VS Technology
Machine Vision Optics

VS Technology Corporation
www.vst.co.jp/en

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MACHINE VISION LIGHTING DATA

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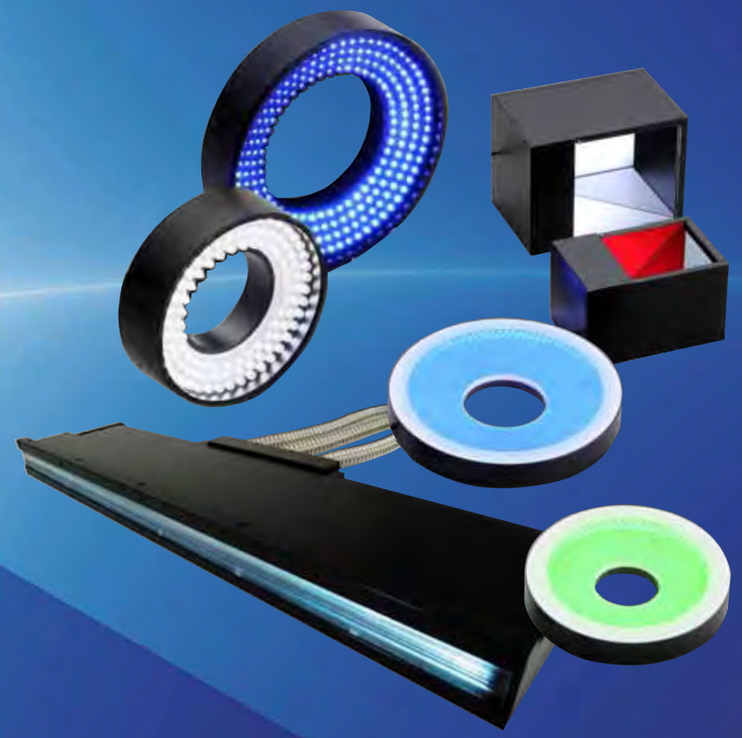
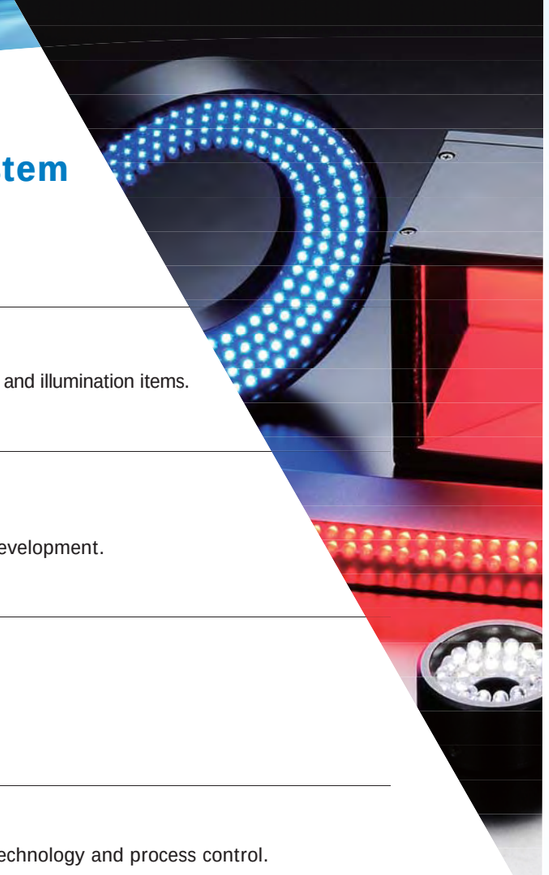


MACHINE VISION LIGHTING DATA

VST for Your Vision System



Wide Product Range

A large product pipeline which includes more than 500 standard optical and illumination items.

OEM

Capable of OEM and customized products.
From cost-effective semi-custom to state-of-the-art new product development.

Performance

Our products are developed by experienced designers in optical engineering specializing in machine vision applications.

Manufacturing

Cost effective production system in our factory with cutting edge technology and process control.

Quality Control

Well equipped for laboratory testing and inspection, such as MTF, Vibration, Heat-shock, Centering measurement, etc.

Customer Support

Our offer

Product selection, Product tryout, Testing service, Consultation and Quotation. Faster and better.

Until you receive it

Designing, Manufacturing, Testing and Delivery. All for one goal: Your Vision.

After sales

Post-sales services are well provided. Aiming for a mutually beneficial long-term relationship.

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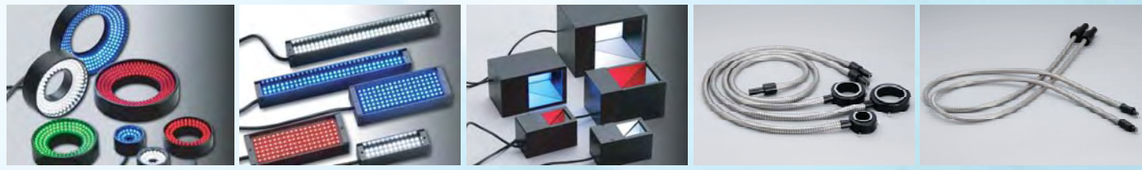

Optical Fiber Products

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High Power LED Light Source

- Super bright LED light source
- Alternative to Metal Halide
- Uniform light with original optical design

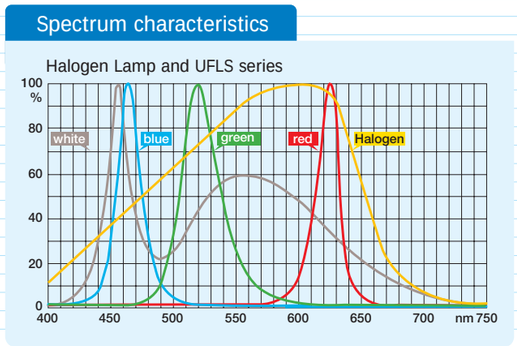
- Two models

UFLS-50
: 4 times brighter than UFLS-12

UFLS-140
: 12 times brighter than UFLS-12

- Equipped with three different external control
  : Serial(RS-232C), 8bit digital, Analog
- Adaptors for different light guides

Spectrum characteristics



Specifications

Model No	UFLS-50	UFLS-140
Fiber bundle diameter	φ8～φ12	φ15～φ24
Illumination intensity	360.000 lx ※at WD 100mm	900.000 lx ※at WD 100mm
Color	Standard : White Make to Oder : Red Blue Green	Standard : White
Power Consumption	100W	200W
Input Voltage	AC100～240V 50/60HZ	
Intensity Control System	Manual: by volume knob on the front panel Remote: RS-232C / 8bit digital / 0～5V Analog	
Interface	D-sub25p	
Average Lifetime	30.000H※	
Operating Temperature	0°～40°	

ROHS Compliant.

※Measured by using straight light guide.
※Not guaranteed lifetime, which depends on the operation enviroment.

Full Color LED Light Source

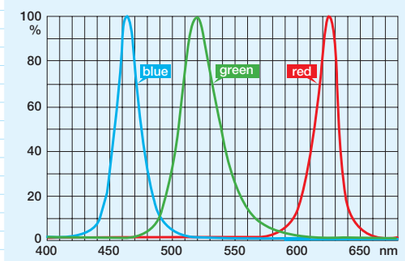
- Three different LED colors, Red, Green & Blue, installed in one light source unit.
- Able to adjust the power output of each LED color independently and get the most suitable color contrast.

Specifications

Model No	UFLS-12-08RGB	UFLS-12-12RGB
Fiber bundle diameter	～φ8	～φ12
Color	Red Blue Green	
Input Voltage	AC100～230V 50/60HZ	
Intensity Control System	by volume knob on the front panel	
Interface	D-sub25pin	
Average Lifetime	30.000H	
Operating Temperature	0°～40°	
Dimension	W74 x H118 x D242 ※not including protruding parts.	
Weight	150Kg	

※ROHS Compliant.
※Not guaranteed lifetime, which depends on the operation enviroment.

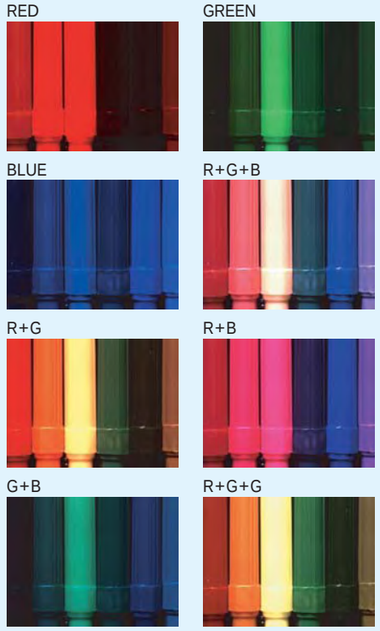
Spectrum characteristics



Pin Assignment

S1 Position	→	↘	↗		Power On/Off to change modes
Pin No.	Serial (RS232C)	8-bit Digital	Analog	In/Out	
1		Common(+)	Common(+)	(A)	Shared Power Source
2	T×D			Out	Data Output
3	R×D			In	Data Input
4	RTS(N.C)			Out	
5	CTS(N.C)			In	
6					
7	D.GND	D.GND	D.GND		Digital Ground
8					
9		Bit 0(LSB)	Analog input (0-5V)	In(K)	Light Modulating Signal (LSB) Analog 0-5V
10		Bit 1		In(K)	Light Modulating Signal
11		Bit 2		In(K)	Light Modulating Signal
12		Bit 3		In(K)	Light Modulating Signal
13		Bit 4		In(K)	Light Modulating Signal
14		Bit 5		In(K)	Light Modulating Signal
15		Bit 6		In(K)	Light Modulating Signal
16		Bit7(MSB)		In(K)	Light Modulating Signal (MSB)
17		On/Off	On/Off	In(K)	External On/Off
18					
19					
20					
21					
22		Error Signal	Error Signal	Out(E)	Alarm Output
23					
24					
25		Trigger Input / Error Signal Off	Error Signal Off	In(K)	Trigger Input / Error Signal Off

Sample visual representation with different color lighting conditions



LED Light Source UFLS Series

Specifications

Model No	UFLS-12-08	UFLS-12-12
Fiber bundle diameter	～Φ8	～Φ12
Illumination intensity	300.000 lx ※at WD 50mm	
Color	Standard : White / Make to Oder : Red Blue Green	
Color Temperature	6.500K (white)	
Input Voltage	AC100～230V 50/60HZ	
POWER CONSUMPTION	80VA	
Intensity Control System	Manual	by volume knob on the front panel
	Remote	RS-232C 8bit digital 0～5V Analog
Interface	D-sub25pin	
Average Lifetime	30.000H※	
Operating Temperature	0°～40°	
Dimension	W74 x H118 x D242 ※not including protruding parts.	
Weight	approx 1.5Kg	
	ROHS Compliant.	

ROHS Compliant.

※Measured by using straight light guide.
※Not guaranteed lifetime, which depends on the operation enviroment.

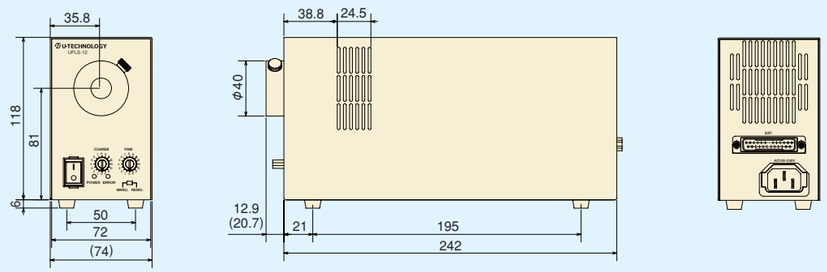
- High Power LED with original optics providing extremely high intensity **Brighter than 150W** halogen light source.

Configuration of model No.

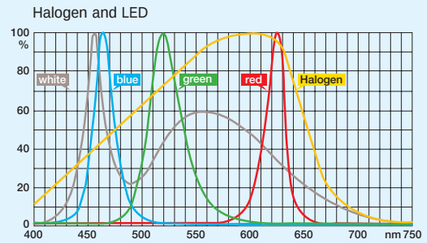
UFLS-12-08W-UT

- 08 : Fiber bundle diameter — 08:～Φ8 12:～Φ12
- W : Color — W / R / B / G
- UT : Type of Light guide

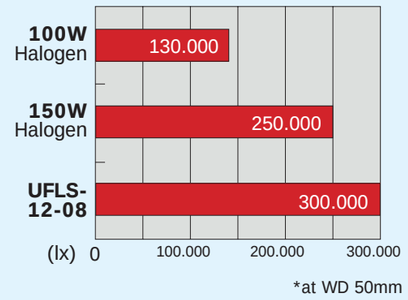
Dimension



Spectrum characteristics



Intensity Comparison.



Pin Assignment

S1 Position	→	↘	↗		Power On/Off to change modes
Pin No.	Serial (RS232C)	8-bit Digital	Analog	In/Out	
1		Common(+)	Common(+)	(A)	Shared Power Source
2	T×D			Out	Data Output
3	R×D			In	Data Input
4	RTS(N.C)			Out	
5	CTS(N.C)			In	
6					
7	D.GND	D.GND	D.GND		Digital Ground
8					
9		Bit 0(LSB)	Analog input (0-5V)	In(K)	Light Modulating Signal (LSB) Analog 0-5V
10		Bit 1		In(K)	Light Modulating Signal
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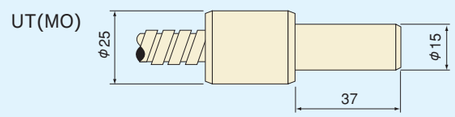
12		Bit 3		In(K)	Light Modulating Signal
13		Bit 4		In(K)	Light Modulating Signal
14		Bit 5		In(K)	Light Modulating Signal
15		Bit 6		In(K)	Light Modulating Signal
16		Bit7(MSB)		In(K)	Light Modulating Signal (MSB)
17		On/Off	On/Off	In(K)	External On/Off
18					
19					
20					
21					
22		Error Signal	Error Signal	Out(E)	Alarm Output
23					
24					
25		Trigger Input / Error Signal Off	Error Signal Off	In(K)	Trigger Input / Error Signal Off

Dimension example of Light Guide.

<Standard>



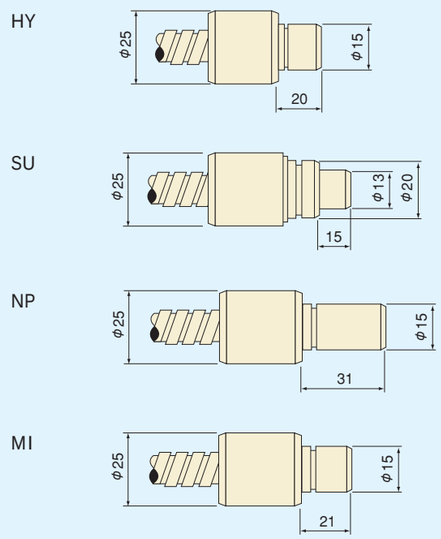
* If you use other light gude, please ask us.

Option.

*External control cable.
UTC-EXC-25P / D-sub 25pin

Dimension example of Light Guide.

<Optional>



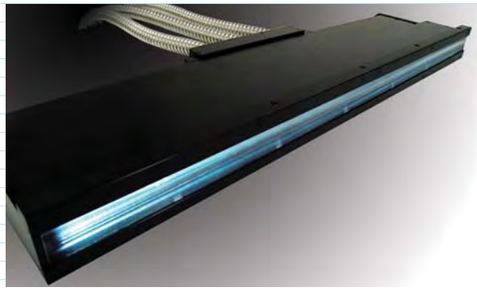
Long Line Light Guides

Super uniform and highly condensed light for linescan

Main Applications ●FPD and Glass inspection ●Optical film and sheet inspection ●Solar panel inspection

- State-of-the-art fiber optics technology providing high light uniformity and linearity
- Advanced condensation and diffusion lighting design most suitable for line sensors
- Line length up to 3400mm with multiple light sources

※Refer to page XX for single or double light source application.



Model Description

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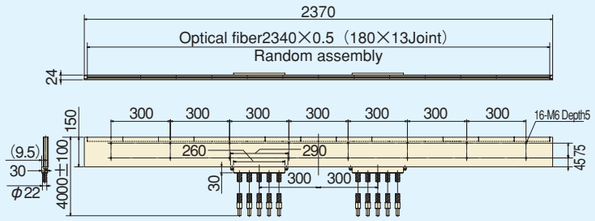
Fiber material	Line Length	Line Thickness	Number of Light Source	Light guide length	Tube material	Condenser Lens	Option
G : Glass P : Plastic		Standard : 0.5mm			S : SUS flexible V : SUS flexible + PVC	L : Lens DL : Diffuser + Lens	HR : 300℃ Heat Resistant

[Example of product]

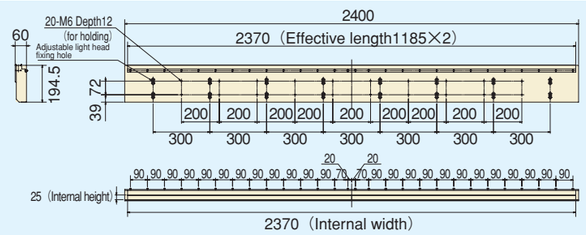
UFKG2340×0.5-10B-4000S-DL

Line length : 2340mm
Line Thickness : 0.5mm
Light guide length : 4000mm
Condenser: Diffuser+Lens

Light Head



Condenser

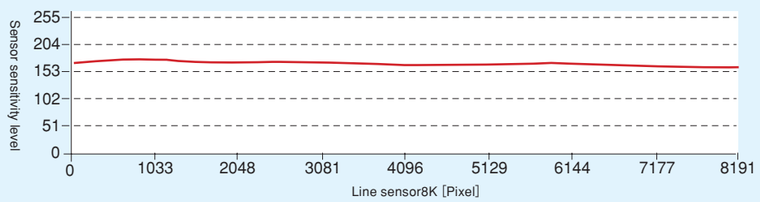


All dimensions in mm

Uniformity graph

[Measurement condition]

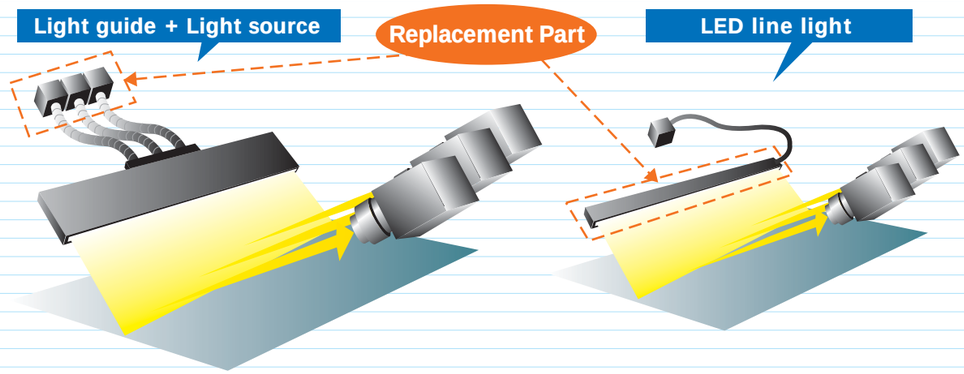
Line sensor : 8K/7μm
Lens : VS-L0715-65
Lighting WD : 80mm



Advantage in maintenance over LED line light!!

