



Integrated Smart driver  
(Auto-strobe & Dimming control)



Very intense and uniform illuminated area  
Full range of colors: from blue to IR, white  
Long lifetime and minimal maintenances

<b>Electronics</b>	Power supply	24V DC
	Illumination mode	Continuous or strobe mode
	Power consumption	6 LED: 15W / 12 LED: 30W
	Cable	Bare cable (5 or 10 meters) - 5 contacts
<b>Optics</b>	Wavelength	Single (from Blue to IR), White
<b>Mechanics</b>	Weight	6 LED: 180g / 12 LED: 300g
	Dimensions (width x height x length)	32mm x 87mm x (6 LED: 66mm / 12 LED: 116mm)
	Fastener	2 M4 holes
	Material	Device body: 316L Stainless Steel; Window: PMMA
<b>Environment</b>	Working temperature	0°C to 40°C
	IP code	IP68 & IP69K

## Part Number



### Reference:

EFFI-SMART-IP69K-**WW**-**XXX**-**YY**-**ZZ**-V-**AA**

### **WW**: Number of LED

**6**: 2 x 3 LED

**12**: 2 x 6 LED

### **XXX**: Wavelength (nm) / Color (other wavelengths available upon request)

• Blue **465**

• Green **525**

• Red **625**

• IR **850**

○ White **000**  
(T°= 5500K ± 500K)

### **YY**: Type of window (If not specified, semi-diffuse window by default)

**TR**: Transparent

**SD**: Semi-Diffuse

**OP**: Opaline

### **ZZ**: Lens Position (If not specified, position P2 by default) Emission angle varies according to the lens position

**P0**: 75° (without lens)

**P1**: 45°

**P2**: 25°

**P3**: 10°

### **V**: Vent

The vent on our IP69K products equalizes pressures, minimize the condensation while blocking water.

### **AA**: Cable length (If not specified, 10 meters length by default) (other lengths available upon request)

**-L5**: 5 meters

**-L10**: 10 meters

### Option: Food processing

For food processing environment, the nickel-plated brass gland can be replaced with stainless steel type and the cable with a certified food & beverage convenient one. For this option, please add **-FOOD** in the part number. Please note that the maximum cable length for this option is 10 meter.

**Part number:** EFFI-SMART-IP69K-**FOOD**-**XXX**-**YYY**-**ZZZ**

### Electronical considerations



The EFFI-Smart-IP69K is supplied with a 24V constant voltage. Please make sure that the flying leads output of the cable is in a sealed area. The AIC contact needs to be connected. Power consumption is 15W for the 6 LED version and 30W for the 12 LED version.

Weather, bio oil, detergent and hot water resistant cable Core insulation made of modified PP / Outer sheath made of special TPE / Sheath colour: black	
Conductor N°	EFFI-SMART-IP69K
1	+24V
2	<b>NPN TRIGGER (trigger on falling edge) for Auto-strobe</b> Light ON if $V_{NPN} < 1.5$ DC Max consumption = 0.1mA – max 24V – Analog Voltage
3	GND
4	<b>PNP TRIGGER (trigger for rising edge) for Auto-strobe</b> Light ON if $V_{PNP} > 3$ V DC Max consumption = 2mA – max 24V – Analog Voltage
5	<b>AIC : Analog Intensity Control for Dimming Control</b> Consumption = 1mA @10V & 2mA @24V – max 24V – Analog Voltage

AUTOSTROBE PNP	Contact N°	Contact arrangement
	1	+24V
	2	Not connected ( $\neq 0V$ )
	3	GND
	4	$V_{PNP} > 3$ V DC max 24V – Analog Voltage
	5	Not connected ( $\neq 0V$ )

AUTOSTROBE NPN	Contact N°	Contact arrangement
	1	+24V
	2	$V_{NPN} < 1.5$ V DC max 24V – Analog Voltage
	3	GND
	4	Not connected ( $\neq 0V$ )
	5	Not connected ( $\neq 0V$ )

