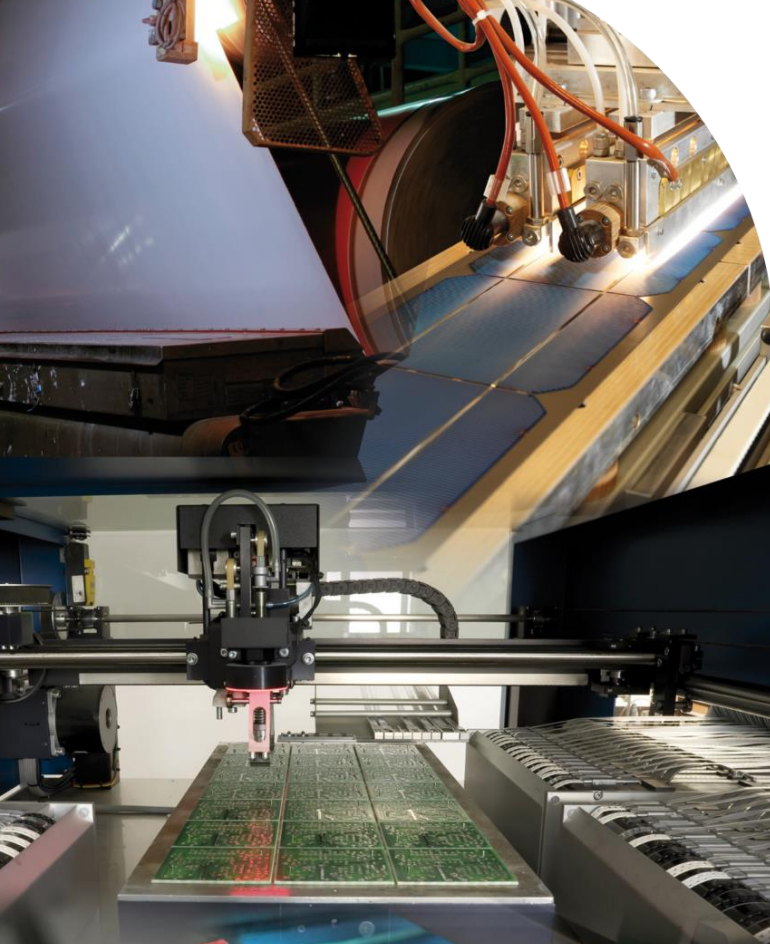


2014-2015



LED lighting
for machine
vision



Optical innovation for LED illumination





EFFILUX is an innovative French company with expertise in Optic and LEDs whose mission is to design, manufacture and market LED lighting systems integrating optical technologies in order to improve industrial processing.



SERVICES



**TECHNICAL
SUPPORT**



CUSTOM



contact@effilux.fr

CONTENT

COMPANY OVERVIEW p 3

STANDARDS PRODUCTS

EFFI-Ring p.7

EFFI-Flex p.9

EFFI-BL p.13

EFFI-FD p.15

EFFI-Sharp p.17

EFFI-Lase p.19

Web inspection p.21

EFFI-Line p.23

EFFI-Telecentric p.25

Brand labelling p.26

CUSTOM - OEM p.29

ELECTRONIC p.31

ACCESSORIES p.33

For each machine vision project, a lighting solution has to be tested and validated. EFFILUX provides advice and technical support for your machine vision projects.

Depending on the project, EFFILUX will deliver :

- a standard product from its portfolio
- a customized solution



Description of your project

- Inspective material : size, reflective- or not, color ?
- Illuminance requirements
- Illuminated area?
- Homogeneity?
- Mechanical constraints?
- ..



Free study by Effilux

Loan of standard products



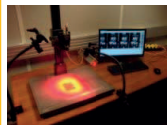
To accelerate tests and feasibility at customer's facilities, EFFILUX loans its lighting systems.

Demo package



To help customers to be autonomous for testing, EFFILUX proposes some demo package cases at discounted prices.

Free feasibility



EFFILUX helps its customers to determine which light is best suited for their machine vision



Standard product

Custom development



Prototype

- Feasibility
- Technical support

Custom product

- Optical design
- Electrical studies
- CAD design

- Industrialisation

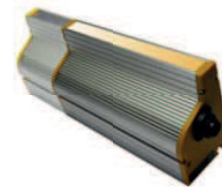
OEM development



effiRing
Annular LED Lighting p7



effiFlex
Bar of Leds p9



effiLine-v2.0
Linear LED lighting p24



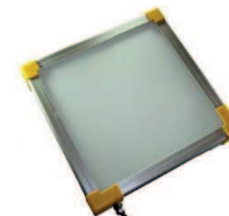
effiTelecentric
LED Telecentric p25



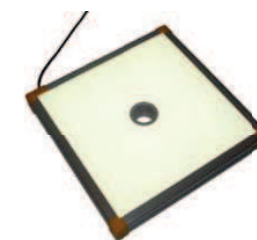
effiLase
LED Pattern Projector p19



effiSharp
LED Pattern Projector p17



effiBL
Backlight p14



effiFD
Flat Dome p16



Ring Light



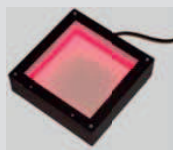
Dark-field Ring Light



High density regular illumination



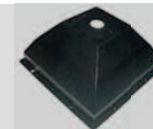
Diffused Ring Light



Diffused Square Illumination



Dome Light



Very Large Square Dome Light



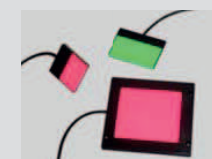
Tunnel Illumination



Co-axial Illumination



Classic backlight



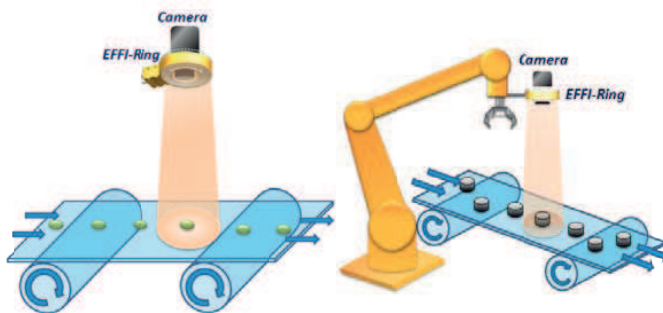
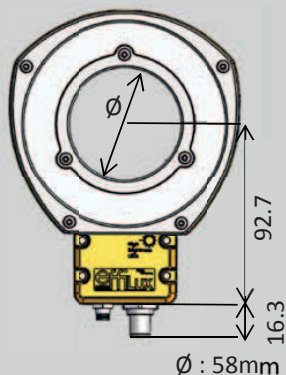
Side Illumination Backlight

