DATASHEET

Efficient Led Lighting

Very intense

No speckle

Full range of color

High depth of field

IP54

CE

effiLASE-PSV

Powerful structured light projector

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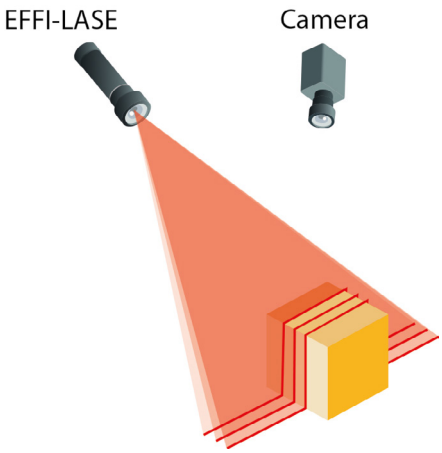
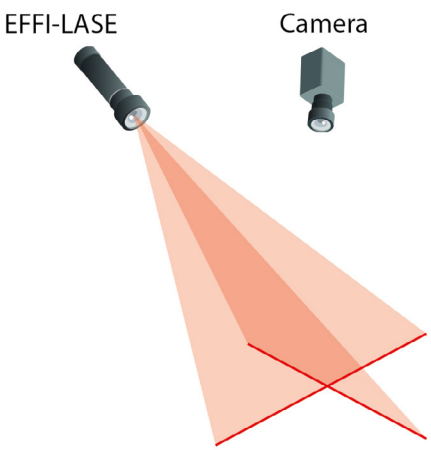
APPLICATIONS

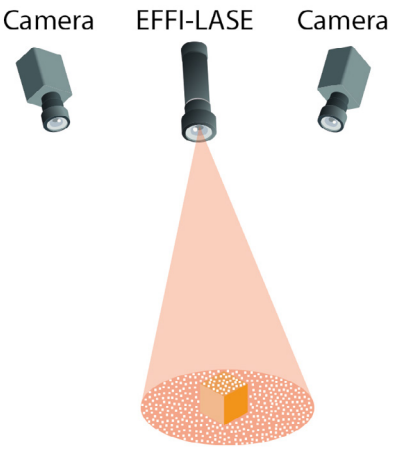
3D Profiling



Alignment application



Stereovision



RELATED PRODUCT

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

EFFI-LASE

Structured LED lighting

EFFI-LASE-V3

Ultra High Power Structured Lighting
LED Pattern Projector

PART NUMBERING

STANDARD VERSION

EFFI-LASE-PSV - VVV - ZZZ - M

LED pattern

LX1: Adapted for 3D profilometry

MX1: Adapted for stereovion and aligment

MX2: Adapted for stereovion and aligment

Wavelength [nm]

- **385** (UV)
- **395** (UV)
- **405** (UV)
- **465** (Blue)
- **525** (Green)
- **625** (Red)
- **850** (Infrared)
- **000** (White)

Type of mask

3D Profilometry: L01/ L02/ L03/L04...

Stereovision and Aligment: G01/ G02/ C03/ A02...

TECHNICAL SPECIFICATIONS

effiLASE-PSV

Illumination Mode	Continuous or strobe mode
Wavelengths	385nm, 395nm, 405nm, 465nm, 525nm, 625nm, 850nm, White (5500K ±500K)
Power Supply	24V DC
Connector(s)	M12 - 5 pins
Power Consumption	15W to 90W (depending on the number of LEDs)
Weight	400g
Dimensions	Height x width x length: 79.1 mm x 79.1 mm x 129.6 mm (without the objective)
Material	Device body: Aluminum alloy
Fastener	6 x M5 holes on the sides of the device / 4 x M4 on the top of the device
IP rating	IP54
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 50°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

Mask and Pattern Projection

3D Profilometry (line length: 13mm)