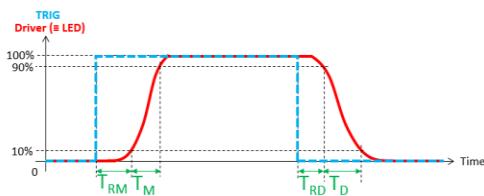
DIMMING CONTROL	Contact N°	Contact arrangement
	1	+24V
	2	Not connected ( $\neq 0V$ )
	3	GND
	4	Not connected ( $\neq 0V$ )
	5	AIC: 0-24V max 24V – Analog Voltage

TEST MODE	Contact N°	Contact arrangement
	1	+24V
	2	$V_{NPN} > 3V$ DC (or not connected) max 24V – Analog Voltage
	3	GND
	4	$V_{PNP} > 3V$ DC max 24V – Analog Voltage
	5	$V_{AIC} > 3V$ DC max 24V – Analog Voltage

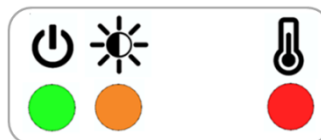
### Electronical characteristics

Designation	Time (driver on the cable)
Rise time ( $T_M$ ) <sup>1</sup>	10 $\mu$ s
Response rise time ( $T_{RM}$ ) <sup>2</sup>	30 $\mu$ s
Fall time ( $T_D$ ) <sup>3</sup>	10 $\mu$ s
Response fall time ( $T_{RD}$ ) <sup>4</sup>	30 $\mu$ s (PNP) / 20 $\mu$ s (NPN)

- (1) From 10% to 90% of the peak value of driver signal
- (2) From 90% to 10% of the peak value of driver signal
- (3) From the beginning of the TRIG signal to 10% of the peak value of driver signal
- (4) From the ending of the TRIG signal to 90% of the peak value of driver signal



### LED indicator



**Green LED ON:** Power Supply Connected

**Orange LED ON:** Mode

Mode	Frequency
AUTOSTROBE	Flash at the light frequency
AIC	Flash at 1 Hz
TEST	Flash at 6 Hz

