




COMPACT Version

Very intense and uniform illuminated area
Full range of colors: from UV to IR, white
Long lifetime and few maintenances
Compatible with most objectives (C-Mount)
Flexible: Adjustable working distance & spot size

		CPT (Compact)
Electronics	Connectors	M8, 8 Contacts (no LED driver = no protection)
	Power supply	 Direct current
	Illumination mode	Strobe mode only or low constant current (no cooling system)
	Power consumption	Depending on the current
Optics	Wavelength	Various wavelengths (from UV to IR, white)
	Projection system	Near Field, Middle Field, Far Field & any C-mount objective
	Projected pattern	Square, Disc or Half-moon patterns
Mechanics	Weight	380g
	Width x length	42 mm x 112,9 mm (NF & MF) or 153,4 mm (FF)
	Focusing adjustment	An adjustment ring on the objective
	Fastener	8 x M5 6H
	Material	Device body: Aluminum alloy
Environment	Working temperature	0°C to 40°C
	IP code	IP54

Part Number



Reference:

EFFI-SHARP-CPT-VVV-XX-YYY-Z

VVV: LED version

MX1



MX2



XX: Objective

NF

MF

FF

CM

Typical working distance:
80 to 3000 mm

Typical working distance:
420 to 3000 mm

Typical working distance:
350 to 3000 mm

To adjust a C-mount
objective

Illuminance*:
2 000 000 lux at 100 mm

Illuminance*:
90 000 lux at 500 mm

Illuminance*:
20 000 lux at 1000 mm

YYY: Wavelength (nm) / Color (other wavelengths available on demand)

- UV 385 – 395 – 405
- Blue 465
- Green 525
- Red 625
- IR 850
- White 000 (T°= 5500 K ± 500 K)

Z: Part number of the shape / Pattern projection (If not specified, default 2)

1: Square 9x9 mm



2: Disc Ø15,1 mm



3: Half-moon R = 9,5 mm



Option Polarizer



Without polarizer



With polarizer

If polarizer, add -POL in the part number.

Part number: EFFI-SHARP-CPT-VVV-XX-YYY-Z-POL

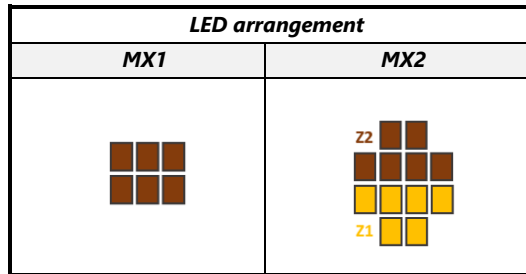
*: Measurements were made with a 2000mA strobe current through each LED (white MX2 LED version).

Electronical considerations

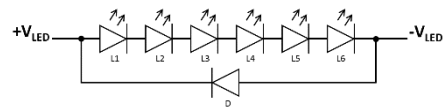
Contact arrangement

The EFFI-SHARP-CPT is supplied with a direct current through the M8-8 PINS (male). Cable length = 500mm.

CONVENTION CABLE M8 Direct current!				
Pin number	Cable color	Contact arrangement	With MX1	With MX2
1	White	 M8 8 PINS (male)	-V _{LED}	-V _{LED} n°1 (Z2)
2	Brown		+V _{LED}	+V _{LED} n°1 (Z2)
3	Green		N.C	-V _{LED} n°2 (Z1)
4	Yellow		N.C	+V _{LED} n°2 (Z1)
5	Grey		N.C	N.C
6	Pink		N.C	N.C
7	Blue		-TH Thermistor	-TH Thermistor
8	Red		+TH Thermistor	+TH Thermistor



Electrical diagram for each channel:



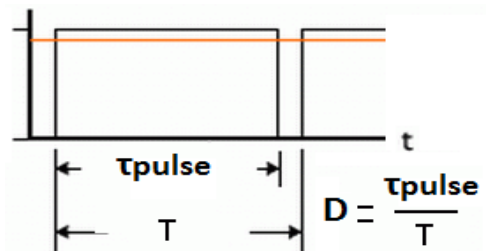
Protective diode **D** TVS 400mW 24V :
PTVS24VS1UR

Thermistor NTC 10kΩ **TH1**:
VISHAY NTCS0805E3103JMT

Strobe mode

EFFILUX proposes a LED controller (EFFI-IPSC4) which allows you to obtain by software interface the ON time and OFF time that you desire. You can see below 5 possible configurations depending on the current that you provide to the EFFI-SHARP-CPT. Contact EFFILUX for more information.

