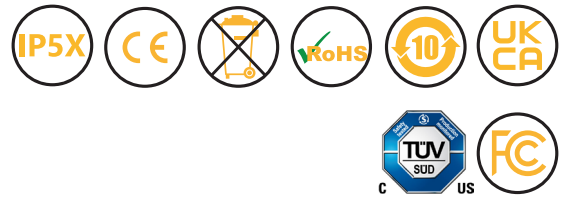


USER MANUAL

effiFLEX-LG



GENERAL PRODUCT INFORMATION



Une version française de cette notice est disponible sur la page produit correspondante de notre site web.

Thank you for purchasing an Efflux's product. To ensure proper use of the product, please read this *User manual* before use and keep it for your future reference. Any improper use voids the warranty. This product is an LED light used for machine vision and industrial inspection. Do not use the product for other applications, and be sure to follow the instructions below.

Datasheets and drawings in PDF and/or CAD can be downloaded from the Efflux website: www.ffmpeg.com

The label(s) on the product always indicate(s) the reference, the power consumption and the serial number of the product. Be sure to check the content before using the product and handle the label(s) with care. The date of manufacturing is included in the serial number of the product: XXXXXYYMM-ZZZ with YY corresponding to the year and MM to the month. If the label is missing or damaged and the content cannot be checked, please contact Efflux.

GENERAL WARNINGS AND PRECAUTIONS OF USE

MAINTENANCE

The product must be switch off during any maintenance operation. To remove marks on the lens or on the window: Use alcohol-free lens cleaning fluid on a cleaning tissue. Few drops will suffice. Please clean gently. Always apply the fluid to a tissue rather than the lens itself. To clean optical components: Please wear gloves and use compressed air if there is dust.

USAGE AND STORAGE ENVIRONMENT

Operating environment	Temperature: 0 to 40°C - Humidity: 20 to 85RH% (without condensation) - Altitude: Up to 2000m
Storage environment	Temperature: -20 to 60°C - Humidity: 20 to 85RH% (without condensation)
Informations	Overvoltage category I - Protective class III - Pollution degree 3

Except if a specific IP rating is given for your product (refer to the «Dust and Water resistance (IP rating) » section), please install the product to locations with following conditions (Incorrect installation location may causes product failure) :

Well-ventilated places with minimal dust.	Places free from any liquid, chemical product or steam.
Places free from corrosive or combustible gas.	Places that are not subject to sudden temperature changes.
Places away from water taps, boilers, humidifiers, air conditioners, heaters or stoves.	

USER SECURITY

Incorrect use of the product may result in fire, electric shock, or other serious damages. Please ensure to follow below conditions. If an abnormal condition occurs (fuming, heat, noises, etc.), stop using the product immediately and turn the power off.

Do not disassemble or modify the product.	Do not look directly at the LED light without protection.
Do not try to fix any damages on the product by yourself.	Make sure special protective glasses are used with UV products (<420nm).
Do not touch the product with wet hands.	Do not use homemade cables.
Wire and keep the flying leads cables in a dry area (regardless of the product's degree of protection).	Make sure the product does not show any moisture or liquid inside before switching it ON.
Make sure the power supply and the cable/connector are adapted to the product specifications.	The device must be powered by a 24V safety power supply in accordance to local Electrical Safety rules
Do not inverse electrical polarity - check your connections and the conventions.	The product packaging must be removed before use.

The cTUVus certification is only applicable for the white (000) and red (625) devices, with a power consumption under 150W and, powered with a power supply that fulfills SELV and Limited Energy according IEC 61010-1 9.4) With a power consumption under 150W (depending on the size and the software version) and, powered with a power supply that fulfills SELV and Limited Energy according IEC 61010-1 9.4

PART NUMBER KEY

STANDARD VERSION

EFFI-FLEX-LG	-	XXXX	-	ZZZ	-	WW	-	PP
		Optical Length (mm)		Wavelength		Window		Lens position
		200		● 465 (Blue)		LD (Lightly-diffuse)		P0 (90°)
		400		● 525 (Green)		SD (Semi-diffuse)		P1 (45°)
		600		● 625 (Red)		OP (Opaline)		P2 (25°)
		... All 200mm		● 850 (Infrared)				P3 (10°)
		1400		○ 000 (White)				

AVAILABLE OPTIONS: REFERENCES

Please refer to the datasheet for the specifications of a product with option(s).

