DATASHEET

Efficient Led Lighting

Built-in driver

Up to 3 meters

Customizable software

IP rating

High uniformity

Easy-to-use

Up to 2.7 MLux

POWER x3

IP5X

IP67

CE

effiLINE3

Powerful LED Line Light

PART NUMBERING

STANDARD VERSION

EFFI-LINE3 - XXX - ZZZ - ... - ...

Optical Length [mm]	Wavelength [nm]	Optical options	Electronics Options
200	**465** (Blue)	**FOC** (Focus lens)	**FL1-LXX*** (Flying leads - 1 power input)
300	**625** (Red)	**POL** (Polarizer)	**FL2-LXX*** (Flying leads - 2 power inputs)
... All 100mm	**850** (Infrared)		**SWxxxxxx** (Customized software)
2900	**000** (White)		**NPN** (NPN trigger on Pin/Wire 4)

*XX=Cable Length in meter [2/ 5 / 10] - L5 is the defaut configuration if the length is not specified

ADDITIONAL VERSIONS

POWER version with watercooling

POWER x3

EFFI-LINE3 - WTR - XXX - ZZZ - PWR

- The POWER version allows to multiply by 3 the optical power.
- Due to thermal considerations, this version requires a watercooling system (-WTR).
- All the options and versions are compatible with the POWER version.

BACKLIGHT version

EFFI-LINE3 - BL - XXX - ZZZ

- The BACKLIGHT version has an enhanced uniformity which is necessary for most backlight applications.
- All the options and versions are compatible with the BACKLIGHT version.
- Optical specifications are written in Annex page 11 and 12.

IP67 version

EFFI-LINE3 - IP67 - XXX - ZZZ

- The IP67 protection does not affect the mechanical dimensions.
- All the options and versions are compatible with the IP67 version.
- Example: IP67 version combined with POWER and BACKLIGHT version -> EFFI-LINE3-BL-IP67-WTR-XXX-ZZZ-PWR.

TECHNICAL SPECIFICATIONS

effiLINE3

Illumination Mode	Continuous or strobe			
Wavelengths	465nm, 625nm, 850nm (+/- 5%) *(Other wavelength upon request)* White (5500K ±500K)			
Power Supply Voltage	24V DC +10%/-0			
Connector(s) *(Depending on the power consumption - See page 6)*	M12 Power (T-Coded) - *(See wiring layout page 6)* 4 pins at the end of a 500 mm cable length			
	Flying leads 1 - 1 power input - *(See wiring layout page 6)* XX m long, section 2.5 mm^2			
	Flying leads 2 - 2 power inputs - *(See wiring layout page 6)* XX m long, section 2.5 mm^2 x2			
Average Power Consumption Standard version *(Cable not included in the calculation)*	**IR 850 nm**	**Red 625 nm**	**Blue 465 nm**	**White 5500K**
	Max. 8W per 100 mm	Max. 10W per 100 mm	Max. 12W per 100 mm	Max. 12W per 100 mm
Built-in driver features	Analog Intensity Control (AIC)			
	Continuous or Strobe via the trigger input signal			
Analog Intensity Control (AIC)	The output optical power is adjustable from 10% to 100% by applying a signal from [2V-10VDC] Total voltage range [2V-24VDC] / Don't exceed 24V DC / Max. signal consumption: 4mA			
Trigger Input signal	PNP trigger input: Light ON @ [4.5-24V] / OFF @ [0-1V] *(Option NPN: Light ON @ [0-0.8V] / OFF @ [2.5-24V])* Don't exceed 24V DC / Max. signal consumption: 4mA - *(See wiring layout page 6)*			
Response + Rise time	Max. 10µs			
Weight	Please refer to General Drawing			
Dimensions	52mm x 86.3mm x Length (Optical length + 39mm) - *Please refer to General Drawing, see page 7*			
Material	Device body: Aluminum alloy / Window: PMMA / Water coupler (if -WTR): Stainless steel			
Fastener	T-slot on the back for M6 T-nuts 8mm slot (2x M6 T-nuts included)			
IP rating	IP5X (dust protected) / IP67 version available			
Operation environment	Temperature: 0°C to 50°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

Overview

The EFFI-Line3 optical standard has been designed to provide high light output over a wide range of working distances with its **collimated lens**. As every customer need is different, several variants has been developped to make the EFFI-Line3 as flexible as EFFILUX other products:

