

# effiLase C-Mount

## Profilometer LED lighting by EFFILUX

For C-Mount lenses and C-Mount tubes



EFFI-Lase are extremely durable LED light sources that offer a service life of up to 60,000 hours. They are available in different colors from UV to near infrared.

### BENEFITS

#### High accuracy measurement

- High power : from 1 mW to 15 mW
- Perfectly sharp edges
- No speckle ( no diffraction and scattering effects )
- Excellent illumination uniformity

#### Easy installation

- No ocular hazards
- Compactness
- Few maintenance : very long lifetime

#### Flexible

- Adjustable working distance : from 50 mm to 2000 mm
- Any kind of pattern shape available: line, cross, circle, mire...
- Full range of color from UV to near IR
- White color
- Wide dimming range of 0-100%
- Compatible with C-Mount lens

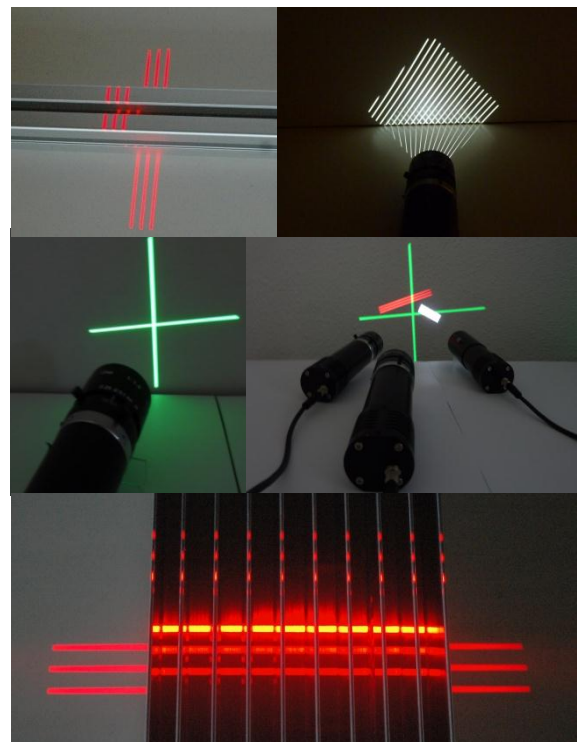
#### Special 3D reconstruction pattern

- Mire sinusoidal for phase shifting method

EFFI-Lase is a lighting range specifically designed by EFFILUX for 3D reconstruction by profilometry. It projects thin and very powerful light lines. This LED lighting projector can be used as a laser line.

#### Applications:

- 3D reconstruction by profilometry
- Alignment
- Targeting and positioning applications
- Automated inspection in the semiconductor, food & beverage, solar, mining, and pharmaceutical industries



## Product nomenclature

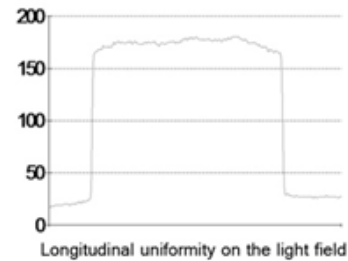


X	XXX
<b>Pattern</b>	<b>Wavelength (nm)</b>
1: Line width=50 µm	Cool White: 000
2: Cross	Neutral white: 001
3: Concentric circles	Warm White: 002
4: Cloud of dots 1	Other wavelengths upon request
5: Multilines	
6: Cloud of dots 2	