L01: 1 line 50µm

L02: 1 line 20µm

L03: 1 line 10 µm

L04: 3 lines 50 µm separated by 500 µm

L05: 3 lines 50 µm separated by 200 µm

L06: 5 lines 50 µm separated by 750 µm

L07: 100 lines 45 µm separated by 112.5 µm

L08: 22 lines 50 µm separated by 350 µm

L09: 1 line 5 µm

L41: 1 line 75 µm + 40 lines 45 µm separated by 200 µm

Stereovision and Alignement

A01: Cross Line thickness: 50µm, Line length: 13mm

A02: 26 concentric circles Thick : 50µm, Step: 250µm, Central: Ø30µm

A03: Square Line thickness: 50µm, Line length: 10mm

C02: Cloud of dots density 50%, Effective mask: 12,8x9,6mm²

C03: Cloud of dots density 17%, Effective mask:12,8x9,6mm²

G01: Round Ø50 µm
Step: 100µm, Effective mask: 10x10mm²

G02: Round Ø50µm
Step: 100µm, Effective mask: 13x13mm²

G03: Grid 40x40, lines 50µm thick
Step: 255µm, Effective mask: 10x10mm²

G04: Grid 50x50, lines 50µm thick
Step: 255µm, Effective mask: 12,5x12,5mm²

G05: 100x100 Squares, 50x50µm² each
Step: 100µm, Effective mask: 10x10mm²

C-MOUNT OBJECTIVE

Any C-mount objective can be mounted on the EFFI-LASE-PSV. The objective is not provided with the EFFI-LASE-PSV.

To guarantee the quality of the projector, the pattern is directly mounted in the projector body. However, the pattern can be observed through the aperture of the projector. Avoid any sharp contact with the mask: this one is sensitive and can easily be damaged.

OBJECTIVE SELECTION

EFFILUX recommends using one of the following objectives with the EFFI-LASE-PSV:

1" Lenses :

	EFFO-KW-6-F1.8-1'-HR-CM	EFFO-KW-8-F1.4-1'-HR-CM	EFFO-RC-12.5-F1.8-1'-LR-CM	EFFO-KW-16-F1.4-1'-HR-CM	EFFO-VS-25-F1.4-1'-LR-CM	EFFO-KW-35-F1.4-1'-HR-CM	EFFO-RC-50-F1.4-1'-LR-CM	EFFO-KW-75-F1.8-1"-HR-CM
Focal length (mm)	6	8	12.5	16	25	35	50	75
Iris range	F1.8	F1.4	F1.8	F1.4	F1.4	F1.4	F1.4	F1.8
Angle of View (HxV)	96.8°x79.4°	79.4°x63°	55.5°	44.3°x33.6°	16.1° x 19.0°	20.9°x15.8°	14.4°	9.7° x 7.3°
Filter mount	x	M55 P=0.75	M40.5 P=0.5	M35.5 P=0.5	M27 P=0.5	M35.5 P=0.5	M46 P=0.75	M46 P=0.75

2/3" Lenses :

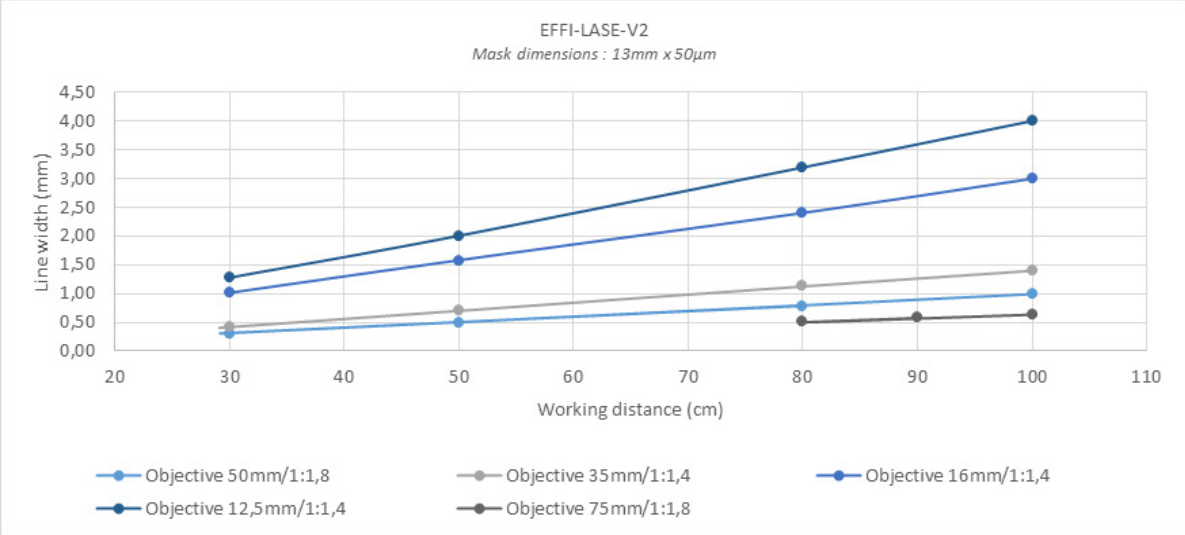
	EFFO-VS-8-F1.3-2/3»-LR-CM	EFFO-KW-12-F1.4-2/3"-HR-CM	EFFO-VS-16-F1.4-2/3»-LR-CM	EFFO-VS-25-F1.4-1»-LR-CM*	EFFO-VS-35-F1.8-2/3»-LR-CM	EFFO-VS-50-F1.8-2/3»-LR-CM	EFFO-KW-75-F2.5-2/3"-HR-CM
Focal length (mm)	8	12	16	25	35	50	75
Iris range	F1.3	F1.4	F1.4	F1.4	F1.8	F1.8	F2.5
Angle of View (HxV)	49.0° x 57.2°	30.0° x 22.7°	24.6° x 28.9°	16.1° x 19.0°	11.7° x 13.8°	8.5° x 10.0°	6.7°×5.0°
Filter mount	M25.5 P=0.5	M25.5 P=0.5	M27 P=0.5	M27 P=0.5	M27 P=0.5	M30.5 P=0.5	M34 P=0.5