Labor and cost effectiveness

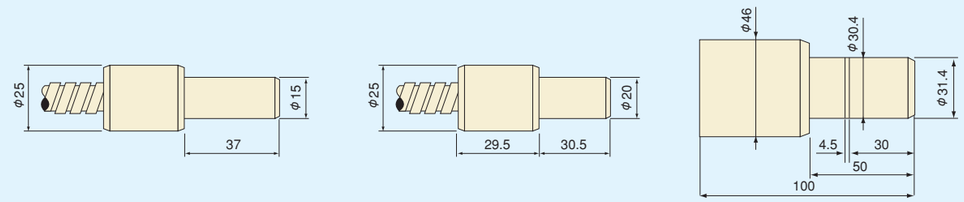
LED itself has a long life-time of a few years but each LED unit's brightness will decrease overtime differently and the whole light head unit needs constant maintenance.
In addition, precise adjustment of lighting position and direction is required every time a replacement takes place.
When LED light source and fiber line light are used together, only LED light source needs maintenance and there is no need for adjustment, fully utilizing the advantage of LED's long life-time.
By the VE/VA approach, the initial cost for fiber light guide could be as low as LED line light.



※Only light source or light element needs to be replaced. No need for light head adjustment.

※Whole LED line light unit needs to be replaced maintenance and the light position and direction also need to be adjusted each time.

Dimension example for light-source-end



Fiber bundle ～φ11.0 | Fiber bundle φ11～φ14 | Fiber bundle φ14～φ24

All dimensions in mm

Light sources

UFLS-12 Series

UFLS-50 & 140 Series

Please refer to page from 3 to 6.

Direct Ring Lighting

Main Applications ●PCB Inspection ●Flaw Detection ●Surface Inspection ●Stain Detection

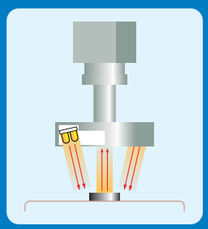
- Suitable for various inspection applications
- High brightness with direct light
- Easy and flexible installation and adjustment with 360 degree lighting
- Polarizer and Diffuser are also available to improve lighting.

Direct Ring Lighting

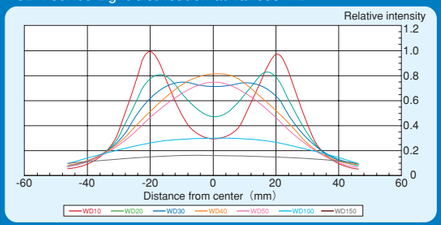
Series	Model No.	Color※	Internal Ring Diameter (mm)	External Ring Diameter (mm)	Power Consumption	Drawing
UDR Series	UDR-10R32	Red ●	φ10	φ32	24V/1.2W	UDR-10∗32
	UDR-10W32	White ○			24V/2.0W	
	UDR-10B32	Blue ●			24V/2.0W	
	UDR-15R38	Red ●	φ15	φ38	24V/2.3W	UDR-15∗38
	UDR-15W38	White ○			24V/5.8W	
	UDR-15B38	Blue ●			24V/5.8W	
	UDR-16R28	Red ●	φ16	φ28	24V/1.4W	UDR-16∗28
	UDR-16W28	White ○			24V/1.2W	
	UDR-16B28	Blue ●			24V/1.2W	
	UDR-16R48	Red ●	φ16	φ48	24V/2.9W	UDR-16∗48
	UDR-16W48	White ○			24V/4.9W	
	UDR-16B48	Blue ●			24V/4.9W	
	UDR-28R50	Red ●	φ28	φ50	24V/2.4W	UDR-28∗50
	UDR-28W50	White ○			24V/4.1W	
	UDR-28B50	Blue ●			24V/4.1W	
	UDR-30R66	Red ●	φ30	φ66	24V/4.8W	UDR-30∗66
	UDR-30W66	White ○			24V/8.2W	
	UDR-30B66	Blue ●			24V/8.2W	
	UDR-35R70-F	Red ●	φ35	φ70	24V/4.3W	UDR-35∗70-F
	UDR-35W70-F	White ○			24V/7.3W	
	UDR-35B70-F	Blue ●			24V/7.3W	
	UDR-50R90	Red ●	φ50	φ90	24V/8.6W	UDR-50∗90
	UDR-50W90	White ○			24V/14.7W	
	UDR-50B90	Blue ●			24V/14.7W	
	UDR-60R120	Red ●	φ60	φ120	24V/17.3W	UDR-60∗120
	UDR-60W120	White ○			24V/29.4W	
	UDR-60B120	Blue ●			24V/29.4W	
	UDR-95R140	Red ●	φ95	φ140	24V/14.4W	UDR-95∗140
	UDR-95W140	White ○			24V/12.2W	
	UDR-95B140	Blue ●			24V/12.2W	

Operating voltage: DC 24V

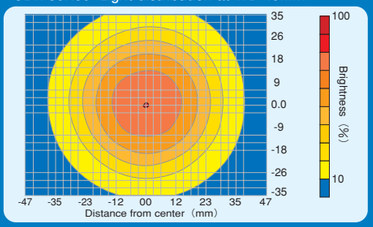
※Green● and IR850● are also available. Other wavelengths such as UV365●, UV395● and IR940● are available upon request.
Please contact us for details. Please refer to Page 33 for standard items of UV365 and UV395.



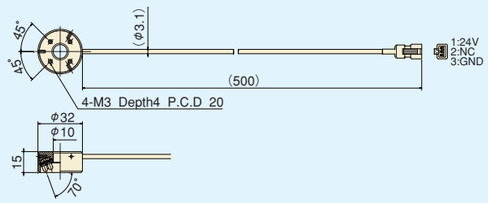
UDR-30R60 Light distribution at various WD



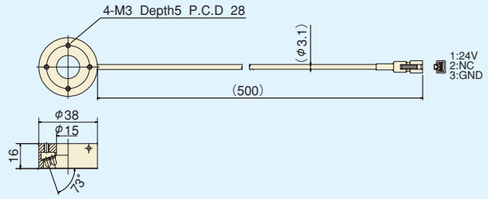
UDR-30R60 Light distribution at WD 40mm



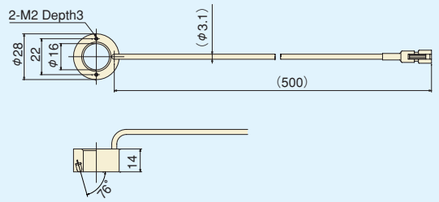
ULR-10∗32



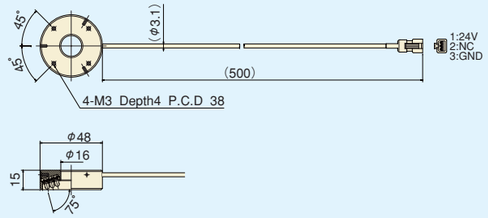
UDR-15∗38



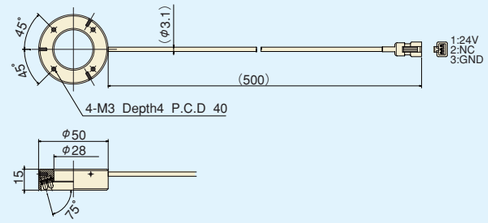
UDR-16∗28



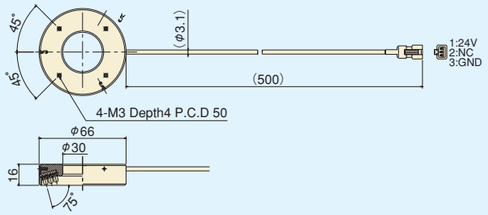
UDR-16∗48



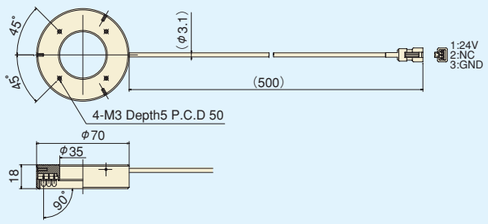
UDR-28∗50



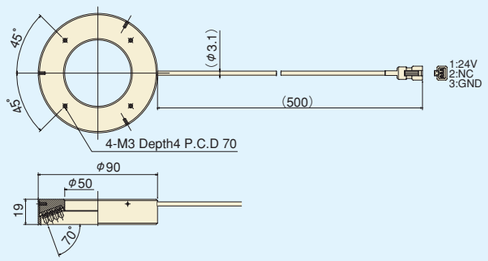
UDR-30∗66



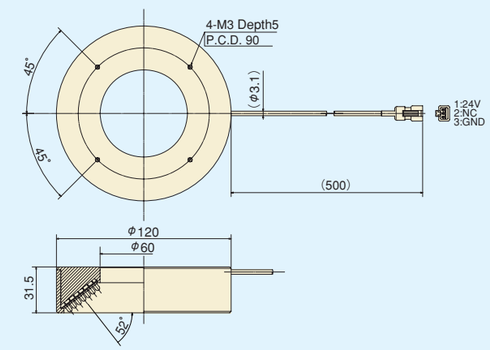
UDR-35∗70-F



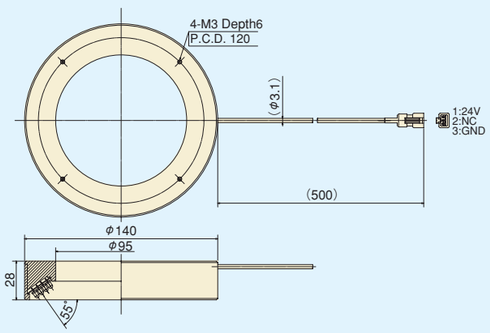
UDR-50∗90



UDR-60∗120



UDR-95∗140



All dimensions in mm

Low Angle Ring Lighting

Main Applications ●Edge Detection ●Scratch Inspection ●Crack and Chip Detection

- Suitable for the detection of small convex and concave defects on surface
- Ideal to emphasize the edge-crack
- Easy and flexible installation and adjustment with 360 degree lighting
- Polarizer and Diffuser are available to improve lighting efficiency

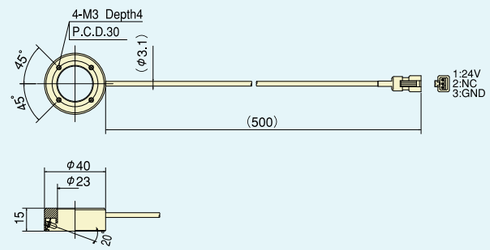
Low Angle Ring Lighting

	Model No.	Color※	Internal Ring Diameter (mm)	External Ring Diameter (mm)	Power Consumption	Drawing
ULR Series	ULR-23R40	Red ●			1.0W	
	ULR-23W40	White ○	φ23	φ40	1.6W	ULR-23∗40
	ULR-23B40	Blue ●			1.6W	
	ULR-25R50	Red ●			1.9W	
	ULR-25W50	White ○	φ25	φ50	3.3W	ULR-25∗50
	ULR-25B50	Blue ●			3.3W	
	ULR-48R74	Red ●			3.4W	
	ULR-48W74	White ○	φ48	φ74	5.7W	ULR-48∗74
	ULR-48B74	Blue ●			5.7W	
	ULR-68R100	Red ●			7.2W	
	ULR-68W100	White ○	φ68	φ100	12.2W	ULR-68∗100
	ULR-68B100	Blue ●			12.2W	
	ULR-96R132	Red ●			10.1W	
	ULR-96W132	White ○	φ96	φ132	17.1W	ULR-96∗132
	ULR-96B132	Blue ●			17.1W	
	ULR-134R170	Red ●			13.4W	
	ULR-134W170	White ○	φ134	φ170	22.8W	ULR-134∗170
	ULR-134B170	Blue ●			22.8W	
	ULR-172R208	Red ●			17.3W	
	ULR-172W208	White ○	φ172	φ208	29.4W	ULR-172∗208
	ULR-172B208	Blue ●			29.4W	
	ULR-250R286	Red ●			21.6W	
	ULR-250W286	White ○	φ250	φ286	36.7W	ULR-250∗286
	ULR-250B286	Blue ●			36.7W	

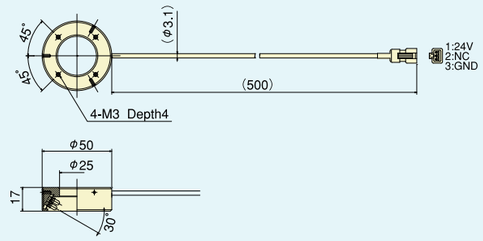
Operating voltage: DC 24V

※Green● and IR850● are also available. Other wavelengths such as UV365●, UV395● and IR940● are available upon request.
Please contact us for details. Please refer to Page 33 for standard items of UV365 and UV395.

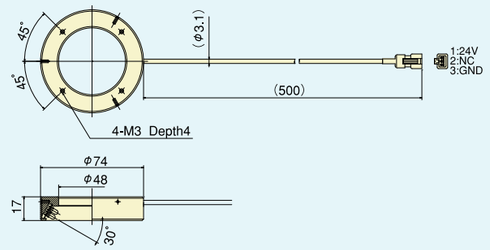
ULR-23∗40



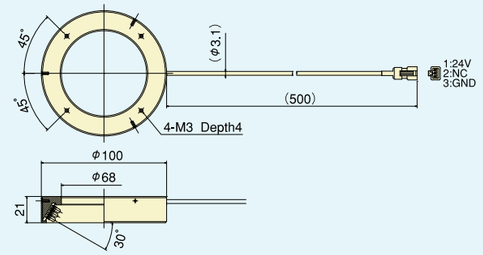
ULR-25∗50



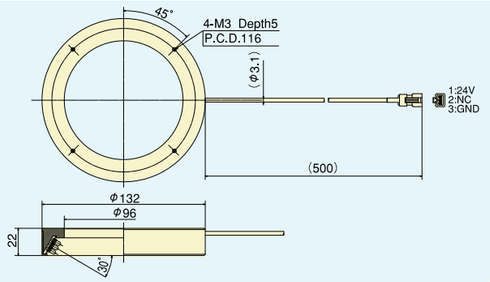
ULR-48∗74



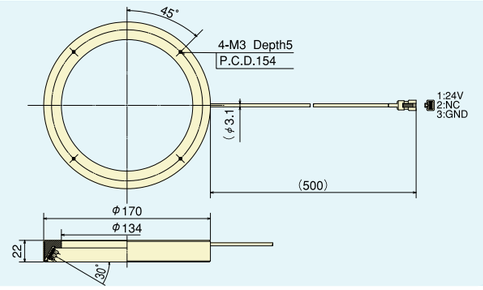
ULR-68∗100



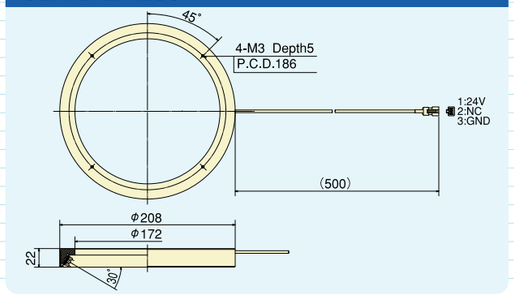
ULR-96∗132



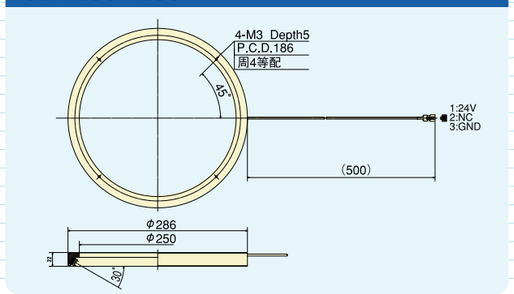
ULR-134∗170



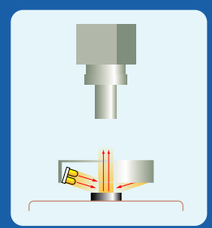
ULR-172∗208



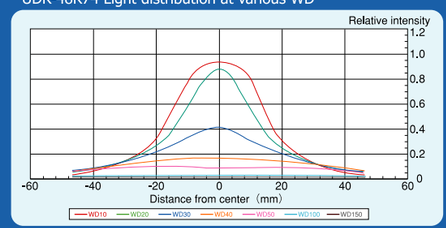
ULR-250∗286



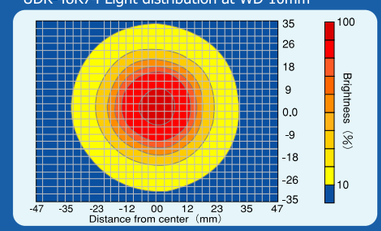
All dimensions in mm



UDR-48R74 Light distribution at various WD



UDR-48R74 Light distribution at WD 10mm



Horizontal Ring Lighting

Main Applications ●Edge Detection ●Scratch Inspection ●Crack and Chip Detection

- Suitable for the detection of small convex and concave defects on surface
- Ideal to emphasize the edge-crack
- Easy and flexible installation and adjustment with 360 degree lighting

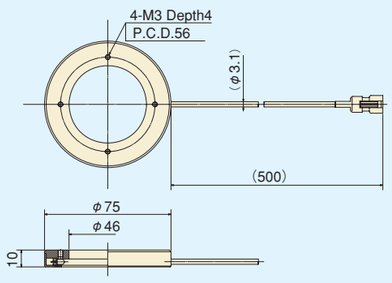
Horizontal Ring Lighting

Series	Model No.	Color※	Internal Ring Diameter (mm)	External Ring Diameter (mm)	Power Consumption	Drawing
ULRH Series	ULRH-46R75	Red ●	φ46	φ75	24V/1.9W	ULRH-46*75
	ULRH-46W75	White ○			24V/3.3W	
	ULRH-46B75	Blue ●			24V/3.3W	
	ULRH-60R96	Red ●	φ60	φ96	24V/2.4W	ULRH-60*96
	ULRH-60W96	White ○			24V/4.1W	
	ULRH-60B96	Blue ●			24V/4.1W	
	ULRH-110R146	Red ●	φ110	φ146	24V/3.8W	ULRH-110*146
	ULRH-110W146	White ○			24V/6.5W	
	ULRH-110B146	Blue ●			24V/6.5W	
	ULRH-170R206	Red ●	φ170	φ206	24V/5.8W	ULRH-170*206
	ULRH-170W206	White ○			24V/9.8W	
	ULRH-170B206	Blue ●			24V/9.8W	

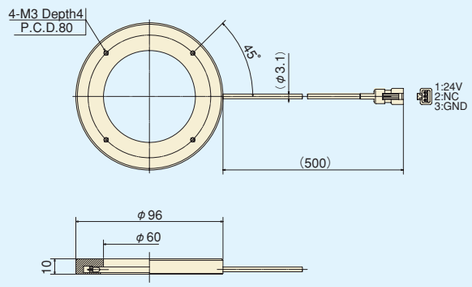
Operating voltage: DC 24V

※Green● and IR850● are also available. Other wavelengths such as UV365●, UV395● and IR940● are available upon request.
Please contact us for details. Please refer to Page 33 for standard items of UV365 and UV395.