**Red LED ON:** Default Temperature at 65°C.

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

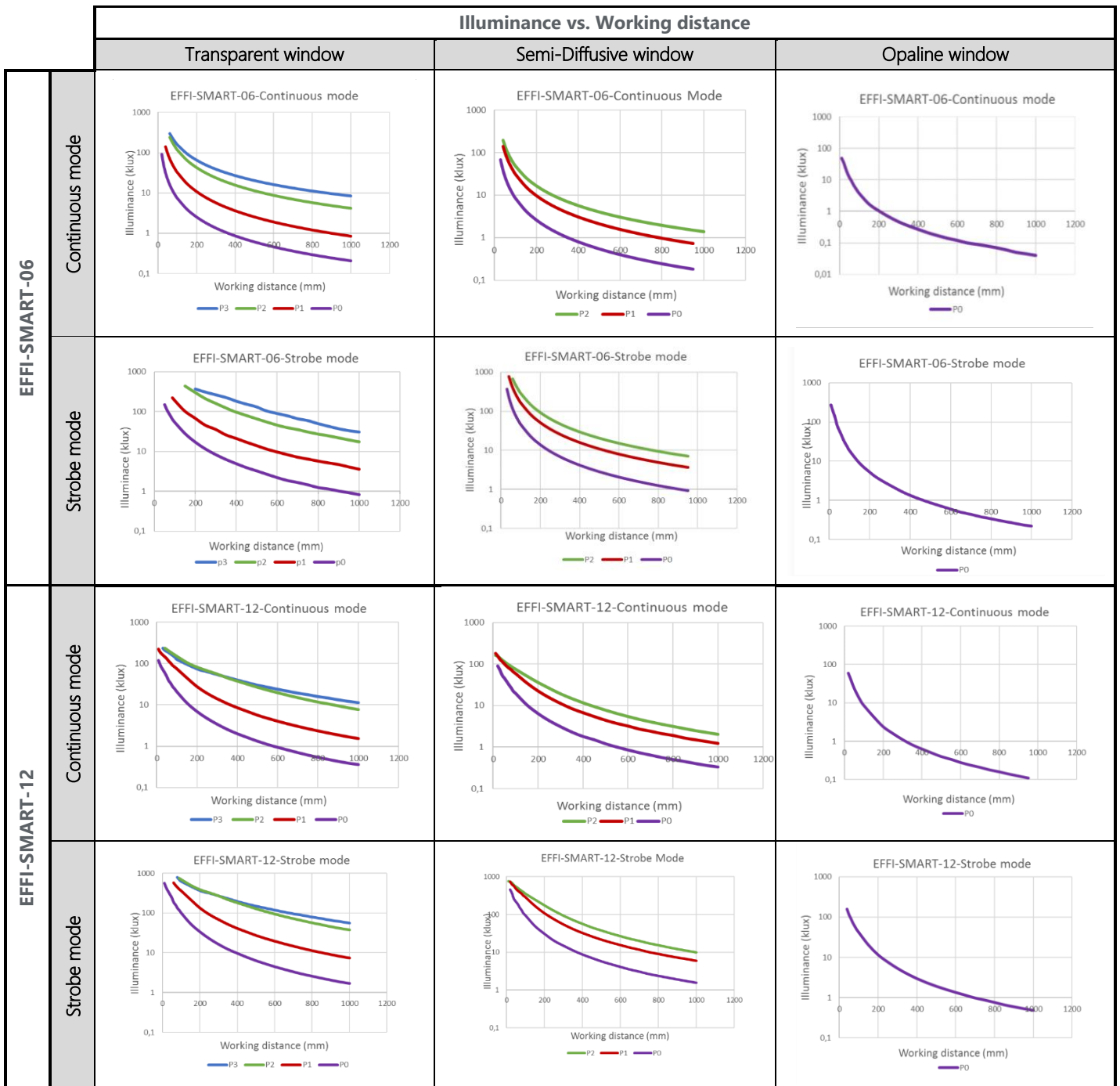
### Optical considerations

#### Handle & clean optical components

To remove marks on the window, apply just one or two drops of **alcohol-free** lens cleaning fluid to a cleaning tissue and clean in a gentle circular motion. Always apply the fluid to a tissue rather than on the window itself.