Depending on the working distance (WD) and the C-mount objective, different pattern sizes are obtained:

Objective	**Line width (mm)** Mask dimensions: 13mm x 50µm (L01)			
	WD = 30cm	WD = 50cm	WD = 80cm	WD = 100cm
f = 12.5mm	1.27	2	3.19	4
f = 16mm	1.01	1.58	2.40	3
f = 35mm	0.42	0.71	1.13	1.40
f = 50mm	0.30	0.49	0.78	0.98
f = 75mm	n.a	n.a	0.51	0.63

*There could be a difference between measured size and indicated values.

The relation between the line width and the working distance is linear. For a 50µm mask width, the following graphs are obtained:



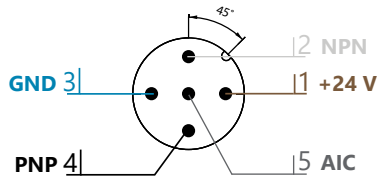
Objective	**Pattern dimensions HxW (cm)** Dimensions of a 12.8x9.6mm cloud of dots pattern (**C02**)			
	WD = 30cm	WD = 50cm	WD = 80cm	WD = 100cm
f = 12.5mm	32 x 23	51 x 37	82 x 59	102 x 73
f = 16mm	25 x 19	41 x 31	66 x 49	82 x 61
f = 35mm	11 x 8	18 x 14	29 x 22	36 x 27
f = 50mm	n.a	12 x 9	20 x 15	25 x 19
f = 75mm	n.a	n.a	13 x 10	16 x 12

ELECTRONICAL CONSIDERATIONS

Wiring layout

The EFFI-LASE is supplied with a 24V constant voltage. The characteristics below are true for PSV version.

M12 - 5pins

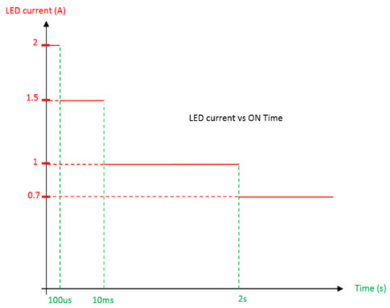


Notes: If the AIC is not connected, the light will light on at 100% as if VAIC=24V. If you don't need to adjust light level do not connect/use this PIN.

Working mode

General behaviour

If you set trigger NPN continuously ON (or PNP), the light will run continuously with a 700 mA LED current.



Power Consumption of the EFFI-Lase V2 PSV		
LED Version	Power consumption - Continuous (0.7A)	Power consumption - Max (2A)
LX1/ MX1	15 W	45 W
MX2	No continuous	90 W

Strobe mode

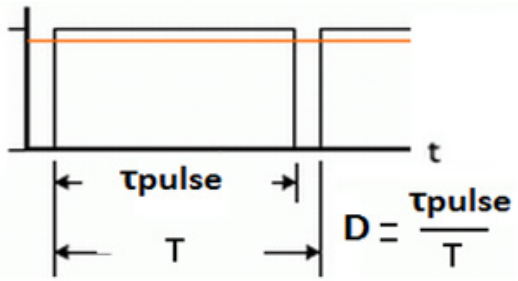
The LED driver inside the product is set to automatically pulse the LED.

If you trigger light for a short pulse (< 100 µs), light is pulsed (LED are driven at 2A).

If your pulse is longer, light automatically decreases LED current to protect LED against failure.

To protect LED, the product will enter in protection mode (Light is OFF for 2 second) if the duty cycle is superior to 0.3. Every 2 seconds, the product will check if duty cycle is correct to restart.

