

Direct Lighting

Low-Angle Ring Lights

LDR2-LA Series

Provides direct light at a low angle from an angled emitting part



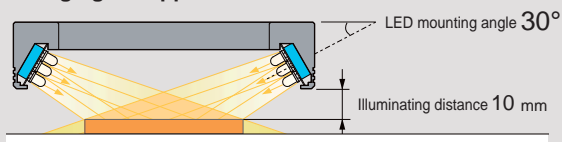
Applications

Inspection for engraving, damage, or stains on metal surfaces; edge extraction; inspection for foreign material mixed with medicine; inspection for damage to glass edges; visual inspection for O-rings; etc.

Extraction of Uneven Damage or Engravings

Providing direct light from a low angle to the center section allows for an image that emphasizes the workpiece's characteristic features.

Imaging example for the LDR2-100RD2-LA:
Imaging the appearance of coins



LDR2-90RD2



Edge extraction is difficult with illumination from a high angle.

LDR2-100RD2-LA

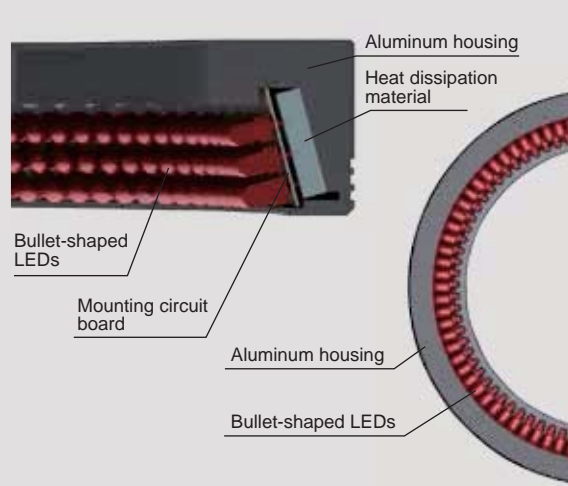


Illuminating from a low angle allows for imaging that emphasizes the edges.

Illuminates from a Low-Angle at a Steep Slope

By mounting LEDs on a flexible circuit board in a steep angle, it becomes possible to converge light in the center section from a low position.

Cross-section image of the LDR2-132-LA



Custom Orders

Please contact your sales representative.

E.g.: Different shape

External/internal diameter Create a Light Unit with a large size



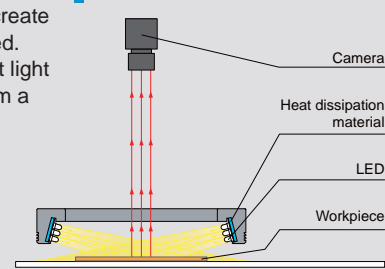
Customizable items

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

Example Configuration

Using a flexible circuit board to create any angle needed. Illuminates direct light to the center from a low angle.

LDR2-132-LA

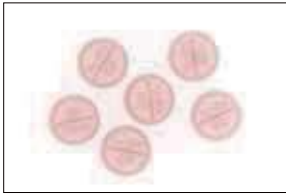


Imaging Example: Imaging Text on Tablets and Their Appearance



Description	Text, visual inspection
Workpiece	Tablets
Conventional lighting	Interior lamp
New lighting	LDR2-170RD2-LA
Result	Emphasizes text and edge of the exterior

Workpiece image



Tablets

Interior lamp



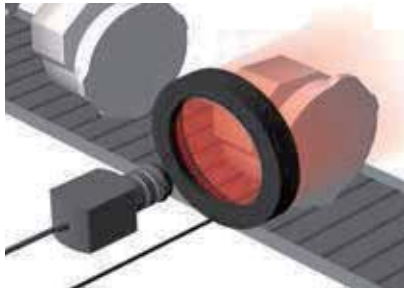
It is difficult to take an image that emphasizes the text or exterior.

LDR2-170RD2-LA



Possible to take an image that emphasizes the text or exterior.

Imaging Example : Imaging Engraved Text on Metal Blocks (Stain Finishing)



Description	Character recognition
Workpiece	Metal blocks
Conventional lighting	LED Dome Light
New lighting	LDR2-132RD2-LA
Result	Extracts only the engraved text

Workpiece image



Metal blocks (stain finishing)

LED Dome Light



The whole thing is illuminated, making it difficult to emphasize only the characters.

LDR2-132RD2-LA



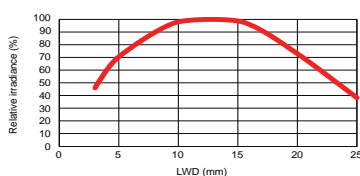
Reduces effects from the stain finishing, making it possible to emphasize the characters.