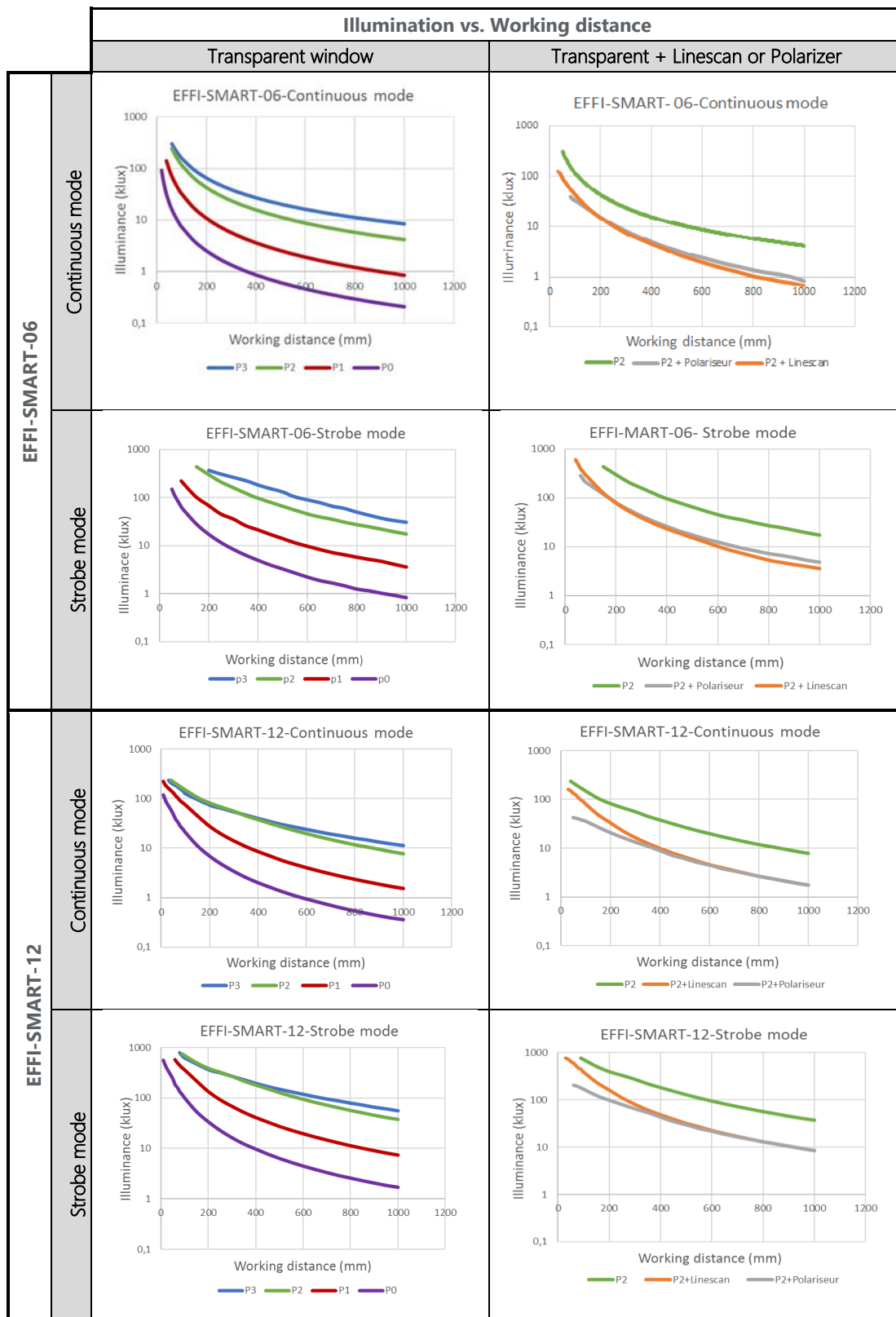
#### Evolution of illuminance with different optical configurations

**Measurements of 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.

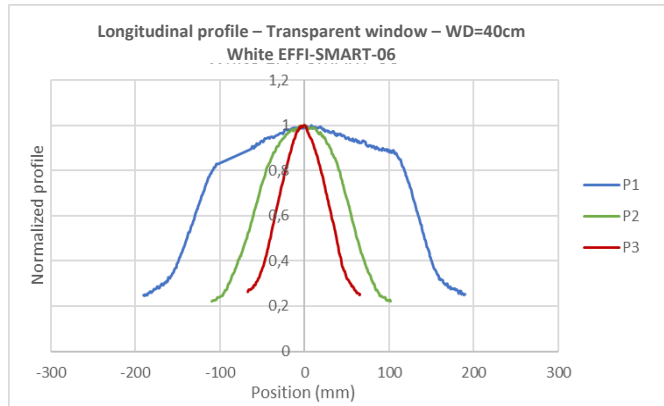
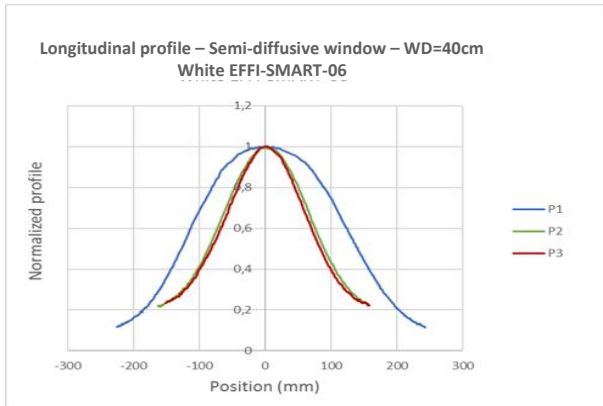


