Low-angle Ring Lights
LDR-LA1 series

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

LDR-206SW2-LA1

LDR-176BL2-LA1

LDR-146RD2-LA1

LDR-96GR2-LA1

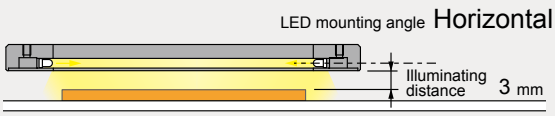
LDR-75RD2-LA1

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

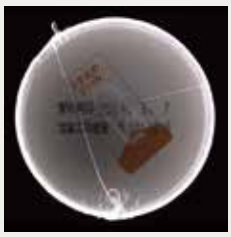
Illuminating closest to the workpiece

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



LDR2-208SW2-LA



The seal and engraved text affect the image, and the shrink seal cannot be sufficiently detected.

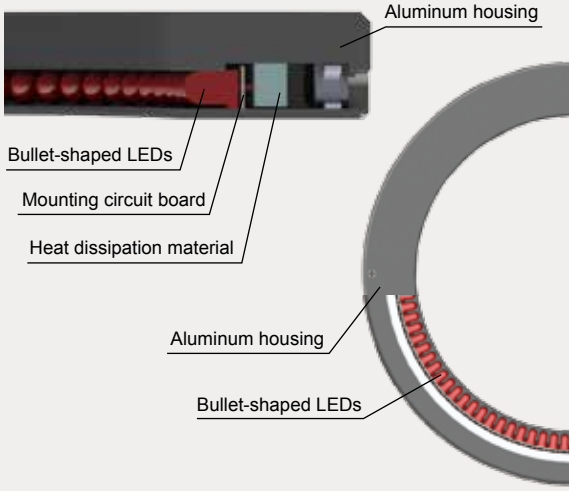
LDR-206SW2-LA1

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

Format/ material

Created a Light Unit with a shape to match the purpose

Customizable items

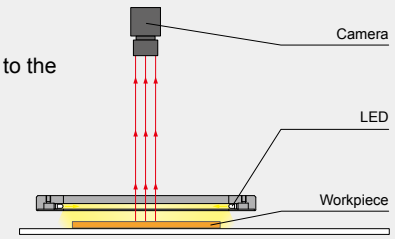
- External/internal diameter
- Wavelength/ Color
- Increase output
- Cable length
- Illuminating angle
- Format/ material
- Connector format
- Installation/ mounting

Etc.

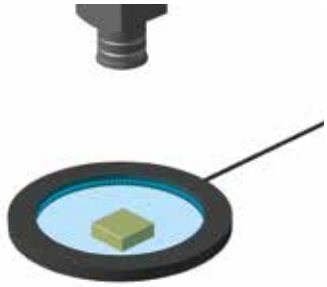
Example configuration

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

LDR-146-LA1



Imaging example : Exterior imaging of a plastic case surface



Description	Visual inspection
Workpiece	Plastic case
Conventional lighting	Interior lamp
New lighting	LDR-146BL2-LA1
Result	Extracting the damage

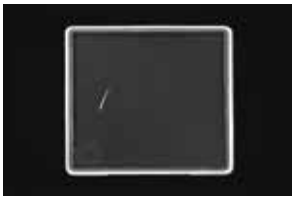
Workpiece image

Plastic case

Interior lamp

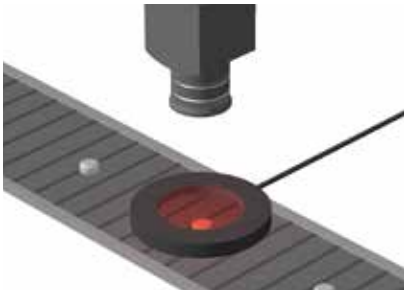
The whole thing is evenly illuminated, making it difficult to detect the damage.

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 cell batteries



Description	Visual inspection
Workpiece	Button cell battery
Conventional lighting	LED Ring Light
New lighting	LDR-75RD2-LA1
Result	Extracting the damage

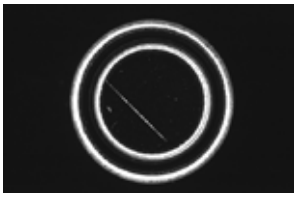
Workpiece image

Button cell battery

LED Ring Light

It is difficult to get an image of the button cell 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.

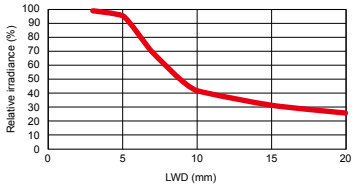
Data: Relative irradiance graph and uniformity (Representative example)

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

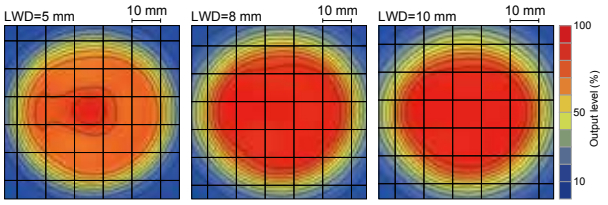
LDR-75RD2-LA1

Relative irradiance graph[*1] (LWD Characteristics)[*2]

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



Uniformity (Relative irradiance)



