



Flexibility

**Up to
3 meters**

**High intensity
lighting**

**Ajustable
beam angle**

Easy-to-use

Built-in driver



effiFLEX2

Multimode Flexible LED bar light

PART NUMBERING

STANDARD VERSION

EFFI-FLEX2	- XXXX	- ZZZ	- WW	- PP
	Optical Length [mm]	Wavelength [nm]	Window	Lens position
	60	● 365* (UV)	TR (Transparent)	P0 (90°)
	100	● 405 (UV)	SD (Semi-diffuse)	P1 (45°)
	200	● 465 (Blue)	OP (Opaline)	P2 (25°)
	300	● 525 (Green)	KIT (All diffusers)	P3 (10°)
	... Every 100mm	● 625 (Red)		
	2900	● 850 (Infrared)		
		○ 000 (White)		

(*) The UV 365nm wavelength is a specific configuration. Refer to the corresponding annex.

AVAILABLE VERSIONS & OPTIONS

OTHER LED DENSITIES VERSIONS	
L2: Economical version	EFFI-FLEX2- L2 -XXXX-ZZZ-WW-PP 1 LED every 40mm vs 1 LED every 20mm for standard (See corresponding annex)
X2: High uniformity version	EFFI-FLEX2- X2 -XXXX-ZZZ-WW-PP 1 LED every 10mm vs 1 LED every 20mm for standard (See corresponding annex)
OPTICAL OPTIONS	
Kit with all diffusers	EFFI-FLEX2-XXXX-ZZZ- KIT 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 ≤ 800mm.
Polarizer	EFFI-FLEX2-XXXX-ZZZ-WW-PP- POL (See page 5)
Linescan film	EFFI-FLEX2-XXXX- ZZZ-TR-P3-LS (See page 5)
Cylindrical lens	EFFI-FLEX2-XXXX-ZZZ- TR-P1-LS-CYL (See page 5)
ELECTRONICAL OPTIONS	
Customized software	EFFI-FLEX2-XXXX-ZZZ-WW-PP- SWxxxxxx Specific reference xxxxxx for each customized software.
NPN	EFFI-FLEX2-XXXX-ZZZ-WW-PP- NPN Light ON with a trigger signal between 0-2V (inverted to PNP)
CONNECTOR OPTIONS	
Connector position and orientation, Cables position	EFFI-FLEX2-XXXX-ZZZ-WW-PP- SCXXX/BSC/SCG (See corresponding annex)

TECHNICAL SPECIFICATIONS



Illumination Mode		Overdrive, Strobe or continuous		
Wavelengths		365nm, 405nm, 465nm, 525nm, 625nm, 850nm (+/- 5nm) White (5500K ±500K) (Other wavelength upon request)		
Power Supply		24V DC (+/-10%)		
Connector(s) (See wiring layout page 6)	Optical length	60mm - 400mm	500mm - 1600mm	1700mm - 2900mm
	Type	M12 (A-coded) - 5 pins	M12 Power (T-coded) - 4 pins	2x M12 Power (T-coded) - 4 pins
Power Consumption (See details page 6)	In continuous mode	Max. 10W per 100 mm of optical length		
	In Autostrobe mode (peak)	Max. 40W per 100mm of optical length		
Built-in driver version		Multimode (3 modes: AutoStrobe with overdrive intensity / Dimmable strobe / Dimmable continuous)		
Analog Intensity Control (AIC)		The output optical power is adjustable from 20% to 100% by applying a signal from [2V-10VDC] Total voltage range [2V-24VDC] / Don't exceed 24V DC / Max. signal consumption: 4mA		
Autostrobe		450% Overdrive current during 245 ms max then continuous at 100%		
		Max. duty cycle 30%		
		PNP trigger input: Light ON from 4.5V* to 24V / Don't exceed 24VDC / Max. signal consumption: 4mA (Option NPN for size ≥ 500mm, on PIN4: Light ON from 0V to 2V / Don't exceed 24V DC / Max. signal consumption: 4mA)		
Response time		Max. 10µs (Rise time included)		
Weight		Approx. 315g per 100mm of optical length		
Dimensions		51mm x 49mm x Length = Optical length + 35mm (Please see the drawing on page 8)		
Material		Device body: Aluminum alloy / Window: PMMA		
Fastener		T-slot on the back for M6 T-nuts 8mm slot (2x M6 T-nuts included)		
IP rating		IP5X (dust protected)		
Operation environment		Temperature: 0°C to 40°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		

***Note:** The PNP threshold voltage of 4.5V may vary according to lengths and power consumption. (Please refer to the related table value in the User Manual of EFFI-Flex2)

OPTICAL SPECIFICATIONS

MANY POSSIBLE CONFIGURATIONS IN JUST ONE LIGHT

Diffusers

TR : Transparent

SD : Semi-diffuse

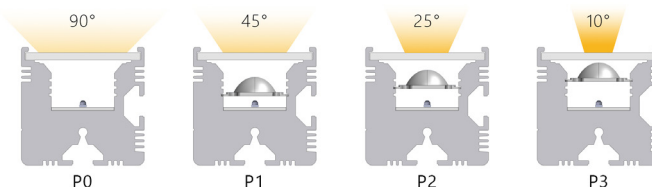
OP : Opaline



Depending on the uniformity needed for the application, the user can easily change the diffuser to satisfy the application requirements.