effiRing New

- **Very intense** and **uniform** illuminated area
- **Full range of colors**: from UV to IR, white, three colored
- **Long lifetime** and few maintenance
- **Compatible** with most objectives



	WD = 400 mm		WD = 1000 mm	
Window	Illumination	Diameter	Illumination	Diameter
Transparent	350 000 Lux	60 mm	80 000 Lux	130 mm
Semi-diffused	150 000 Lux	80 mm	25 000 Lux	200 mm



- Applications :
- Quality control
 - Pick and place

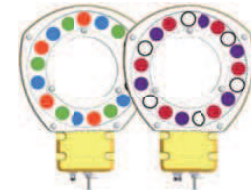
1

Wavelength
Select your color

UV Blue Green Red IR White
 405 nm 465 nm 525 nm 625 nm 850 nm "000"

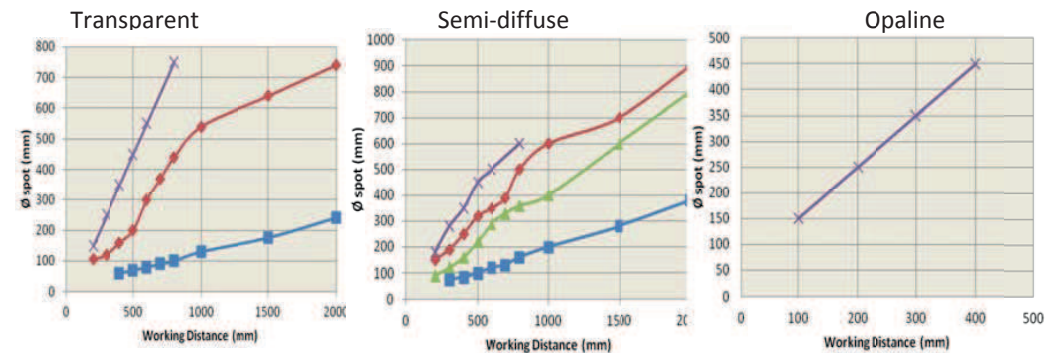
Or 3 colored version

• • • : 'RGB'
 • • • : 'WUI'



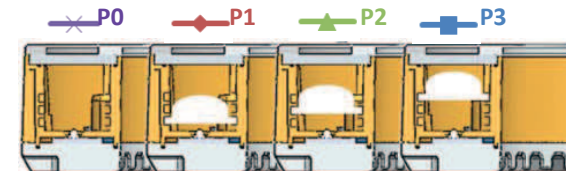
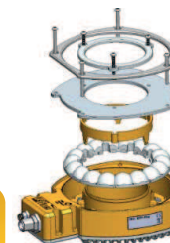
2

Glass
Choose your glass



3

Lens
Adjust the lens yourself



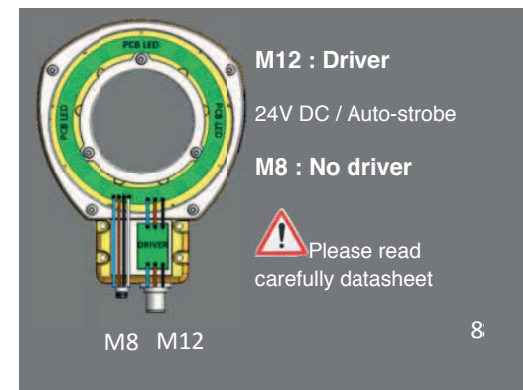
DO IT YOURSELF

EFFI-Ring _XXX(_Y_Z)

Wavelength (nm)

Window

Lens position

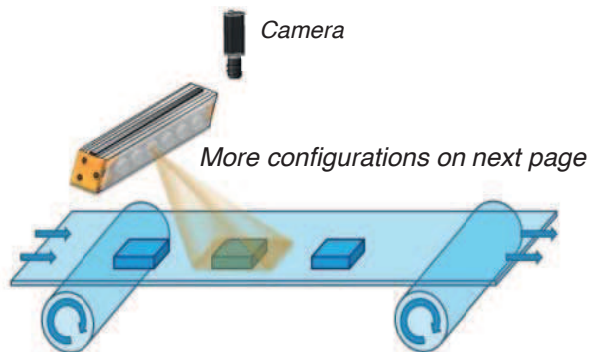


effiFlex

- **Adjustable**
- **Economic**
- **Homogeneous**
- **Automatic Strobe**

Illumination
(EFFI-Flex-5-000 : White 5 Leds EFFI-Flex)

Position	WD = 500 mm	WD = 1000 mm
P0	1500 Lux	600 Lux
P1	3000 Lux	1000 Lux
P2	4000 Lux	1100 Lux
P3	10 000 Lux	6300 Lux



OPTIONS :

- IP 65
- Different kind of electrical control available
- Polarizer
- Linescan

Applications :

- Quality control,
- Bar code reading,
- Robotic vision, Pick and Place,
- Engraved code reading, ..