Data: Relative Irradiance Graph and Uniformity (Representative Example)

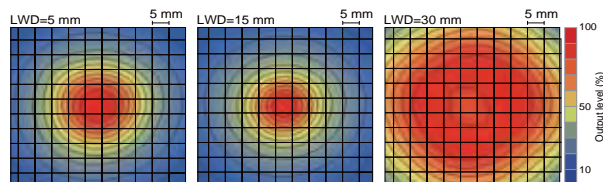
LDR2-74RD2-LA

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)



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

Direct Lighting	LDR2 LDR2-LA LDR-LA1 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 LFV3
Coaxial Lighting	MSU MFU
Strobe Lighting	PF
Water-proof Lighting	HLDR-IP/ HSL-PCL
Ultraviolet Lighting	UV2 UV LNSP-UV-FN
Infrared Control Lighting	IR2
Intensely Control Lighting	IU
Spot Lighting, Etc.	HLV3 HLV2 LV LSP HFS/HFR HLV3-NR HLV3-3M-RGB-4 HLV2-NR HLV2-3M-RGB-3W PFB3 PFB2
Convergent Lighting	LNLP LNSP2 LNSP Coaxial Units LNSP-FN LN/LN-HK
Diffused Lighting	LNSD LND2 HLND LT
Oblique Angled Lighting	LNV LNDG LNS2
Lenses	LNIS LNIS-FN Telecentric Lens Macro Lens

LDR2-LA Series



Lineup

Model name	LED color	Power consumption	Peak wavelength / correlated color temperature	Options	Extension cables	Recommended Control Units	Weight
LDR2-48RD2-LA	Red	24 V / 2.1 W	630 nm	Diffusion plate	FCB* ² Straight Cable FCB-W* ³ 2-branch Cable FCB-F 4-branch Cable FRCB Robot Cable	PD3 CC-ST-1024 PSB POD* ¹	50 g
LDR2-48SW2-LA	White	24 V / 3.1 W	5,500 K				
LDR2-48BL2-LA	Blue		470 nm				
LDR2-48GR2-LA	Green		525 nm				
LDR2-74RD2-LA	Red	24 V / 4.6 W	630 nm				
LDR2-74SW2-LA	White	24 V / 5.7 W	5,500 K				
LDR2-74BL2-LA	Blue		470 nm				
LDR2-74GR2-LA	Green		525 nm				
LDR2-100RD2-LA	Red	24 V / 9.1 W	630 nm				
LDR2-100SW2-LA	White	24 V / 12 W	5,500 K				
LDR2-100BL2-LA	Blue		470 nm				
LDR2-100GR2-LA	Green		525 nm				
LDR2-132RD2-LA	Red	24 V / 13 W	630 nm				
LDR2-132SW2-LA	White	24 V / 16 W	5,500 K				
LDR2-132BL2-LA	Blue		470 nm				
LDR2-132GR2-LA	Green		525 nm				
LDR2-170RD2-LA	Red	24 V / 18 W	630 nm				
LDR2-170SW2-LA	White	24 V / 22 W	5,500 K				
LDR2-170BL2-LA	Blue		470 nm				
LDR2-170GR2-LA	Green		525 nm				
LDR2-208RD2-LA	Red	24 V / 22 W	630 nm				
LDR2-208SW2-LA	White	24 V / 28 W	5,500 K				
LDR2-208BL2-LA	Blue		470 nm				
LDR2-208GR2-LA	Green		525 nm				

*2 The cables with a model name that ends with "-ME7", "-EL2", "-PF", or "-PF-EL9" are not included.
*3 The cables with a model name that ends with "-EL2" are not included.

Extension Cables ▶ P.308

Control Unit Selection Guide ▶ P.251

List of Control Unit Specifications ▶ P.253

LED Properties

Spectral distribution

Offers you the most suitable lens filter for each wavelength. For details about the lens filter, refer to P.299.

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.

Options



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

Diffusion plate

Model name	Applicable Light Unit (Common for all colors)
DF-LDR-48LA	LDR2-48-LA
DF-LDR-74LA	LDR2-74-LA
DF-LDR-100LA	LDR2-100-LA
DF-LDR-132LA	LDR2-132-LA
DF-LDR-170LA	LDR2-170-LA
DF-LDR-208LA	LDR2-208-LA

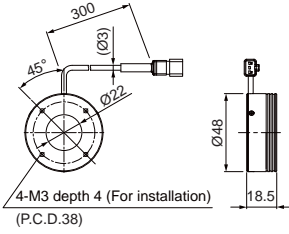
▶ P.302

Various technical documents available.