### Evolution of illuminance with different options

Measurements of white LED

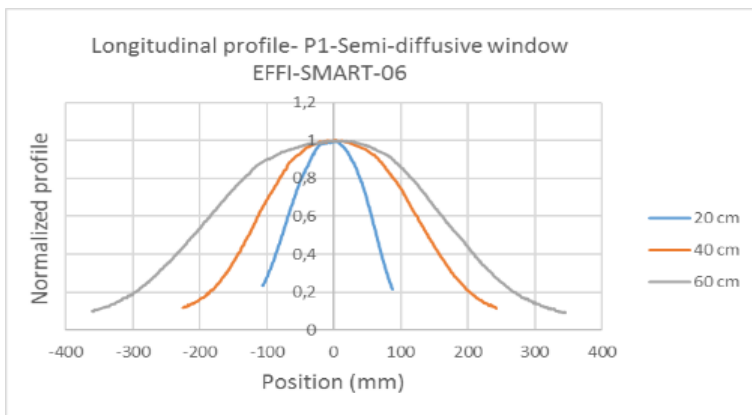


### Evolution of the illuminance with different options



Longitudinal and transverse profiles are similar for the EFFI-SMART-12.

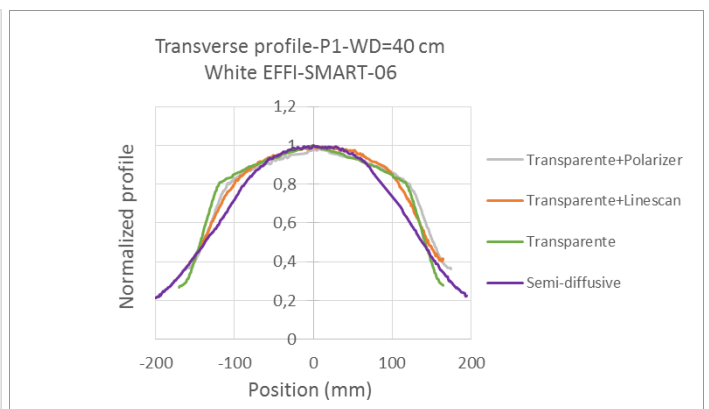
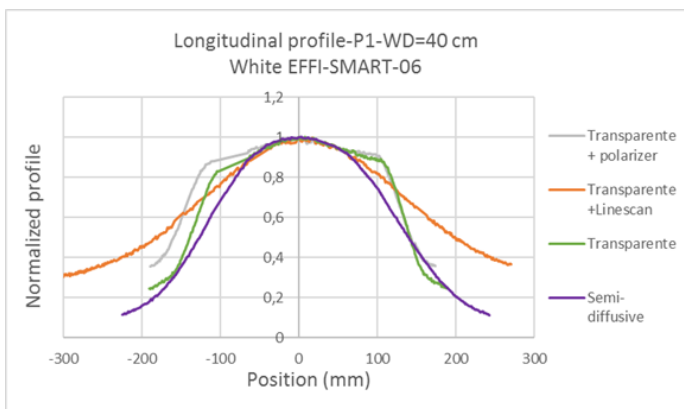
### Evolution of the illuminated surface



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

For EFFI-SMART-12, the transverse profile remains almost the same. And the longitudinal profile will be proportional to the length of the product.