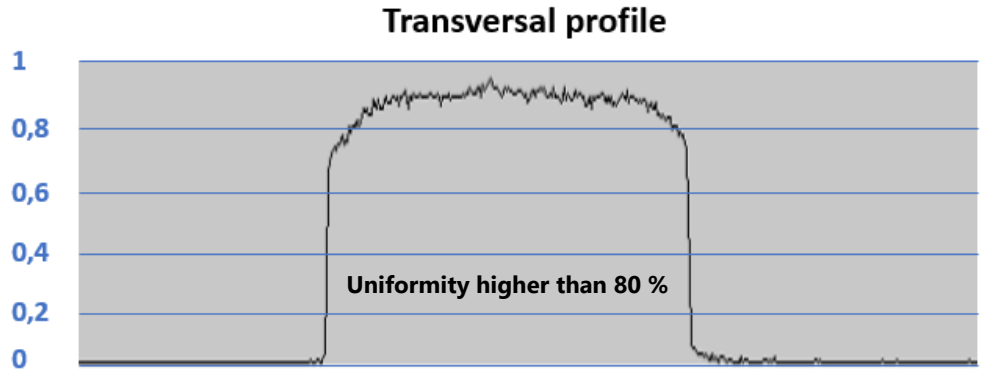
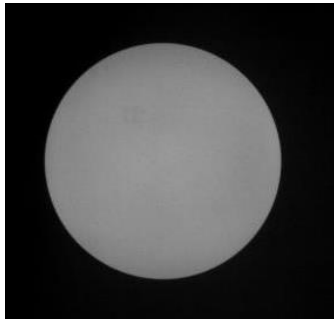
Configuration	Current	Max pulse duration (μs) / τ _{pulse}	D
1	1.2A	50000	0.5
2	1.5A	10000	0.1
3	2A	1000	0.01
4	2.5A	100	0.001
5	3.5A	40	0.0004



Optical considerations

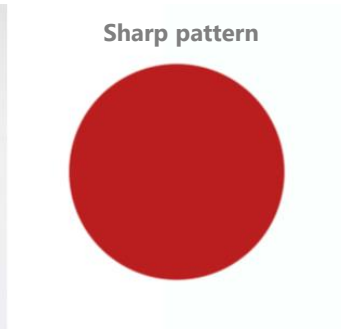
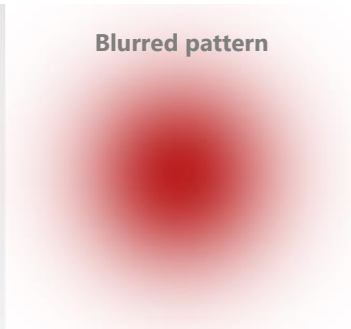


Uniformity of the pattern

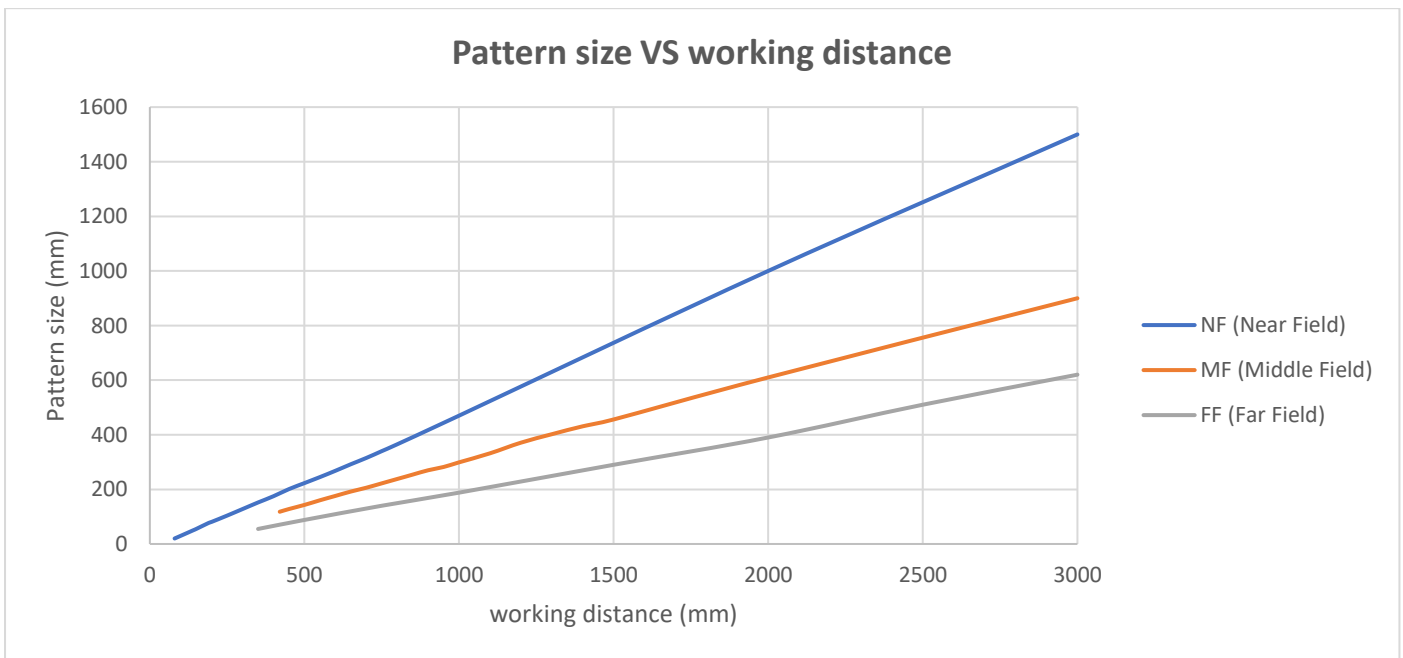


Adjust optical configuration

Rotate the adjustment ring to get a sharp edges pattern and lock the position by screwing the M4 screw.