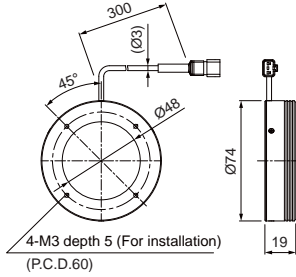
- PDF Drawings
- DXF Drawings
- Product Brochures
- Instruction Guides
- 3D CAD
- Data Sheets
- Imaging Examples
- Digital Catalogs

Dimensions (mm)

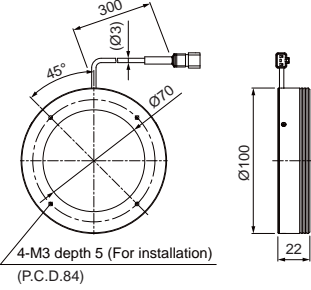
LDR2-48RD2-LA/SW2-LA/BL2-LA/GR2-LA



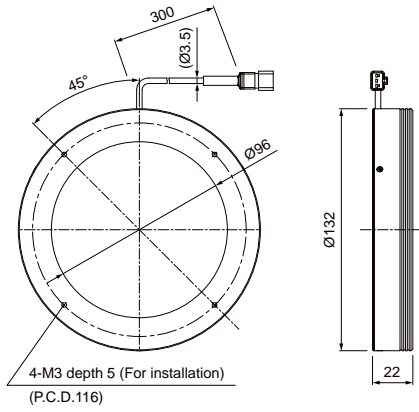
LDR2-74RD2-LA/SW2-LA/BL2-LA/GR2-LA



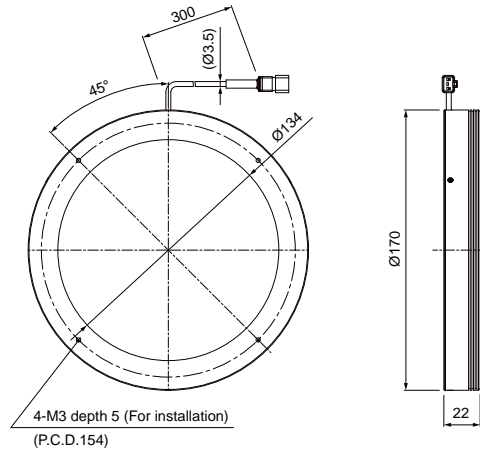
LDR2-100RD2-LA/SW2-LA/BL2-LA/GR2-LA



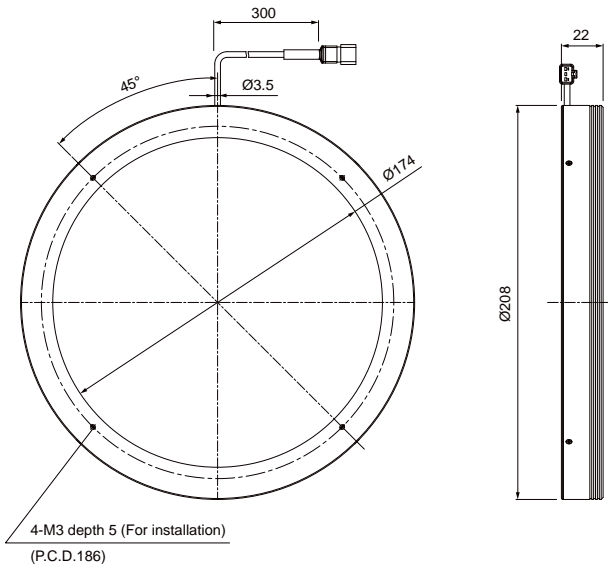
LDR2-132RD2-LA/SW2-LA/BL2-LA/GR2-LA



LDR2-170RD2-LA/SW2-LA/BL2-LA/GR2-LA



LDR2-208RD2-LA/SW2-LA/BL2-LA/GR2-LA



Direct Lighting	LDR2
	LDR2-LA
	LDR-LA1
	SQR
	SQR-TP
Diffused Lighting	HPR2
	LFR
	LKR
	FPR
	FPQ2
Direct Lighting	LDL2
	LDLB
	HLDL2
	HL
	TH2 (5 types)
	TH
Diffused Lighting	LFL
	HPD2
	LDM2
	LAV
	PDM
	LFX3
	LFX3-PT
	LFV3
Coaxial Lighting	MSU
	MFU
Strobe Lighting	PF
Water-proof	HLDR-IP/
	HSL-PCL
Ultraviolet	UV2
	UV
	LNSP-UV-FN
Infrared	IR2
Control Lighting	IU
Spot Lighting, Etc.	HLV3
	HLV2
	LV
	LSP
	HFS/HFR
	HLV3-NR
	HLV3-3M-RGB-4
	HLV2-NR
	HLV2-3M-RGB-3W
	PFBR
	PFB3
	PFB2
Convergent Lighting	LNLP
	LNSP2
	LNSP
	Coaxial Units
	LNSP-FN
	LN/LN-HK
Diffused Lighting	LNSD
	LND2
	HLND
	LT
Oblique Angled	LNV
	LNDG
	LNS2
	LNIS
	LNIS-FN
Lenses	Telecentric Lens
	Macro Lens

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