OPTICS	
Kit with all diffusers	EFFI-FLEX-LG-XXXX-ZZZ- KIT
Polarizer accessory	EFFI-FLEX-LG-XXXX-ZZZ-WW-PP- POL
Custom wavelength	EFFI-FLEX-LG-XXXX- ZZZ -WW-PP Other wavelengths upon request.
ELECTRONICS	
Customized software (Strobe length & frequency modification)	EFFI-FLEX-LG-XXXX-ZZZ-WW-PP- SWxxxxxx Specific for each customized software. <i>If the device consumption exceed 150W, regulations' compliancy may be impacted, please contact Effilux.</i>
External power supply Version	EFFI-FLEX-LG-XXXX-ZZZ-WW-PP- CPW-SWxxxxxx Customized software mandatory. Specific user manual.
Daisy Chain Version	EFFI-FLEX-LG-XXXX-ZZZ-WW-PP- CHS Number of chainable bars: see page 3
Daisy Chain Version with output female connector on the opposite cap	EFFI-FLEX-LG-XXXX-ZZZ-WW-PP- CHO Number of chainable bars: see page 3
NPN trigger Version	EFFI-FLEX-LG-XXXX-ZZZ-WW-PP- NPN NPN trigger on pin 2 instead of PNP trigger on pin 4
MECHANIC	
Longer length (Up to 2800mm)	EFFI-FLEX-LG- XXXX -ZZZ-WW-PP <i>If the device consumption exceeds 150W, regulations' compliancy may be impacted, please contact Effilux.</i>

AVAILABLE ACCESSORIES

Please refer to the specific documentations for additional information on the accessories of the EFFI-Flex-LG.

DIFFUSERS	Lightly-diffuse: EFFO-FLEX2-LD-XXXX Semi-diffuse: EFFO-FLEX2-SD-XXXX Opaline: EFFO-FLEX2-OP-XXXX
POLARIZER	EFFO-FLEX2-POL-XXXX
POWER SUPPLIES	Power supply: EFFI-PWR-WWW-24V-102-YY* Compact power supply: EFFI-SPWR-090W-24V-102-YY**
EXTENSION CABLES	2 meters: EFFC-CAB-M12-FM-5-DD-L2 5 meters: EFFC-CAB-M12-FM-5-DD-L5 10 meters: EFFC-CAB-M12-FM-5-DD-L10
FASTENERS	T-Nut Kit: EFFV-BOLT-0011 Pivot joint Kit: EFFM-1-0002
CAMERA FILTERS	EFFO-FLR-...

*YY = Type of outlet UK, CH, EU, US, ...

ELECTRICAL INSTALLATION - STD CONNECTOR CONFIGURATION

POWER SUPPLY

Power supply / Electrical Input	24V DC +/-10%	
Connector (depending on the power consumption)	1x M12 - 5 pins or 1x M12 Power (T-coded) - 4 pins <i>If M12 Power - indicated in the product reference EFFI-FLEX-LG-XXXX-ZZZ-WW-PP-1M12P</i>	
Power consumption	Average	Approx. 20W for each 200mm.
	Peak (Max)	6A max for XXXX<1000mm - 12A max for XXXX≥1000mm
	Inrush	6A max - 50ms max for XXXX<1000mm - 12A - 50ms max for XXXX≥1000mm
Max consumption strobe signal (PNP)	2mA	

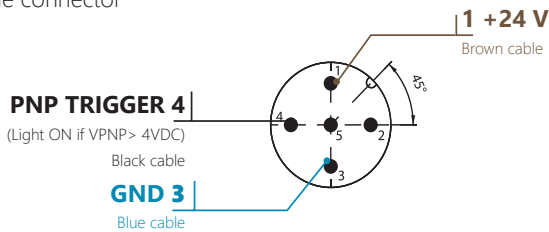
The consumption values are maximum values, the exact power consumption of the product is always indicated on the product label.

HOW TO CONNECT THE EFFI-FLEX-LG?

- The EFFI-Flex-LG requires 24V DC input power.
- The trigger pin needs to be connected to a PNP trigger signal.
- If a continuous signal is applied to the PNP trigger pin, the output light is strobed by default at maximum Frequency and Strobe length (150 Hz - 400 μs), although it appears continuous for human eye.

