

Ring Lights

LDR2 series

Provides direct light from an angled emitting part



Applications

Character recognition, visual inspection, inspections for damage or stains, reading 2-dimensional code, inspecting parts on boards, etc.

Standard Ring Lights

Uses a flexible circuit board to achieve the functions needed for a Ring Light. It can illuminate workpieces at an angle and can illuminate the whole workpiece. This alleviates the influence of slight position or inclination deviations in the workpiece and enables stable imaging.

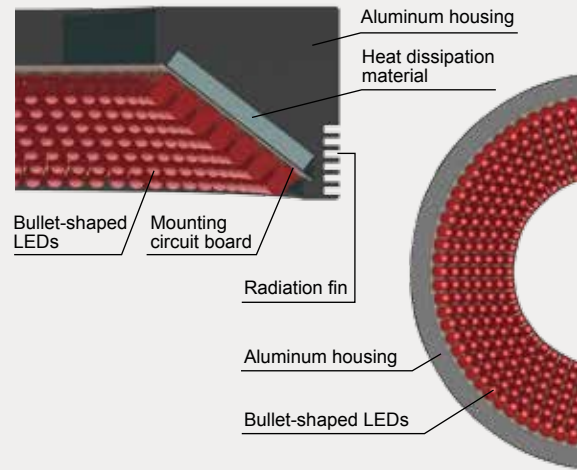
Flexible circuit board



Succeeds in greatly reducing LED's heat

Heat dissipation material is used between the board and the aluminum housing, absorbing heat produced by the LEDs. This succeeds in greatly reducing the creation of heat, which causes the LEDs to deteriorate.

Cross-section image of the LDR2-120



Custom orders

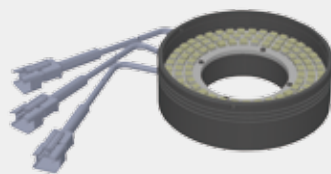
Please contact your CCS sales representative.

E.g.: Different color

Wavelength/Color
Creating a full color (RGB) Light Unit

Customizable items

- External/Internal diameter
- Wavelength/Color
- Increase output
- Cable length
- Illuminating angle
- Format/material
- Connector format
- Installation/mounting

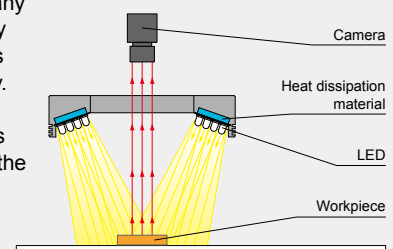


Etc.

Example configuration

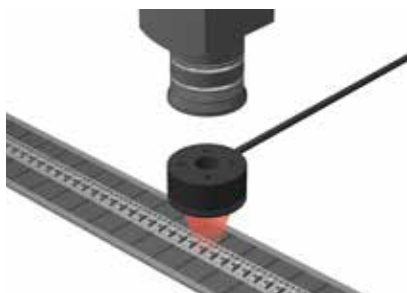
Bend the flexible circuit board to any shape necessary and mount LEDs with high density. Illuminates so that direct light is concentrated in the center.

LDR2-90



LDR2	Direct Lighting
LDR2-LA	Direct Lighting
LDR-LA1	
SQR	
SQR-TP	
HPR2	Diffused Lighting
LFR	
LKR	
FPR	
FPQ2	
LDL2	
LDLB	
HDL2	Direct Lighting
HL	
TH2 (5 types)	
TH	Diffused Lighting
LFL	
HPD2	
LDM2	
LAV	
PDM	
LFX3	
LFX3-PT	
LFX2	
LFV3	
MSU	Colimated Lighting
MFU	
PF	Strobe Lighting
HLDR-IP/	Water-proof
IQ/HSL-PCL	
UV2	Ultraviolet Lighting
UV	
LNSP-UV-FN	Infrared Lighting
IR2	
IU	Intensity Control
HLV2	Spot Lighting, Etc.
LV	
LSP	
HFS/HFR	
HLV2-NR	
HLV2-3M-RGB-3W	
PFBR	
PFB2	Convergent Lighting
LNL	
LNSP2	
LNSP	Coaxial Units
LNSP-FN	
LN/LN-HK	Diffused Lighting
LNSD	
LND2	
HLND	
LT	Oblique Angled Lighting
LNV/HLDN	
LNDG	
LNIS2	
LNIS	Lenses
LNIS-FN	
Telecentric Lens	
Macro Lens	

