DATASHEET

Efficient Led Lighting

Very intense

Pattern projection

Flexible

IP54

CE

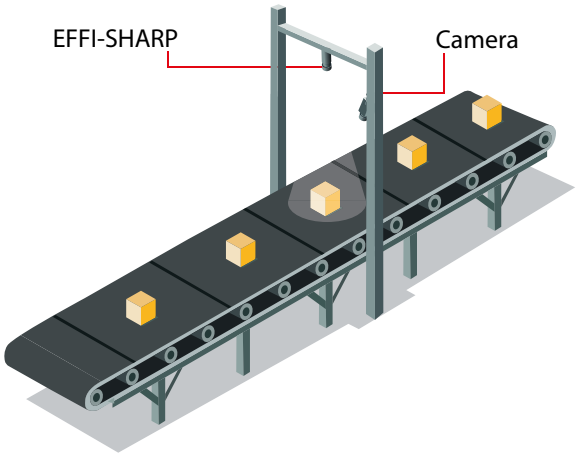
effiSHARP-PSV

Powerful shape projector

TABLE OF CONTENTS

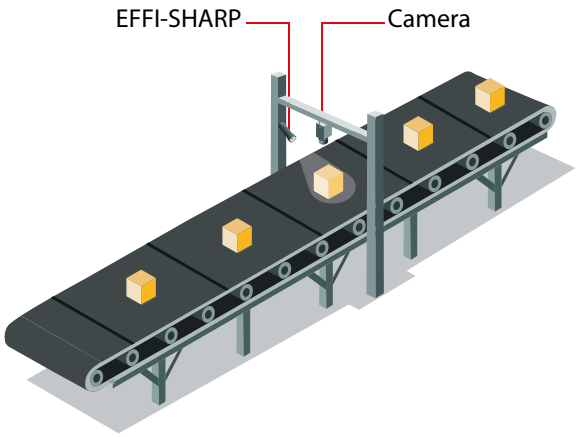
APPLICATIONS

Sharp standard



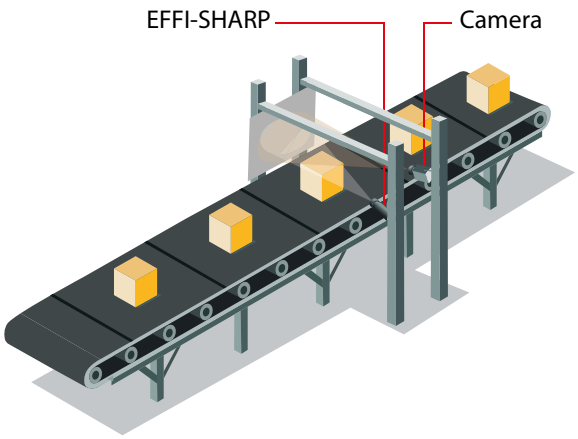
Precise spot light with sharp edges for long working distances.

Sharp dark-field



Tangential illumination for carved codes reading, cleavage inspection, edges view enhancing

Sharp back-light



Backlight illumination with a spot light.

PART NUMBERING

STANDARD VERSION

EFFI-SHARP-PSV - VVV - XX - ZZZ - M

LED pattern	Optical lens	Wavelength [nm]	Mask
MX1 	NF: Near Field	405 (UV)	1: Square 9x9 mm
	MF: Middle Field	465 (Blue)	2: Disc Ø 15.1 mm
	FF: Far Field	525 (Green)	3: Half-moon R = 9.5 mm
	CM: For any other C-mount configuration lens	625 (Red)	
MX2 *(strobe mode only) 		850 (Infrared)	
		000 (White)	

AVAILABLE OPTIONS

Polarizer option

EFFI-SHARP-PSV - VVV - XX - ZZZ - M - POL

- The optical accessory Polarizer eliminates glare caused by the lighting on parts to control.
- The camera can then analyze the part, without being disturbed by the glow effects.

