


Low-angle Ring Lights

LDR-LA1 series

Refer to our website for product details.
 CCS LDR-LA1  You can also use your smartphone or cell phone.
 Use a search engine.

Provides direct light at a low angle from an emitting part directed horizontally

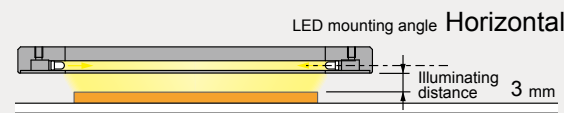


Applications Edge detection, inspection for engraving/damage/stains on metal surfaces, inspection for foreign material on wafers, inspection of bonding on shrink film, and engraved character recognition for rubber, etc.

▶ Illuminating closest to the workpiece

Allows for illuminating closer to the workpiece than the LDR2-LA series. Perfect for imaging of minute unevenness, damage, or engraved characters.

Imaging example for the LDR-206SW2-LA1:
 Exterior imaging of food containers

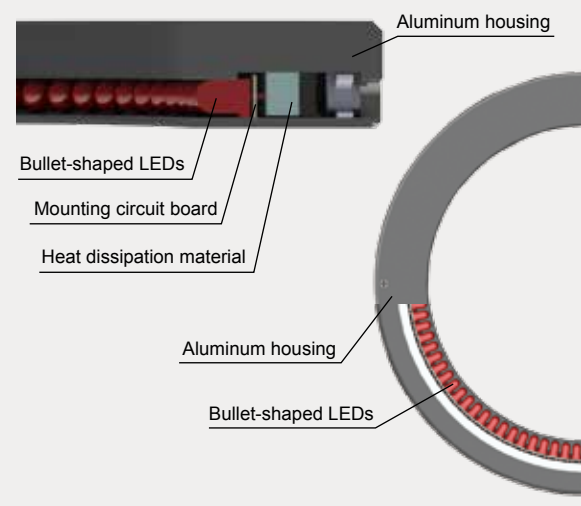


The seal and engraved text affect the image, and the shrink seal cannot be sufficiently detected.
 Only the shrink seal clearly stands out.

▶ LEDs mounted horizontally

Achieved a thin device that is 10 mm thick by mounting LEDs horizontally in one line. Helps save space because it can be installed near the workpiece.

Cross-section image of the LDR-146-LA1



▶ Custom orders

Please contact your CCS sales representative.
 E.g.: Changed the format to take measures against interference with the device

Customizable items

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

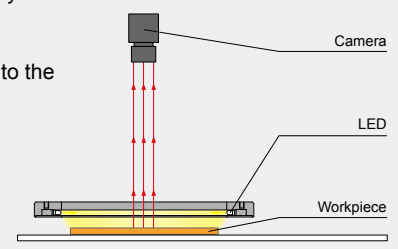
Format/material: Created a Light Unit with a shape to match the purpose

Cut to match the purpose

▶ Example configuration

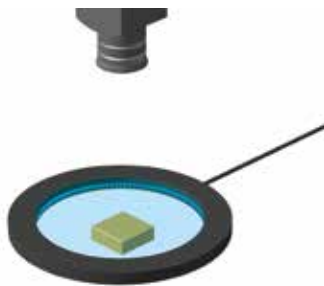
LEDs are arranged facing horizontally in a ring shape. It can be used extremely close to the workpiece.

