



Smart strobe electronic



Very intense and **uniform** illuminated area

Full range of colors: from blue to IR, white

Long lifetime and few maintenances

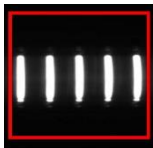
Waterproof

Chainable: Double I/O connectors

Electronics	Connectors	2X M12 5 contacts (1 male & 1 female)
	Power supply	24V DC
	Illumination mode	Continuous or strobe mode
	Max Power consumption	6 LED: 15W / 12 LED: 30W / 36 LED: 80W
Optics	Wavelength	Single (from UV to IR, white)
Mechanics	Weight	6 LED: 180g / 12 LED: 300g / 36 LED: 800g
	Width x length x height	Depends on the amount of LED
	Fastener	4xM4 screw + 4xM3 screw + 2xM4 holes
	Material	Device body: Aluminum alloy & ABS; Window: PMMA
Environment	Working temperature	0°C to 45°C
	IP code	IP67

Part Number



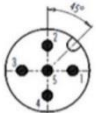
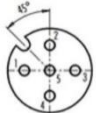
Reference: EFFI-SMART-XX-ZZZ-WW-PP					
XX: Number of LED					
06: 2X3 LED 		12: 2X6 LED 		36: 2X18 LED 	
ZZZ: Wavelength (nm) / Color (other wavelengths available on request)					
● UV 405	● Blue 465	● Green 525	● Red 625	● IR 850	○ White 000 (T°= 5500K ± 500K)
WW: Type of window					
TR: Transparent		SD: Semi-Diffuse		OP: Opaline	
If not specified, default semi-diffuse window					
PP: Lens Position (emission angle depending on the lens position)					
P0: 90° (without lens)	P1: 45°		P2: 25°		P3: 10°
If not specified, default position P2					
Option Linescan (linear lighting or a darkfield lighting)			Option Polarizer (to eliminate glare caused by the lighting)		
 Without Linescan With Linescan If linescan, add -LS in the part number. Possibility to buy only the linescan. Part number: EFFI-SMART-XX-ZZZ-WW-PP-LS			 Without polarizer With polarizer If polarizer, add -POL in the part number. Possibility to buy only the polarizer. Part number: EFFI-SMART- XX-ZZZ-WW-PP-POL Note: The standard polarizer is not suitable for continuous mode use of blue or white light. EFFILUX recommends high durability polarizer for these applications (-POL-HDY).		

Electronical considerations



Contact arrangement

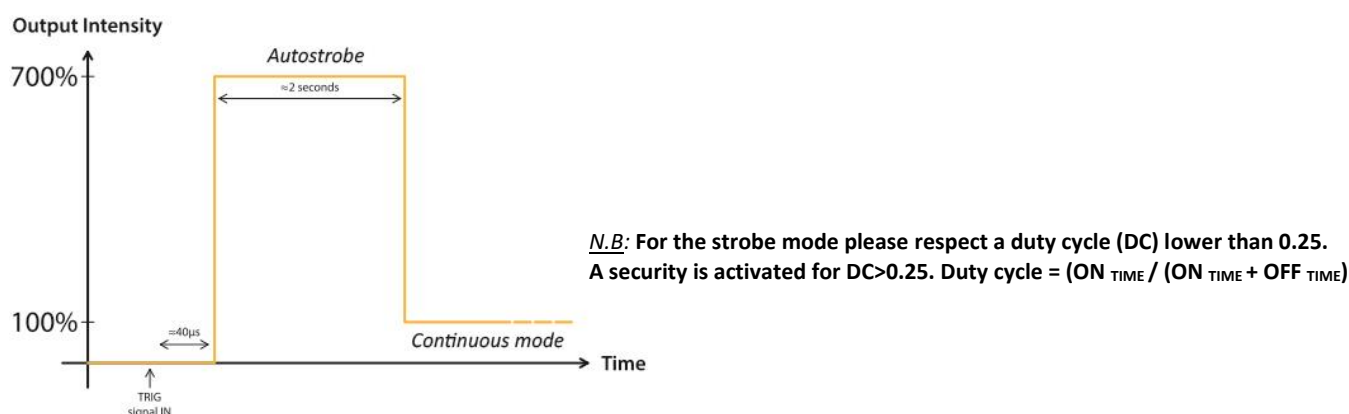
The EFFI-Smart is supplied with a 24V constant voltage. Power consumption = **15 W** for the 6 LED version, **30 W** for the 12 LED version and **80 W** for the 36 LED version.