1

Wavelength
Select your color

● UV 405 nm
 ● Blue 465 nm
 ● Green 525 nm
 ● Red 625 nm
 ● IR 850 nm
 ○ White "000"

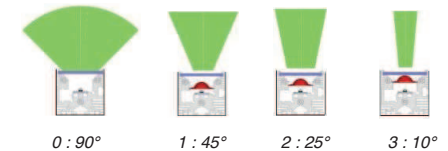
2

Length
Number of LEDs

Version	L (en mm)					
	1 led	3 leds	5 leds	10 leds	15 leds	...
Classic	55	95	135	235	335	Up to 4000
½ : 1 led every two positions. Add '1/2' at the end of part number	-	-	235	435	635	Up to 4000

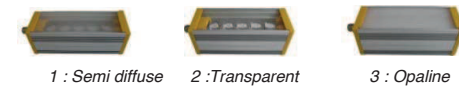
3

Lens
Adjust the lens yourself



4

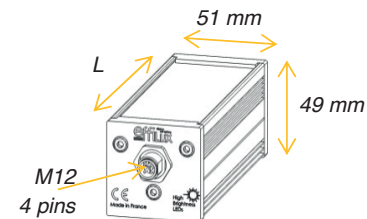
Glass
Choose your glass



5

Electronic
Choose your electronic

Auto-Strobe (Standard) or Continuous. See page 12



EFFI-Flex _ XX _ XXX (_ Y _ Z)
 Number of LEDs └┘
 Wavelength └┘
Y : Type of glass
Z : Lens position

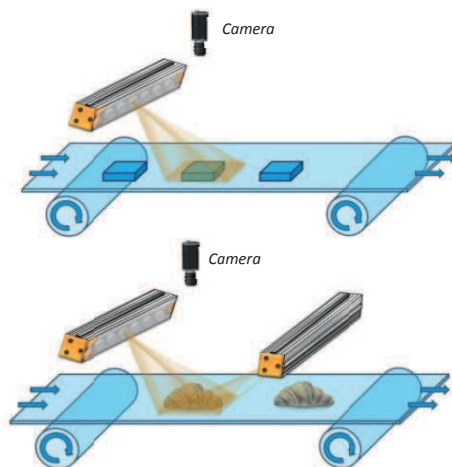
Build your own system of illumination with **effiFlex**

Direct Illumination

1 or 2 EFFI-Flex
Glass = Semi-diffuse
Position : P0, P1, P2, P3

Application:

- Quality control,
- Bar code reading,
- Robotic vision,
- Pick & Place

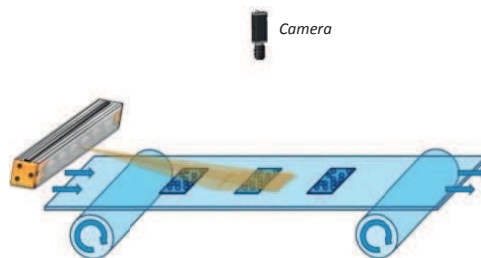


Darkfield illumination

Position = P3 (10°)
Accessory : Flex-linescan

Application:

- Engraved codes reading,
- Crashes inspection



Indirect Illumination



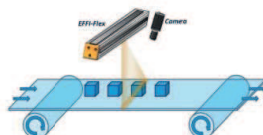
Page 16

Backlight Illumination



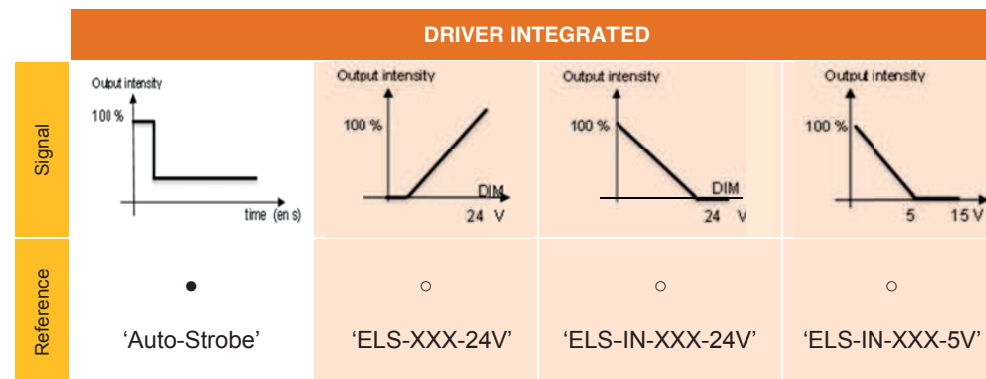
Page 14

Linescan Illumination



Page 22

Special Electronic for **effiFlex**

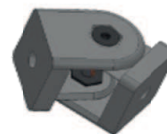


● : Standard / ○ : Option

XXX	Output Intensity [0-100%]	Cooling system
350	0-350 mA	passive
500	0-500 mA	& passive + fans Please contact Effilux
700	0-700 mA	
1000	0-1000 mA	

Special Accessories for **effiFlex**

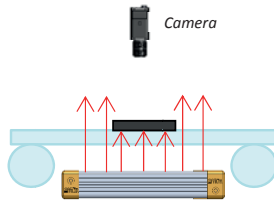
- Polarizer
- Linescan (page 22)
- Fixations



effiBL

- **Economic**
- **Robust**
- **Easy integration**
- **From 50 * 50 mm² to 1500 * 1500mm²**

Application:
Any machine vision applications with backlights



1 Wavelength Select your color

UV 405 nm
Blue 465 nm
Green 525 nm
Red 625 nm
IR 850 nm
White "000"

2 Length - Width Choose your dimensions

Optical Width (mm)	Optical Length (mm)			
	50	100	150	Every 50 mm Up to 1500mm
50	•	•	•	•
100		•	•	•
150			•	•
Every 50 mm Up to 1500mm				•

EFFI-BL - XXX - XXX - XXX
 Length |
 Width |
 Wavelength |

OPTIONS :

