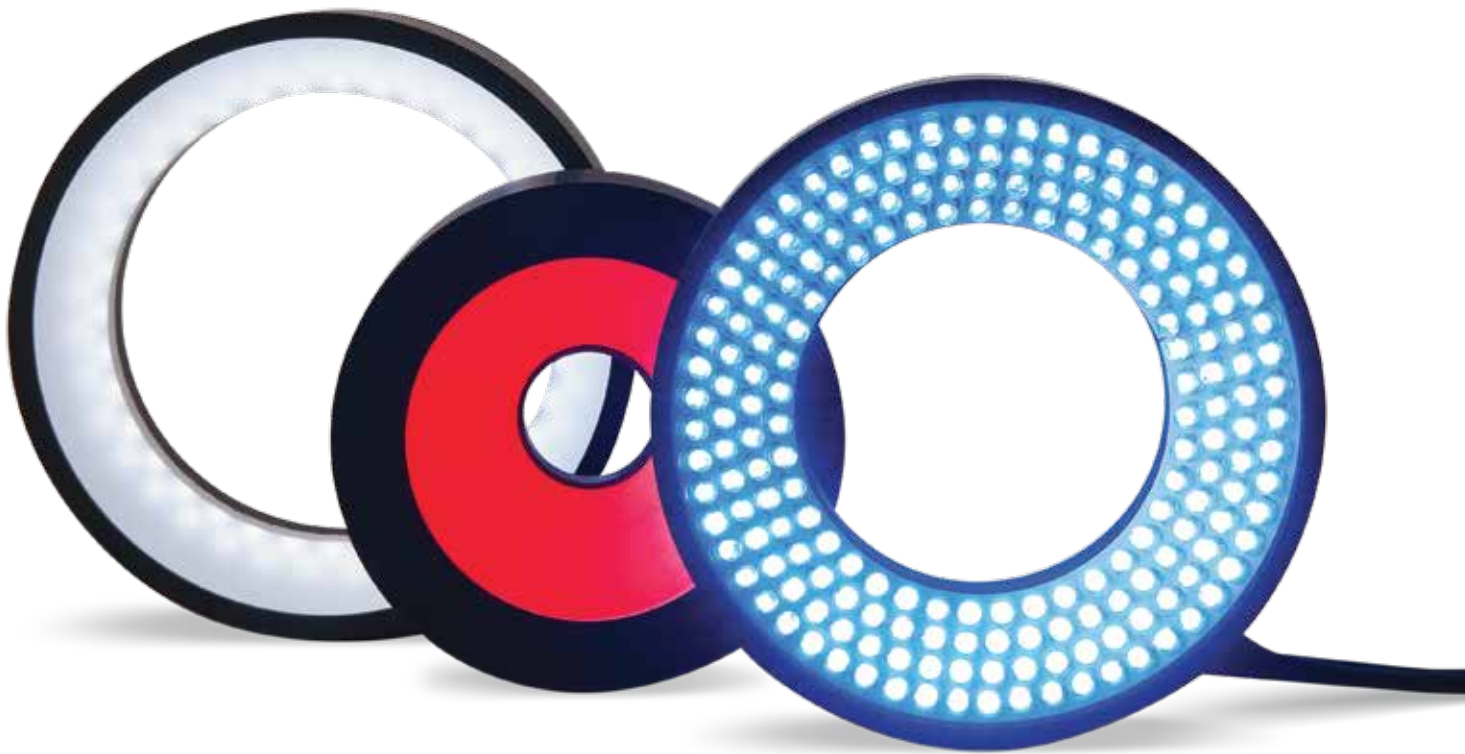




## MACHINE VISION LIGHTINGS DATA

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Powered by



**VS TECHNOLOGY**  
MACHINE VISION OPTICS

VER. 7.0  
(2018-2019)



## What is VAL?

“VAL” is the original brand under VS Technology Group.

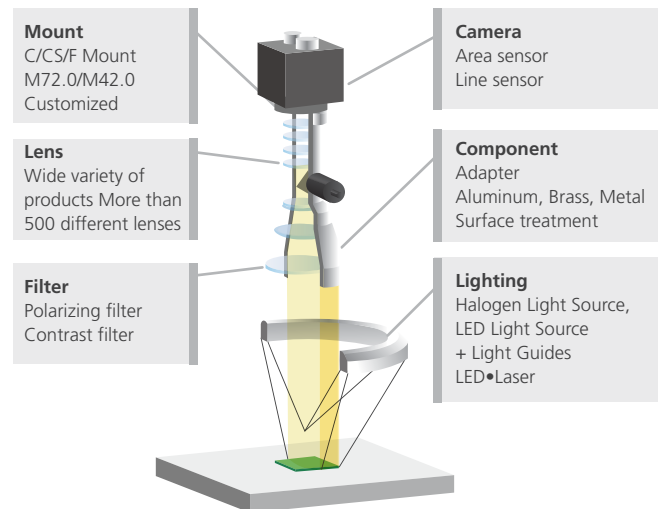
We delicately develop and manufacture valuable lighting products for worldwide machine vision market. Our goal is to be valuable company who supports various lighting applications in vision field.

### Advantage for customer

We always keep closely listening and considering what the customer needs in order to catch-up the latest market demands and grow together with customer. Additionally, our compact business organization enables us to take action as fast as possible to generate the highest customer satisfaction.

## Why lighting is important for Vision System?

Using correct lighting unit is as important as proper camera and lens. Light must reflect off the object and collected by the lens in order to get required image for every project. The lighting unit should be selected depending on the object to get sharp image (good enough contrast) of characteristic, marks, defect etc. Since the light reflects from the object in different ways depending on surface and shape, material, there is no lighting unit which able to cover all object and all points need to capture. So it is important to choose an optimized lighting unit and set-up correctly each vision system. (Please refer technical resource for more details.)



Work together to make the best optical solution with customers



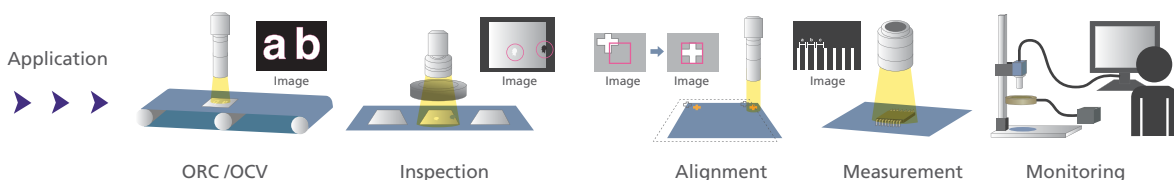
+



=



We support customer project to find out the best optical solution of both of lens and lighting through each regional VS Technology (Thailand) Co.,Ltd. or our partner. Please feel free to contact us. [www.vst.co.jp/en](http://www.vst.co.jp/en)



VAL OFFERS THE PRODUCTS ANSWERING  
CUSTOMER'S NEEDS IN TERMS OF...



## Contents



## POWER SUPPLY & CONTROLLER

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LED Power Supply (Ethernet)	VLP	53
LED Strobe Power Supply	VLPS	54
LED Power Supply (1CH)	VLP	55

### Customized or OEM Products.

Capable to produce tailor-made products and OEM even one piece. Our know-how and long-term experience enable us to provide various ideal items.

Ex.) Multi-angle light unit / RGB (multi-color) light unit / Segment light unit / multi-function control unit etc.



\* All of sample images which are shown in this catalogue is not customer project. All sample objects belong to VS Technology (Thailand) Co., Ltd. as we purchased by ourselves.

## OUR EXPERIENCED MARKET

- Electronics
- Semi-conductor
- Automobile
- Flat panel display
- Food & Beverage
- Packaging
- Etc.

## LED LIGHTING AND OPTIONS



Description	Series	Page
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Options	-	45
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# AREA LIGHT



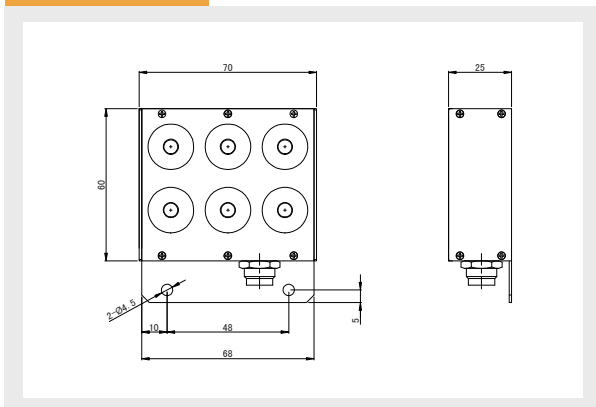
## VL-A01 SERIES

- Direct 24V in design.
- Built in overdrive mode.
- M12 connector design.
- Compact size and light weight.
- RoHS compliant.

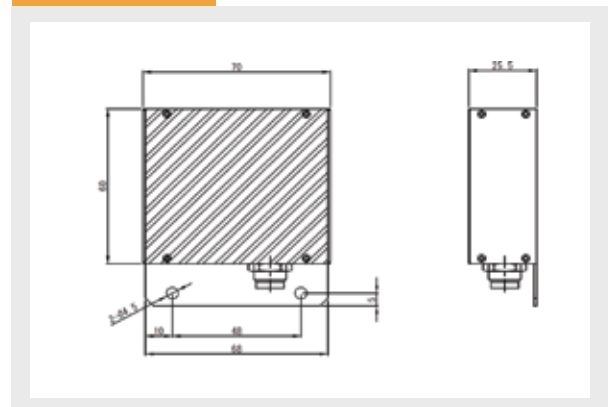
Model No.	VL-A01W-1	VL-A01W-E1
Color	○ White	
Input Voltage	DC24V (min. 22V / max. 26V)	
Max. Input Current	0.5A (strobe mode) / 0.1A (Continuous mode)	
Intensity Control	Analog 0 - 10V, 0V=10% / 10V =100%	
Strobe Mode	When trigger < 5mS / Duty cycle 1:10 (10%)	
Trigger Input	DC 5 ~ 24V	
Trigger Delay	max. 10usec	

\* VL-A01 series is not available to use with VLP / VLC series because the lighting unit require trigger signal to turn on the light.

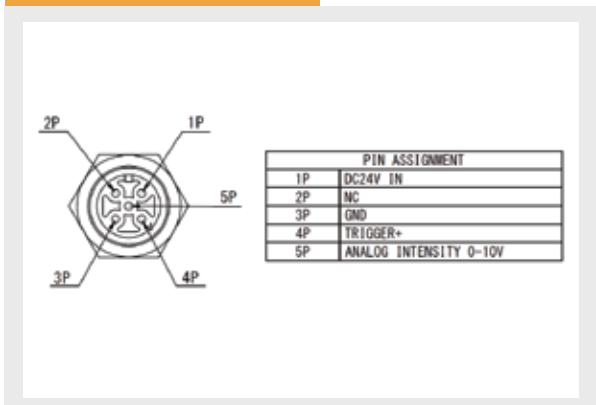
VL-A01\*-1



VL-A01\*E1



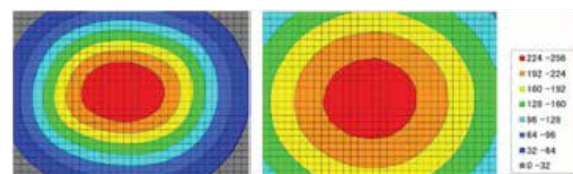
Connector M12 5-PIN MALE



### LIGHT DISTRIBUTION

VL-A01W-1, FOV(H) 100mm.  
Data A: LWD100mm / exposure time 150us.  
Data B: LWD270mm / exposuer time 500us.

VL-A01W-E1 (Diffused type) provide more better even light though the peak brightness level is lower than VL-A01W-1 (Lens type).



Data A

Data B



## VL-AB-1 SERIES

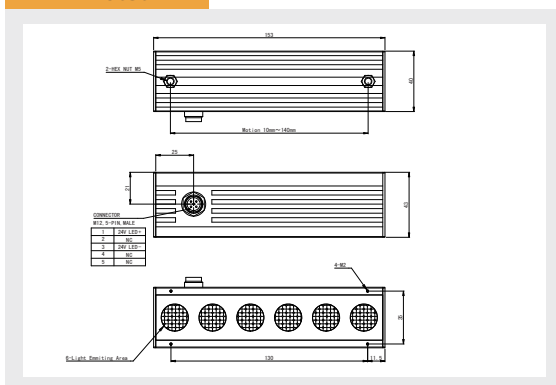
- Suitable for Long WD (>150mm)
- Suitable for Large FOV.
- Compact design and light weight.
- PWM control only for brightness adjutment.
- Daisy chain type is available.
- M12 connector design.
- RoHS compliant.

Model No.	Color	Dimension of Lighting-Area (mm)	Power Consumption (Max.)	Optionaal Diffuser Plate Model No.
VL-AB15030R-1	● Red	150 x 30	24V	DP-AB15030-02
VL-AB15030W-1	○ White			
VL-AB30030R-1	● Red	300 x 30	24V	DP-AB30030-02
VL-AB30030W-1	○ White			
VL-AB45030R-1	● Red	450 x 30	24V	DP-AB45030-02
VL-AB45030W-1	○ White			
VL-AB75030R-1	● Red	750 x 30	24V	DP-AB75030-02
VL-AB75030W-1	○ White			

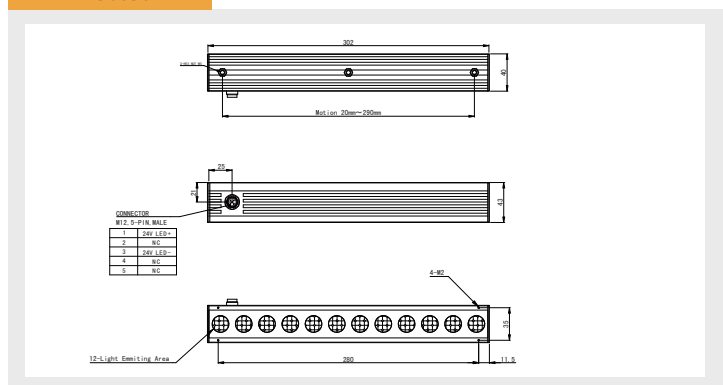
### Optional Cable

Model No.	Connector (Lighting unit side)	Connector (Power supply side)	Cable length (mm)
VL-ECM12-2	M12 (5pin) Female	M12 (5pin) Male	L = 2000
VL-ECM12-3P	M12 (5pin) Female	SM 3Pin Male	L = 500

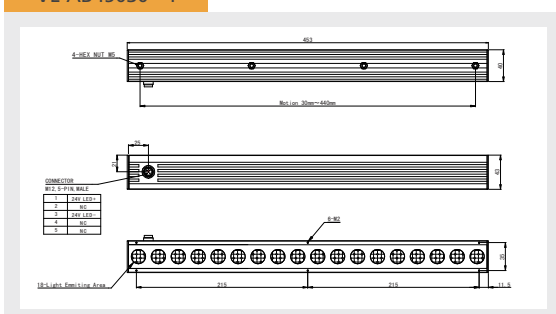
### VL-AB15030\*-1



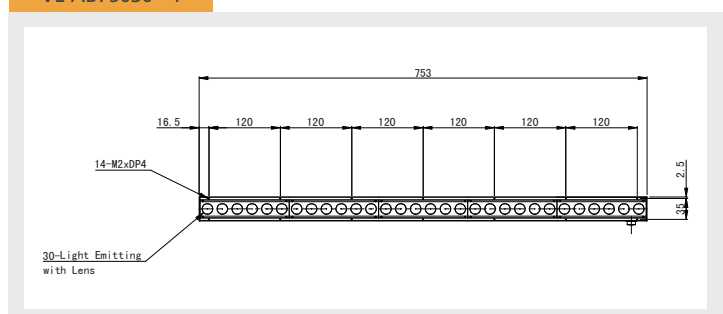
### VL-AB30030\*-1



### VL-AB45030\*-1



### VL-AB75030\*-1



# DIRECT SQUARE LIGHT



## VL-ADS SERIES

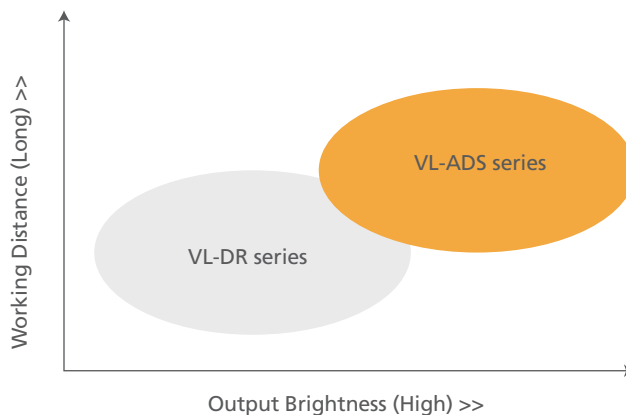
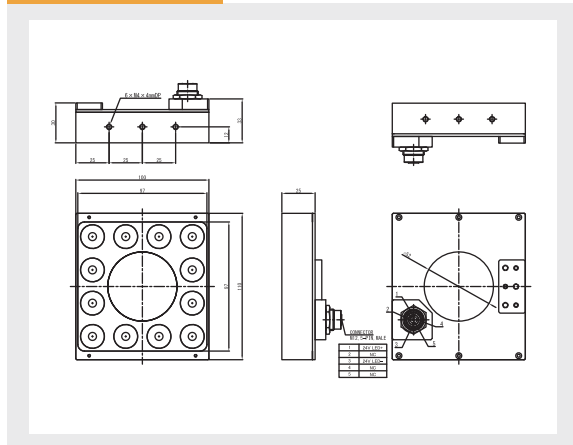
- Suitable for various inspection applications.
- Higher brightness than previous ring-light.
- M12 connector design.
- RoHS Compliant.

Model No.	Color	Internal Ring Dia. (mm)	Dimension (mm)	Power Consumption (Max.)	Optional Diffuser Plate Model No.
VL-ADS1010R	● Red	φ52	100 x 100	24V	DP-ADS1010-01
VL-ADS1010W	○ White			18.2W	
				22.4W	

Optional Cable for ADS series

Model No.	Details	Cable Length
VL-ECM12-3P	M12 - 3P connector cable	500 mm
VL-ECM12-2	M12 - M12 connector cable	2000 mm

### VL-ADS1010\*



VL-ADS is suitable for long working distance, the recommended working distance is 150 ~ 300mm. The lighting effect of VL-ADS is brighter than previous VL-DR series at the long working distance condition. Suitable for OCR / OCV / Packaging inspection / Robot vision application etc. We're capable to provide other color such as Green / Blue depends on customer needs. And also able to provide optional cables, external cable / fly on wire cable etc.

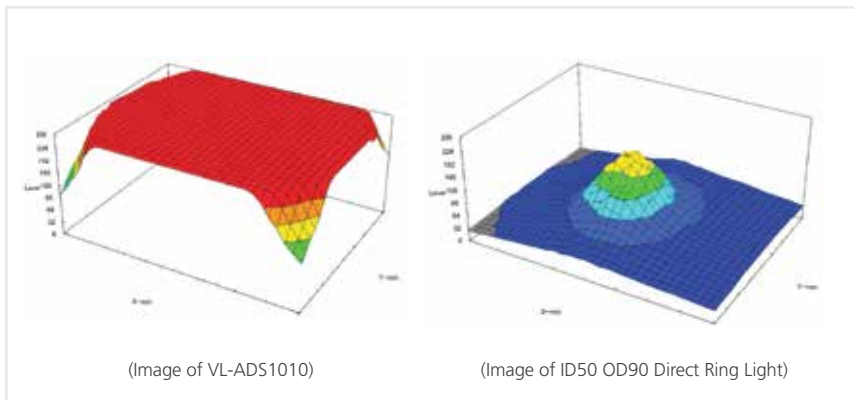


Image comparison between VL-ADS1010 and common ID50 / OD90 mm Direct Ring light at Lighting WD 200mm. The brightness is totally different and easy to understand the advantage of VL-ADS1010.



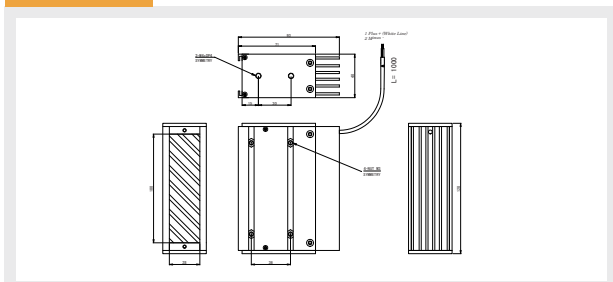


## VL-LB SERIES

- High-Power LED Line Light.
- 2models L=100mm / 200mm.
- Recommended LWD is 50~100mm.
- Affordable cost.
- RoHS compliant.

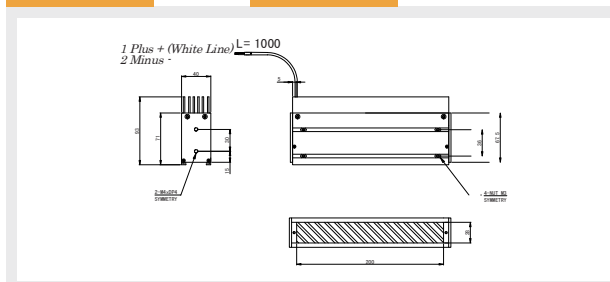
Model No.	Color	Lighting Area	Input Current (max.)	Connector
VL-LB1-100W	○ White	100mm	24V / 0.8A	Open Wire
VL-LB1-200W	○ White	200mm	24V / 1.6A	Open Wire
VL-LB1-300W	○ White	300mm	24V / 2.4A	Open Wire
VL-LB3-200W	○ White	200mm	24V / 2.5A	Open Wire
VL-LB3-400W	○ White	400mm	24V / 2.5A (x 2CH)	Open Wire

VL-LB1-100\*

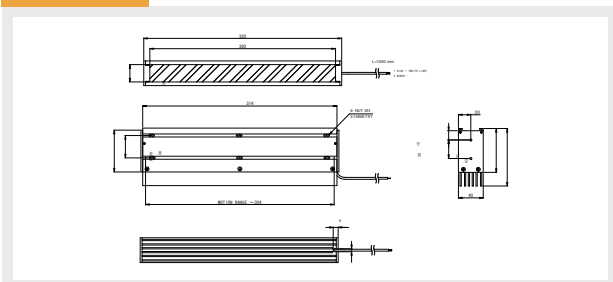


VL-LB1-200\*

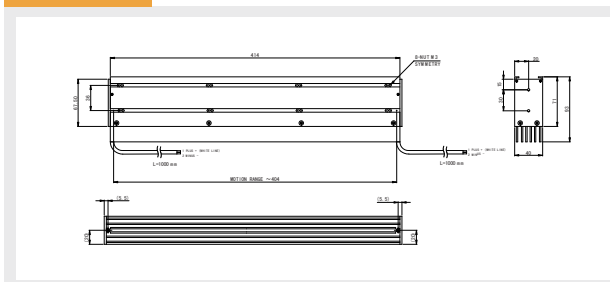
VL-LB3-200\*



VL-LB1-300\*

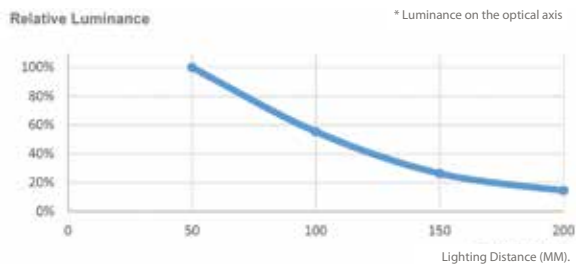
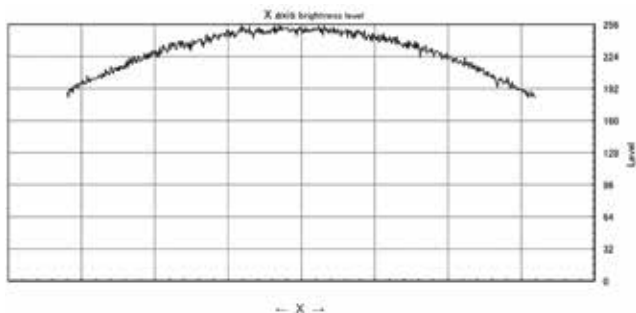


VL-LB3-400\*



### TECHNICAL INFORMATION

Condition: VL-LB1-100W max. brightness at LWD 100mm (FOV 90mm). The Luminance at WD50mm is 516,000 liux.



Remark: technical data is a reference data. All the information above are measured by our own equipment. The value will be changed depends on the conditions and method. The data does not guarantee the performance.

# DIRECT RING LIGHT

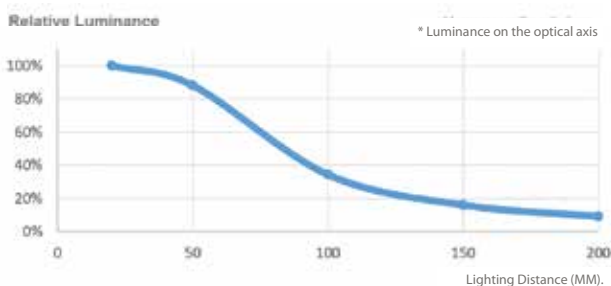
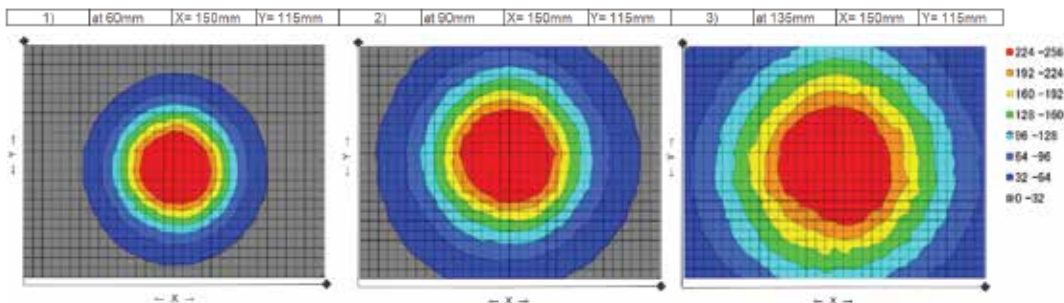


## VL-DR SERIES

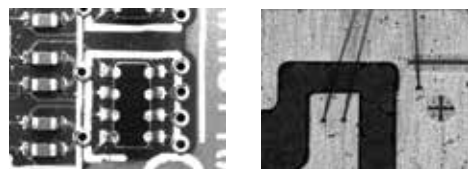
- Suitable for various inspection applications.
- Easy and flexible installation and adjustment with 360 degree lighting.
- RoHS Compliant.

Model No.	Color	Internal Ring Dia. (mm)	External Ring Dia. (mm)	Power Consumption (Max.)	Optional Parts Model No.
VL-DR1648R	● Red	φ 16	φ 48	24V	2.0W 3.1W 3.5W
VL-DR1648W	○ White				
VL-DR1648B	● Blue				
VL-DR2850R	● Red	φ 28	φ 50	24V	1.7W 2.5W 2.7W
VL-DR2850W	○ White				
VL-DR2850B	● Blue				
VL-DR3066R	● Red	φ 30	φ 66	24V	3.3W 5.1W 5.9W
VL-DR3066W	○ White				
VL-DR3066B	● Blue				
VL-DR5090R	● Red	φ 50	φ 90	24V	7.0W 10.0W 11.1W
VL-DR5090W	○ White				
VL-DR5090B	● Blue				
VL-DR3090R	● Red	φ 30	φ 90	24V	7.4W 10.6W 11.8W
VL-DR3090W	○ White				
VL-DR3090B	● Blue				
VL-DR60120R	● Red	φ 60	φ 120	24V	13.1W 17.6W 19.6W
VL-DR60120W	○ White				
VL-DR60120B	● Blue				

### Optional Diffuser Plate For VL-DR Series

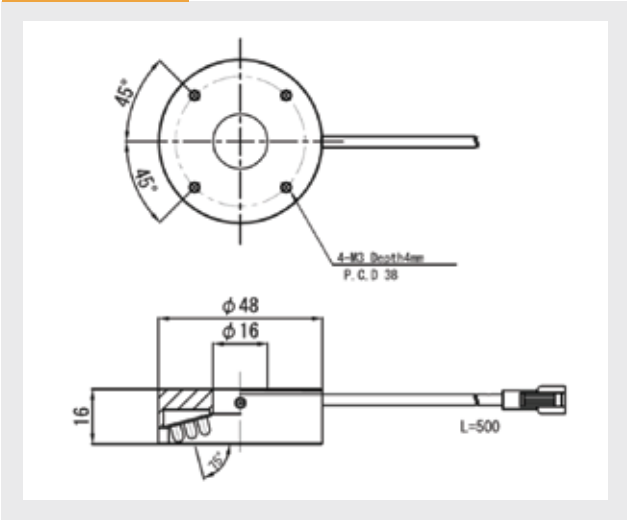


Sample Image of VL-DR.

