CREATING CUSTOMER SATISFACTION

High Power UV/Violet LED Lighting
UV3/VL3 Series

More applications possible with higher power and new wavelengths

Applications

- Observation of special inks
- Magnetic particle inspection
- Dye penetrant inspection
- Adhesive inspection
- Coating inspection
- and more

Example of imaging with white LED lighting

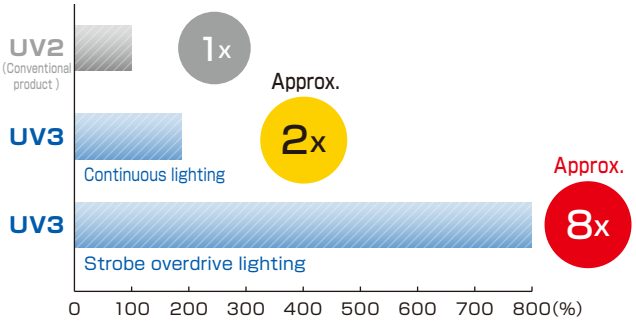
Example of imaging with UV-LED lighting

LIGHTING SOLUTION
CCS Inc.

Features

Increase brightness with overdrive

Comparison with a conventional product



※ Comparison between the LDR2-60UV3-365-N and LDR2-60UV2-365-N at 100 mm LWD.
The increase in brightness varies depending on model.
(These values are for reference only and are not guaranteed values.)

Imaging special ink on can

Example of imaging with UV2
(Continuous lighting)

A lack of brightness makes it difficult to perform fluorescence observation for special inks.

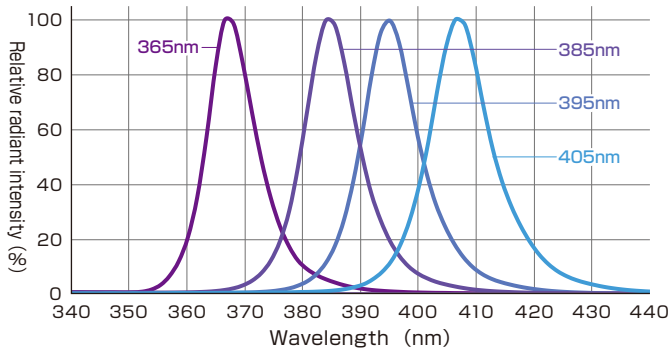
Example of imaging with UV3
(Strobe overdrive lighting)

Enables fluorescence observation for special inks even with faster shutter speed.

※ Comparison of imaging at 1ms shutter speed

4 wavelengths (365/386/395/405 nm) expand possible applications

Spectral distribution



Cautionary Information regarding UV Products

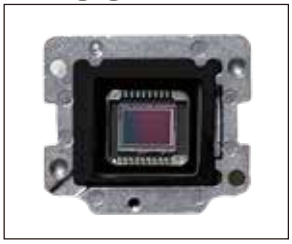
- Do not expose your eyes or skin to direct UV irradiation.
- When using UV illumination, be sure to wear UV blocking eye wear and avoid looking at irradiating parts (emitting parts).
- Do not turn on UV-LED irradiating parts (emitting parts) if they are facing someone's eyes.
- Wear long sleeves and gloves to protect your skin from UV irradiation.
- Thoroughly educate all those involved near the product about the dangers of UV LEDs.

E.g.:
UV blocking eye wear

Imaging Example

Imaging adhesive on an imaging sensor substrate

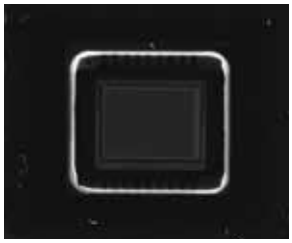
Workpiece image
(Imaging sensor substrate)



White LED lighting
(LDR2-90-30SW2)

It is difficult to capture the adhesive with white LED lighting.

UV-LED lighting
(LDR2-100UV3-365-W)



With UV light, the adhesive can be observed because of emitted fluorescent light.

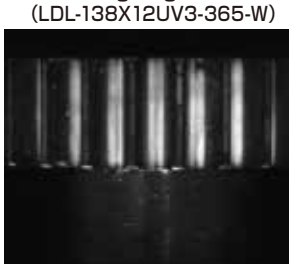
Imaging of grease applied on a gear part

Workpiece image
(Gear part)

White LED lighting
(LDR2-90SW2)

With white light, it is difficult to capture the application of the grease on the uneven surface.

UV-LED lighting
(LDL-138X12UV3-365-W)



With UV light, the application of the grease can be observed because of emitted fluorescent light.