- Strobe (only for White)
- Thin Edge

effiFlex-BL



1

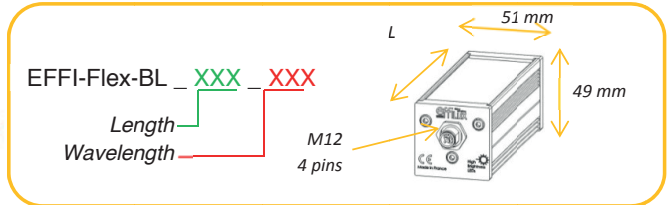
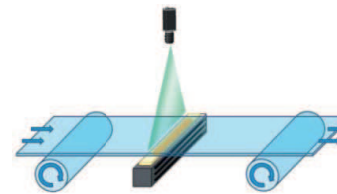
Wavelength Select your color

UV 405 nm
Blue 465 nm
Green 525 nm
Red 625 nm
IR 850 nm
White "000"

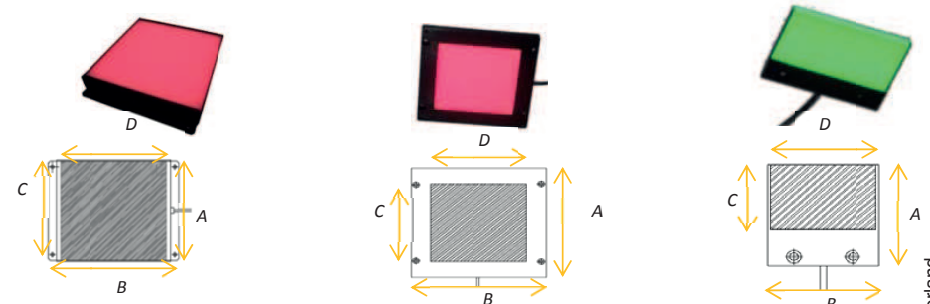
2

Length - Width Choose your dimensions

Length L	L (en mm)			
XXX	100	200	300	Every 100 mm Up to 4m



Others Backlights (*)



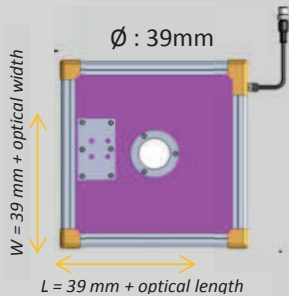
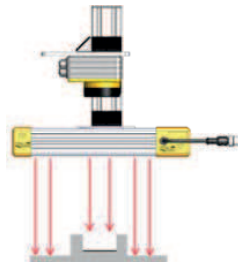
Part Number	A (mm)	B (mm)	C (mm)	D(mm)	F (mm)
EFFI-BHS3-00-020	24	52	22	28	15
EFFI-BHS3-00-050	54	78	52	54	15
EFFI-BHS3-00-080	84	108	82	84	15
EFFI-BHS3-00-100	104	128	102	104	15
EFFI-BHDS-00-25x36	43.5	38.5	25	36	5.3
EFFI-BHDS-00-31x58	43.5	60	31	58	5.3
EFFI-BHDS-00-070	84.5	98.5	70	70	5.3
EFFI-BHD-00-070	98.5	98.5	70	70	5.3
EFFI-BHD-00-100	128.5	128.5	100	100	5.3

*only for France, Germany & Switzerland

effiFD

- o **Economic**
- o **Robust**
- o **Easy integration**
- o **From 50 * 50 mm² to 1500 * 1500mm²**

Application:
EFFI-FD is used on shiny object to avoid reflectivity.
It can be compared to a dome light.



OPTIONS :

- Strobe (only for White)
- Thin Edge

1

Wavelength
Select your color

- UV 405 nm
- Blue 465 nm
- Green 525 nm
- Red 625 nm
- IR 850 nm
- White "000"

2

Length - Width
Choose your dimensions

		Optical Length			
		100	150	200	Every 50 mm Up to 1500mm
Optical Width	100	•	•	•	•
	150		•	•	•
	200			•	•
	Every 50 mm Up to 1500mm				•

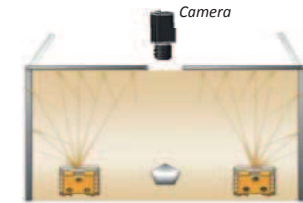
EFFI-FD - XXX XXX XXX
Length
Width
Wavelength

Build your own Tunnel or Dome light

What do you need ?

- o A white box.
- o 2 or 4 EFFI-Flex
 - Glass = Semi-diffuse
 - Position = P0 (no lens)

With EFFI-Flex



Application:

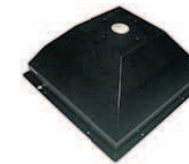
- o Tunnel or dome light effect.
- o Inspection of shiny objects

Others Dome light*

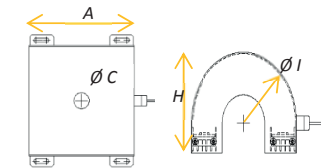
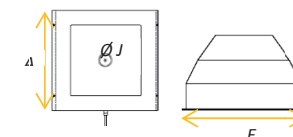
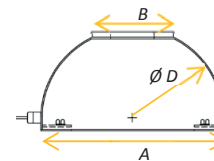
EFFI-IDS3



EFFI-IDQ



EFFI-IDT



Part Number	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	H (mm)	I (mm)	J (mm)
EFFI-IDS3-00-050	68	10		53				
EFFI-IDS3-00-070	95	20		78				
EFFI-IDS3-00-100	118	25		103				
EFFI-IDS3-00-150	185	40		165				
EFFI-IDS3-00-200	232	50		212				
EFFI-IDS3-00-250	284	50		261.6				
EFFI-IDQ-00-100	180				200			35
EFFI-IDQ-00-190	270				290			35
EFFI-IDQ-00-300	412	452		50				
EFFI-IDT-00-100	100		15			71	100	
EFFI-IDT-00-150	150		25			96	150	
EFFI-IDT-00-200	200		25			121	200	