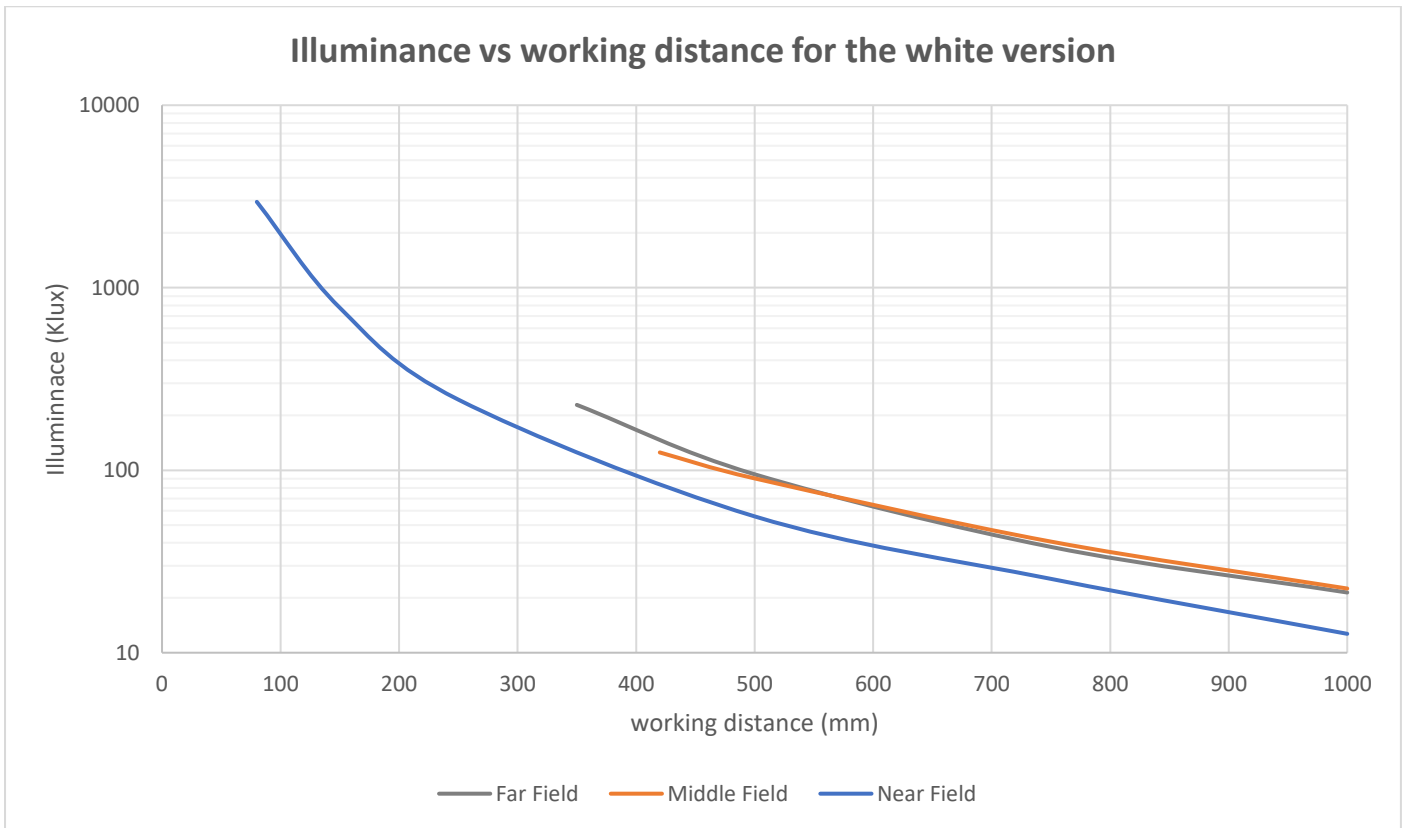


Pattern size VS working distance



Measurements were made with the disc Ø15,1 mm mask (Z=2).

Illuminance VS working distance



Measurements were made with a 2000mA strobe current through each LED (MX2). Please refer to the Power factor array for more information.