Lineup / End of the model name -N : Narrow type / -W : Wide type -FN : Narrow type / -FNNR : Wide type

Wavelength 385/395/405 nm will be manufactured on a built-to-order system.

Product Series	Model name※1	LED color	Power consumption※2	Extension cables	Recommended Control Units	Weight
LDR2 	LDR2-60UV3-365-N/-W	Ultraviolet	24V / 7.6W	FCB※3 Straight Cable FCB-W※4 2-branch Cable FCB-F 4-branch Cable FRCB Robot Cable	PD3 CC-ST-1024 PSB POD※5	End of the model name -N:80g
	LDR2-60VL3-□-N/-W	Violet				End of the model name -W:85g
	LDR2-100UV3-365-N/-W	Ultraviolet	24V / 23W		PD3 PSB POD※5	End of the model name -N:210g
	LDR2-100VL3-□-N/-W	Violet				End of the model name -W:240g
LDL 	LDL-71X12UV3-365-N/-W	Ultraviolet	24V / 7.6W		PD3 CC-ST-1024 PSB POD※5	270 g
	LDL-71X12VL3-□-N/-W	Violet				
	LDL-138X12UV3-365-N/-W	Ultraviolet	24V / 16W		PD3 PSB POD※5	450 g
	LDL-138X12VL3-□-N/-W	Violet				
	LDL-205X12UV3-365-N/-W	Ultraviolet	24V / 23W			600 g
	LDL-205X12VL3-□-N/-W	Violet				
	LDL-339X12UV3-365-N/-W	Ultraviolet	24V / 38W		PD3 POD※5	950 g
	LDL-339X12VL3-□-N/-W	Violet				
LN 	LN-61UV3-365	Ultraviolet	24V / 7.6W		PD3 CC-ST-1024 PSB POD※5	430 g
	LN-61VL3-□	Violet				
	LN-128UV3-365	Ultraviolet	24V / 16W		PD3 PSB POD※5	700 g
	LN-128VL3-□	Violet				
	LN-195UV3-365	Ultraviolet	24V / 23W			970 g
	LN-195VL3-□	Violet				
HLDR 	HLDR-IP67-100UV3-365	Ultraviolet	24V / 18W	FCB-M12 Straight Cable (Dedicated cables)	PD3 PSB	420 g
	HLDR-IP67-100VL3-□	Violet				
HLV2 	HLV2-24UV3-365	Ultraviolet	0.7A / 2.8W	FCB※3 Straight Cable FRCB Robot Cable	PD3 CC-PJ-0707 PJ PJ2	50 g
	HLV2-24VL3-□	Violet				
LNSP-FN※6 	LNSP-100UV3-365-FN	Ultraviolet	36W	QCBM QCB	PSCC-30048(A) PSCC-60048(A)	900 g
	LNSP-100VL3-□-FN	Violet				
	LNSP-100UV3-365-FNNR	Ultraviolet				700 g
	LNSP-100VL3-□-FNNR	Violet				
	LNSP-200UV3-365-FN	Ultraviolet	70W			1300 g
	LNSP-200VL3-□-FN	Violet				
	LNSP-200UV3-365-FNNR	Ultraviolet				1000 g
	LNSP-200VL3-□-FNNR	Violet				
	LNSP-300UV3-365-FN	Ultraviolet	103W			1700 g
	LNSP-300VL3-□-FN	Violet	104W			
	LNSP-300UV3-365-FNNR	Ultraviolet	103W			1300 g
	LNSP-300VL3-□-FNNR	Violet	104W			

※1 □shows the wavelength, 385/395/405.
※2 The power consumption for LNSP-FN series includes the power consumption by the fan.
※3 The cables with a model name that ends with "-ME7", "-EL2", "-PF", or "-PF-EL9" are not included.
※4 The cables with a model name that ends with "-EL2" are not included.
※5 For information on the combination of Light Units and POD-series Control Unit, please refer to our website. ▶ https://www.ccs-grp.com/lnk/qr/pod
※6 Products with “-FN” and “-FNNR” employ a cooling fan.

Note:Models without POD as the recommended control unit cannot be used in combination with the strobe overdrive control unit. Please contact us if you would like to make a special order for the combination.

About HLDR-IP67

Case Material

	LED Light	Dedicated cable
Case material	Body: aluminum alloy (black anodized) Screws: SUS Washers: SUS, elastomer (TPE) Connectors: PA resin Lens: silicone	Light Unit side connector: soft PBT Cable: PVC Control Unit side connector: nylon

Note

The 1st numeral "6" indicates the following level of protection:
- No dust inside the instrument. (dustproof)

The 2nd numeral "7" indicates the following level of protection:
- No damage when submerged in water at the rated pressure for the rated time. (watertight type)
- Can be submerged in water to a depth of 1 m (for instruments with a height of less than 850 mm) for 30 minutes.

