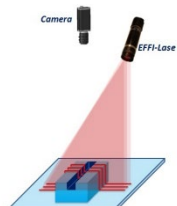




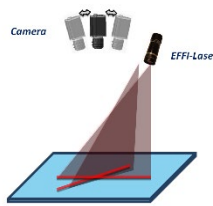
Very intense and uniform LED pattern projector
 Full range of colors: Red, Converted-Green (White), Blue
 Long lifetime and minimal maintenance
 Compatible with most lenses (E-Mount)
 Wide depth of field of Lines and Cloud of Dots version
 No speckle

Electronics	Connectors	Without connector
	Power supply	12V DC – 30A
	Illumination mode	Strobe mode
	Max power consumption	400W
Optics	Wavelengths available	Red, Converted-Green (White), Blue
	Projected pattern	Various designs for body scanning, 3D profiling and stereovision
Mechanics	Weight	350g (without the lens)
	Dimensions (projector)	59mm x 95.2mm (without the lens)
	Dimensions (driver)	105mm x 84mm x 38.5mm (L x W x H)
	Objective adjustment	"E-Mount" Sony adaptor on the projector
	Fastener	3x M4 bothe sides
	Material	Device body: Aluminum alloy / Delrin®
Environment	Working temperature	-10°C to 40°C
	IP code	IP50

Applications



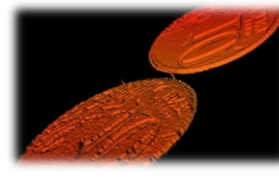
Stereo Vision and 3D profiling



Alignment









Body scanning



*EFFI-Lase (top right) vs. Laser (bottom left):
 No speckle = high precision and contrast*

Part Number



Reference: EFFI-LASE-V3-YYY-ZZZ		
YYY: Wavelength (nm) / Color (other wavelengths available upon request)		
● Blue 465	● Converted-Green (White) 520	● Red 625
ZZZ: Type of Mask		
3D Profilometry (line length: 25mm)		Stereovision (diameter 25mm)
L01-3	1 line: 100µm 	C02-3 Cloud of dots density 50%: Pixel size (smallest dot) 22.5µm 
L02-3	1 line: 20µm 	C10-3 Grid of dots density 50%: Pixel size (smallest dot) 20µm (Special Bodyscanning) 
L07-3	100 lines (19.5mm x 16.5mm) 67.5µm / pitch 100µm 	
L08-3	22 lines (17.4mm x 16.5mm) 75µm / pitch 500µm 	
Please note that we can also integrate custom masks upon request		
Option: Type of connector		
Standard EFFI-Lase-V3 comes with flying leads. For a RD24 connector instead, please add -RD24 at the end of the part number. Part number: EFFI-LASE-V3-YYY-ZZZ-RD24		

Electronical considerations



Contact arrangement

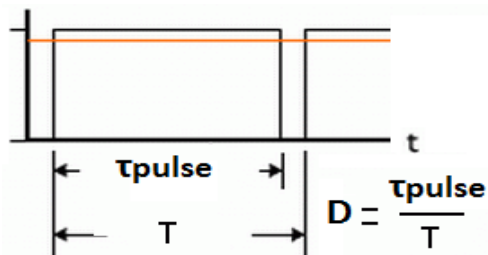
The EFFI-LASE-V3 has an external driver on the cable. The driver has to be powered by a constant voltage of **12V**. Power consumption from 20W to 360W.

Contact arrangement	Pin number	Color contact	Designation
Flying leads Nicked cable AWG 13 (2,5mm ²)	1	Brown	+12V
	2	Grey	GND
	3	Black	PNP TRIGGER (trigger for rising edge) for strobe mode Light OFF if V _{PNP} < 3VDC / Light ON @100% if V _{PNP} > 3V DC Max 12V DC – Analog Voltage

Strobe mode

The LED driver is set to pulse the LED automatically at 30A, with the maximum duty cycle of 5% and pulse duration <150ms.

If the pulse duration exceeds 150ms, the protection mode will be activated automatically. Light remains ON for 150ms and then OFF for 4s in order to keep the duty cycle below 5%.



If $D = \text{Duty Cycle } (T_{\text{ON}} / (T_{\text{ON}} + T_{\text{OFF}})) > 0.05$ the light is Off for 4s

Please note : The controller delay (the delay between the Input and Output Signal of the controller) is between 40 and 70μs.

Electronical Flexibility

The electronic of the EFFI-LASE-V3 can be easily modified by programming of the microcontroller inside the driver.

The electronic parameters of the standard strobe mode ($T_{\text{ON}} = 150\text{ms}$, $T_{\text{OFF}} = 4\text{s}$, $I_{\text{max}} = 30\text{A}$) can be adapted to your application.

For example, we can adapt the duty cycle value or the power of the LED for longer pulse.

The trigger mode can also be changed to a continuous mode with an adapted current.

Please contact Effilux for more information.

Temperature precaution



Warning: The EFFI-LASE-V3 is not protected against heat. Please use it appropriately to avoid damaging the product. The temperature of this product could increase and becomes hot. Please be cautious and handle with care.

Optical considerations



Any E-Mount lens (accessory) can be mounted on the EFFI-Lase-V3.

Lenses are not sold together with the EFFI-LASE-V3, they have to be purchased separately.

