

# Low-angle Ring Lights

## LDR-LA1 series

Refer to our website for product details.

CCS LDR-LA1

Search



You can also use your smartphone or cell phone.

For quick access.

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



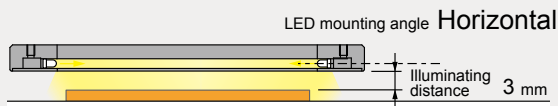
### Applications

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

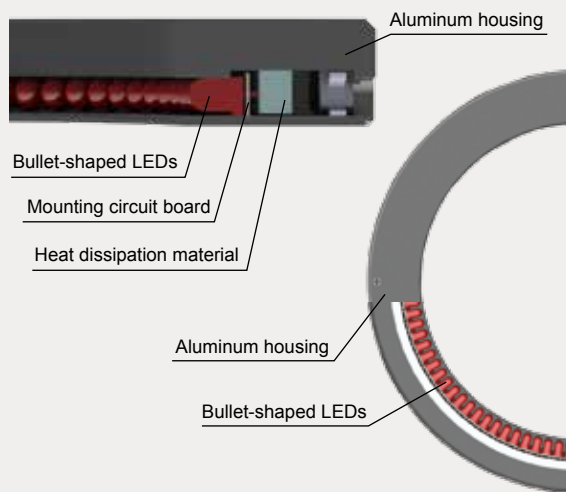


Only the shrink seal clearly stands out.

### ➤ 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

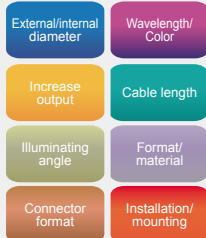


### ➤ Custom orders

Please contact your CCS sales representative.

E.g.: Changed the format to take measures against interference with the device

#### Customizable items



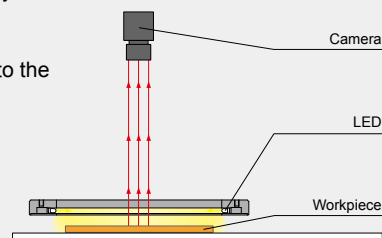
Format/material Created a Light Unit with a shape to match the purpose



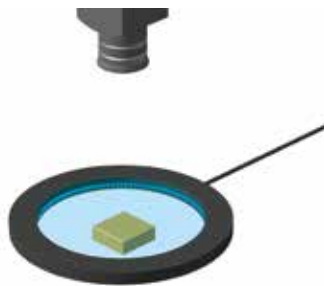
### ➤ Example configuration

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

#### LDR-146-LA1



## ➤ 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



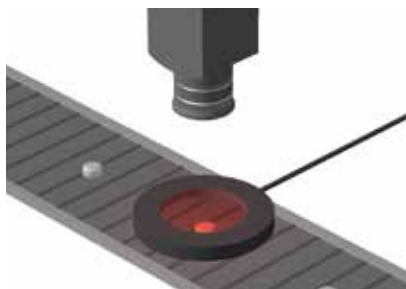
The whole thing is evenly illuminated, making it difficult to detect the damage.

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



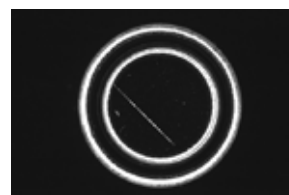
Button cell battery

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.

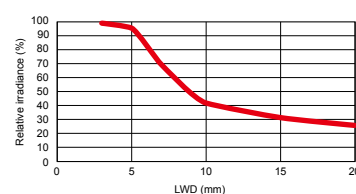
## ➤ Data: Relative irradiance graph and uniformity (Representative example)

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

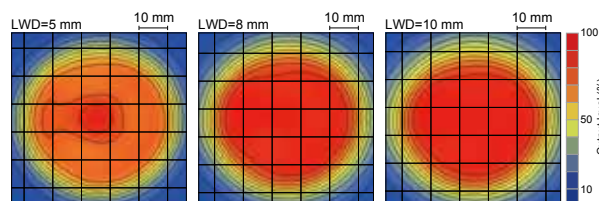
### LDR-75RD2-LA1

#### Relative irradiance graph<sup>\*1</sup> (LWD Characteristics)<sup>\*2</sup>

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



#### Uniformity (Relative irradiance)



# LDR-LA1 series



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## 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	-	<div>FCB*2 Straight Cable</div> <div>FCB-W 2-branch Cable</div> <div>FCB-F 4-branch Cable</div> <div>FRCB Robot Cable</div> <p>*2 The cables with a model name that ends with "ME7" or "EL2" are not included.</p>		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			<div>PD3</div> <div>CC-ST-1024</div> <div>PSB</div> <div>POD*1</div>	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 / 6.1 W	5,500 K				160 g
LDR-146BL2-LA1	Blue		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				