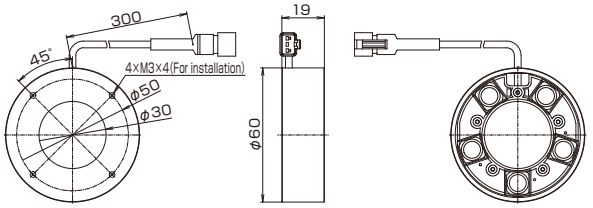
Cautionary Information regarding Waterproofing

- After cleaning manufacturing lines, be sure to wipe away any moisture remaining on the lens. Imaging can be affected by moisture on the lens.
- Use water to wash away any cleaning agent adhered to this product.
- Use water to wash away any oils or chemicals adhered to this product.
- The Control Unit connectors (SM connectors) on dedicated cables are not waterproof.

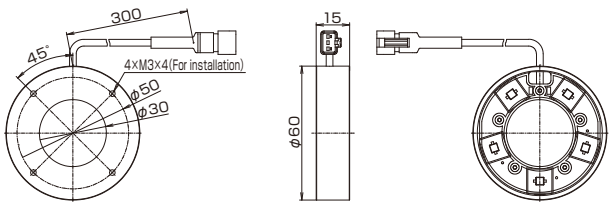
Dimensions / mm

Ring Lights

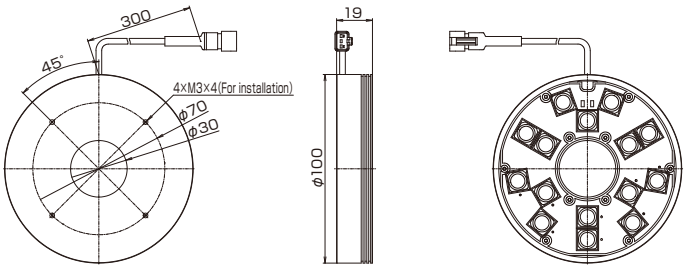
LDR2-60UV3/VL3-N (Narrow type)



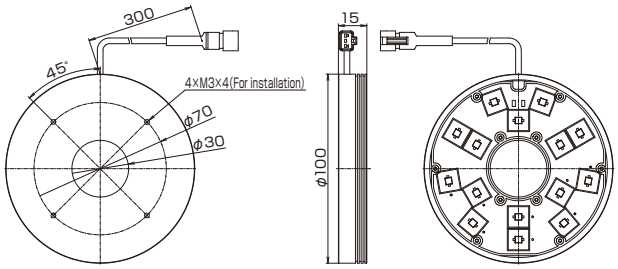
LDR2-60UV3/VL3-W (Wide type)



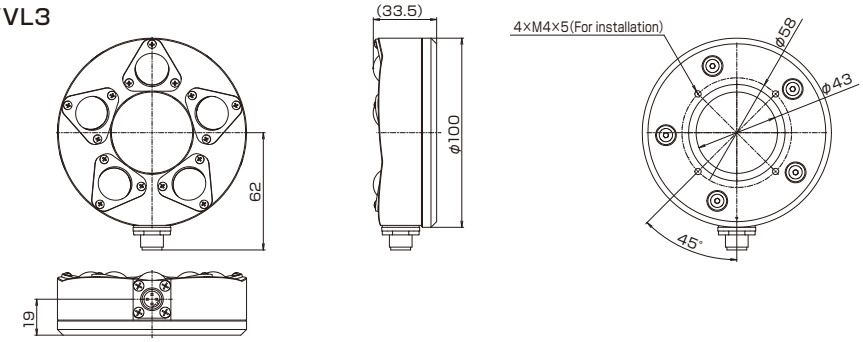
LDR2-100UV3/VL3-N (Narrow type)



LDR2-100UV3/VL3-W (Wide type)