LDR-LA1 series

Lineup

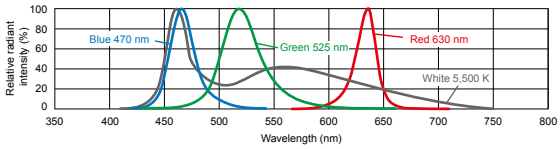
Model name	LED color	Power consumption	Peak wavelength/ correlated color temperature	Options	Extension cables	Recommended Control Units	Weight
LDR-75RD2-LA1	Red	24 V / 2.6 W	630 nm	–	FCB*2 Straight Cable FCB-W 2-branch Cable FCB-F 4-branch Cable FRCB Robot Cable *2 The cables with a model name that ends with "-ME7" or "-EL2" are not included.	PD3 / CC-ST-1024 PSB / POD*1	55 g
LDR-75SW2-LA1	White	24 V / 3.8 W	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				100 g
LDR-96SW2-LA1	White	24 V / 3.8 W	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				170 g
LDR-146SW2-LA1	White	24 V / 6.0 W	5,500 K				160 g
LDR-146BL2-LA1	Blue	24 V / 6.1 W	470 nm				
LDR-146GR2-LA1	Green		525 nm				
LDR-176RD2-LA1	Red	24 V / 6.1 W	630 nm				210 g
LDR-176SW2-LA1	White	24 V / 7.6 W	5,500 K				205 g
LDR-176BL2-LA1	Blue		470 nm				
LDR-176GR2-LA1	Green		525 nm				
LDR-206RD2-LA1	Red	24 V / 7.1 W	630 nm				250 g
LDR-206SW2-LA1	White	24 V / 9.1 W	5,500 K				220 g
LDR-206BL2-LA1	Blue		470 nm				
LDR-206GR2-LA1	Green		525 nm				

Extension Cables ▶ P.280 | Control Unit Selection Guide ▶ P.229 | List of Control Unit Specifications ▶ P.231

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

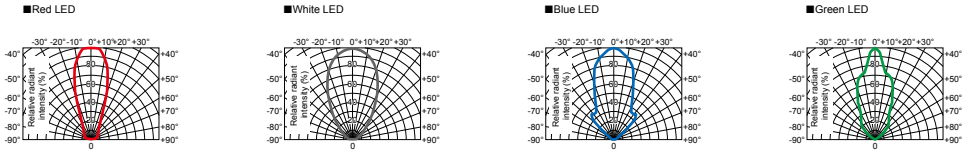
LED properties

Spectral distribution



CCS offers you the most suitable lens filter for each wavelength. For details about the lens filter, refer to P.271.

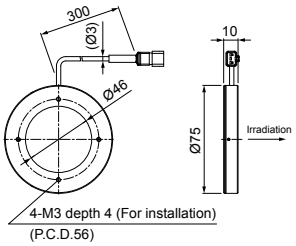
Directional characteristics



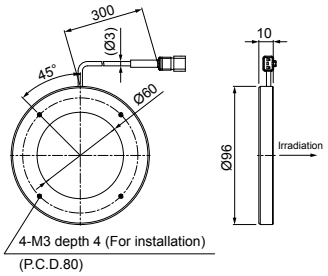
Be sure to read the "Instruction Guide" included with the product before use and follow the safety precautions upon use.
The data included is for reference only. Actual values may vary.

Dimensions (mm)

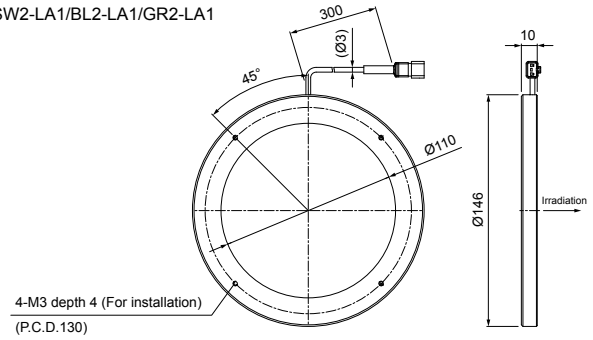
LDR-75RD2-LA1/SW2-LA1/BL2-LA1/GR2-LA1



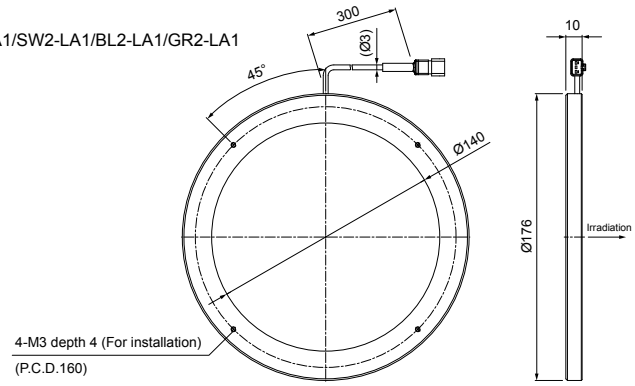
LDR-96RD2-LA1/SW2-LA1/BL2-LA1/GR2-LA1



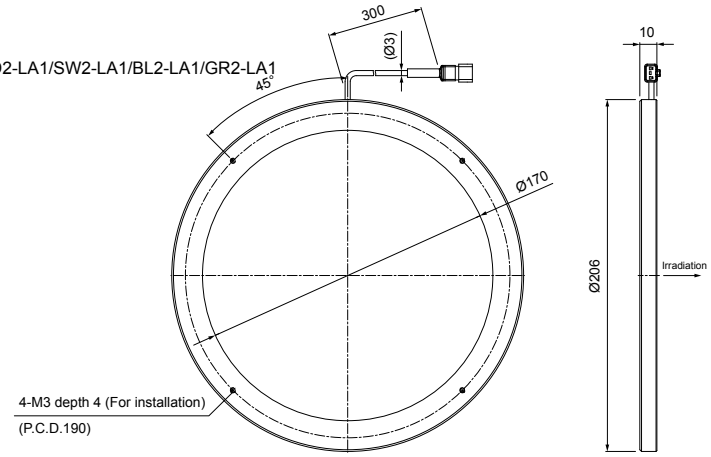
LDR-146RD2-LA1/SW2-LA1/BL2-LA1/GR2-LA1



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.5 for details.