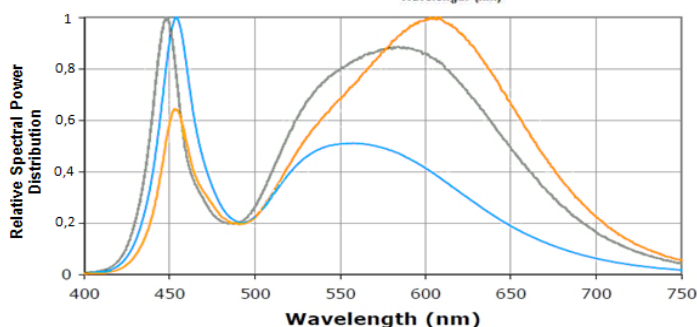
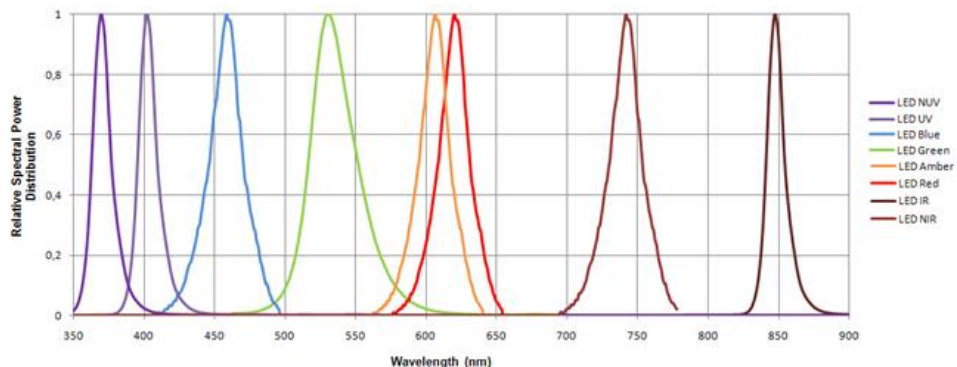
## Optical Characteristics

### Uniformity of the light

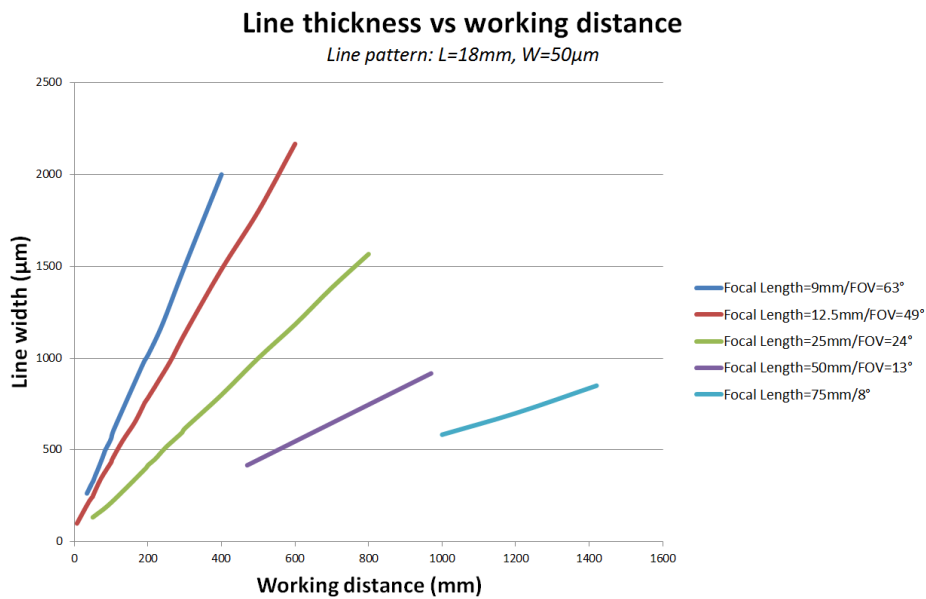
The light is uniform throughout the length of the image.



### LED Typical Spectrum



## Geometric shape of the line for the working distance



## Optical customization

The patented optical combination of lenses from EFFILUX's standard products can be optimized according to your specifications.

- Working distance: up to 2000 mm.
- Home design mask (cross, multi lines, circles...).
- Specific optical power (up to 20 times standard power).
- Dual or tri-color projector by mixing different LEDs.
- Integration of optical components such as diaphragm or filters.