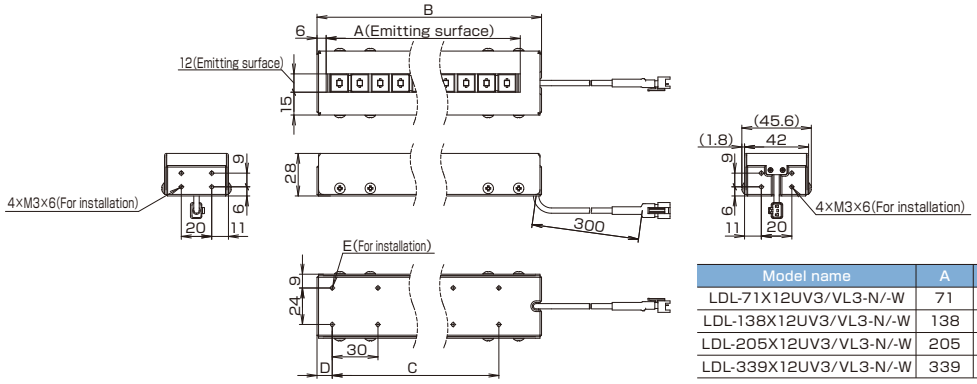


HLDR-IP67-100UV3/VL3



Bar Lights

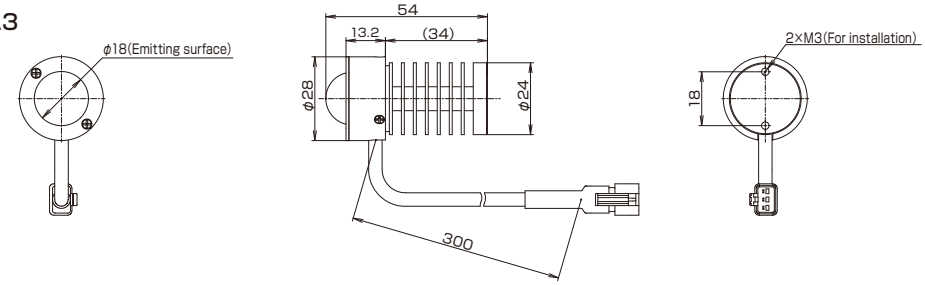
LDL-△UV3/VL3-N/-W (Common dimensions for the narrow/wide types)



Model name	A	B	C	D	E
LDL-71X12UV3/VL3-N/-W	71	91	P30×2=60	10	6×M3×6
LDL-138X12UV3/VL3-N/-W	138	158	P30×4=120	10	10×M3×6
LDL-205X12UV3/VL3-N/-W	205	225	P30×6=180	20	14×M3×6
LDL-339X12UV3/VL3-N/-W	339	359	P30×10=300	29.5	22×M3×6