- **Focus lens option** - High light output at short working distances
- **POWER version** - 300% increased intensity by adding a water cooling system
- **BACKLIGHT version** - Enhanced uniformity necessary for most backlight applications

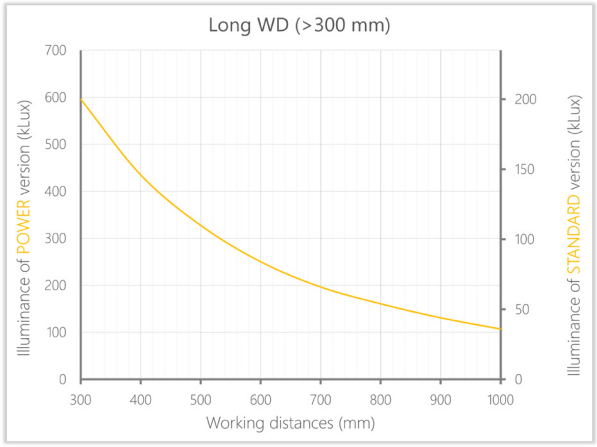
General measurements can be found below, for specific variants please refer to the dedicated annexes at the end of the document.

Intensity vs working distance

All the measurements of this document have been made with 600mm lights.

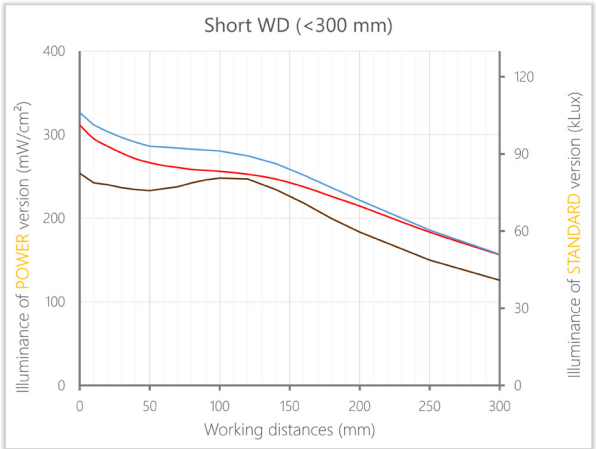
POWER VERSION: EFFI-LINE3-WTR-600-ZZZ-PWR (on the left axis) – **STANDARD VERSION:** EFFI-LINE3-600-ZZZ (on the right axis)