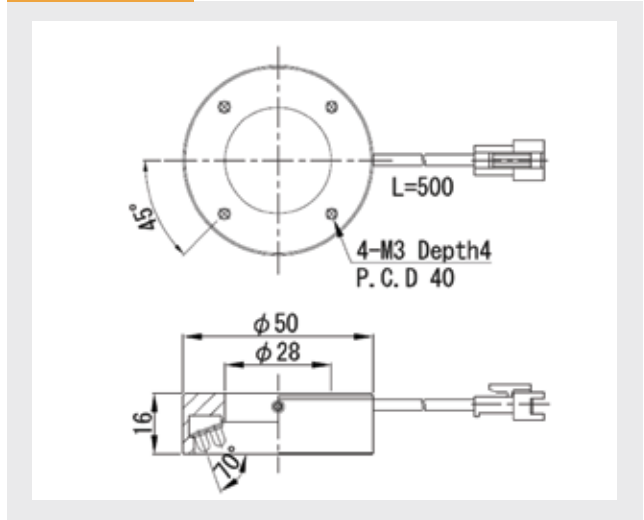




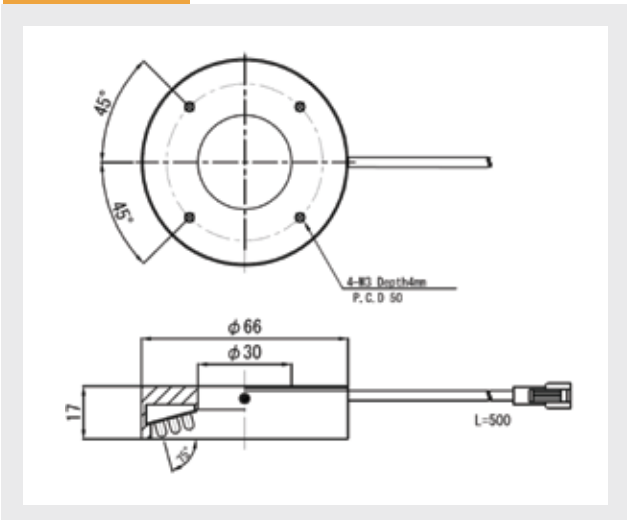
VL-DR1648\*



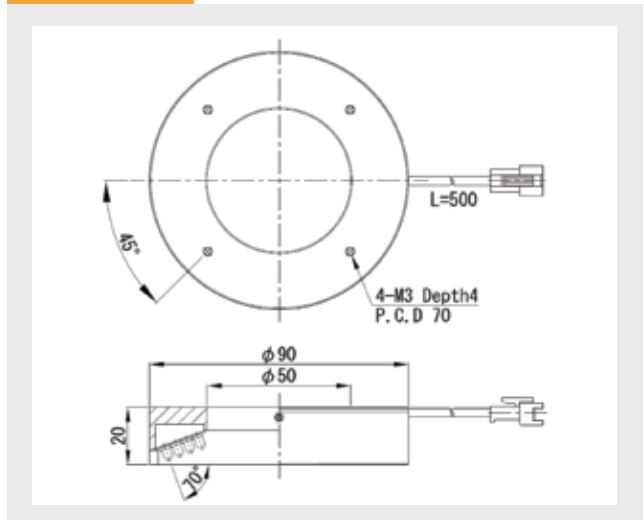
VL-DR2850\*



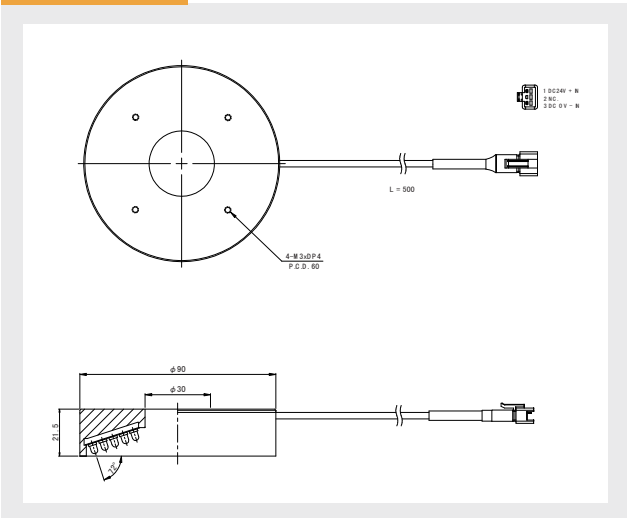
VL-DR3066\*



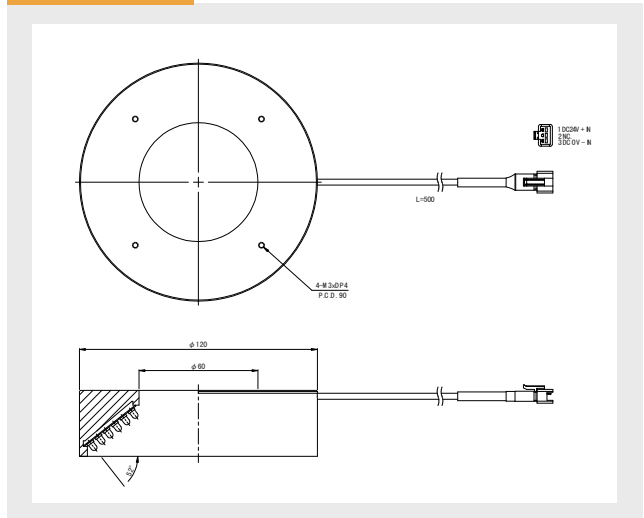
VL-DR5090\*



VL-DR3090\*



VL-DR60120\*



# LOW ANGLE RING LIGHT



## VL-LR SERIES

- Suitable for various inspection applications.
- Low angle light provides different image from Direct Ring light image.
- RoHS Compliant.

Model No.	Color	Internal Ring Dia. (mm)	External Ring Dia. (mm)	Power Consumption (Max.)
VL-LR2550R	● Red	φ25	φ50	1.6W
VL-LR2550W	○ White			2.5W
VL-LR2550B	● Blue			2.9W
VL-LR4874R	● Red	φ48	φ74	2.9W
VL-LR4874W	○ White			4.3W
VL-LR4874B	● Blue			5.0W
VL-LR68100R	● Red	φ68	φ100	6.2W
VL-LR68100W	○ White			8.8W
VL-LR68100B	● Blue			9.7W
VL-LR96132R	● Red	φ96	φ132	8.5W
VL-LR96132W	○ White			13.4W
VL-LR96132B	● Blue			15.2W
VL-LR134170R	● Red	φ134	φ170	10.0W
VL-LR134170W	○ White			16.9W
VL-LR134170B	● Blue			18.7W

Sample image comparison between VL-LR and VL-DR.



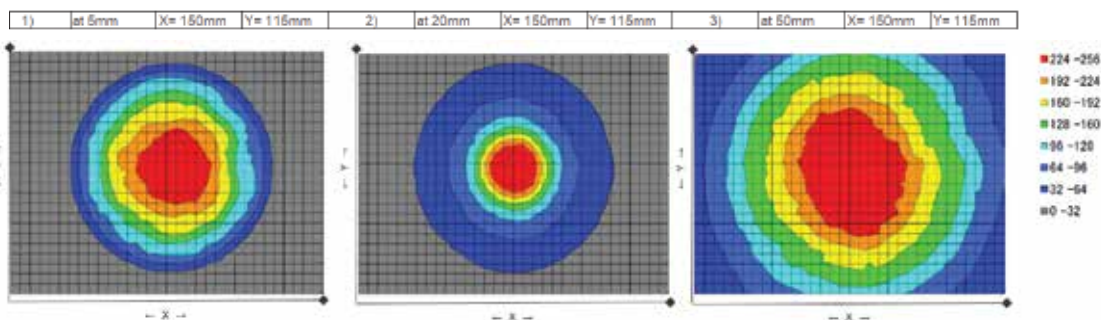
VL-LR



VL-DR

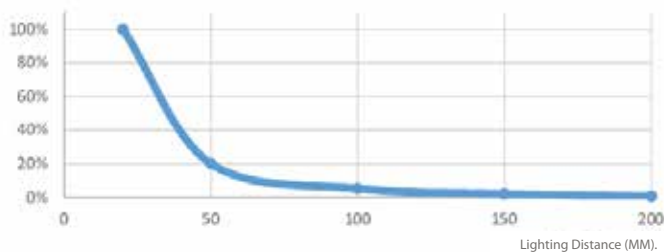
### Brightness Distribution

Example: VL-LR68100W (125,000lux at LWD20mm)



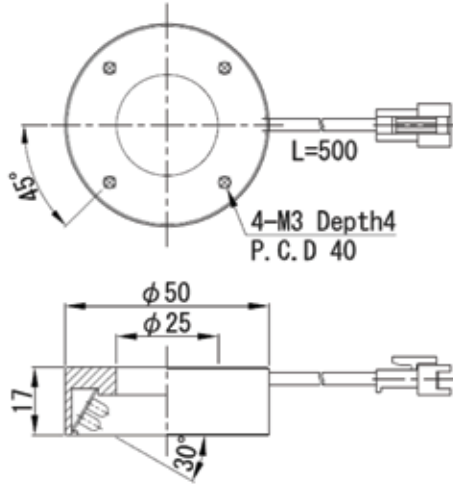
Relative Luminance

\* Luminance on the optical axis

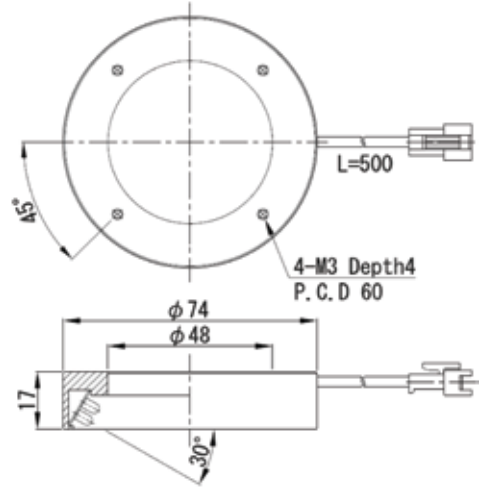


# LOW ANGLE RING LIGHT

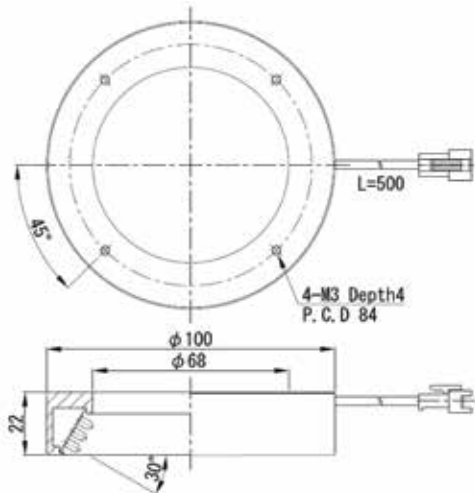
VL-LR2550\*



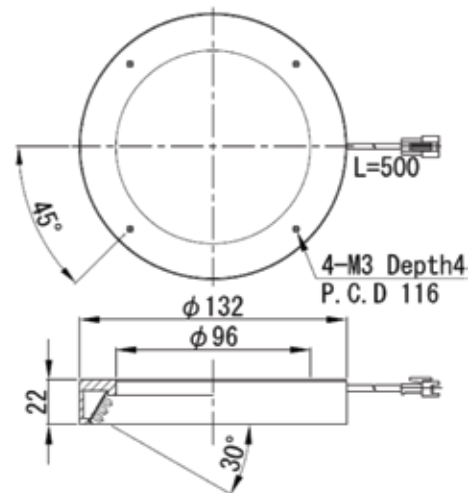
VL-LR4874\*



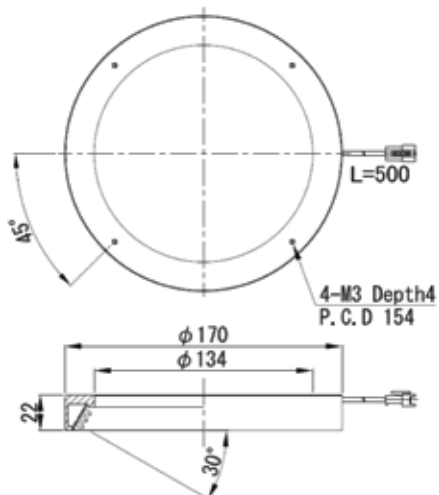
VL-LR68100\*



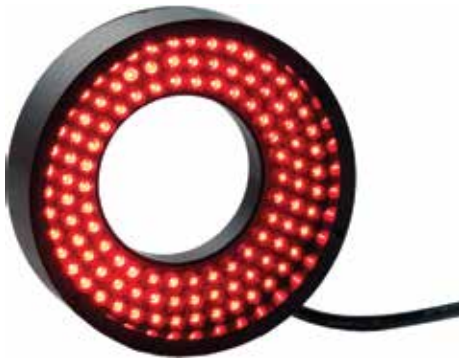
VL-LR96132\*



VL-LR134170\*



# FLAT RING LIGHT

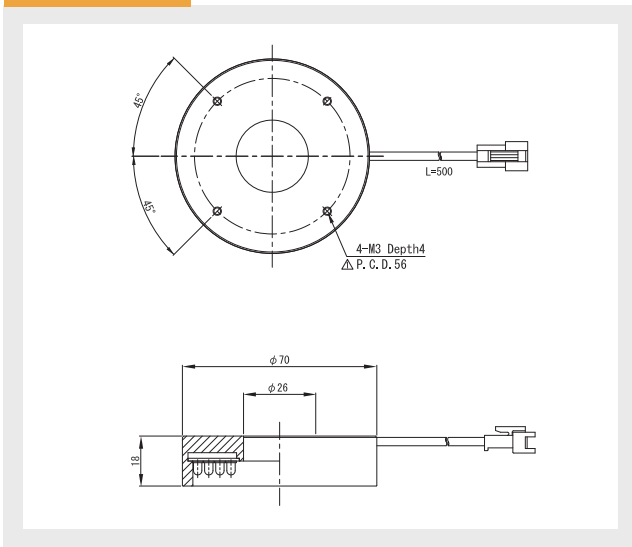


## VL-FR SERIES

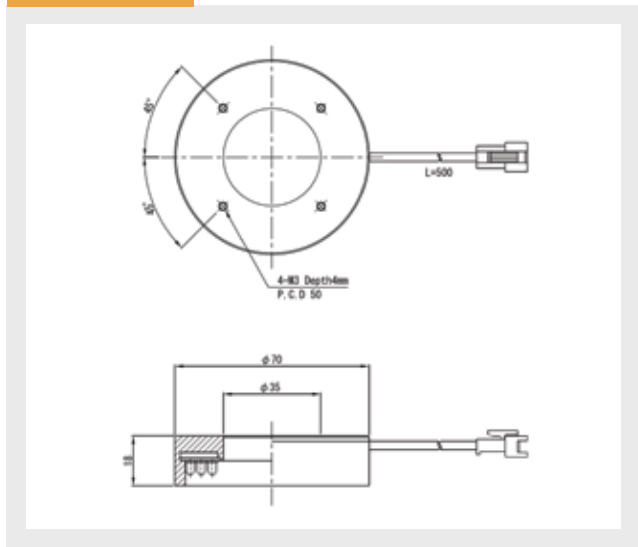
- Suitable for various inspection applications.
- Easy and flexible installation and adjustment with 360 degree lighting.
- RoHS Compliant.

Model No.	Color	Internal Ring Dia. (mm)	External Ring Dia. (mm)	Power Consumption (Max.)	Optionl Parts Model No.
VL-FR2670R	● Red	φ26	φ70	24V	DP-FR2670-01 (Diffuser plate)
VL-FR2670W	○ White			4.6W	
VL-FR2670B	● Blue			5.8W	
VL-FR3570R	● Red	φ35	φ70	24V	DP-FR3570-01 (Diffuser plate) PL-FR3570-01 (Polarizer plate)
VL-FR3570W	○ White			3.8W	
VL-FR3570B	● Blue			5.7W	
					6.0W

VL-FR2670\*



VL-FR3570\*



Sample image of VL-FR.



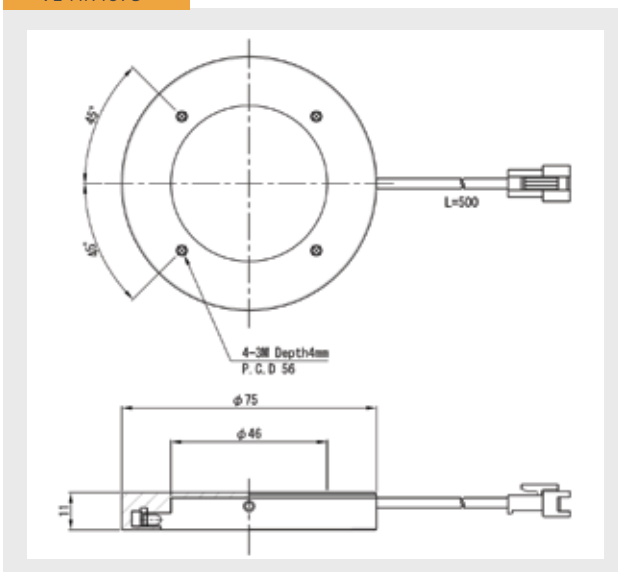


## VL-HR SERIES

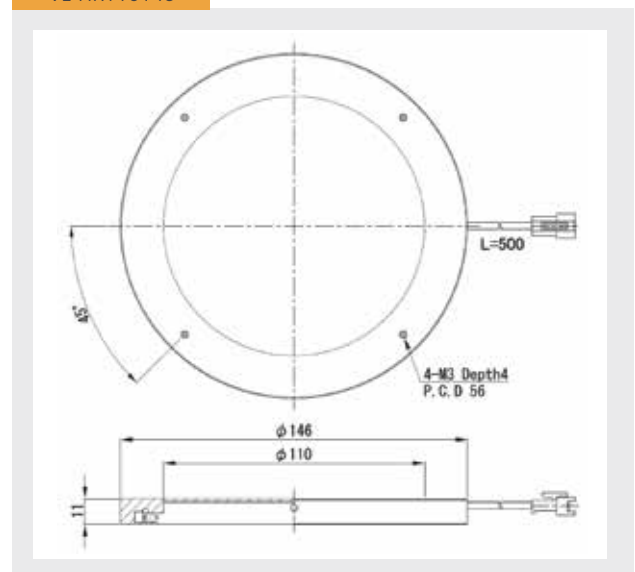
- Suitable for the detection of small convex and concave defects on surface.
- Ideal to emphasize the edge-crack.
- RoHS Compliant.

Model No.	Color	Internal Ring Dia. (mm)	External Ring Dia. (mm)	Power Consumption (Max.)	
VL-HR4675R	● Red	φ46	φ75	24V	1.6W
VL-HR4675W	○ White				2.6W
VL-HR4675B	● Blue				2.7W
VL-HR110146R	● Red	φ 110	φ 146	24V	3.1W
VL-HR110146W	○ White				5.0W
VL-HR110146B	● Blue				5.6W

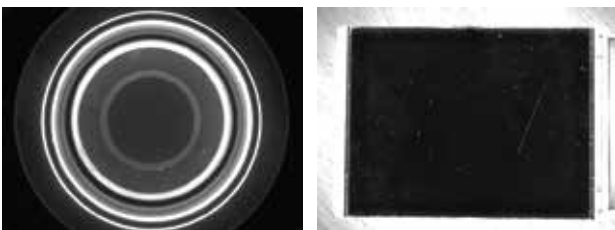
VL-HR4675\*



VL-HR110146\*



Sample Image of VL-HR. Surface edge / fiber / dust / crack etc.



# FLAT RING LIGHT

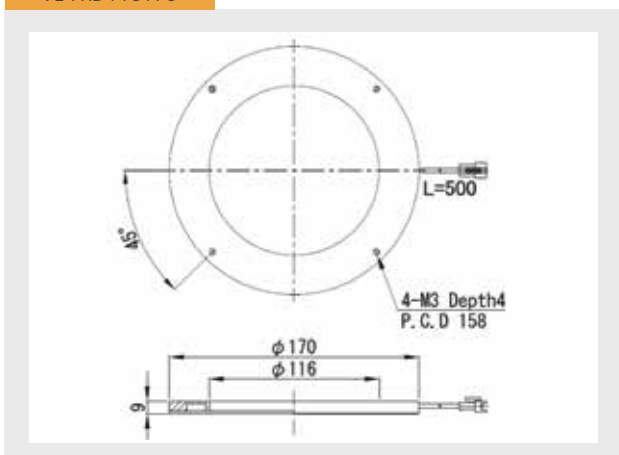


## VL-FRD SERIES

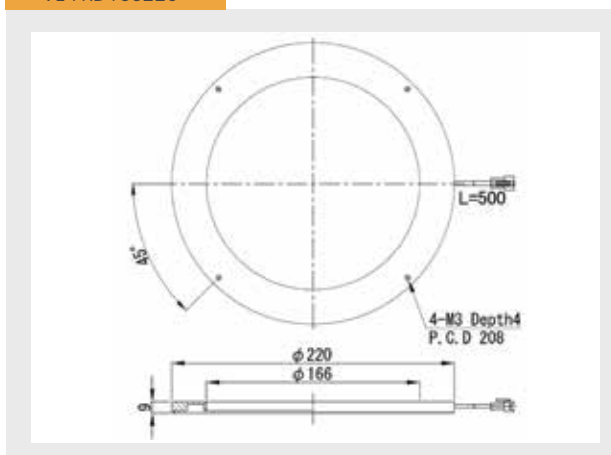
- Ultra Slim design for space constrained application.
- Suitable for large FOV application.
- Diffuser is attached as a standard package.
- RoHS Compliant.

Model No.	Color	Internal Ring Dia. (mm)	External Ring Dia. (mm)	Power Consumption (Max.)	
VL-FRD116170R	● Red	φ116	φ170	24V	
VL-FRD116170W	○ White				1.6W
VL-FRD116170B	● Blue				4.2W
VL-FRD166220R	● Red	φ 166	φ220	24V	
VL-FRD166220W	○ White				2.6W
VL-FRD166220B	● Blue				5.6W
VL-FRD266320R	● Red	φ 266	φ320	24V	
VL-FRD266320W	○ White				3.5W
VL-FRD266320B	● Blue				7.0W
					7.4W

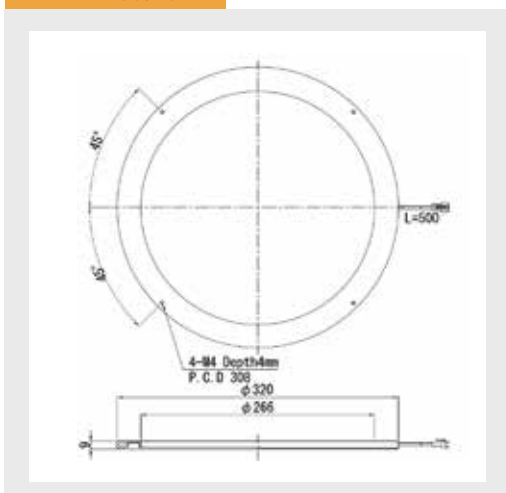
VL-FRD116170\*



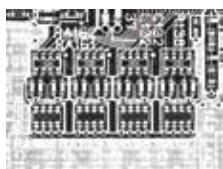
VL-FRD166220\*



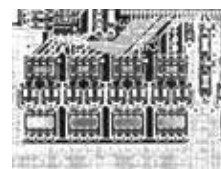
VL-FRD266320\*



Sample image comparison between VL-FR\*D and VL-DR model at same lighting Working Distance. VL-FRD image is more better contrast in this sample object.



Flat Ring Lighting



Direct Ring Lighting







## VL-BP SERIES

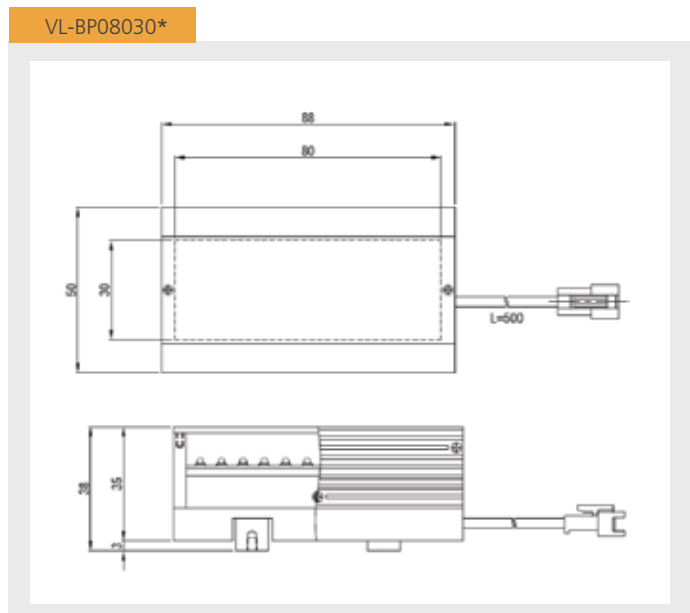
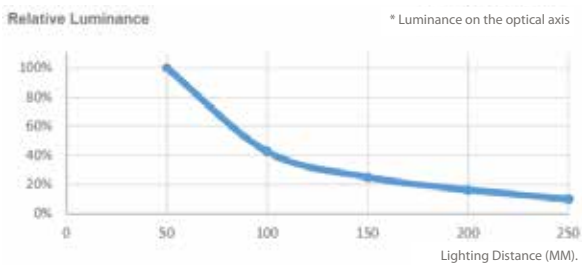
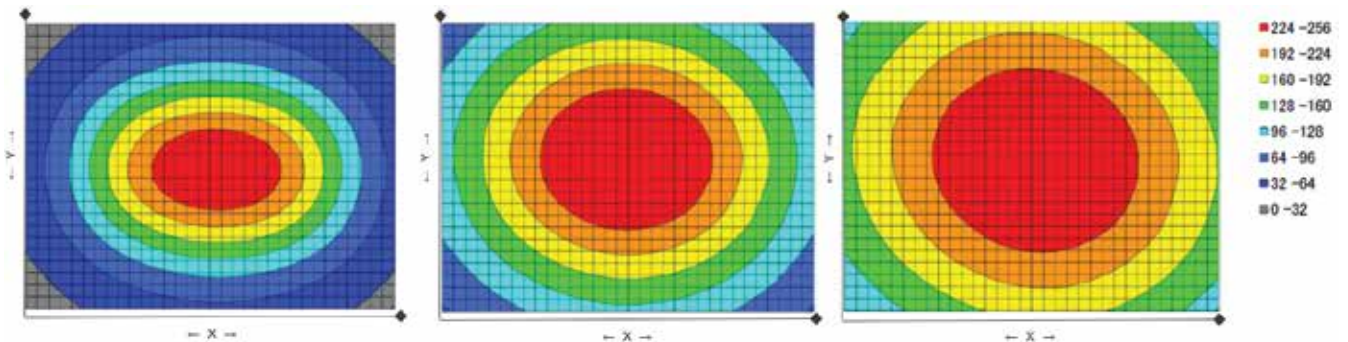
- Adjustable lighting angle according to the object shape.
- High brightness with direct light.
- Removable diffuser Plate is attached as standard package.
- RoHS Compliant.

Model No.	Color	Dimension of Lighting Area (mm)	Power Consumption (Max.)
VL-BP08030R	● Red	80 x 30	6.4W
VL-BPN08030W	○ White		24V
VL-BP08030B	● Blue		11.3W

### Brightness Distribution

Example: VL-LR68100W (125,000lux at LWD20mm)

1)	at 45mm	X= 130mm	Y= 98mm	2)	at 85mm	X= 130mm	Y= 98mm	3)	at 120mm	X= 130mm	Y= 98mm
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# BAR LIGHT



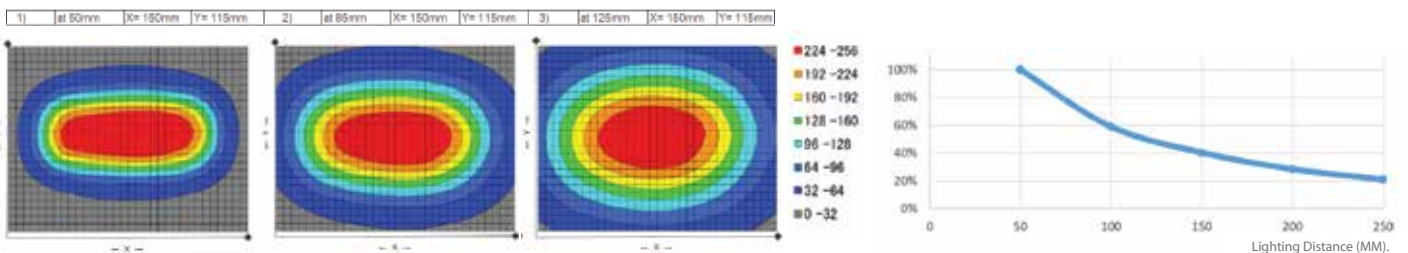
## VL-B SERIES

- Adjustable lighting angle according to the object shape.
- High brightness with direct light.
- RoHS Compliant.