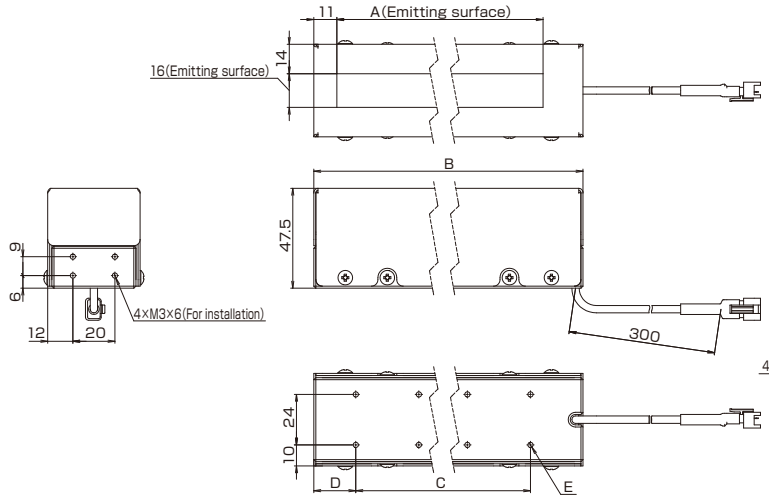
Spot Lights

HLV2-24UV3/VL3



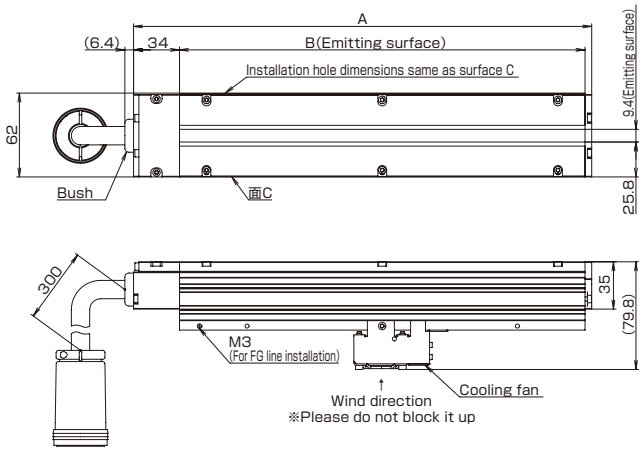
Line Lights

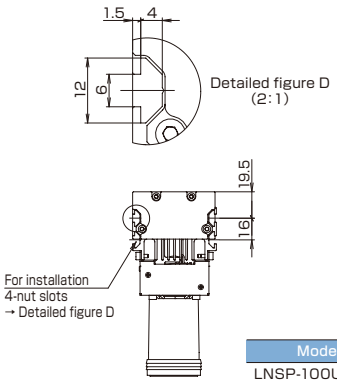
LN-△UV3/VL3



Model name	A	B	C	D	E
LN-61UV3/VL3	61	91	P30×2=60	10	6×M3×6
LN-128UV3/VL3	128	158	P30×4=120	10	10×M3×6
LN-195UV3/VL3	195	225	P30×6=180	20	14×M3×6

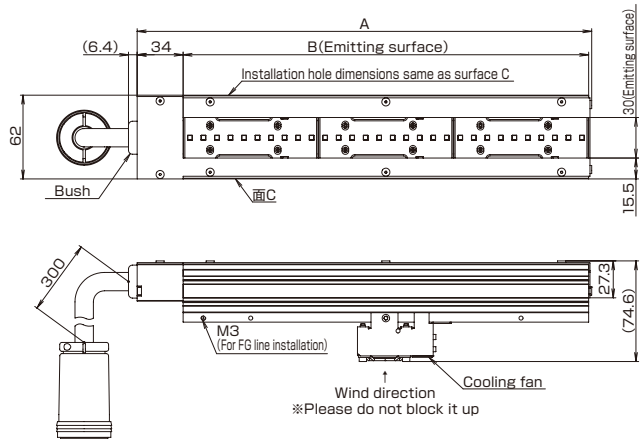
LNSP-△UV3/VL3-FN (Narrow type)

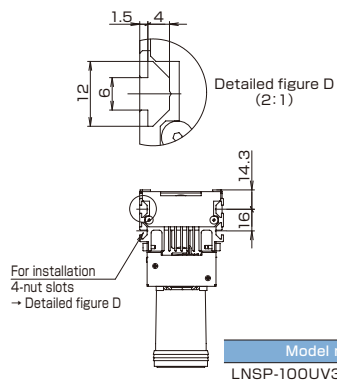




Model name	A	B
LNSP-100UV3/VL3-FN	139	100
LNSP-200UV3/VL3-FN	239	200
LNSP-300UV3/VL3--FN	339	300

LNSP-△UV3/VL3-FNNR (Wide type)





Model name	A	B
LNSP-100UV3/VL3-FNNR	136.3	100
LNSP-200UV3/VL3-FNNR	236.3	200
LNSP-300UV3/VL3-FNNR	336.3	300

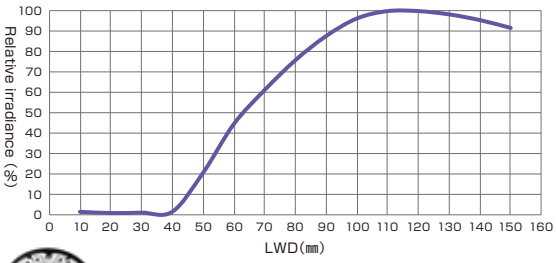
DATA / Relative Irradiance Graph and Uniformity(Representative Example)

The data included is for reference only. Actual values may vary.

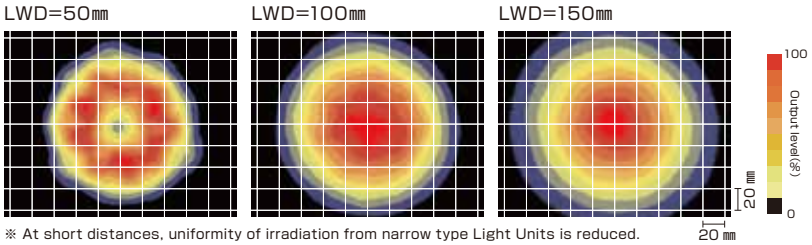
LDR2-100UV3-365-N (Narrow type)

■ Relative irradiance graph (LWD characteristics)

※1 ※2



■ Uniformity (Relative irradiance)

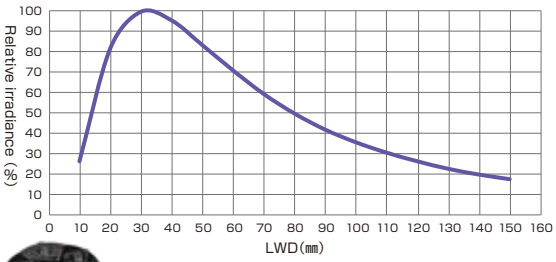


※ At short distances, uniformity of irradiation from narrow type Light Units is reduced. This may affect imaging depending on the type of workpiece.