effiSharp

effiSharp-power

effiSharp-focuslight

1 **Wavelength**
Select your color

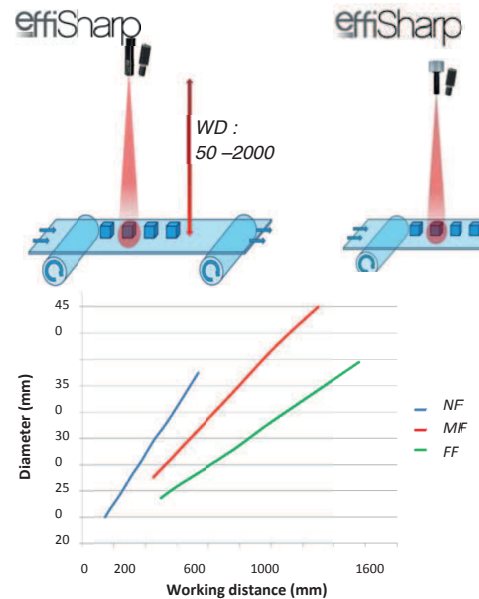
UV 405 nm Blue 465 nm

2 **Shape**
Choose your shape

1 : square

3 **Working distance**
Choose your working distance

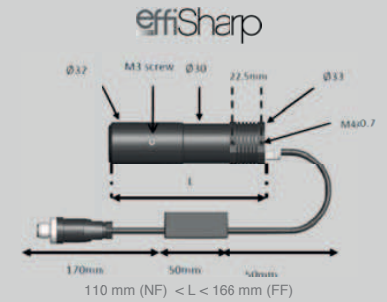
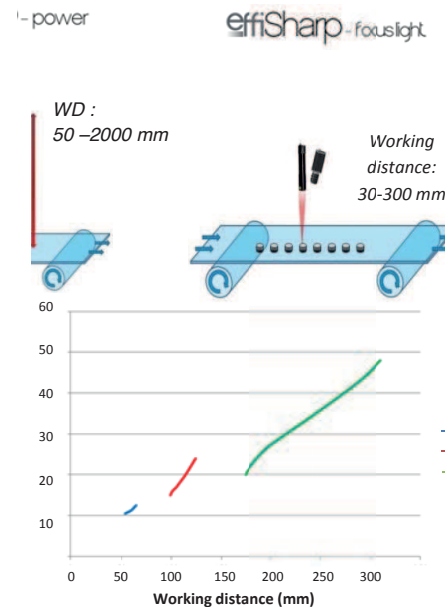
	Sharp	
	Typical WD	Illumination
Near Field (NF)	100-800 mm	100 000 Lux at 100 mm
Middle Field (MF)	400-1600 mm	5 000 Lux at 500 mm
Far Field (FF)	500-1800 mm	650 Lux at 2000 mm



Green 525 nm Red 625 nm IR 850 nm White "000"

2 : circle

Sharp-Power		Sharp-Focus Light	
Typical WD	Illumination	Typical WD	Illumination
100-800 mm	250 000 Lux at 100 mm	40-70 mm	1 000 000 Lux at 50 mm
400-1600 mm	12 500 Lux at 500 mm	80 - 120 mm	300 000 Lux at 100 mm
500-1800 mm	1 500 Lux at 2000 mm	150 - 300 mm	150 000 Lux at 180 mm



EFFI-Sharp _XX_XXX_X
EFFI-Sharp-Power _XX_XXX_X
EFFI-Sharp-FL _XX_XXX_X

Working distance
Wavelength
Shape

effiLase

effiLase power

Advantages Vs laser :

- NO SPECKLE
- C-Mount compatible
- Many standard masks
- Homogeneity > 80%
- Long lifetime
- Eye safety

1

Wavelength
 Select your color

UV

405 nm

Blue

465 nm

Green

525 nm

Red

625 nm

IR

850 nm

White

"000"

2

Mask
 Choose your mask

3D Profilometry

1 Line

L01: thickness = 50 μ m
 L02: thickness = 20 μ m
 L03: thickness = 10 μ m

3 Lines

Thickness: 50 μ m
 Pitch = 500 μ m
 Ref = L04

5 Lines

Thickness: 100 μ m
 Pitch = 750 μ m
 Ref = L06

100 Lines

Thickness: 45 μ m
 Pitch = 67.5 μ m
 Ref = L07

3D Stereo

vision

Could of dots
 C02: Density = 50%

Could of dots
 C03: Density = 17%

Grid
 Thickness: 50 μ m
 Pitch = 205 μ m
 Ref = G03 – G04

Round / Squares
 Diameter / Side: 50 μ m
 Round = G01
 Square = G05

Alignment

Cross

Ref = A01

Circle

Ref = A02

How to calculate the projected pattern size? (Example: Line)

Mask dimensions :

I

w

L

W

$$W = w * L / I$$

EFFI-Lase-CM _ XX _ XXX
 EFFI-Lase-Power _ XX _ XXX

Mask

Wavelength

20

Web inspection lighting solutions

effiFlex
+ linescan accessory



Flexible
Next page

effiLine-v2.0



Powerful
Page 24

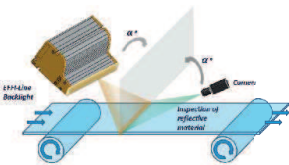
effiFlex-BL



Homogeneous
Page 14

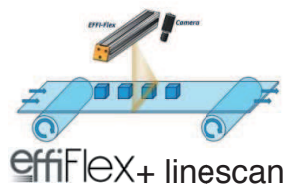
Choose your solution

effiLine-v2.0



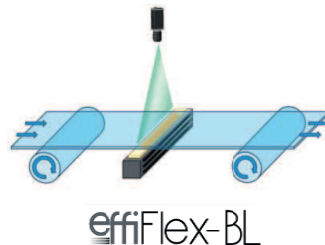
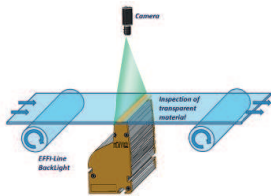
Direct

effiFlex



effiFlex+ linescan

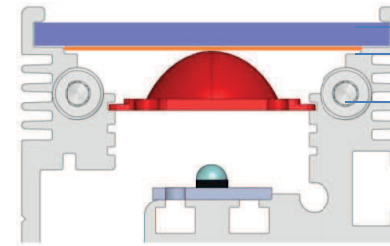
Backlight



effiFlex-BL

effiFlex + linescan accessory

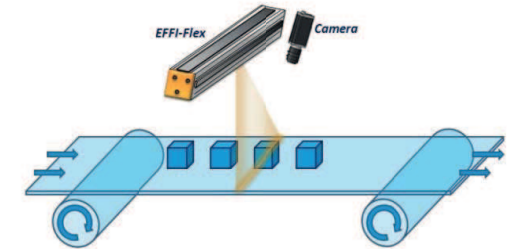
- 1 EFFI-Flex (about EFFI-Flex p.9-10) with :