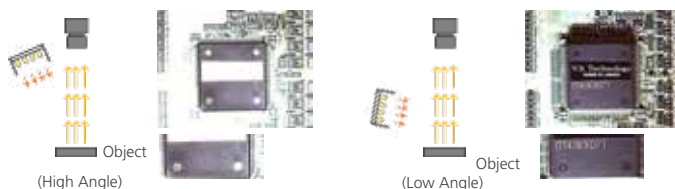
Model No.	Color	Dimension of Lighting Area (mm)	Power Consumption (Max.)	Optional Parts Model No.	
VL-B05015R	● Red	50 x 15	24V	DP-B05015-01 (Diffuser plate) PL-B05015-01 (Polarizer plate)	
VL-B05015W	○ White				1.2W
VL-B05015B	● Blue				1.9W
VL-B10015R	● Red	100 x 15	24V	DP-B10015-01 (Diffuser plate) PL-B10015-01 (Polarizer plate)	
VL-B10015W	○ White				2.1W
VL-B10015B	● Blue				2.5W
VL-B15015R	● Red	150 x 15	24V	DP-B15015-01 (Diffuser plate) PL-B15015-01 (Polarizer plate)	
VL-B15015W	○ White				3.7W
VL-B15015B	● Blue				5.7W
VL-B20015R	● Red	200 x 15	24V	DP-B20015-01 (Diffuser plate) PL-B20015-01 (Polarizer plate)	
VL-B20015W	○ White				6.4W
VL-B20015B	● Blue				8.1W
VL-B07530R	● Red	75 x 30	24V	DP-B07530-01 (Diffuser plate)	
VL-B07530W	○ White				3.9W
VL-B07530B	● Blue				8.1W
VL-B10030R	● Red	100 x 30	24V	DP-B10030-01 (Diffuser plate) PL-B10030-01 (Polarizer plate)	
VL-B10030W	○ White				8.4W
VL-B10030B	● Blue				5.0W
VL-B20030R	● Red	200 x 30	24V	DP-B20030-01 (Diffuser plate) PL-B20030-01 (Polarizer plate)	
VL-B20030W	○ White				11.2W
VL-B20030B	● Blue				12.3W
VL-B30030R	● Red	300 x 30	24V	DP-B30030-01 (Diffuser plate) PL-B30030-01 (Polarizer plate)	
VL-B30030W	○ White				8.5W
VL-B30030B	● Blue				21.4W
VL-B30030W	○ White	300 x 30	24V	DP-B30030-01 (Diffuser plate) PL-B30030-01 (Polarizer plate)	
VL-B30030R	● Red				30.0W
VL-B30030B	● Blue				30.0W

### Brightness Distribution

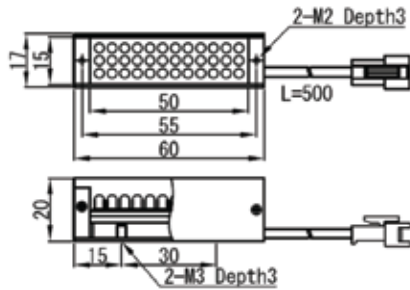
Example: VL-B10030W (67,000lux at LWD50mm)



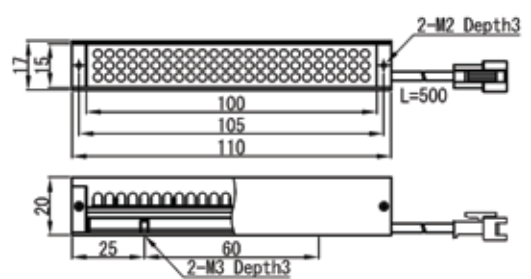
Sample image comparison in different lighting angle. It is possible to find out the best angle for your application.



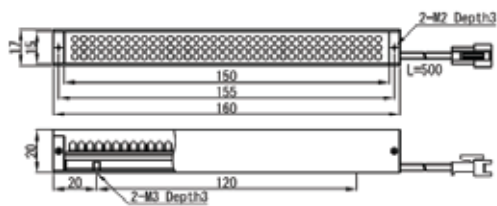
VL-B05015\*



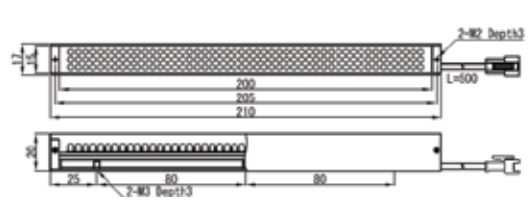
VL-B10015\*



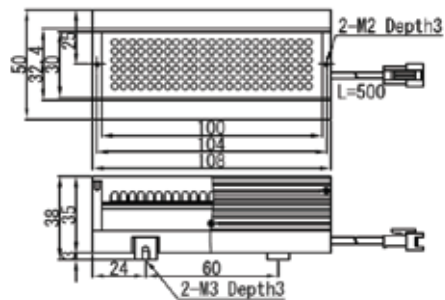
VL-B15015\*



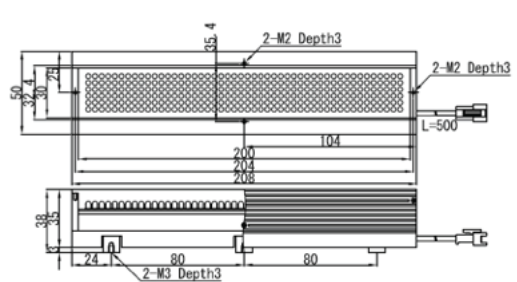
VL-B20015\*



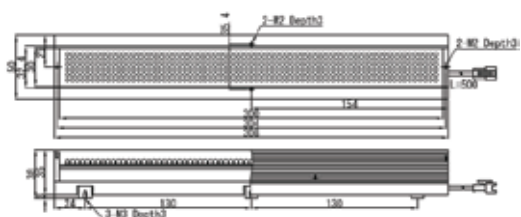
VL-B10030\*



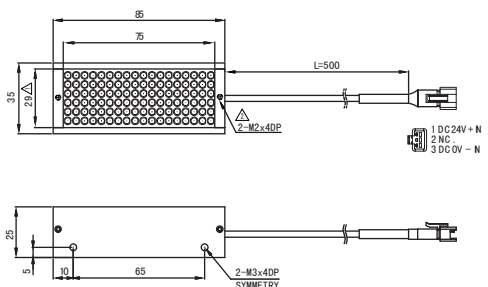
VL-B20030\*



VL-B30030\*



VL-B07530\*



# SQUARE ADAPTER WITH BAR LIGHT



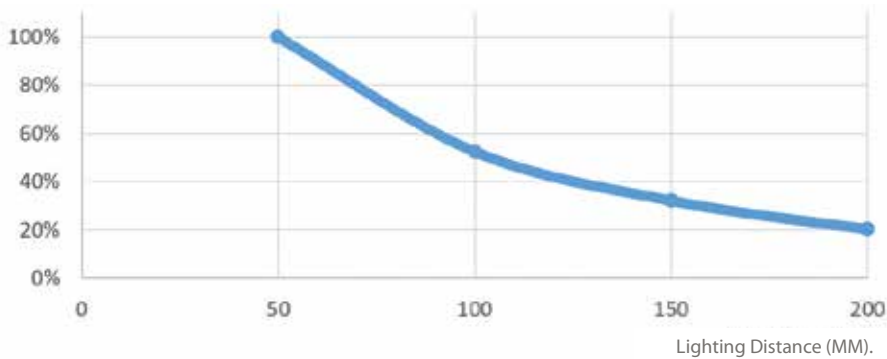
## VL-B-SQ4C SERIES

- Adjustable angle.
- Individual control by 4 Channels.
- Useful for various application.
- Available for customization.
- RoHS compliant.

Model No.	Color	Dimension of Lighting Area (mm)	Power Consumption (Max.)
VL-B08020W-SQ4C	○ White	80 x 20 ( x 4pcs)	24V
			3.7W / 1CH
			14.9W (4CH total)

### Relative Luminance

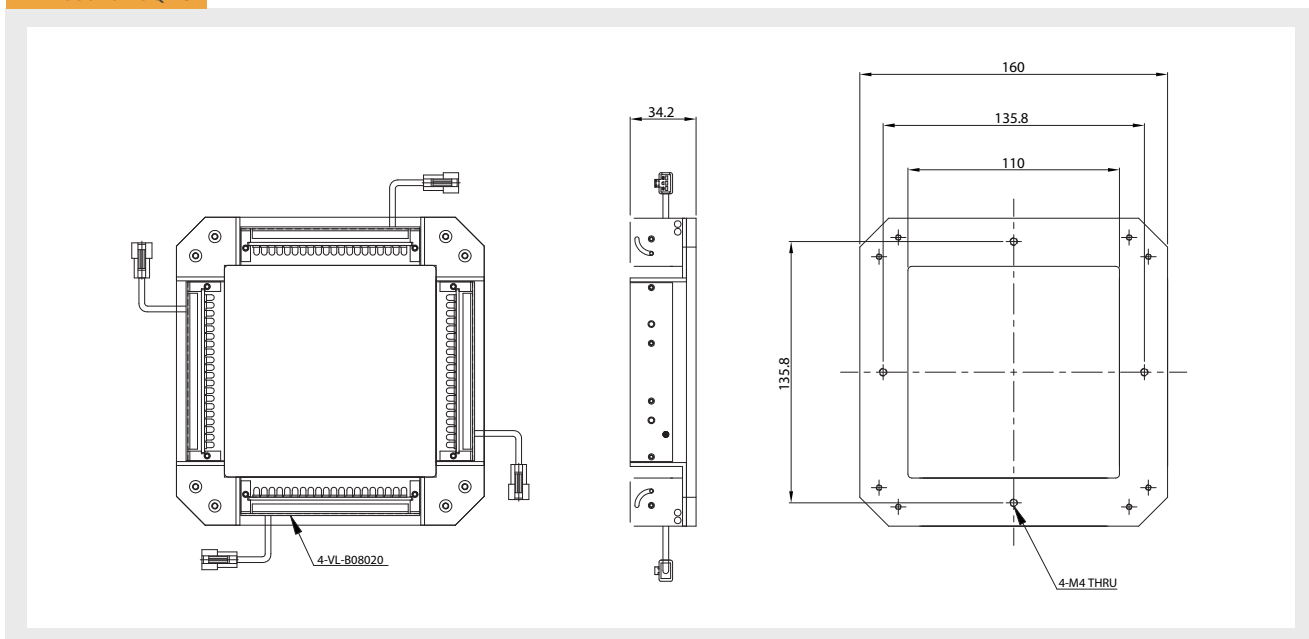
Example: VL-B08020W (59,000lux at LWD50mm) \*on the optical axis.



### Flexible design

Available to adjust the angle of each bar light and fix the position by M3 hex screw. Recommended power supply is VLP-2430-4 or VLC-2430-4 (controller).

### VL-B08020\*-SQ4C



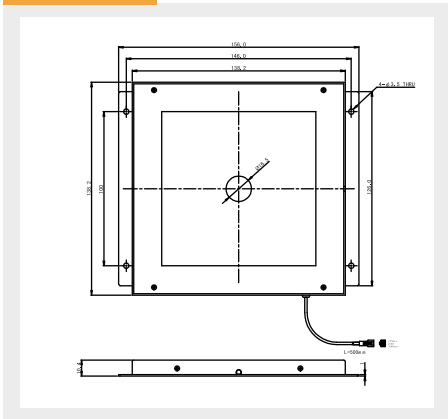


## VL-EBH SERIES

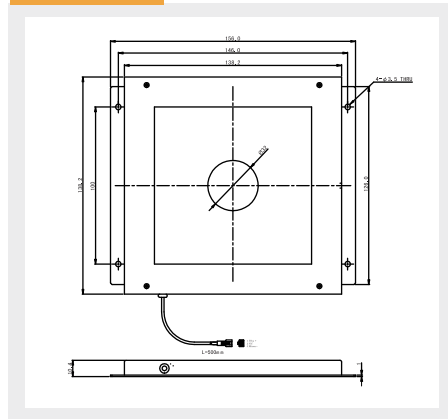
- Uniform light distribution.
- Suitable for Pick & Place / Positioning applications.
- RoHS Compliant.

Model No.	Color	Dimension of Lighting Area (mm)	Power Consumption (Max.)		Drawing
VL-EBH1010W	○ White	100 x 100	24V	9.3W	VL-EBH1010*
VL-EBH1010W-2	○ White	100 x 100	24V	12.0W	VL-EBH1010*-2
VL-EBH2121W	○ White	210 x 210	24V	9.9W	VL-EBH2121*
VL-EBH2121WH	○ White	210 x 210	24V	16.8W	VL-EBH2121*
VL-EBH3030W	○ White	300 x 300	24V	22.6W	VL-EBH3030*

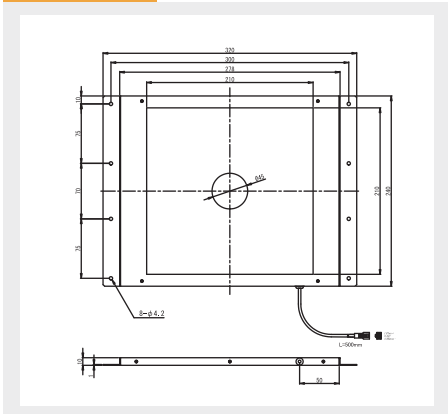
VL-EBH1010\*



VL-EBH1010\*-2



VL-EBH2121\*



VL-EBH3030\*

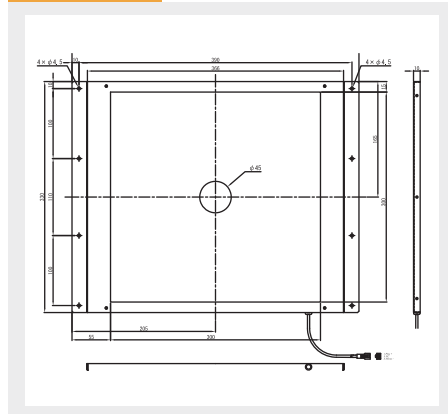


Image of EBH2121W



Image of Ring light + Diffuser.

Easy to see the difference and find out which one is suitable for image processing. Especially evenness in entire image, EBH provide better image than Ring light. These image captured same camera / lens / FOV / lighting working distance.

# TELECENTRIC LIGHTING



## VL-TLN SERIES

- Suitable for High-accuracy measurement.
- Improve the DOF of image with Telecentric Lens for camera side.
- Enables to get the image with high-level edge contrast
- Suitable Application is, Metal parts / Medical equipment / Electronics etc.

Model No.	Color	Lighting Area (mm)	Power Consumption (Max.)
VL-TLN30R	● Red	φ30	2.1V
VL-TLN30W	○ White		3.2V
VL-TLN30B	● Blue		3.2V
VL-TLN30G	● Green		3.2V
VL-TLN60R	● Red	φ60	2.1V
VL-TLN60W	○ White		3.2V
VL-TLN60B	● Blue		3.2V
VL-TLN60G	● Green		3.2V
VL-TLN100R	● Red	φ100	2.1V
VL-TLN100W	○ White		3.2V
VL-TLN100B	● Blue		3.2V
VL-TLN100G	● Green		3.2V
VL-TLN150R	● Red	φ150	2.1V
VL-TLN150W	○ White		3.2V
VL-TLN150B	● Blue		3.2V
VL-TLN150G	● Green		3.2V

### Optional Resistor Box for TLN series

Model No.	For	Connector (power supply side)
RB2407	24V power supply	3P / SMR-03V-B
RB1207	12V power supply	2P / SMR-02V-B

VL-TLN\* is designed for up to 700mA output power source. Can't use 24V or 12v power supply such as VS-PSA2410-1, VS-PSA1210-2 etc. without additional resistor box.

And the connector is SM connector (SMR-02V-B). Please choose correct power source which provides current Max. 700mA. We can provide register box which will be used between VL-TL60W and 24V power supply. Please ask us for more details.

### Optional Adapter

Model No.	Suitable lighting Unit
AD-TLN30-01	VL-TLN30*
AD-TLN60-01	VL-TLN60*
AD-TLN100-02	VL-TLN100*

### Optional Mirror Unit

Model No.	Suitable lighting Unit
RAU-TL30-M1	Right Angle mirror unit for TLN30
CAU-TL30-M1	Co-axial mirror unit for TLN30

Image comparison TL60 and standard back light.

Easy to find the difference between VL-TL60 image and general back light image. Enables to get the image which has high-level contrast in entire field of view without light reflection.



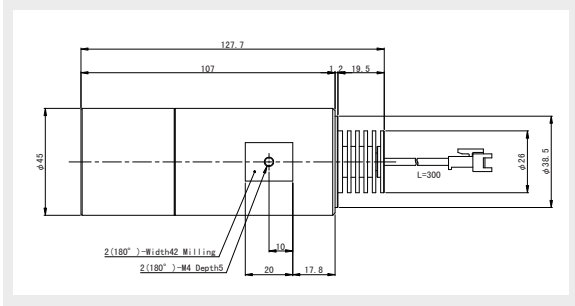
Image of VL-TL60



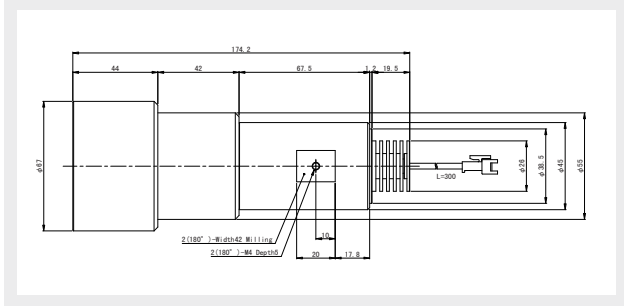
Image of Back Light



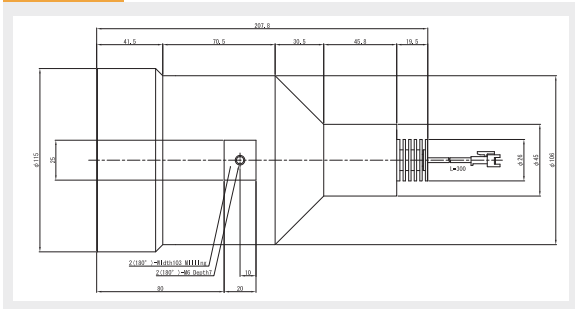
VL-TLN30\*



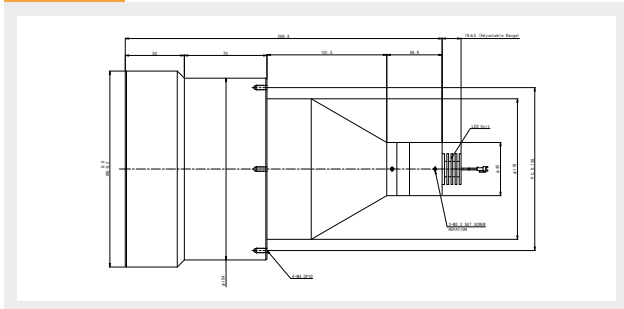
VL-TLN60\*



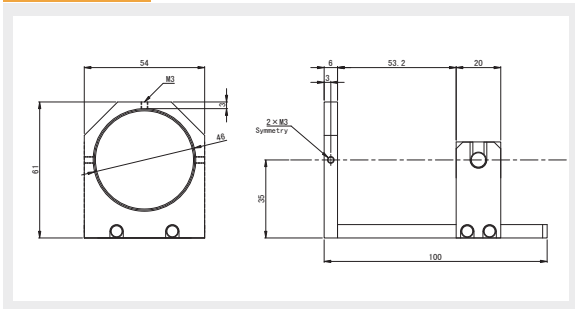
VL-TLN100\*



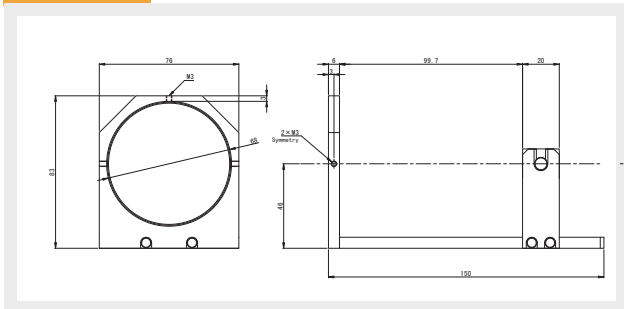
VL-TLN150\*



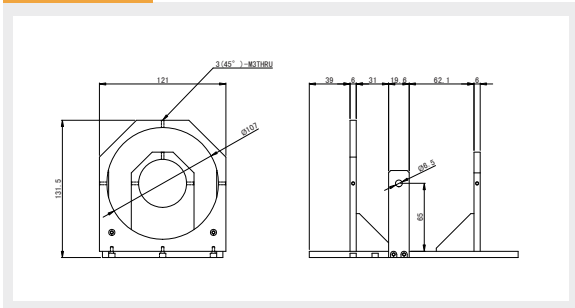
AD-TLN30-01



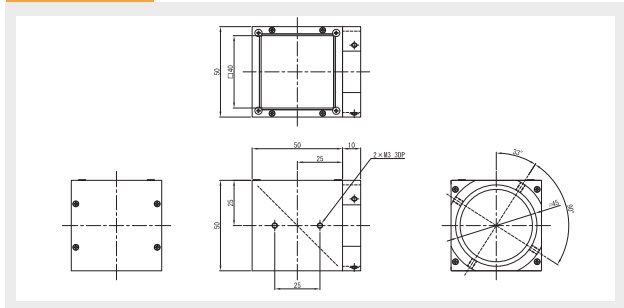
AD-TLN60-01



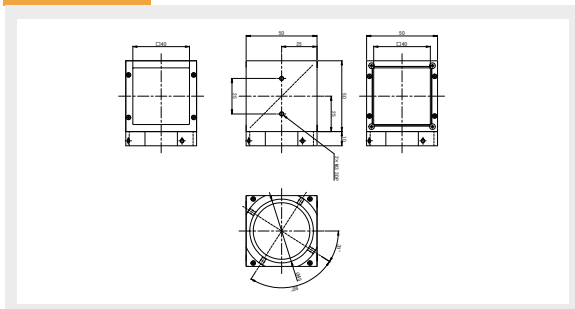
AD-TLN100-02



RAU-TL30-M1



CAU-TL30-M1



# HIGH POWER BACK LIGHT



## VL-G2DB SERIES

- High-Power LED Back Light.
- Original LED unit by direct bonding Technology.
- Suitable for high-speed inspection.
- Customized models are available.
- RoHS compliant.

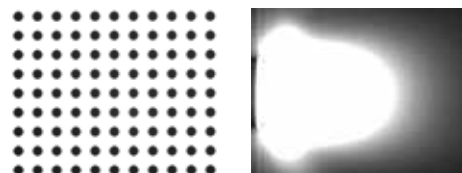


Model No.	Color	Dimension of Lighting Area (mm)	Power Consumption (Max.)	
VL-G2DB1-30R	● Red	30 x 30	24V	4.0W
VL-G2DB1-30W	○ White		4.0W	
VL-G2DB2-A4R	● Red	290 x 210	24V	60.0W
VL-G2DB2-A4W	○ White			58.0W

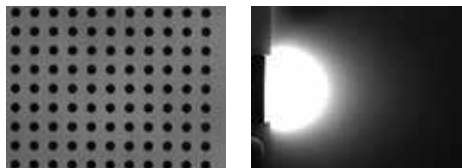
### What is Direct Bonding?

Direct bonding technology (D.B.T) enables us to make a LED unit with fine pitch assembly. Usually bullet-type LED provide higher brightness than chip-type LED due to the angle of light. However, our LED unit using D.B.T. provide much brighter light than conventional bullet-type LED with even light distribution. We also capable to design custom-made LED unit with our D.B.T.

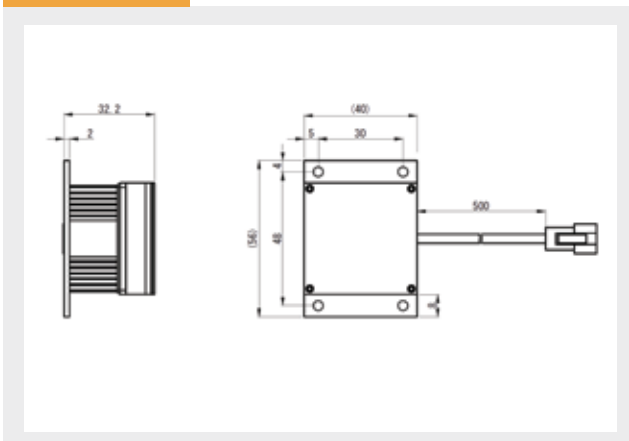
VL-G2DB1-30 Image (Direct Bonding LED unit)



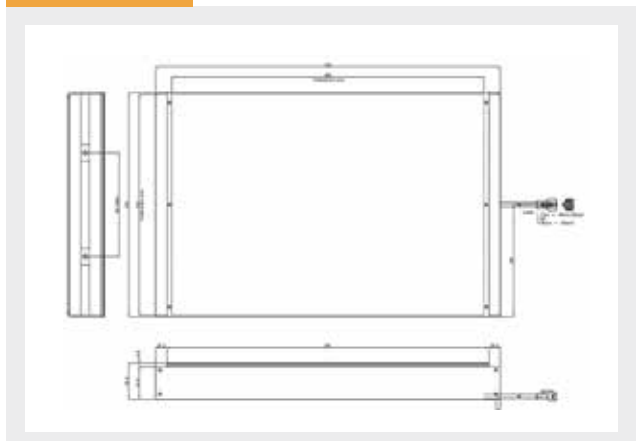
Conventional Back Light Image (Bullet-type LED)



VL-G2DB1-30\*



VL-G2DB2-A4\*



# HIGH PARALLELISM CHIP BACK LIGHTING

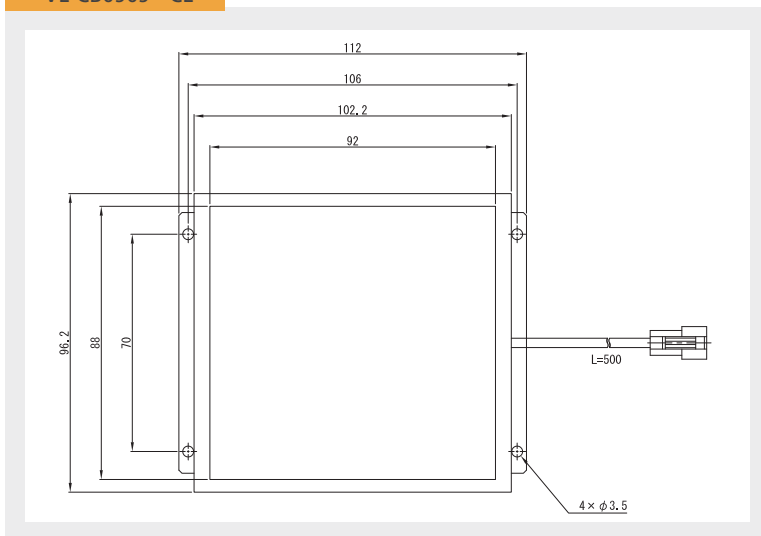


## VL-CB-CL SERIES

- Direct Chip Back Light.
- Higher brightness than standard VL-CB series.
- Higher parallelism provide better image for measurement.
- RoHS compliant.

Model No.	Color	Dimension of Lighting Area (mm)	Power Consumption (Max.)
VL-CB0909R-CL	● Red	92 x 92	5.2W
VL-CB0909W-CL	○ White		8.0W
VL-CB0909B-CL	● Blue		8.4W
VL-CB0909G-CL	● Green		10.0W

### VL-CB0909\*-CL



Brightness comparison between VL-CB-CL and VL-CB model. CB-CL type brightness is approx. 2times brighter than standard CB type even similar or same power consumption.