Power factor

Objective	Near Field	Middle Field	Far Field
Power factor between MX2 and MX1 LED version	1,7	1,3	1,1

$$Illuminance_{MX1} = \frac{Illuminance_{MX2}}{Power\ Factor}$$

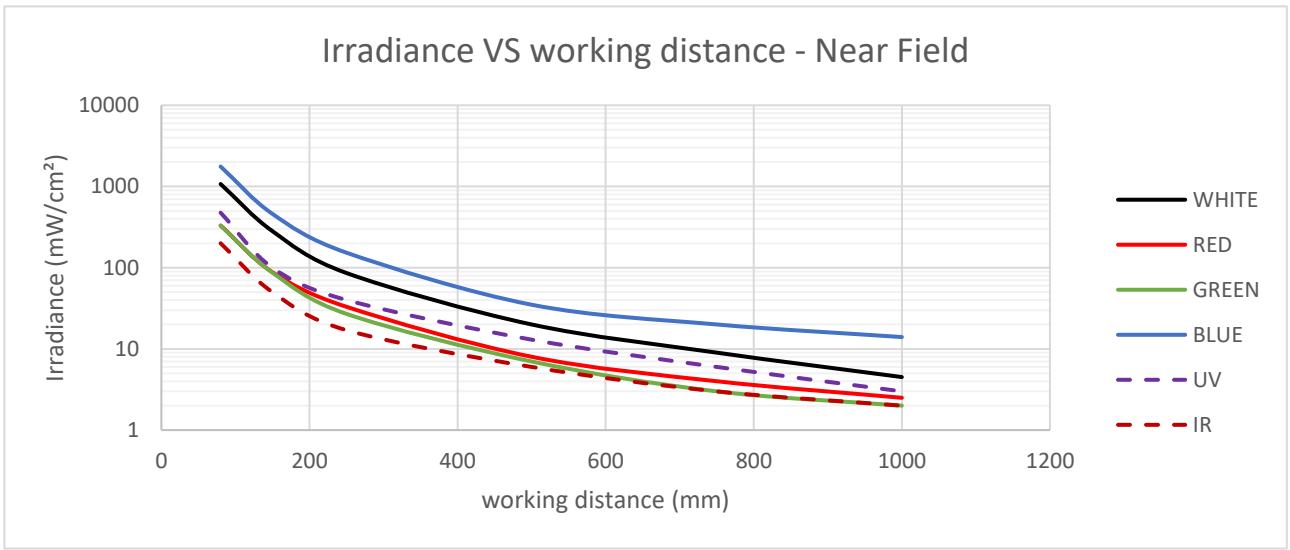
Intensity through each LED	1,5 A	1 A	0,15 A
Power factor between a 2A strobe and another intensity	1,2	1,7	6,5