Pin Number	Cable color	Contact arrangement	Designation
1	Brown	  M12 Male connector M12 Female connector	Power supply: +24V Max current: 0.65A / 6LED; 1.25A / 12LED; 3.5A / 36LED
2	White		NPN (triggered on falling edge) - max 24V Max consumption = 0,1 mA
3	Blue		GND
4	Black		PNP (triggered on rising edge) - max 24V Max consumption = 2 mA
5	Grey		Analog Intensity Control: 0-10V - Max 24V Consumption = 1mA @10V & 2mA @24V



PLEASE NOTE: EFFI-Smart has several operating modes, please refer to the specific paragraph for each mode.

Autostrobe Mode



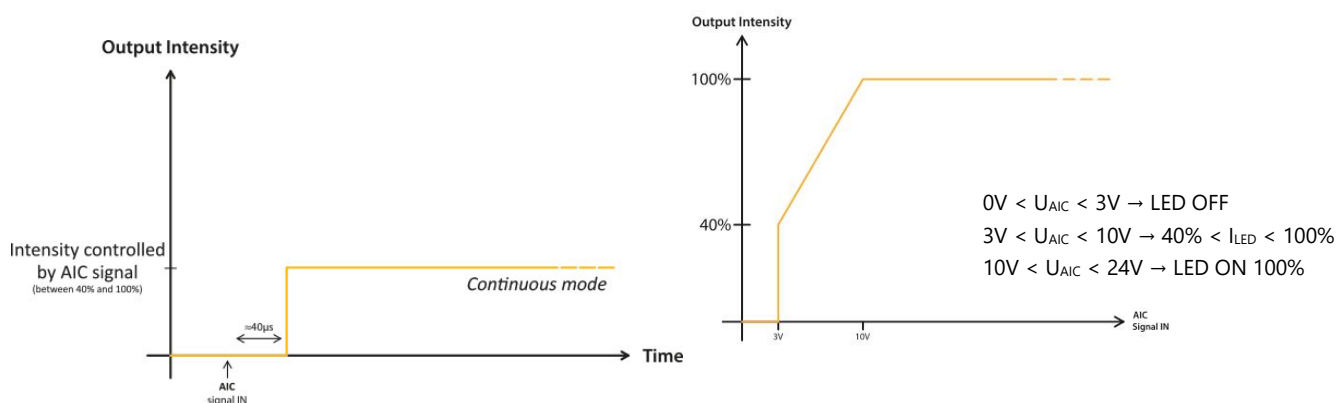
Contact arrangement Autostrobe PNP Version

Pin 1: Brown	Pin 2: White	Pin 3: Blue	Pin 4: Black	Pin 5: Grey
+24V	Not connected	GND	PNP (>3VDC)	Not connected

Contact arrangement Autostrobe NPN Version

Pin 1: Brown	Pin 2: White	Pin 3: Blue	Pin 4: Black	Pin 5: Grey
+24V	NPN trigger (<1.5V DC)	GND	Not connected	Not connected