TECHNICAL SPECIFICATIONS

effiSHARP-PSV	
Illumination Mode	Continuous or strobe mode
Wavelengths	405nm, 465nm, 525nm, 625nm, 850nm, 000nm
Power Supply	24V DC
Connector(s)	**M12 - 5 pins (LED driver)**
Power Consumption	15 W to 90W (depending on the LED version)
Weight	620g
Dimensions	Height x length x width = 171,9 mm (NF / MF) - 212,4 mm (FF) x 79,1 mm x 79,1 mm
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 60°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

Type of lens

NF: Near Field	MF: Middle Field	FF: Far Field
NF: 80 to 400 mm Illuminance: 2 000 000 lux at 100 mm	MF: 400 to 3000 mm Illuminance: 100 000 lux at 500 mm	FF: 400 to 3000 mm Illuminance: 200 000 lux at 1000 mm

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

Power factor

Objective	Near Field	Middle Field	Far Field
Power factor between MX2 and MX1 LED version	1.7	1.3	1.1

Intensity through each LED	1.5 A	1 A	0.7 A
Power factor between a 2A strobe and another intensity	1.2	1.7	2.5

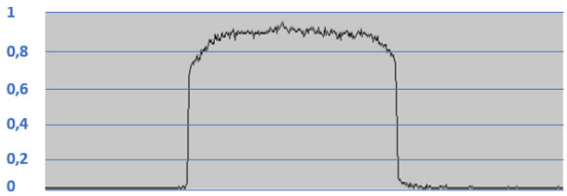
Mask and pattern projection (If not specified, default 2)

1: Square (9 x 9mm)

2: Disc (Ø 15.1 mm)

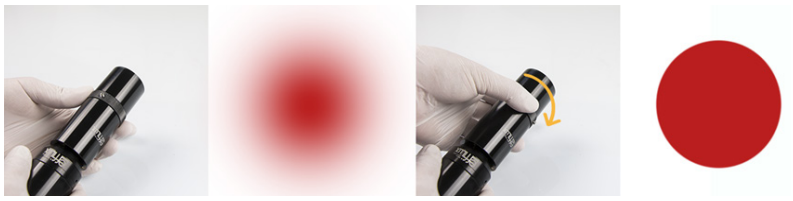
3: Half-moon (R = 9.5 mm)

Uniformity



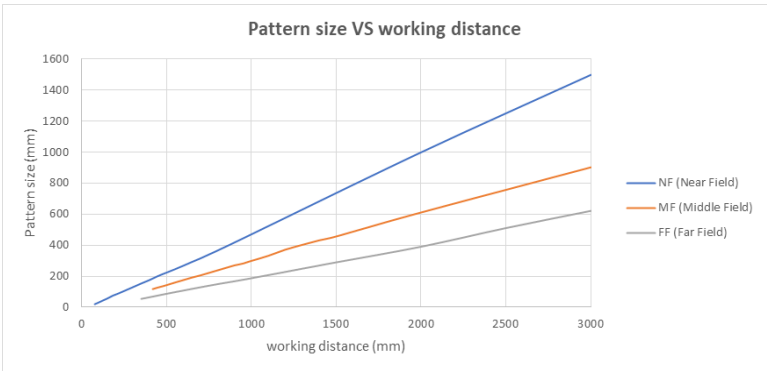
Uniformity higher than 80%

Adjust optical configuration

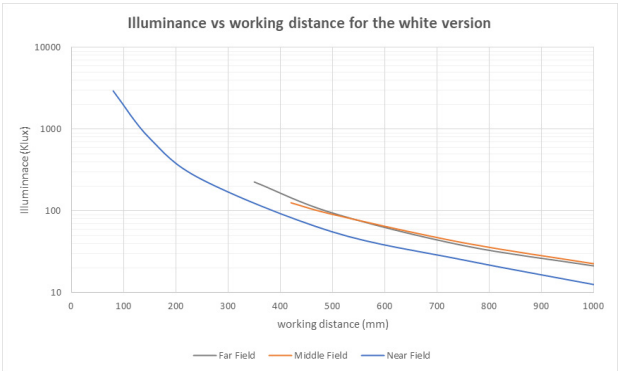


Notes: Rotate the adjustment ring to get a sharp edges pattern and lock the position by screwing the M4 screw.