$$Illuminance_{other\ intensity} = \frac{Illuminance_{2A}}{Power\ Factor}$$

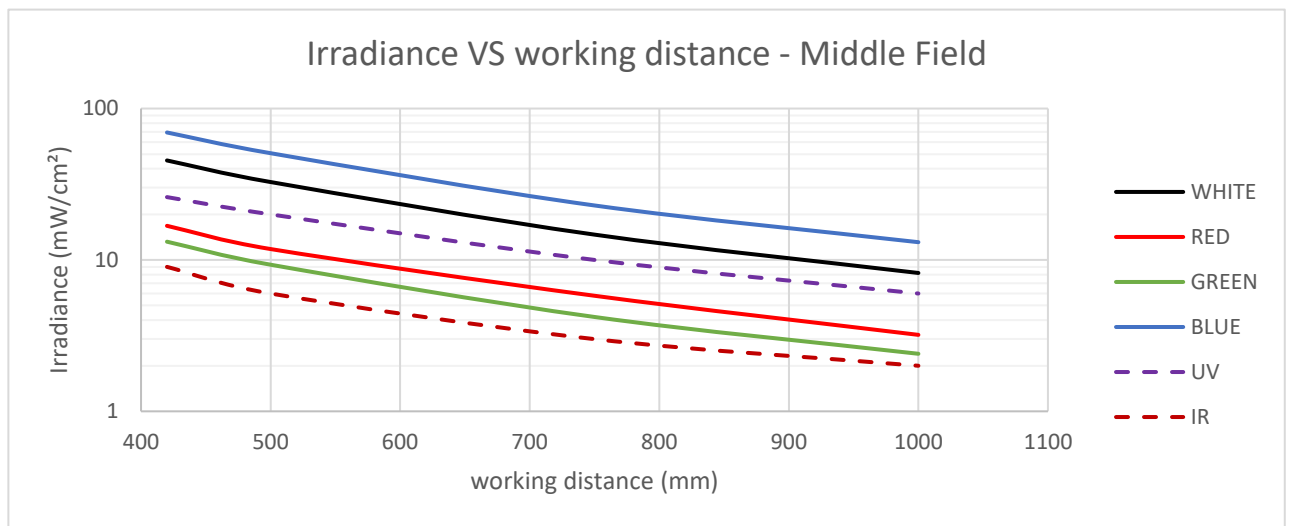
Irradiance VS working distance

EFFI-SHARP-CPT

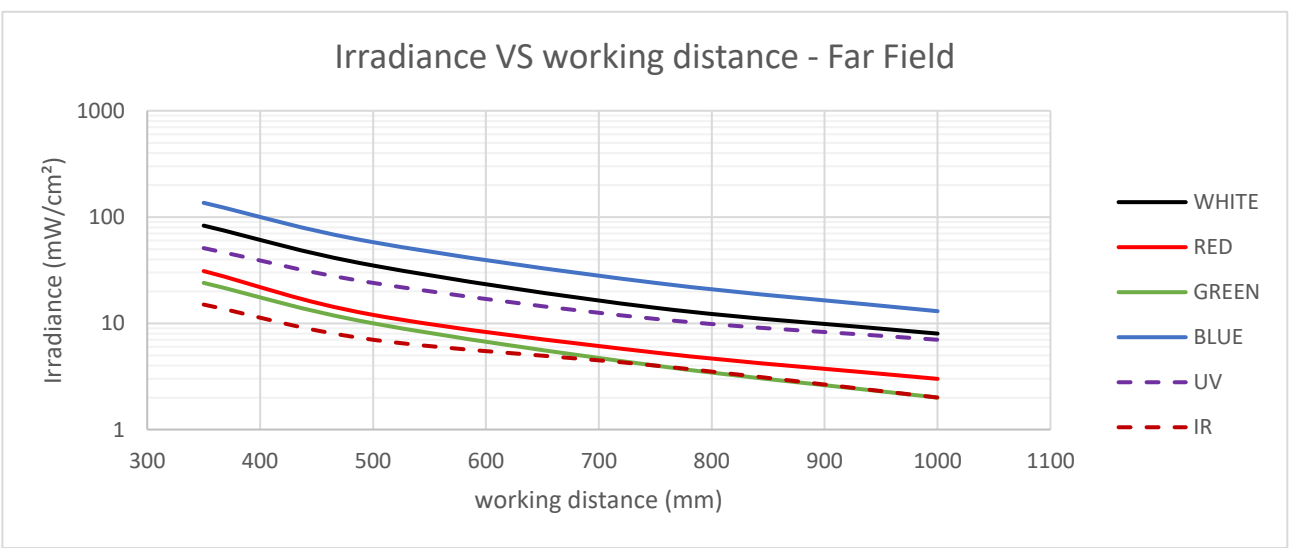
Near Field



Middle Field



Far Field



Measurements made with a 2000mA strobe current through each LED (MX2). Please refer to the Power factor array for more information.

C-mount objective selection



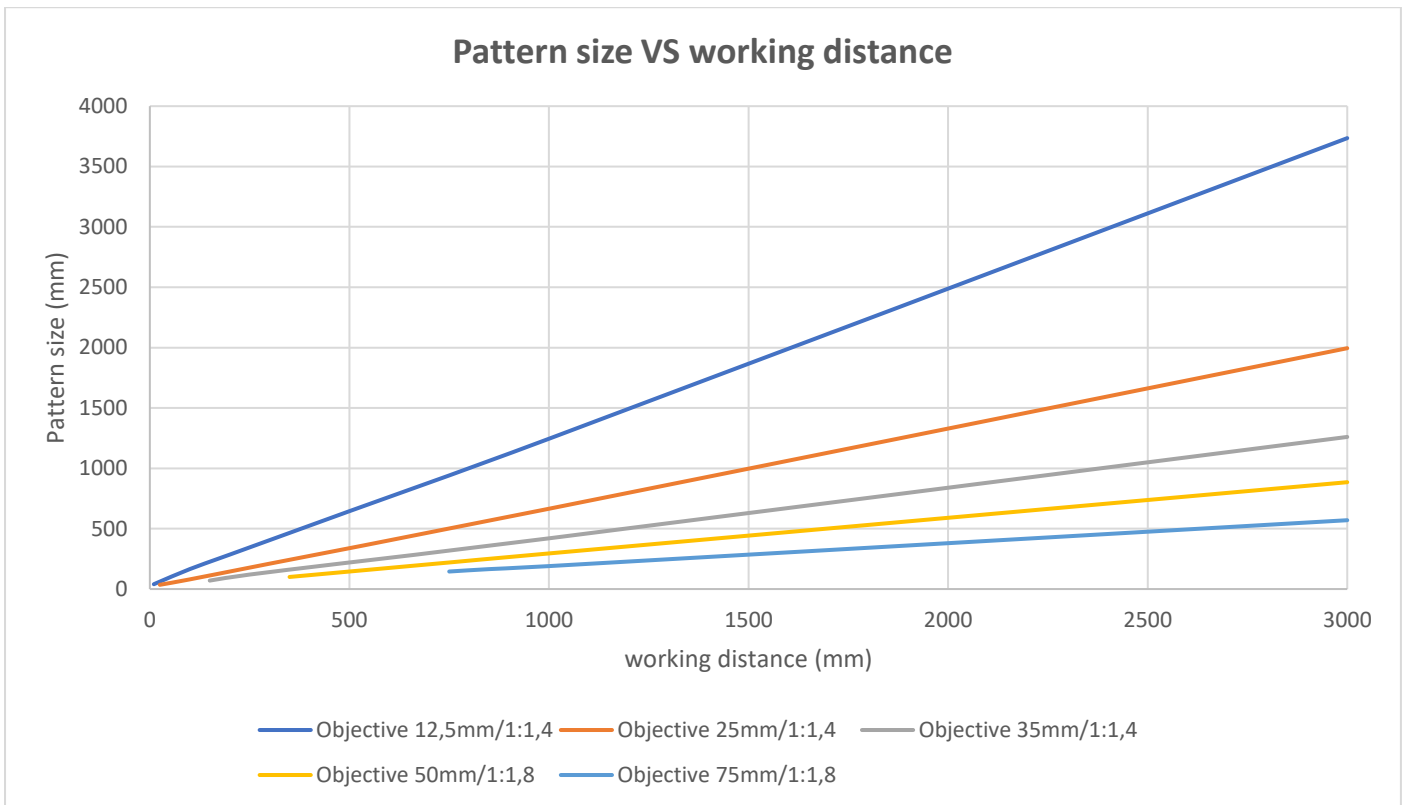
Any C-mount objective can be mounted on the EFFI-SHARP-CPT. The objective is not provided with the EFFI-SHARP-CPT.