➤ Imaging example : Electrode imaging of electronic parts



Description	Visual inspection
Workpiece	Electronic parts
Conventional lighting	LED Bar Light
New lighting	LDR2-32RD2
Result	Improved uniformity

Workpiece image



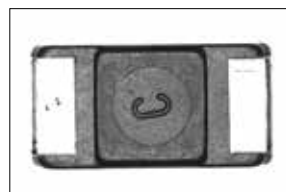
Electronic part

LED Bar Light



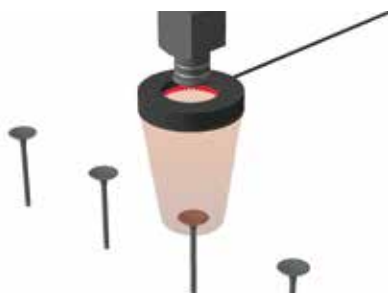
It's difficult to make an image of the electrode part using a Bar Light.

LDR2-32RD2



A Ring Light can illuminate the electrode part evenly and make an image.

➤ Imaging example : Imaging text on an intake valve



Description	Character recognition
Workpiece	Intake valve (automobile part)
Conventional lighting	LED Ring Light
New lighting	LDR2-50RD2
Result	Emphasized characters

Workpiece image



Intake valve

LED Ring Light



It's difficult to clearly recognize the text due to the inner indentation.

LDR2-50RD2



Allows for image that makes the character edges stand out.

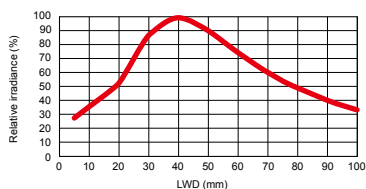
➤ Data: Relative irradiance graph and uniformity (Representative example)

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

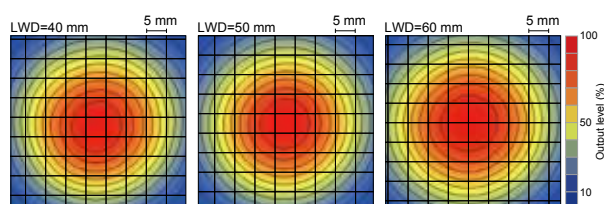
LDR2-50RD2

Relative irradiance graph^{*1} (LWD Characteristics)^{*2}

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



Uniformity (Relative irradiance)