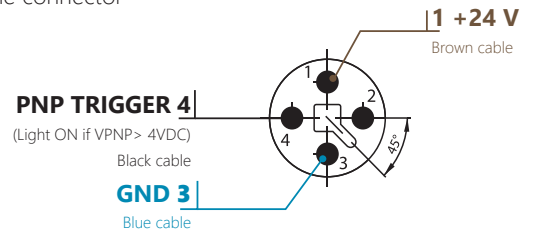
M12 - 5 pins

male connector



M12 Power (T-coded) - 4 pins

male connector



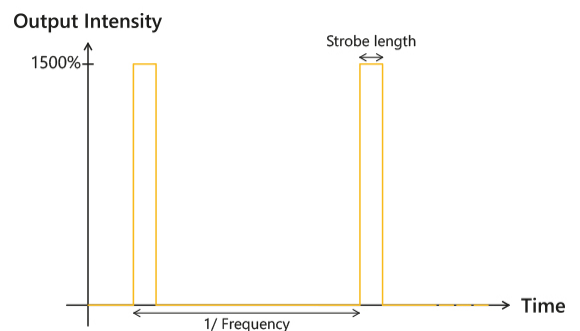
INITIALIZATION PHASE

When EFFI-Flex-LG is supplied, the product first enters in a few seconds initialization phase. This initialization is a sequence of very short strobes of increasing intensity. Please wait until the end of this initialization to use the product (max 5 seconds).

MEGAStROBE FEATURE



MegaStrobe	
Strobing time (internal protection)	400μs max
Frequency (internal protection)	150Hz max
Rising time	<1μs
Falling time	<2μs



CHS/CHO CONFIGURATIONS (DAISY-CHAIN OPTIONS)

You can chain several EFFI-Flex-LG-CHS by connecting the output connector directly to the next EFFI-Flex-LG bars. The EFFI-Flex-LG-CHS / EFFI-Flex-LG-CHO requires the use of a standard 5 pin M12 cable (or a 4 pins M12 Power cable depending on the product's connector) to effectively chain the lights.

The number of bars possible to chain depends on the product software and the cables' length.

With the standard software and 1 meter cables, the number of chainable products is:

Connector configuration	Optical length of the product						
	200mm	400mm	600mm	800mm	1000mm	1200mm	1400mm
INPUT & OUTPUT connectors							
Standard M12 connector (5-pins, A-coded)	4	2	X	X	X	X	X
M12P Power connector (4-pins, T-coded)	14	7	4	3	2	2	2

The pinout specifications are the same for the INPUT and OUTPUT connectors)

OPTICAL FLEXIBILITY

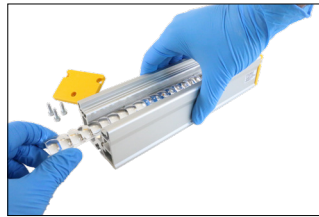
Be careful to always open the product from the side without the connector.

HOW TO CHANGE THE OPTICAL CONFIGURATION?

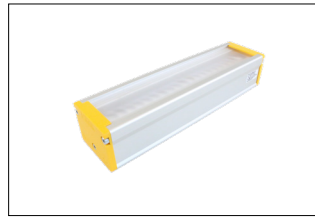
The EFFI-Flex-LG offers flexible lens positioning to control the beam angle and different type of diffusers to adapt the uniformity. The user can easily change the diffuser and the lens position.



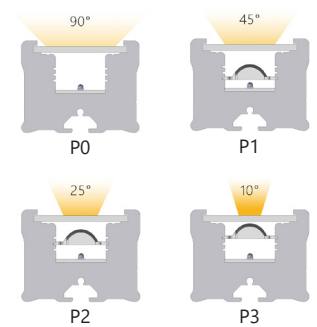
Unscrew the M4 screws and remove the cap



Slide out the window and all lenses



Place the lenses & window in desired configuration



HOW TO INSTALL A POLARIZER ACCESSORY?

By using polarizers, on the Effilux 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 **EFFO-FLEX-POL** inside the EFFI-Flex-LG, under the window.



Open the EFFI-Flex-LG and insert the LD window



Insert the polarizer under the LD window



Close the product

Important note:

- The polarization is optimal with a **LD window**, the use of SD or OP window can depolarize the light.