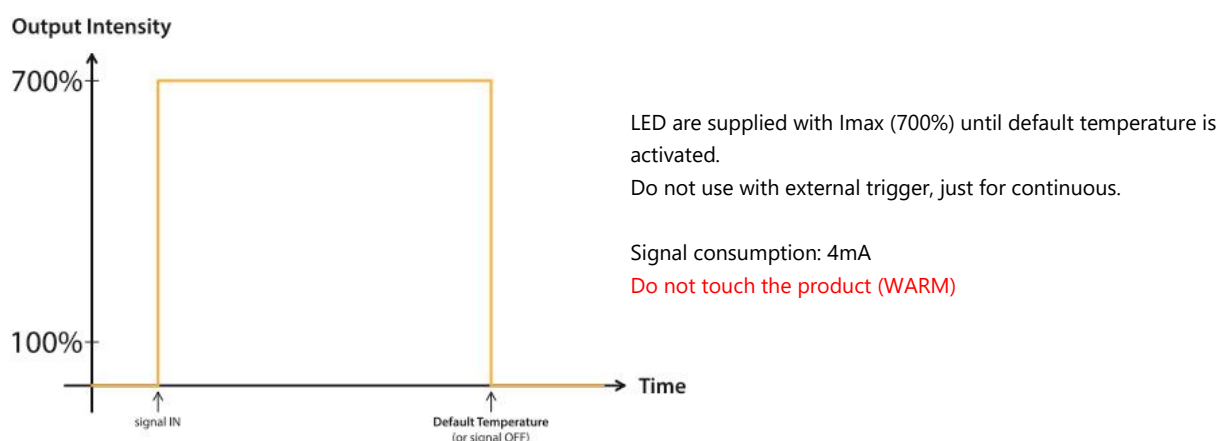
Dimming Mode : AIC control



Contact arrangement AIC Mode

Pin 1: Brown	Pin 2: White	Pin 3: Blue	Pin 4: Black	Pin 5: Grey
+24V	Not connected	GND	Not connected	AIC: 0-24V See scheme

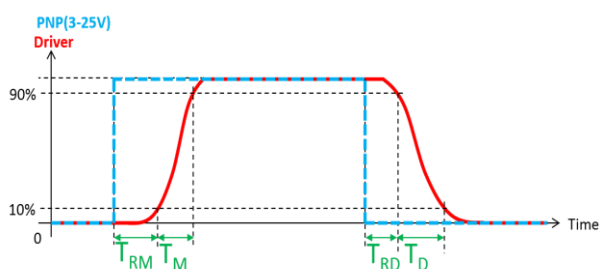
TEST Mode



Contact arrangement TEST Mode

Pin 1: Brown	Pin 2: White	Pin 3: Blue	Pin 4: Black	Pin 5: Grey
+24V	Not connected or PNP (>3VDC)	GND	PNP (>3VDC)	PNP (>3VDC)

Characteristics of the pulse

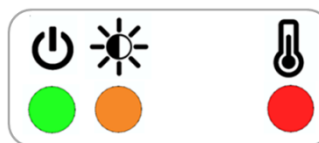


Designation	Time (µs)
Rise time (T _M)	10
Response rise time (T _{RM})	30
Fall time (T _D)	10
Response fall time (T _{RD})	30 (20 NPN)



A thermal security will trigger if the device gets too hot (long use at maximum power or duty cycle too strong).

LED indicator



Green LED ON: Power Supply Connected

Red LED ON: Default Temperature at 65°C

! Do not touch the product! Please wait 5 minutes before handling the product again.