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.

EFFILUX recommends using one of the following objectives with the EFFI-SHARP-CPT (2/3" 1.5MP and 1" 1.5MP):

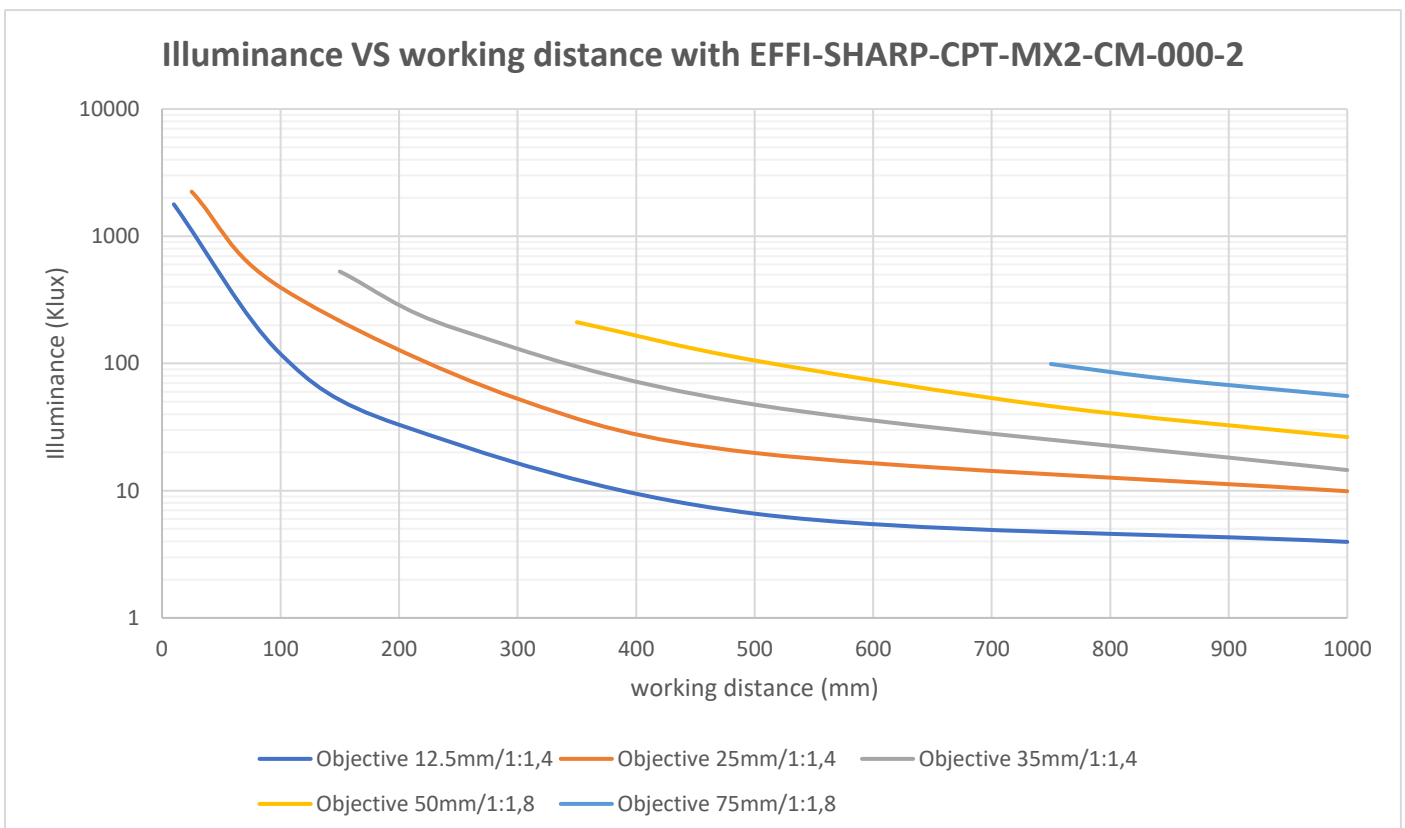
	OBJ-1-F12.5 CF12.5HA-1	OBJ-1-F25 CF25HA-1	OBJ-1-F35 CF35HA-1	OBJ-1-F50 CF50HA-1	OBJ-1-F75 CF75HA-1
<i>Focal length (mm)</i>	12.5	25	35	50	75
<i>Iris Range</i>	F1.4 – F22			F1.8 – F22	
<i>Angle of View (HxV)</i>	45° 13' x 42° 01'	28° 43' x 21° 44'	20° 43' x 15° 37'	14° 35' 10° 58'	9° 45' x 7° 19'
<i>Filter thread</i>	M49 x 0.75 mm				
<i>L x Ø</i>	68.5 x 51 mm	75.5 x 51 mm	48.5 x 51 mm	55.5 x 51 mm	76 x 51 mm
<i>Mechanical characteristics</i>	<p>The mechanical drawing shows a side view of the objective with dimensions: L (total length), Ø (diameter), 50 (height of the main body), and 4 (height of the mounting flange).</p>				