Lineup End of the model name: -WD: Wide type

Model name	LED color	Power consumption	Peak wavelength/ correlated color temperature	Options	Extension cables	Recommended Control Units	Weight						
LDR2-32RD2	Red	24 V / 1.6 W	630 nm	<input type="checkbox"/> Diffusion plate <input type="checkbox"/> Polarizing plate <input type="checkbox"/> Adapter <input type="checkbox"/> Lens attachment ring	<input type="checkbox"/> FCB*2 Straight Cable <input type="checkbox"/> FCB-W 2-branch Cable <input type="checkbox"/> FCB-F 4-branch Cable <input type="checkbox"/> FRCB Robot Cable	<input type="checkbox"/> PD3 <input type="checkbox"/> CC-ST-1024 <input type="checkbox"/> PSB <input type="checkbox"/> POD*1	30 g						
LDR2-32SW2	White		5,500 K										
LDR2-32BL2	Blue		470 nm										
LDR2-32GR2	Green		525 nm										
LDR2-42RD2	Red	24 V / 2.1 W	630 nm	<input type="checkbox"/> Diffusion plate <input type="checkbox"/> Polarizing plate <input type="checkbox"/> Adapter			<input type="checkbox"/> FCB*2 Straight Cable <input type="checkbox"/> FCB-W 2-branch Cable <input type="checkbox"/> FCB-F 4-branch Cable <input type="checkbox"/> FRCB Robot Cable	<input type="checkbox"/> PD3 <input type="checkbox"/> CC-ST-1024 <input type="checkbox"/> PSB <input type="checkbox"/> POD*1	50 g				
LDR2-42SW2	White		5,500 K										
LDR2-42BL2	Blue		470 nm										
LDR2-42GR2	Green		525 nm										
LDR2-50RD2	Red	24 V / 3.1 W	630 nm	<input type="checkbox"/> Diffusion plate <input type="checkbox"/> Polarizing plate <input type="checkbox"/> Adapter <input type="checkbox"/> Lens attachment ring					<input type="checkbox"/> FCB*2 Straight Cable <input type="checkbox"/> FCB-W 2-branch Cable <input type="checkbox"/> FCB-F 4-branch Cable <input type="checkbox"/> FRCB Robot Cable	<input type="checkbox"/> PD3 <input type="checkbox"/> CC-ST-1024 <input type="checkbox"/> PSB <input type="checkbox"/> POD*1	50 g		
LDR2-50RD2-WD													
LDR2-50SW2	White	24 V / 3.8 W	5,500 K										
LDR2-50BL2	Blue		470 nm										
LDR2-50GR2	Green		525 nm										
LDR2-70RD2	Red		24 V / 6.1 W		630 nm	<input type="checkbox"/> Diffusion plate <input type="checkbox"/> Polarizing plate					<input type="checkbox"/> FCB*2 Straight Cable <input type="checkbox"/> FCB-W 2-branch Cable <input type="checkbox"/> FCB-F 4-branch Cable <input type="checkbox"/> FRCB Robot Cable	<input type="checkbox"/> PD3 <input type="checkbox"/> CC-ST-1024 <input type="checkbox"/> PSB <input type="checkbox"/> POD*1	110 g
LDR2-70RD2-WD													
LDR2-70SW2	White	24 V / 7.6 W	5,500 K										
LDR2-70BL2	Blue		470 nm										
LDR2-70GR2	Green		525 nm										
LDR2-90RD2	Red		24 V / 11 W		630 nm		<input type="checkbox"/> Diffusion plate <input type="checkbox"/> Polarizing plate <input type="checkbox"/> Adapter	<input type="checkbox"/> FCB*2 Straight Cable <input type="checkbox"/> FCB-W 2-branch Cable <input type="checkbox"/> FCB-F 4-branch Cable <input type="checkbox"/> FRCB Robot Cable					<input type="checkbox"/> PD3 <input type="checkbox"/> CC-ST-1024 <input type="checkbox"/> PSB <input type="checkbox"/> POD*1
LDR2-90RD2-WD													
LDR2-90SW2	White	24 V / 14 W	5,500 K										
LDR2-90BL2	Blue		470 nm										
LDR2-90GR2	Green		525 nm										
LDR2-90-30RD2	Red		24 V / 14 W	630 nm	-				<input type="checkbox"/> FCB*2 Straight Cable <input type="checkbox"/> FCB-W 2-branch Cable <input type="checkbox"/> FCB-F 4-branch Cable <input type="checkbox"/> FRCB Robot Cable	<input type="checkbox"/> PD3 <input type="checkbox"/> CC-ST-1024 <input type="checkbox"/> PSB <input type="checkbox"/> POD*1			
LDR2-90-30SW2	White	24 V / 18 W	5,500 K										
LDR2-90-30BL2	Blue	24 V / 17 W	470 nm										
LDR2-90-30GR2	Green	525 nm											
LDR2-120RD2-WD	Red	24 V / 24 W	630 nm	<input type="checkbox"/> Diffusion plate <input type="checkbox"/> Polarizing plate <input type="checkbox"/> Adapter		<input type="checkbox"/> FCB*2 Straight Cable <input type="checkbox"/> FCB-W 2-branch Cable <input type="checkbox"/> FCB-F 4-branch Cable <input type="checkbox"/> FRCB Robot Cable					<input type="checkbox"/> PD3 <input type="checkbox"/> CC-ST-1024 <input type="checkbox"/> PSB <input type="checkbox"/> POD*1	510 g	
LDR2-120SW2	White	24 V / 28 W	5,500 K										
LDR2-120BL2	Blue	24 V / 26 W	470 nm										
LDR2-120GR2	Green		525 nm										