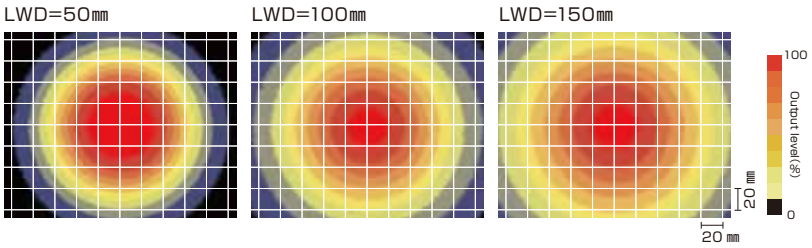
LDR2-100UV3-365-W (Wide type)

■ Relative irradiance graph (LWD characteristics)

※1 ※2



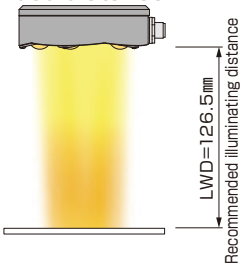
■ Uniformity (Relative irradiance)



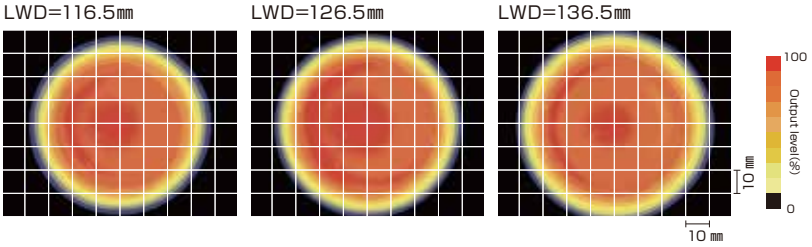
HLDR-IP67-100UV3-365

■ Regarding recommended distance

Recommended illuminating distance
(126.5 mm±10 mm)
If distance is exceeded, the uniformity may change and the imaging may be affected.



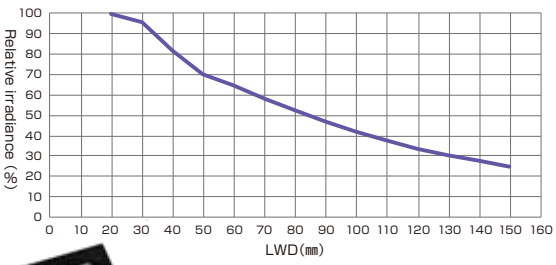
■ Uniformity (Relative irradiance)



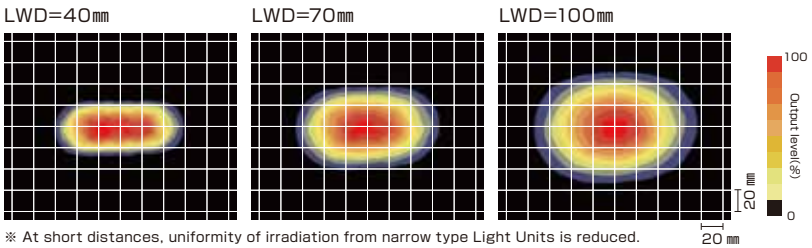
LDL-71X12UV3-365-N (Narrow type)

■ Relative irradiance graph (LWD characteristics)

※1 ※2



■ Uniformity (Relative irradiance)

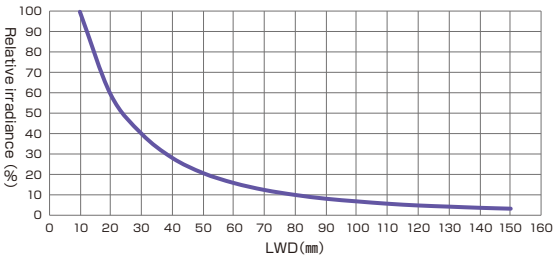


※ At short distances, uniformity of irradiation from narrow type Light Units is reduced. This may affect imaging depending on the type of workpiece.