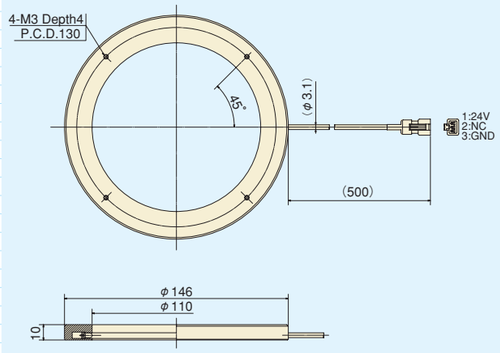
ULRH-46*75



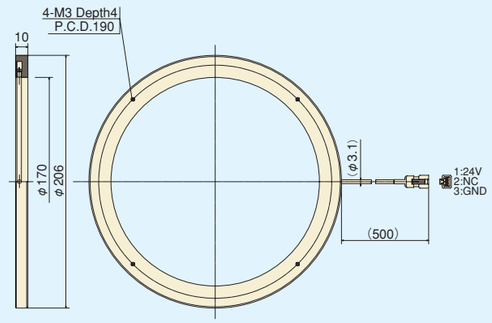
ULRH-60*96



ULRH-110*146



ULRH-170*206



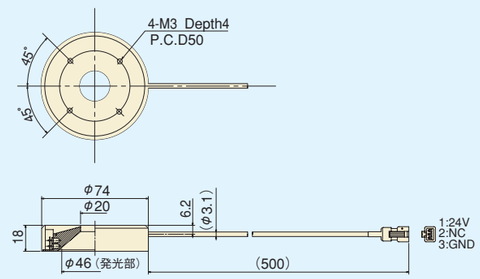
All dimensions in mm

Diffuse Ring Lighting

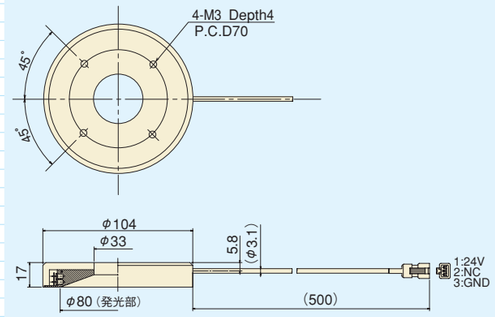
Main Applications ●Inspection of Glossy Surface ●Soldering Inspection

- For object with glossy surface
- Prevention of LED glare and reflections
- Light evenly spread out onto the object surface

UNS-20∗74

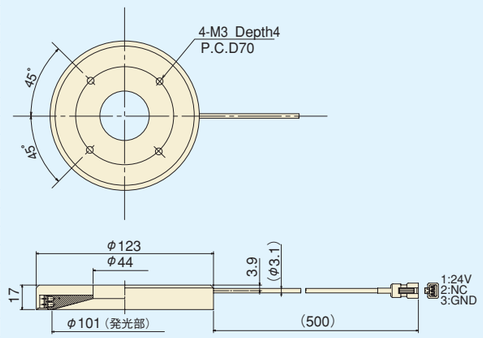


UNS-33∗104



All dimensions in mm

UNS-44∗123

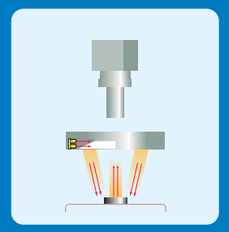


Diffuse Ring Lighting

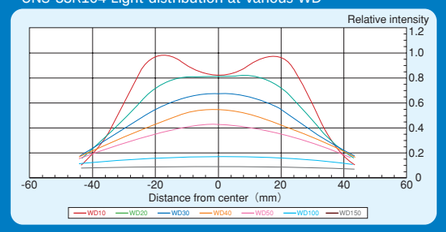
Series	Model No.	Color	Internal Ring Diameter (mm)	External Ring Diameter (mm)	Power Consumption	Drawing
UNS Series	UNS-20R74	Red ●	φ20	φ74	24V/3.8W	UNS-20∗74
	UNS-20W74	White ○			24V/6.5W	
	UNS-20B74	Blue ●			24V/6.5W	
	UNS-33R104	Red ●	φ33	φ104	24V/4.8W	UNS-33∗104
	UNS-33W104	White ○			24V/8.2W	
	UNS-33B104	Blue ●			24V/8.2W	
	UNS-44R123	Red ●	φ44	φ123	24V/6.7W	UNS-44∗123
	UNS-44W123	White ○			24V/11.4W	
	UNS-44B123	Blue ●			24V/11.4W	

Operating voltage: DC 24V

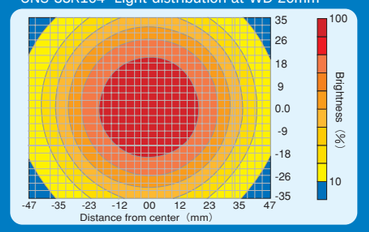
※Green● and IR850● are also available. Other wavelengths such as IR940● are available upon request.
Please contact us for details.



UNS-33R104 Light distribution at various WD



UNS-33R104 Light distribution at WD 20mm



Diffuse Low Angle Lighting

Main Applications ●Inspection of Shiny Surface ●Soldering Detection

- Uniform diffuse light from low angle light guiding plate
- Suitable for inspection of glossy object

Diffuse Low Angle Ring Lighting

Series	Model No.	Color※	Internal Ring Diameter (mm)	External Ring Diameter (mm)	Power Consumption	Drawing
UNSL Series	UNSL-73R100	Red ●	φ73	φ100	24V/5.3W	UNSL-73∗100
	UNSL-73W100	White ○			24V/9.0W	
	UNSL-73B100	Blue ●			24V/9.0W	
	UNSL-109R136	Red ●	φ109	φ136	24V/7.2W	UNSL-109∗136
	UNSL-109W136	White ○			24V/12.2W	
	UNSL-109B136	Blue ●			24V/12.2W	
	UNSL-153R180	Red ●	φ153	φ180	24V/9.6W	UNSL-153∗180
	UNSL-153W180	White ○			24V/16.3W	
	UNSL-153B180	Blue ●			24V/16.3W	

Operating voltage: DC 24V

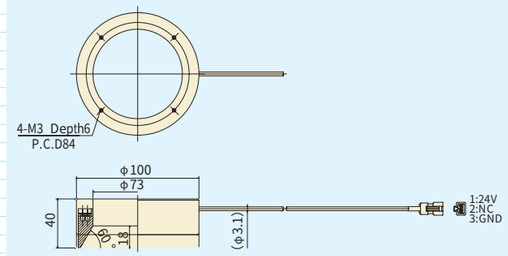
Square Lighting

Series	Model No.	Color※	Outer Dimension	Power Consumption	Drawing
USQN Series	USQN-32R32	Red ●	32×32	24V/1.0W	USQN-32∗32
	USQN-32W32	White ○		24V/1.6W	
	USQN-32B32	Blue ●		24V/1.6W	
	USQN-48R48	Red ●	48×48	24V/1.4W	USQN-48∗48
	USQN-48W48	White ○		24V/2.4W	
	USQN-48B48	Blue ●		24V/2.4W	
	USQN-75R75	Red ●	75×75	24V/2.4W	USQN-75∗75
	USQN-75W75	White ○		24V/4.1W	
	USQN-75B75	Blue ●		24V/4.1W	
	USQN-96R96	Red ●	96×96	24V/3.8W	USQN-96∗96
	USQN-96W96	White ○		24V/6.5W	
	USQN-96B96	Blue ●		24V/6.5W	

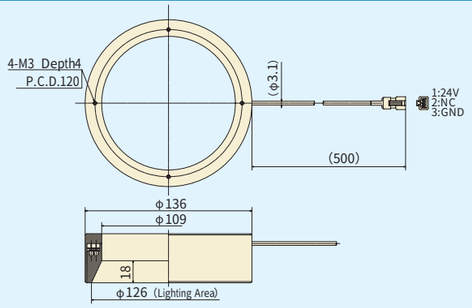
Operating voltage: DC 24V

※Green● and IR850● are also available. Other wavelengths such as IR940● are available upon request. Please contact us for details.

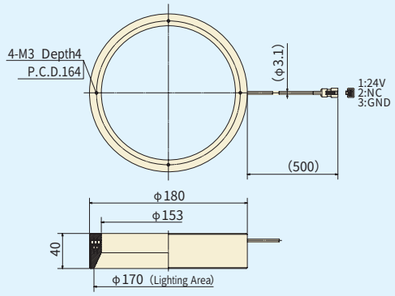
UNSL-73∗100



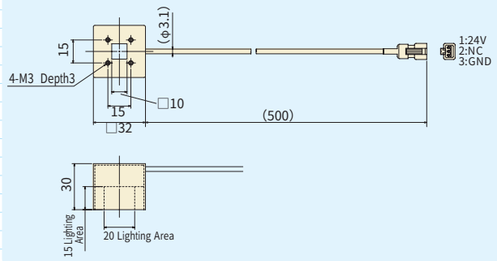
UNSL-109∗136



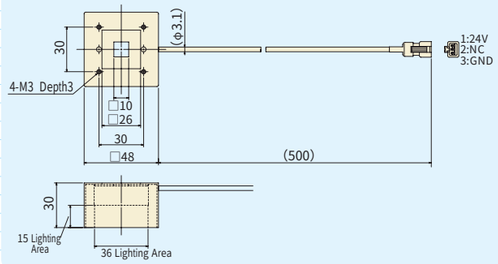
UNSL-153∗180



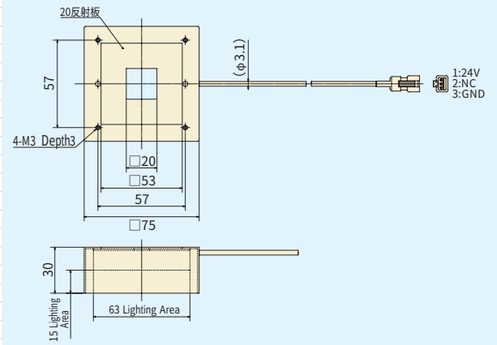
USQN-32∗32



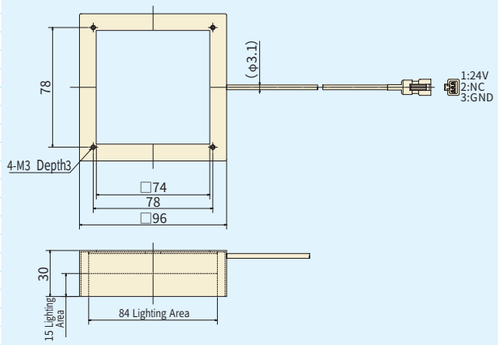
USQN-48∗48



USQN-75∗75



USQN-96∗96



All dimensions in mm

Bar Lighting

Main Applications ●Pitch Inspection for Connector Pin ●Crack Inspection

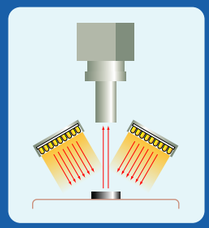
- Adjustable lighting angle according to the object shape
- High brightness with direct light
- Polarizer and Diffuser are also available to improve lighting.
- Aluminum PCB helps heat dissipation and ensures stability of light intensity.

Bar Lights

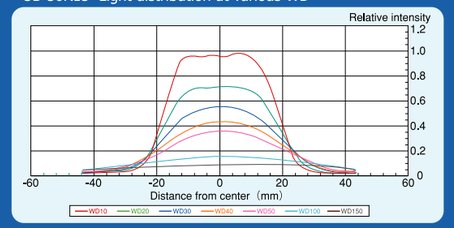
Series	Model No.	Color※	Dimension of Lighting Area (mm)	Power Consumption	External Dimension
UB Series	UB-34R8 UB-34W8 UB-34B8	Red White Blue	34×8	24V/1.0W 24V/1.6W 24V/1.6W	UB-34∗8
	UB-50R15 UB-50W15 UB-50B15	Red White Blue	50×15	24V/1.4W 24V/2.4W 24V/2.4W	UB-50∗15
	UB-75R15 UB-75W15 UB-75B15	Red White Blue	75×15	24V/2.4W 24V/3.7W 24V/3.7W	UB-75∗15
	UB-75R30 UB-75W30 UB-75B30	Red White Blue	75×30	24V/4.3W 24V/7.3W 24V/7.3W	UB-75∗30
	UB-100R15 UB-100W15 UB-100B15	Red White Blue	100×15	24V/2.9W 24V/4.9W 24V/4.9W	UB-100∗15
	UB-130R15 UB-130W15 UB-130B15	Red White Blue	130×15	24V/3.8W 24V/6.5W 24V/6.5W	UB-130∗15
	UB-150R15 UB-150W15 UB-150B15	Red White Blue	150×15	24V/4.3W 24V/7.3W 24V/7.3W	UB-150∗15
	UB-200R15 UB-200W15 UB-200B15	Red White Blue	200×15	24V/5.8W 24V/9.8W 24V/9.8W	UB-200∗15
	UB-200R20 UB-200W20 UB-200B20	Red White Blue	200×20	24V/7.7W 24V/13.1W 24V/13.1W	UB-200∗20
	UB-200R30 UB-200W30 UB-200B30	Red White Blue	200×30	24V/11.5W 24V/19.6W 24V/19.6W	UB-200∗30
	UB-250R15 UB-250W15 UB-250B15	Red White Blue	250×15	24V/7.2W 24V/12.2W 24V/12.2W	UB-250∗15
	UB-300R15 UB-300W15 UB-300B15	Red White Blue	300×15	24V/8.6W 24V/14.7W 24V/14.7W	UB-300∗15
	UB-500R6 UB-500W6 UB-500B6	Red White Blue	500×6	24V/10.1W 24V/10.1W 24V/10.1W	UB-500∗6

Operating voltage: DC 24V

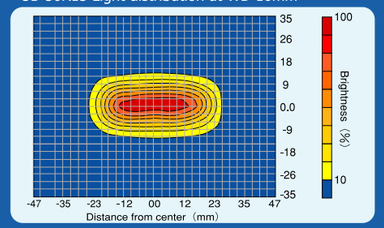
※Green● and IR850● are also available. Other wavelengths such as UV365●, UV395● and IR940● are available upon request.
Please contact us for details. Please refer to Page 33 for standard items of UV365 and UV395.



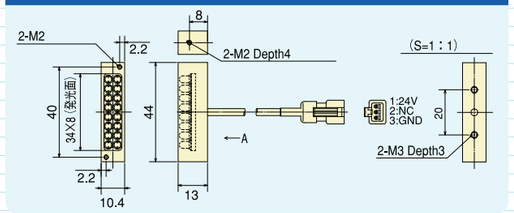
UB-50R15 Light distribution at various WD



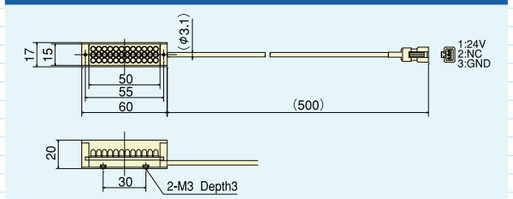
UB-50R15 Light distribution at WD 10mm



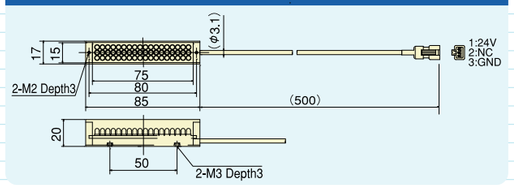
UB-34∗8



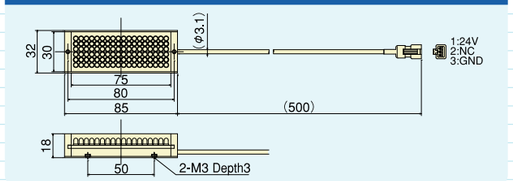
UB-50∗15



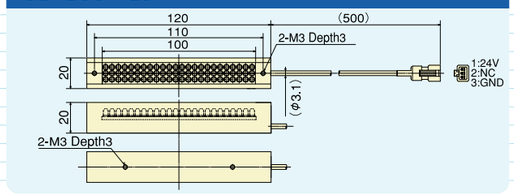
UB-75∗15



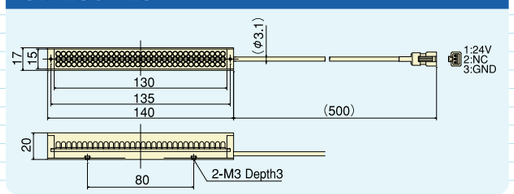
UB-75∗30



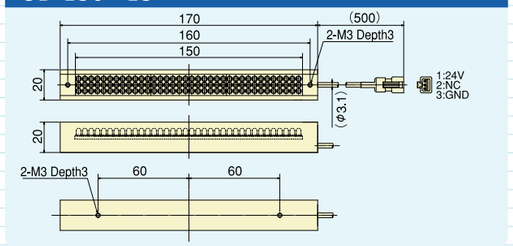
UB-100∗15



UB-130∗15



UB-150∗15



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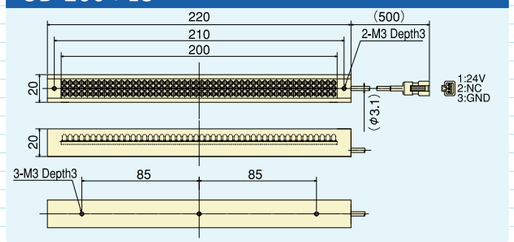
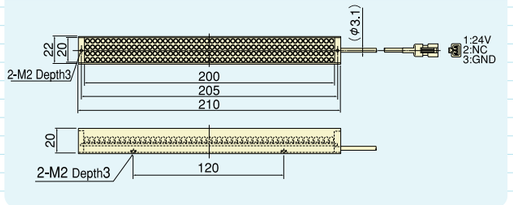
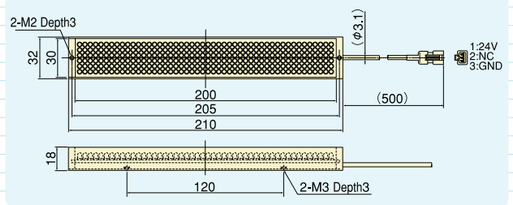


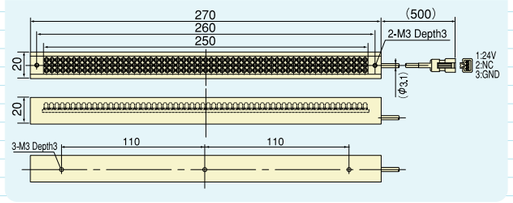
UB-200∗20



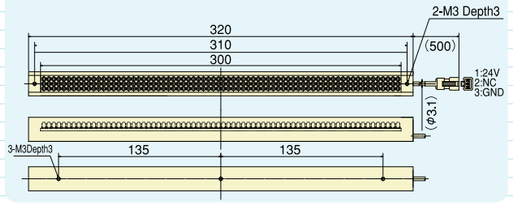
UB-200∗30



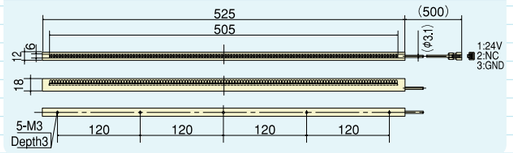
UB-250∗15



UB-300∗15



UB-500∗6

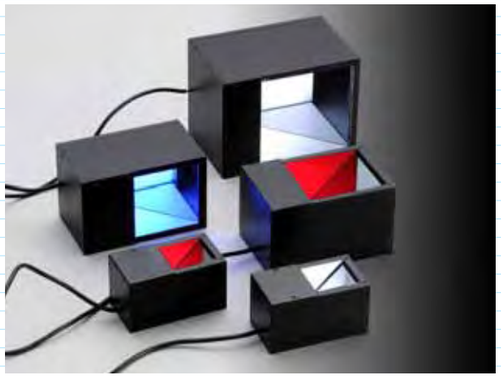


All dimensions in mm

Diffuse Co-axial Lighting

Main Applications ●Alignment mark recognition ●Dimensional Measurement
●Inspection for Glass Substrate

- For inspection of mirror finished surface or highly reflective object
- Uniform illumination on flat surfaces.
- Light-control-film to change light efficiency
- Aluminum PCB helps heat dissipation and ensures stability of light intensity.