Pattern size/ illuminance vs working distance



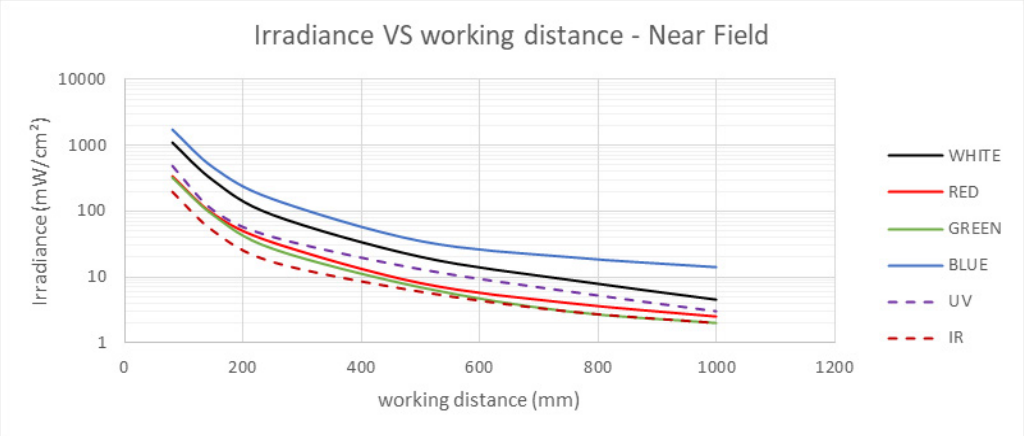
Notes: Measurements were made with the disc Ø15,1 mm mask (Z=2).



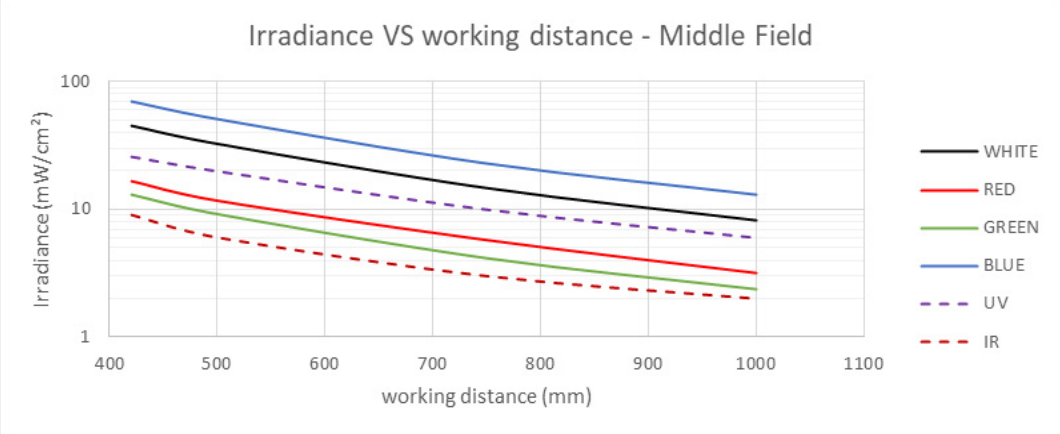
Notes: Measurements were made with a 2000mA strobe current through each LED (MX2). Please refer to the Power factor array for more information.

