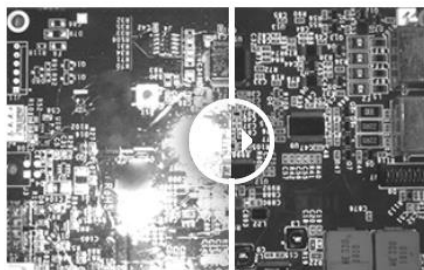


Polarization

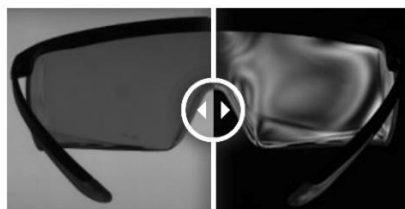
Polarization can be used in machine vision for direct illumination or backlight illumination.

In the first case, using the polarizer accessory, it is possible to **eliminate glare** from your workpiece making it easier to acquire a suitable image for the application. The camera can then analyse the part, without being disturbed by **glow effects**. The polarizer can be useful to perform quality control on many applications, for instance, to inspect parts packed in transparent plastic bags.



Without polarizer VS With polarizer

In the case of backlight applications, the polarizer is used to highlight **solder, hole, or thickness difference** in transparent materials.



Without polarizer VS With polarizer

Camera filters : Polarizers

Reference	Description
Linear Polarizer - PR032	EFFO-FLR-PR032-MXX
Ultra High Contrast Linear Polarizer - PR120	EFFO-FLR-PR120-MXX
VIS/SWIR Wire Grid Linear Polarizer - PR1000	EFFO-FLR-PR1000-MXX
NIR/Vis Linear Polarizer, High Extinction - Pi031	EFFO-FLR-PI031-MXX
NIR/Vis Linear Polarizer, High Transmission - Pi035	EFFO-FLR-PI035-MXX
Circular Polarizer - PC052	EFFO-FLR-PC052-MXX

Available sizes: M13.25, M22.5, M25.4, M25.5, M27, M30.5, M34, M35.5, M37, M37.5, M39, M40.5, M43, M46, M48, M49, M52, M55, M58, M62, M67, M72, M77, M82, M86, M95, M105

Effilux products: Available polarizers

Name	Reference	Description
Standard	EFFO-XXXX-POL-...	Standard Polarizer. 450nm-700nm / 40% < T < 45% - 0.75 mm
High Durability	EFFO-XXXX-POL-...-HDY	Application in continuous mode and/or blue or white lighting. 420-700nm / 0.8mm
Near Infrared Only available in 90° version	EFFO-XXXX-POL-...-NIR-90°	Custom polarizer for Infrared lightings (transparent). 650nm-1065nm / T > 70% - 0.13mm

Please refer to the datasheet and the user manual of each product for guidance to install your accessory.
Other products are available in polarized version upon request, please contact Effilux for more information.

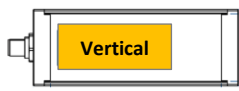
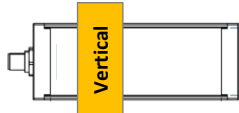
Polarized EFFI-Flex

Typical configuration:

Put the polarizer under a transparent window.


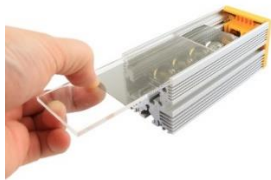

(The polarization is optimal with a transparent window, the use of diffuser can depolarize the light)

In case of using the product for linescan applications, please be sure to put the polarizer on top of the linescan accessory.

Orientation – EFFI-Flex Vertical polarization = 0° (passing direction)	
Standard	
90°	

Compatibility & Reference: EFFI-Flex			
Polarizer Type	Compatibility	Accessory's references	Product's references
Standard Polarizer	All sizes	EFFO-FLEX-POL-XXX XXX: number of LED	EFFI-FLEX-XXX-YYY-WW-PP- POL
Standard Polarizer – 90°	Product's size max 30 LED	EFFO-FLEX-POL-XX-90° XX: number of LED	EFFI-FLEX-XXX-YYY-WW-PP- POL-90°
High Durability Polarizer	Product's size max: 45 LED	EFFO-FLEX-POL-XX-HDY XX: number of LED	EFFI-FLEX-XXX-YYY-WW-PP- POL-HDY
High Durability Polarizer – 90°	Product's size max: 25 LED	EFFO-FLEX-POL-XX-HDY-90° XX: number of LED	EFFI-FLEX-XXX-YYY-WW-PP- POL-HDY-90°
Near Infrared Polarizer – 90°	Product's size max : 45 LED	EFFO-FLEX-POL-XX-NIR-90° XX: number of LED	EFFI-FLEX-XXX-YYY-WW-PP- POL-NIR-90°

How to install a polarizer in your standard EFFI-Flex:

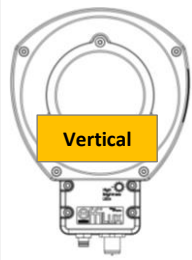
		
Open the EFFI-Flex and slide out the window	Slide in the polarizer and the transparent window together	Close the product

Polarized EFFI-Ring

Typical configuration:

Put the polarizer on top of the window (transparent, semi-diffusive or opaline).