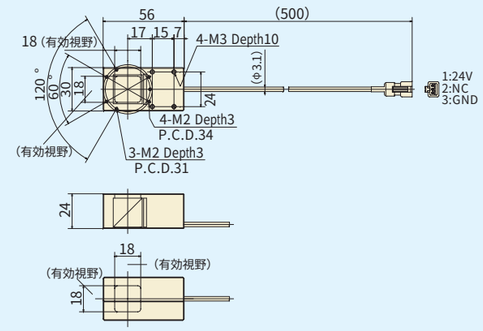
Diffuse Coaxial Lighting

Series	Model No.	Color※	Dimension of aperture area (mm)	Power Consumption	Drawing
USCO Series	USCO-18R18	Red	18×18	24V/1.0W	USCO-18∗18
	USCO-18W18	White		24V/1.6W	
	USCO-18B18	Blue		24V/1.6W	
	USCO-31R28	Red	31×28	24V/1.9W	USCO-31∗28
	USCO-31W28	White		24V/3.3W	
	USCO-31B28	Blue		24V/3.3W	
	USCO-50R50	Red	50×50	24V/4.3W	USCO-50∗50
	USCO-50W50	White		24V/7.3W	
	USCO-50B50	Blue		24V/7.3W	
	USCO-75R72	Red	75×72	24V/7.7W	USCO-75∗72
	USCO-75W72	White		24V/13.1W	
	USCO-75B72	Blue		24V/13.1W	
	USCO-100R100	Red	100×100	24V/13.0W	USCO-100∗100
	USCO-100W100	White		24V/22.0W	
	USCO-100B100	Blue		24V/22.0W	
	USCO-130R130	Red	130×130	24V/24.0W	USCO-130∗130
	USCO-130W130	White		24V/40.8W	
	USCO-130B130	Blue		24V/40.8W	

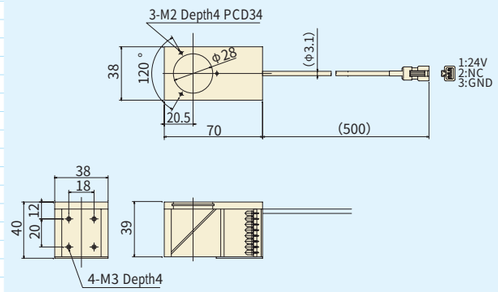
Operating voltage: DC 24V

※Green● and IR850● are also available. Other wavelengths such as IR940● are available upon request.
Please contact us for details.

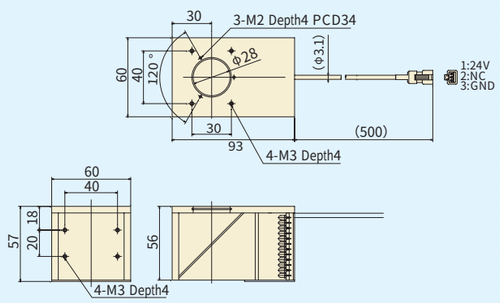
USCO-18∗18



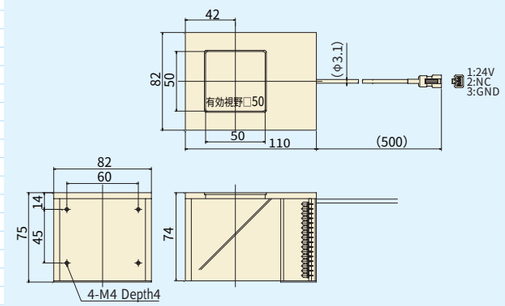
USCO-31∗28



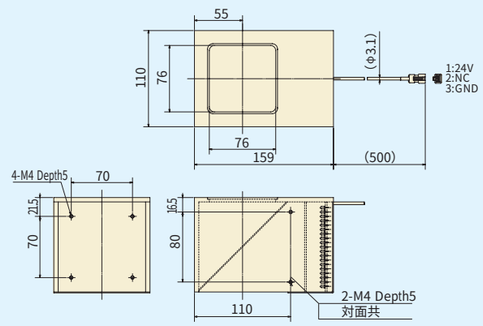
USCO-50∗50



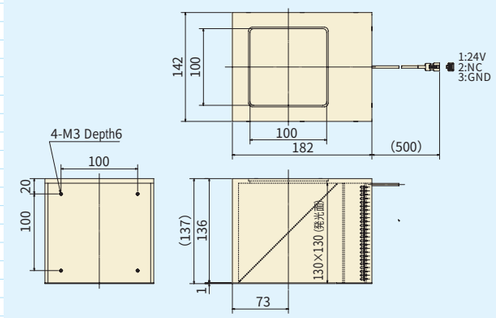
USCO-75∗72



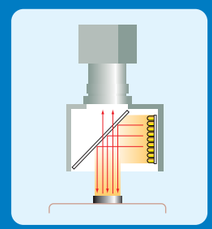
USCO-100∗100



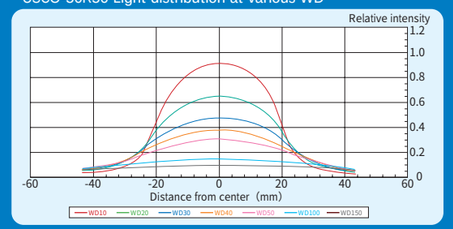
USCO-130∗130



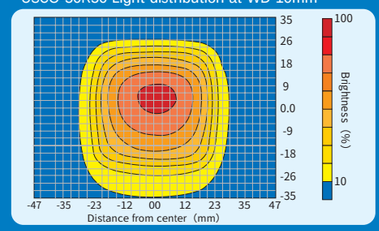
All dimensions in mm



USCO-50R50 Light distribution at various WD



USCO-50R50 Light distribution at WD 10mm

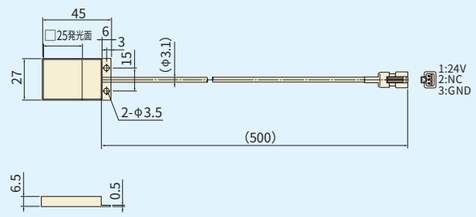


Edge Backlighting

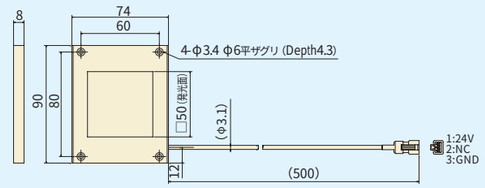
Main Applications
- Size Measurement, Transmitted Light Inspection
- Detection of Film Stain or Edge

- Thin and flat for space constrained applications (diffuse plate type)
- Suitable for edge inspection
- Uniform light distribution

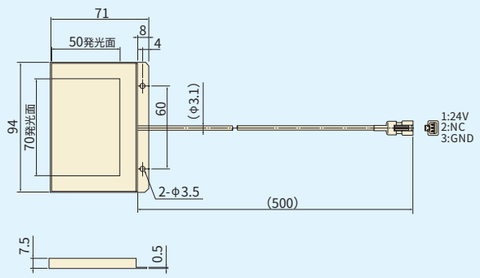
UEB-25★25



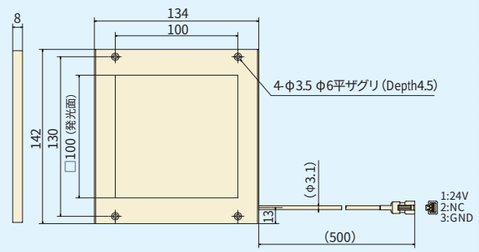
UEB-50★50



UEB-70★50



UEB-100★100



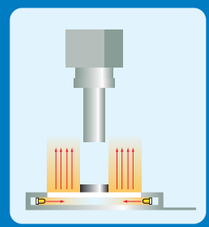
All dimensions in mm

Edge Backlighting

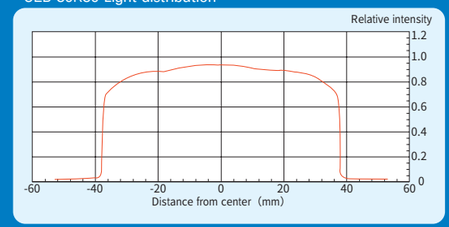
Series	Model No.	Color※	Dimension of Lighting Area (mm)	Power Consumption	Drawing
UEB Series	UEB-25R25	Red ■	25×25	24V/0.5W	UEB-25★25
	UEB-25W25	White □		24V/0.4W	
	UEB-25B25	Blue ■		24V/0.4W	
	UEB-50R50	Red ■	50×50	24V/1.9W	UEB-50★50
	UEB-50W50	White □		24V/3.3W	
	UEB-50B50	Blue ■		24V/3.3W	
	UEB-70R50	Red ■	70×50	24V/1.9W	UEB-70★50
	UEB-70W50	White □		24V/3.3W	
	UEB-70B50	Blue ■		24V/3.3W	
	UEB-100R100※	Red ■	100×100	24V/3.8W	UEB-100★100
	UEB-100W100※	White □		24V/6.5W	
	UEB-100B100※	Blue ■		24V/6.5W	

Operating voltage: DC 24V

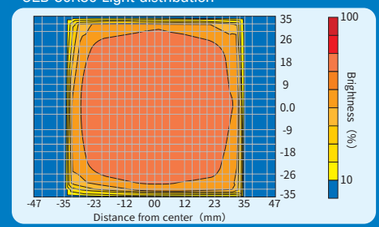
※Green● and IR850● are also available. Other wavelengths such as IR940● are available upon request.
Please contact us for details.



UEB-50R50 Light distribution

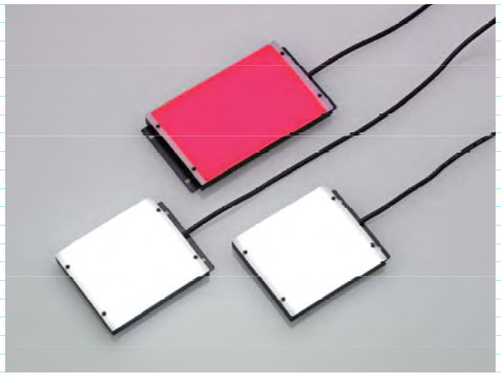


UEB-50R50 Light distribution



Direct Chip LED Backlighting

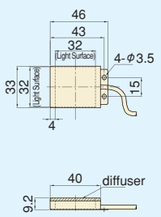
- Suitable for transmittance illumination.
- Highly uniform light by using high-density Chip LED
- Ultra slim design for space constrained application



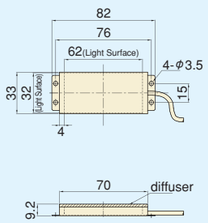
Direct Chip LED Backlights

	Model No.	Color	Dimension of Lighting Area (mm)	Power Consumption	Drawing	
VKM Series	VLM1-32RD	Red	32x32	12V/1.32W	VLM-32**	DC12V with 2 Pin Conector
	VLM1-3262RD	Red	32x62	12V/2.64W	VLM-3262**	
	VLM1-3292RD	Red	32x92	12V/3.96W	VLM-3292**	
	VLM1-32122RD	Red	32x122	12V/5.28W	VLM-32122**	
	VLM1-62RD	Red	62x62	12V/5.28W	VLM-62**	
	VLM1-6292RD	Red	62x92	12V/7.92W	VLM-6292**	
	VLM1-62122RD	Red	62x122	12V/10.56W	VLM-62122**	
	VLM1-92RD	Red	92x92	12V/11.88W	VLM-92**	
	VLM1-92122RD	Red	92x122	12V/15.84W	VLM-92122**	
	VLM1-122RD	Red	122x122	12V/21.12W	VLM-122**	
	VLM2-32WD	White	32x32	24V/2.16W	VLM-32**	DC24V with 3 Pin Conector
	VLM2-3262WD	White	32x62	24V/4.32W	VLM-3262**	
	VLM2-3292WD	White	32x92	24V/6.48W	VLM-3292**	
	VLM2-32122WD	White	32x122	24V/8.64W	VLM-32122**	
	VLM2-62WD	White	62x62	24V/8.64W	VLM-62**	
	VLM2-6292WD	White	62x92	24V/12.96W	VLM-6292**	
	VLM2-62122WD	White	62x122	24V/17.28W	VLM-62122**	
	VLM2-92WD	White	92x92	24V/19.44W	VLM-92**	
	VLM2-92122WD	White	92x122	24V/25.92W	VLM-92122**	
	VLM2-122WD	White	122x122	24V/34.56W	VLM-122**	

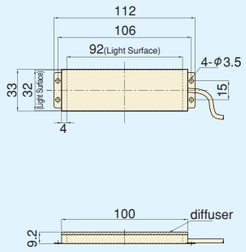
VLM-32**



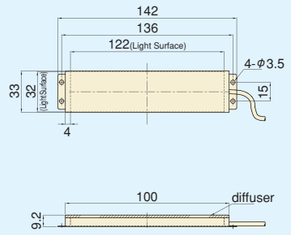
VLM-3262**



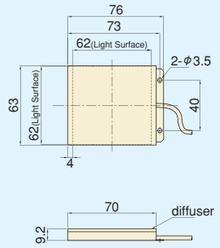
VLM-3292**



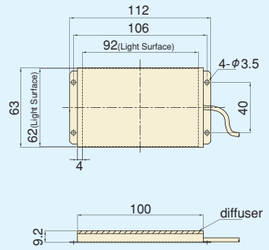
VLM-32122**



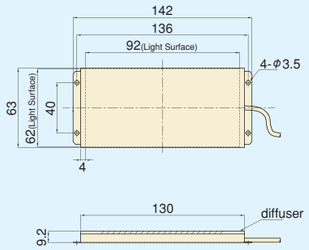
VLM-62**



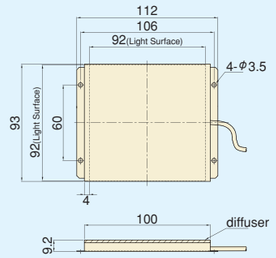
VLM-6292**



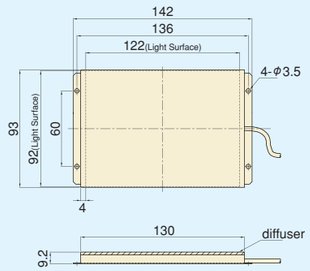
VLM-62122**



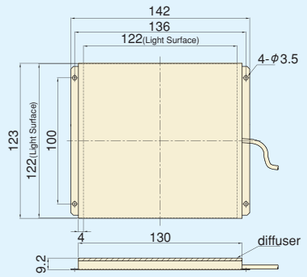
VLM-92**



VLM-92122**



VLM-122**



12V 2PIN Conector

1plus +
2:minus -

SMR-02V-B

24V 3PIN Conector

1plus +
2:NC
3:minus -

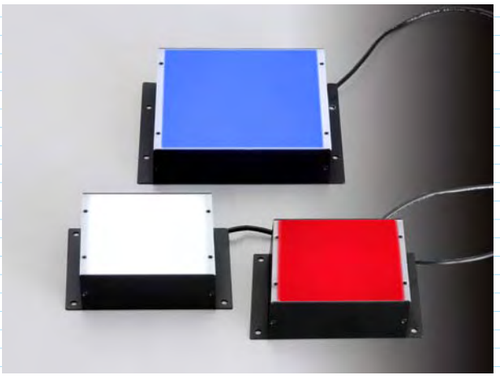
SMR-03V-B

All dimensions in mm

Direct Backlighting

Main Applications ●Size Measurement ●Backlight Inspection
●Film Stain Detection ●Edge Detection

- Suitable for light transmittance applications
- Direct LED light to provide high intensity.
- Aluminum PCB helps heat dissipation and ensures stability of light intensity.



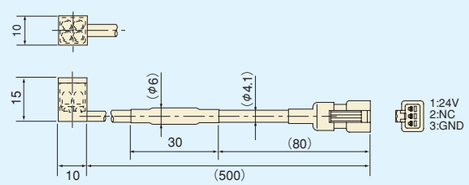
Direct Backlights

Series	Model No.	Color※	Dimension of Lighting Area (mm)	Power Consumption	Drawing
UDB Series	UDB-10R10	Red	10×10	24V/0.5W	UDB-10∗10
	UDB-10W10	White		24V/0.4W	
	UDB-10B10	Blue		24V/0.4W	
	UDB-30R30	Red	30×30	24V/1.4W	UDB-30∗30
	UDB-30W30	White		24V/2.4W	
	UDB-30B30	Blue		24V/2.4W	
	UDB-60R60	Red	60×60	24V/5.8W	UDB-60∗60
	UDB-60W60	White		24V/9.8W	
	UDB-60B60	Blue		24V/9.8W	
	UDB-90R90	Red	90×90	24V/13.0W	UDB-90∗90
	UDB-90W90	White		24V/22.0W	
	UDB-90B90	Blue		24V/22.0W	
	UDB-220R100	Red	220×100	24V/24.0W	UDB-220∗100
	UDB-220W100	White		24V/40.8W	
	UDB-220B100	Blue		24V/40.8W	

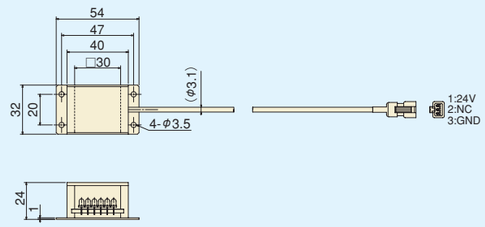
Operating voltage: DC 24V

※Green● and IR850● are also available. Other wavelengths such as UV365●, UV395● and IR940● are available upon request.
Please contact us for details. Please refer to Page 33 for standard items of UV365 and UV395.