Orange LED ON: Mode

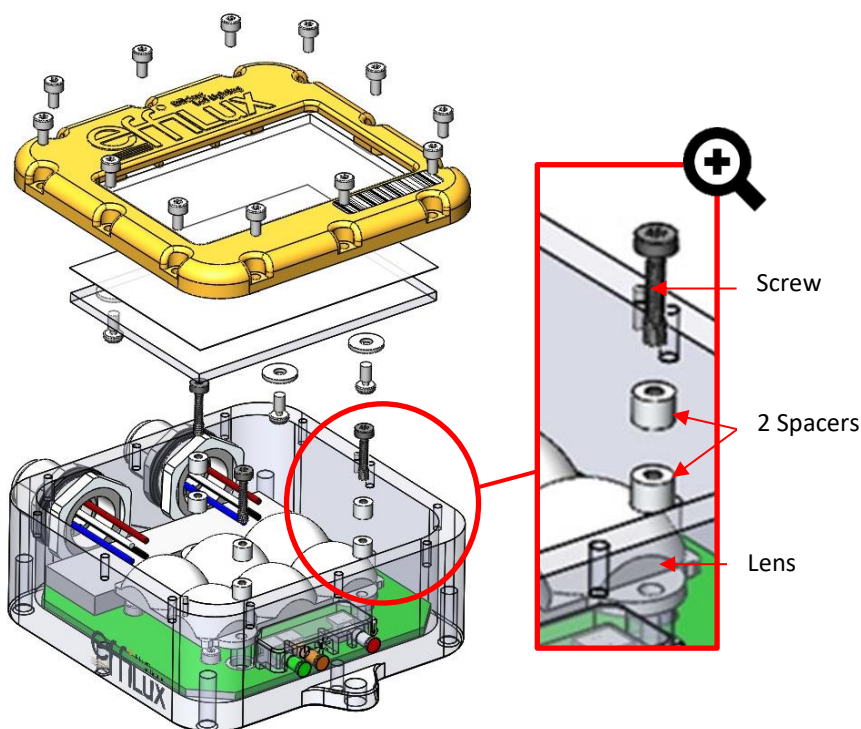
Mode	Frequency
PNP & NPN	Flash at the light frequency
AIC	Flash at 1 Hz
TEST	Flash at 6 Hz

Optical considerations



Lens position

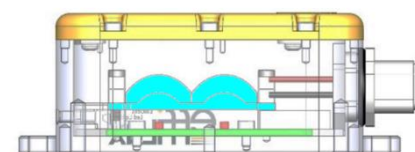
There are 4 lens positions, P0, P1, P2 and P3 for 4 different emission angles



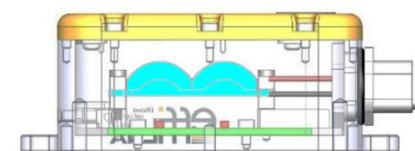
(Scheme: P1 configuration)



