

Ring Lights

LDR2 series

Provides direct light from an angled emitting part



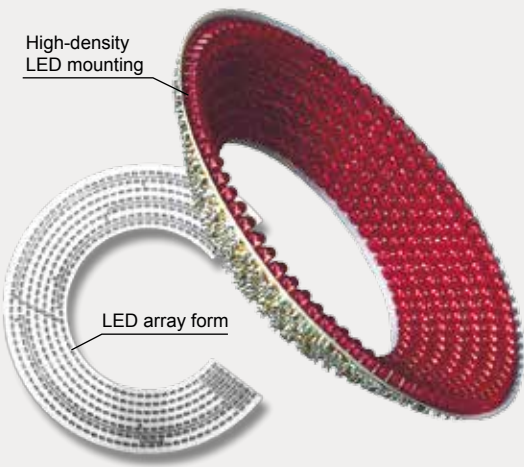
Applications

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.

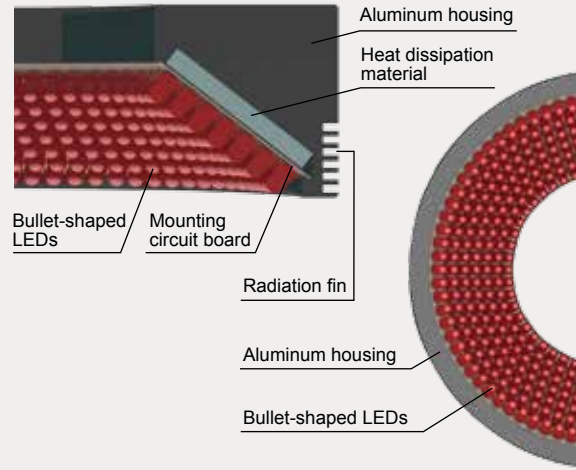
Flexible circuit board



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

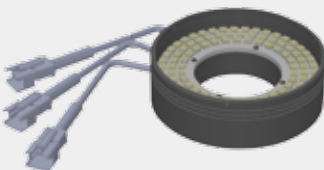
Please contact your CCS sales representative.

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

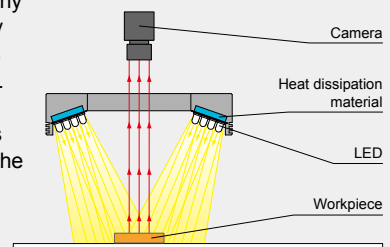


Etc.

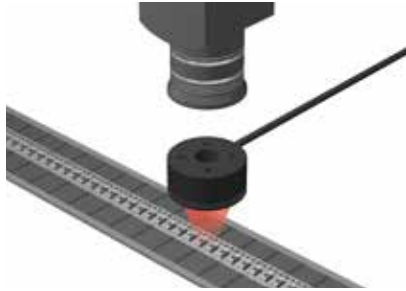
Example configuration

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



➤ 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



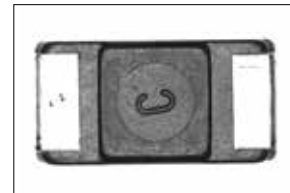
Electronic part

LED Bar Light



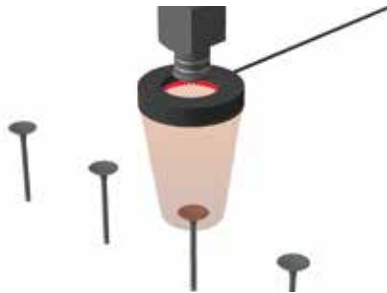
It's difficult to make an image of the electrode part using a Bar Light.

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.