Evolution of the pattern size for different C-mount objective



Measurements were made with the disc Ø15,1 mm mask (Z=2).


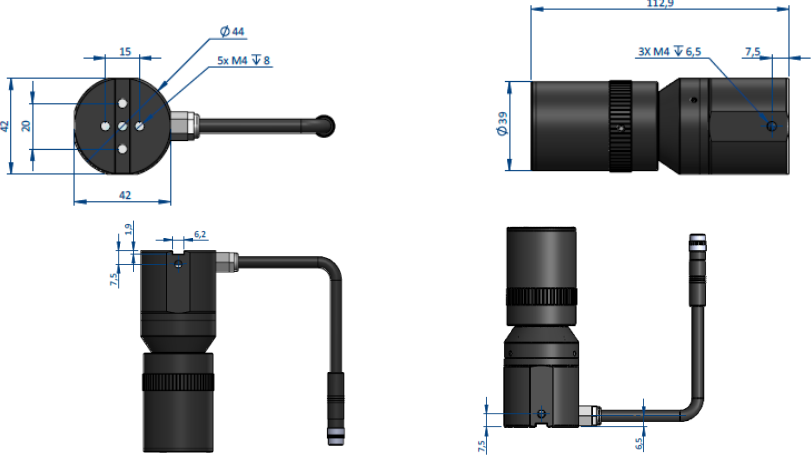
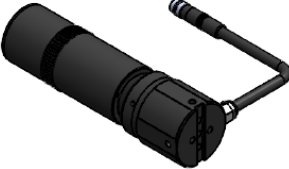
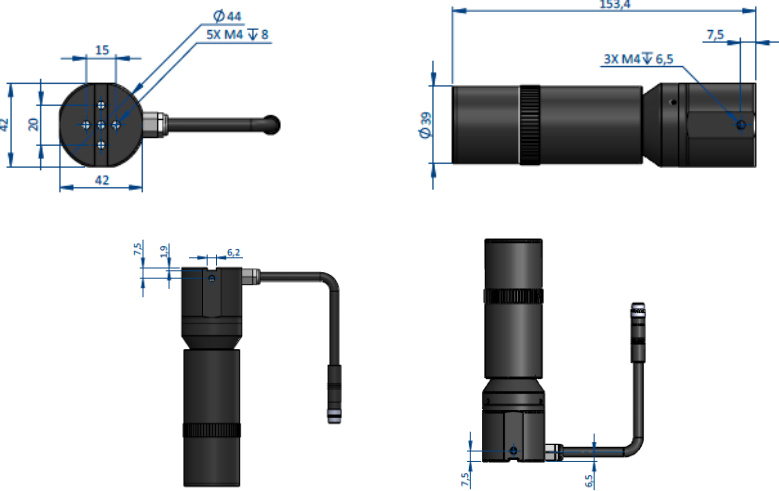

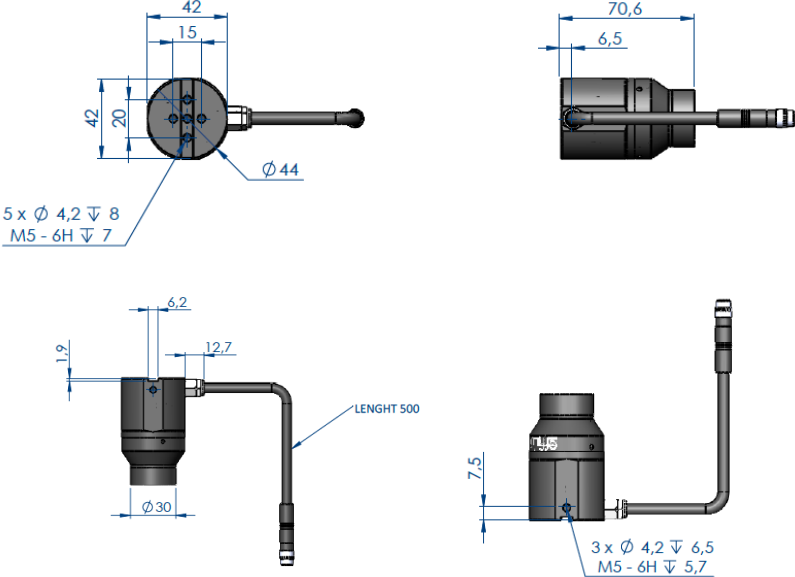
Evolution of the illuminance for different C-mount objective



Measurements were made with a 2000mA strobe current through each LED (MX2). Please refer to the Power factor array for more information.