## Electrical characteristics

Two options are offered to supply an EFFI-Lase:

1. Use an EFFI-Supply Wire (Supplied by Effilux)
2. Use a direct current source

### Warning:

Changes or modifications not expressly approved by Effilux could void the user's authority to operate this device: use only the proper type of power supply and never exceeds the maximum ampere rate.

This device should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, use the EFFI-Supply Wire.

### EFFI-Supply Wire

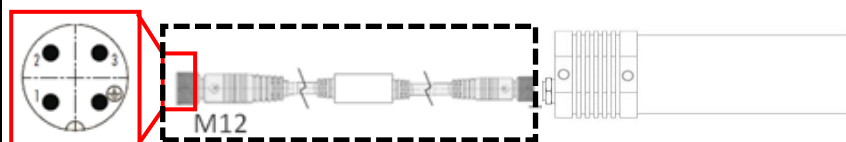
EFFI-Supply Wire converts the input voltage into constant current, used to drive the high power LEDs. EFFI-Supply Wire is specially designed for a high current level stability and an analogue voltage dimming.



EFFI-Supply Wire

### Electrical considerations

Pin	1	2	3	4
Identification	24VDC	DIM	GND	n.a.
Wire color	Brown	Black	Blue	White



EFFI-Supply Wire

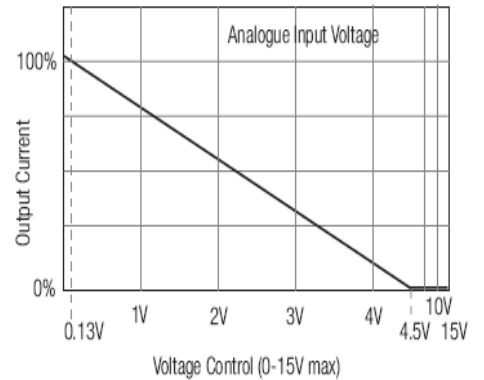
### EFFI-Supply Wire presentation

<i>Model</i>	<i>EFFI-Supply Wire 0.7</i>
Input voltage	24 VDC ( ±10 % )
Power consumption	See section 'LED Power Ratings'
Intensity control	Current control system
Forward current	700 mA
ON / OFF Time	300 µs
Maximum Dimming Frequency	300 Hz
Operating environment	Temp. : 0 to 40 °C, humidity : 10 to 90 %RH

### Dimming control

EFFI-Lase can be dimmed by an analogue voltage. If the dimming control is not used, leave the pin opens.

<b>Input Voltage Range:</b>		<b>0.3V to 15V</b>
<b>Control Voltage Range Limits:</b>	<b>Full On</b>	<b>0.13V ± 50mV</b>
<b>(see Graph)</b>	<b>Full Off</b>	<b>4.5V ± 50mV</b>
<b>Analogue Current :</b>		<b>V<sub>c</sub>=5V 0.2mA max.</b>



### Supply with a current source



A current source, with the correct settings and the correct wires, can be used to supply EFFI Lase: details can be found in the following table and pictures.

To pulse and/or to strobe at high frequency the EFFI Lase, use an appropriate current source.


#### Direct current Source

Input voltage	See the section “ LED Power Ratings”
Power consumption	See “LED Power rating ”
Maximum continuous forward current	<b>1000 mA</b>
Peak pulsed forward current	<b>1800 mA</b>
Maximum flash frequency	<b>1 MHz</b>
Maximum strobe pulse width	<b>50 µs</b>

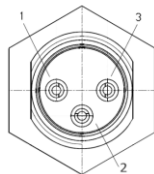
### Wires connections for direct LED control

M8, 3 pins.