Extension Cables ▶ P.296

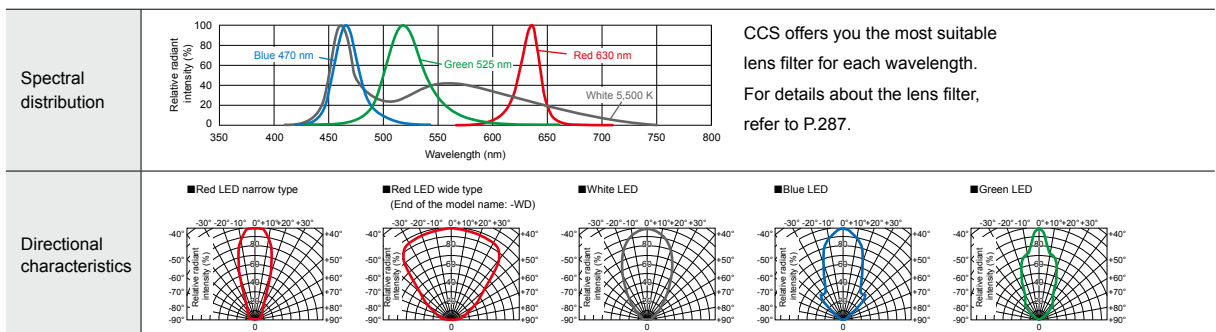
Control Unit Selection Guide ▶ P.243

List of Control Unit Specifications ▶ P.245

*1 For information on the combination of Light Units and POD-series Control Unit, please refer to our website. <http://www.ccs-grp.com/ink/qr/pod>

*2 The cables with a model name that ends with "-ME7" or "-EL2" are not included.

LED properties



Be sure to read the "Instruction Guide" included with the product before use and follow the safety precautions upon use. The data included is for reference only. Actual values may vary.

Options



Can prevent glare, which is a problem when making images of glossy workpieces.

Diffusion plate

An adapter is required when installing a diffusion plate.

Model name	Applicable Light Unit (Common for all colors)
DF-LDR-32	LDR2-32
DF-LDR-42	LDR2-42
DF-LDR-50	LDR2-50
DF-LDR-70*	LDR2-70
DF-LDR-90	LDR2-90
DF-LDR-120-45	LDR2-120

* DF-LDR-70 does not require an adapter. Directly affix it to the Light Unit.

▶ P.290



Use with a polarizing filter to remove the light's surface reflection.

Polarizing plate

An adapter is required when installing a polarizing plate.

Model name	Applicable Light Unit (Common for all colors)
PL-LDR-32	LDR2-32
PL-LDR-42	LDR2-42
PL-LDR-50	LDR2-50
PL-LDR-70*	LDR2-70
PL-LDR-90	LDR2-90
PL-LDR-120-40	LDR2-120

* PL-LDR-70 includes an adapter for attachment.

▶ P.291



Use when installing a diffusion plate or polarizing plate to the Light Unit.

Adapter

Model name	Applicable Light Unit (Common for all colors)
AD-LDR-32	LDR2-32
AD-LDR-42	LDR2-42
AD-LDR-50	LDR2-50
AD-LDR-90	LDR2-90
AD-LDR-120	LDR2-120

▶ P.295



Can directly install the Light Unit to the screw section for the lens filter. Perfect for environments with narrow installation spots.