Irradiance vs working distance

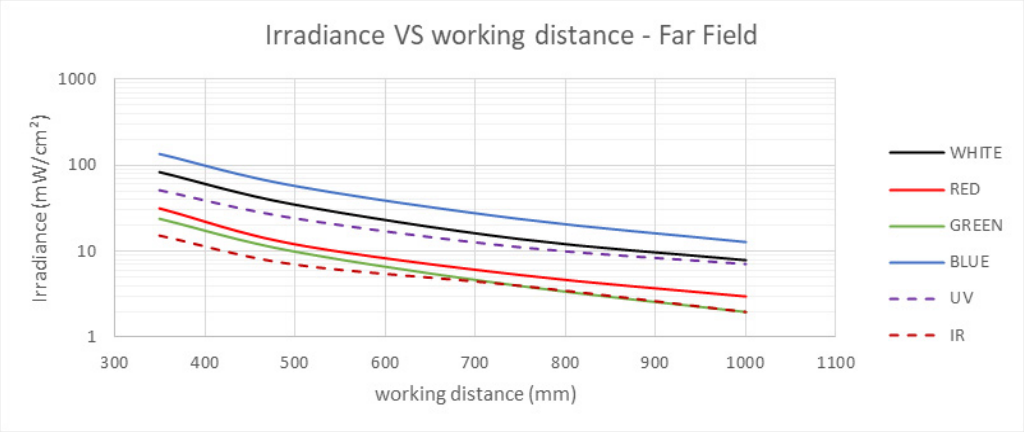
Near Field



Middle Field



Far Field



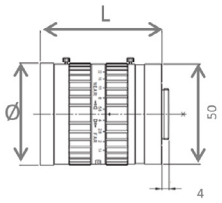
Notes: Measurements were made with a 2000mA strobe current through each LED (MX2). Please refer to the Power factor array for more information.

C-MOUNT OBJECTIVE SELECTION

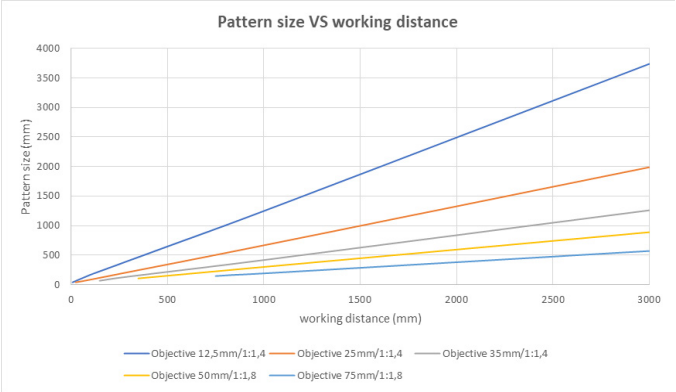
Any C-mount objective can be mounted on the EFFI-SHARP-PSV. The objective is not provided with the EFFI-SHARP-PSV.

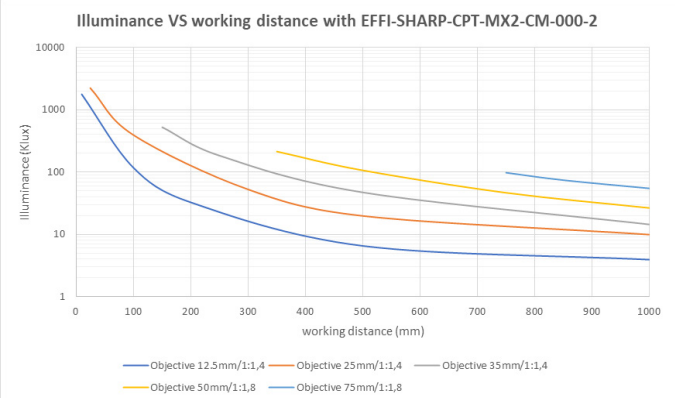
To guarantee the quality of the projector, the pattern is directly mounted in the projector body. However, the pattern can be observed through the aperture of the projector. Avoid any sharp contact with the mask: this one is sensitive and can easily be damaged.