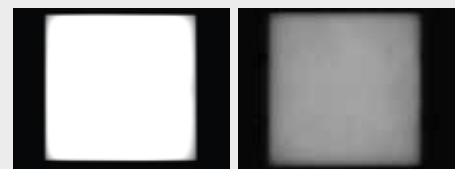


Image of CB-CL TYPE

Image of CB TYPE

Better parallelism light provide better image for measurement application. Left image is by CL type, right image is by standard CB model. At the edge of the object, there is some reflection in case of standard back light. But CL images has better contrast at the same point due to parallelism difference.



Image of CB-CL TYPE



Image of CB TYPE

# BACK LIGHT



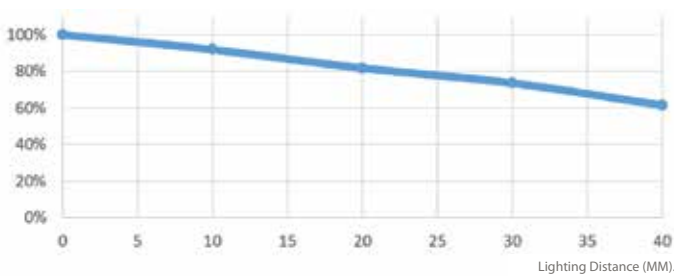
## VL-CB SERIES

- Direct Chip Back Light Model.
- Highly uniform light by using high-density Chip LED.
- Ultra slim design.
- RoHS Compliant.

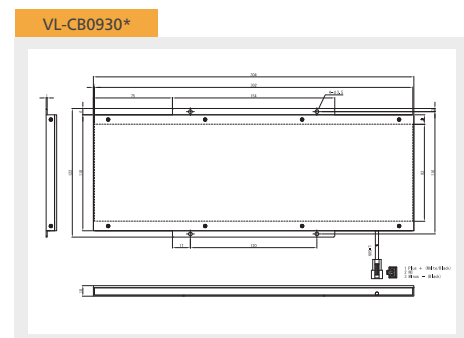
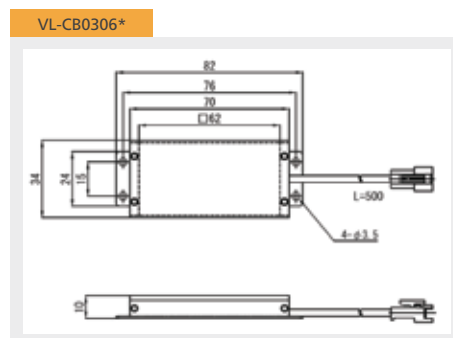
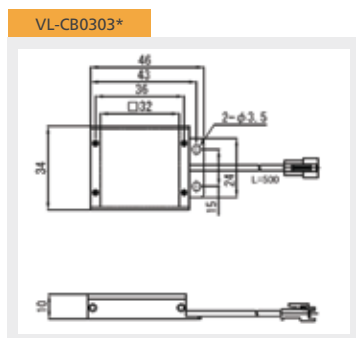
Model No.	Color	Dimension of Lighting Area (mm)	Power Consumption (Max.)	
VL-CB0303R	● Red	32 x 32	24V	0.6W
VL-CB0303W	○ White		0.9W	
VL-CB0306R	● Red	32 x 62	24V	1.1W
VL-CB0306W	○ White		1.8W	
VL-CB0606R	● Red	62 x 62	24V	2.3W
VL-CB0606W	○ White		3.6W	
VL-CB0909R	● Red	92 x 92	24V	5.2W
VL-CB0909W	○ White			8.0W
VL-CB0909B	● Blue			8.4W
VL-CB0909G	● Green			10.0W
VL-CB1212R	● Red	122 x 122	24V	9.4W
VL-CB1212W	○ White			14.2W
VL-CB1521W	○ White	152 x 212	24V	30.0W
VL-CB1527W	○ White	152 x 272	24V	39.0W
VL-CB0930RH	● Red	92 x 302	24V	17.5 W

### Relative Luminance (luminance on the optical axis)

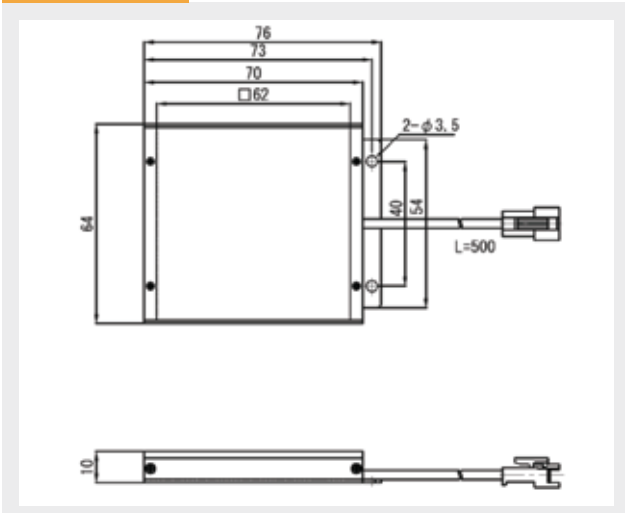
Example: VL-CB0909W (24,500lux at LWD 0mm \*on surface)



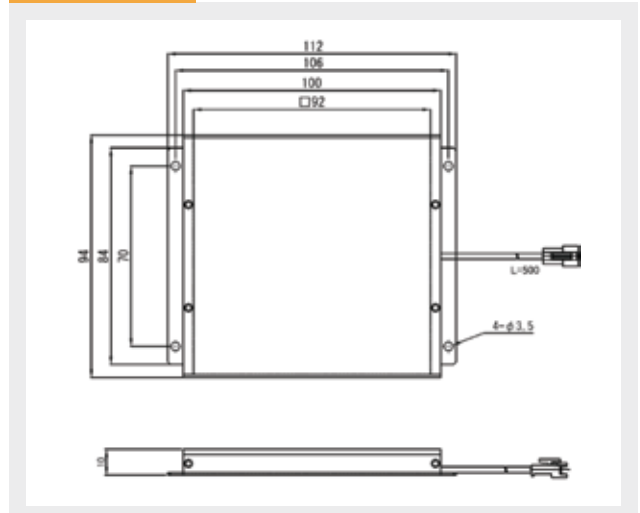
Sample image of VL-CB series. Measurement of metal parts.



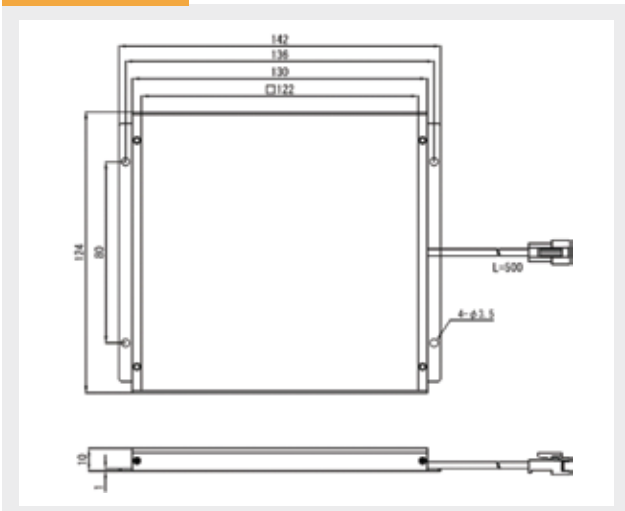
VL-CB0606\*



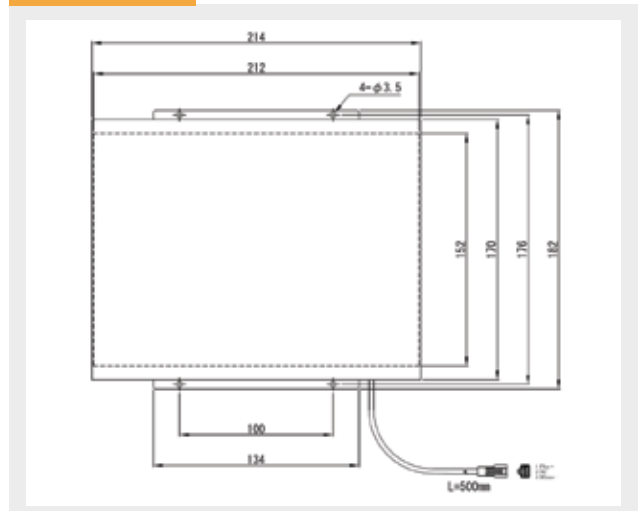
VL-CB0909\*



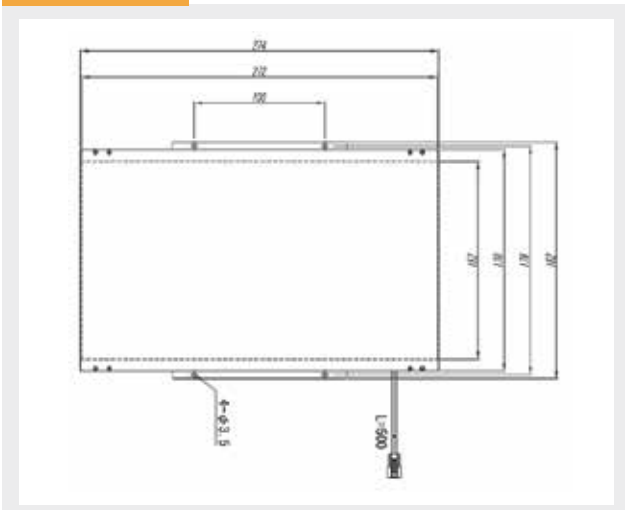
VL-CB1212\*



VL-CB1521\*



VL-CB1527\*



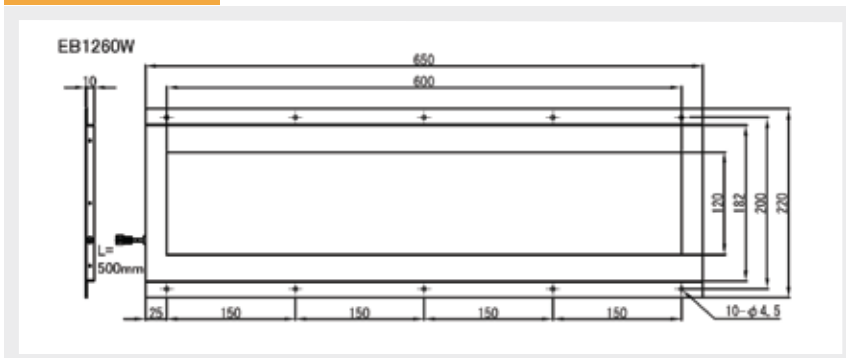


## VL-EB SERIES

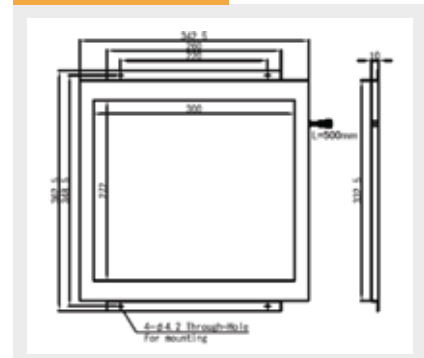
- Edge Back Light Model.
- Suitable for edge inspection with large FOV.
- Uniform light distribution.
- RoHS Compliant.

Model No.	Color	Dimension of Lighting Area (mm)	Power Consumption (Max.)
VL-EB1260W	○ White	120 x 600	24V 26.0W
VL-EB2730W	○ White	270 x 300	
VL-EB4545W	○ White	450 x 450	
VL-EB2121WH	○ White	210 x 210	
VL-EB3030WH	○ White	300 x 300	

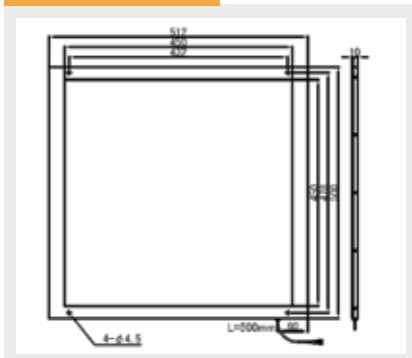
VL-EB1260\*



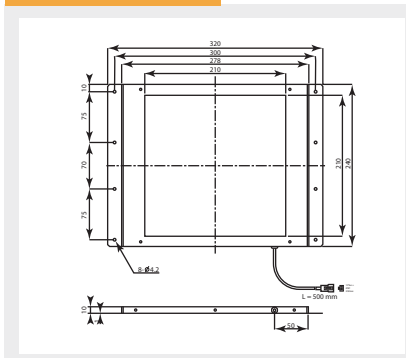
VL-EB2730\*



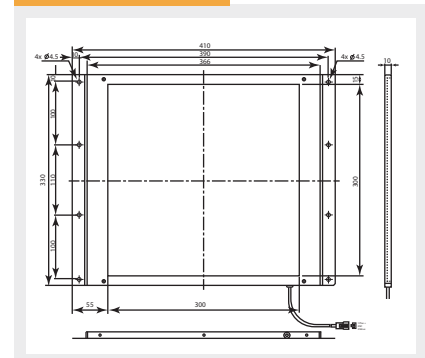
VL-EB4545\*



VL-EB2121\*



VL-EB3030\*







## VL-D SERIES

- Uniform non-shadowy light.
- 150mm /200mm /300mm 3types.
- Reasonable price.
- RoHS Compliant.

Model No.	Color	Dome Size (mm)	Power Consumption (Max.)	
VL-D100RH	● Red	φ 100	24V	5.1W
VL-D100WH	○ White			8.4W
VL-D150R	● Red	φ 150	24V	1.7W
VL-D150W	○ White			4.3W
VL-D150B	● Blue			4.3W
VL-D200R	● Red	φ 200	24V	2.4W
VL-D200W	○ White			5.6W
VL-D200B	● Blue			6.0W
VL-D300R	● Red	φ 300	24V	3.2W
VL-D300W	○ White			7.0W
VL-D300B	● Blue			7.6W

Sample image comparison between VL-D and Direct Ring Light model. VL-D image is more better contrast in entire object especially in case of non-flat surface / metal parts surface etc.

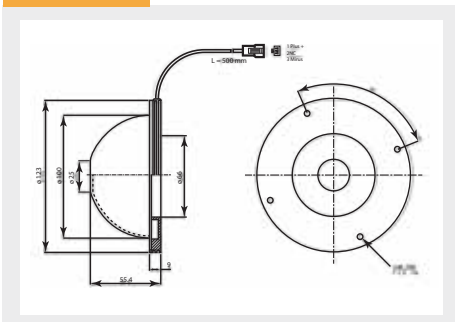


VL-D image

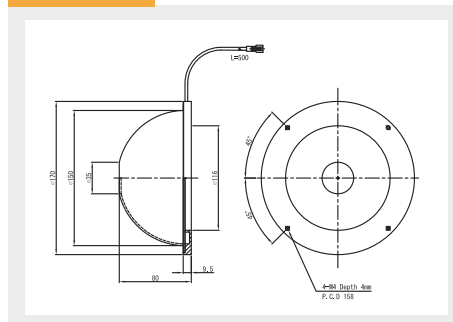


Direct Ring image

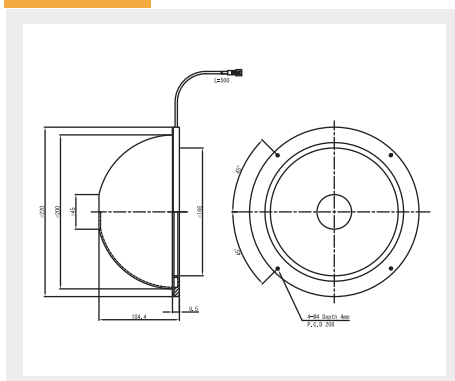
### VL-D100\*



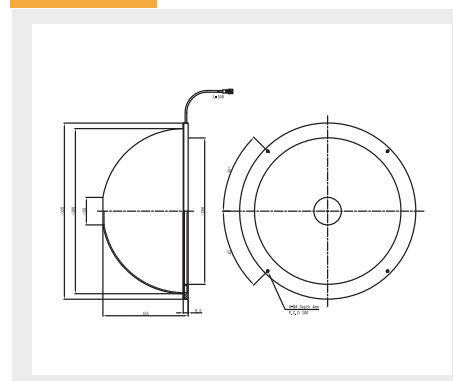
### VL-D150\*



### VL-D200\*



### VL-D300\*



# CUBE DOME



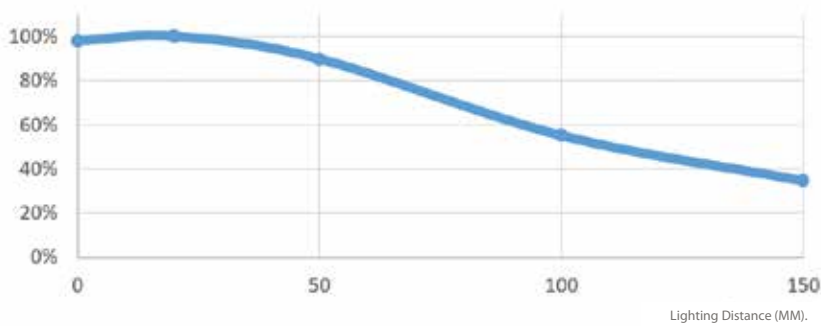
## VL-CD SERIES

- Space saving design.
- Similar effect with general dome light.
- Useful for multi COR applicatin.
- Avaiable for customization.
- RoHS complaint.

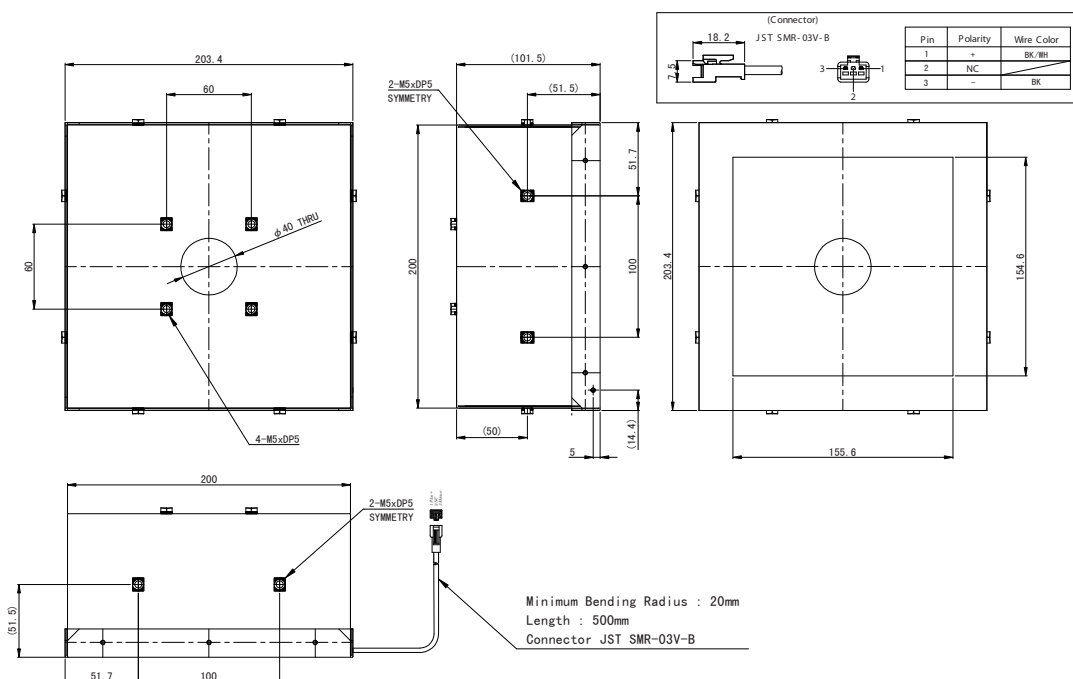
Model No.	Color	Lighting Area (mm)	Power Consumption(Max.)
VL-CD2020W	○ White	150 x 150	24V 32.6W

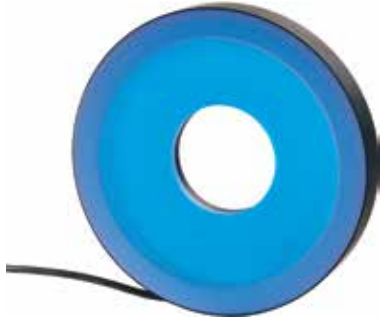
### Brightness Distribution

Example: VL-CD2020W (38,200lux at LWD20mm)



### VL-LRD2075\*





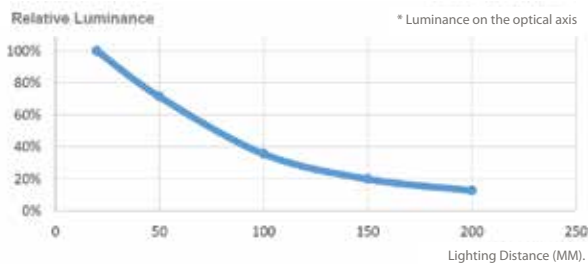
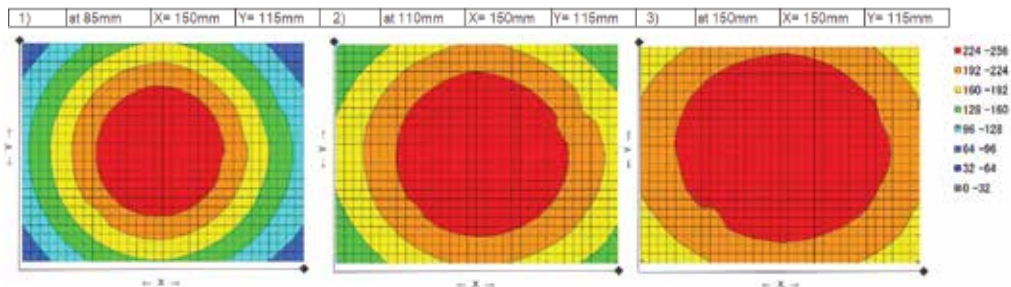
## VL-RD SERIES

- Ring Diffused Light model.
- Suitable for inspection of glossy object.
- Prevention of LED glare and reflections.
- Light evenly spread out onto the object surface.
- RoHS Compliant.

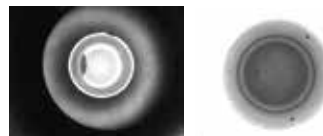
Model No.	Color	Internal Ring Dia. (mm)	External Ring Dia. (mm)	Power Consumption (Max.)
VL-RD44123R	● Red	φ 44	φ 123	3.4W
VL-RD44123W	○ White			8.8W
VL-RD44123B	● Blue			9.3W
VL-RD44123-180	○ White		φ 123 (Half Ring)	4.4W

### Brightness Distribution

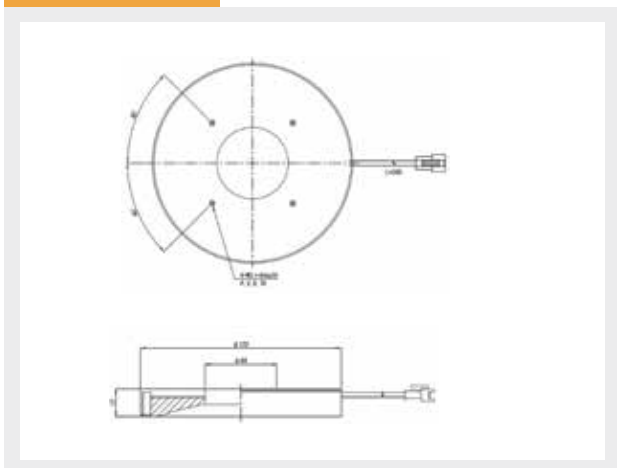
Example: VL-RD44123W (14,000lux at LWD20mm)



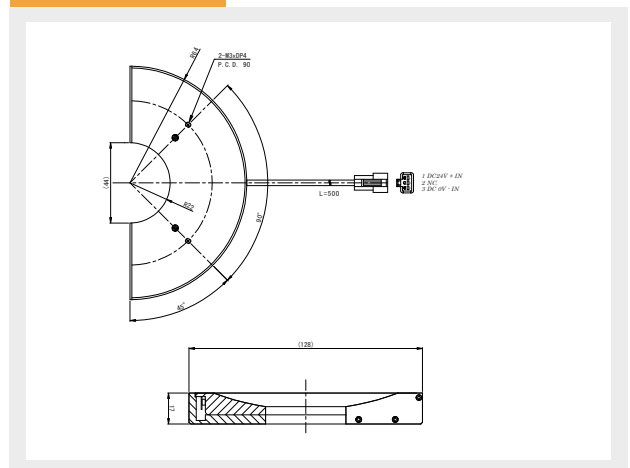
Sample image of VS-RD series. Inside cap inspection.



### VL-RD44123\*



### VL-RD44123\*-180



# LOW ANGLE RING DIFFUSED LIGHT



## VL-LRD SERIES

- Low angle ring diffused Light model.
- Suitable for inspection of glossy object.
- Prevention of LED glare and reflections.
- Light evenly spread out onto the object surface.
- RoHS Compliant.

Model No.	Color	Internal Ring Dia. (mm)	External Ring Dia. (mm)	Power Consumption (Max.)	
VL-LRD2075R	● Red	φ 20	φ 75	24V	6.3W
VL-LRD2075W	○ White			9.0W	
VL-LRD2075B	● Blue			10.0W	
VL-LRD73100R	● Red	φ 73	φ 100	24V	3.2W
VL-LRD73100W	○ White			6.0W	
VL-LRD73100B	● Blue			6.9W	
VL-LRD153180R	● Red	φ 153	φ 180	24V	6.5W
VL-LRD153180W	○ White			12.0W	
VL-LRD153180B	● Blue			12.6W	
VL-LRD4577W	○ White	φ 45	φ 77	24V	9.3W
VL-LRD4577B	● Blue			9.3W	
VL-LRD4577G	● Green			8.3W	

The sample image of VS-LRD series.

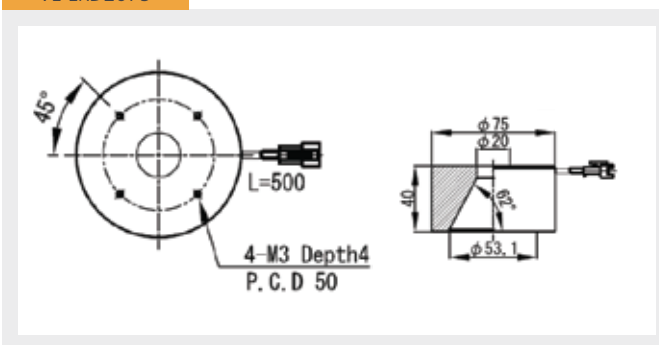


Long lighting working distance

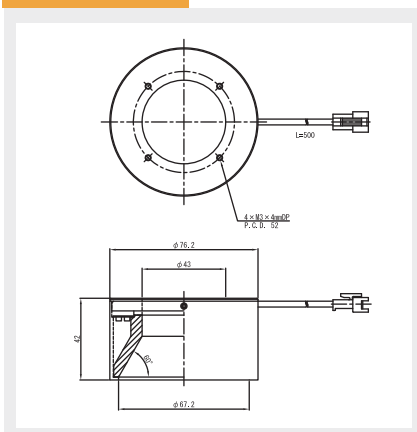


Short lighting working distance

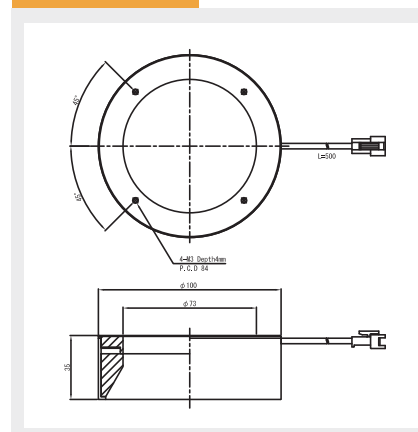
### VL-LRD2075\*



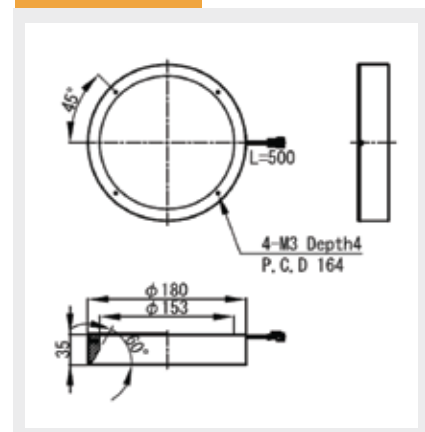
### VL-LRD4577\*



### VL-LRD73100\*



### VL-LRD153180\*



# LOW ANGLE RING DIFFUSED LIGHT



## VL-LRDH SERIES

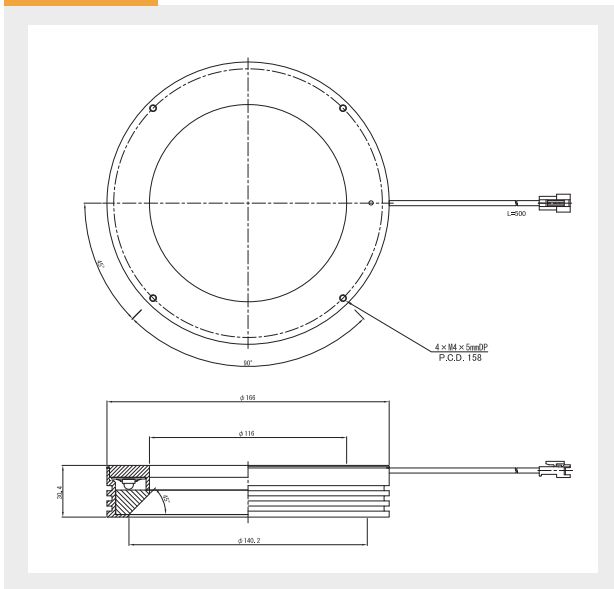
- High-power design
- Low angle ring diffused light model.
- Suitable for inspection of glossy object.
- Prevention of LED glare and reflections.
- Light evenly spread out onto the objectsurface.
- RoHS compliant.