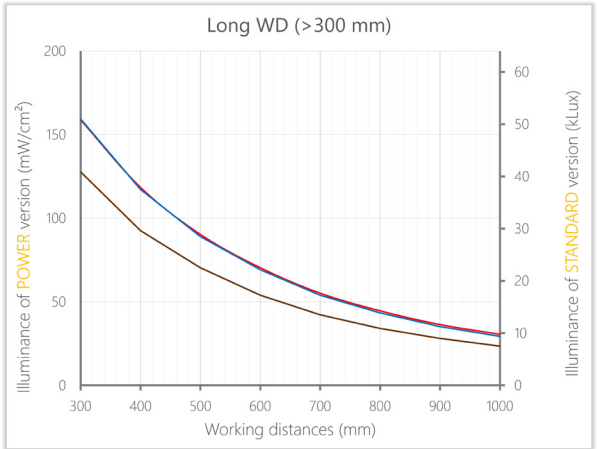
White light



White 5500K

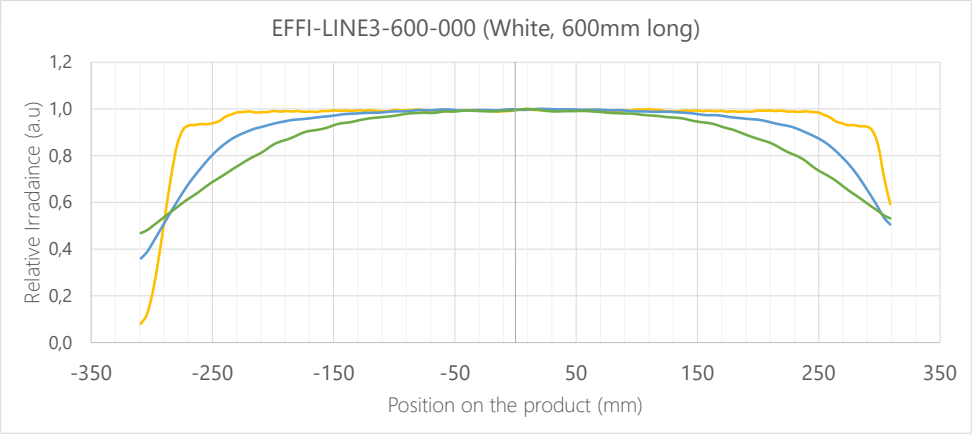
Other wavelengths





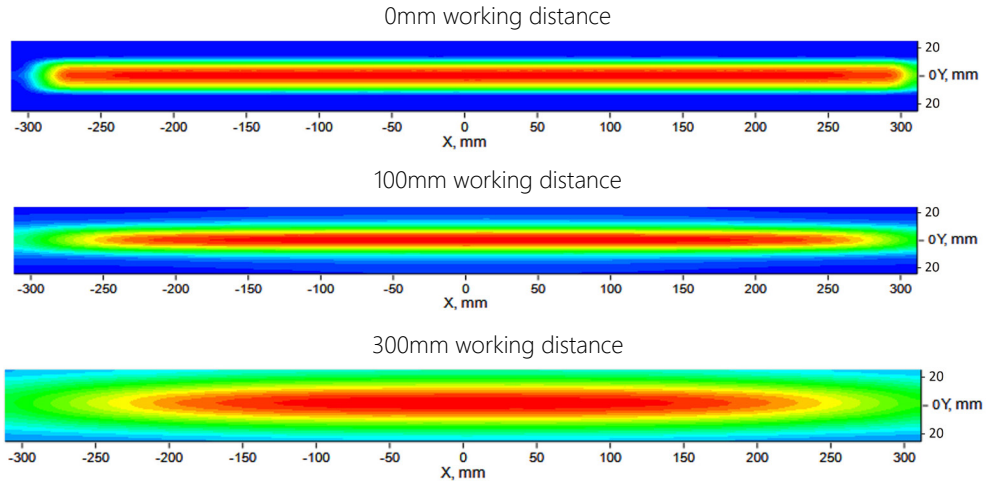
Blue 465nm Red 625nm IR 850nm

Longitudinal irradiance profile



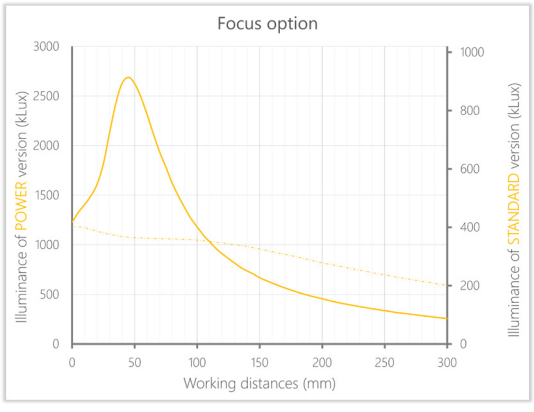
0mm working distance — 100mm working distance — 300mm working distance

Irradiance map



Optical variants

White PWR — White Standard



Standard — Focus

For detailed measurements please refer to the dedicated annexes at the end of the document.

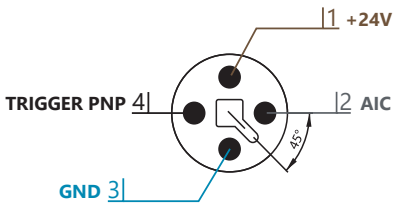
ELECTRONICAL SPECIFICATIONS

Wiring layout

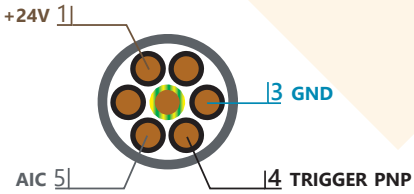
Depending on the size and the version, the light comes with different connection.

M12 Power (T-coded) - 4 pins

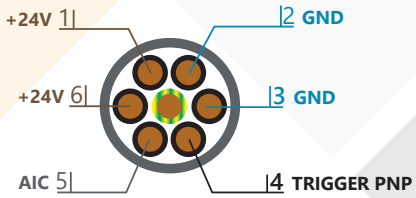
male connector - 500 mm cable length



Flying leads FL1



Flying leads FL2

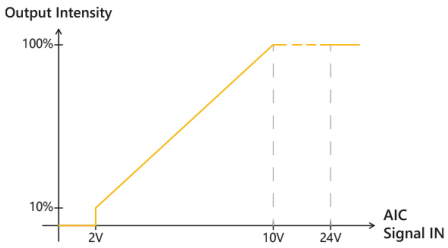


Important notes:

- For the FL2, the power has been duplicated. Make sure **wire 2 and 6 are also connected to a power supply** or the cable may be damaged. **Both GND must be connected together**.
- For the POWER version with watercooling (-WTR), **the housing must be connected to the ground** thanks to the ground connection kit delivered with the product.