- Glass : transparent
- Linescan accessory (ref: EFFI-Flex-Linescan-XX (XX : number of leds of EFFI-Flex))
- Position : P3

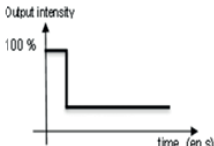
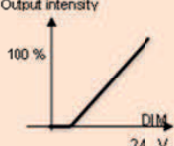
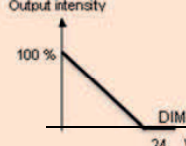
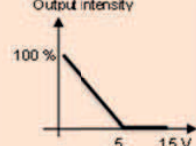
Application :

- Optical sorting
- Linear inspection
- Quality control



Example: EFFI-Flex-10-000-ELS-350-24V + EFFI-Flex-Linescan-10

Available Electronic for EFFI-Flex + Linescan :

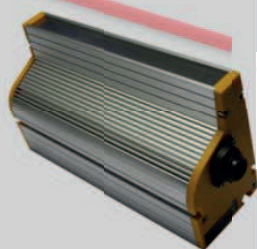
DRIVER INTEGRATED				
Signal				
Reference				
	'ELS-XXX-24V'	'ELS-IN-XXX-24V'	'ELS-IN-XXX-5V'	

• : Standard / ○ : Option

XXX	Output intensity [0-100%]	Cooling System
350	0-350 mA	
500	0-500 mA	
700	0-700 mA	
1000	0-1000 mA	Please contact Effilux

effiLine-v2.0

Standard (S)

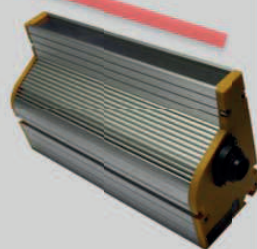


COOLING SYSTEM



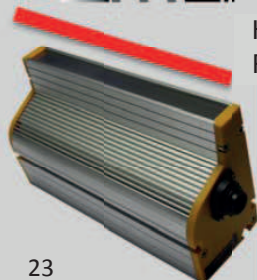
effiLine-v2.0

Power (P)



effiLine-v2.0

High Power (HP)



1

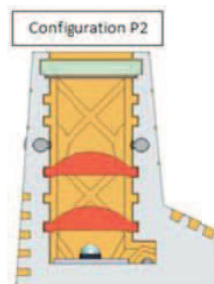
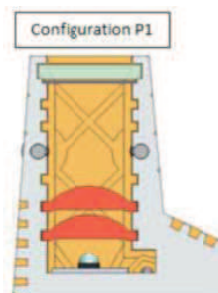
Wavelength
Select your color

UV
405 nm

Blue
465 nm

2

Lens Position
Select your position



3

Power version
Select your power version

Power version	Cooling
Standard (S)	Passive dissipation
Power (P)	Fans
High Power (HP)	Water cooling

3

Optical length
Choose your optical length

Length L

XXX

Green
525 nm

Red
625 nm

IR
850 nm

White
"000"

Illumination at 100 mm working distance (white)

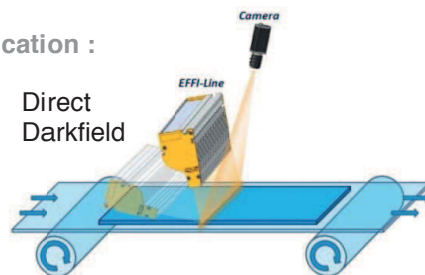
200 000 Lux
400 000 Lux
1 000 000 Lux

L (en mm)

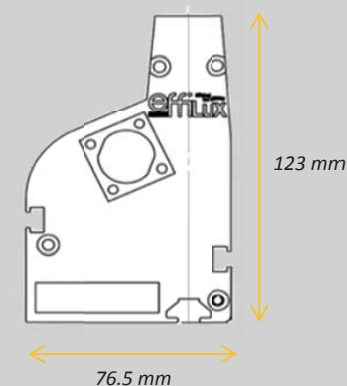
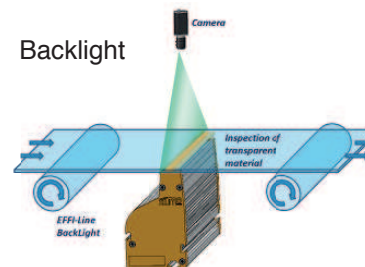
100	200	300	Every 100 mm Up to 6m
-----	-----	-----	--------------------------

Application :

- o Direct
- o Darkfield



o Backlight



EFFI-Line-2.0 _XX_XXX_X_X

Optical Length

Wavelength

Power Version

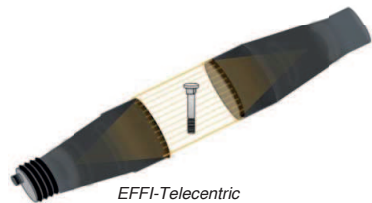
Lens Position



effiTelecentric

EFFI-Telecentric has to be used with a telecentric lens on the camera.