Lens position

The EFFI-Flex2 offers flexible lens positioning to control the beam angle. The user can adjust it by himself: the angle can be widened by moving the lens closer to the LEDs or narrowed by moving the lens further away from the LEDs.



How to change the optical configuration of your EFFI-Flex2?

The EFFI-Flex2 offers flexible lens positioning to control the beam angle and different type of diffusers to adapt the uniformity. The user can easily change the diffuser and the lens position in the field.



Unscrew the M4 screws and remove the cap (without connector)



Slide out the window and all lenses



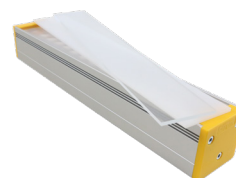
Place the lenses & window in desired configuration

KIT OPTION

With the KIT option, 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.

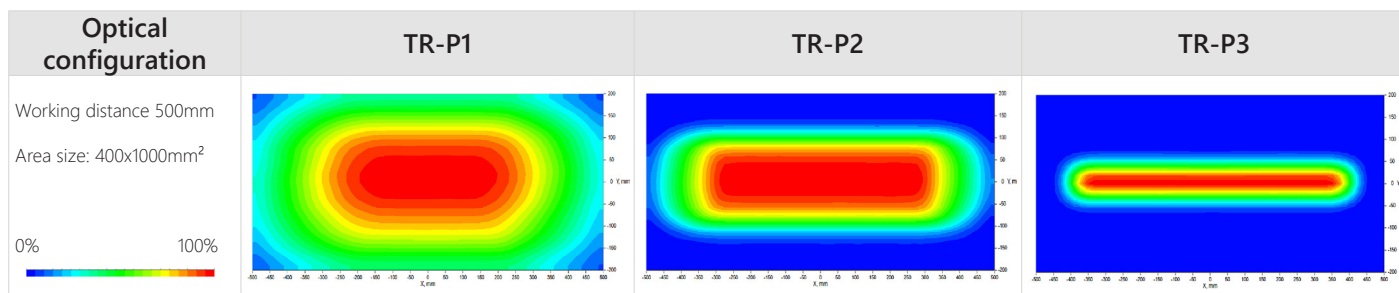
Only available for sizes $\leq 800\text{mm}$.

The KIT replaces WW-PP in the part number. Example: EFFI-FLEX2-XXXX-ZZZ-**WW-PP** becomes EFFI-FLEX2-XXXX-ZZZ-**KIT**



LENS POSITION IMPACT

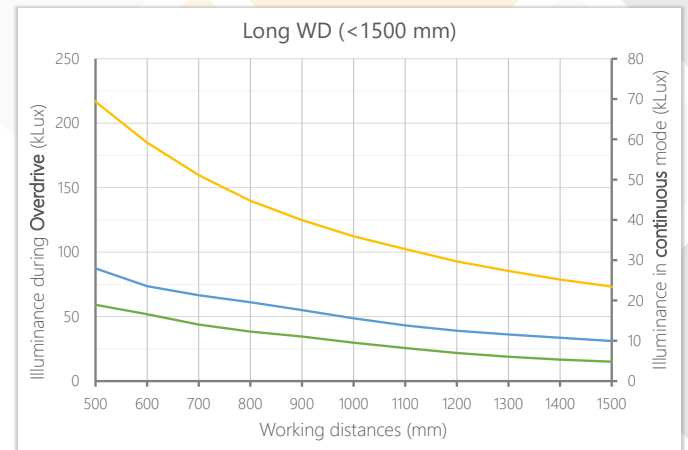
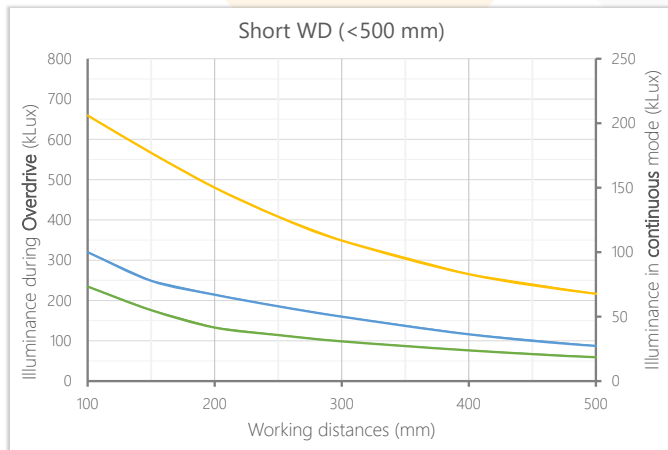
Irradiance map



Note: The measurements have been made with a 800mm red light, transparent window: EFFI-FLEX2-800-000-TR-PP

LENS POSITION IMPACT (CONTINUED)

Illuminance vs Working distance (WD) - White LED



— Lens position P1 — Lens position P2 — Lens position P3

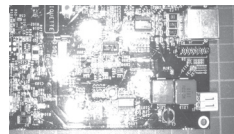
Note: The measurements have been made with a 800mm white light, transparent window: EFFI-FLEX2-800-000-TR-PP. For the L2 version divide the illuminance by 2 (refer to the corresponding annex).