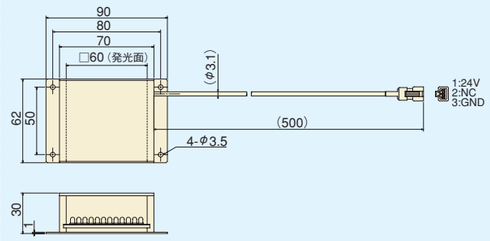
UDB-10∗10



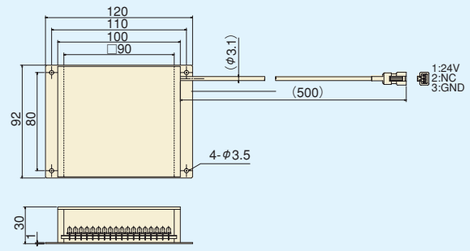
UDB-30∗30



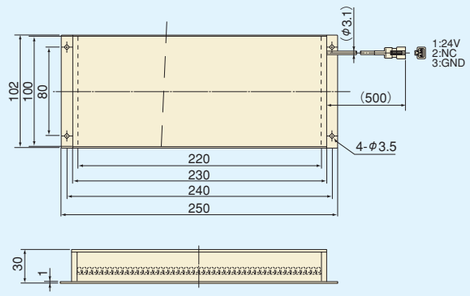
UDB-60∗60



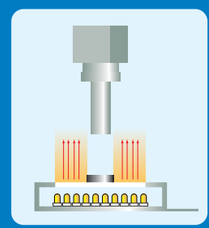
UDB-90∗90



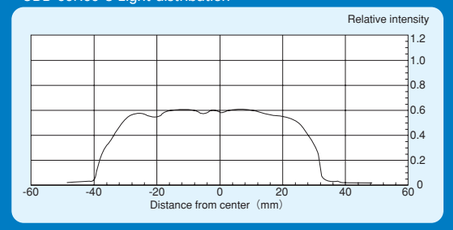
UDB-220∗100



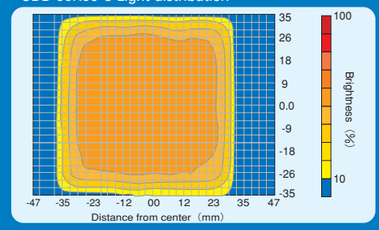
All dimensions in mm



UDB-60R60-3 Light distribution



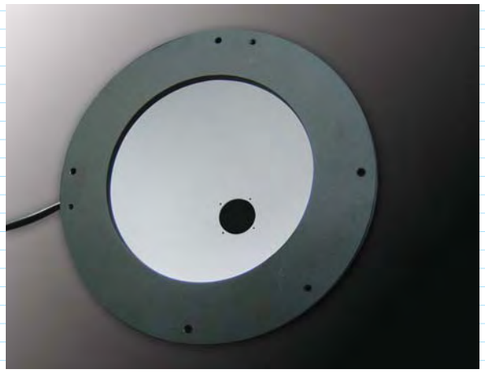
UDB-60R60-3 Light distribution



Dome Lighting

Main Applications ●Inspection of Glossy Surface ●Printing inspection on cans

- High brightness with power LED
- Uniform non-shadowy light
- Able to combine with horizontal ring light



Dome Lighting

Series	Model No.	Color	Dome Size(mm)	Power Consumption	Drawing
UDM Series	UDM-100R	Red ●	φ100	24V/9.0W	UDM-100*
	UDM-100W	White ○		24V/14.0W	
	UDM-100B	Blue ●		24V/14.0W	
	UDM-150R	Red ●	φ150	24V/16.0W	UDM-150*
	UDM-150W	White ○		24V/20.0W	
	UDM-150B	Blue ●		24V/20.0W	
	UDM-200R	Red ●	φ200	24V/22.0W	UDM-200*
	UDM-200W	White ○		24V/32.0W	
	UDM-200B	Blue ●		24V/32.0W	
	UDM-250R	Red ●	φ250	24V/25.0W	UDM-250*
	UDM-250W	White ○		24V/37.0W	
	UDM-250B	Blue ●		24V/37.0W	
	UDM-300R	Red ●	φ300	24V/25.0W	UDM-300*
	UDM-300W	White ○		24V/41.0W	
	UDM-300B	Blue ●		24V/41.0W	

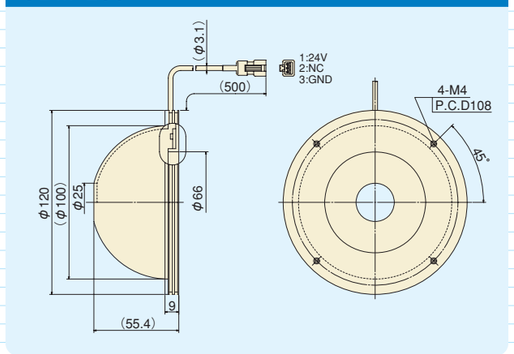
Operating voltage: DC 24V

Dome with Co-ax and Ring Lighting

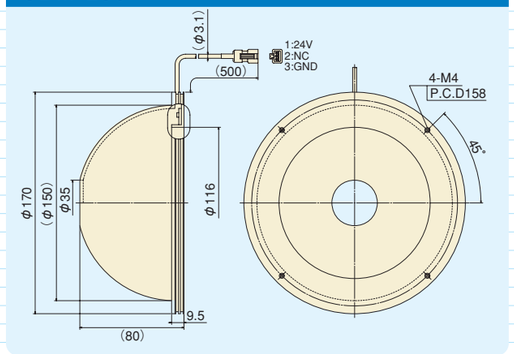
Series	Model No.	Color	Dome Size(mm)	Power Consumption			Drawing
				Co-ax	Dome	Ring	
UDM-COL Series	UDM-COL100R	Red ●	φ100	4.3W	4.8W	2.9W	UDM-COL100*
	UDM-COL100W	White ○		7.3W	8.2W	4.9W	
	UDMCOL-100B	Blue ●		7.3W	8.2W	4.9W	

Operating voltage: DC 24V

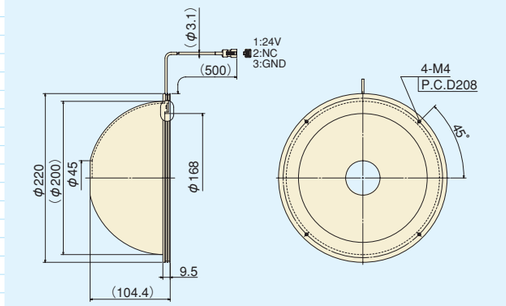
UDM-100*



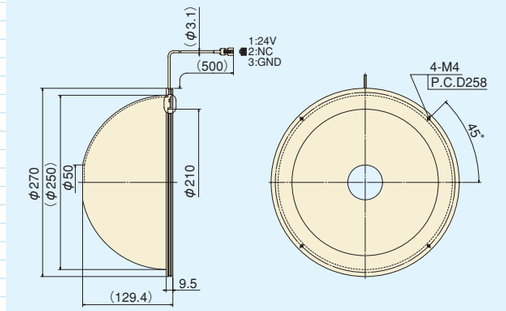
UDM-150*



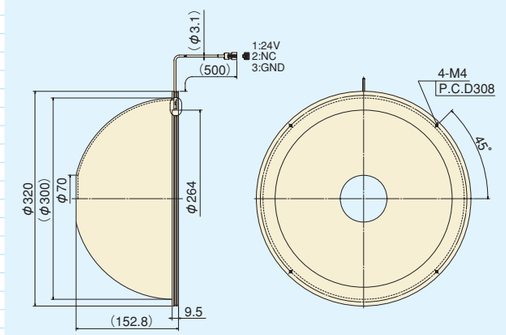
UDM-200*



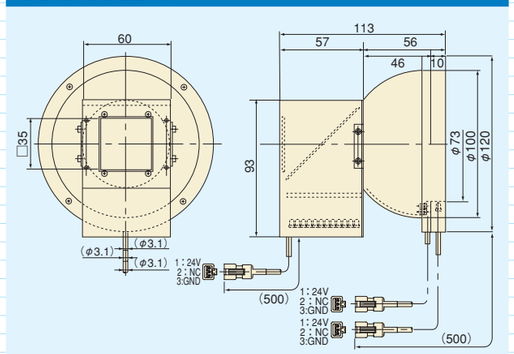
UDM-250*



UDM-300*



UDM-COL100*



All dimensions in mm

IR LED Lighting

Main Applications ●Backlight Inspection

- Suitable for transmission inspection with Infra Red light
- Wavelengths of 850nm and 940nm are available

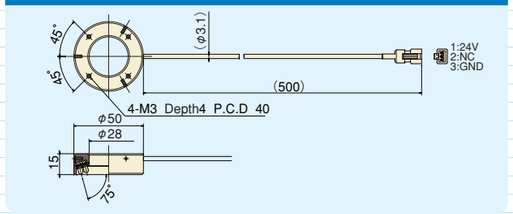
IR LED Lighting

Series	Model No.	Color	Model and Size	Power Consumption	Drawing
IR Series	UDR-28IR50	850nm	Direct Ring・φ28	24V/4.2W	UDR-28*50
	UDR-35IR70-F	850nm	Direct Ring・φ35	24V/7.6W	UDR-35*70-F
	ULR-48IR74	850nm	Low Angle Ring・φ48	24V/5.9W	ULR-48*74
	ULR-96IR132	850nm	Low Angle Ring・φ96	24V/17.6W	ULR-96*132
	UNS-20IR74	850nm	Diffuse Ring・φ74	24V/6.7W	UNS-20*74
	UB-50IR15	850nm	Bar・50×15	24V/2.5W	UB-50*15
	UB-75IR30	850nm	Bar・75×30	24V/7.6W	UB-75*30
	UB-130IR15	850nm	Bar・130×15	24V/6.7W	UB-130*15
	USCO-50IR50	850nm	Co-ax・50×50	24V/7.6W	USCO-50*50
	U-SPIR	850nm	Spot・φ8	24V/0.8W	U-SP*
	UEB-100IR100	850nm	Edge Type・100×100	24V/6.7W	UEB-100*100
	UDB-90IR90	850nm	Direct Backlight・90×90	24V/22.7W	UDB-90*90

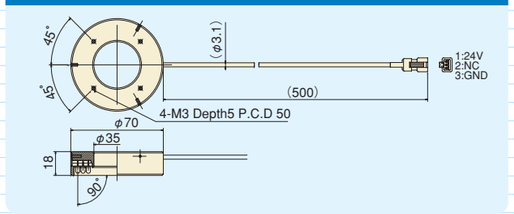
Please contact us for different size and 940nm model.

Operating voltage: DC 24V

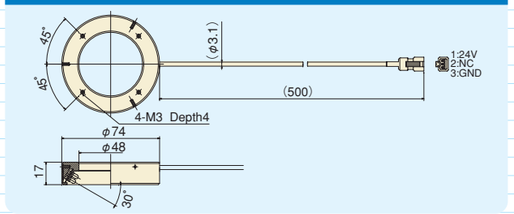
UDR-28*50



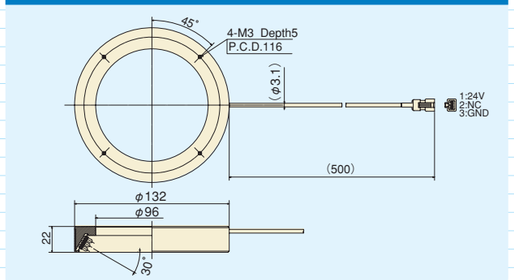
UDR-35*70-F



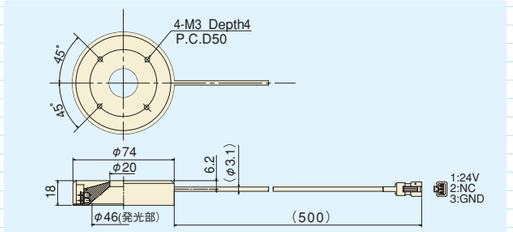
ULR-48*74



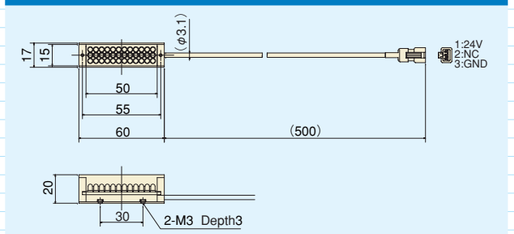
ULR-96*132



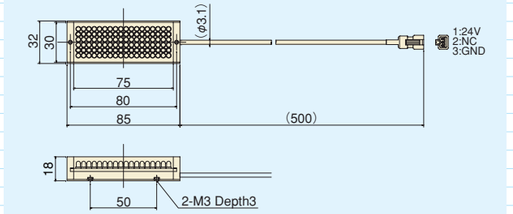
UNS-20*74



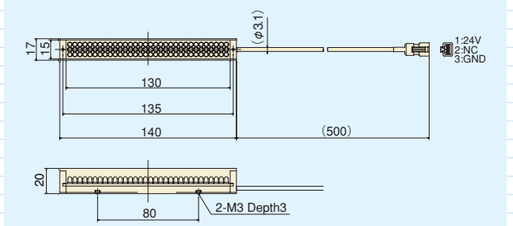
UB-50*15



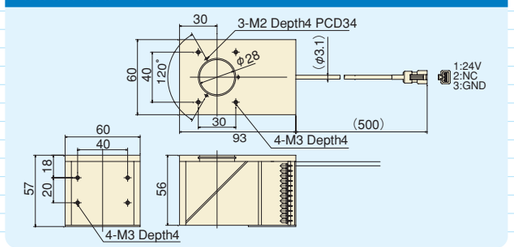
UB-75*30



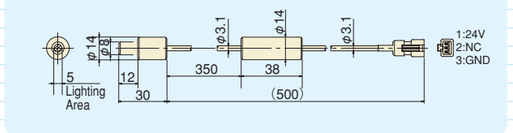
UB-130*15



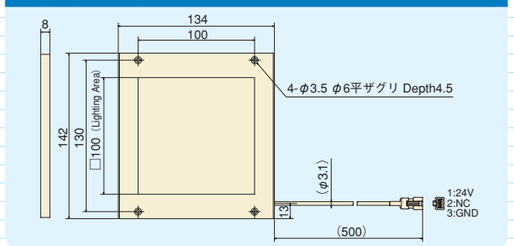
USCO-50*50



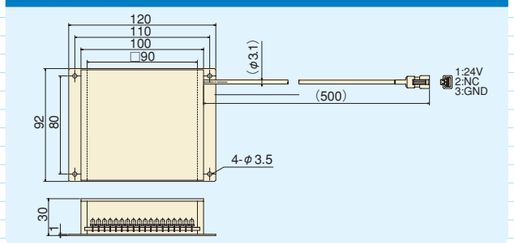
U-SP*



UEB-100*100



UDB-90*90



All dimensions in mm

UV LED Lighting

Main Applications ●Transparent Electrode ●Glass or Metal Inspection

- Suitable for inspection with diffusive Ultra Violet light
- Ideal for excitation fluorescence application
- Available in 365nm and 395nm

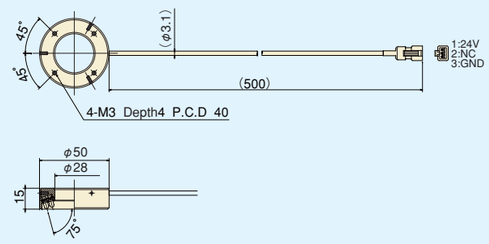
UV LED Lighting

Series	Model No.	Color	Model and Size	Power Consumption	Drawing
UV Series	UDR-28UV50-365	UV・365nm	Direct Ring・φ28	24V/4.8W	UDR-28*50
	UDR-28UV50-395	UV・395nm			
	UDR-35UV70-F-365	UV・365nm	Direct Ring・φ35	24V/8.6W	UDR-35*70-F
	UDR-35UV70-F-395	UV・395nm			
	ULR-48UV74-365	UV・365nm	Low Angle Ring・φ48	24V/6.7W	ULR-48*74
	ULR-48UV74-395	UV・395nm			
	ULR-96UV132-365	UV・365nm	Low Angle Ring・φ96	24V/20.2W	ULR-96*132
	ULR-96UV132-395	UV・395nm			
	UB-50UV15-365	UV・365nm	Bar・50×15	24V/2.9W	UB-50*15
	UB-50UV15-395	UV・395nm			
	UB-75UV30-365	UV・365nm	Bar・75×30	24V/8.6W	UB-75*30
	UB-75UV30-395	UV・395nm			
	UB-130UV15-365	UV・365nm	Bar・130×15	24V/7.7W	UB-130*15
	UB-130UV15-395	UV・395nm			
	U-SPUV-365	UV・365nm	Spot・φ8	24V/0.5W	U-SP*
	U-SPUV-395	UV・395nm			

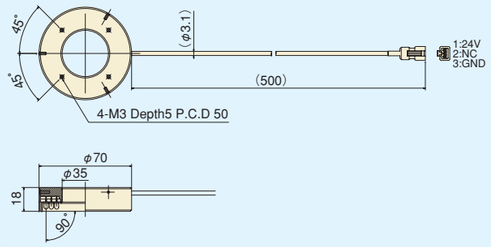
Please contact us for different size model.

Operating voltage: DC 24V

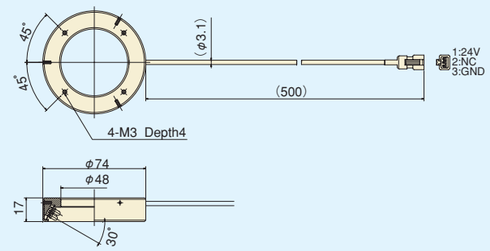
UDR-28*50



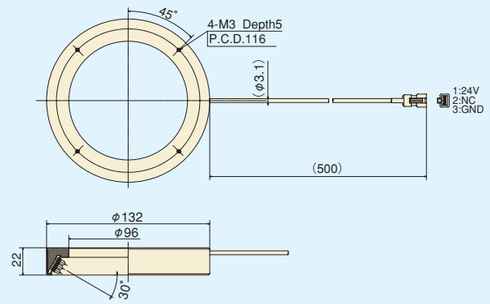
UDR-35*70-F



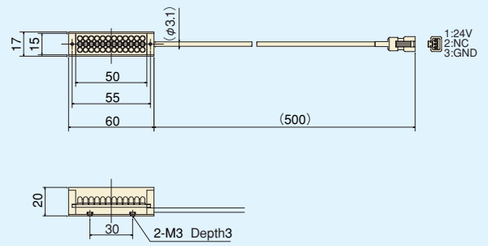
ULR-48*74



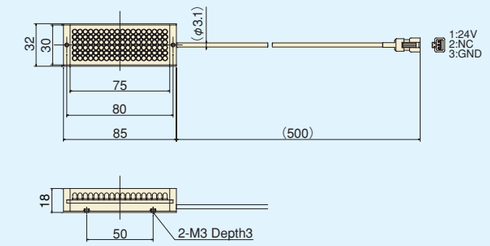
ULR-96*132



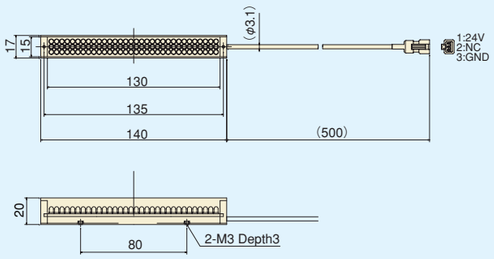
UB-50*15



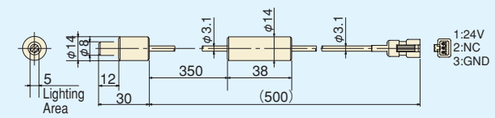
UB-75*30



UB-130*15



U-SP*



All dimensions in mm

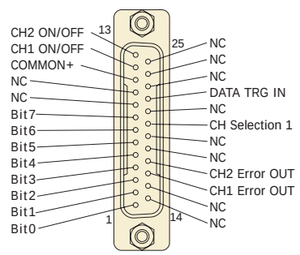
LED Power Supply

- 24V, Digital intensity control
- Support all colors of lighting
- RoHS Compliance
- CE certified

External Control Pin Assignment

Pin. No.	Name	Pin. No.	Name
1	8bit digital Input Bit0(LSB)	14	NC
2	8bit digital Input Bit1	15	NC
3	8bit digital Input Bit2	16	CH1 error signal output
4	8bit digital Input Bit3	17	CH2 error signal output
5	8bit digital Input Bit4	18	NC
6	8bit digital Input Bit5	19	NC
7	8bit digital Input Bit6	20	CH selection signal input 1※1
8	8bit digital Input Bit7(MSB)	21	NC
9	NC	22	light intensity data write TRG signal input※2
10	NC		
11	Common(+)	23	NC
12	CH1 output ON/OFF signal(Input)	24	NC
13	CH2 output ON/OFF signal(Input)	25	NC

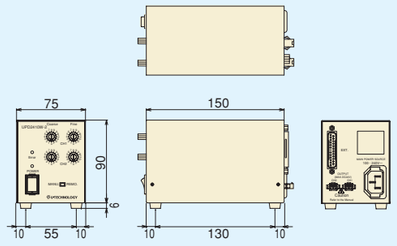
D-sub25S



LED Power Supply / 10W

Series No.	UPD2410W-2
Output	2CH Output Max. 10W
Input Voltage	AC100-240V 50/60Hz
Input Current	ACIN 100V 0.25Atyp.（Io=100%) ACIN 200V 0.16Atyp.(Io=100%)
Surge Current	ACIN 100V 15Atyp.(Io-100%) cold start ACIN 200V 30Atyp.(Io-100%) cold start
Storing temperature / humidity	-15~+40℃ / 20~85%RH (No Condensation)
Output System	DC pulse system (approx. 78KHz)
Output Control System	8-bit PWM control
External Light Control	8-bit digital control (parallel)
Output ON/OFF Function	Supported (photo-coupler insulation)
Error Signal Output	Supported (photo-coupler insulation, control error)
Cooling System	Natural Cooling by air
Installation	Rubber legs placed on flat surface
Output Connector	SMP-03V-BC(JST) 1: Output+ 3 : Output -
Weight	0.8kg