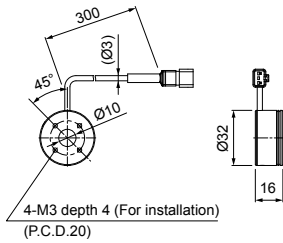
Lens attachment ring

Model name	Note	Applicable Light Unit (Common for all colors)
MR-LDR-32-M25	M25.5 P0.5	LDR2-32
MR-LDR-32-M27	M27.0 P0.5	
MR-LDR-32-M30	M30.5 P0.5	
MR-LDR-50-M25	M25.5 P0.5	LDR2-50
MR-LDR-50-M27	M27.0 P0.5	
MR-LDR-50-M30	M30.5 P0.5	

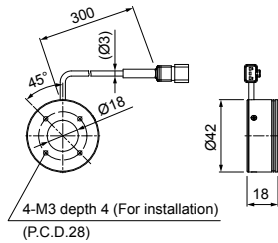
▶ P.295

Dimensions (mm)

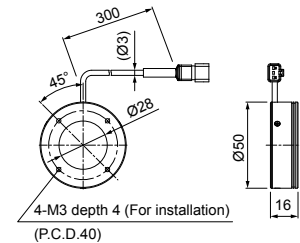
LDR2-32RD2/SW2/BL2/GR2



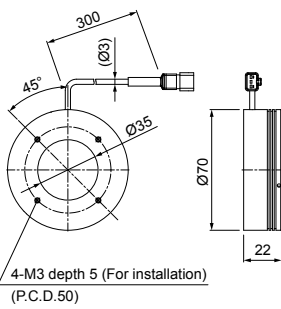
LDR2-42RD2/SW2/BL2/GR2



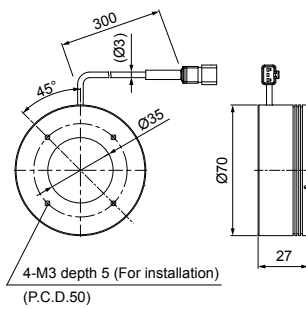
LDR2-50RD2/RD2-WD/SW2/BL2/GR2



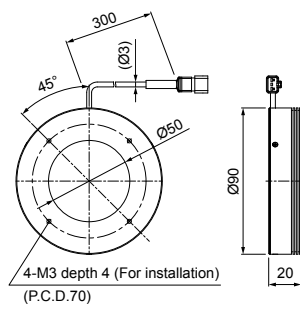
LDR2-70RD2/RD2-WD



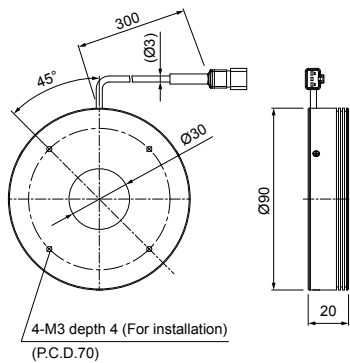
LDR2-70SW2/BL2/GR2



LDR2-90RD2/RD2-WD/SW2/BL2/GR2

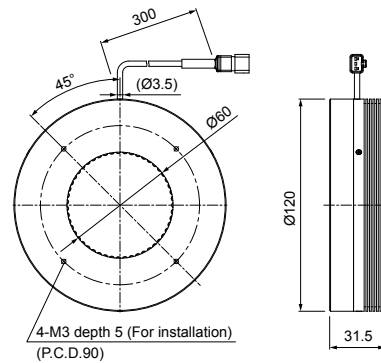


LDR2-90-30RD2/SW2/BL2/GR2



The cable diameter of LDR2-90-30SW2/BL2/GR2 is Ø3.5.

LDR2-120RD2-WD/SW2/BL2/GR2



You can change the connectors of the Light Unit cable. Choose between M12 connectors and flying leads. Refer to P.5 for details.