Model No.	Color	Internal Ring Dia. (mm)	External Ring Dia. (mm)	Power Consumption (Max.)	
VL-LRDH116166R	● Red	φ 116	φ 166	24V	23.4W
VL-LRDH116166W	○ White				29.6W
VL-LRDH116166B	● Blue				30.0W
VL-LRDH116166G	● Green				27.7W
VL-LRDH4090W	○ White	φ 40	φ 90		9.6W

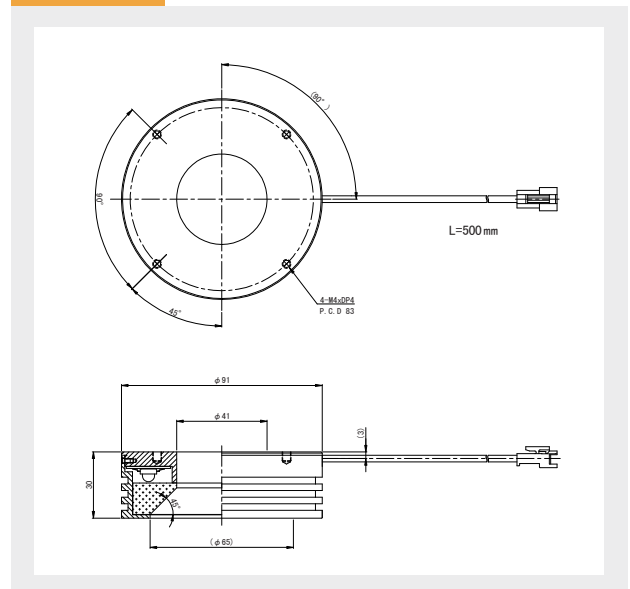
Brightness comparison between LRDH and 3rd company models



VL-LRDH116166\*



VL-LRDH4090\*



# SQUARE DIFFUSED LIGHT

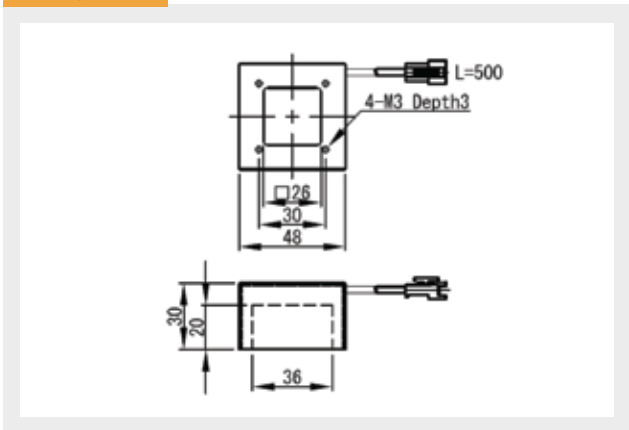


## VL-SQD SERIES

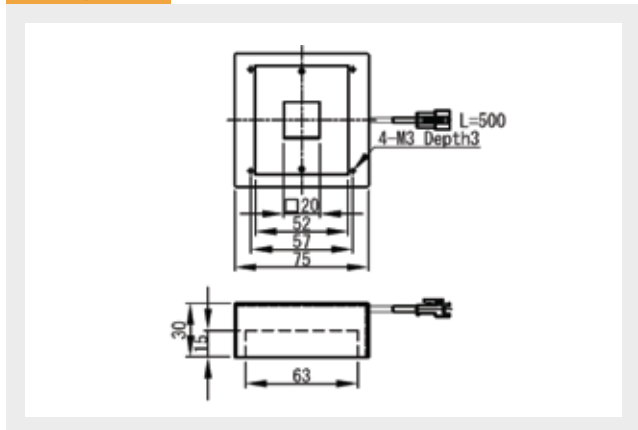
- Square Diffused Light model.
- Suitable for inspection of glossy object.
- RoHS Compliant.

Model No.	Color	Outer Dimension (mm)	Power Consumption (Max.)
VL-SQD048R	● Red	48 x 48	1.3W
VL-SQD048W	○ White		2.9W
VL-SQD048B	● Blue		3.1W
VL-SQD075R	● Red	75 x 75	2.0W
VL-SQD075W	○ White		5.7W
VL-SQD075B	● Blue		6.0W
VL-SQD120R	● Red	120 x 120	11.8W
VL-SQD120W	○ White		11.5 W
VL-SQD120B	● Blue		12.6 W

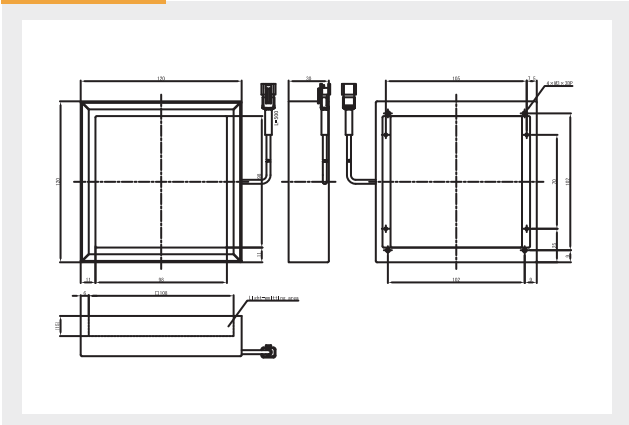
VL-SQD048\*



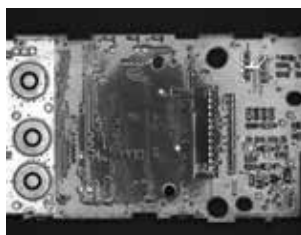
VL-SQD075\*



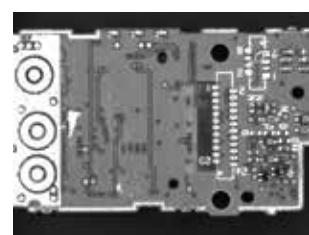
VL-SQD120\*



Sample image comparison between VL-SQD and VL-DR.



VL-DR



VL-SQD



## VL-CS SERIES

- For Telecentric Lens illumination.
- 12V / 24V / 700mA models are available.
- RoHS Compliant.

Able to choose best model from our variety line-up of Co-axial Spot light.

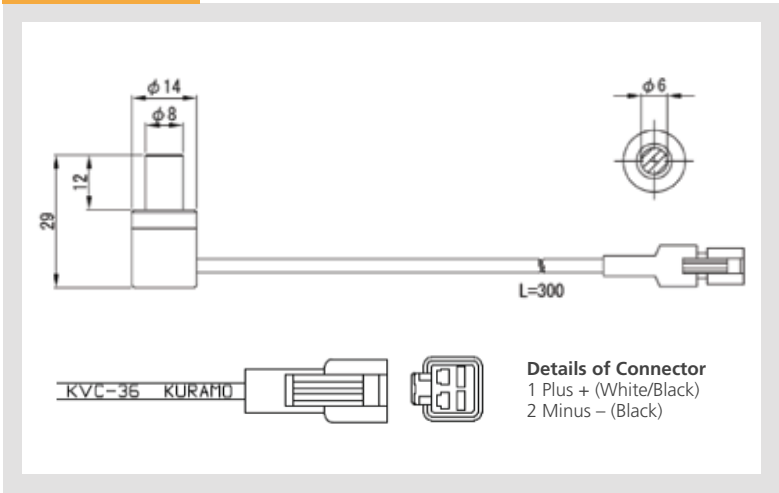
Control	Brightness ←————→ High		
12V	VL-CS0814		
24V	VL-CS2414	VL-CSN2414	VL-CSH07 + Registor Box
Current			VL-CSH07

If you have a concern choosing suitable model for your system, please feel free to let us know.

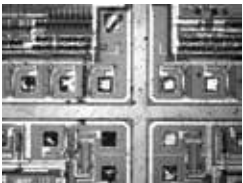
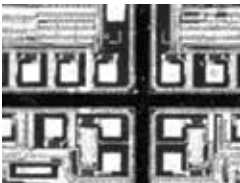
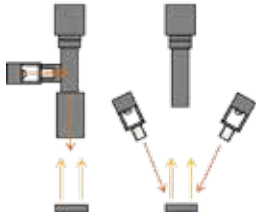
## VL-CS SERIES (12V TYPE)

Model No.	Color	Dimension Of Lighting Area (mm)	Power Consumption (Max.)
VL-CS0814R	● Red	φ 6	0.6W
VL-CS0814W	○ White		0.5W
VL-CS0814B	● Blue		0.8W
VL-CS0814IR850	● IR850		1.0W

### VL-CS0814\*



Sample image comparison between VL-CS and Direct Ring Light model.



Direct Ring image

VL-CS image



# CO-AXIAL SPOT LIGHT (24V TYPE)



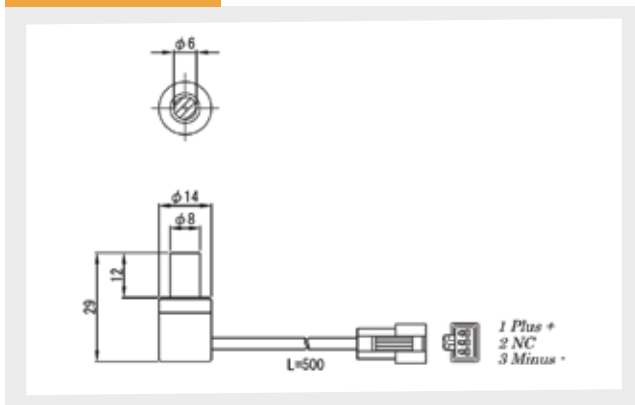
## VL-CS SERIES (24 V TYPE)

- For Telecentric Lens illumination.
- Wide angle type / Narrow angle type
- Ultra-compact design.
- RoHS Compliant.

Model No.	Color	Dimension Of Lighting Area (mm)	Power Consumption (Max.)
VL-CS2414R	● Red	φ 6	0.8W
VL-CS2414W	○ White		1.0W
VL-CS2414B	● Blue		0.9W
VL-CS2414G	● Green		0.8W
VL-CS2414IR850	● IR850		1.3W
VL-CSN2414R	● Red	φ 5.5	1.0W
VL-CSN2414W	○ White		1.0W
VL-CSN2414B	● Blue		1.0W
VL-CSN2414G	● Green		1.0W

\*VL-CS2414R is Wide angle model > suitable for low magnification Telecentric Lens.  
 VL-CSN2414 is Narrow angle model > suitable for high magnification Telecentric Lens.

VL-CS2414\*



VL-CSN2414\*

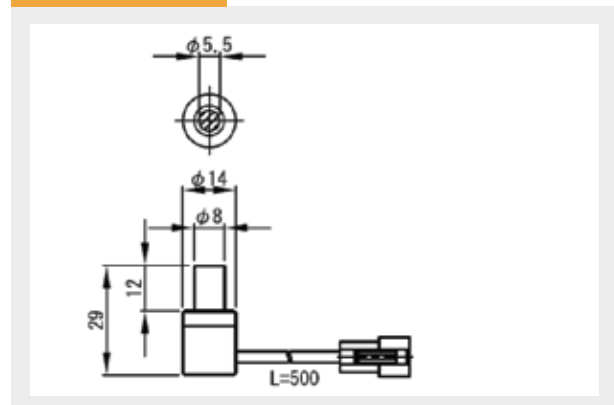
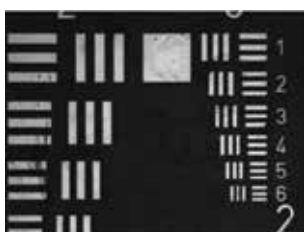
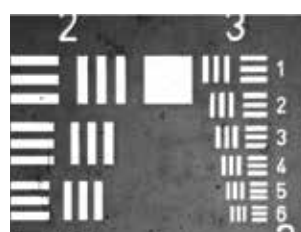


Image comparison between VL-CS2414 and VL-CSN2414.



\*VL-CS2414R



\*VL-CSN2414R

VS-CS2414\* : Wide Angle type

Suitable for low-magnification Telecentric lens since wide angle type provides better evenness even low magnification use. Also suitable for high-reflection object's inspection which you don't need high-brightness but need sensitive brightness control.

VL-CSN2414\* : Narrow Angle type

Suitable for high-magnification Telecentric lens such as 1x / 2x or more. Provide higher brightness than VL-CS2414 even the similar power consumption.



## VL-CSH SERIES (CURRENT TYPE)

- For Telecentric Lens illumination.
- High-Power Spot Light.
- Suitable for high-speed or high-mag. application.
- RoHS Compliant.

VL-CSH Series (High-Power / Current Control Type)

Model No.	Color	Lighting Area (mm)	Power Consumption (Max.)		
VL-CSH07R	● Red	φ 5.5	700mA	2V	1.6W
VL-CSH07W	○ White			3.2V	2.5W
VL-CSH07B	● Blue			3.2V	2.5W
VL-CSH07G	● Green			3.2V	2.5W
VL-CSH07IR850	● IR850			2.0V	2.3W
VL-CSH07UV365	● UV365			4.0V	2.8W

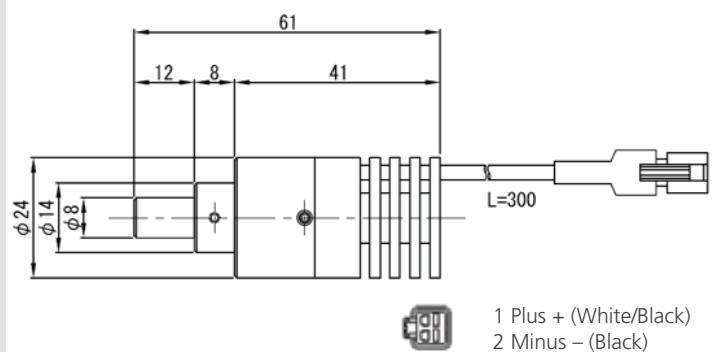
VL-CSH07\* is designed for up to 700mA output power source. Can not use 24V or 12V power supply such as VS-PSA2410-1, VS-PSA1210-2 etc. without additional resistor box.

And the connector is SM connector (SMR-02V-B). Please choose correct power source which provides current Max. 700mA.

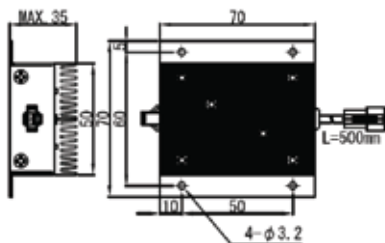


Recommended Combination is with VLC-07A10-1. VLC is a controller for LED lighting and 07A10-1 is suitable for CSH (High-Power Spot light) Please refer Page5 for more details.

### VL-CSH07\*



### RB2407



## OPTIONAL RESISTOR BOX FOR VL-CSH07

Model No. RB2407

Enables to connect 24V power supply with resistor box.

Connection example:

VLP-2410-1 > Resistor Box > VL-CSH07W

## RECOMMENDED TELECENTRIC LENS

- APT series (Economical model)
- VS-TC series (standard model)
- VS-TCH series (2/3" High-Resolution model)
- VS-THV series (1" DOF adjustable model)



# HIGH POWER SPOT LIGHT



## VL-G2SP1 SERIES

- Spot light unit for VST Lenses.
- 3models for f50mm / f75mm / f100mm.
- Suitable for OCR / OCV, Inspection application.
- RoHS Compliant.

Model No.	Color	Recommended Lens model	Power Consumption (Max.)		
VL-G2SP1-50W	○ White	SV-5018V	700mA	3.2V	2.7W
VL-G2SP1-75W	○ White	SV-7527V			
VL-G2SP1-100W	○ White	SV-10035V			

\* VL-G2SP1 is not including lens unit. Please contact local VST offices for more details about lens selection.

### Reference of Lighting Area.

Actual effective lighting area will be changed depends on the lens combination.

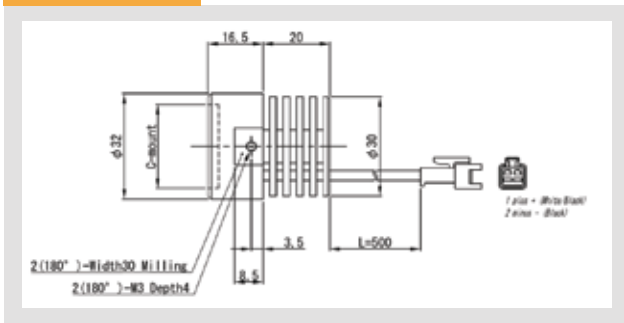
Model No.	VL-G2SP1-50W	VL-G2SP1-75W	VL-G2SP1-100W
Lens	SV-5018V	SV-7527V	SV-10035V
LWD	Lighting Area (mm)		
50mm	dia.30	dia.30	dia.30
100mm	dia.40	dia.37	dia.35
200mm	dia.60	dia.48	dia.40

### Combination with Telecentric Lens

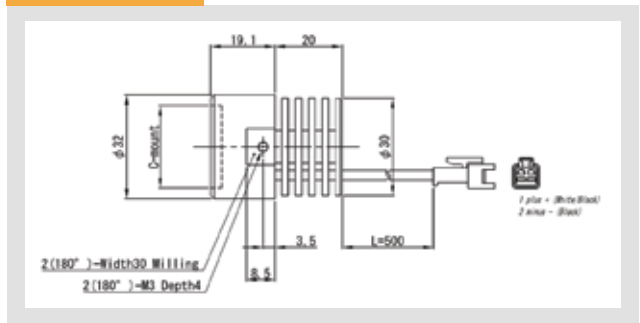
VL-G2SP1 is also available to use with VST telecentric lens. These combination is suitable for small size OCR/OCV with small FOV. About diameter 1mm spot light is possible depends on lens combination.



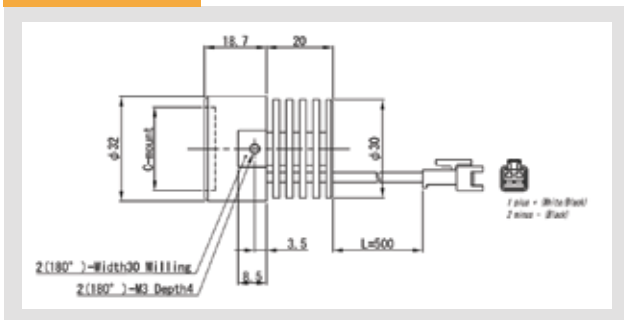
### VL-G2SP1-50\*



### VL-G2SP1-75\*



### VL-G2SP1-100\*



# EXTERNAL CO-AXIAL BOX LIGHT



## VL-EXC SERIES

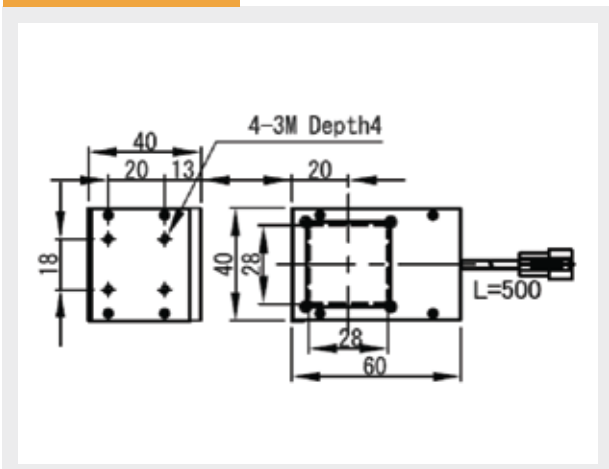
- Uniform illumination on flat surfaces.
- Suitable for surface inspection.
- RoHS Compliant.

Model No.	Color	Dimension of Aperture Area (mm)	Power Consumption (Max.)
VL-EXC3128R	● Red	31 x 28	1.7W
VL-EXC3128W	○ White		3.0W
VL-EXC3128B	● Blue		4.8W
VL-EXC5050R	● Red	50 x 50	2.3W
VL-EXC5050W	○ White		4.3W
VL-EXC5050B	● Blue		4.6W
VL-EXC7570W	○ White	75 x 70	13.2W
VL-EXC7570B	● Blue		12.1W
VL-EXC100100R	● Red	100 x 100	8.7W
VL-EXC100100W	○ White		17.0W
VL-EXC100100B	● Blue		18.3W
VL-EXC130130R	● Red	130 x 130	13.9W
VL-EXC130130W	○ White		27.9W
VL-EXC130130B	● Blue		29.8W

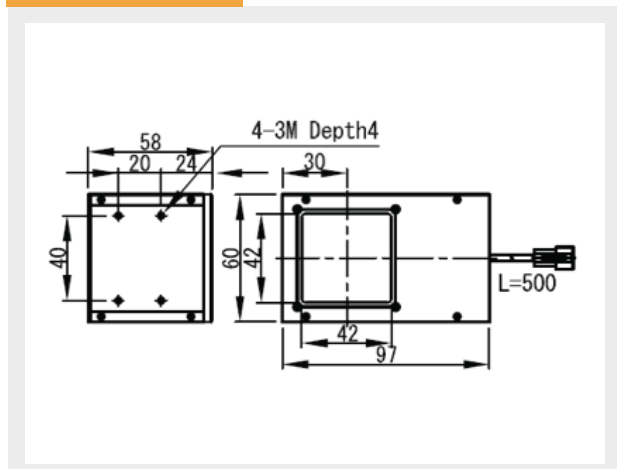
The sample image of VL-EXC series.  
Surface contamination Scratch inspection



VL-EXC3128\*

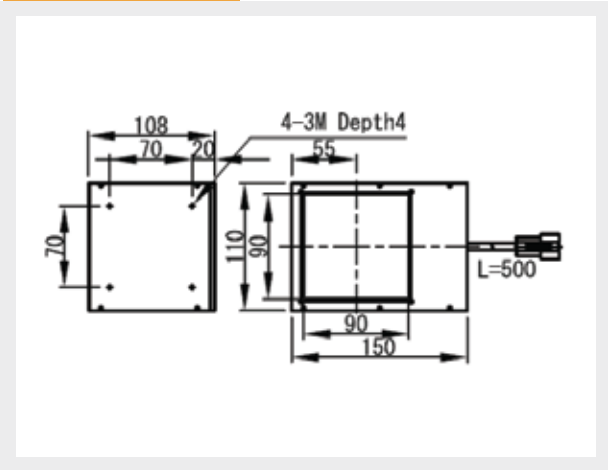


VL-EXC5050\*

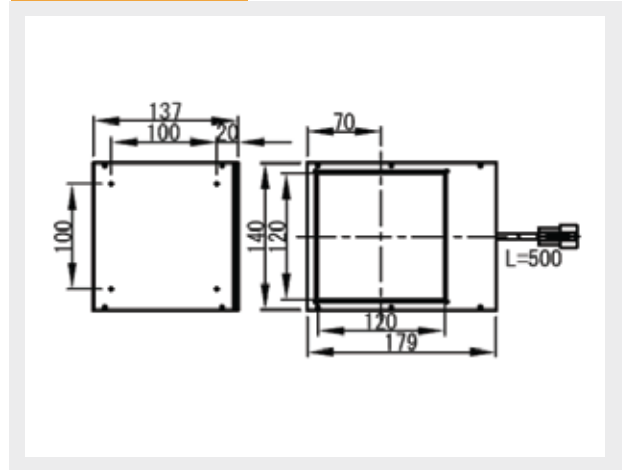


# EXTERNAL CO-AXIAL BOX LIGHT

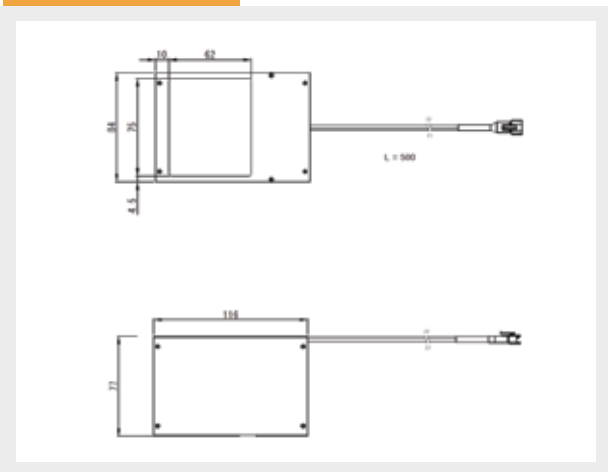
VL-EXC100100\*



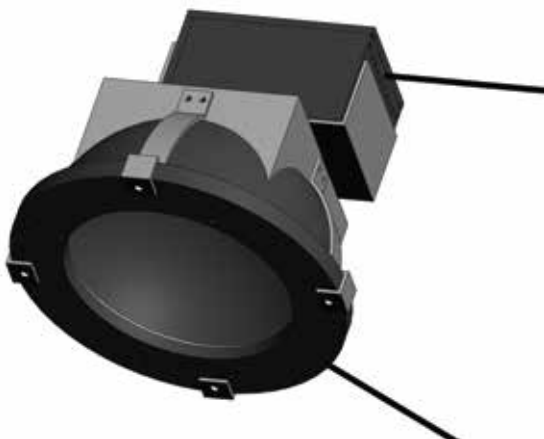
VL-EXC130130\*



VL-EXC7570\*



Example of customized unit.



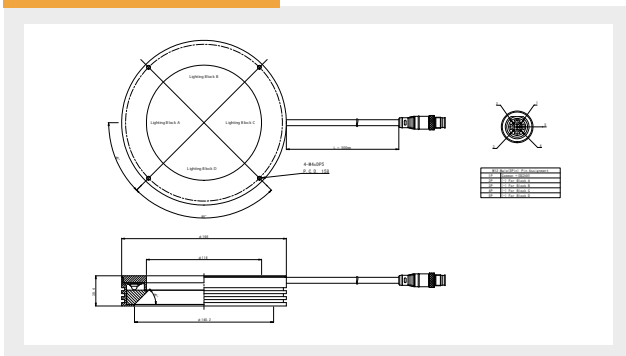


## SEGMENT LIGHT SERIES

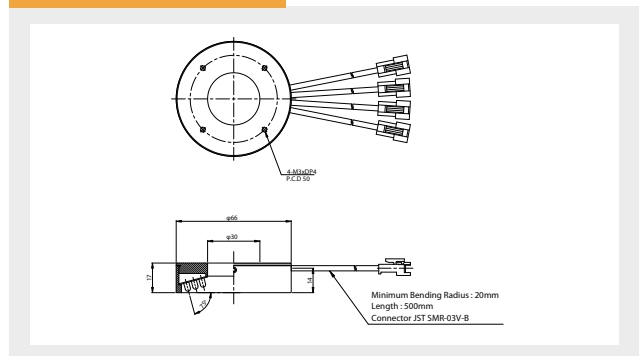
- Suitable for surface inspection.
- Reduce the unnecessary reflection in the image.
- Available for customization.
- RoHS compliant.