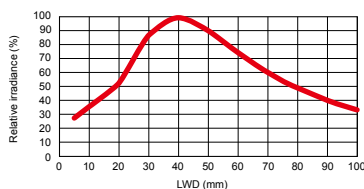
➤ Data: Relative irradiance graph and uniformity (Representative example)

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

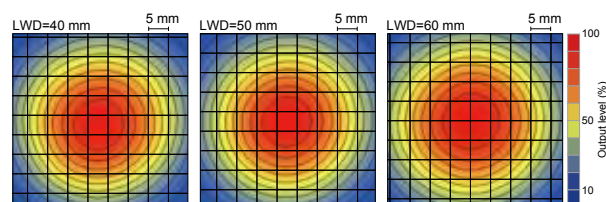
LDR2-50RD2

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							
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			170 g	
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								
LDR2-90-30SW2	White	24 V / 18 W	5,500 K	-	<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	220 g		
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									
LDR2-120SW2	White	24 V / 28 W	5,500 K	<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
LDR2-120BL2	Blue	24 V / 26 W	470 nm									
LDR2-120GR2	Green		525 nm									
LDR2-120SW2	White	24 V / 28 W	5,500 K									
LDR2-120BL2	Blue	24 V / 26 W	470 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	500 g				
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>

LED properties

Spectral distribution

CCS offers you the most suitable lens filter for each wavelength. For details about the lens filter, refer to P.287.

Directional characteristics

Red LED wide type (End of the model name: -WD)

White LED

Blue LED

Green LED

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.

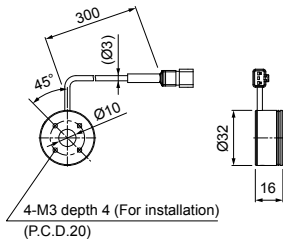
Lens attachment ring

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	

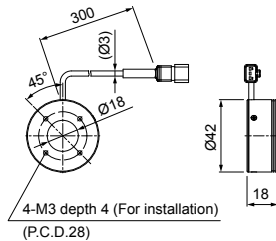
► P.295

Dimensions (mm)

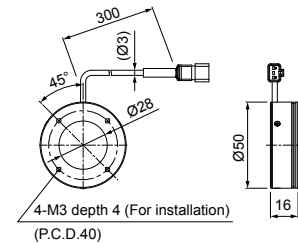
LDR2-32RD2/SW2/BL2/GR2



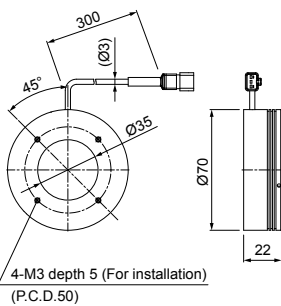
LDR2-42RD2/SW2/BL2/GR2



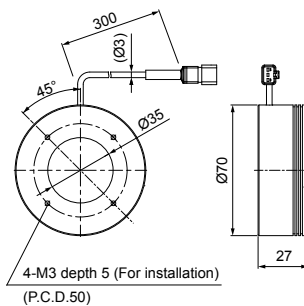
LDR2-50RD2/RD2-WD/SW2/BL2/GR2



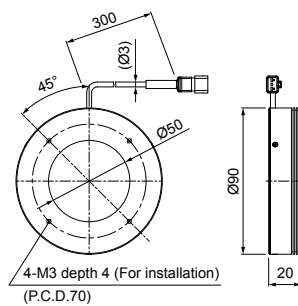
LDR2-70RD2/RD2-WD



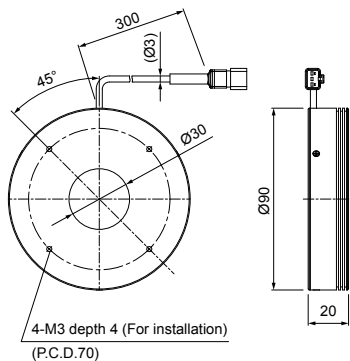
LDR2-70SW2/BL2/GR2



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

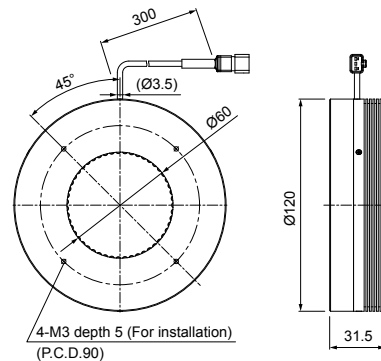


LDR2-90-30RD2/SW2/BL2/GR2



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.