LDR-146-LA1



LDR2	Direct Lighting
LDR2-LA	Direct Lighting
LDR-LA1	Direct Lighting
SQR	Direct Lighting
SQR-TP	Direct Lighting
HLDR-IP	Convergent Lighting
HPR2	Diffused Lighting
HPR	Diffused Lighting
LFR	Diffused Lighting
LKR	Diffused Lighting
FPR	Diffused Lighting
FPQ2	Diffused Lighting
LDL2	Direct Lighting
LDLB	Direct Lighting
HLDL2	Direct Lighting
TH	Direct Lighting
LFL	Direct Lighting
HPD2	Diffused Lighting
HPD	Diffused Lighting
LDM2	Diffused Lighting
LAV	Diffused Lighting
PDM	Diffused Lighting
LFX2	Diffused Lighting
LFV3	Diffused Lighting
LFV2	Diffused Lighting
MSU	Collimated Lighting
MFU	Collimated Lighting
UV2	Ultraviolet Lighting
UV	Ultraviolet Lighting
LNSP-UV-FN	Ultraviolet Lighting
IR2	Infrared Lighting
HLV2	Spot Lighting, Etc.
LV	Spot Lighting, Etc.
LSP	Spot Lighting, Etc.
HFS/HFR	Spot Lighting, Etc.
HLV2-NR	Spot Lighting, Etc.
HLV2-3M-RGB-3W	Spot Lighting, Etc.
PFB2	Spot Lighting, Etc.
PFBR	Spot Lighting, Etc.
LNSP	Convergent Lighting
CU-LNSP	Convergent Lighting
LNSP-FN	Convergent Lighting
LN/LN-HK	Convergent Lighting
LNSD	Diffused Lighting
LND2	Diffused Lighting
HLND	Diffused Lighting
LT	Diffused Lighting
LNW/HLDN	Diffused Lighting
LNIS	Oblique Angled Lighting
LNIS-FN	Oblique Angled Lighting
Telecentric Lens	Lenses
Macro Lens	Lenses

Imaging example : Exterior imaging of a plastic case surface



Description	Visual inspection
Workpiece	Plastic case
Before the proposal	Interior lamp
After the proposal	LDR-146BL2-LA1
Result	Extracting the damage

Workpiece image



Plastic case

Interior lamp



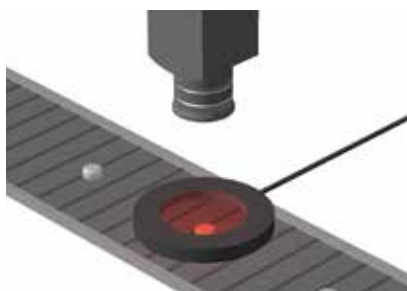
The whole thing is evenly illuminated, making it difficult to detect the damage.

LDR-146BL2-LA1



It is possible to clearly get an image of the outside and damage on the surface.

Imaging example : Exterior imaging of button batteries



Description	Visual inspection
Workpiece	Button battery
Before the proposal	LED Ring Light
After the proposal	LDR-75RD2-LA1
Result	Extracting the damage

Workpiece image



Button battery

LED Ring Light



It is difficult to get an image of the button battery outside or damage on the surface.

LDR-75RD2-LA1



It is possible to clearly get an image of the outside and damage on the surface.

Data: Relative irradiance graph/Uniformity graph (Representative example)

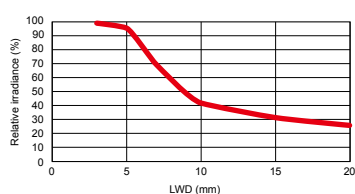
*The graph included is for reference only and does not guarantee the quality of this product.

LDR-75RD2-LA1

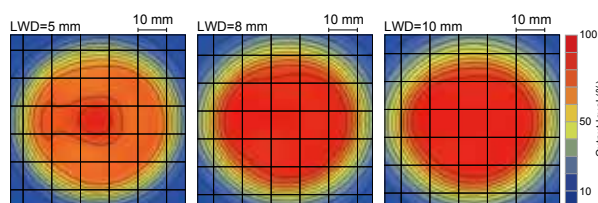
Relative irradiance graph^{*1} (LWD Characteristics)^{*2}

*1: Irradiance on the optical axis

*2: Illuminating distance from the Light Unit to the workpiece



Uniformity graph (Relative irradiance)



LDR-LA1 series



Refer to our website for product details.

CCS LDR-LA1

Search



You can also use your smartphone or cell phone.