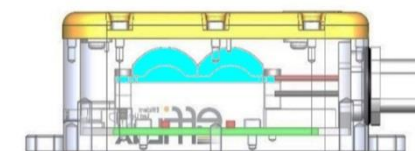
P0: without lens



P1: screw+spacer+spacer+lens



P2: screw+spacer+lens+spacer



P3: screw+lens+spacer+spacer

Handle & clean optical components

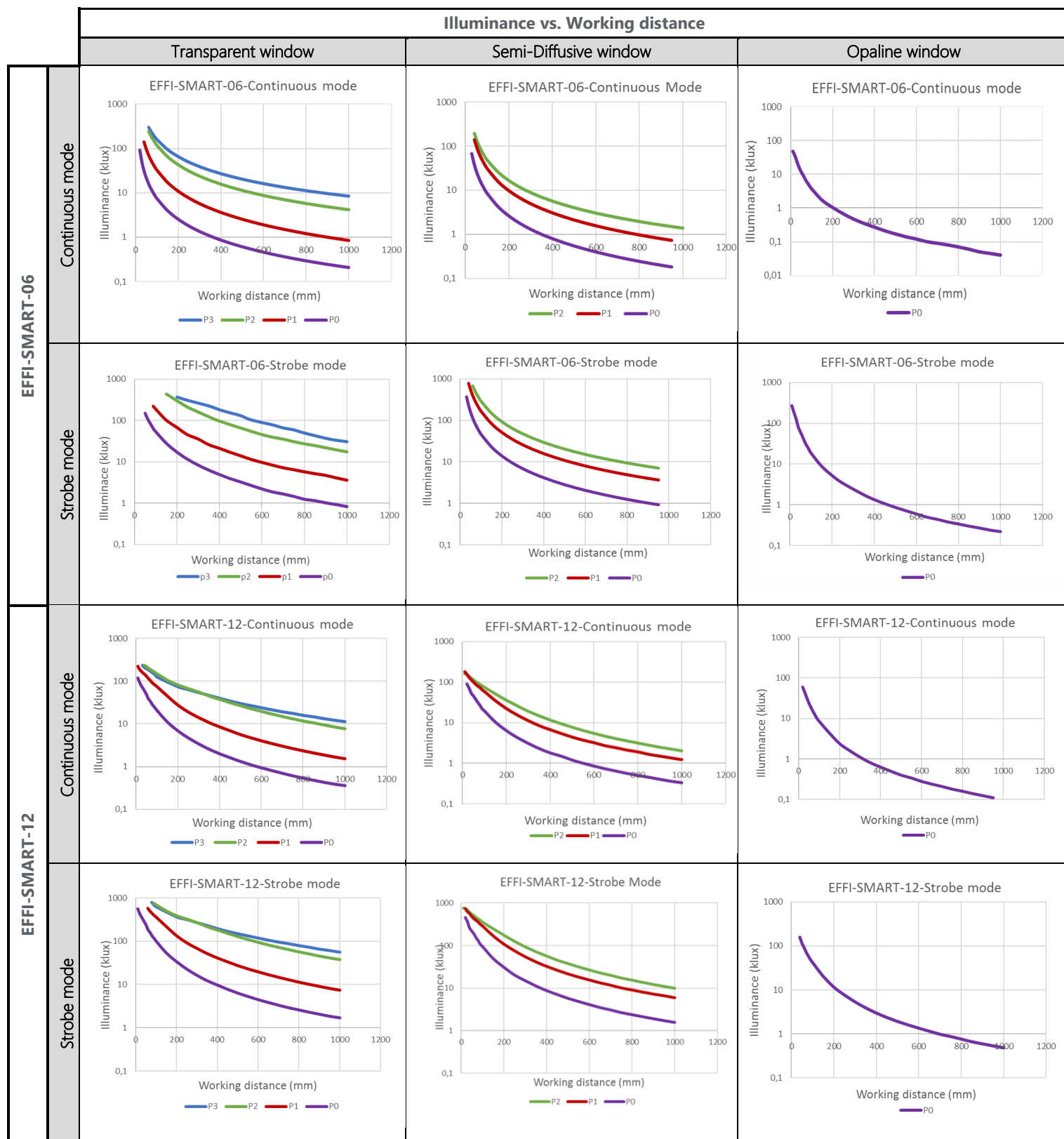
To handle optical components, wearing gloves is strongly recommended.

To clean the optical components:

- Use compressed air duster if there is dust.
- To remove marks on the lens or the window, just a drop or two wiped of alcohol-based lens cleaning fluid in a gentle circular motion with a cleaning tissue. Always apply the fluid to a tissue rather than on the lens itself.