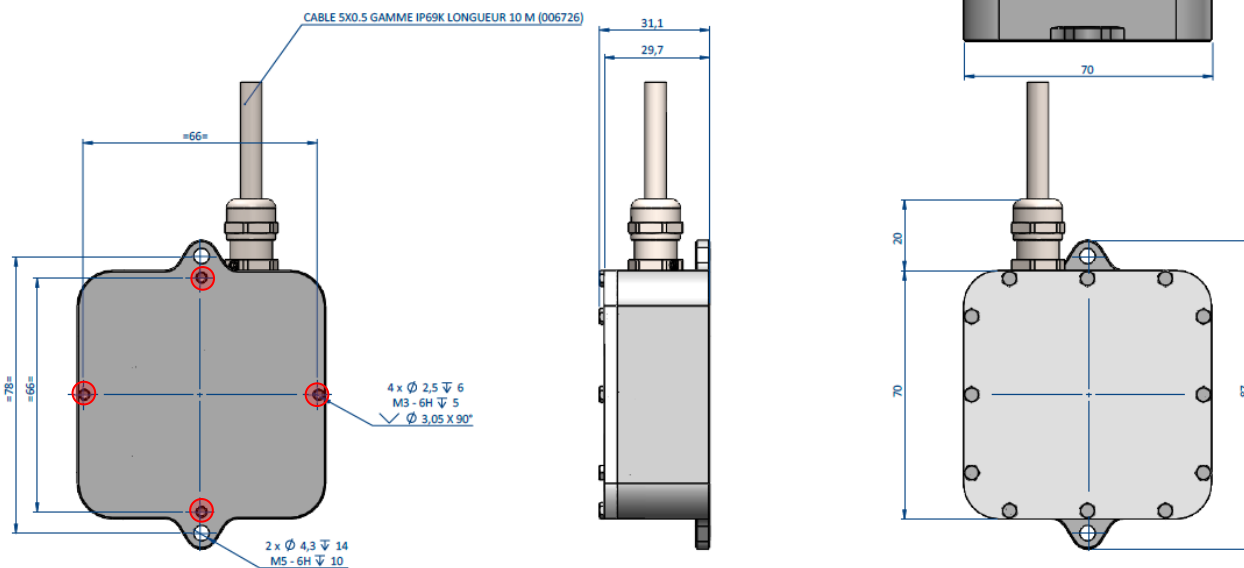
### Evolution of the illuminated surface with different options



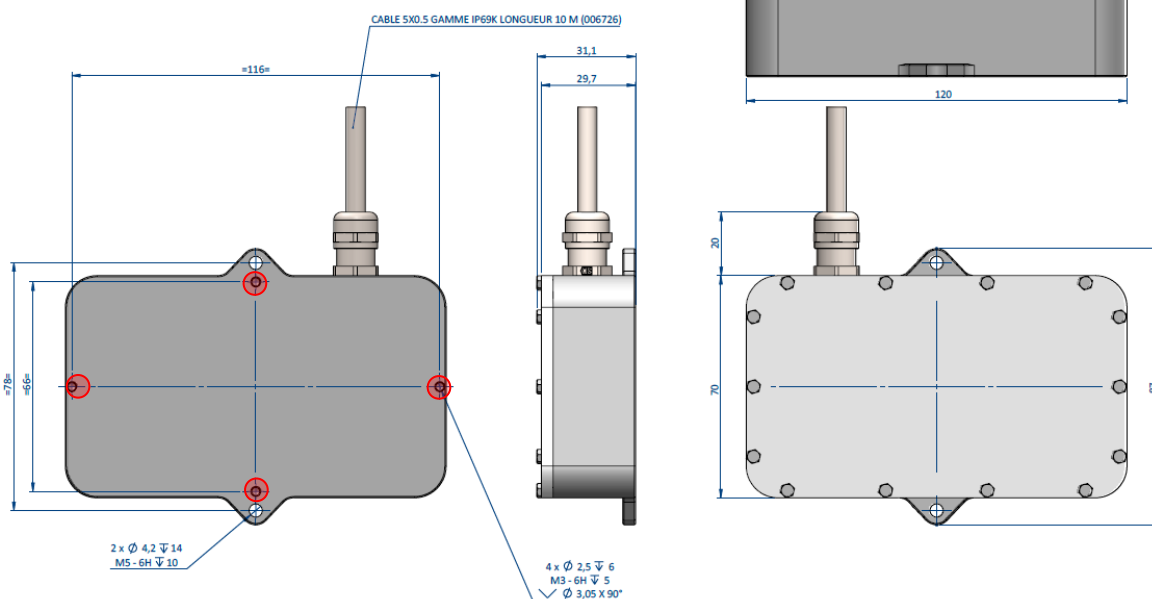
## Mechanical considerations



### EFFI-SMART-IP69K-06



### EFFI-SMART-IP69K-12



⚠ To avoid water retention, the gaps of stainless-steel screws must be filled in (x4)