Use a search engine.

Lineup

Model name	LED color	Power consumption	Peak wavelength/ correlated color temperature	Options	Recommended Control Units	Weight
LDR-75RD2-LA1	Red	24 V / 2.6 W	630 nm	-	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">PD3</div> <div style="border: 1px solid black; padding: 2px;">CC-ST-1024</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="border: 1px solid black; padding: 2px;">PSB</div> <div style="border: 1px solid black; padding: 2px;">PTU2</div> </div>	55 g
LDR-75SW2-LA1	White		5,500 K			
LDR-75BL2-LA1	Blue		470 nm			
LDR-75GR2-LA1	Green		525 nm			
LDR-96RD2-LA1	Red	24 V / 3.1 W	630 nm	-	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">PD3</div> <div style="border: 1px solid black; padding: 2px;">CC-ST-1024</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="border: 1px solid black; padding: 2px;">PSB</div> <div style="border: 1px solid black; padding: 2px;">PTU2</div> </div>	100 g
LDR-96SW2-LA1	White		5,500 K			
LDR-96BL2-LA1	Blue		470 nm			
LDR-96GR2-LA1	Green		525 nm			
LDR-146RD2-LA1	Red	24 V / 4.6 W	630 nm	-	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">PD3</div> <div style="border: 1px solid black; padding: 2px;">CC-ST-1024</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="border: 1px solid black; padding: 2px;">PSB</div> <div style="border: 1px solid black; padding: 2px;">PTU2</div> </div>	170 g
LDR-146SW2-LA1	White		5,500 K			
LDR-146BL2-LA1	Blue		470 nm			
LDR-146GR2-LA1	Green		525 nm			
LDR-176RD2-LA1	Red	24 V / 6.0 W	630 nm	-	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">PD3</div> <div style="border: 1px solid black; padding: 2px;">CC-ST-1024</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="border: 1px solid black; padding: 2px;">PSB</div> <div style="border: 1px solid black; padding: 2px;">PTU2</div> </div>	160 g
LDR-176SW2-LA1	White		5,500 K			
LDR-176BL2-LA1	Blue		470 nm			
LDR-176GR2-LA1	Green		525 nm			
LDR-206RD2-LA1	Red	24 V / 7.1 W	630 nm	-	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">PD3</div> <div style="border: 1px solid black; padding: 2px;">CC-ST-1024</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="border: 1px solid black; padding: 2px;">PSB</div> <div style="border: 1px solid black; padding: 2px;">PTU2</div> </div>	250 g
LDR-206SW2-LA1	White		5,500 K			
LDR-206BL2-LA1	Blue		470 nm			
LDR-206GR2-LA1	Green		525 nm			

[Extension Cables ▶ P.222](#)
 [Control Unit Selection Guide ▶ P.181](#)
 [Control Unit Page ▶ P.185](#)

LED properties

Light spectrum

If using a sharp-cut filter, please use the R60 (option). For details about the sharp-cut filter, refer to P.215.

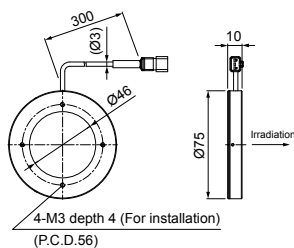
Directional characteristics

Be sure to read the "Instruction Guide" included with the product before use and observe cautionary information. The data included is for reference only and does not guarantee the quality of this product.