Mode control

	Illumination mode	
	Continuous	**Strobe**
Signal to apply on **PNP**	A continuous signal must be applied with V_{PNP}> 4.5V DC	A trigger signal must be applied ▪ ON V_{PNP}[4.5-24V] ▪ OFF V_{PNP}[0-1V]
Signal to apply on **AIC**	By default, if AIC is not connected, the light is ON at 100% V_{AIC} [2-10V] to adjust the intensity from 10% to 100% *(see the graph)*	



Power consumption & connector definition

MAX POWER CONSUMPTION (+/- 5%) for STANDARD version in continuous mode (White LED - Standard software - When FL1 or FL2, 5m cable length is included into the calculation)														
Optical Length XXXX (mm)	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Average power consumption	25W	36W	48W	60W	71W	83W	95W	106W	118W	118W	141W	153W	166W	177W
Optical Length XXXX (mm)	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900
Average power consumption	189W	201W	212W	224W	237W	248W	260W	272W	284W	303W	316W	327W	340W	353W

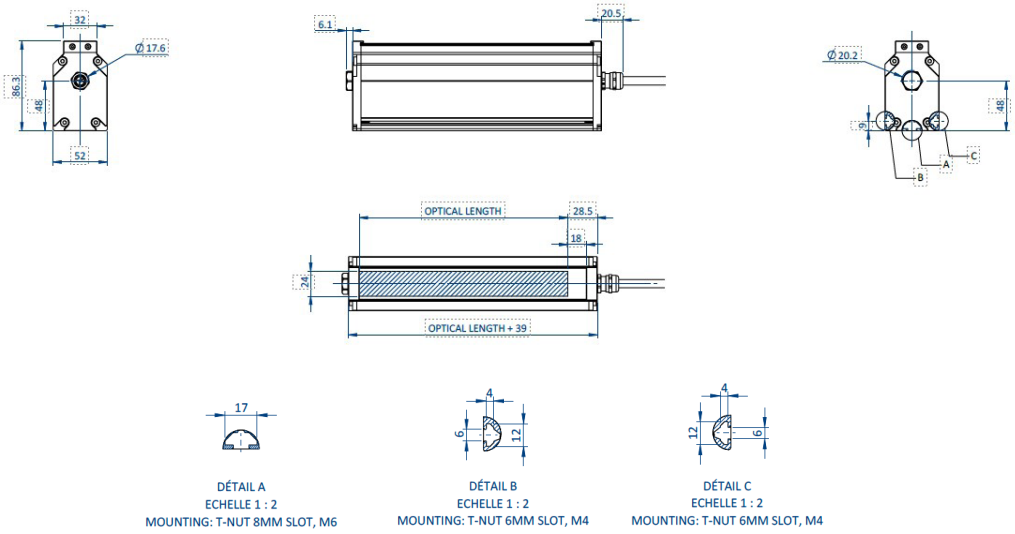
MAX POWER CONSUMPTION (+/- 5%) for POWER version in continuous mode (White LED - Standard software - When FL1 or FL2, 5m cable length is included into the calculation)														
Optical Length XXXX (mm)	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Average power consumption	81W	123W	166W	211W	256W	291W	351W	399W	450W	502W	555W	537W	581W	625W
Optical Length XXXX (mm)	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900
Average power consumption	670W	715W	759W	805W	851W	897W	944W	991W	1039W	1087W	1135W	1182W	1231W	1281W