POLARIZER

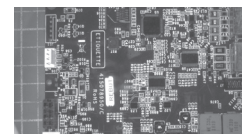


Using polarizers, on the Efflux light and on the camera, it is possible to eliminate glare from your workpiece making it easier to acquire a suitable image for the application.

The user can insert directly the polarizer inside the EFFI-Flex2, under the window.



Without polarizer



With polarizer

Important note: The polarization is optimal with a TR window, the use of diffuser (SD or OP) can depolarize the light.

LINESCAN CONFIGURATIONS

Linescan film (TR-P3-LS)



With the lens in the upper position (P3) and the transparent window (TR), the linescan filter accessory transforms the EFFI-Flex2 into a uniform line light ideal for either brightfield or darkfield illumination.

Cylindrical lens (TR-P1-LS-CYL)

Used in combination with the internal lenses in the lowest position (P1), and the Linescan film (LS), the additional Cylindrical lens (CYL) allows to focus even more the light into a very bright line.



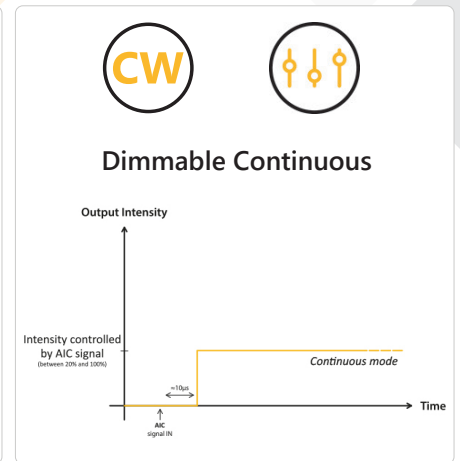
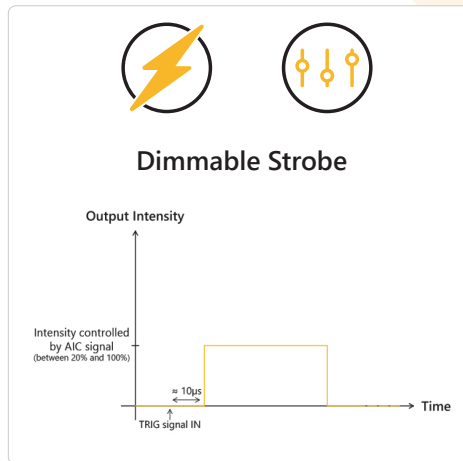
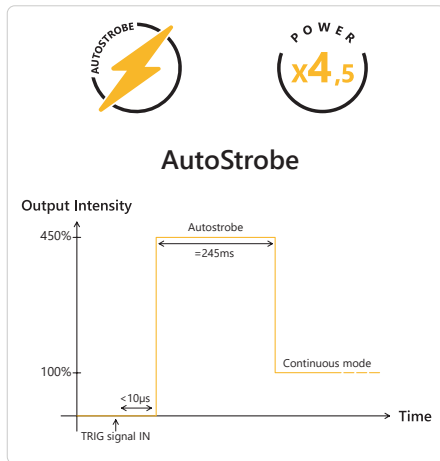
ELECTRONICAL SPECIFICATIONS

OVERVIEW

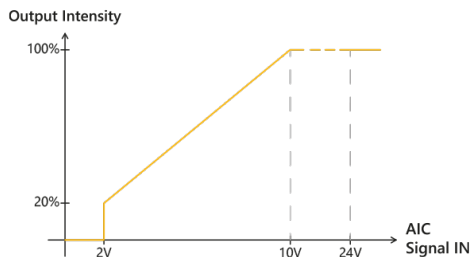
The EFFI-Flex2 has been designed to have several electronical modes available in the same product. Additionnally to that, our engineers have developed a strong AutoStrobe mode to boost the injected current up to 450% of the continuous mode current value.

Thus, EFFI-Flex2 can be used to have a:

- **High power strobe (Autostrobe mode):** 450% current value with a max duty cycle of 30% and max pulse duration of 245ms.
- **Dimmable light (Strobe or Continuous mode):** Light intensity between 20% and 100% monitored with the AIC pin and strobe or continuous mode monitored with the trigger pin.



ANALOG INTENSITY CONTROL (AIC)



- The output intensity can be adjusted from 20% to 100% by applying a signal from [2V-10V DC]. For maximum intensity in continuous mode, AIC pin can be tied to +24V.
- If $V_{AIC} = [0V-1V \text{ DC}]$ or if not connected, the EFFI-Flex2 is in AutoStrobe mode by default.