Reference: 79-3406-42-03

Manufacturer :  binder USA

SERIES 718



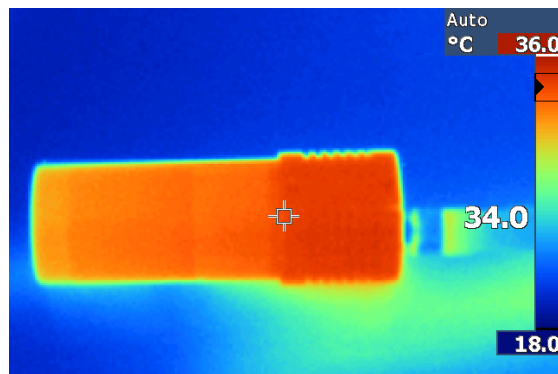
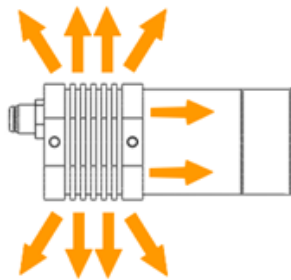
Pin	1	2	3
Terminal	Anode (A)	Cathode (K)	n.a.
Sign	+	-	n.a.
Wire color	Blue	Black	n.a.

## LED Power Ratings

Products	Wavelength peak	Forward voltage (Volt)	Forward current (mA)
EFFI-Sharp NUV	365	3.7	700
EFFI-Sharp UV	385	3.7	700
EFFI-Lase WHITE	n.a.	3.8	700
EFFI-Lase BLUE	460 nm	3.8	700
EFFI-Lase GREEN	525 nm	3.8	700
EFFI-Lase AMBER	590 nm	2.6	700
EFFI-Lase RED	625 nm	2.6	700
EFFI-Lase DEEP RED	660 nm	2.6	700
EFFI-Lase NIR	750 nm	1.6	700
EFFI-Lase IR	850 nm	1.6	700

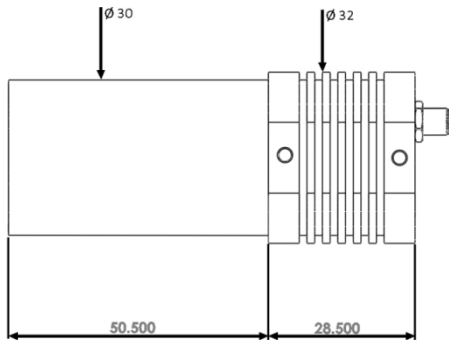
## Thermal Characteristics

EFFI-Lase design enables the heat transfer from the LED p-n junction in order to obtain high performances and a long lifetime.

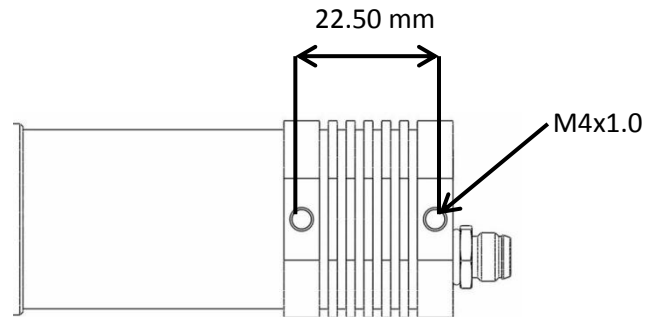


## Mechanical Characteristics (all dimensions are expressed in millimeters)

### Dimensions



### Fastener



## Bill of materials

- **EFFI-Supply-Wire\_M12/M8\_700\_300**
  - Input connector M12
  - Output connector M8
  - Size 300 mm
  - Input Power 24 Volt, 5 Watts
  - Output Power 700 mA



## Accessories

### Other Wires

- **EFFI-Wire\_M8\_3\_2000\_angled**
  - Wire gauge (mm<sup>2</sup>) 0,25 mm<sup>2</sup>
  - Wire gauge (AWG) 24
  - Cable length 2 m
- **EFFI-Wire\_M8\_3\_2000**
  - Wire gauge (mm<sup>2</sup>) : 0,25 mm<sup>2</sup>
  - Wire gauge (AWG) : 24
  - Cable length: 2 m
- **EFFI-Wire\_M12\_4\_1000**
  - Wire gauge (mm<sup>2</sup>) 0,2
  - Wire gauge (AWG) 24
  - Cable length 1 m