M12P 4 pins | Flying Leads FL1 | Flying Leads FL2

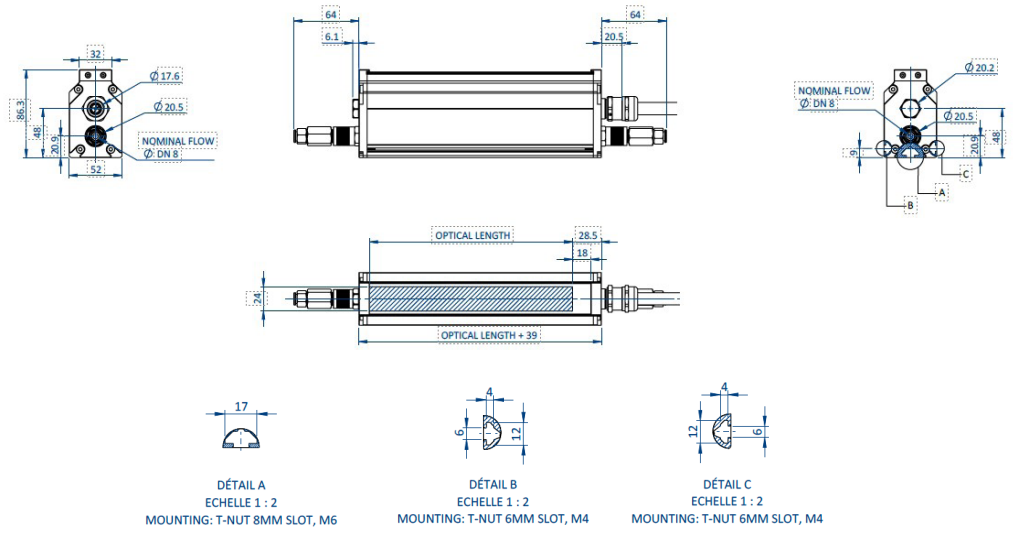
Note 1: These values may change for the products with a customized software.
Note 2: For the POWER version with watercooling (-WTR), the housing must be connected to the ground thanks to the ground connection kit delivered with the product. *(See picture page 7)*

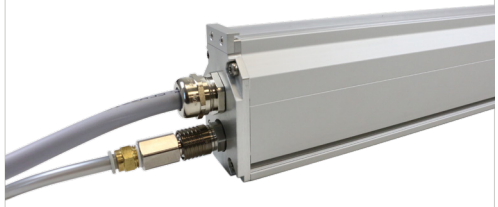
MECHANICAL SPECIFICATIONS

STANDARD VERSION (in mm)



POWER VERSION (in mm)





Cable gland and anti-drip connectors

Ground connection kit

Note 1: The anti-drip connectors for watercooling only fit 8mm diameter tubes (PVC recommended).
Note 2: Two tubes must be provided by the customer for watercooling (one for each side of the product).
Note 3: The ground connection kit is provided in a separated bag and must be set by the customer.

ACCESSORIES

Please refer to the specific documentation for additional information on the accessories of the EFFI-Line3.

Fasteners

T-Nut Kit: EFFV-BOLT-0011
Pivot joint Kit: EFFM-1-0002

Extension cables

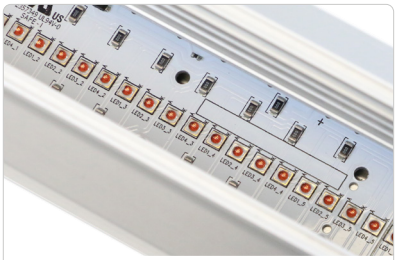
2meters: EFFC-CAB-M12P-F-4-D-L2
5meters: EFFC-CAB-M12P-F-4-D-L5
10meters: EFFC-CAB-M12P-F-4-D-L10

Camera Filters

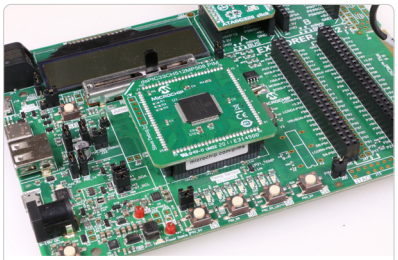
EFFO-FLR-...

CUSTOMIZATION

Please ask your sales contact for a custom device.



Other LED density



Custom software

Additional optical filter

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 December-2022 and may be changed without prior notice.

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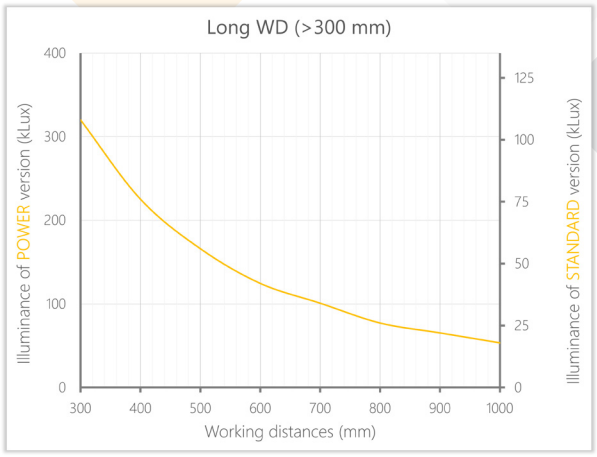
ANNEX - OPTICAL SPECIFICATIONS - BACKLIGHT VERSION

The BACKLIGHT version has been designed to enhance the optical uniformity, mainly required for backlight applications.