POWER CONSUMPTION & CONNECTOR DEFINITION

MAX POWER CONSUMPTION (+/- 5%) (White LED - Standard software)															
Optical Length XXXX (mm)	60	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400
In Continuous mode	<10W	10W	15W	20W	25W	35W	40W	45W	50W	60W	65W	70W	75W	80W	90W
In AutoStrobe mode (peak)	<30W	30W	60W	95W	130W	170W	205W	240W	280W	315W	350W	390W	425W	460W	500W
Optical Length XXXX (mm)	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900
In Continuous mode	95W	100W	105W	115W	120W	125W	130W	140W	145W	150W	155W	160W	170W	175W	180W
In AutoStrobe mode (peak)	535W	570W	610W	645W	685W	720W	755W	790W	830W	865W	905W	940W	975W	1010W	1050W

M12 - 5 pins

M12P - 4 pins

2x M12P - 4 pins

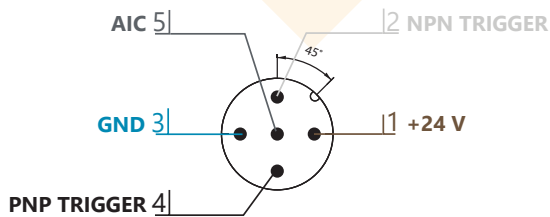
Note: These values are maximum values. The consumption may vary according to the wavelength and the software.

WIRING LAYOUT

Depending on the size, the light comes with different connectors (*refer to the table above*).

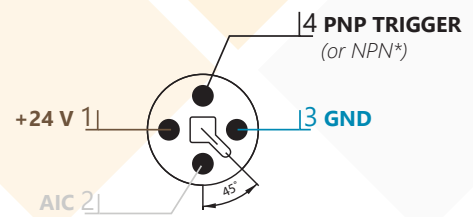
M12 (A-coded)- 5 pins

male connector



M12 Power (T-coded) - 4 pins

male connector



Notes:

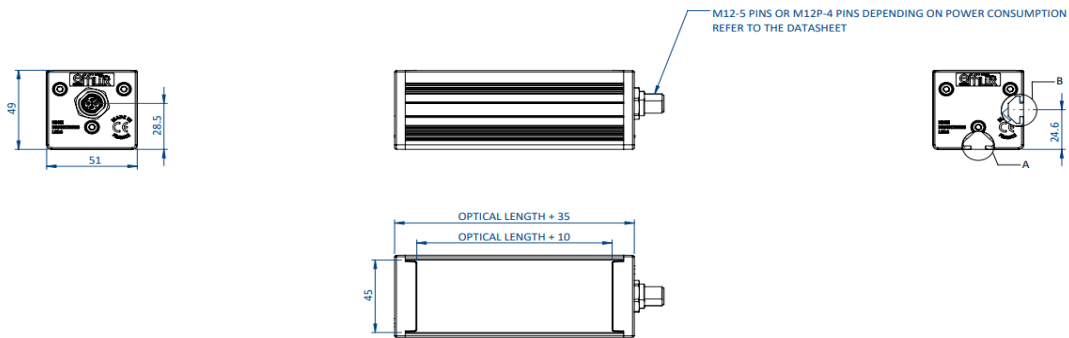
- The EFFI-FLEX2 requires 24V DC input power.
- PNP trigger pin (or NPN) needs to be connected either to a trigger signal for AutoStrobe and Strobe mode or to a continuous signal for Continuous mode.
- AIC pin can stay unplugged for Autostrobe mode, or tied to +24V for continuous mode at maximum intensity.
- (*) For light requiring M12P connector, the NPN trigger is optionnal. With the NPN option, the PNP trigger input is replaced by the NPN trigger input.

LAYOUT EXAMPLE (PNP)

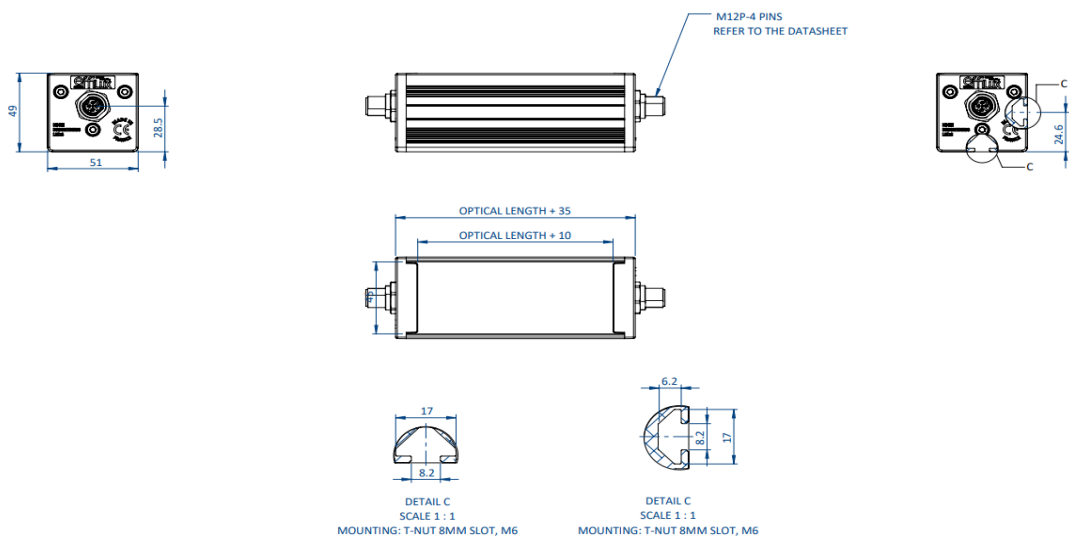
	AutoStrobe	Dimmable Strobe	Dimmable Continuous
M12			
M12P			
2x M12P	<ul style="list-style-type: none"> • When the 2x M12P configuration is required, a second M12P is added on the opposite cap with power inputs only. • The second M12P has black nut to easily indentify it. • Warning: Both GND must be connected together 		

