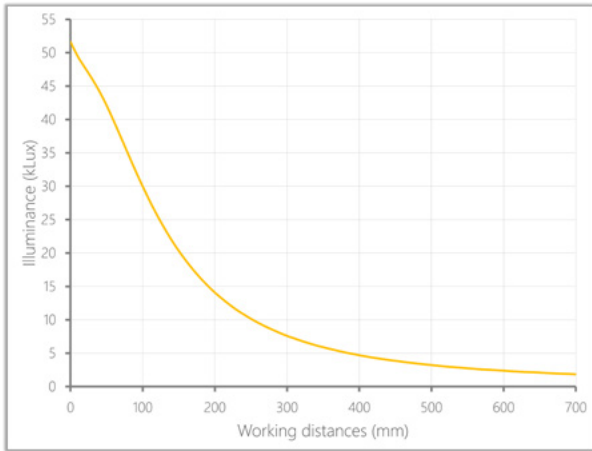
OPTICAL SPECIFICATIONS

HOMOGENEITY



Note: The homogeneity is calculated on the optical area (5mm of edge effect)

OUTPUT POWER



— White 5500K — Red 625nm & IR850

POLARIZER

Using polarizer, 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.



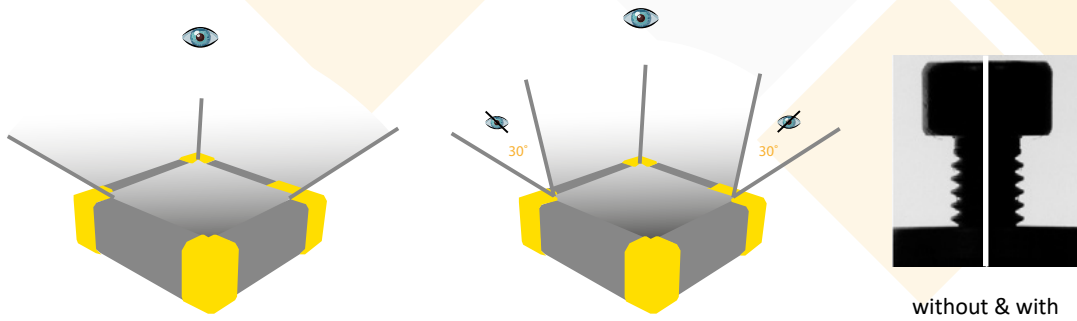
EFFI-BL: no reflection



Bar light and neon light reflection

COLLIMATED OPTION

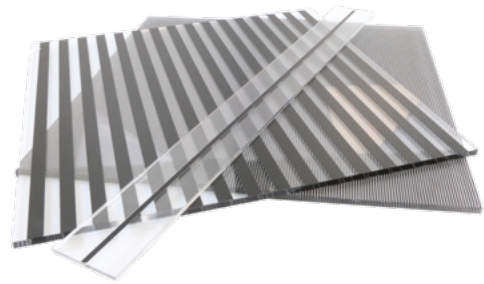
Collimation film can be used on backlights to reduce the angle of emission and get parallel light rays. This helps to provide high-contrast images needed for precise edge detection and defect analysis.



ZEBRA

The zebra mask from EFFILUX is the ideal mask for metrology and deflectometry to reveal defects (stripe, impact, or positioning, etc) on reflective / transparent surfaces /or semi transparent.

The goal of ZB lighting is to provide maximum contrast so that machine vision software can evaluate and make necessary judgment. On the image, the defect will be revealed in white on black.

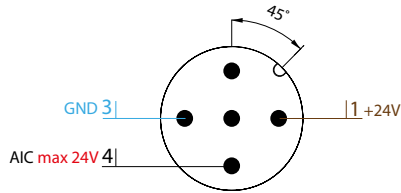


ELECTRONICAL SPECIFICATIONS

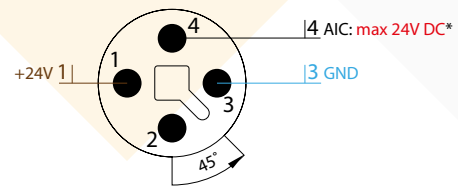
CONTACT ARRANGEMENT

The EFFI-BL is supplied with 24V DC. Depending on the size, the EFFI-BL come with different types and numbers of connectors.

M12 connector (A-coded) Male



M12 connector Power (T-coded) Male



Important notes:

- The AIC pin needs to be connected.
- In the case of multiple connectors, the AIC (DIM) contact is in the first connector, the one closer to the edge (the AIC contact on the other connectors is not assigned).
- (*) For the power version this pin is used for the strobe.