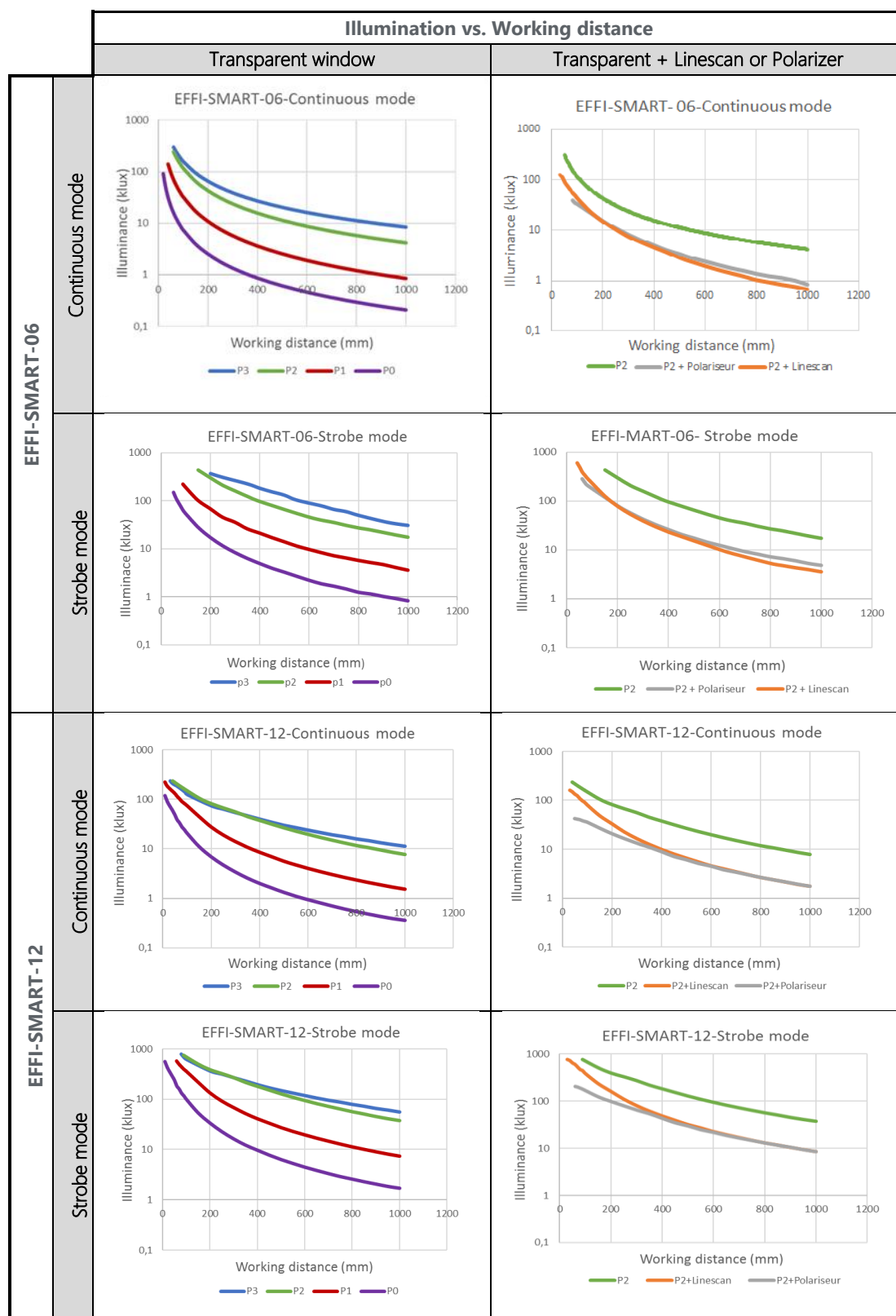
Evolution of illuminance with different optical configurations

Measurements for white LED



With Semi- Diffuse glass, there is no differences between P2 and P3. With Opaline glass there is no differences between P0, P1, P2 and P3. There is a ratio of 5 between illuminance of the strobe mode and the continuous mode.

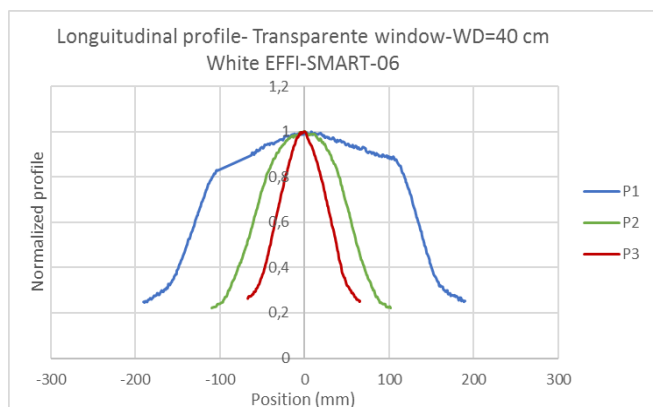
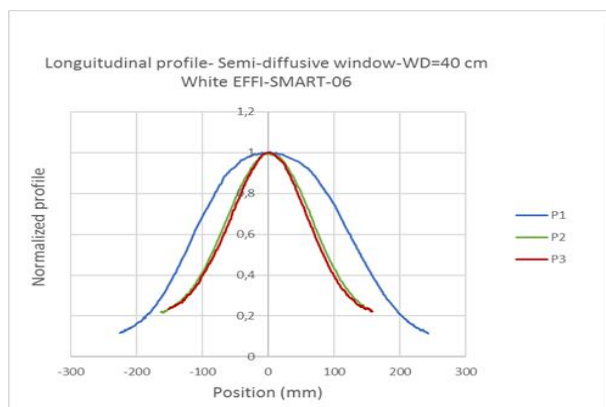
Evolution of illuminance with different options