MECHANICAL SPECIFICATIONS

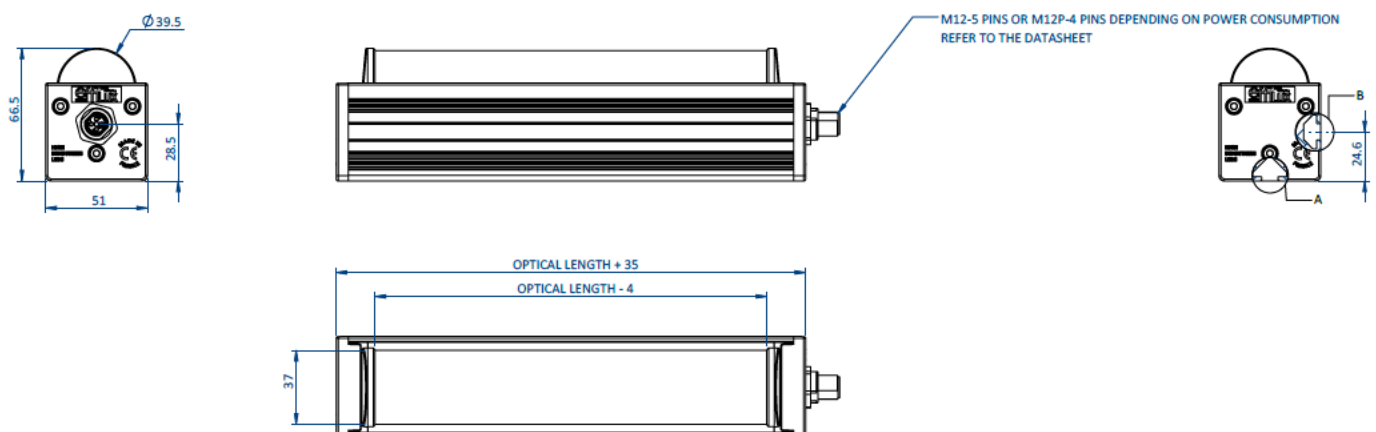
DIMENSIONS OF EFFI-FLEX2 - M12 & M12P (in mm)



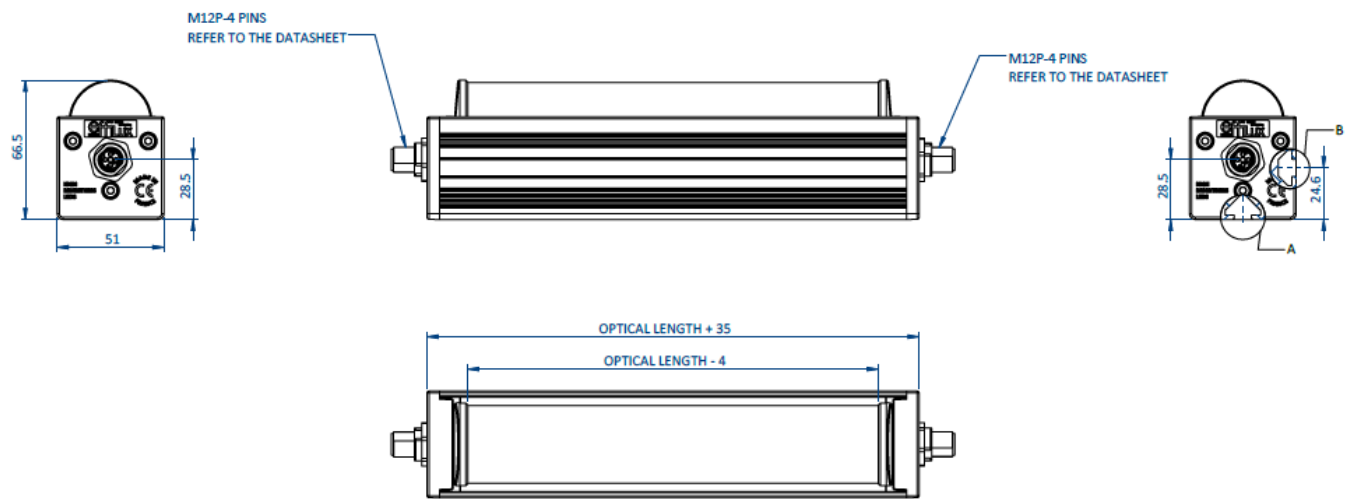
DIMENSIONS OF EFFI-FLEX2 - 2M12P (in mm)