Model No.	Color	Internal Ring Dia. (mm)	External Ring Dia. (mm)	Segment	Power Consumption (max.)	Connector	
VL-LRDH116166W-S4M12	○ White	116	166	4	24	20.0W (4CH total)	1x M12 (5pin Male)
VL-DRN3066R-S43P	● Red	30	66	4	24	6.7W (4CH total)	4x 3Pin (Male)
VL-RD44123R-S43P	● Red	44	123	4	24	7.2W (4CH total)	4x 3Pin (Male)
VL-SQD120B-S43P	● Blue	44	123	4	24	12.4W (4CH total)	4x 3Pin (Male)

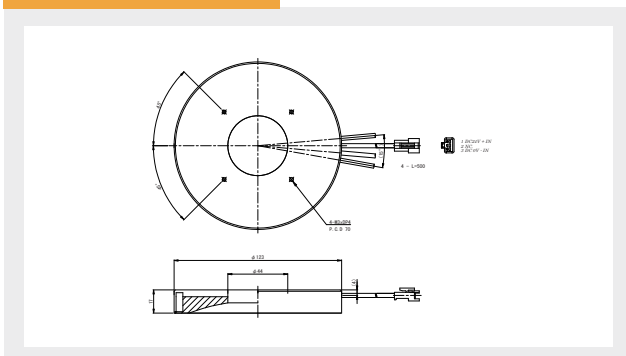
VL-LRDH116166\*-S4M12



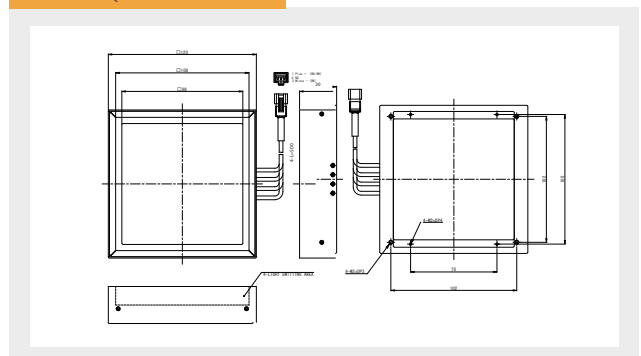
VL-DRN3066\*-S43P



VL-RD44123\*-S43P

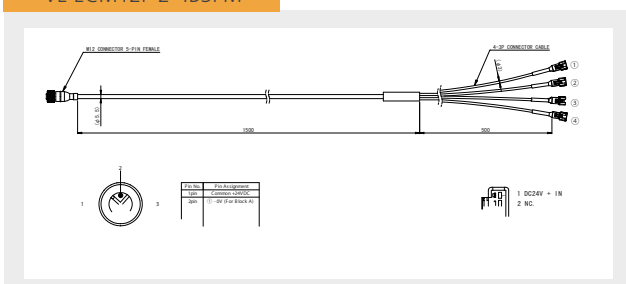


VL-SQD120\*-S43P



### Optional cables for segment light

VL-ECM12F-2-4B3PM



# RGB (MULTI-COLOR) LIGHT



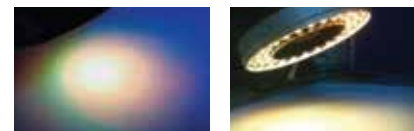
## RGB SERIES

- More than hundred color variation.
- Compact design with light weight.
- Removable diffuser plate is attached as standard package.
- RoHS Compliant.

RGB Series (Bar Type)

Model No.	Color	Type (mm)	Power Consumption (Max.)	
VL-B08030RGB	● RGB	Bar 80 x 30	24V	11.0W
VL-DR5090RGB	● RGB	Ring ID50 / OD90	24V	9.9W
VL-LRD153180RGB	● RGB	Ring ID153 / OD180	24V	28.8W
VL-D200RGB	● RGB	Dome $\phi$ 200	24V	32.0W

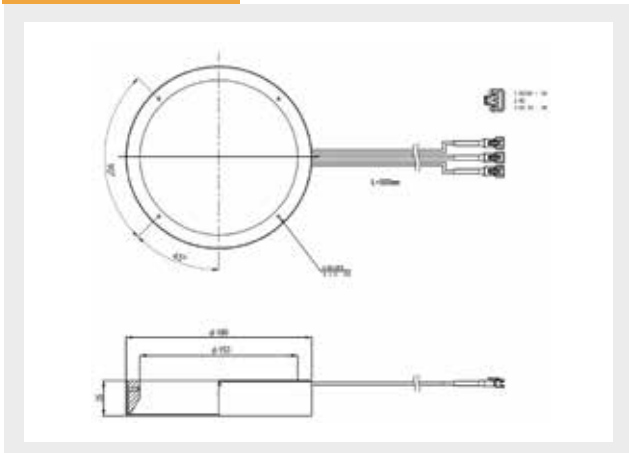
Previous RGB lighting was use individual LED in R/G/B. When use just one color, we can use only 1/3 LED of the unit. And when we mix color, the light isn't fully even. Our new RGB lighting generates more even mixed color as shown in the picture below.



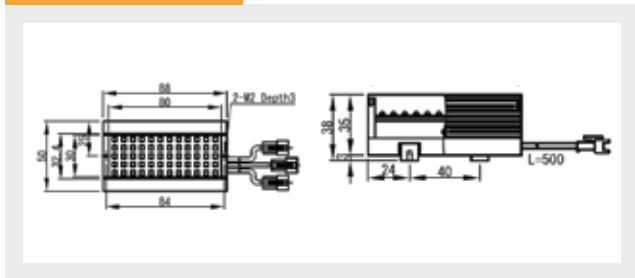
Previous RGB Light

New RGB Light

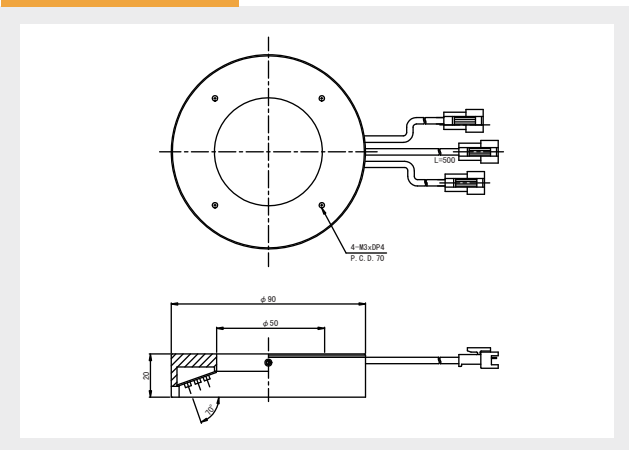
VL-LRD153180RGB



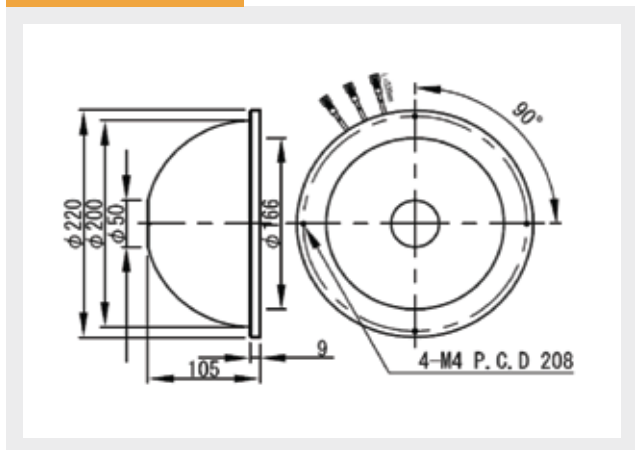
VL-B08030RGB



VL-DR5090RGB



VL-D200RGB







## IR SERIES

- Suitable for transmission inspection with IR light.
- Wavelength of 850nm. (950nm is also available, please ask us)
- RoHS Compliant.

Model No.	Color	Type (mm)	Power Consumption (Max.)	
VL-B05015IR850	● IR850	Bar 50 x 15	24V	2.7W
VL-B10015IR850	● IR850	Bar 100 x 15	24V	5.3W
VL-B20030IR850	● IR850	Bar 200 x 30	24V	25.9W
VL-B30030IR850	● IR850	Bar 300 x 30	24V	38.9W
VL-DR3066IR850	● IR850	Ring ID30 / OD66	24V	7.2W
VL-DR5090IR850	● IR850	Ring ID50 / OD90	24V	15.1W
VL-LR4874IR850	● IR850	Ring ID48 / OD74	24V	6.3W
VL-LR68100IR850	● IR850	Ring ID68 / OD100	24V	12.9W
VL-LR96132IR850	● IR850	Ring ID96 / OD132	24V	19.5W
VL-LRD2075IR850	● IR850	Ring ID 20 / OD75	24V	11.5W

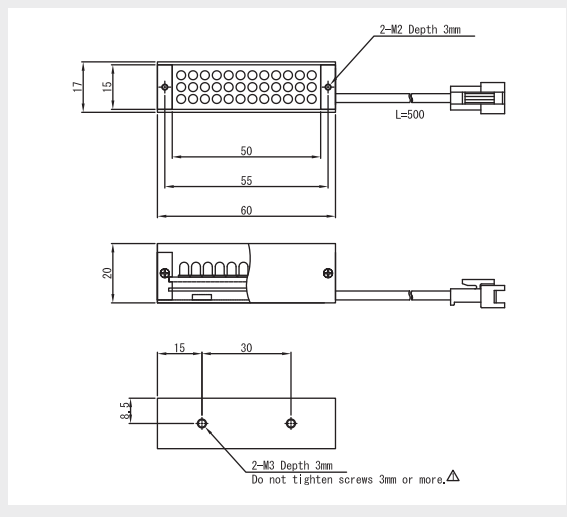
It is easy to understand the difference between 2 images on left side. IR lighting captured the glue located between the label and the bottle.



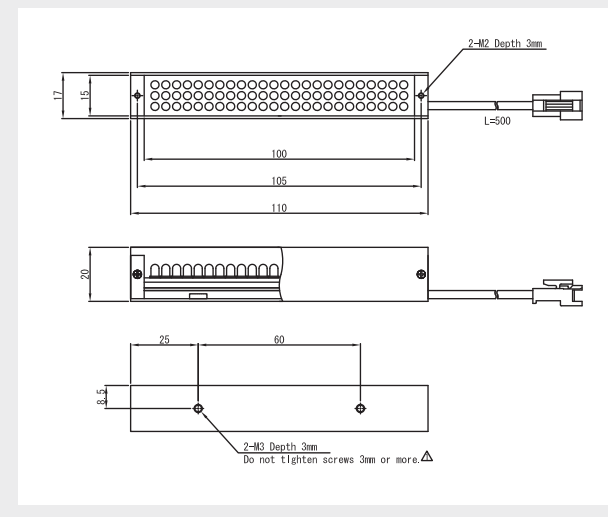
Image with Red LED Light

Image with IR LED Light

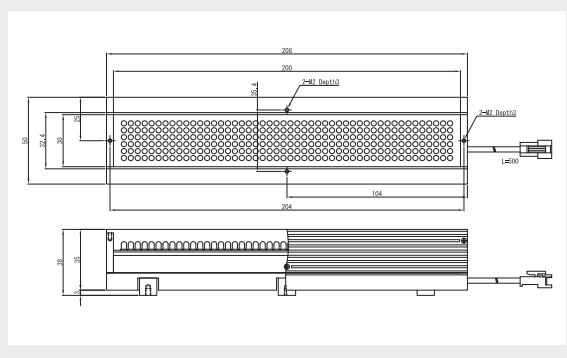
### VL-B05015IR850



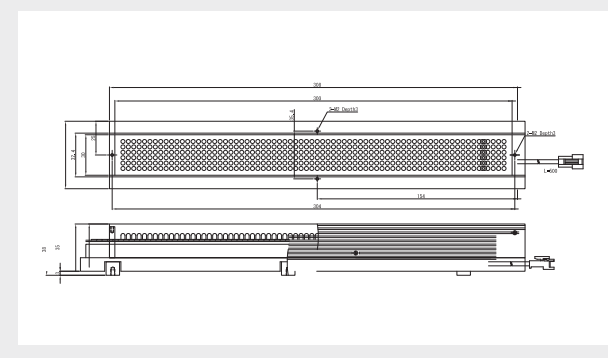
### VL-B10015IR850



### VL-B20030\*

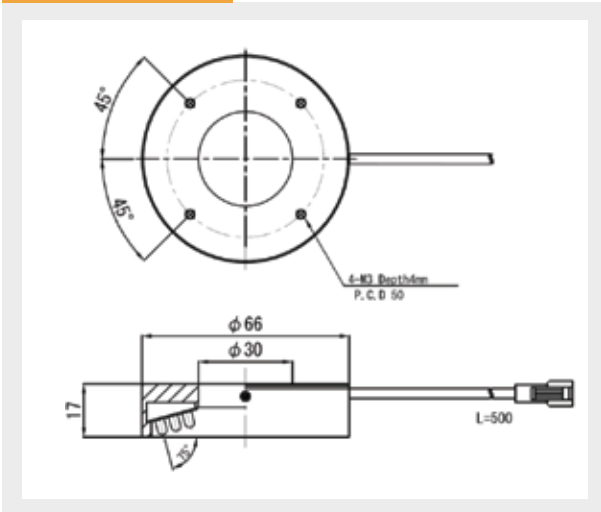


### VL-B30030\*

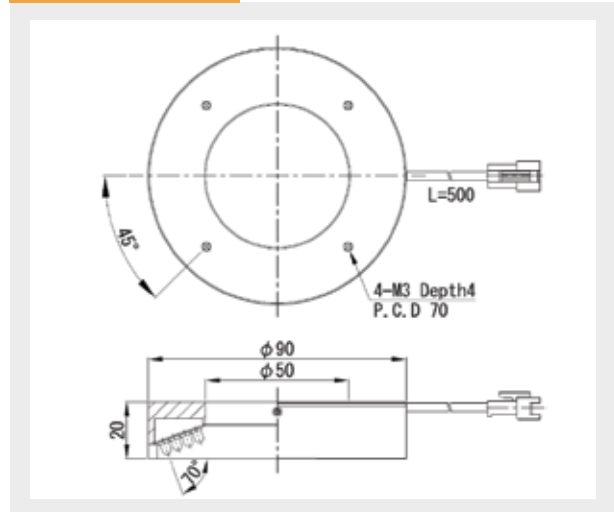


# INFRARED LED LIGHT

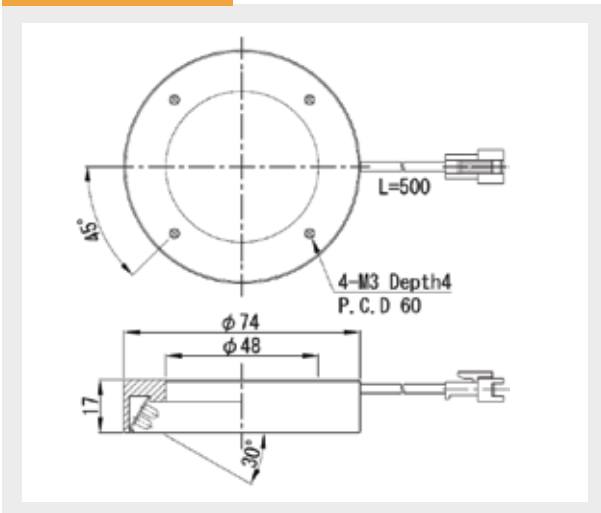
VL-DR3066IR850



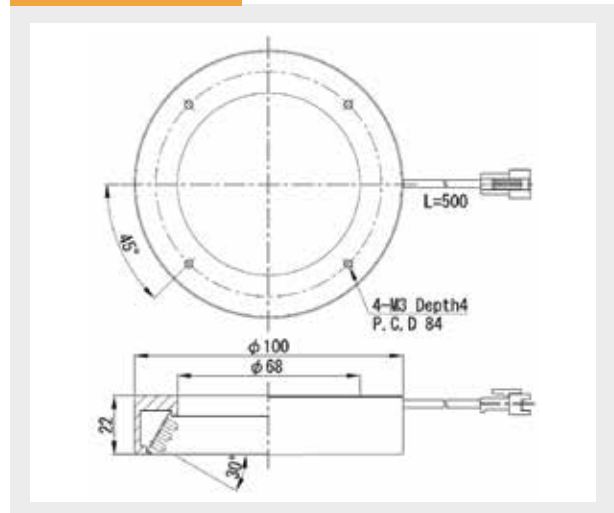
VL-DR5090IR850



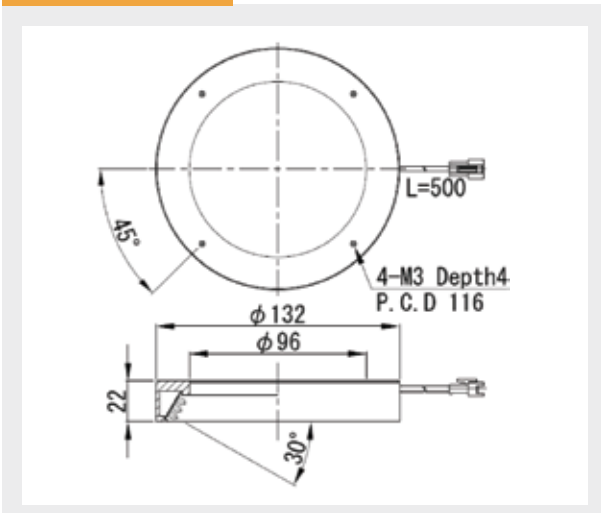
VL-LR4874IR850



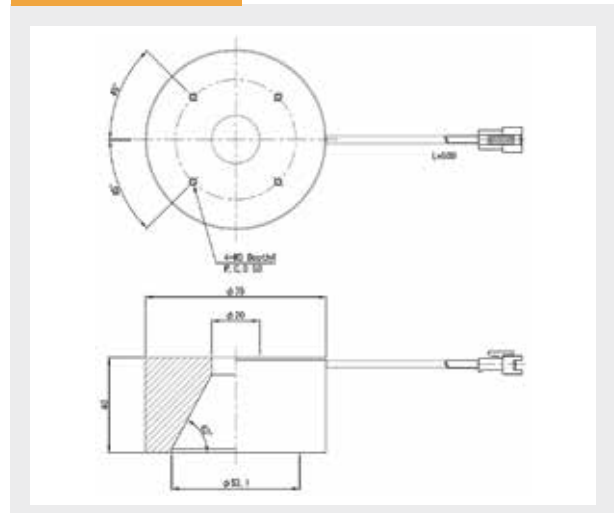
VL-LR68100IR850



VL-LR96132IR850



VL-LRD2075IR850





## UV SERIES

- Suitable for inspection with diffusive UV light.
- Ideal for excitation fluorescence application.
- RoHS Compliant.

Model No.	Color	Type (mm)	Power Consumption (Max.)	
VL-DR3066UV395	● UV395	Ring ID30 / OD66	24V	8.0W
VL-DR5090UV395	● UV365	Ring ID50 / OD90	24V	6.0W
VL-LR4874UV365	● UV365	Ring ID48 / OD74	24V	7.8W
VL-LR3257UV365	● UV365	Ring ID32 / OD57	24V	6.9W
VL-LR3257UV365	● UV365	Ring ID60 / OD100	24V	14.4W
VL-B10015UV395	● UV395	Bar 100 x 15	24V	6.0W
VL-B30030UV395	● UV395	Bar 300 x 30	24V	31.8W
VL-G2B1-30030UV365	● UV395	Bar 300 x 30	24V	24.0W
VL-DB0505UV395	● UV395	Back 50 x 50	24V	5.5W

The sample image of UV series.

Left-side image were captured UV light and White color light at the same lighting shape and size, working distance. UV image provides much better contrast in terms of glue point.



Image with UV light



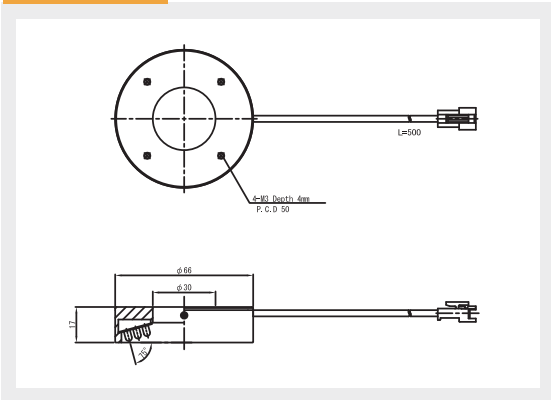
Image with white light

### ⚠ Warning for UV (Ultraviolet) color products.

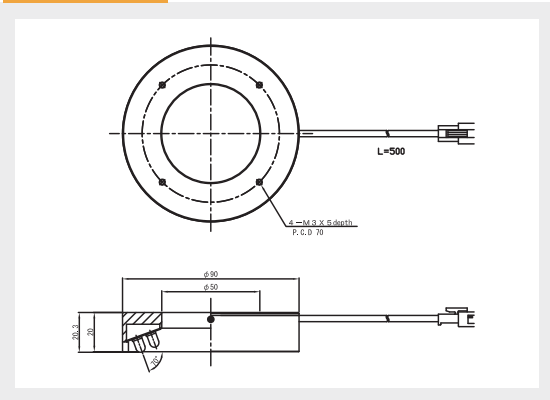
- Never look directly at our tough an ultraviolet light source.
- Do not look at the radiating surface of the light unit directly while it is turn on. Also do not turn it towards others.
- During the operation, always wear protective UV glasses and be sure not to let any UV light enter your eyes.
- During the operation, please wear long sleeves and gloves and do not expose your skin to the UV light.
- Make sure that everyone in the vicinity of the light unit is aware of the dangers of UV light LEDs.

# ULTRAVIOLET LED LIGHT

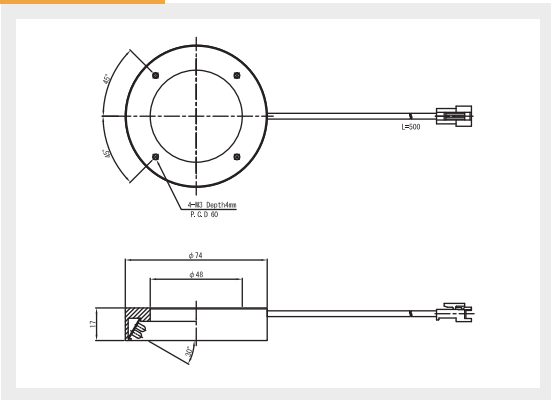
VL-DR3066UV395



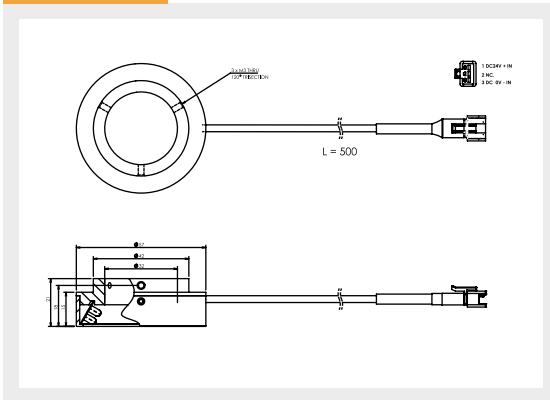
VL-DR5090UV365



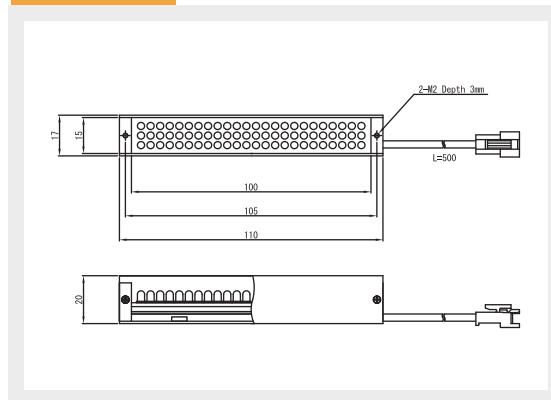
VL-LR4874UV365



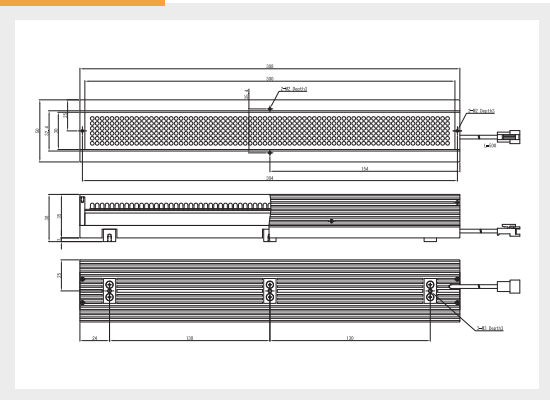
VL-LR3257UV365



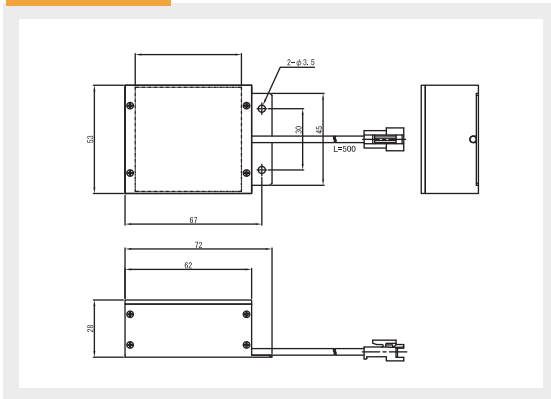
VL-B10015UV395



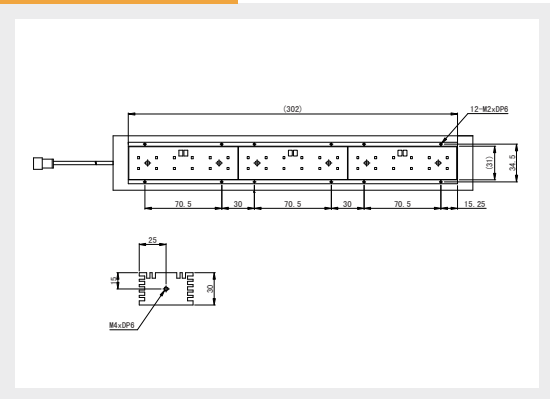
VL-B30030UV395



VL-DB0505UV395

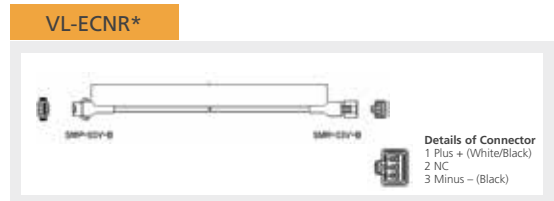


VL-G2B1-30030UV365

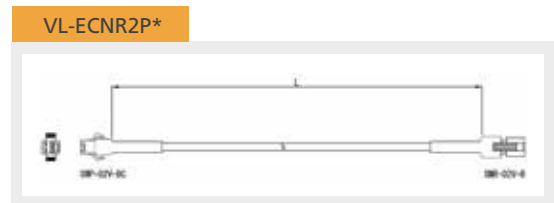


## EXTENSION CABLES (NON-ROBOT)

Model No.	Length (m)	Type	Illumination model info.
VL-ECNR1	1	Non-robot	for 24V lighting unit. (3Pin connector)
VL-ECNR2	2	Non-robot	
VL-ECNR3	3	Non-robot	
VL-ECNR5	5	Non-robot	

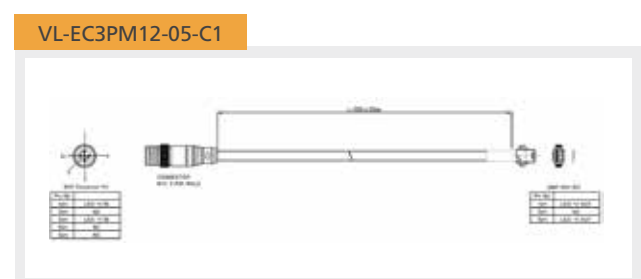
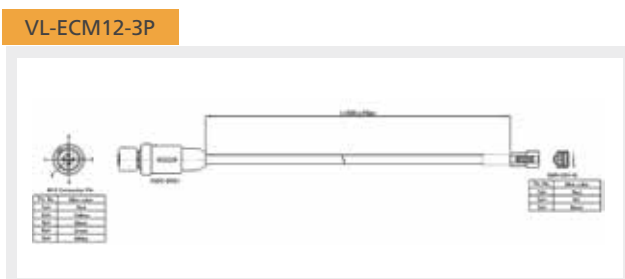
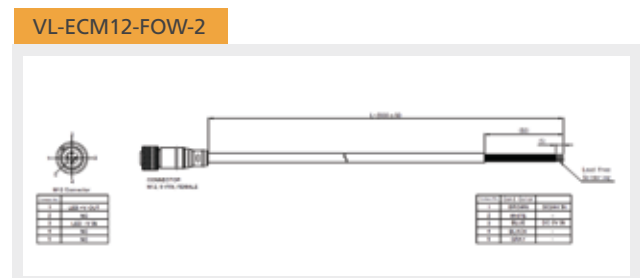
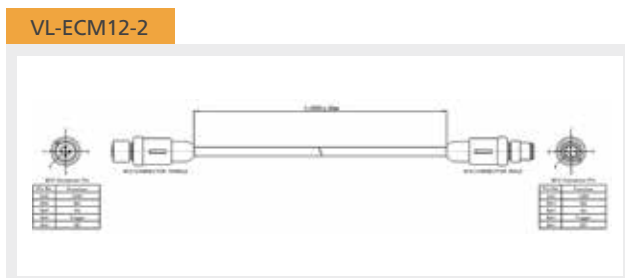