If D=Duty cycle (ON TIME / (ON TIME + OFF TIME)) > 0.3 → Light shutdowns for 2 seconds.



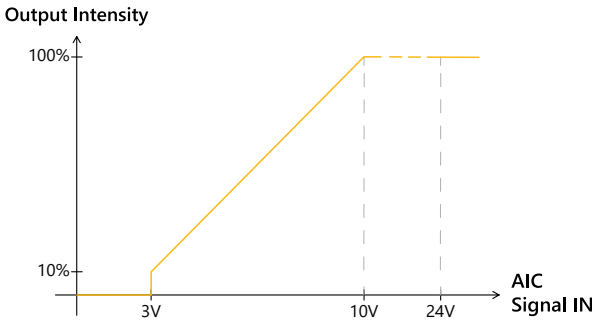
AIC (Analog Intensity Control)

By adjusting the analog tension, light intensity can be controlled from 10% to 100%.

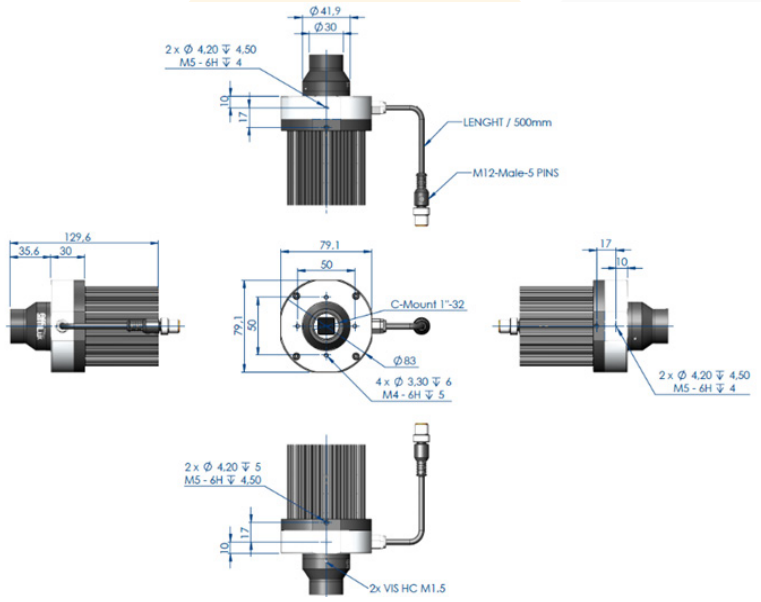
If the Input AIC is not connected, the EFFI-LASE-PSV will act as if AIC was set at 24V.

Notes:

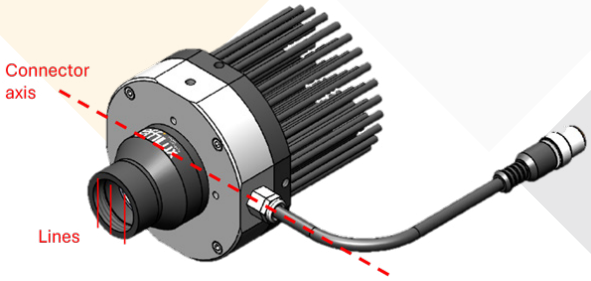
- 0-3V: LED OFF
- 3-10V: ≈10% to 100% light intensity
- 10-24V: LED ON 100%
- 100% if not connected



MECHANICAL CONSIDERATIONS (DIMENSIONS IN MM)



The lines of the LXX masks are oriented perpendicular to the connector axis as illustrated under.

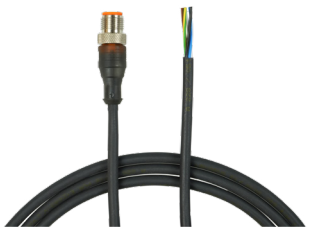


ACCESSORIES

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

Fasteners

Clamping: EFFM-1-0001
Pivot joint: EFFM-1-0009
Tripod adapter: EFFM-1-0027



Extension cables

M8
2meters: EFFC-CAB-M8-F-8-D-L2
5meters: EFFC-CAB-M8-F-8-D-L5
10meters: EFFC-CAB-M8-F-8-D-L10

Pulse controller

Pulse controller
EFFI-IPSC4
Cables
2 meters: EFFC-CAB-M8-SUBD-FM-4-DD-L2
5 meters: EFFC-CAB-M8-SUBD-FM-4-DD-L5
10 meters: EFFC-CAB-M8-SUBD-FM-4-DD-L10

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 April 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@effillux.fr