To guarantee the best 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 contact with the mask : the mask is sensitive and can easily be damaged.

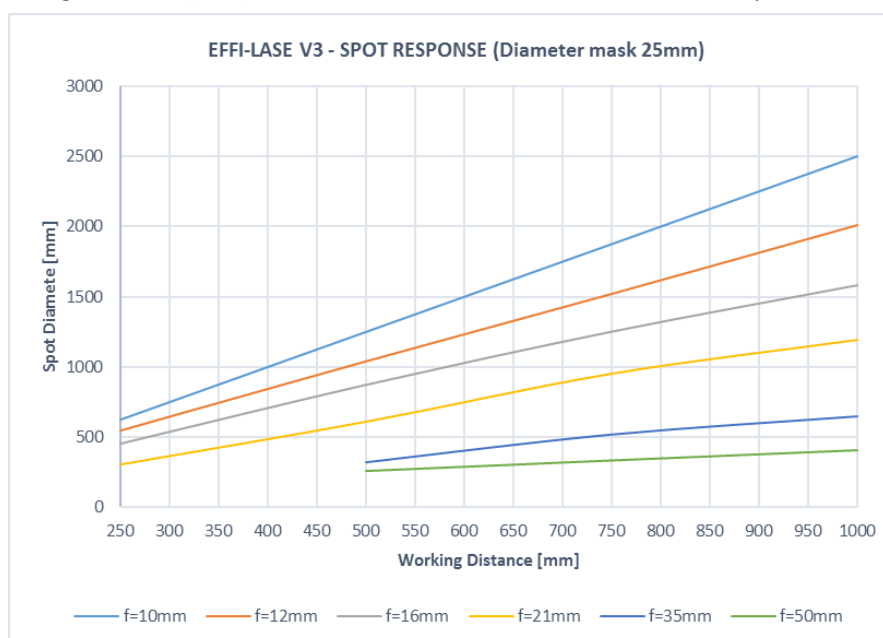


Lens selection

EFFILUX recommends using one of the following lenses with the EFFI-LASE-V3:

Lenses	Efflux References	EFFO-SG-10-F2.8-EM	EFFO-SG-12-F2-EM	EFFO-SG-16-F2-EM	EFFO-SG-21-F1.4-EM	EFFO-SG-35-F1.2-EM	EFFO-SG-50-F1.2-EM
		014601	006694	014602	007828	009112	009113
		10mm F2.8 ED AS NCS CS	12mm F2.0 NCS CS	16mm F2.0 ED AS UMC CS	21mm F1.4 ED AS UMC CS	35mm F1.2 ED AS UMC CS	50mm F1.2 AS UMC CS
Focal length (mm)		10	12	16	21	35	50
Aperture Range		F2.8~22	F2.0~22	F2.0~22	F1.4~22	F1.2~22	F1.2~22
Angle of View APS-C (°)		109.5	98.9	83.1	69.3	44.6	31.7
Mount		E-Mount (SONY)					
M filter size		-	M67 x 0.75	M77 x 0.75	M58 x 0.75	M62 x 0.75	M62 x 0.75
L x Ø (mm)		76.7 x 86	59.1 x 72.5	115.4 x 83	64.3 x 67.5	74.2 x 67.5	74.2 x 67.5
Weight (g)		580	245	615	275	420	375

Depending on the working distance (WD) and the E-mount lens selected, different spot sizes can be obtained:







Illuminations obtained using each lens on different working distances are:

Depending on the E-Mount lens selected, different minimum focus distances can be obtained. These values were measured using a LaseV3 in color Blue color with a Standard Driver, in continuous mode at I = 30A.						
Lens			Illumination at the center (mW/cm²) 25cm Mask diameter			
Reference	Focal	Min focus distance	WD = 25cm	WD = 50cm	WD = 75cm	WD = 100cm
EFFO-SG-10-F2.8-EM	f = 10mm	240mm	-	-	-	-
EFFO-SG-12-F2-EM	f = 12mm	200mm	9.2	1.8	1.1	0.9
EFFO-SG-16-F2-EM	f = 16mm	200mm	8.4	2.8	1.5	1.2
EFFO-SG-21-F1.4-EM	f = 21mm	280mm	NA	5.8	2.8	1.9
EFFO-SG-35-F1.2-EM	f = 35mm	380mm	NA	19.9	7.5	5.1
EFFO-SG-50-F1.2-EM	f = 50mm	450mm	NA	29.8	16.3	8.2

Adaptative extension rings are available: 1mm, 2mm, 3mm, 5mm, 7.5mm, 10mm, 12.5mm, 15mm.

EFFILUX Structured LED Lighting Range

For a similar spot diameter (60cm), the illumination at maximum power of each projector is obtained:

Product	effiLase	effiLase-PWR	effiLaseV2 <i>MX2 Version</i>	effiLase V3
				
Objective	C-Mount 25mm	C-Mount 25mm	C-Mount 25mm	E-Mount 35mm
Max. Power	24V – 700mA	24V – 700mA	24V – 700mA	12V – 30A
Wavelength	465nm	465nm	465nm	460-465nm
Optical Power factor (for the same area illuminated)	1	X2	X6	X30

It means that for a similar spot diameter, the LASEv3 is 5 times more powerful than the LASE v2 (MX2 version).

Mechanical considerations (Dimensions in mm)