Camera + Telecentric objective



EFFI-Telecentric

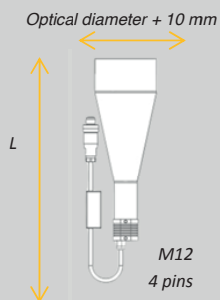
	Length (mm)	Optical diameter (mm)
EFFI-Telecentric_20_XXX	117	20
EFFI-Telecentric_45_XXX	147	45
EFFI-Telecentric_70_XXX *	245	70

* On request



Application :

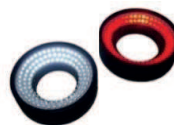
Very accurate measurement.



EFFI-Telecentric _XXX_XXX
Optical diameter
Wavelength

Direct Illumination

Ring light *



Part Number	A (mm)	B(mm)	α (°)	D (mm)
EFFI-LSW-00-W	43 -> 92	15 -> 40	0	20
EFFI-LSW-15-W	50 -> 103	28 -> 48	15	16 > 22
EFFI-LSW-30-W	46 -> 92	20 -> 48	30	16 > 22
EFFI-LSW-45-W	54 -> 100	25 -> 48	45	20 > 30
EFFI-LLA-60-W	74 -> 202	41 -> 167	60	20.5 > 23.5
EFFI-LLA-75-W	131 -> 175	94 -> 136	75	24.5

W : Red, Blue, Green, White

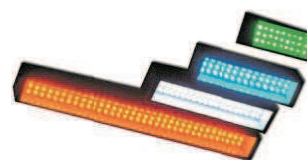
Dark-field ring light *



Part Number	A (mm)	B(mm)
EFFI-LLA-90-050-W	56	24
EFFI-LLA-90-080-W	80	50
EFFI-LLA-90-100-W	101	71
EFFI-LLA-90-150-W	151	121
EFFI-LLA-90-180-W	181	151
EFFI-LLA-90-210-W	211	181

W : Red, Blue, Green, White

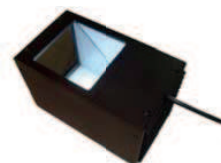
High density rectangular illumination *



Part Number	L (mm)
EFFI-LBS2-00-050-3-W	50
EFFI-LBS2-00-080-3-W	80
EFFI-LBS2-00-100-3-W	100
EFFI-LBS2-00-140-3-W	144
EFFI-LBS2-00-190-3-W	190

W : Red, Blue, Green, White

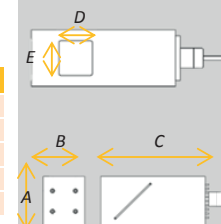
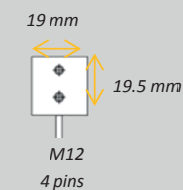
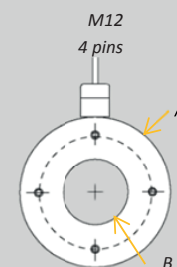
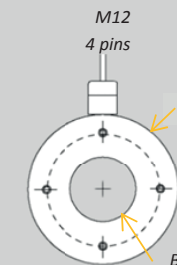
On axis Illumination



Part Number	A	B	C	D	E
EFFI-CAS-00-010-W	36	29	77.4	18	18
EFFI-CAS-00-020-W	46	39	87.3	25	24
EFFI-CAS-00-040-W	66	60	107.5	48	48
EFFI-CAS-00-070-W	95	89	139.6	70	70
EFFI-CAS-00-100-W	123.8	120	168.7	100	100

*only for France, Germany & Switzerland

W : Red, Blue, Green, White



Diffused

& Direct Illumination

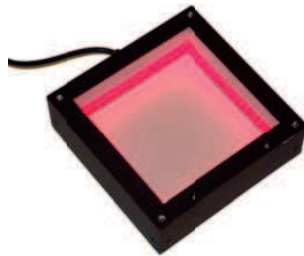
Diffused ring light *



Part Number	A (mm)	B(mm)	α (°)
EFFI-DLR-45-W	50.8 -> 126.5	8 -> 71	45
EFFI-DLR-60-W	50.8 -> 126.5	18 -> 93	60

W : Red, Blue, Green, White

Diffused Square illumination *



Part Number	A (mm)	B(mm)
EFFI-DLQ-90-030-W	31.8	10
EFFI-DLQ-90-050-W	50.8	10
EFFI-DLQ-90-070-W	76.2	20
EFFI-DLQ-90-100-W	101.6	20
EFFI-DLF-90-050-W	50.8	26
EFFI-DLF-90-070-W	76.2	55
EFFI-DLF-90-100-W	101.6	80

W : Red, Blue, Green, White

*only for France, Germany & Switzerland

LBDQ series *

Part Number	A (mm)	B(mm)	α (°)
EFFI-LBDQ-00-050-1-X	114	90	72
EFFI-LBDQ-00-100-X	164	140	122

W : Red, Blue, Green, White

DFR2 series *

Part Number	A (mm)	B(mm)	XX (en °)			
			0	15	30	45
EFFI-DFR2-XX-050-1-W	50.8	8	•		•	•
EFFI-DFR2-XX-050-1-W	76.2	21	•	•	•	•
EFFI-DFR2-XX-050-1-W	100	30	•	•	•	•
EFFI-DFR2-XX-050-1-W	126.5	45	•	•	•	•

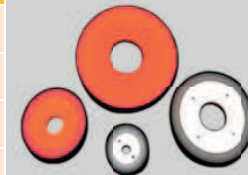
W : Red, Blue, Green, White

DLS / DLW series *

Part Number	A (mm)	B(mm)	XX	
			60	75
EFFI-DLS-XX-050-1-W	50.8	16	•	•
EFFI-DLS-XX-070-1-W	76.2	20	•	•
EFFI-DLS-XX-100-1-W	101.6	20	•	•
EFFI-DLW-XX-070-1-W	76.2	20	•	•
EFFI-DLW-XX-100-1-W	101.6	20	•	•

W : Red, Blue, Green, White

*only for France, Germany & Switzerland



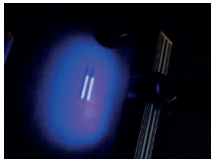
Custom product

Added value

- Project management from the requirements to the mass delivery
- Optical know-how.
- LED technology mastery
- Industrialisation skills
- Sensor and machine vision experience

Our tools

- **Software** : Optic (Light tools, Zeemax), Mechanic (SolidWorks), Thermal (Flotherm), ERP & CRM
- **Equipment** : Assembly plant equipped with modern tools
- **Quality control** : Spectrometer, cameras and measurement tools.