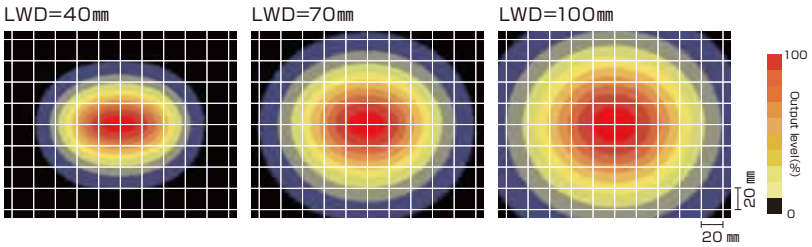
LDL-71X12UV3-365-W (Wide type)

■ Relative irradiance graph (LWD characteristics)

※1 ※2



■ Uniformity (Relative irradiance)

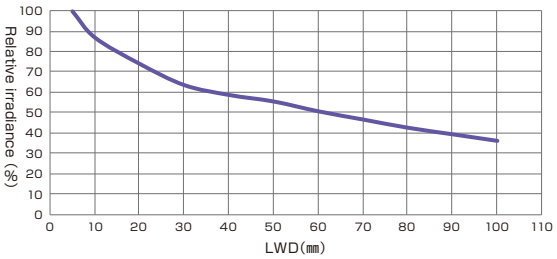


※1 Irradiance on the optical axis
※2 Illuminating distance from the Light Unit to the workpiece

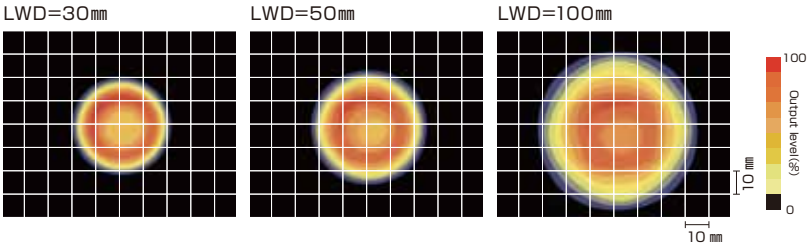
HLV2-24UV3-365

■ Relative irradiance graph (LWD characteristics)

※1 ※2



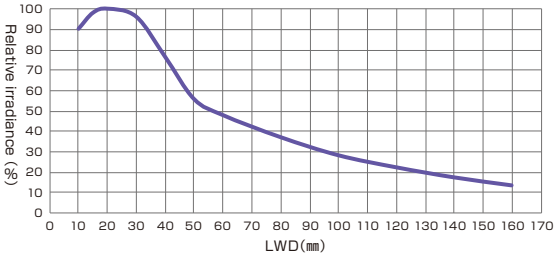
■ Uniformity (Relative irradiance)



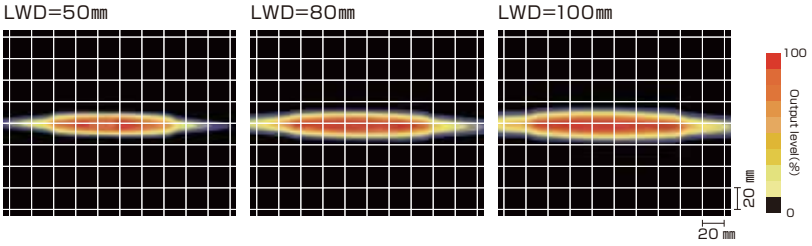
LN-61UV3-365

■ Relative irradiance graph (LWD characteristics)

※1 ※2



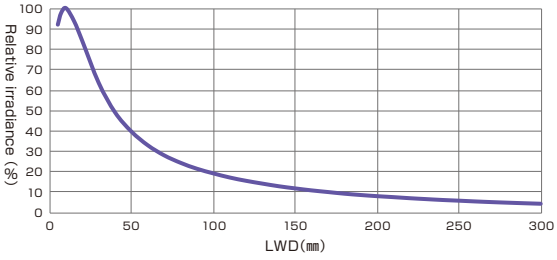
■ Uniformity (Relative irradiance)



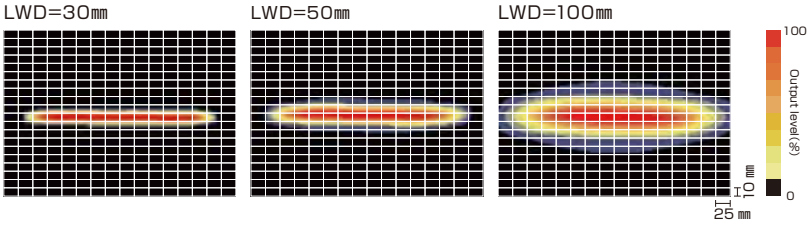
LNSP-300UV3-365-FN (Narrow type)

■ Relative irradiance graph (LWD characteristics)