EFFILUX recommends using one of the following objectives with the EFFI-SHARP-PSV(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**
Focal length (mm)	12.5	25	35	50	75
Iris range	F1.4 - F22			F1.8 - F22	
Angle of view (HxV)	45° 13′ x 42° 01′	28° 43′ x 21° 44′	20° 43′ x 15° 37′	14° 35′ 10° 58′	9° 45′ x 7° 19′
Filter thread	M49 x 0.75 mm				
L x Ø	68.5 x 51 mm	75.5 x 51 mm	48.5 x 51 mm	55.5 x 51 mm	76 x 51 mm
Mechanical characteristics					

EVOLUTION OF THE PATTERN SIZE FOR DIFFERENT C-MOUNT OBJECTIVE

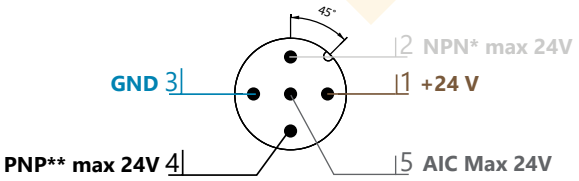




ELECTRONICAL CONSIDERATIONS

Wiring layout

Cable gland M12 - 5pins

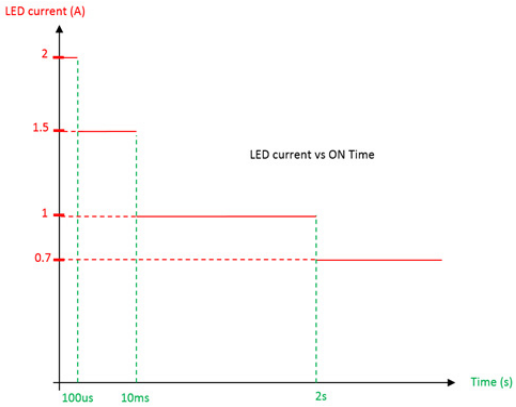


Notes:

- The EFFI-SHARP-PSV is supplied with a 24V constant voltage.
- Cable length = 500 mm.
- 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.
- (*)NPN [triggered on falling edge] - Max 24V (Light ON if VNPN < 1.5 V / OFF if VNPN > 3V)
- (**)PNP [triggered on rising edge] - Max 24V (Light ON if VPNP > 4.5 V / OFF if VPNP < 3V)

Working mode

General behaviour



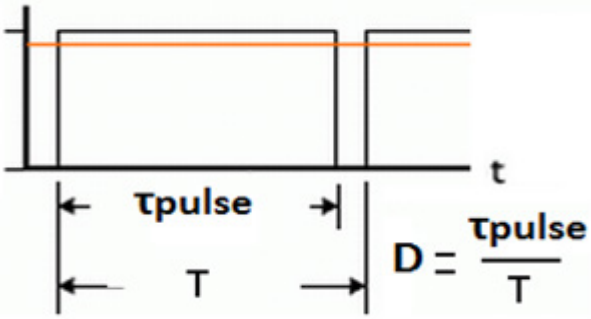
Power consumption of EFFI-SHARP-PSV		
LED Version	Power consumption - Continuous (0.7A)	Power consumption - Max (2A)
MX1	15 W	45 W
MX2	No continuous	90 W

In continuous mode the product will go through every stage from 2A to 0.7A then stabilize at 0.7A the rest of the time.

Be careful, there is no continuous mode with MX2 configurations.

Strobe mode

In strobe mode, with 100us ON time, 2A (max power) is sent in the LEDs. For 2ms ON time, 2A will be sent for 100us then 1.5A during 1.9ms and the sensor will see the average of the power on the integration time.



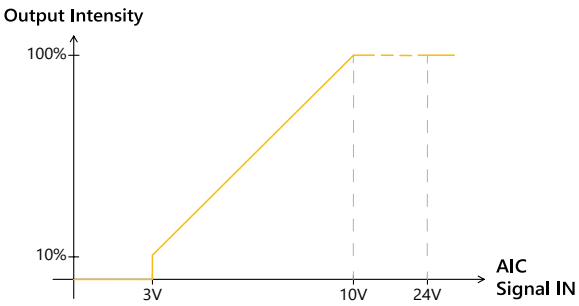
In strobe mode the product is protected by a duty cycle limit to avoid any issues. Duty cycle must remain under 0.3.

Duty cycle = ON TIME / (ON TIME + OFF TIME)

The duty cycle is checked every 2s and if the value is over 0.3 then the light shutdowns for 2s.