Power factor for different color (wavelengths)

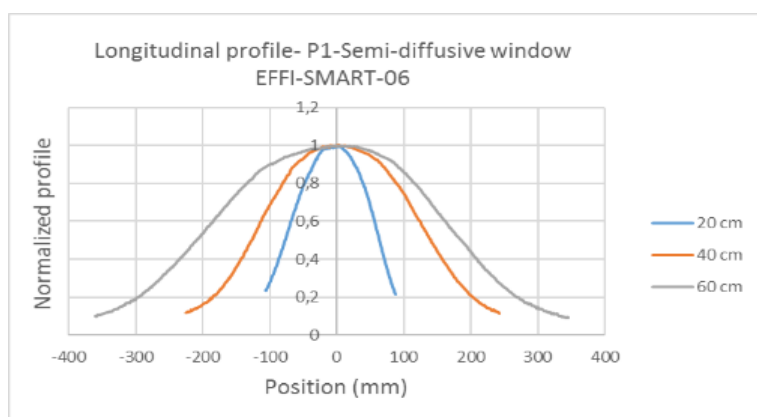
Color	WHITE	RED	GREEN	BLUE
Power factor	1	/	/	/

Evolution of the illuminance with different options



Longitudinal and transverse profile are similar for the EFFI-SMART-06.

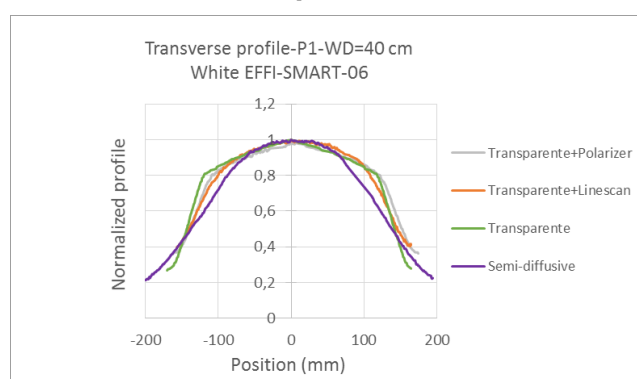
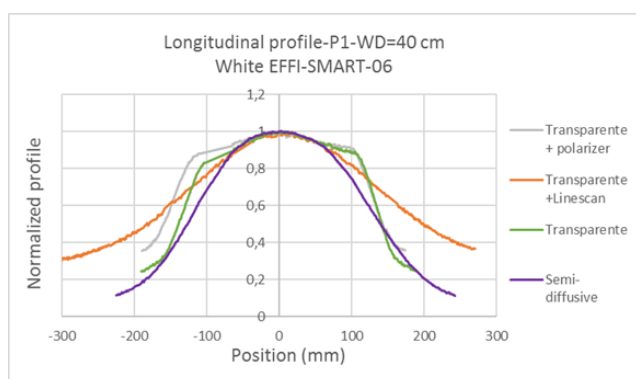
Evolution of the illuminated surface



Longitudinal and transverse profile are similar for the EFFI-SMART-06.