UPD2410W-2



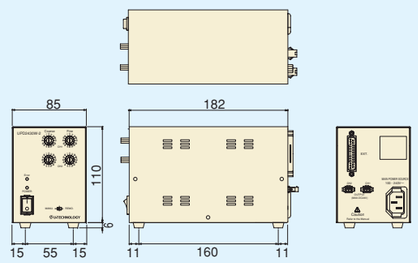
LED Power Supply / 30W

Series No.	UPD2430W-2	UPD2430W-4
Output	2CH Output Max. 30W	4CH Output Max. 30W
Input Voltage	AC100-240V 50/60Hz	
Input Current	ACIN 100V 0.8Atyp.（Io=100%) ACIN 200V 0.4Atyp.(Io=100%)	
Surge Current	ACIN 100V 15Atyp.(Io-100%) cold start ACIN 200V 30Atyp.(Io-100%) cold start	
Storing temperature / humidity	-15~+40℃ / 20~85%RH (No Condensation)	
Output System	DC pulse system (approx. 78KHz)	
Output Control System	8-bit PWM control	
External Light Control	8-bit digital control (parallel)	
Output ON/OFF Function	Supported (photo-coupler insulation)	
Error Signal Output	Supported (photo-coupler insulation, control error)	
Cooling System	Natural Cooling by air	
Installation	Rubber legs placed on flat surface	
Output Connector	SMP-03V-BC(JST) 1: Output+ 3 : Output -	
Weight	1.0kg	1.2kg

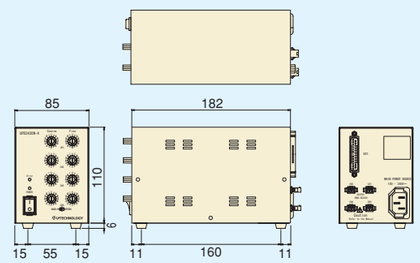
LED Power Supply / 50W

Series No.	UPD2450W-2	UPD2450W-4
Output	2CH Output Max. 50W	4CH Output Max. 50W
Input Voltage	AC100-240V 50/60Hz	
Input Current	ACIN 100V 1.3Atyp.（Io=100%) ACIN 200V 0.7Atyp.(Io=100%)	
Surge Current	ACIN 100V 15Atyp.(Io-100%) cold start ACIN 200V 30Atyp.(Io-100%) cold start	
Storing temperature / humidity	-15~+40℃ / 20~85%RH (No Condensation)	
Output System	DC pulse system (approx. 78KHz)	
Output Control System	8-bit PMW control	
External Light Control	8-bit digital control (parallel)	
Output ON/OFF Function	Supported (photo-coupler insulation)	
Error Signal Output	Supported (photo-coupler insulation, control error)	
Cooling System	Natural Cooling by air	
Installation	Rubber legs placed on flat surface	
Output Connector	SMP-03V-BC(JST) 1: Output+ 3 : Output -	
Weight	1.4kg	1.4kg

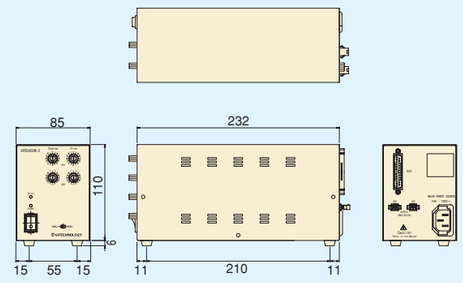
UPD2430W-2



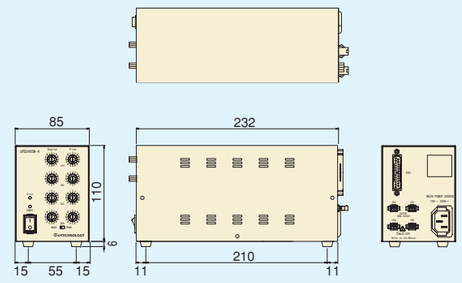
UPD2430W-4



UPD2450W-2



UPD2450W-4



All dimensions in mm

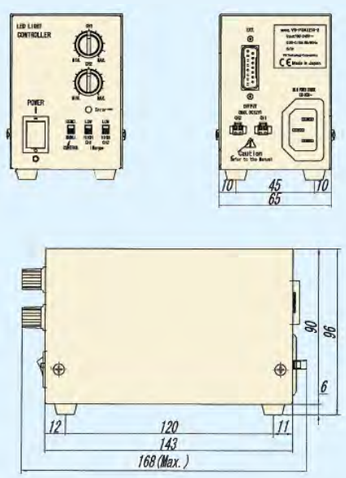
LED Power Supply for 12V

- 12V Analog power supply
- Fine adjustment mode for low current application
- RoHS compliant
- CE certified

Specifications

Model	VS-PSA1210-2
Input Voltage	AC 100-240V(rated) ±10% 50/60Hz
Power Consumption	32VA Max.(AC200V)
Inrush Current(A)	15/30A(AC100/230V) at cold start
AC Power Cord	3m(max.) cord with a protective earth terminal
DC Output	2 Channels DC12V(between output and GND)
Output Connectors	SMP-02V-BC(JST) 1:output+ 2:output− Insulation resistance:500MΩ(min.) Withstand voltage:AC1500V/minute
Intensity Control	MANU:Control manually by volume knobs REMO:Remote control by external analog input(DC 0 to 5V)
i Range function	HIGH:Normal control up to rated current LOW:Fine control up to 30mA
ON/OFF Control	Signal H(5V):OFF / L(0V):ON
Intensity Control	PWM(20KHz)
Overcurrent protection	Operates at 105% or higher of the rated current
Insulation resistance/ withstand voltage	Between input and FG(frame ground): AC 1500V/minute(10mA), DC 500V 50MΩ(min.)
	Between input and output: AC 1500V/minutes(10mA),DC 500V 50MΩ(min.)
	Between output and FG(frame ground):DC500V 50MΩ(min.)
Operating Environment	Temperature:0 to 40℃ Humidity:20～85% RH without condensation Altitude: 2000m Max. Pollution level: 2 Protective ground class I Installation category Ⅱ (restricted to use in indoor environment)
Storage Temperature/Humidity	-15 to 40℃/20 to 85% RH without condensation
Cooling Method	Air-cooling
Dimensions	W62mm x D143mm x H90mm
Weight	Approx. 0.8kg
European Standards(CE Marking)	EN61326-1 / EN61010-1

Dimension



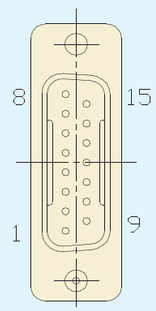
Pin Assignment

Pin No.	Identification
1	CH1 ON/OFF signal input(+) *1
2	CH1 ON/OFF signal input(−) *1
3	CH2 ON/OFF signal input(+) *1
4	CH2 ON/OFF signal input(−) *1
5	NC
6	NC
7	CH1 External input(0-5V) *2
8	CH1 External input(GND.)
9	NC
10	CH2 External input(0-5V) *2
11	NC
12	NC
13	NC
14	Error signal output(Open Collector)
15	Error signal output(Open Emitter)

*1 Input voltage is set at DC5V

*2 Analog control signal. Set the voltage range between DC 0 and 5V.
Load capacity DC24V and 10mA(max.)

Pin Assignment



Strobe Control Power Supply

- Power supply with strobe control
- 3-pin connector for our standard 24V-in LED lighting
- Pulse duration from 1us to 990us with 2ch independent control
- Two to three times brighter than continuous light

Specification

Model No.	USTD-3948-2
Input Voltage	AC100-230V 50/60Hz
Output Voltage	39V/48V *1 2CHMax.30W
Pulse Duration	1μs～990μs（2ch independent control）
Connector	SMP-03V-BC
Connector for remote control	D-sub25pin
Current Protection	Shutdown at over-rated load 120% min.
Operation Temperature	0℃～40℃

*1：39V with Red LED lighting and 48V with White and Blue

Parallel Lighting

Main Applications ●Collimated Spot Lighting

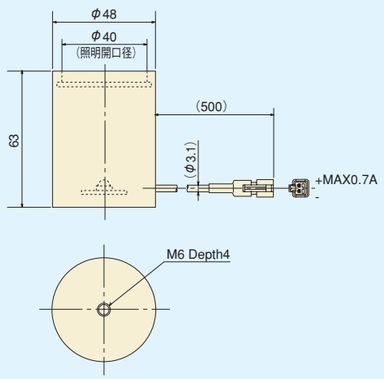
- Collimated Light gives highly uniform illumination.
- Bright lighting even at long WD. Useful for detecting shallow flaws and dents.

Collimated Spot Lighting

Series	Model No.	Color	Lighting area	Power Consumption	External Dimension
UKS Series	UKS-LH40R	Red ●	φ40	3.0W	UKS-LH40＊
	UKS-LH40W	White ○			
	UKS-LH40B	Blue ●			
	UKS-LH40G	Green ●			

Operating: Current Control

UKS-LH40＊



All dimensions in mm

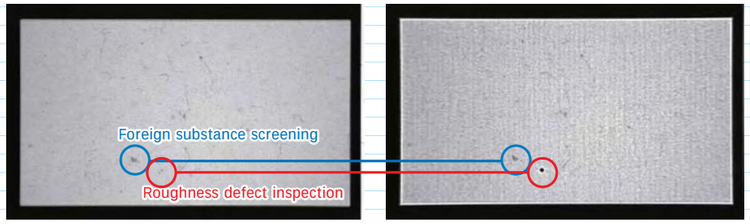
Please use current control power supply. Please refer to Page 45

Optical Film Inspection Unit VS-FIV100 Patent pending

- Special inspection unit employing original lighting and optics from VS Technology
- This unit allows fast and reliable inspection of tiny convex and concave defects, as well as thickness unevenness of film, that conventional vision system could not achieve.

[Feature]

- Visualization of hard-to-detect surface roughness defect of translucent film



[Normal picture-taking] [Strengthened picture-taking]

- Allows emphasis of the defects which would otherwise be impossible to detect by human eyes or normal vision system ※Please refer to red color circle
- Able to differentiate between thickness unevenness and foreign substance ※Please refer to blue color circle

- Suitable for inspection of adhesive film

[Normal picture-taking] [Strengthened picture-taking]

- Visualization of inapparent roughness defect of film

- Large monitor for fast inspection time
  - FOV at 100mm (maximum in diagonal)

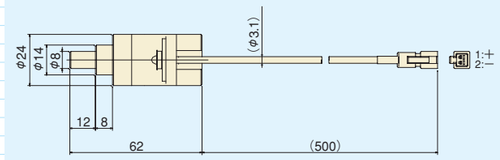
Able to clearly distinguish the defects and improve the inspection accuracy
Easy setup and installation even for inexperienced operators

※Please contact us for more details

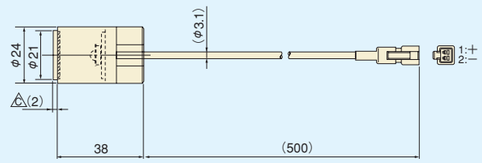
High-Power Spot Lighting

- Compatible with coaxial telecentric lens, or can be used as spot side lighting
- High brightness with power LED

UHP-SP＊3W



UHP-SP＊3W-CON



All dimensions in mm

High Power Spot Lighting

Series	Model No.	Color	Dimension of Lighting Area (mm)	Power Consumption	External Dimension
UHP Series	UHP-SPR3W	Red	φ 8	3.0W	UHP-SP＊3W
	UHP-SPW3W	White			
	UHP-SPB3W	Blue			
	UHP-SPG3W※	Green			

Condensed High Power Spot Lighting

Series	Model No.	Color	Dimension of Lighting Area (mm)	Power Consumption	External Dimension
CON Series	UHP-SPR3W-CON※	Red	φ 21	3.0W	UHP-SP＊3W-CON
	UHP-SPW3W-CON※	White			
	UHP-SPB3W-CON※	Blue			
	UHP-SPG3W-CON※	Green			

Operating: Current Control

Light Guide Adapter

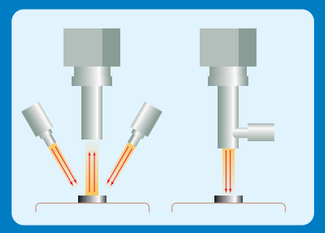
Series	Model No.	
—	UHP-AD1	Connecting high power spot lighting with light guide

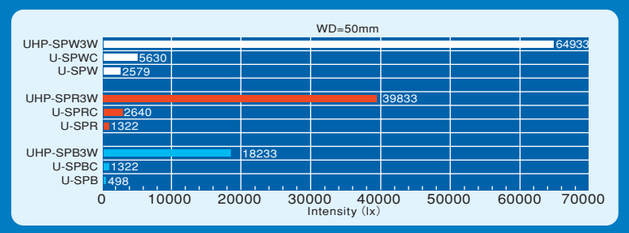
Please use current control power supply. Please refer to Page 45

Connection example of light guide

CON series lighting area

WD	
50	φ20
100	φ25
150	φ30
200	φ35
250	φ40
300	φ45





Spot Light for Co-axial lens

- Ideal co-axial spot lighting for telecentric lens illumination
- Ultra-compact design for space-constrained machine vision applications
- Hot spot effect is alleviated with uniform lighting even at low magnifications

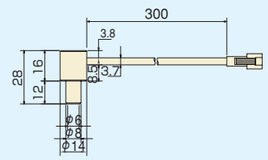
12V type

Series	Model No.	Color	Dimension of Lighting Area (mm)	Power Consumption	Drawing
VS-LEV Series	VS-LEV12-14L/R-H	Red	ϕ8	12V/0.84W	VS-LEV-14/*
	VS-LEV12-14L/W-H	White			
	VS-LEV12-14L/B-H	Blue			
	VS-LEV12-14L/G-H	Green			
	VS-LEV12-14L/IR	IR			
	VS-LEV-24V-RB		—	24V	VS-LEV-24V-RB

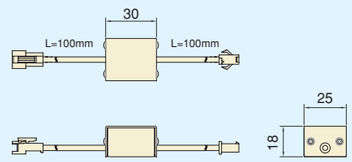
24V type

Series	Model No.	Color※	Dimension of Lighting Area (mm)	Power Consumption	Drawing
SP Series	U-SPR	Red	ϕ8	24V/0.41W	U-SP*
	U-SPW	White	ϕ8	24V/0.41W	
	U-SPB	Blue	ϕ8	24V/0.41W	
	U-SPG ※	Green	ϕ8	24V/0.41W	
	U-SPRC	Red	ϕ8	24V/1.2W	U-SP*C
	U-SPWC	White	ϕ8	24V/1.2W	
	U-SPBC	Blue	ϕ8	24V/1.2W	
	U-SPGC ※	Green	ϕ8	24V/1.2W	

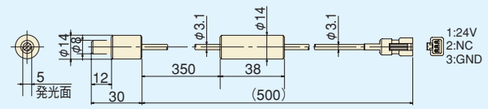
VS-LEV-14/*



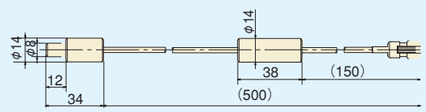
VS-LEV-24V-RB



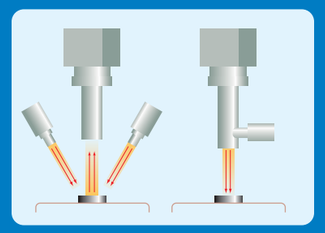
U-SP*

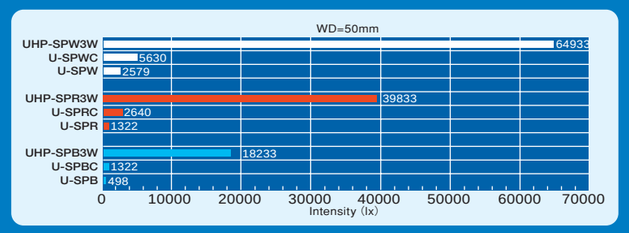


U-SP*C



All dimensions in mm





High-Power Spot Power Supply

- Power supply for power LED spot lighting UHP and UKS series
- Available in 1, 2 and 4 channels.

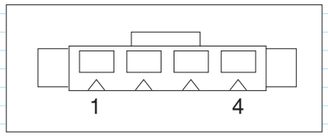
Current Control Power Supply

Model	UHPD1	UHPD2	UHPD4
Channels	1	2	4
Control	Current control		
Output voltage	DC6V（Channel independent）		
Max. output current	700mA（Channel independent）		
Input	AC100-240V 50/60Hz		
Operation temperature	0～+50℃/30～85%RH No condensation		
External control	DC0-5V		
On/Off	Supported		
Connector	SMP-02V-BC 1:+ 2:-		
Weight (approx.)	0.5kg	0.7kg	1.2kg

●ROHS compliant ●For all colors

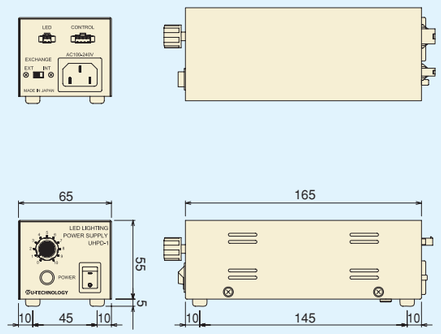
External control connection

Pin #				
1	EXT L・C	External control	DC 0~5V	approx. 1KΩ
2	GND	Circuit GND	0V	Circuit GND
3	ON/OFF	External On/Off	DC 0~6V	FET gate (22KΩ pull-up)
4	GND	Circuit GND	0V	Circuit GND

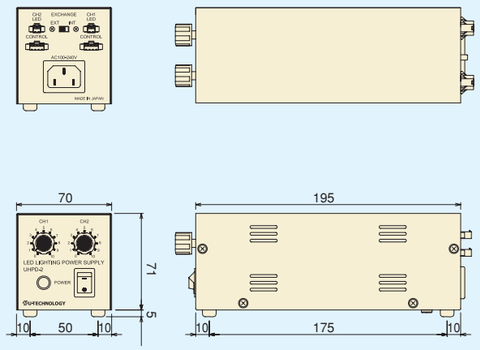


●Control connecter (SMP-04VBC/female)
●Maximum voltage for #1 pin is 5.1V.