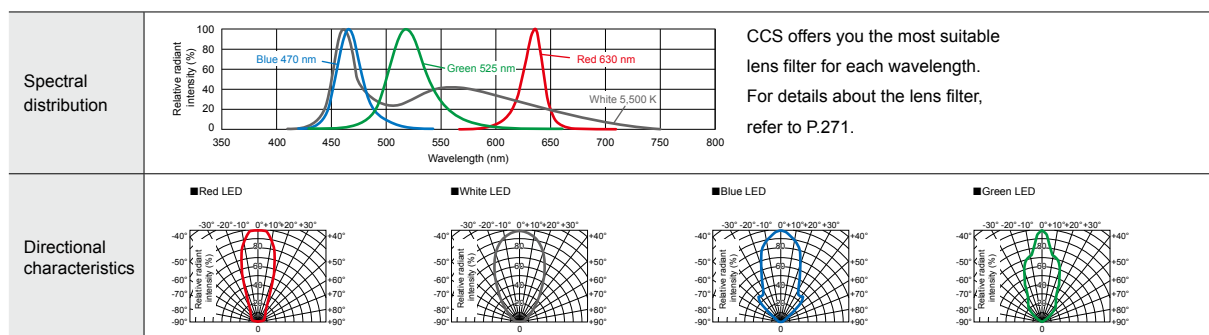
Extension Cables ▶ P.280

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>

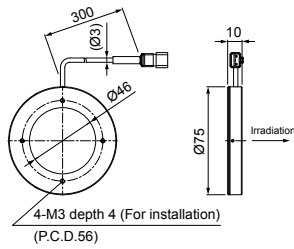
## LED properties



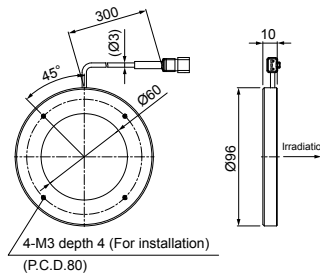
Be sure to read the "Instruction Guide" included with the product before use and follow the safety precautions upon use.  
The data included is for reference only. Actual values may vary.

## ► Dimensions (mm)

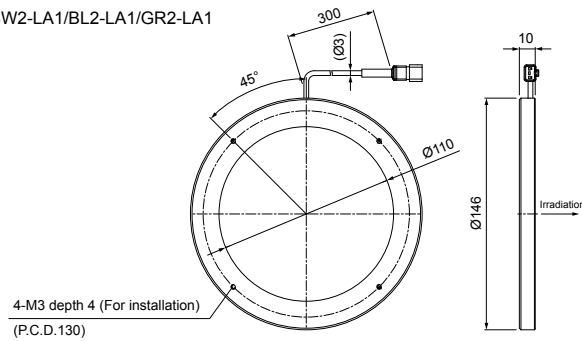
LDR-75RD2-LA1/SW2-LA1/BL2-LA1/GR2-LA1



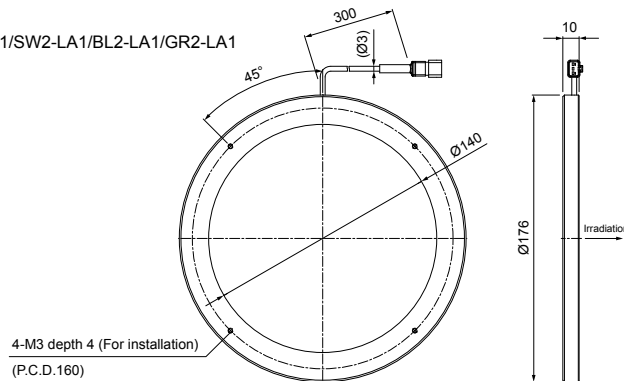
LDR-96RD2-LA1/SW2-LA1/BL2-LA1/GR2-LA1



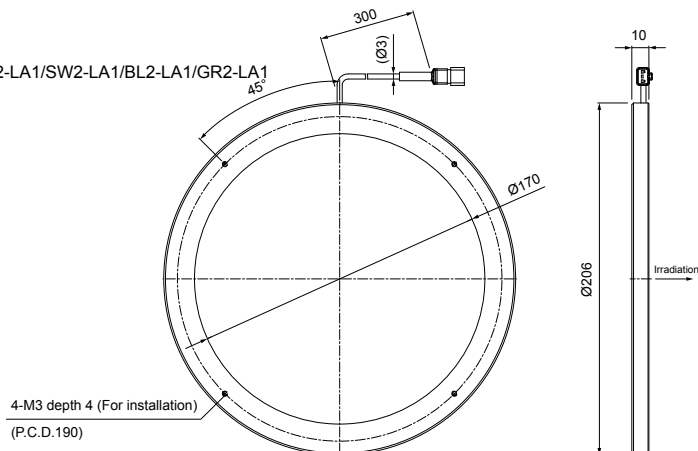
LDR-146RD2-LA1/SW2-LA1/BL2-LA1/GR2-LA1



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.

Direct Lighting	LDR2
	LDR2-LA
	<b>LDR-LA1</b>
	SQR
	SQR-TP
Diffused Lighting	HPR2
	LFR
	LKR
	FPR
	FPQ2
Direct Lighting	LDL2
	LDLB
	HLDL2
	HL
Diffused Lighting	TH2 (5 types)
	TH
	LFL
	HPD2
	LDM2
	LAV
	PDM
	LFX3
	LFX3-PT
	LFX2
	LFV3
Colimated Lighting	MSU
	MFU
Strobe Lighting	PF
Water-proof	HLDR-IP/ IQ/HSL-PCL
Ultraviolet Lighting	UV2
	UV
	LNSP-UV-FN
Infrared Lighting	IR2
Intensity Control	IU
Spot Lighting, Etc.	HLV2
	LV
	LSP
	HFS/HFR
	HLV2-NR
	HLV2-3M-RGB-3W
	PFBR
	PFB2
Convergent Lighting	LNLP
	LNSP2
	LNSP
	Coaxial Units
	LNSP-FN
	LN/LN-HK
Diffused Lighting	LNLD
	LND2
	HLND
	LT
	LVN/HLDN
Oblique Angled Lighting	LNDG
	LNIS
	LNIS-FN
Lenses	Telecentric Lens
	Macro Lens