Measurements

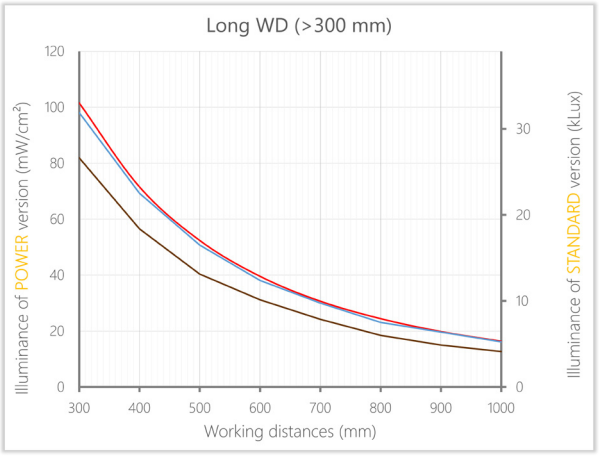
Note: All the measurements of this document have been made with 600mm lights.
POWER VERSION: EFFI-LINE3-BL-WTR-600-ZZZ-PWR – **STANDARD VERSION:** EFFI-LINE3-BL-600-ZZZ

Illuminance vs Working distance (WD) - White LED



White 5500K

Irradiance vs Working distance (WD) - Color LED



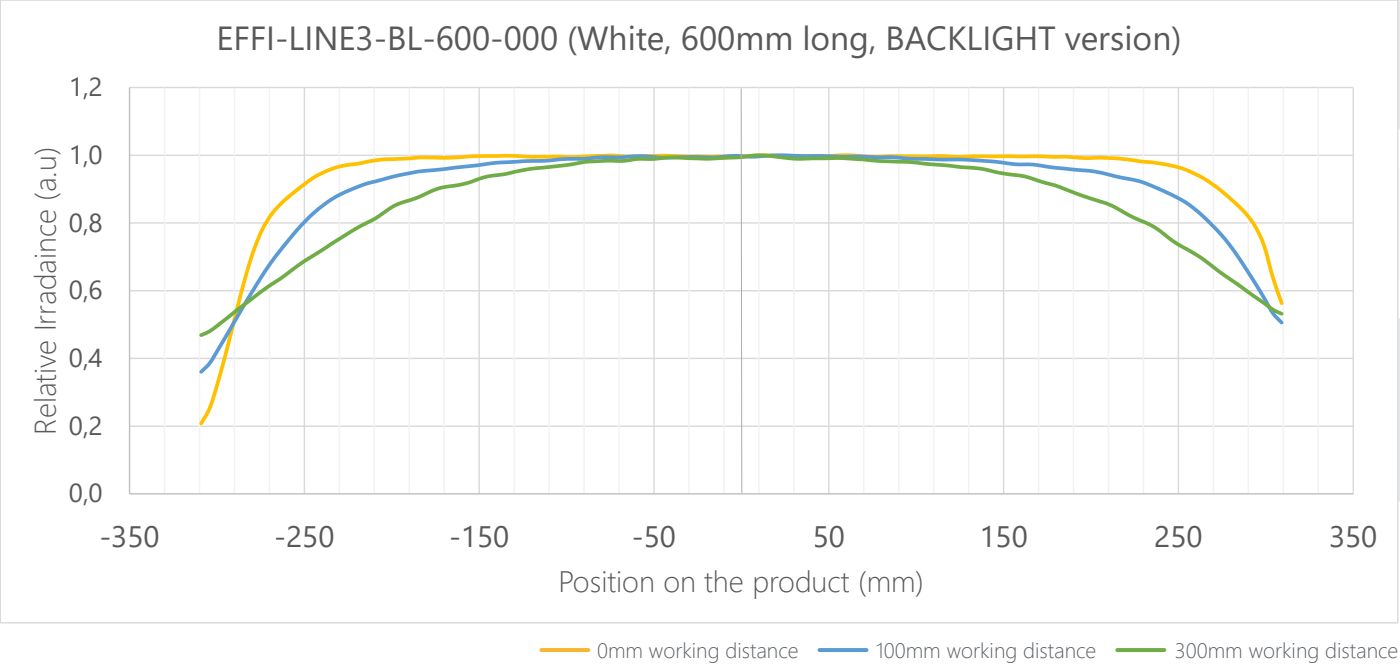
Blue 465nm Red 625nm IR 850nm

Optical variant - POWER version

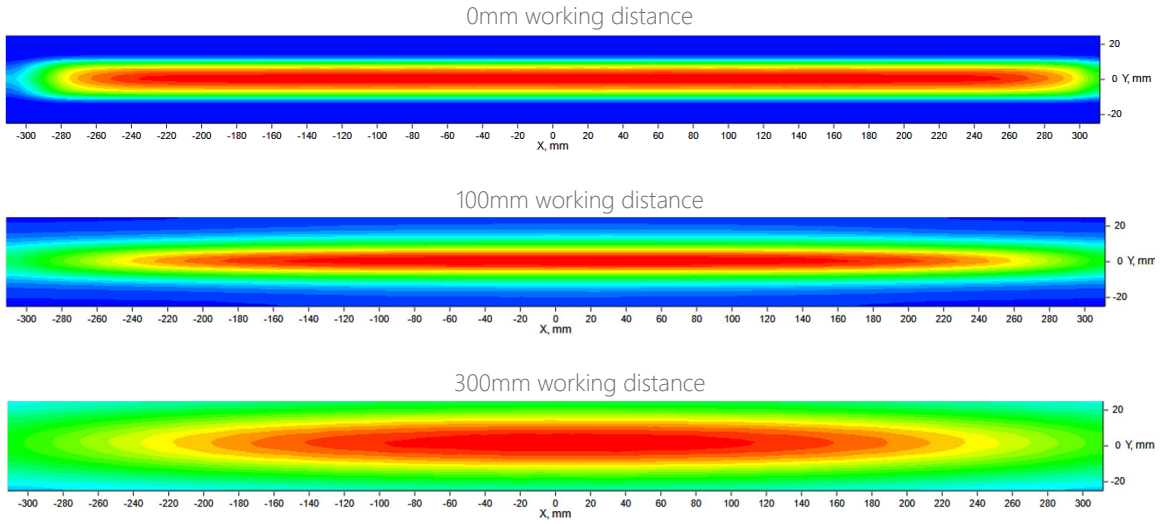