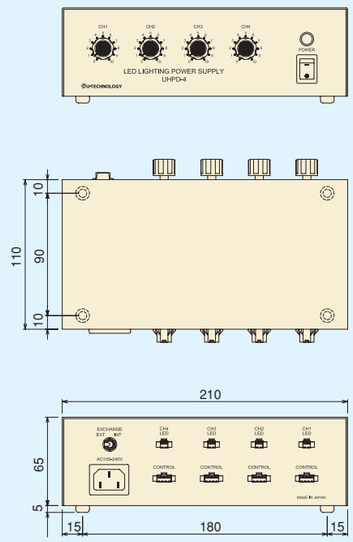
UHPD-1



UHPD-2



UHPD-4

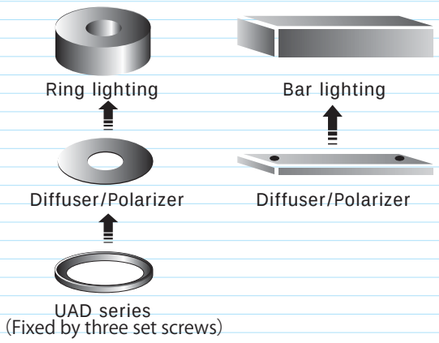


All dimensions in mm

Option

Diffuser

Series	Model No.	Dimension (inner diameter / VXH)	Adapter	Illumination model No.
UDF Series	UDF-10D	φ9	UAD-10D	UDR-10★32
	UDF-15D	φ15	UAD-15D	UDR-15★38
	UDF-16D	φ14	UAD-16D	UDR-16★48
	UDF-28D	φ26	UAD-28D	UDR-28★50
	UDF-30D	φ28	UAD-30D	UDR-30★66
	UDF-35D	φ35	UAD-35D	UDR-35★70-F
	UDF-50D	φ46	UAD-50D	UDR-50★90
	UDF-60D	φ60	UAD-60D	UDR-60★120
	UDF-95D	φ95	UAD-95D	UDR-95★140
	UDF-25L	φ25		ULR-25★50
	UDF-48L	φ48		ULR-48★74
	UDF-68L	φ68		ULR-68★100
	UDF-5015B	50×15		UB-50★15
	UDF-7515B	75×15		UB-75★15
	UDF-7530B	75×30		UB-75★30
	UDF-10015B	100×15		UB-100★15
	UDF-13015B	130×15		UB-130★15
	UDF-15015B	150×15		UB-150★15
	UDF-20015B	200×15		UB-200★15
	UDF-20020B	200×20		UB-200★20
	UDF-20030B	200×30		UB-200★30
	UDF-25015B	250×15		UB-250★15
	UDF-30015B	300×15		UB-300★15



Polarizer

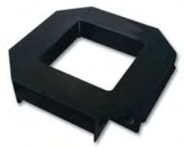
Series	Model No.	Dimension (inner diameter / VXH)	Adapter	Illumination model No.
UPL Series	UPL-10D	φ9	UAD-10D	UDR-10★32
	UPL-15D	φ15	UAD-15D	UDR-15★38
	UPL-16D	φ14	UAD-16D	UDR-16★48
	UPL-28D	φ26	UAD-28D	UDR-28★50
	UPL-30D	φ28	UAD-30D	UDR-30★66
	UPL-35D	φ35	UAD-35D	UDR-35★70-F
	UPL-50D	φ46	UAD-50D	UDR-50★90
	UPL-60D	φ60	UAD-60D	UDR-60★120
	UPL-95D	φ95	UAD-95D	UDR-95★140
	UPL-5015B	50×15		UB-50★15
	UPL-7515B	75×15		UB-75★15
	UPL-7530B	75×30		UB-75★30
	UPL-10015B	100×15		UB-100★15
	UPL-13015B	130×15		UB-130★15
	UPL-15015B	150×15		UB-150★15
	UPL-20015B	200×15		UB-200★15
	UPL-20020B	200×20		UB-200★20
	UPL-20030B	200×30		UB-200★30
	UPL-25015B	250×15		UB-250★15
	UPL-30015B	300×15		UB-300★15

Angle adjusting adapter for bar lighting

Series	Model No.	Illumination model No.
UAD Series	UAD-5015B	UB-50★15
	UAD-7515B	UB-75★15
	UAD-13015B	UB-130★15

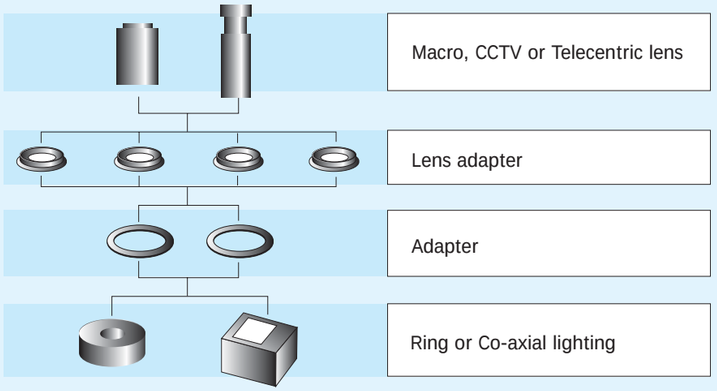
Basement for bar lighting

Series	Model No.	Illumination model No.
QB Series	UAD-QBK50	UB-50★15
	UAD-QBK75	UB-75★15
	UAD-QBK130	UB-130★15



Lens Attachment

System diagram



Lens Adapter

Series	Model No.	Specification	Illumination model No.
Lens adapter	UAD-COM225	M22.5 P0.5 Lens	VS-LD Series VS-H Series VS-TCH Series etc
	UAD-COM255	M25.5 P0.5 Lens	
	UAD-COM270	M27.0 P0.5 Lens	
	UAD-COM305	M30.5 P0.5 Lens	
Adapter for co-axial	UAD-COBS		USCO-18/31/50
Adapter for ring lighting	UAD-DRBS		UDR-16/28/30/35

Series	Model No.	Specification	Illumination model No.	Illumination model No.
For telecentric lens Lens adapter	UAD-DR1616	ϕ16 Lens	UDR-16*48	telecentric lens for ϕ16、ϕ25、ϕ30 of VS-TC/TCM/TCH etc
	UAD-DR1616S			
	UAD-DR3025	ϕ25 Lens	UDR-30*66	
	UAD-DR3030	ϕ30 Lens		

Lightings can be mounted onto VST lens products such as Macro, CCTV or Telecentric lenses.

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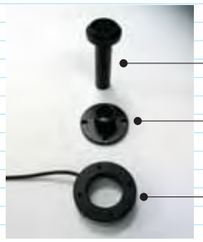


Cable

Extension Cables

Series	Model No.	Size	Illumination model No.
3PIN	UC-1M	Robot cable・1M	for 24V lighting unit（Except for UHP Series）
	UC-2M	Robot cable・2M	
	UC-3M	Robot cable・3M	
	UC-5M	Robot cable・5M	
	UCNR-1M	Non-robot cable・1M	
	UCNR-2M	Non-robot cable・2M	
	UCNR-3M	Non-robot cable・3M	
	UCNR-5M	Non-robot cable・5M	
2PIN	UCP-1M	Robot cable・1M	specifically for UHP, UKS & 12V lighting unit
	UCP-2M	Robot cable・2M	
	UCP-3M	Robot cable・3M	
	UCP-5M	Robot cable・5M	
	UCPNR-1M	Non-robot cable・1M	
	UCPNR-2M	Non-robot cable・2M	
	UCPNR-3M	Non-robot cable・3M	
	UCPNR-5M	Non-robot cable・5M	

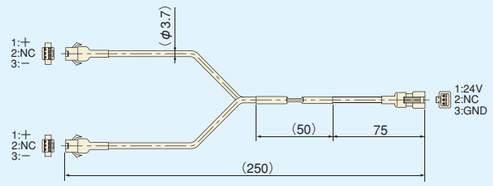
Other cables

Series	Model No.	Size	Illumination model No.
UTC Series	UCNR-B2※	Two branch cable	for 24V lighting unit（Except for UHP Series）
	UCNR-B4※	Four branch cable	
	UTC-3P2P※	3P - 2P adapter	

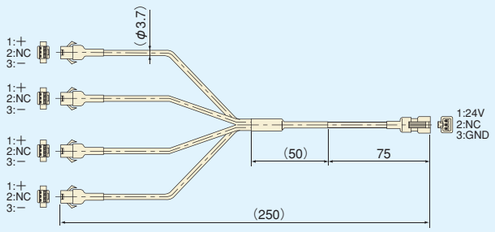
External control cable

Series	Model No.	Size	Illumination model No.
EXC Series	UTC-EXC-4P※	for 4P connector	for UHP, UKS & 12V lighting unit
	UTC-EXC-25P※	for D-sub25pin connector	for power supplies（Except for UHP Series）

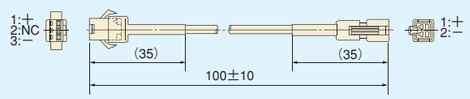
UCNR-B2



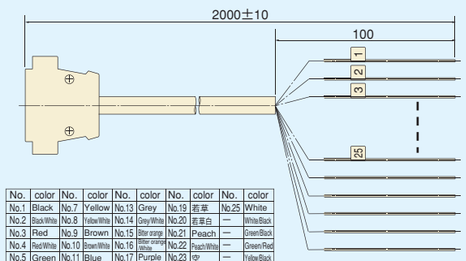
UCNR-B4



UTC-3P2P

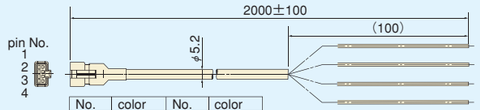


UTC-EXC-25P



No.	color	No.	color	No.	color	No.	color	No.	color
No.1	Black	No.7	Yellow	No.13	Grey	No.19	若草	No.25	White
No.2	Black/White	No.8	Yellow/White	No.14	Grey/White	No.20	若草白	—	White/Black
No.3	Red	No.9	Brown	No.15	Blue-orange/White	No.21	Peach	—	Green/Black
No.4	Red/White	No.10	Brown/White	No.16		No.22	Peach/White	—	Green/Red
No.5	Green	No.11	Blue	No.17	Purple	No.23	空	—	Yellow/Black
No.6	Green/White	No.12	Blue/White	No.18	Purple/White	No.24	空白	—	Yellow/Red

UTC-EXC-4P

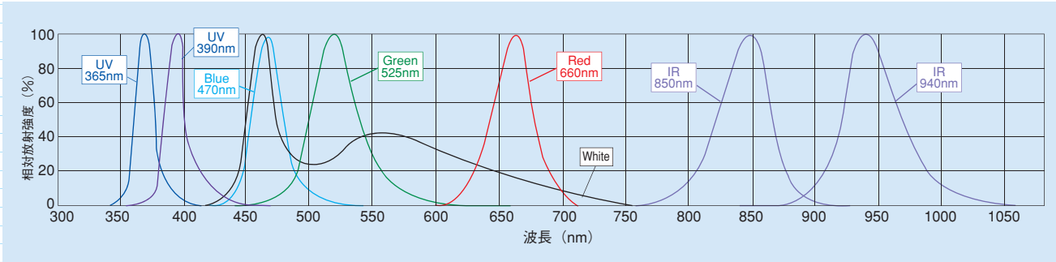


No.	color	No.	color
No.1	Black	No.3	Red
No.2	Black/White	No.4	Red/White

All dimensions in mm

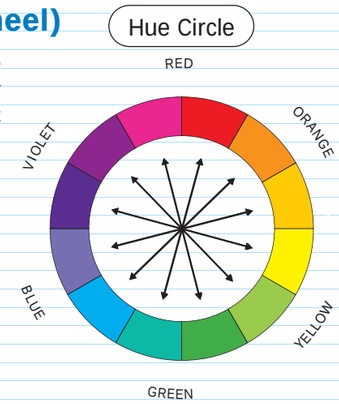
LED Lighting Technical Data

Spectrum



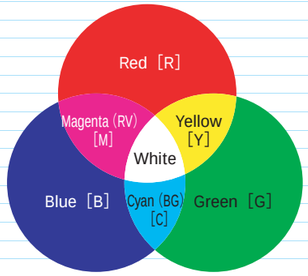
Hue Circle (Color Wheel)

To obtain optimized contrast, the complementary color (opposite color in circle) tends to be better against the color of object surface.

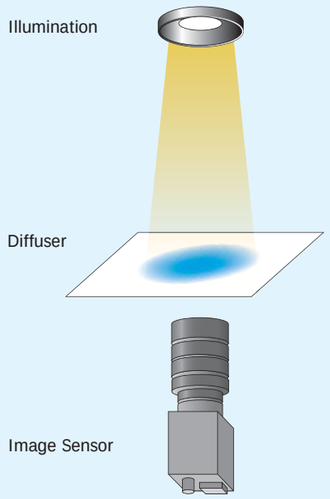


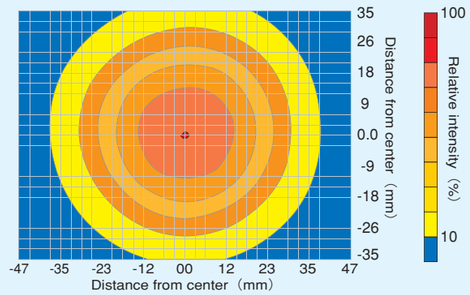
Primary Colors

Various colors could be derived using three primary colors of light.



Distribution data of lighting



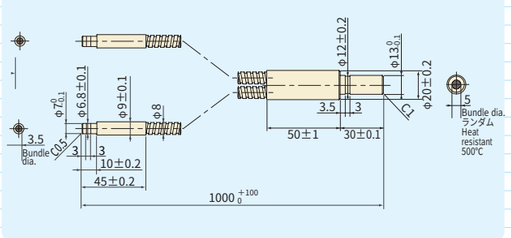


The results of light distribution on a diffusion plate are retrieved by a image sensor and uploaded to a computer. 2D luminance level data are subsequently be produced.

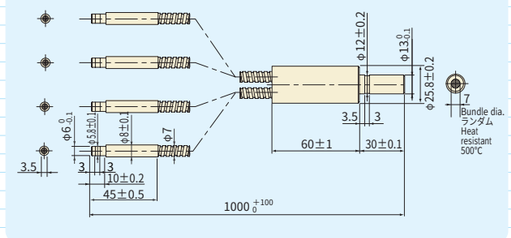
Quartz Light Guide for UV

- Manufacturing of a wide variety of products in small quantities
- Fast delivery and low cost
- Can be customized for different UV light source
- Ring or Line type are available

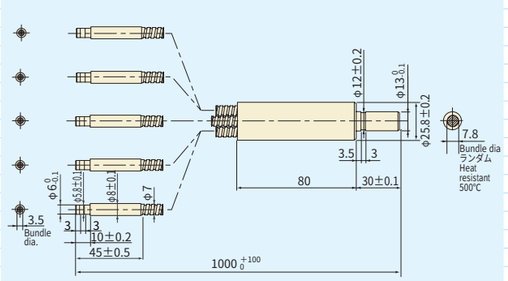
UWS3.5-1000S-UV



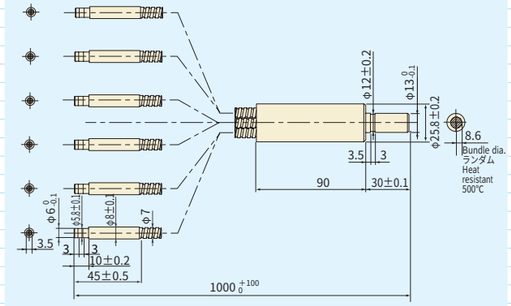
U4S3.5-1000S-UV



U5S3.5-1000S-UV



U6S3.5-1000S-UV



All dimensions in mm

Repair service for your quartz light guide

The time for UV curing becomes longer as the intensity of UV rays gets weaker when the light guide surface is deteriorated. Normally the users would home to change the whole light guides and UV lamp which results in high costs .

Services

- Polishing of light guide edge surfaces
- Repair of broken fiber
  (total length may become shorter as a result)

When do you need repair?

When curing time and efficiency for UV glue become longer and low respectively,
we recommend repair or installation of a new products.

Example of repair

- Scratches

Surface polish

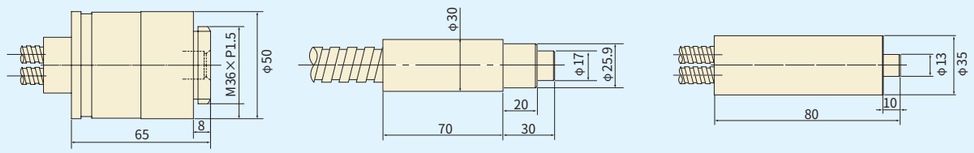
- UV glue contaminant

Surface polish

- Fiber disconnection
  (Black points showing disconnection)

Disconnection repair

Example of dimensions for different light sources



All dimensions in mm

Ring Light Guides

Model Number Structure

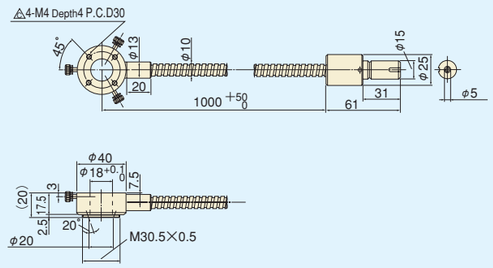
URG - [ ] - [ ] [ ] - [ ]

Inner Dia.	Length	Flexible Tube Type	Custom Spec.
18mm	500mm	R = Interlocking tube	HR = 300℃ Heat Resistance
31mm	1000mm	S = SUS flexible tube	
53mm		V = SUS flexible + PVC tube	
61mm			

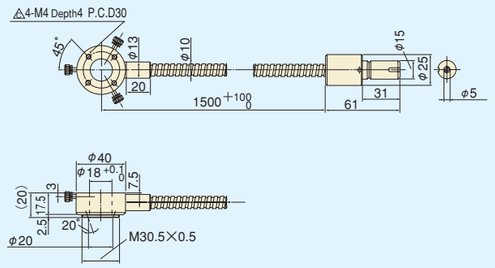
Ring Light Guide

Series	Model No.	Internal Ring Diameter (mm)	External Ring Diameter (mm)	Line length(mm)	External Dimension
URG Series	URG18-1000S	ϕ 18	ϕ 40	L=1000	URG18-1000S
	URG18-1500S			L=1500	URG18-1500S
	URG31-1000S	ϕ 31	ϕ 60	L=1000	URG31-1000S
	URG31-1500S			L=1500	URG31-1500S
	URG53-1000S	ϕ 53	ϕ 80	L=1000	URG53-1000S
	URG53-1500S			L=1500	URG53-1500S
	URG61-1000S	ϕ 61	ϕ 90	L=1000	URG61-1000S
	URG61-1500S			L=1500	URG61-1500S

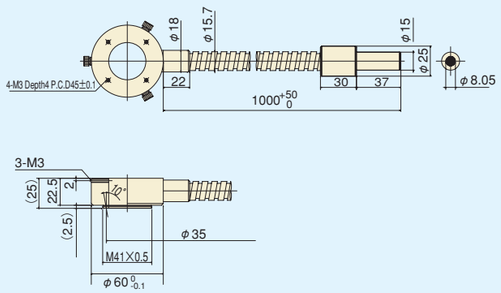
URG18-1000S



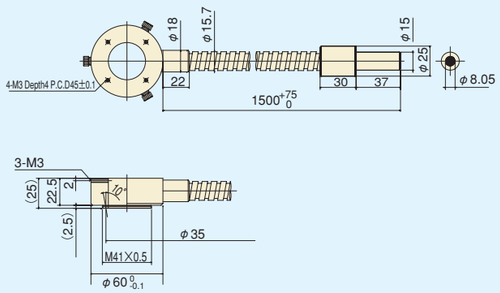
URG18-1500S



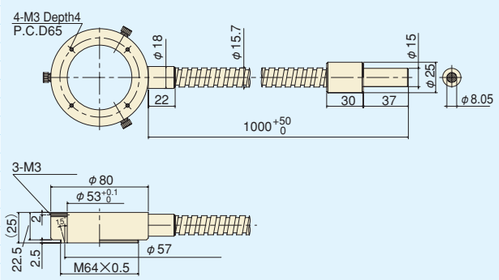
URG31-1000S



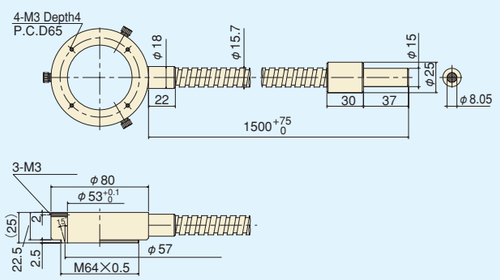
URG31-1500S



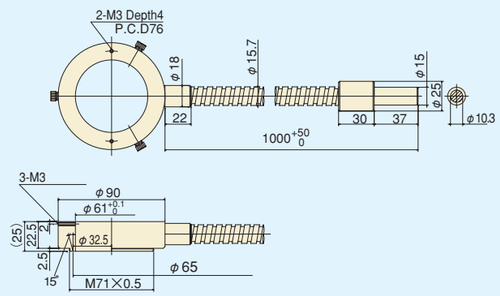
URG53-1000S



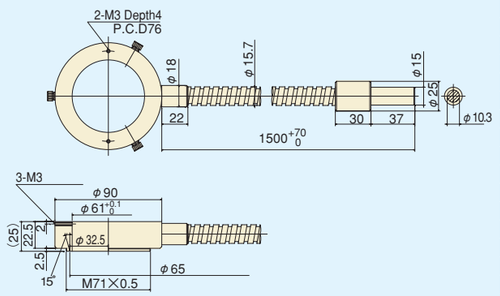
URG53-1500S



URG61-1000S



URG61-1500S



All dimensions in mm

Straight Light Guides

Model Number Structure

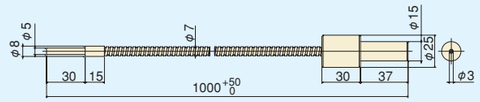
USG- [ ] - [ ] [ ] - [ ]