MECHANICAL CONSIDERATION

IP rating	IP5X (dust protected)
Dimensions	60mm x 47mm x Length = Optical length + 35mm
Fixing	One T-slot on the back for M6 T-nuts 8mm slot (2x M6 T-nuts included)

REGULATIONS COMPLIANCY

Regulations & Marking	CE - UKCA - FCC - ICES-3/NMB-3 - KC - cTUVus (The supply of the device has to fulfill SELV and Limited Energy according IEC 61010-1 9.4)
Environmental Standards	RoHS Directives (2011/65/EU, 2015/863/EU and China RoHS) - REACH Regulation - WEEE Regulation
Country of Origin	France - Manufactured by Effilux
Model number	FLG001 & FLG002

The FCC mark indicates that it complies with part 15 of the FCC Rules (US FCC Class A (47 CFR § 15.19)). Operation is subject to the following 2 conditions:

- (1) This device may not cause harmful interference,
- (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAN ICES-003(A) / NMB-003(A)

This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

ENVIRONMENTAL REGULATIONS

EU RoHS DIRECTIVE

The EU RoHS Directive is short for the «Restriction Of use of certain Hazardous Substances in electrical and electronic equipment». The EU RoHS Directive (2011/65/EU) restricts the use of specific hazardous substances for the new electronic equipment marketed in the EU. The Directive (EU) 2015/863 amending 2011/65/EU was published in 2015 to restrict the use of specific hazardous substances, including six conventional substances, lead (<0.1%), mercury (<0.1%), cadmium (<0.01%), hexavalent chromium (<0.1%), polybrominated biphenyl (PBB) (0.1%) and polybrominated diphenyl ether (PBDE) (<0.1%), as well as four substances (phthalate compounds), bis(2-Ethylhexyl) phthalate (DEHP) (<0.1%), benzyl butyl phthalate (BBP) (<0.1%), dibutyl phthalate (DBP) (<0.1%), diisobutyl phthalate (DIBP) (<0.1%). Our products do not contain the above certain hazardous substances in excess of the maximum permitted concentration. However, this does not apply if the product falls under the exemption.

CHINA ROHS

China RoHS Directive is formally known as «Management Methods for Restricting Hazardous Substances Used in Electric and Electronic Products», which was implemented on July 1st, 2016 in China. Same as EU RoHS Directive (2011/65/EU), this regulation restricts the usage of same six substances. This regulation requires electronic information products which are manufactured or imported, and sold in China, to clearly disclose contents of the 6 restricted substances listed below.

Names and Contents of Hazardous Substances							
Usage Deadline for Environmental Protection	Product name	Names and contents of hazardous substances					
		Lead and its compounds (Pb)	Mercury and its compounds (Hg)	Cadmium and its compounds (Cd)	Hexavalent chromium compounds (Cr(VI))	PBB	PBDE
10	LED Light, Control Unit, or Optional product	×	○	×	○	○	○

(This table is made in compliance with SJ/T11364 regulations.)
 ○: Indicates that this toxic or hazardous substances contained in all the homogeneous materials for this part, according to GB/T26572 is within the limit requirement.
 ×: Indicates that this toxic or hazardous substance contained in all the homogeneous materials for this part, according to GB/T26572, is over the limit requirement.
 *Lead and cadmium are exempted in EU RoHS.

Usage deadline for environmental protection
 The number used in this logo is based on "Management Methods for Restricting Hazardous Substances Used in Electric and Electronic Products" and related regulations. It shows the product usage duration in years for environmental protection. After finishing a product usage, the product needs to be re-used or discarded appropriately following local law and regulations, complying with safety and usage caution.

产品中有害物质的名称及含量							
环保使用期限	产品	有害物质的名称及含量					
		铅及其化合物 (Pb)	汞及其化合物 (Hg)	镉及其化合物 (Cd)	六价铬化合物 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
10	LED 照明、电源或任选件	×	○	×	○	○	○

(本表格依据 SJ/T11364 的规定编制。)
 ○: 表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T26572 标准规定的限量要求以下。
 ×: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 GB/T26572 标准规定的限量要求。
 (注) 铅和镉中的“×”，因欧洲联盟 RoHS 没有限定，故用“○”表示。

环保使用期限
 此标志的数字是根据电器电子产品有害物质限制使用管理办法以及相关标准等，表示该产品的环保使用期限的年限。遵守产品的安全和使用上的注意，在产品使用后采取适当的方法根据各地法律，规定，回收再利用或进行废弃处理。

WARRANTY

EFFILUX products come with a warranty of 2 years (one year for radiant quantity), starting from EFFILUX shipping date. Any improper use voids the warranty.

Exceptions: UV products (<420nm): 1-year warranty / Chillers: 1-year warranty / Polarizers are excluded from warranty.

For more information, please refer to the warranty information available on Effilux's website.

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 March-2022 and may be changed without prior notice.



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