- The POWER version allows to multiply by 3 the illuminance (or irradiance) and reach 900 kLux at maximum.
- Due to thermal considerations, this version requires a water-cooling system (-WTR).

White BL+PWR White BL

Longitudinal irradiance profile



Irradiance map



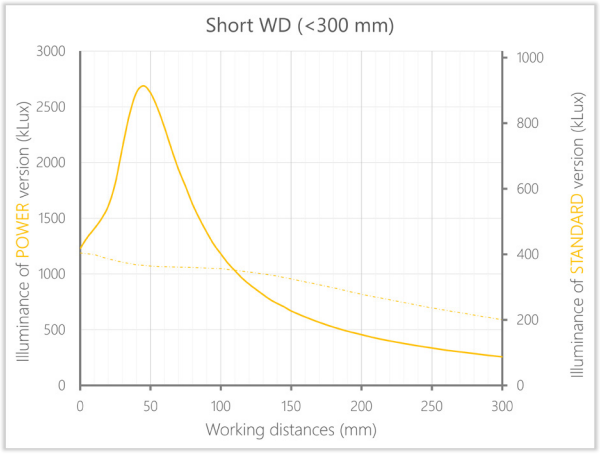
ANNEX - OPTICAL SPECIFICATIONS - FOCUS OPTION

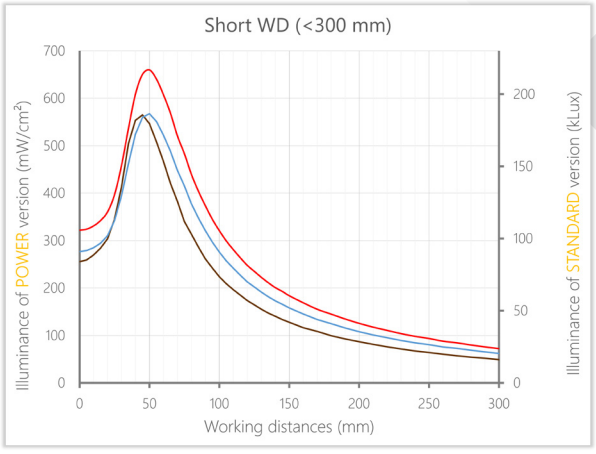
The FOCUS option has been designed for high optical output at short working distances.