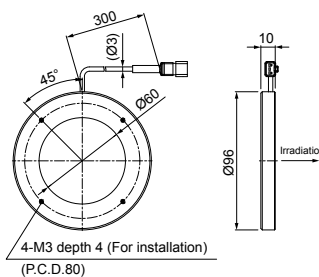
- LDR2
- LDR2-LA
- LDR-LA1**
- SQR
- SQR-TP
- HLDL-IP
- HPR2
- HPR
- LFR
- LKR
- FPR
- FPQ2
- LDL2
- LDLB
- HLDL2
- TH
- LFL
- HPD2
- HPD
- LDM2
- LAV
- PDM
- LFX2
- LFV3
- LFV2
- MSU
- MFU
- UV2
- UV
- LNSP-UV-FN
- IR2
- HLV2
- LV
- LSP
- HFS/HFR
- HLV2-NR
- HLV2-3M-RGB-3W
- PFB2
- PFBR
- LNSP
- CU-LNSP
- LNSP-FN
- LN/LN-HK
- LNSD
- LND2
- HLND
- LT
- LNW/HLDN
- LNIS
- LNIS-FN
- Telecentric Lens
- Macro Lens

► Dimensions (mm)

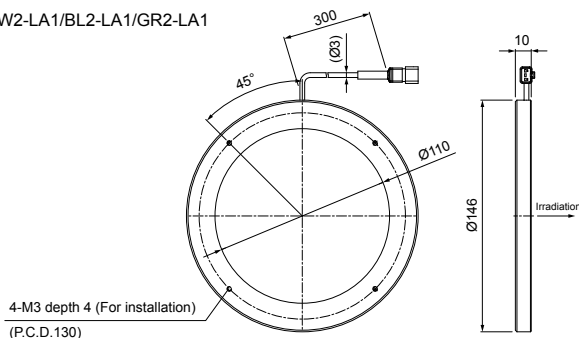
LDR-75RD2-LA1/SW2-LA1/BL2-LA1/GR2-LA1



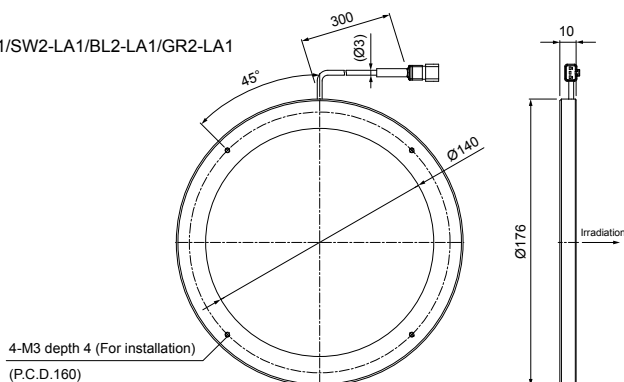
LDR-96RD2-LA1/SW2-LA1/BL2-LA1/GR2-LA1



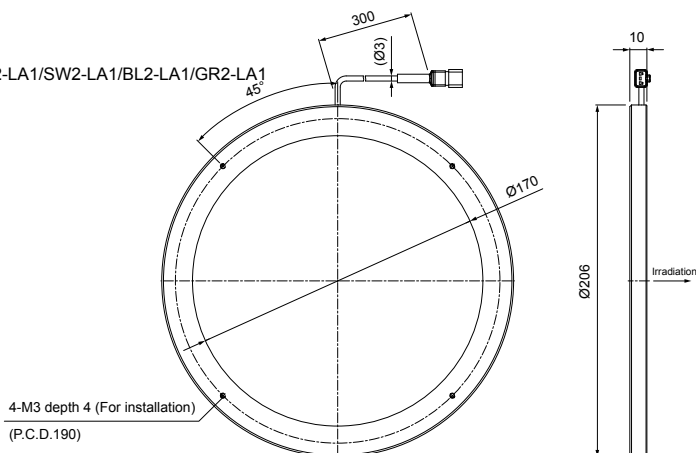
LDR-146RD2-LA1/SW2-LA1/BL2-LA1/GR2-LA1



LDR-176RD2-LA1/SW2-LA1/BL2-LA1/GR2-LA1



LDR-206RD2-LA1/SW2-LA1/BL2-LA1/GR2-LA1



You can change the connectors of the Light Unit cable. Choose between M12 connectors and flying leads. Refer to P.125 for details.