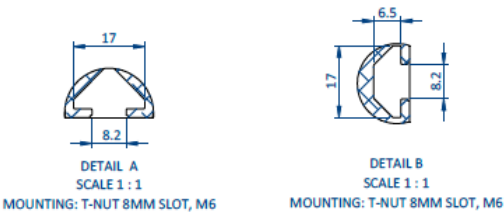
DIMENSIONS OF EFFI-FLEX2-...CYL - M12 & M12P (in mm)



DIMENSIONS OF EFFI-FLEX2-...CYL - 2M12P (in mm)



T-NUT SYSTEM



ACCESSORIES

Please refer to the specific documentation for additional information on the accessories of the EFFI-Flex2



Fasteners

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



Extension cables

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

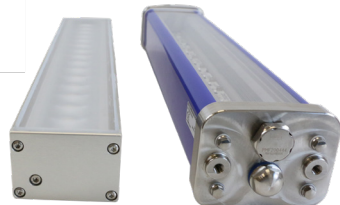


Camera Filters

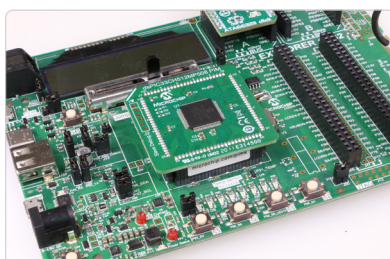
EFFO-FLR-...

CUSTOMIZATION

Please ask your sales contact for a custom device.



IP version



Custom software



Other caps color

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 May-2024 and may be changed without prior notice.



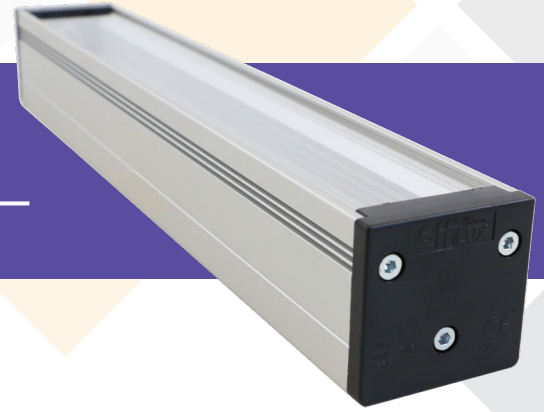
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effiFLEX2 UV365

Multimode Flexible UV LED bar light



PART-NUMBERING

EFFI-FLEX2	- XXXX	- ZZZ	- WW	- PP
	Optical Length [mm]	Wavelength [nm]	Window	Lens position
	60	● 365 (UV)	TR (Transparent special UV)	P0 (90°)
	100			
	... Every 100mm			
	2900			

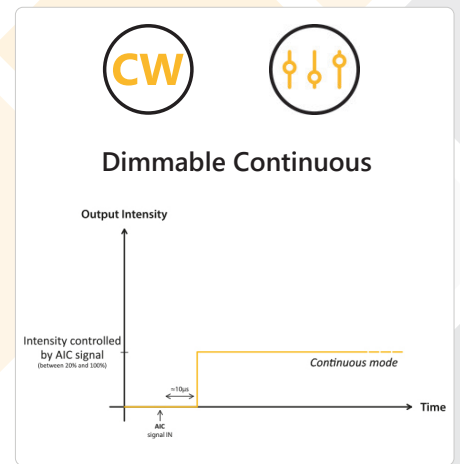
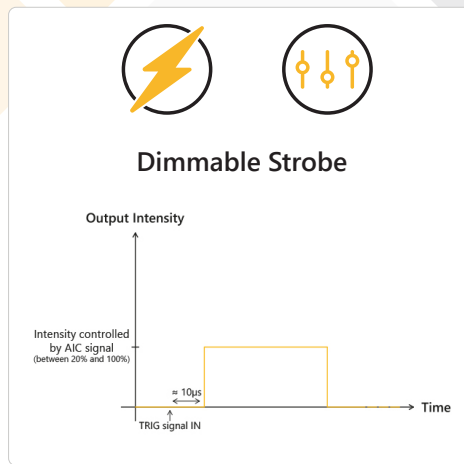
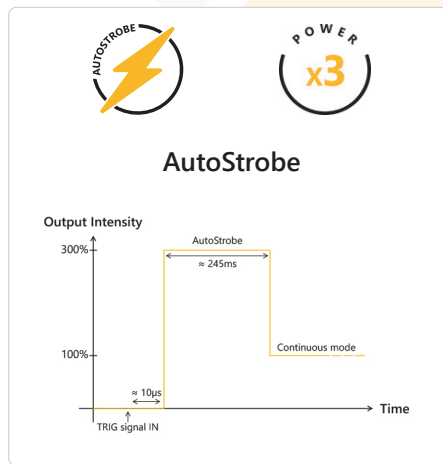
Notes:

- The EFFI-Flex2 UV365 comes with one possible configuration: transparent window and lens position at P0 (90°) (i.e. no lenses)
- The transparent window for EFFI-Flex2 UV365 is a special made transparent window for UV365. The standard transparent window of EFFI-Flex2 is not compatible with EFFI-Flex2 UV365.
- Linescan film and standard polarizer are not compatible with UV365.
- For maximum performances, please use a cable **no longer than 5m**. Otherwise, the overdrive performances may be impacted.