- Bundle Diameter: ϕ3, ϕ4, ϕ6, ϕ8
- Length: 500mm, 1000mm, 2000mm
- Flexible Tube Type: R = Interlocking tube; S = SUS flexible tube; V = SUS flexible + PVC tube
- Custom Spec.: HR = 300℃ Heat Resistance; SD = small output outer diameter

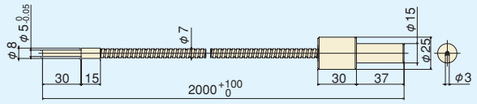
Straight Light Guides

Series	Model No.	Line length(mm)	Light outputside fiber bundle diameter	Special Spec	Drawing
USG Series	USG3-1000S-SD	L=1000	ϕ3	Small diameter	USG3-1000S-SD
	USG4-500R	L=500	ϕ4	Interlock	USG4-500R
	USG4-1000S	L=1000	ϕ4		USG4-1000S
	USG4-2000S	L=2000	ϕ4		USG4-2000S
	USG4-1000S-L	L=1000	ϕ4	L type	USG4-1000S-L
	USG6-1000S	L=1000	ϕ6		USG6-1000S
	USG6-2000S	L=2000	ϕ6		USG6-2000S
	USG8-1000S	L=1000	ϕ8		USG8-1000S
	USG8-2000S	L=2000	ϕ8		USG8-2000S

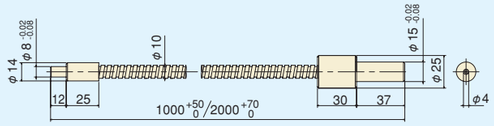
USG3-1000S-SD



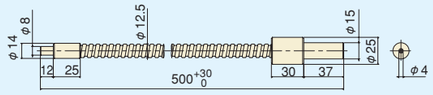
USG3-2000S-SD



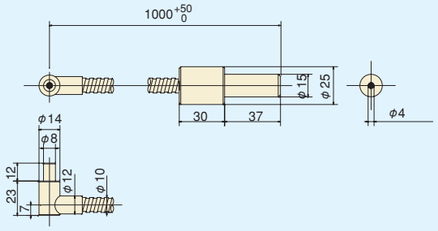
USG4-1000S



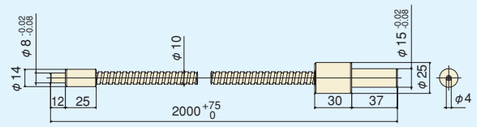
USG4-500R



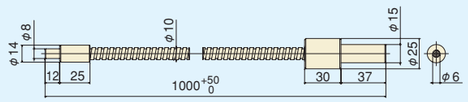
USG4-1000S-L



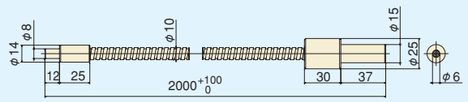
USG4-2000S



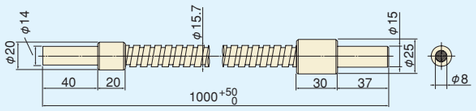
USG6-1000S



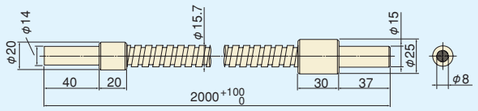
USG6-2000S



USG8-1000S



USG8-2000S



All dimensions in mm

Multi-branch Light Guides

Model Number Structure

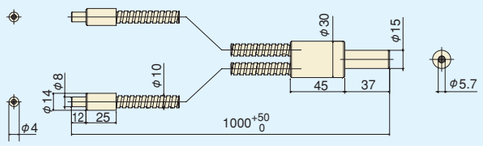
UWG- [ ] [ ] - [ ]

- Length: 1000mm, 2000mm
- Flexible Tube Type: R = Interlocking tube; S = SUS flexible tube; V = SUS flexible + PVC tube
- Custom Spec.: HR = 300℃ Heat Resistance; SD = small output outer diameter

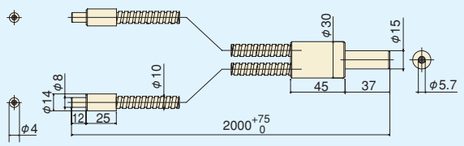
Multi-brarch Light Guides

Series	Model No.	Line length(mm)	Bundle		Drawing
UWG Series	UWG-1000S	L=1000	φ4		UWG-1000S
	UWG-2000S	L=2000	φ4		UWG-2000S
	UWG-1000S-L	L=1000	φ4	L-type	UWG-1000S-L
	U4G3-1500S-SD	L=1500	φ3	Slim-type	U4G3-1500S-SD

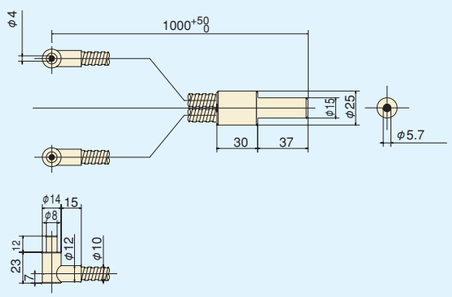
UWG-1000S



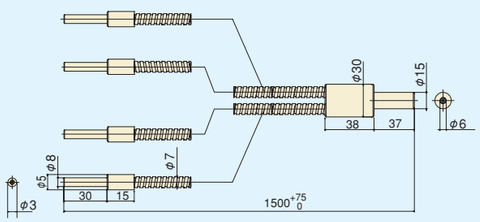
UWG-2000S



UWG-1000S-L



U4G3-1500S-SD



All dimensions in mm

Line Light Guides

Model Number Structure

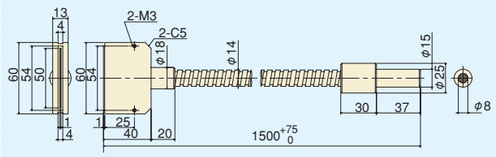
UKG- [ ] - [ ] [ ] - [ ]

- Line Length: 50mm, 180mm
- Length: 1500mm
- Flexible Tube Type: S = SUS flexible tube; V = SUS flexible + PVC tube
- Custom Spec.: HR = 300℃ Heat Resistance

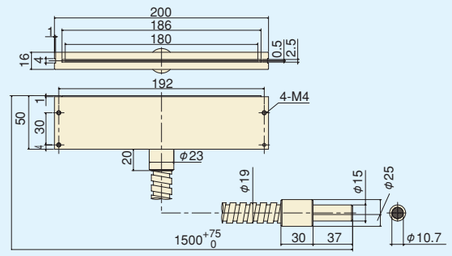
Line Light Guides

Series	Model No.	Line length(mm)	Light Width		Drawing
UKG Series	UKG50-1500S	L=1500	50mm		UKG50-1500S
	UKG180-1500S	L=1500	180mm		UKG180-1500S
	UKG180-1500S-W	L=1500	180mm	two branches	UKG180-1500S-W

UKG50-1500S

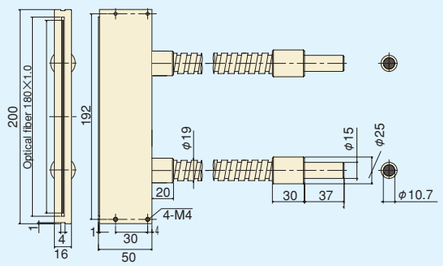


UKG180-1500S



All dimensions in mm

UKG180-1500S-W

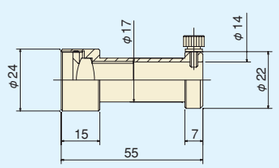


Condenser Lenses

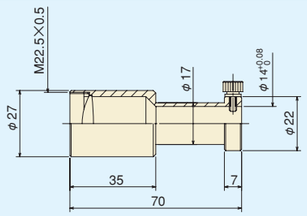
Condenser Lens

Series	Model No.	Shape (mm)	Spec	External Dimension
UL Series	UL-30	ϕ24	USG/UWG Series	UL-30
	UL-50	ϕ27	USG/UWG Series	UL-50
	ULK-50	L=70	UKG50 exclusive	ULK-50
	ULK-180	L=210	UKG180 exclusive	ULK-180

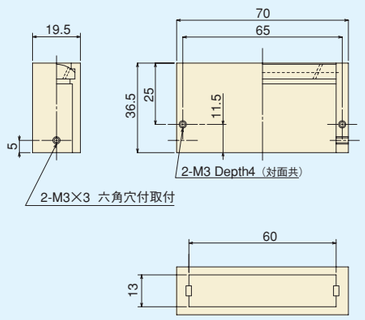
UL-30



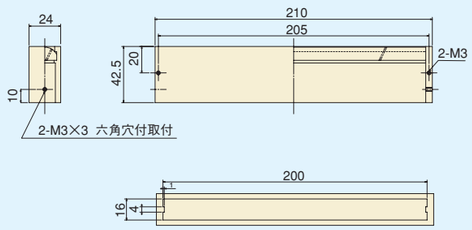
UL-50



ULK-50



ULK-180



All dimensions in mm

Light Guide Technical Data

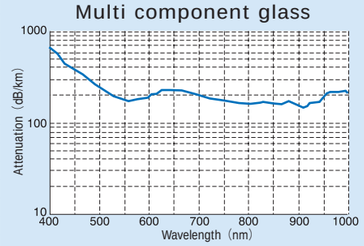
Optical fiber characteristics

Typical optical fibers are: Glass for illumination, plastic for cost-effective illumination and fused silica (quartz) for UV curing.

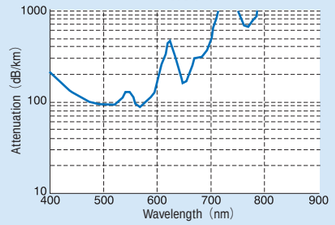
Material	Multi component glass		Plastic		Fused silica	
Fiber diameter	50μm		250μm 500μm		208μm	
Core diameter	45μm		-		200μm	
Acceptance Angle (approx.)	70°		60°		25°	
Entrance end temperature limit	Standard Heat resistant	200℃ 300℃	Standard	70℃	Standard Heat resistant	200℃ 500℃
Flex resistance	△		○		×	
Temperature resistance	○		×		○	
Attenuation	△		△		○	

Optical fiber attenuation

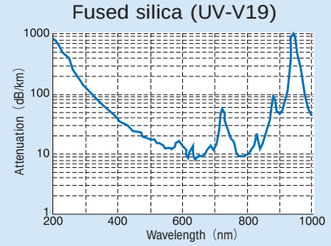
Multi component glass



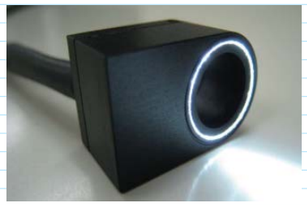
Plastic



Fused silica (UV-V19)



Ultra thin ring light



Micro-head ring light

Super uniform long line light

Single branch line light

UV Curing quartz light guide

Explosion-proof ring light

Explosion-proof spot light

Machine Vision Lens

Machine Vision Macro Lens
VS-MC series

Distortionless Macro Lens
VS-LD series

Telecentric Lens
VS-TC series

Magnification Changeable Telecentric Lens
VS-TC0510

New Megapixel CCTV Lens
SV-V series

Mega Pixel Telecentric Lens
VS-TCM series

C mount Macro Lens for Large Format Sensor

C mount Mega Pixel Telecentric Lens for Large Format Sensor

Line Sensor Macro Lens
VS-L series

Telecentric Lens for line Scan Sensor
VS-LTC series

Macro Zoom Lens
VSZ series

Machine Vision High Resolution CCTV Lens
SV-M series

8k & 12k Macro Lens
VS-L/M72 series

Microscope CCD Unit
VS-MS series

Macro Pin-Hole Lens
SV-PH series

F-mount Macro Lens for Line Sensor
VS-L/F series

CCTV Lens for high speed camera
SV-095 series

CCTV Lens for 1" CCD
SV-L series

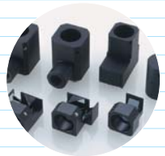
1" CCD CCTV Lens
SV-LMP series

Telecentric CCTV Lens
TEC Series

Extension Tube
SV-EXR series

3 & 5 Megapixel CCTV Lens
SV-H series

Lens Kit for R&D
SV-EGG-BOX series


Prism Unit
VS-PZ series

Rear Converter Lens
SV-X series

Option for Co-axial Lighting
VS-HM series

Option
SV-FAD series

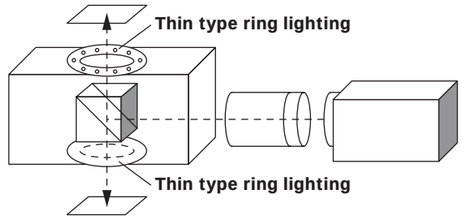
Filter
SV-GA,PL,ND,R,G,B,UV,IR,VC series

OEM & Custom Product

We provide "Customized Lighting","Semi-Customized Lighting" also "OEM" products in response to user's varied requests. We have many experiences of customization which are not shown on this catalogue.

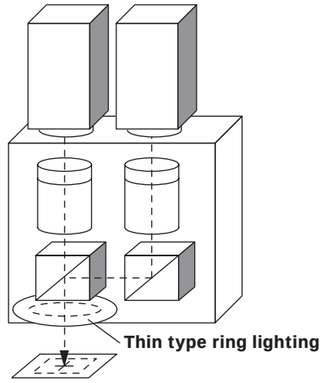
Custom Unit Examples

Up and Down View Optical Unit with One Camera with ring lighting



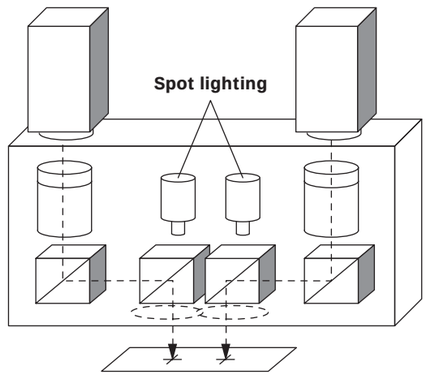
*Optical Unit to recognize up and down objects with one camera

Two Cameras two magnification optical system with ring lighting



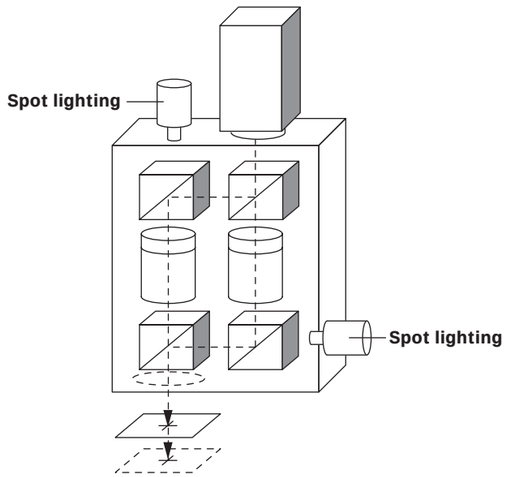
*Imaging one target with high and low magnification

Optical measurement system between two points with co-ax spot lighting



*Recognition of two points at the same time

One Camera two focus points unit with co-ax spot lighting



*Optical system which has two different WD with one camera

About VST

VST is designing, developing, and manufacturing lightings and optics for the market of image processing.
VST supports the machine vision market with sophisticated optical know-how which
meets customers' various requirements even at low-volume production.

History

2011	Founding of VST Asia-Pacific Ltd. in Hong Kong. Opening offices in Bangkok, Thailand and Shanghai, China.
2010	Founding of VST Europe AG in Winterthur, Switzerland. Acquiring capital of factory, Cebu Nisico Corporation in Cebu, Philippines.
2009	Acquiring capital of U-Technology Co., Ltd. in Sendai, Japan. Establishment of branch office in Hong Kong
2008	Founding of R&D company, Ba2 System Co., Ltd. In Saitama, Japan. Founding of VS Optics Co., Ltd. In Saitama, Japan.
2007	Opening of branch office in Nagoya, Japan.
2006	Opening of branch office in Fukuoka, Japan.
2005	Founding of Primal Sense Co., Ltd in Kyoto, Japan.
2003	Opening of engineering office and warehouse in Ichikawa, Japan.
1997	Founding of VS Technology Corporation in Tokyo, Japan.

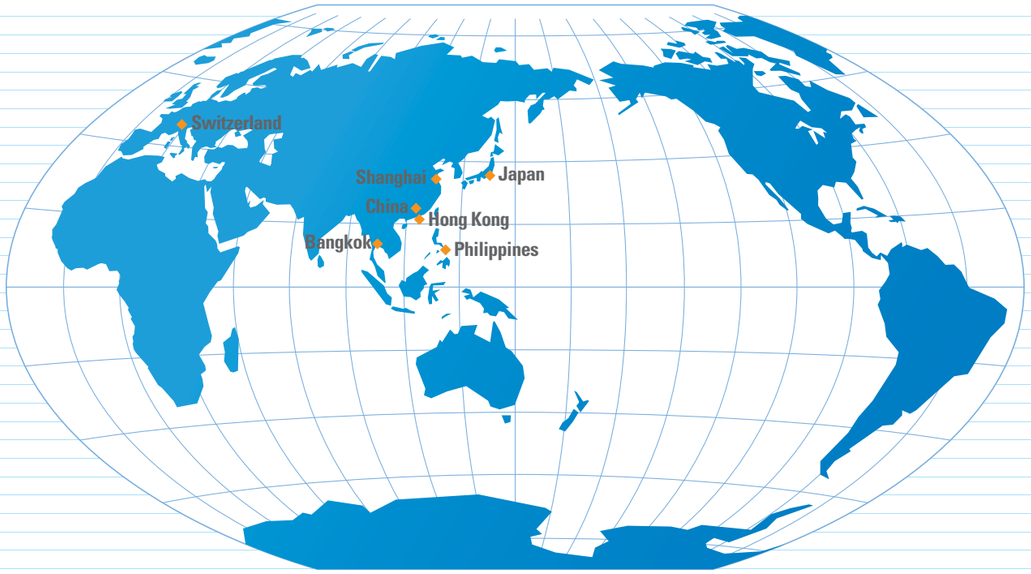
What does "VS" stands for?

"VS" stands for "Vision System" and also for

Valuable &

VST keeps working to create our customers' satisfaction
with the valuable price on our "V & 3S"

Worldwide Network



R&D and Manufacturing

Ichikawa Technical Center

Zaou Factory

Shen-Zhen Factory

Philippines Factory

Ba2 System in Saitama

U-Technology in Sendai

Sales & Support

Winterthur, Switzerland

Bangkok, Thailand

Shanghai, China

Hong Kong

Japan
Tokyo, Fukuoka, Kyoto,
Nagoya, Saitama, Sendai

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