POWER CONSUMPTION & CONNECTOR DEFINITION

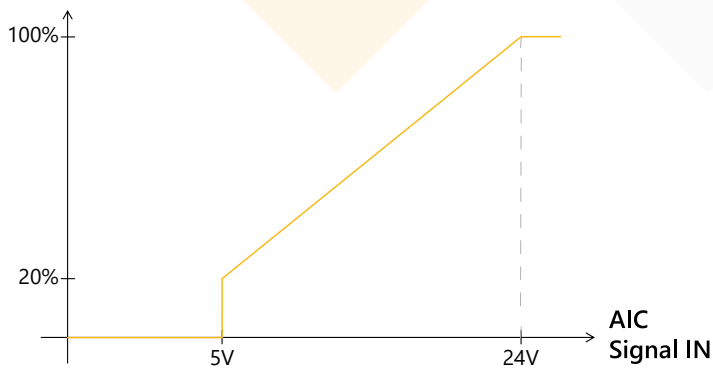
	Optical length (mm)																				
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1500
50	5	5	10	10	10	15	15	15	20	20	20	25	25	25	30	30	30	35	35	35	55
100	5	10	15	15	20	25	25	30	35	35	40	45	45	50	55	55	60	65	65	70	105
150	10	15	20	25	30	35	40	45	50	55	60	65	70	75	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	35	105	155	210	260	310	360	415	465	515	565	620	670	720	770	825	875	925	975	1030	1540

Electrical Power	Corresponding color	Amount & type of connectors
≤ 70W		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

The output optical power of the EFFI-BL is adjustable from 20% to 100% by applying a signal from 0V to 24V on the AIC pin. The control range can be changed to 0-10V or 0-5V on request.

Output Intensity

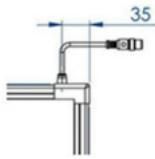
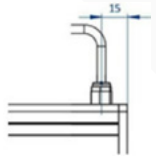
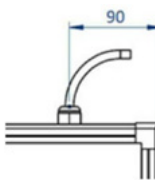

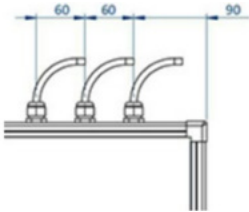
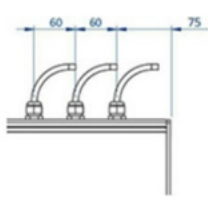


AIC Signal consumption

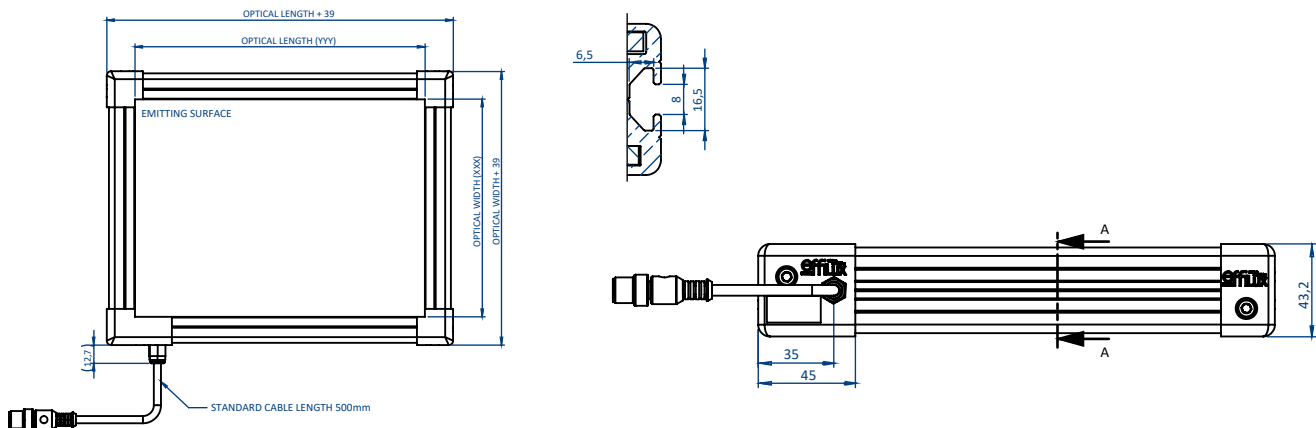
		Optical length (mm)							
		50	100	200	300	400	500	1000	1500
Optical width (mm)	50	0.3	0.6	1.2	1.8	2.4	3	6	9
	100	0.6	0.3	0.6	0.9	1.2	1.5	3	4.5
	150	0.9	0.9	1.8	2.7	3.6	4.5	9	13.5
	200	1.2	1.2	1.2	1.8	2.4	3	6	9
	250	1.5	1.5	1.5	3.6	4.8	6	12	18
	300	3	0.9	0.9	2.7	3.6	4.5	9	13.5
	500	3	1.5	1.5	4.5	6	7.5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