AVAILABLE VERSIONS AND OPTIONS

OPTICS	
Pure UV option	EFFI-FLEX2-XXXX-365-TR-P0- PUV (See details next page)
Cylindrical lens	EFFI-FLEX2-XXXX-365- TR-P0-CYL (See details next page)
L2 Economical version	EFFI-FLEX2- L2 -XXXX-365-TR-P0 1 LED every 10mm vs 1 LED every 20mm for standard (See corresponding annex)

ELECTRONICAL MODES



Note: Compared to the standard version the autostrobe overdrive mode has been capped at 285% of the continuous level.

PURE UV OPTION



Used with the EFFI-Flex2 UV 365, the Pure UV technology is an innovative system that drastically improves the fluorescence effect while concurrently removing glare and improving contrast.

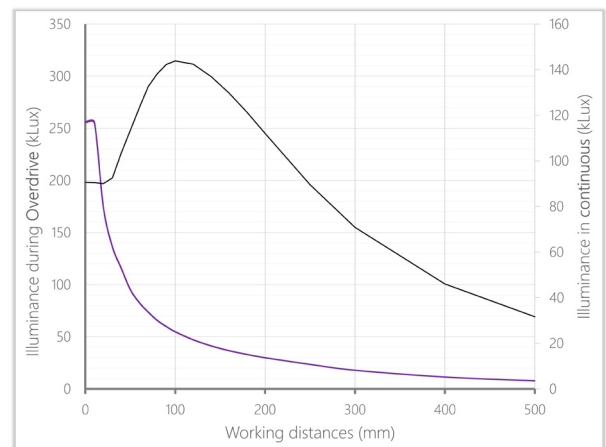
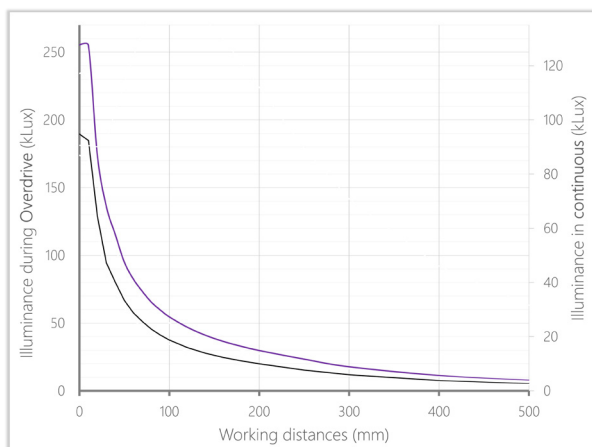
Note: The Pure UV light must be used along with a UV Cut filter on the camera.

CYLINDRICAL LENS



The additional Cylindrical lens (CYL) allows to focus even more the light into a very bright line.

Illuminance vs Working distance (WD)



Note: The measurements have been made with a 300mm UV light, transparent window and lens position 0: EFFI-FLEX2-300-365-TR-P0.

ANNEX 2 - OTHER LED DENSITIES

The standard LED density for the EFFI-Flex2 is one LED every 20mm. For specific needs, we can also offer two other LED densities:

- L2 - Economical version: Twice fewer LEDs (every 40mm) - Twice less light power
- X2 - High light uniformity: Twice more LEDs (every 10mm). - Same light power

Those modifications change the power consumptions and the light uniformity. For these references refer to the datas below.

POWER CONSUMPTION & CONNECTOR DEFINITION

L2 version

MAX POWER CONSUMPTION (+/- 5%) (White LED - Standard software)														
Optical Length XXXX (mm)	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800
In Continuous mode	10W	15W	20W	25W	35W	40W	45W	50W	60W	65W	70W	75W	80W	90W
In AutoStrobe mode (peak)	30W	60W	95W	130W	170W	205W	240W	280W	315W	350W	390W	425W	460W	500W

M12 - 5 pins
M12P - 4 pins
2x M12P - 4 pins

X2 version (Same as standard)

MAX POWER CONSUMPTION (+/- 5%) (White LED - Standard software)														
Optical Length XXXX (mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400
In Continuous mode	10W	15W	20W	25W	35W	40W	45W	50W	60W	65W	70W	75W	80W	90W
In AutoStrobe mode (peak)	30W	60W	95W	130W	170W	205W	240W	280W	315W	350W	390W	425W	460W	500W