Max signal power consumption: 12mA @24V

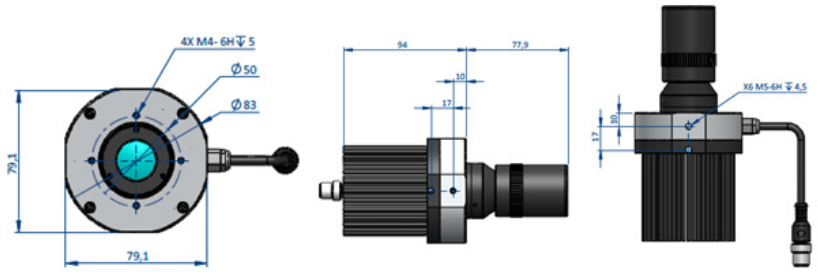
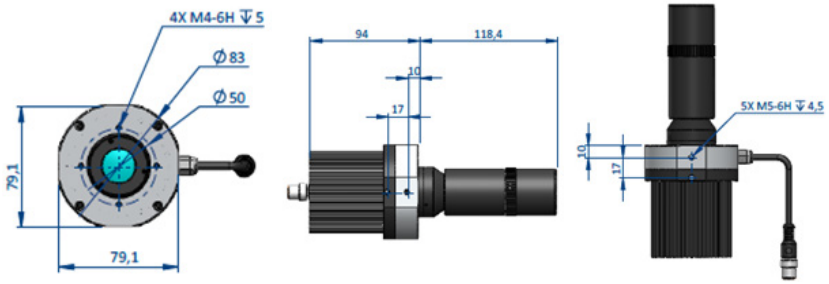
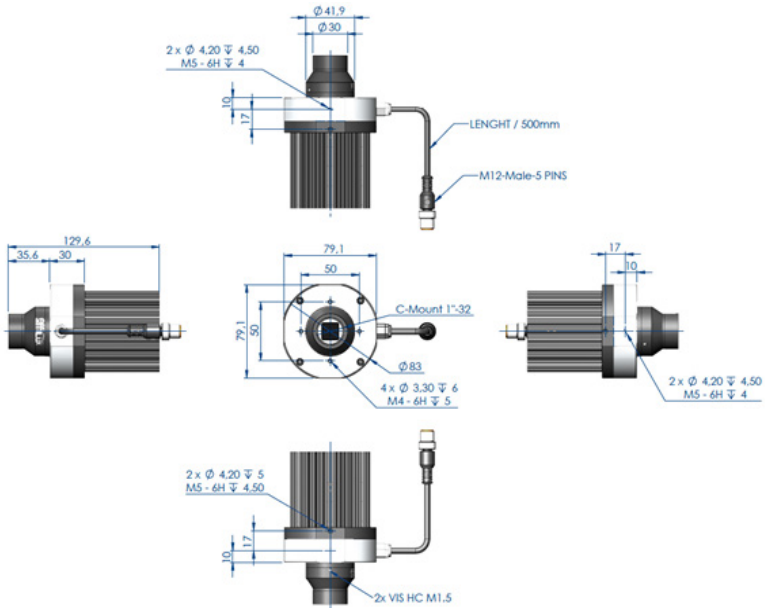
AIC (Analog Intensity Control)



It is possible to control the light output between 10% and 100% of the max value with the AIC pin.

Max signal power consumption: 3mA @24V.

MECHANICAL CONSIDERATIONS (DIMENSIONS IN MM)

Objective version	Dimensions & fastener (in mm)
Near Field (NF) & Middle Field (MF) 	
Far Field (FF) 	
C-mount (CM) 	

ACCESSORIES

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

Potentiometer

EFFI-DIMMER2

Fasteners

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

Extension cables

M12
2meters: EFFC-CAB-M12-FM-5-DD-L2
5meters: EFFC-CAB-M12-FM-5-DD-L5
10meters: EFFC-CAB-M12-FM-5-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 March 2025 and may be changed without prior notice.

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