Mechanical considerations (Dimensions in mm)



Objective version	Dimensions & fixations [in mm]
<p>Near Field (NF) & Middle Field (MF)</p> 	
<p>Far Field (FF)</p> 	
<p>C-mount (CM)</p> 	

M8 cable length = 500 mm.

Change the mask 

Before trying to change the mask, please **disconnect** the product. Then, you can follow the steps below. It is recommended to use **gloves**. If you have the C-mount version, please take off the C-mount adaptor before following the steps below.

EFFM-SPANNER-WRENCH



The two items are needed for the following steps.

1 Ready

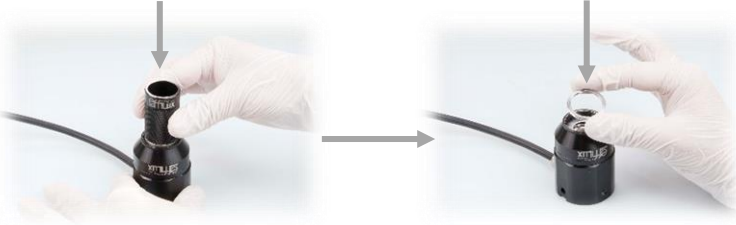
Objective



2 Unscrew the objective

EFFM-SPANNER-WRENCH

Ring



3 Unscrew the ring

Mask (Disc) Clamp



4 Remove the mask carefully

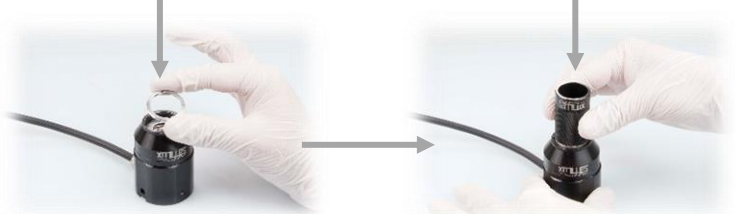
Mask (Square)



5 Place the new mask

Ring

EFFM-SPANNER-WRENCH



6 Screw the ring



7 Screw the objective



The EFFI-SHARP is ready to be used with the new mask.

8 Ready

Remember that the "Change the mask" part works with all the EFFI-SHARP Version (PSV, FAN, CPT) even if the pictures are with a CPT.

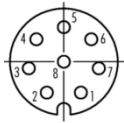
N.B: If you did not succeed in following the steps, please feel free to contact us.

EFFI-IPSC4 accessory (to purchase separately)

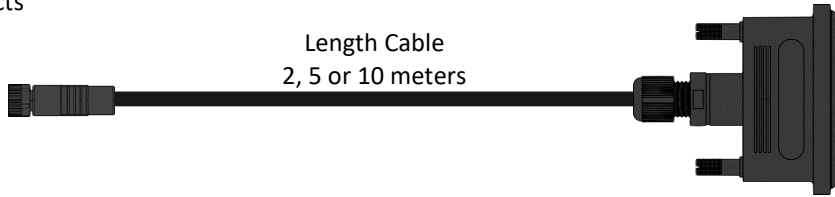


EFFILUX provides an over molded SuBD-Male / M8-Female-8 PINs cable to plug the EFFI-SHARP-CPT to an EFFI-IPSC4. The colors and the signals are corresponding with the array for the M8 connector above (page 3)

OUTPUT Connector :
M8 Female 8 contacts



Length Cable
2, 5 or 10 meters



INPUT Connector:
SuBD Male



SUBD / M8 CONNECTOR 8 CONTACTS							
Cable color	SUBD Contact arrangement (Male)	Designation	M8 Contact arrangement (Female)	With MX1	With MX2		
White		1	GND Channel 1		1	-V _{LED}	-V _{LED} n°1 (Z2)
Brown		A3	+V _{common}		2	+V _{LED}	+V _{LED} n°1 (Z2)
Green		2	GND Channel 2		3	n.c.	-V _{LED} n°2 (Z1)
Yellow		A3	+V _{common}		4	n.c.	+V _{LED} n°2 (Z1)
Grey		3	GND Channel 3		5	n.c.	n.c.
Pink		A3	+V _{common}		6	n.c.	n.c.
Blue		n.c.	n.c.		7	-TH Thermistor	-TH Thermistor
Red		n.c.	n.c.		8	+TH Thermistor	+TH Thermistor

EFFILUX provides cables to integrate the EFFI-SHARP + EFFI-IPSC4 into your process.

Cables (other length on request)	EFFI-IPSC4
2 meters: EFFC-CAB-M8-SUBD-FM-8-DD-L2	<p>Strobe controller with 4 Channels Up to 10A per channel (in pulse mode) Pulse width from 1μs to continuous mode</p>
5 meters: EFFC-CAB-M8-SUBD-FM-8-DD-L5	
10 meters: EFFC-CAB-M8-SUBD-FM-8-DD-L10	