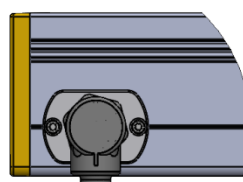
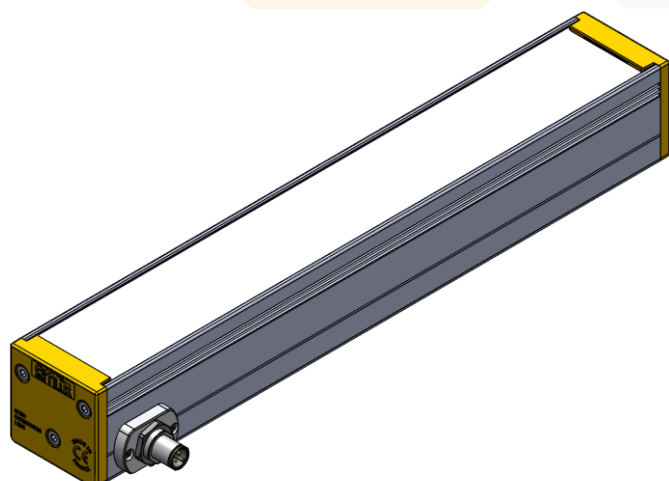
Optical Length XXXX (mm)	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900
In Continuous mode	95W	100W	105W	115W	120W	125W	130W	140W	145W	150W	155W	160W	170W	175W	180W
In AutoStrobe mode (peak)	535W	570W	610W	645W	685W	720W	755W	790W	830W	865W	905W	940W	975W	1010W	1050W

M12 - 5 pins
M12P - 4 pins
2x M12P - 4 pins

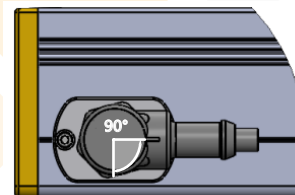
Note: These values are maximum values. The consumption may vary according to the wavelength and the software.

ANNEX 3 - CONNECTORS & CABLE OPTIONS

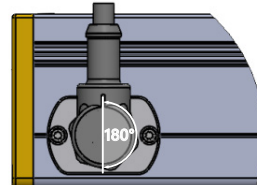
SIDE CONNECTOR - M12 & M12P



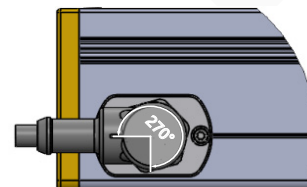
-SC0



-SC90



-SC180



-SC270

EFFI-FLEX2-XXXX-ZZZ-WW-PP-SCXXX

EFFI-FLEX2-XXXX-ZZZ-WW-PP-SCXXX-1M12P

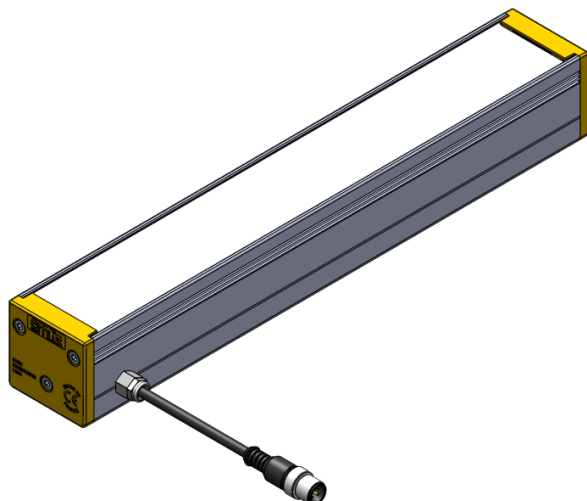
Connector on the side of the extrusion

XXX= Angle connector orientation (standard 0°: angled cable going to the back of the light)

M12 - 5 pins or M12P - 4 pins. Not available with 2M12P connectors.

Please check the connector according to the light size.

SIDE CABLE GLAND - M12



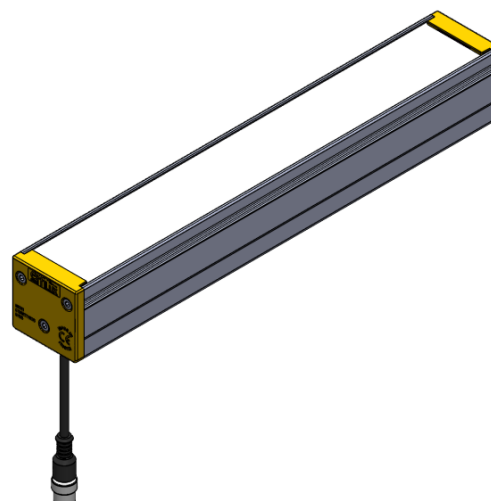
EFFI-FLEX2-XXXX-ZZZ-WW-PP-SCG

Cable gland on the side - Cable length: 500mm +/- 20mm

M12 - 5 pins. Not available with M12P connector.

Please check the connector according to the light size.

BACK SIDE CABLE - M12



EFFI-FLEX2-XXXX-ZZZ-WW-PP-BSC

Cable gland on the back side - Cable length: 500mm +/- 20mm

M12 - 5 pins. Not available with M12P connector.

Please check the connector according to the light size.