Model No.	Length (m)	Type	Illumination model info.
VL-ECNR2P1	1	Non-robot	for 12V or 0.7A lighting unit. (2Pin connector)
VL-ECNR2P2	2	Non-robot	
VL-ECNR2P3	3	Non-robot	
VL-ECNR2P5	5	Non-robot	



## M12 CONNECTOR CABLES

Model No.	Length (m)	Connector Side A	Connector Side B
VL-ECM12-2	2	M12 5Pin Female	M12 5Pin Male
VL-ECM12FOW-2	2	M12 5Pin Female	Open Wire
VL-ECM12-3P	2	M12 5Pin Female	3Pin Male
VL-EC3PM12-05-C1	0.5	3Pin Female	M12 5Pin Male



# OPTIONS

## DIFFUSER PLATE

Model No.	Suitable Bar Light
DP-B05015-01	VL-B05015 R / W / B
DP-B10015-01	VL-B10015 R / W / B
DP-B15015-01	VL-B15015 R / W / B
DP-B20015-01	VL-B20015 R / W / B
DP-B10030-01	VL-B10030 R / W / B
DP-B20030-01	VL-B20030 R / W / B
DP-B30030-01	VL-B30030 R / W / B
DP-DR1648-01	VL-DR1648 R / W / B
DP-DR2850-01	VL-DR2850 R / W / B
DP-DR3066-01	VL-DR3066 R / W / B
DP-DR5090-01	VL-DR5090 R / W / B
DP-AB15030-02	VL-AB15030-1 R / W / B
DP-AB30030-02	VL-AB30030-1 R / W / B
DP-AB45030-02	VL-AB45030-1 R / W / B

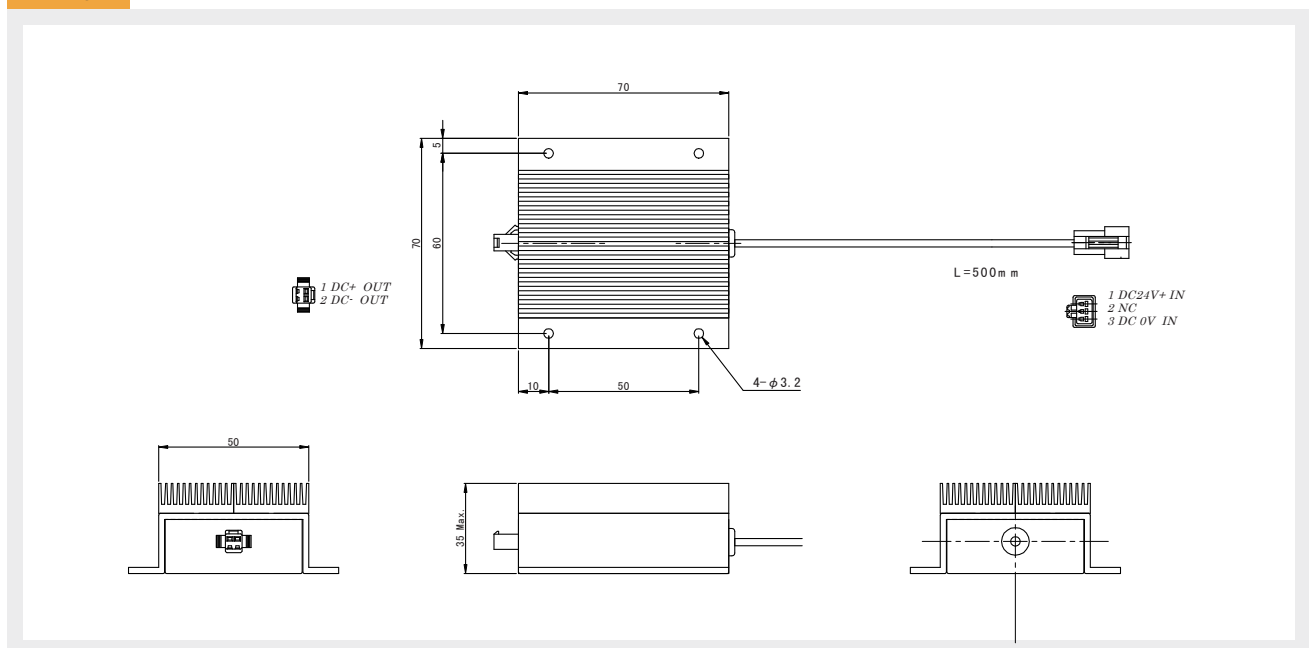
## POLARIZER PLATE

Model No.	Suitable Bar Light
PL-B05015-01	VL-B05015 R / W / B
PL-B10015-01	VL-B10015 R / W / B
PL-B15015-01	VL-B15015 R / W / B
PL-B20015-01	VL-B20015 R / W / B
PL-B10030-01	VL-B10030 R / W / B
PL-B20030-01	VL-B20030 R / W / B
PL-B30030-01	VL-B30030 R / W / B''
PL-DR1648-01	VL-DR1648 R / W / B
PL-DR2850-01	VL-DR2850 R / W / B
PL-DR3066-01	VL-DR3066 R / W / B
PL-DR5090-01	VL-DR5090 R / W / B
PL-FR3570-01	VL-FR3570 R / W / B

## RESISTOR BOX

Model No.	Suitable Lighting Series	Power Source
RB2407	VL-TLN / VL-CSH series	for 24V
RB1207	*Max. 700mA models.	for 12V

### RB2407



## ATTACHMENT ADAPTER FOR LENS

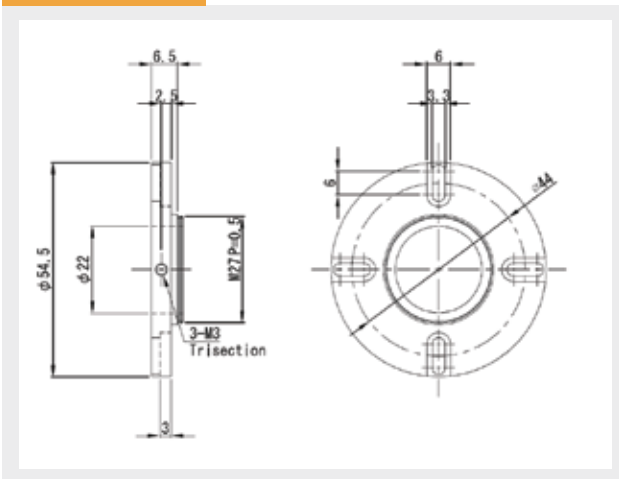
- Available to connect Lens and Lighting easily using filter thread at the front side of lens.  
Ex.) SV-1214H / M27.0 P=0.5 > AD-R01-270



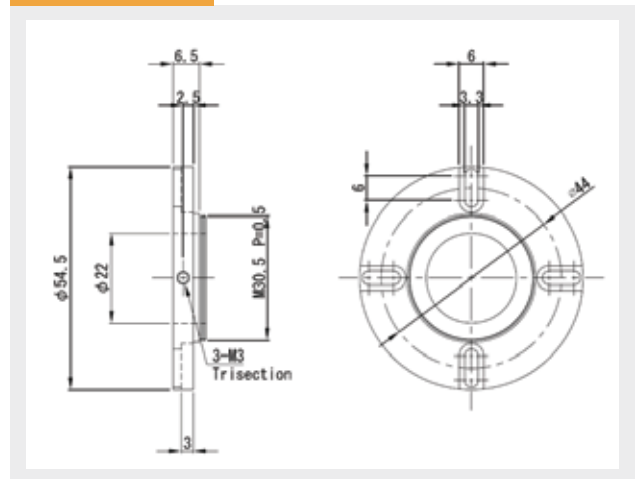
Attachable Model

Model No.	VL-DR	VL-FR
AD-R01-270	VL-DR1648	VL-FR3570
AD-R01-305	VL-DR2850	
	VL-DR3066	

AD-R01-270



AD-R01-305



## OTHER OPTIONAL ITEMS

- Polarizer
- Angle Adjustment Adapter
- Branch Cables (Non-robot)
- Register Box
- External Control Cables
- Robot External Cables

\*Please ask us for more details





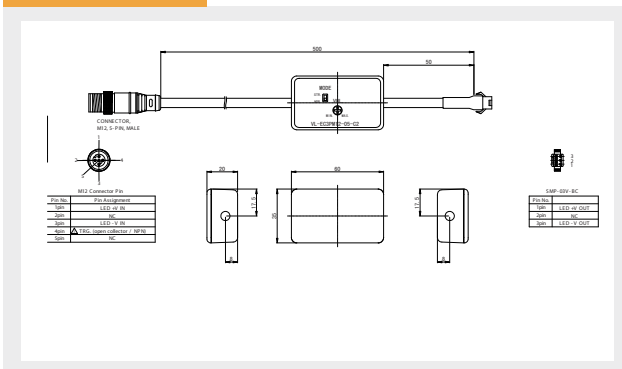
## COMPACT LIGHT CONTROLLER

- Simple & compact controller.
- 1CH output.
- Customization for connector / pin assignment are available.
- RoHS Compliant

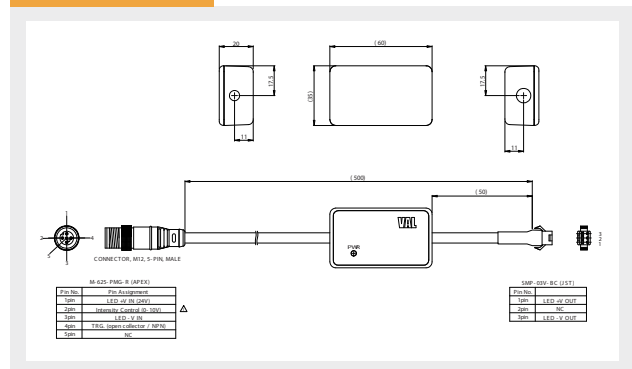
Model No.	VL-EC3PM12-05-C2
Output	1CH / max.15W
Input Voltage	DC24V
Rated output voltage	DC24V (between output and GND)
ON / OFF Control	Signal H (5-24V): OFF / L (0V): ON
Intensity Control (1)	PWM(7.8kHz)
Intensity Control (2)	MANU: Control manually by volume knobs External : N/A
Dimensions	Length: 500mm (Cable included) Case Dimensions: W60 x D35 x H20 mm

Model No.	VL-EC3PM12-05-C3
Output	1CH / max.15W
Input Voltage	DC24V
Rated output voltage	DC24V (between output and GND)
ON / OFF Control	Trigger input voltage Low: 0V, High: 12V
Intensity Control (1)	PWM(31kHz)
Intensity Control (2)	Manual :N/A Input Voltage : DCOV~DC10V
Dimensions	Length: 500mm (Cable included) Case Dimensions: W60 x D35 x H20 mm

VL-EC3PM12-05-C2



VL-EC3PM12-05-C3

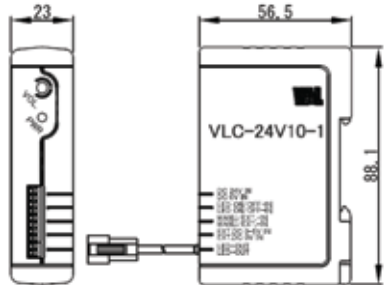




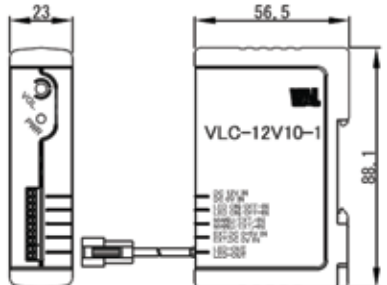
## COMPACT LIGHT CONTROLLER

- Suitable for machine use.
- 1CH / up to 10W.
- 3models for 24V / 12V / 0.7A.
- Super Compact design.
- RoHS Compliant.
- External ON/OFF and Brightness control are available.

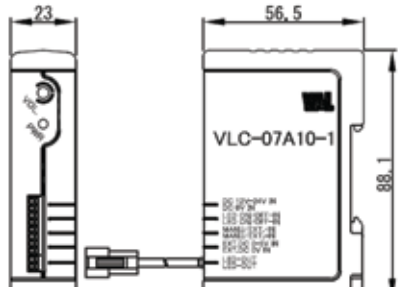
Model No.	VLC-24V10-1	
Output	1CH / max. 10W	
Input Voltage	DC24V / 0.5A	
Rated output voltage	1 Channels DC24V (between output and GND)	
Rated output current	0.42A	
ON/OFF Control	Signal H(12-24V): OFF / L (0V): ON	
Intensity Control (1)	PWM (19.6KHz)	
Intensity Control (2)	INT: Control manually by volume knobs EXT: Analog DC 0-5V Remote control	
Dimensions	W 56.5mm x D 23mm x H 88.1mm	



Model No.	VLC-12V10-1	
Output	1CH / max. 10W	
Input Voltage	DC12V / 1.0A	
Rated output voltage	1 Channels DC12V (between output and GND)	
Rated output current	0.84A	
ON/OFF Control	Signal H(12-24V): OFF / L (0V): ON	
Intensity Control (1)	PWM (19.6KHz)	
Intensity Control (2)	INT: Control manually by volume knobs EXT: Analog DC 0-5V Remote control	
Dimensions	W 56.5mm x D 23mm x H 88.1mm	



Model No.	VLC-07A10-1	
Output	1CH / max. 700mA	
Input Voltage	DC12V / 1A - 24V / 0.5A	
Rated output current	1 Channels 0.7A (between output and GND)	
ON/OFF Control	Signal H(12-24V): OFF / L (0V): ON	
Intensity Control (1)	Constant - current control	
Intensity Control (2)	INT: Control manually by volume knobs EXT: Analog DC 0-5V Remote control	
Dimensions	W 26.5mm x D 23mm x H 88.1mm	



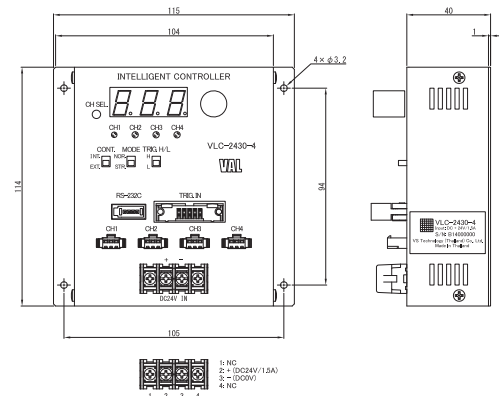
# LED LIGHT CONTROLLER (RS-232C (COMPLIANT))



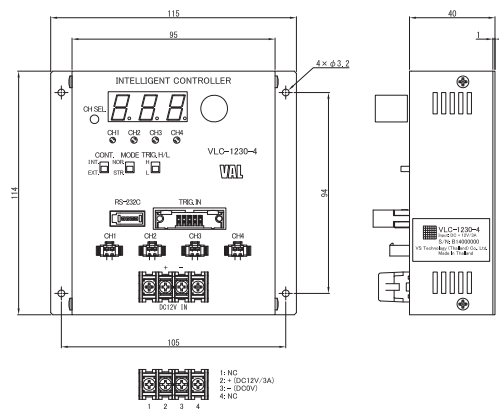
## INTELLIGENT DIGITAL LED LIGHT CONTROLLER

- 2 models for 12V and 24V.
- 30W 4 Channels.
- Strobe mode available. (\*not over-drive)
- Compact Body.
- External control available via RS-232C
- RoHS compliant (Compliant)

Model No.	VLC-2430-4
Input Voltage	DC24V (rated) +/- 10% 50/60Hz
Output	4CH / max. 30W (Total)
Rated output voltage	DC24V (between output and GND)
ON/OFF Control	TRIG.SW H Mode: Signal H(5-24V): ON / L (0V): OFF TRIG.SW L Mode: Signal H(5-24V): OFF / L (0V): ON
Intensity Control (1)	PWM (100KHz)
Intensity Control (2)	INT: Control manually by volume knobs EXT: Remote control by external RS-232C (Compliant)
Strobe Control (not over-drive)	NOR: The lights are always ON STR: Strobe control: (10 mode) 40us/80us/120us/200us/600us/1ms/4ms/10ms/20ms/40ms
Dimensions	W 115mm x D 40mm x H 114mm

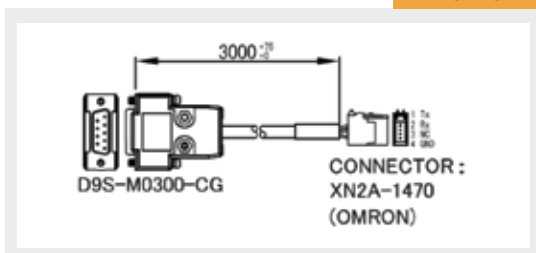


Model No.	VLC-1230-4
Input Voltage	DC 12V (rated) +/- 10% 50/60Hz
Output	4CH / max. 30W (Total)
Rated output current	DC12V (between output and GND)
ON/OFF Control	TRIG.SW H Mode: Signal H(5-24V): ON / L (0V): OFF TRIG.SW L Mode: Signal H(5-24V): OFF / L (0V): ON
Intensity Control (1)	PWM (100KHz)
Intensity Control (2)	INT: Control manually by volume knobs EXT: Remote control by external RS-232C (Compliant)
Strobe Control (not over-drive)	NOR: The lights are always ON STR: Strobe control: (10 mode) 40us/80us/120us/200us/600us/1ms/4ms/10ms/20ms/40ms
Dimensions	W 115mm x D 40mm x H 114mm



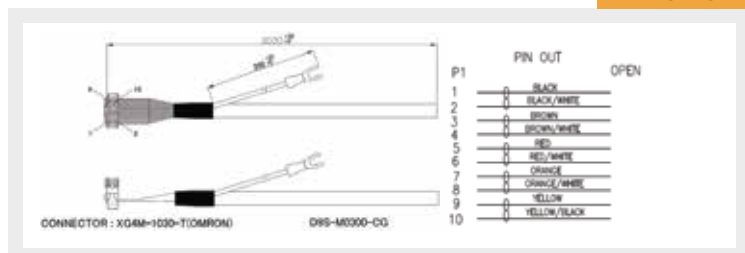
(1) Optional external serial cable.

EXCB1-3



(2) Optional external trigger cable.

EXCB2-3



# LED LIGHT CONTROLLER FOR LINE SCAN LIGHT

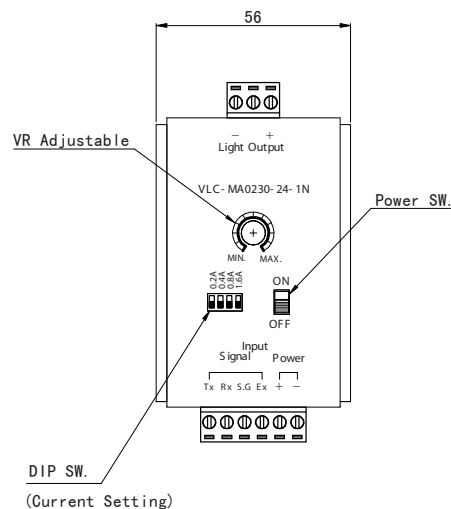
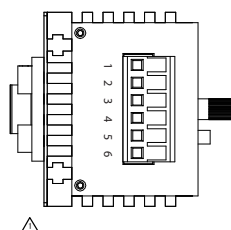
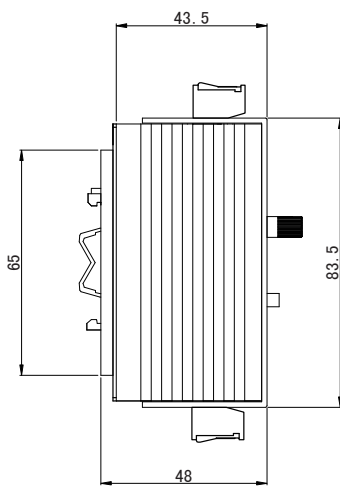


## CONSTANT CURRENT LED LIGHT CONTROLLER

- 1 CH / Adjustable output min. 0.2A ~ max. 3A.
- Suitable for Line-Scan application.
- External control available via RS-232C (compliant).
- Compact design.

Model No.	VLC-MA0230-24-1N
Output	1CH / max. 3A
Input Voltage	DC24V / 3A
ON / OFF Control	Signal H (5-24V): OFF / L (0V): ON
Intensity Control (1)	Constant current control
Intensity Control (2)	MANU: Control manually by volume knobs
MANU. / EXT. Control	Control: Remote control by RS-232C (Compliant) Signal : Manual (OPEN) / External (L:0V)
Cooling Method	Natural cooling by air
Dimensions	W 56mm x D 48mm x H 104mm

\* VLC-MA0230-24-1 is an exclusive design for VL-LB series. (Line Bar light)  
Please contact to us if use with other components.



Dip SW	Dip SW	Dip SW	Dip SW
0mA	800mA	1600mA	2400mA
200mA	1000mA	1800mA	2600mA
400mA	1200mA	2000mA	2800mA
600mA	1400mA	2200mA	3000mA

# LED POWER SUPPLY

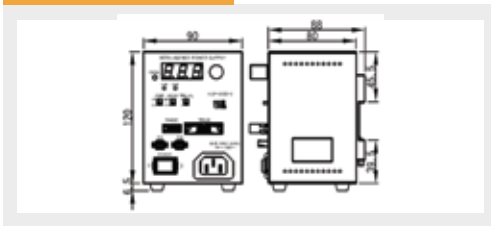


## INTELLIGENT DIGITAL POWER SUPPLY

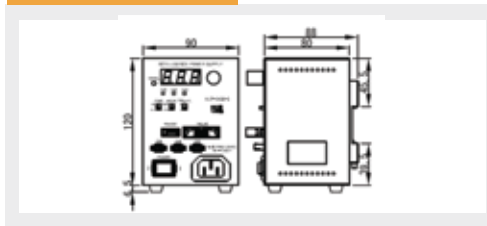
- 24V Digital power supply.
- Strobe mode available. (\*not over-drive)
- External control available via RS-232C (Compliant)
- 30W 3models (2CH/3CH/4CH), 60W 1model (4CH). Compact Body.
- DIN-rail attachable.
- RoHS and CE compliant

Model No.	VLP-2430-2	VLP-2430-3	VLP-2430-4	VLP-2460-4
Output	2CH / max. 30W	3CH / max. 30W (Total)	4CH / max. 30W (Total)	4CH / max. 60W (Total)
Input Voltage	AC 100-240V (rated) +/- 10% 50/60Hz			
Power Consumption	230 VA (AC230V)			
Inrush Current (A)	30/60A (AC115/230V) at cold start			
Rated output voltage	2 Channels DC24V (between output and GND)			
Rated output current	1.1A (Total for 2 channels)			
ON/OFF Control	TRIG.SW H Mode: Signal H(5-24V): ON / L (0V): OFF TRIG.SW L Mode: Signal H(5-24V): OFF/ L (0V): ON			
Intensity Control (1)	PWM (100KHz)			
Intensity Control (2)	INT: Control manually by volume knobs EX: Remote control by external RS-232C (Compliant)			
Strobe Control (not over-drive)	NOR: The lights are always ON STR: Strobe control: (10 mode) 40us/80us/120us/200us/600us/1ms/4ms/10ms/20ms/40ms			
Dimensions	W 90mm x D 88mm x H 126.5mm		W 120mm x D 88mm x H 126.5mm	

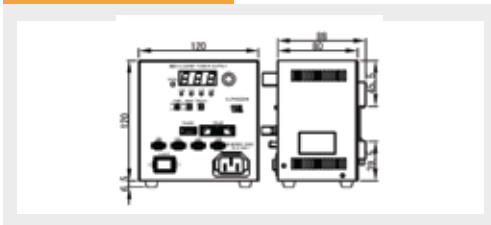
VLP-2430-2



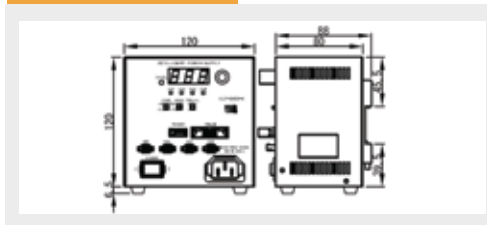
VLP-2430-3



VLP-2430-4



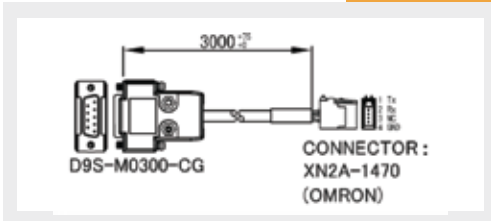
VLP-2460-4



DIN-rail adapter available as a standard package. Useful for installation to machine.

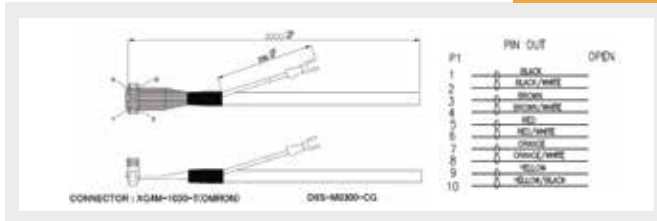
(1) Optional external serial cable.

EXCB1-3



(2) Optional external trigger cable.

EXCB2-3



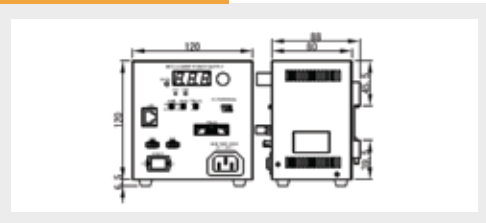


## INTELLIGENT DIGITAL POWER SUPPLY

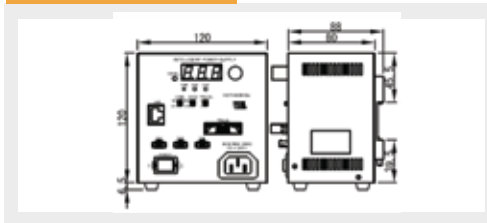
- 24V Digital power supply.
- Strobe mode available. (\*not over-drive)
- External control available via Ethernet.
- 30W 3models (2CH/3CH/4CH), 60W 1 model (4CH).
- Compact Body.
- DIN-rail attachable.
- RoHS and CE compliant
- Require hub-router to use Ethernet control (Without router type is also available please ask us)

Model No.	VLP-2430-2e	VLP-2430-3e	VLP-2430-4e	VLP-2460-4e
Output	2CH / max. 30W (Total)	3CH / max. 30W (Total)	4CH / max. 30W (Total)	4CH / max. 60W (Total)
Input Voltage	AC 100-240V (rated) +/-10% 50/60Hz			
Rated output voltage	DC24V (between output and GND)			
ON / OFF Control	TRIG. SW H Mode: Signal H(5-24V): ON / L(0V): OFF TRIG. SW L Mode: Signal H(5-24V): OFF / L(0V): ON			
Intensity Control (1)	PWM (100KHz)			
Intensity Control (2)	INT: Control manually by volume knobs EX: Remote control by external Ethernet			
Strobe Control (not over-drive)	NOR: The Lights are always ON STR: Strobe control (10 mode) 40us/80us/120us/200us/600us/1ms/4ms/10ms/20ms/40ms			
Dimensions	W 120mm x D 88mm x H 126.5mm			

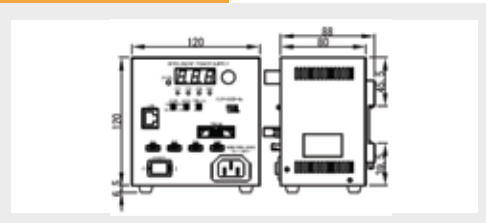
VLP-2430-2e



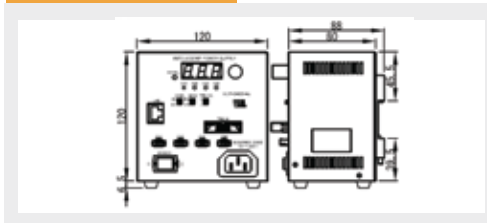
VLP-2430-3e



VLP-2430-4e

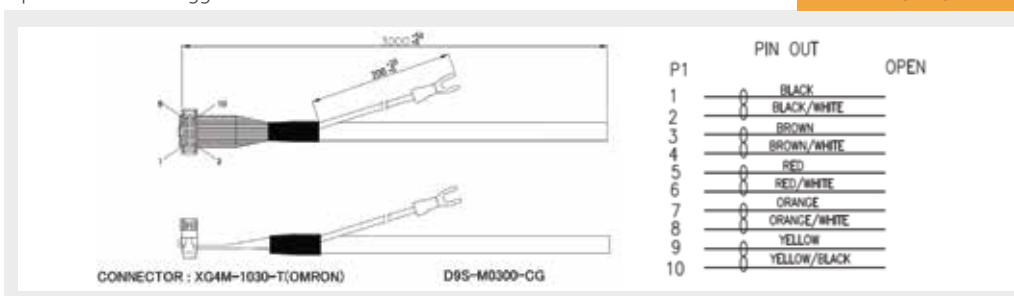


VLP-2460-4e



Optional external trigger cable.