If IP65 rating is needed, the accessory can be directly glued on a transparent

Orientation – EFFI-Ring	
Vertical polarization = 0° (passing direction)	
Standard	

Compatibility & Reference: EFFI-Ring			
Polarizer Type	Compatibility	Accessory's references	Product's references
Standard Polarizer		EFFO-RING-POL (EFFO-RING-POL-TR: polarizer glued on TR window for IP65)	EFFI-RING-XXX-WW-PP- POL (EFFI-RING-XXX-WW-PP- POL-IP for IP65)
High Durability Polarizer		EFFO-RING-POL-HDY	Add -POL-HDY

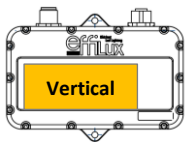
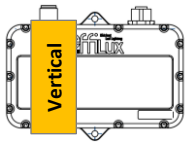
Polarized EFFI-Smart

Typical configuration:

Put the polarizer under a transparent window.

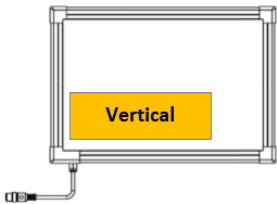
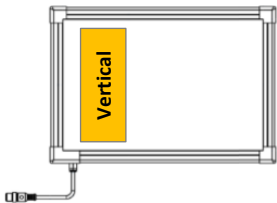
(The polarization is optimal with a transparent window, the use of diffuser can depolarize the light)

In case of using the product for linescan applications, please be sure to put the polarizer on top of the linescan accessory.

Orientation – EFFI-Smart Vertical polarization = 0° (passing direction)	
Standard	
90°	

Compatibility & Reference: EFFI-Smart			
Polarizer Type	Compatibility	Accessory's references	Product's references
Standard Polarizer	Standard Version: All sizes Not for IP69K version	EFFO-SMART-POL-XXX XXX: number of LED	EFFI-SMART-XXX-YYY-WW-PP- POL
Standard Polarizer – 90°	Standard Version: All sizes Not for IP69K version	EFFO-SMART-POL-XX-90° XX: number of LED	EFFI-SMART-XXX-YYY-WW-PP- POL-90°
High Durability Polarizer	Standard Version: All sizes Not for IP69K version	EFFO-SMART-POL-XX-HDY XX: number of LED	EFFI-SMART-XXX-YYY-WW-PP- POL-HDY
High Durability Polarizer – 90°	Standard Version: All sizes Not for IP69K version	EFFO-SMART-POL-XX-HDY-90° XX: number of LED	EFFI-SMART-XXX-YYY-WW-PP- POL-HDY-90°
Near Infrared Polarizer – 90°	Standard Version: All sizes Not for IP69K version	EFFO-SMART-POL-XX-NIR-90° XX: number of LED	EFFI-SMART-XXX-YYY-WW-PP- POL-NIR-90°

Polarized EFFI-BL & EFFI-FD

Orientation – EFFI-Smart Vertical polarization = 0° (passing direction)	
Standard	
90°	

First Solution : Add-On

Accessory kit to attach the polarizer on top of the product with:
 Polarizer, protective window, and brackets (2 brackets up to 300-300, 4 for bigger products).
 Polarized product's thickness (EFFI-BL or EFFI-FD + add-on polarizer kit): 45mm



The accessory kit must be ordered separately from the light to be installed on top of it.

How to install a polarizer kit on your EFFI-BL or EFFI-FD :

			
Unscrew the collar.	Put the polarizer on top of the opaline window.	Put the protection window on top of the polarizer.	Install the collar and the brackets to fix the window.

Compatibility & References: Accessory Kit

Polarizer Type	Compatibility	Accessory's references
Standard Polarizer	Standard product's size max: 400-YYY Upper sizes available upon request (custom) Not for IP69K version	EFFO-BL-POL-XXX-YYY-KIT EFFO-FD-POL-XXX-YYY-KIT
Standard Polarizer – 90°	Standard product's size max: XXX-400 Upper sizes available upon request (custom) Not for IP69K version	EFFO-BL-POL-XXX-YYY-90°-KIT EFFO-FD-POL-XXX-YYY-90°-KIT

Second solution : Built-In

Polarizer directly installed to the product, on top of the opaline window, during manufacturing.
 Polarized product's thickness (EFFI-BL or EFFI-FD + built-in polarizer): 43mm



The complete product must be ordered, the polarizer cannot be installed by the customer.

Compatibility & References: EFFI-BL & EFFI-FD Polarized

Polarizer Type	Compatibility	Product's references
Standard Polarizer	Standard product's size max: 400-YYY Upper sizes available upon request (custom) Not for IP69K version	EFFI-BL-XXX-YYY-ZZZ- POL EFFI-FD-XXX-YYY-ZZZ- POL
Standard Polarizer – 90°	Standard product's size max: XXX-400 Upper sizes available upon request (custom) Not for IP69K version	EFFI-BL-XXX-YYY-ZZZ- POL-90° EFFI-FD-XXX-YYY-ZZZ- POL-90°