Measurements

Note: All the measurements of this document have been made with 600mm lights.
POWER VERSION: EFFI-LINE3-WTR-600-000-FOC-PWR – **STANDARD VERSION:** EFFI-LINE3-600-000-FOC

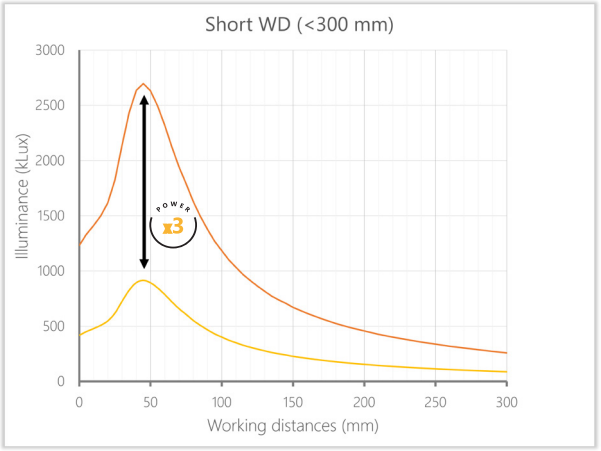
Intensity vs Working distance (WD)



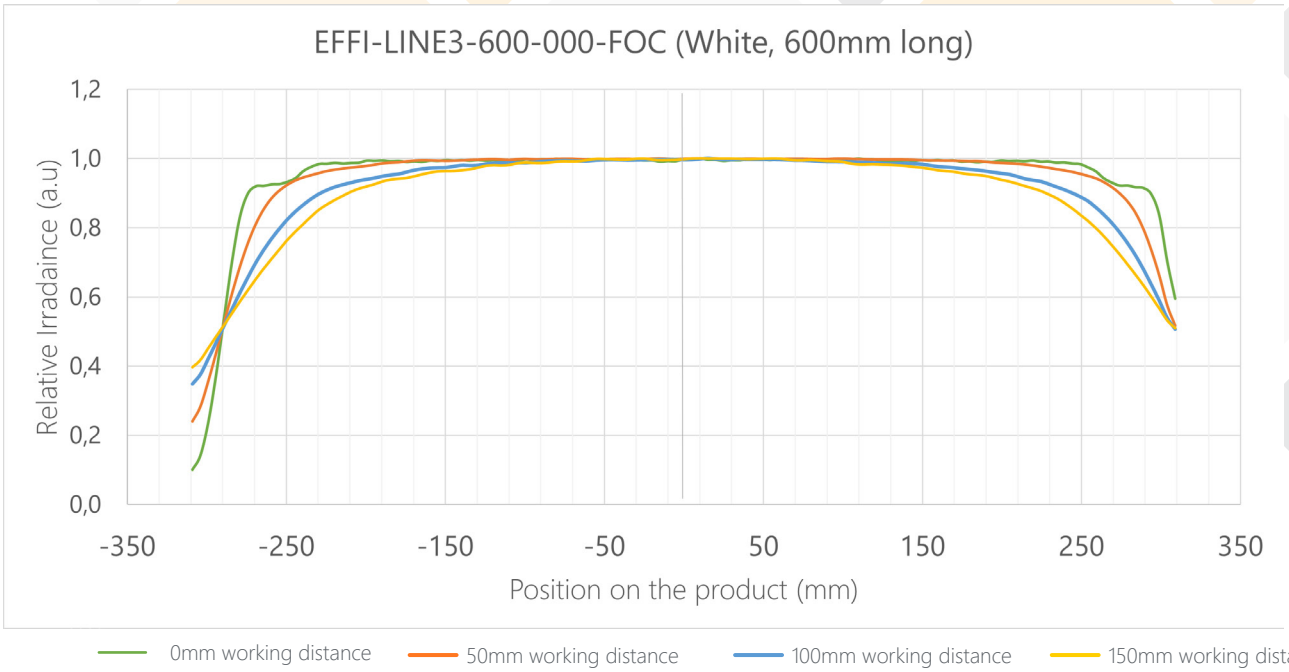


Optical variant - POWER version

- The POWER version allows to multiply by 3 the illuminance (or irradiance) and reach **2 700 kLux** for 50mm working distance.
- Due to thermal considerations, this version requires a water-cooling system (-WTR).



Longitudinal irradiance profile



Irradiance map