For the EFFI-SMART-12/36 the transverse profile is approximatively the same. And the longitudinal profile will be proportional to the length of the product.

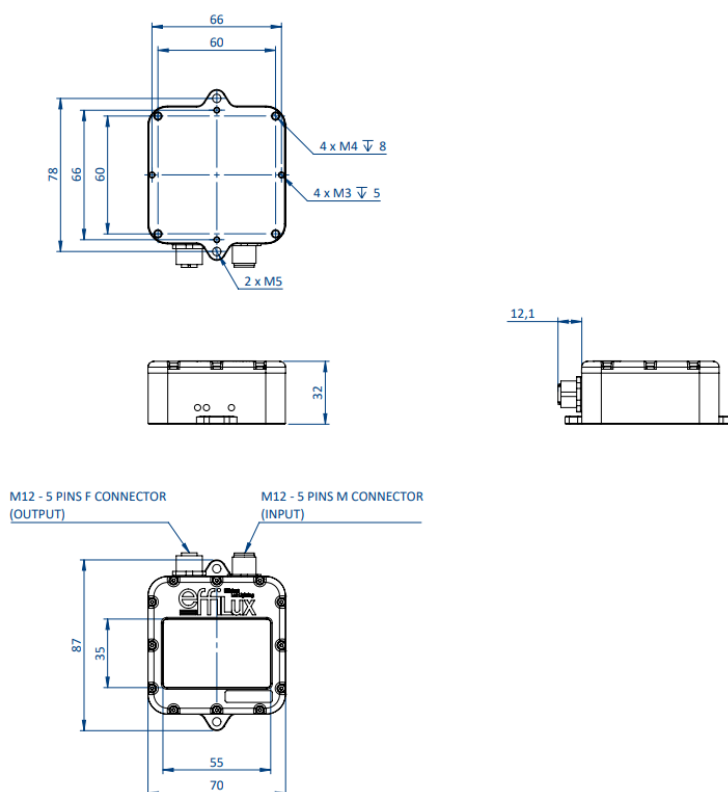
Evolution of the illuminated surface with different options



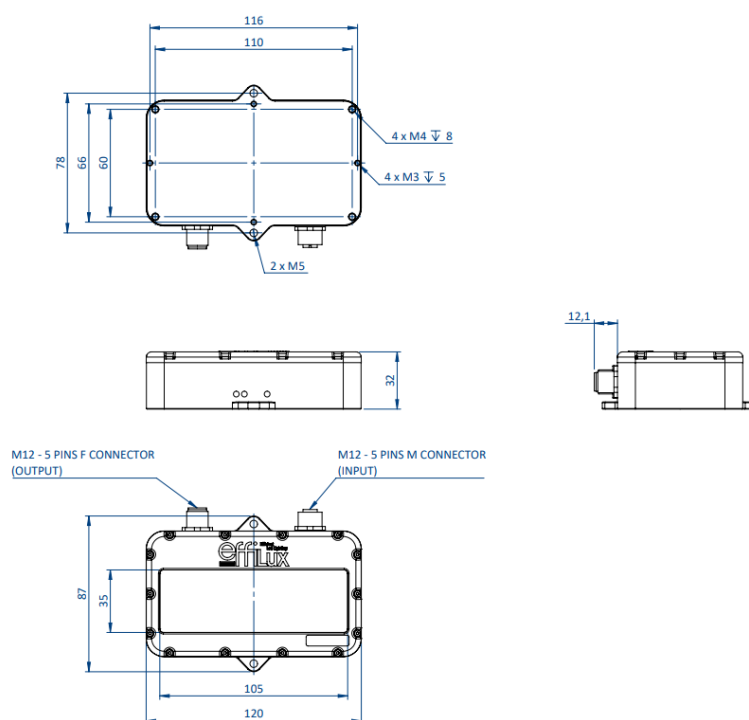
Mechanical considerations



EFFI-SMART-06



EFFI-SMART-12



EFFI-SMART-36