EXCB2-3



# LED STROBE POWER SUPPLY (OVER DRIVE TYPE)

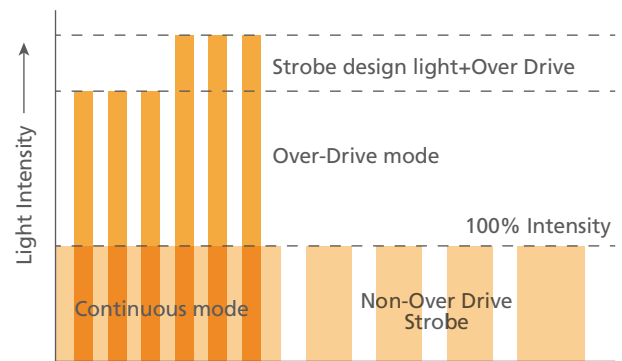


## OVER DRIVE STROBE POWER SUPPLY

- 24V Digital power supply.
- Over Drive Strobe function.
- External control available via RS-232C (Compliant)
- 30W 2models (2CH/3CH).
- Compact Body.
- DIN-rail attachable.
- RoHS and CE compliant
- This power supply is strobe use only.

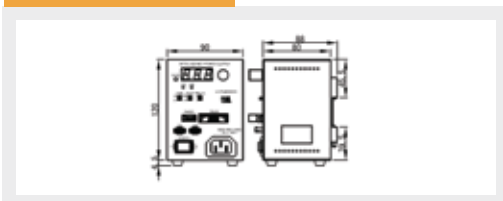
## WHAT IS "OVER DRIVE"?

It is the method to increase a light intensity with pulse lighting compare with continuous mode. It brings benefit to various machine vision applications except the case the camera is exposed long time such as monitoring or line-scan applications. Our Over-Drive power supply provide DC 48V with the certain cycle (Duty Cycle must be On 1 : Off >10) in order to generate more than 2 times higher intensity than continuous use. Thus Over-Drive function is suitable for an application which need high-speed exposure (is mean High-Speed inspection). Additionally if use the lighting unit which is designed for Strobe-use only, it is able to get more higher intensity than the combination of standard light with Over-Drive power supply. And we're capable to provide these solution depends on the conditions.

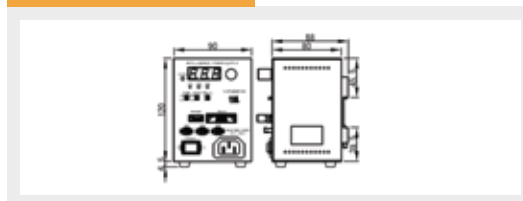


Model No.	VLP-4830-2S	VLP-4830-3S
Output	2CH / max. White & Blue 20W / Red 7.5W	3CH / max. White & Blue 20W / Red 7.5W
Input Voltage	AC100-240V (rated) +/- 10% 50/60Hz	
Rated output voltage	DC48V (between output and GND)	
ON / OFF Control	TRIG. SW H Mode: Signal H(5-24V): ON / L(0V): OFF / Duty Cycle ON1 : OFF>10 TRIG. SW L Mode: Signal H(5-24V): OFF / L(0V): ON / Duty Cycle ON1 : OFF>10	
Strobe Control (Over-drive)	INT: Control manually by volume knobs (10-990us / 10us step) EXT: Remote control by external RS-232C (Compliant) STR: Strobe control (10 mode) 40us/80us/120us/200us/600us/1ms/4ms/10ms/20ms/40ms	
Dimensions	W 90mm x D 88mm x H 126.5mm	

VLP-4830-2s



VLP-4830-3s

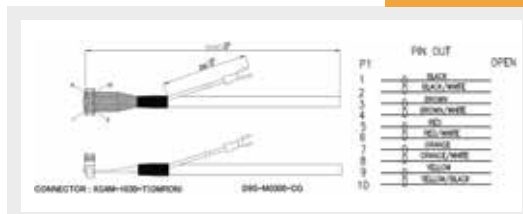
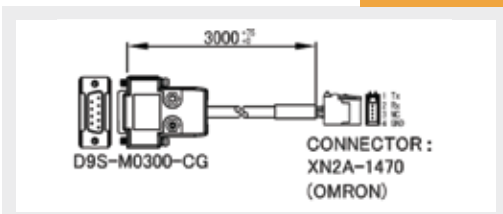


(1) Optional external serial cable.

EXCB1-3

(2) Optional external trigger cable.

EXCB2-3



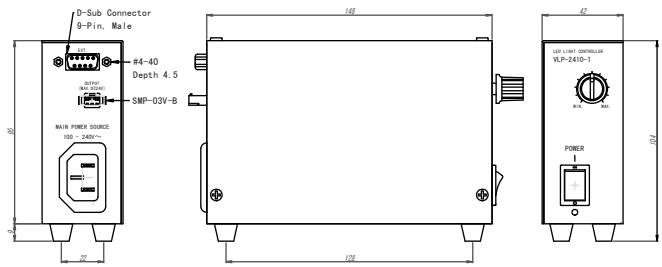




## ANALOGUE POWER SUPPLY

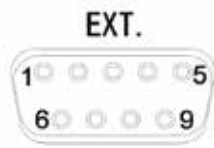
- 24V Analogue power supply.
- 10W / 1CH.
- RoHS compliant.

Model No.	VLP-2410-1	
Output	1CH / max. 10W	
Input Voltage	AC 100-240V (rated) +/- 10% 50/60Hz	
Rated output voltage	DC24V (between output and GND)	
ON / OFF Control	Signal H (5-24V): OFF / L (0V): ON	
Intensity Control (1)	PWM (94KHz)	
Intensity Control (2)	MANU: Control manually by volume knobs REMO: Remote control by RS-232C (Compliant)	
Operating Environment	Temperature: 0~40°C Humidity: 20~85% RH (No condensation)	
Storage Environment	Temperature: -15~40°C Humidity: 20~85% RH (No condensation)	
Dimensions	W 42mm x D 148mm x H 104mm	
Weight	Approx. 0.5Kg	



### External Signal Connector

No.	Identification
1	NC
2	Tx (OUTPUT)
3	Rx (INPUT)
4	NC
5	GND
6	On/Off Signal Input
7	Manu-EXT
8	NC
9	GND (Common)



### Optional External control cable

Model No.	Length	Side A	Side B
EXCB3-3	3m	D-sub 9Pin connector Female	Open wire
EXCB4-3	3m	D-sub 9Pin connector Female	D-sub 9Pin connector Female
EXCB5-3	3m	D-sub 9Pin connector Female	D-sub 9Pin connector Male

# COMPANY PROFILE



## Hanoi Representative Office

15th Floor, Icon4 Tower, 243A De La Thanh,  
Lang Thuong, Wong Da, Hanoi Vietnam.



## Technical Center

29/15 Moo 5, Bangna-Trad Road  
Km.25.5, Bangsaothong,  
Bangsaothong, Samutprakarn 10540



## Sales Office

54 BB Building 8th Floor, Room 3824,  
Sukhumvit 21 (Asoke) Road, North Klong  
Toey, Wattana, Bangkok Thailand 10110

## VS Technology (Thailand) Co., Ltd. is a subsidiary company of VS Technology Corporation

Mission : To be a valuable company in regional "Vision" market

Company Name	VS Technology (Thailand) Co., Ltd.
Business Purpose	Sales and Technical support of VST products for regional customers R&D and Manufacture of LED lighting and relative products
Business Area	ASEAN, India, Oceania, East Asia, Europe, North America etc.
Our Market	Machine Vision, Medical, Security, ITS etc.
Capital	THB10,000,000-
Accounting Term	December
Establishment	Dec – 2014

[www.val-mvlight.com](http://www.val-mvlight.com)

# What is VS Technology Corporation.

VS Technology Corp, VST was established in 1997 and has been growing together with our customer. As a manufacturer specialized in machine vision optical components, our goal is to be a valuable company who supports the industrial field which is very diversified and complex.

### VS Technology Corp. Headquarter

1-9-19 Azabudai, Minato-ku, Tokyo 106-0041, Japan

[www.vst.co.jp](http://www.vst.co.jp)

### VST Policy :V3S

We make speedy response and support come true with compact (Small) business organization by outsourcing production basis on cell production. Sales Engineering dept. who is specialized optics detects market needs of "Various Types, Small quantity, Adjustable requirements" and bring in the needs to product design.

We always design and have product lineup to suggest optimal optics for needs in such a variety period.

## Worldwide VST group company net-work.

We offer our products not only Southern Asia but also EU / USA / Eastern Asia etc. Today VST group has offices at more than 10 locations for sales and technical support. We serve you world-wide.

Find your VST office: <http://www.vst.co.jp/en/profile/profile3.php>



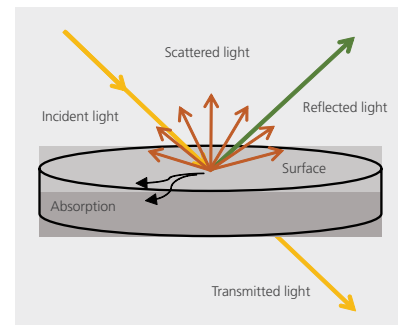
## Things to check

1. Purpose of your project	▶	Alignment? Measurement? Inspection? OCR/OCV?
2. Object details	▶	Material, Shape, Color, Surface condition, etc.
3. Image size	▶	What size of FOV (Field of View) do you need?
4. Mechanical condition	▶	What lighting working distance is acceptable? Etc.

Image testing using camera / Lens / Lighting is most important step to make sure suitable components for vision system.

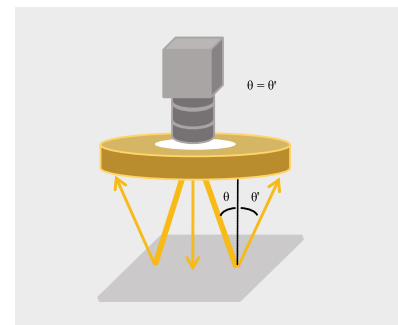
## Effect of Lighting

When the light achieve to the object it divides into Reflected light / Scattered light / Transmitted light and some of absorbed. The ratio of each effects are depend on the object details such as material / surface shape / flatness and also wavelength of the light. Generally shorter wavelength has higher scattering rate. It's mean short wavelength such as Blue is suitable for small defect inspection such as scratch or crack of the object than Red color. We recommend to imagine these factors before choose lighting unit for vision system.



## Lens angle and Lighting dimension

It is important to understand the relationship between lens angle and dimension of lighting unit especially the case need to use direct light such as direct ring light or diffused ring light and back light etc. Normally the light unit dimension should be double size of FOV (Files of View) except the combination with Telecentric lens. Because the incident light angle will the be same as reflect light angle (in case of flat surface). So, in order to cover the entire FOV, we need to consider lens angle. And if the lens or lighting working distance will be longer, the required light unit dimension will be bigger accordingly.



## What are "Dark Field" and "Bright Field"

Choosing suitable lighting unit, it is better to imagine which type Dark Field or Bright Field is suitable image for the project purpose. In dark field case, camera receive scattered light, reflected light is away from the camera. So the defect or mark will be shown as white color in the image with Mono chrome camera. On the other hands, bright field case, camera receive reflected light and able to get high contrast. But specular reflections on shiny or reflective surfaces. Also lighting unit should be double size of FOV. Optional diffuser plate or Diffused light (such as VL-RD / VL-LRD) should be good option in order to avoid hot spots or dark spots in the camera image.

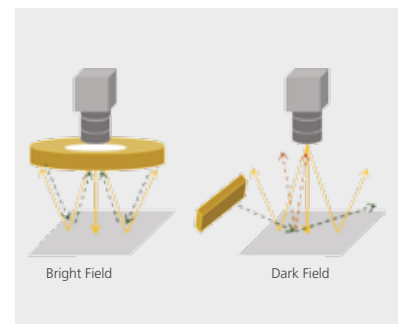
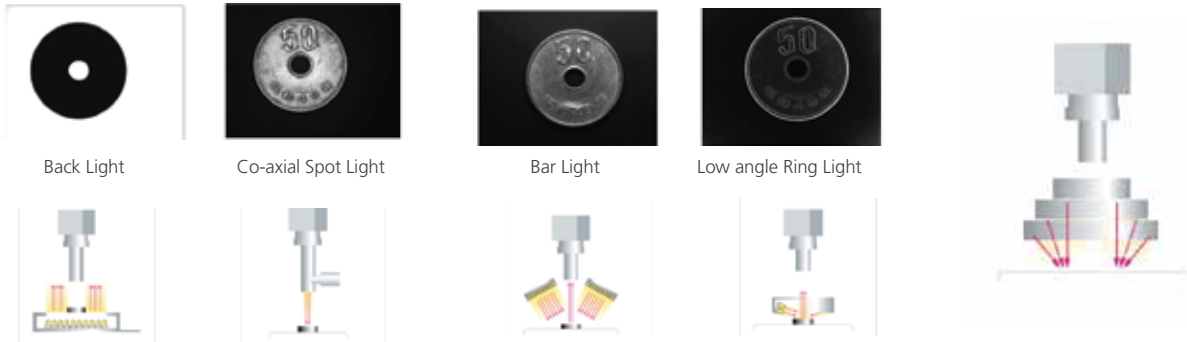


Image comparison between Bright Filed and Dark Field.



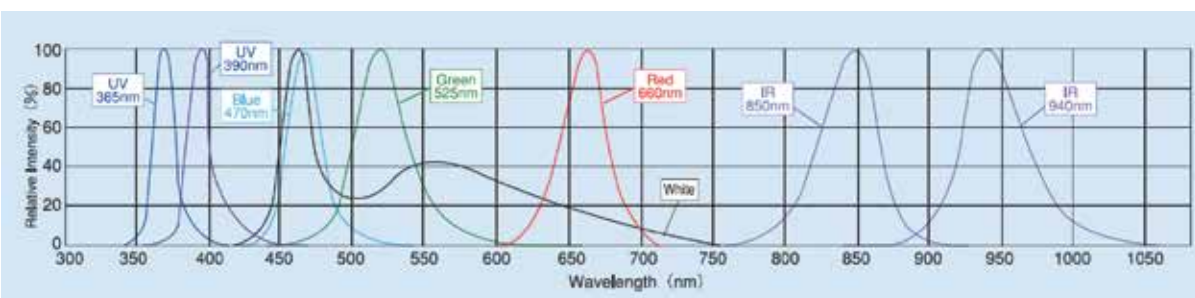
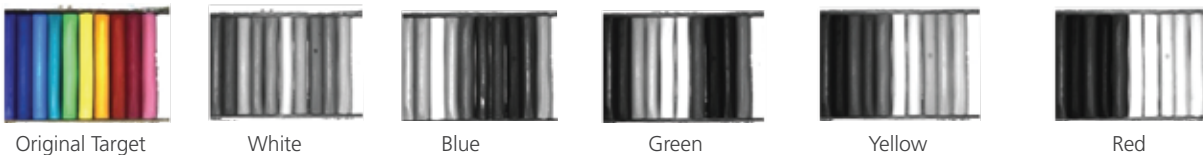
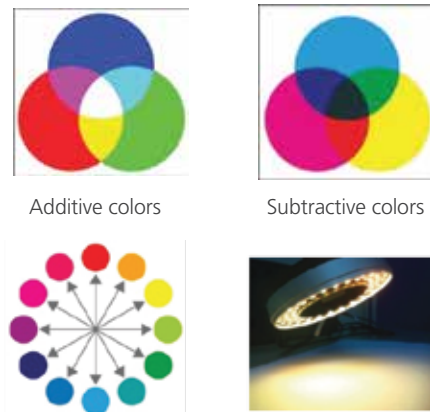
## Effect by the different lighting design



The most important things to make the best vision system is find out the lighting and lens which provide enough contrast between target point and others in the image. In order to get the contrast, we need to find out suitable shape and size, color, brightness from variety of machine vision lighting. Because these conditions will be different in every project by the object difference such as surface shape, material, color, and mechanical condition, inspection purpose etc.. Sometime, application may need multi-angle or multi-color, mixed-color lighting in order to get contrast. VAL has wide-range of line-up and also customized model capability.

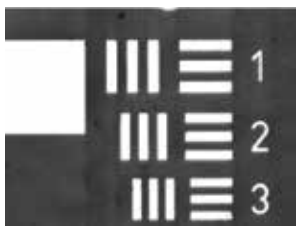
## Difference in Light and Color.

It is very important to choose correct light to fix machine vision system because color will also effect the contrast between target point and others in the camera image. When we consider "light" it will helps if understand the difference between Additive colors and Subtractive colors. Lights such as Green / Blue / Red are Additive colors, ex. Green + Blue + Red = white, Green + Blue = Cyan etc. So the result will be determine by addition. On the other hands Pigments such as Cyan / Magenta / Yellow are Subtractive colors, ex. Cyan absorb Red, Magenta absorb Green, Yellow absorb Blue, then CMY absorb all lights and become black. So the result will be determine by subtraction.

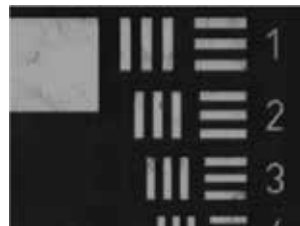


## Lighting Brightness

When consider lighting brightness, many people compare the "maximum power consumption". Of course, power consumption will be one of a key factor but it can't be only one factor to compare lighting brightness. Following image is a comparison between 2.5W Spot lighting and 3.0W Spot lighting at exactly same condition (camera shutter speed / Telecentric lens / LED power supply).

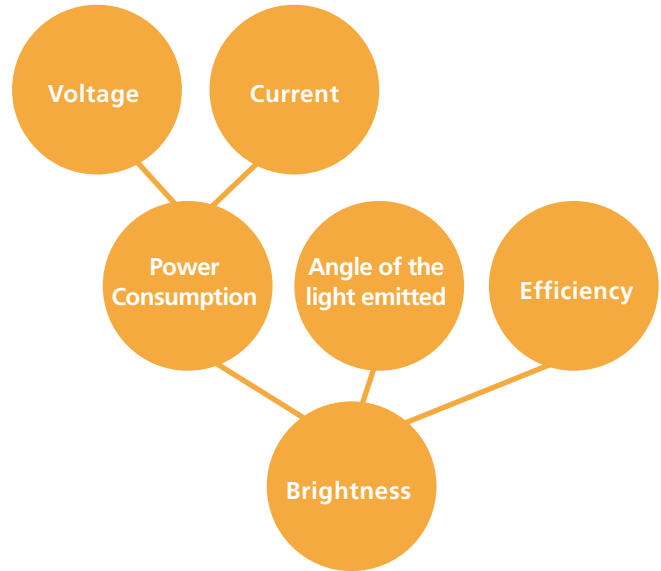


2.5W Spot Light



3.0W Spot Light

The 2.5W spot light provides much brighter image than 3.0W even lower power consumption. It is better to understand the other factor which is related lighting brightness as following chart. If there are two lightings which has the same power consumption with different angle of the light emitted, A is 120 degree / B is 60 degree, and if the 60 degree illumination able to cover entire FOV, image brightness will be brighter than 120 degree one. Thus power consumption should be just one of the factor when you consider lighting brightness.



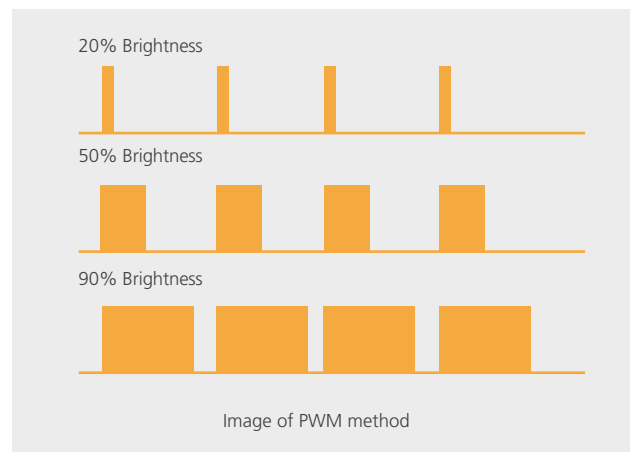
Sample image of the angle of the light emitted difference. Narrow angle light provides more higher intensity than Wide angle light. But the lighting area is smaller than Wide angle type. Both light is the same power consumption with 24V design.

## Lighting Method

This is an introduction of lighting method which is common in current machine vision market.

**1** PWM (Pulse Width Modulation) is a method to control light intensity by varying pulse width. Duty cycle is a ratio of the Light is ON. The larger duty cycle is more brighter and lower duty cycle seems darker. The advantage of PWM method is stable control of the brightness. Disadvantage is not suitable for Line-Scan application since the light is flashing

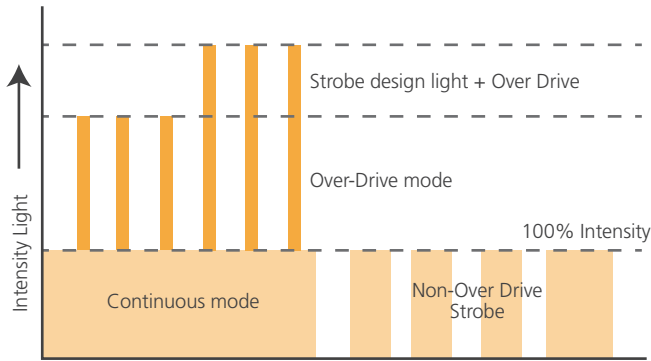
**2** Fixed current control provides constant current to the lighting unit. The brightness is adjusted by the current. The advantage is improving efficiency while reducing heat generation. Also, suitable for Line-Scan application because the light is not flashing. But the cost is tend to higher than other method since it needs more complex design.





## Light Emitting Mode.

Continuous mode and Strobe mode are famous in current machine vision market. But it is better to separate on more mode to avoid misunderstanding. It is 3 mode, Continuous, ON/OFF (or Non-over drive strobe) and Strobe (or Over Drive). Over drive mode is the method to increase lighting brightness twice of 100% brightness at continuous mode.



## Customized lighting

It's not so rare case that the project needs customized lighting even though there are so many kind of standard lighting products in worldwide market. VAL is capable to design and provide customized light solution from small to large quantity. The following points are important factor when we consider customized light. Please try to fill in the blank as much as possible when give us customized or semi-customized opportunity.

Point	Description	Example
Inspection details		Wafer Inspection etc.
Lens FOV		80 x 80mm etc.
Color		Red / White etc.
Wavelength		640nm / 850nm etc.
LED Type		Through-hole / Chip etc.
Electrical design		DC 24V / DC 12V etc.
Category		Ring / Back light etc.
Dimension		ID / OD / window size etc.
Light Angle		Flat / 60 degree etc.
Diffuser		Need removable diffuser plate etc.
Lighting Area		100 x 100mm etc.
Lighting WD		200mm etc.
Intensity		20,000 lux etc.
Mechanical 1		Thickness limitation etc.
Mechanical 2		Screw hole advice for clamp.
Cable		500mm etc.
Connector		M12 (5pin) etc.
Others		

## CUSTOMER SERVICE

We Support customer not only before sales, but also after sales with a worthy long term relationship.

### Testing & Meeting Room

We have testing room to suggest the best solution for our customer. We wait for your coming.

### Rental

We choose lens and lighting based on customer's imaging environment from many kinds of products and rent sample item with charge-free.

### Seminar

We hold seminar to guide basic knowledge of lens and how to choose lens and lighting in our office and outside company.

### [www.val-mvlight.com](http://www.val-mvlight.com)

Update new products and news constantly. Easy lens choosing (calculating formula) and download of drawing are available.



Entrance of Sales office



More than 300 sample units

FOR DETAILS OF VST LENS PRODUCTS,  
PLEASE FEEL FREE CONTACT TO US OR VISIT OUR WEBSITE



CCTV Lens



Macro Lens



Telecentric Lens



Zoom Lens



Large Format Lens



Optional Parts



Filter / Prism etc.



\* WARRANTY \* (for VAL Lighting products only)

Warranty Period : 2 (Two) years from VS Technology (Thailand) Co., Ltd. shipped date.

\*VLC (controller) series is one year warranty.



### WARRANTY TERMS AND CONDITIONS

1: VS Technology (Thailand) Co., Ltd. will repair or replace the product with free of charge if it should fail to function under use on specified condition in accordance with the instruction guide and other written cautions during the indicated warranty period of two years.

2: VS Technology (Thailand) Co., Ltd. will charge a repair fee under the following conditions;

- 2.1) In case of the product has been subjected to misuse or modify from its original design.
- 2.2) In case of the product has been damaged from impacts due to inappropriate handling.
- 2.3) In case of damaged to the product result from external causes including Accidents, Fire, Pollution, Riots, Communication Failures, Earthquakes, Thunderstorms, Wind and Flood damage, or any other act of providence, or from any extraordinary conditions such as Electrical surges, Water leakage condition, or the use of Chemicals.
- 2.4) In case of the damage results from connection to any Power supply or to any Equipment which VS Technology (Thailand) Co., Ltd. dose not manufacture or does not specify to use.

3: VS Technology (Thailand) Co., Ltd. assumes no liability for any user's secondary damage (Damage of equipment, Loss of opportunities, Loss of profits, etc.) or any other damage resulting from a failure of our product.

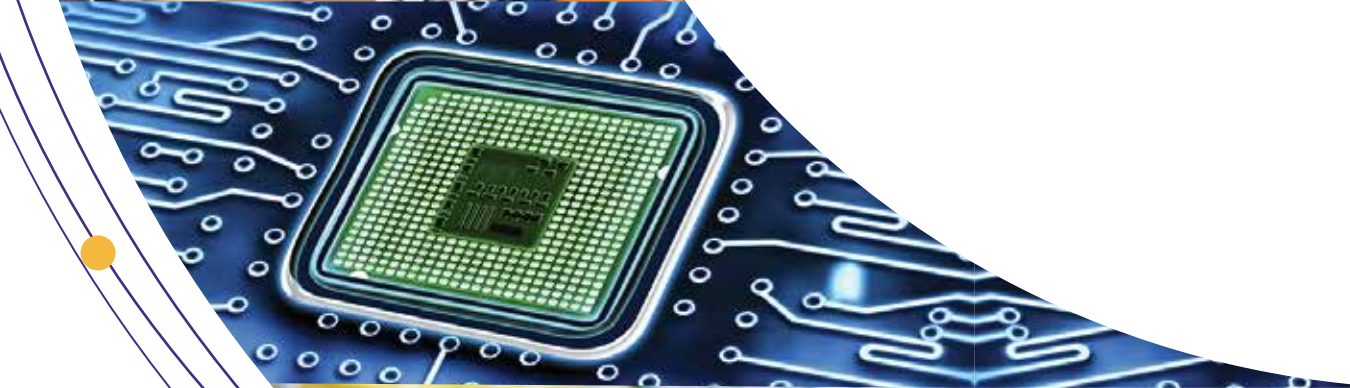
This warranty information provides the scope of VS Technology (Thailand) Co., Ltd's product warranty within the specified period, and does not indicate or imply any further guarantee beyond the warranty terms and conditions.

\* Please read "Instruction Manual" which is contained VAL original product's package before you start to use in order to use VAL products with optimum performance and safety.

\*Warning for UV (Ultraviolet) color products.

- Never look directly at our tough an ultraviolet light source.
- Do not look at the radiating surface of the light unit directly while it is turn on. Also do not turn it towards others.
- During the operation, always wear protective UV glasses and be sure not to let any UV light enter your eyes.
- During the operation, please wear long sleeves and gloves and do not expose your skin to the UV light.
- Make sure that everyone in the vicinity of the light unit is aware of the dangers of UV light LEDs.

\* Specification and dimensions of all of VAL products are subject to change without notice.



[www.val-mvlight.com](http://www.val-mvlight.com)