MECHANICAL SPECIFICATIONS (DIMENSIONS IN MM)

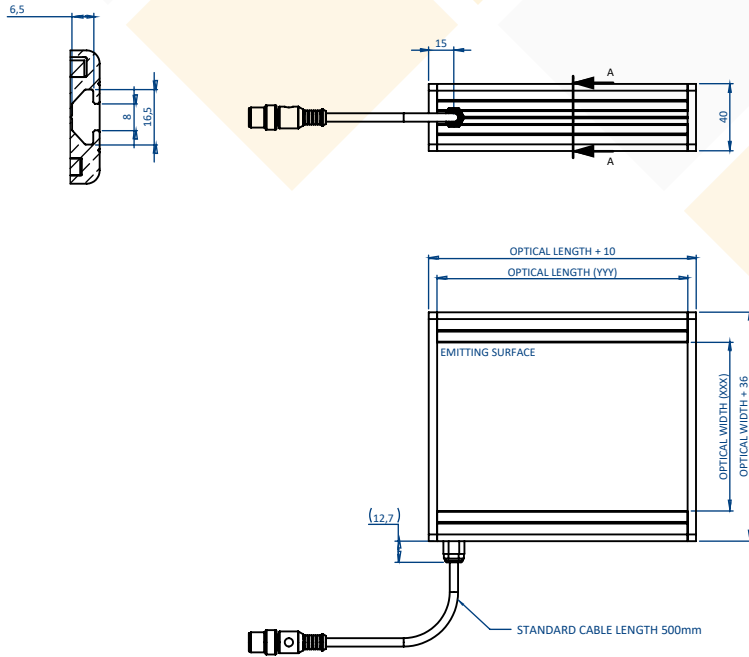
CONNECTORS POSITIONS

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	35mm from edge of the product 	15mm from edge of the product 
	M12 Power	90mm from the edge of the product 	75 mm 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 

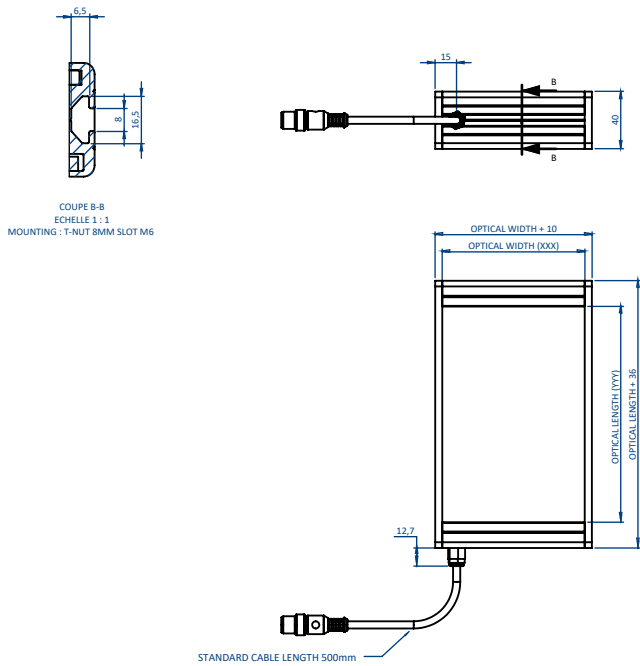
STANDARD VERSION



THIN EDGES VERSION - EFFI-BL-XXXT-YYY-ZZZ-VVV



THIN EDGES VERSION - EFFI-BL-XXX-YYYT-ZZZ-VVV



Note: For thin edges dimensions larger than 1m, contact Effilux.

ACCESSORIES

Please refer to the specific documentation for additional information on the accessories of the EFFI-BL



Fasteners

T-Nut Kit: EFFV-BOLT-0011
Pivot joint Kit: EFFM-1-0002
Bracket: EFFM-1-0017



Extension cables

M12
2meters: EFFC-CAB-M12-FM-5-DD-L2
5meters: EFFC-CAB-M12-FM-5-DD-L5
10meters: EFFC-CAB-M12-FM-5-DD-L10
M12P
2meters: EFFC-CAB-M12P-FM-4-DD-L2
5meters: EFFC-CAB-M12P-FM-4-DD-L5
10meters: EFFC-CAB-M12P-FM-4-DD-L10



Potentiometer

EFFI-DIMMER
EFFI-DIMMER2

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 January-2025 and may be changed without prior notice.



EFFILUX
1, Rue de Terre Neuve
Mini Parc du Verger - Bâtiment E
91940 Les Ulis - FRANCE

Tel: +33 9 72 38 17 80
Fax: +33 9 72 11 21 69
Mail: sales@effilux.fr

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