Custom Wavelegth

EFFILUX delivers UV, IR and custom lights

Wavelength		Description
UV	365 nm	EFFI-Sharp is available at 365 nm EFFI-Flex can be delivered at 365 nm with custom glass and without lenses.
	385 nm	EFFILUX can deliver customized products with other UV wavelength
	405 nm	All EFFILUX's portfolio is available at 405 nm
IR	740 nm	EFFILUX also delivers EFFI-Flex, EFFI-Sharp and EFFI-line at 740 nm on request
	850 nm	All EFFILUX's portfolio is available at 850 nm
Others		Contact Effilux for others wavelengths

Water proof and stainless



EFFILUX can deliver water proof and stainless solutions.

OEM development

EFFILUX develops custom lighting systems for machine vision.

If many products are purchased recurrently, EFFILUX is able to industrialize products in order to decrease costs.

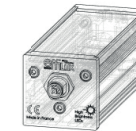


Specifications

Optic: Wavelength, intensity/illuminance
Mechanic: Dimensions, assets...
Electric: Power supply, strobe ?

Conception

Optical, Electrical and Mechanical conception

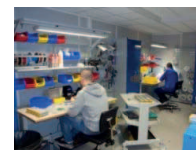


Optical set up

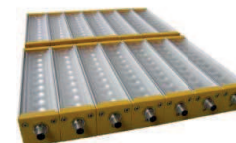
Optical validation at a very low cost investment



Mass delivery



Industrialization



Prototype



Electronic : Continuous or Free mode?

1

Electronic
Continuous or free mode ?

Continuous mode: « Dimming Control »

Adjust light intensity with dimming control

“Auto-Strobe”

*LEDs are supplied with 100% intensity at the beginning.
After 2s, LEDs are supplied with a secured intensity.*

4. « Free » mode :

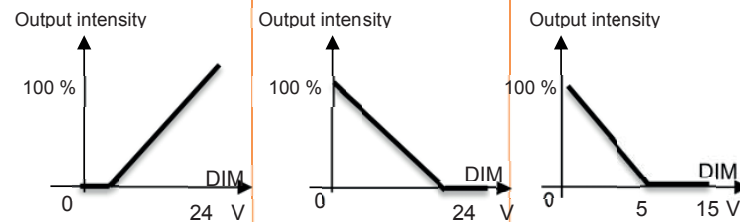
 LED are not protected.

2

Electronic configuration
Select your configuration

DRIVER

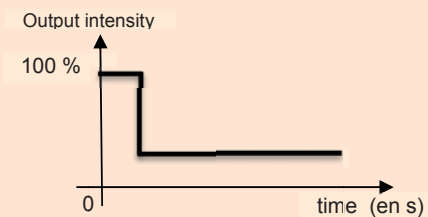
M 12, 4 pins



INTEGRATED

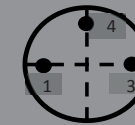
1 : Brown – 24V
2 : White – n.a
3 : Blue – GND
4 : Black – DIM

 Except for EFFI-Ring (5 pins)



NO DRIVER

M 8, 3 pins



1 : Brown – n.a
3 : Blue – +
4 : Black – GND

 Except for EFFI-Ring (4 pins)

Use your own current source

 LED are not protected. Please read datasheet and instructions before connecting products

	0	24 V	15 V
EFFI-Flex	○	○	○
EFFI-Flex-BL	●		
EFFI-Ring			
EFFI-Line-2.0	●		
EFFI-Lase			●
EFFI-Lase-Power			●
EFFI-Sharp			●
EFFI-Sharp-Power			●
EFFI-BL	●		
EFFI-FD	●		
EFFI-Telecentric			●

● : Standard / ○ : Option / Not available

	●	
	●	
		●
		○
		○
		○
		○

● : Standard / ○ : Option / Not available

Accessories

Optical accessories

Part-Number	Description	
Objectives	Standard : C-Mount, F-Mount	Custom Design
Optical filter	Bandpass, Longpass & Shortpass	
Polariser	Polariser for Effilux's illumination systems	Polariser for cameras
EFFO-0006	EFFI-Angle	



Mechanical accessories : Brackets

Part-Number	EFFILUX range compatibility	Description
EFFV-Bolt_0011	BL, FD, Flex	T-nut to insert in the slot Delivered with a screw
EFFM_1_0021	BL, FD, Flex	Bracket to fasten the device – 2 ridges Delivered with EFFV-Bolt_0008 and a screw
EFFM_1_0009	Sharp, Lase, Tele	Fastener used to simplify the projector integration (orientation) – drilled Delivered with 2 M4x12 screws
EFFM_1_0002	BL, FD, Flex	Fastener used to simplify the projector integration (orientation) – undrilled Delivered with EFFV-Bolt_0008 and a M5x12 screw
EFFM_1_0001	Sharp, Lase, Tele	Fastener used to simplify the projector integration (clamp) Delivered with 2 M4x20 screws



Electrical accessories : Cables and Strobe Controller

Part-number	Description
EFFC-Cable_M12_0002	M12 cable – 4 pins – 2m long
EFFC-Cable_M12_0003	M12 cable – 4 pins – 5m long
EFFC-Cable_M12_0004	M12 cable – 4 pins – 10m long
EFFC-Cable_M12_0025	M12 cable – 4 pins – HighFlex – 1.5m long
EFFC-Cable_M12_0026	M12 cable – 4 pins – HighFlex – 3m long
Strobe controller	Min pulse time : 1us Max current : up to 10A

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Fax : +33 9 72 11 21 69