※1 ※2



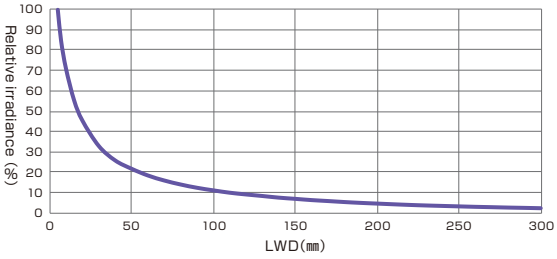
■ Uniformity (Relative irradiance)



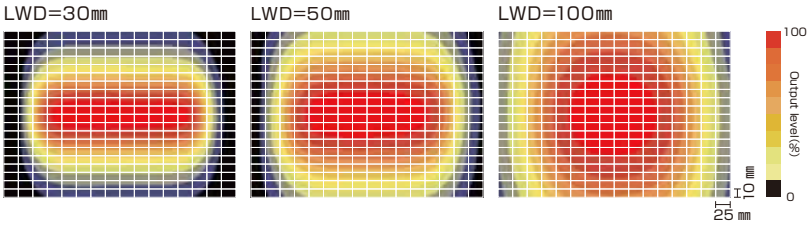
LNSP-300UV3-365-FNNR (Wide type)

■ Relative irradiance graph (LWD characteristics)

※1 ※2



■ Uniformity (Relative irradiance)



※1 Irradiance on the optical axis
※2 Illuminating distance from the Light Unit to the workpiece

Common Specifications

LED color	365nm:Ultraviolet、385/395/405nm:Violet
Operating environment (indoors only)	Temperature: 0 to 40° C, Humidity: 20 to 85% RH (non-condensing)
Storage environment	Temperature: -20 to 60° C, Humidity: 20 to 85% RH (non-condensing)

Cooling method	Natural air-cooling ※LNSP-FN uses forced air-cooling
CE marking	Safety standard: Conforms to EN 62471
Environmental regulations	RoHS and REACH compliant

Lens Filters (Options)

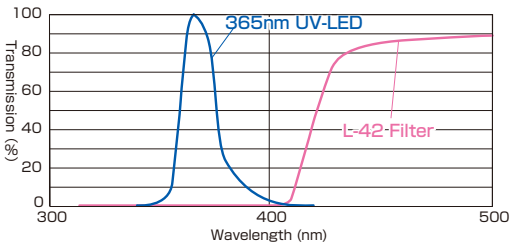
Ultraviolet cutting filters

Blocks light with a wavelength of 420 nm or lower, transmits light with a longer wavelength.

L42 series

Model name	Screw hole diam. × Screw pitch
L42-25	M25.5 × P0.5
L42-27	M27.0 × P0.5
L42-30	M30.5 × P0.5
L42-40	M40.5 × P0.5
L42-46	M46.0 × P0.75

Filter Characteristics and UV-LED Spectral Distribution

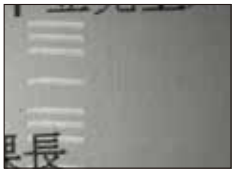


Examples

Workpiece

Postcard

Without ultraviolet cutting filter



Without a filter, both UV and visible light are captured.

With ultraviolet cutting filter

By using a UV cut filter, only the excited scattering light from the ink will be captured.

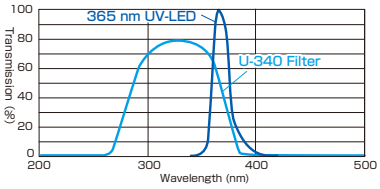
Ultraviolet transmission filters

Transmits light with wavelength range of approx. 280 nm to 380 nm, centered around 340 nm.

U340 series

Model name	Screw hole diam. × Screw pitch
U340-25	M25.5 × P0.5
U340-27	M27.0 × P0.5
U340-30	M30.5 × P0.5
U340-40	M40.5 × P0.5
U340-46	M46.0 × P0.75

Characteristics of UV Transmission Filter and UV-LED Spectral Distribution



Band-pass filters

Transmits light with a specific range of wavelength and is available for a wide range of fluorescent wavelengths

F-BP series

- High transmittance at 90% or greater
- Hard coated filter with high durability
- Twelve-product lineup available for a wide range of wavelengths

Caution

● Please read the instruction guide before product use to ensure correct and safe use. ● Specifications and designs for product improvement may change without advance notice.
● Imaging examples shown on this flyer are provided as references for selecting lights. Please check the functions and conditions of the device and equipment before selecting. In addition, samples shown here are processed by CCS Inc. and may differ from the original quality and properties.

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