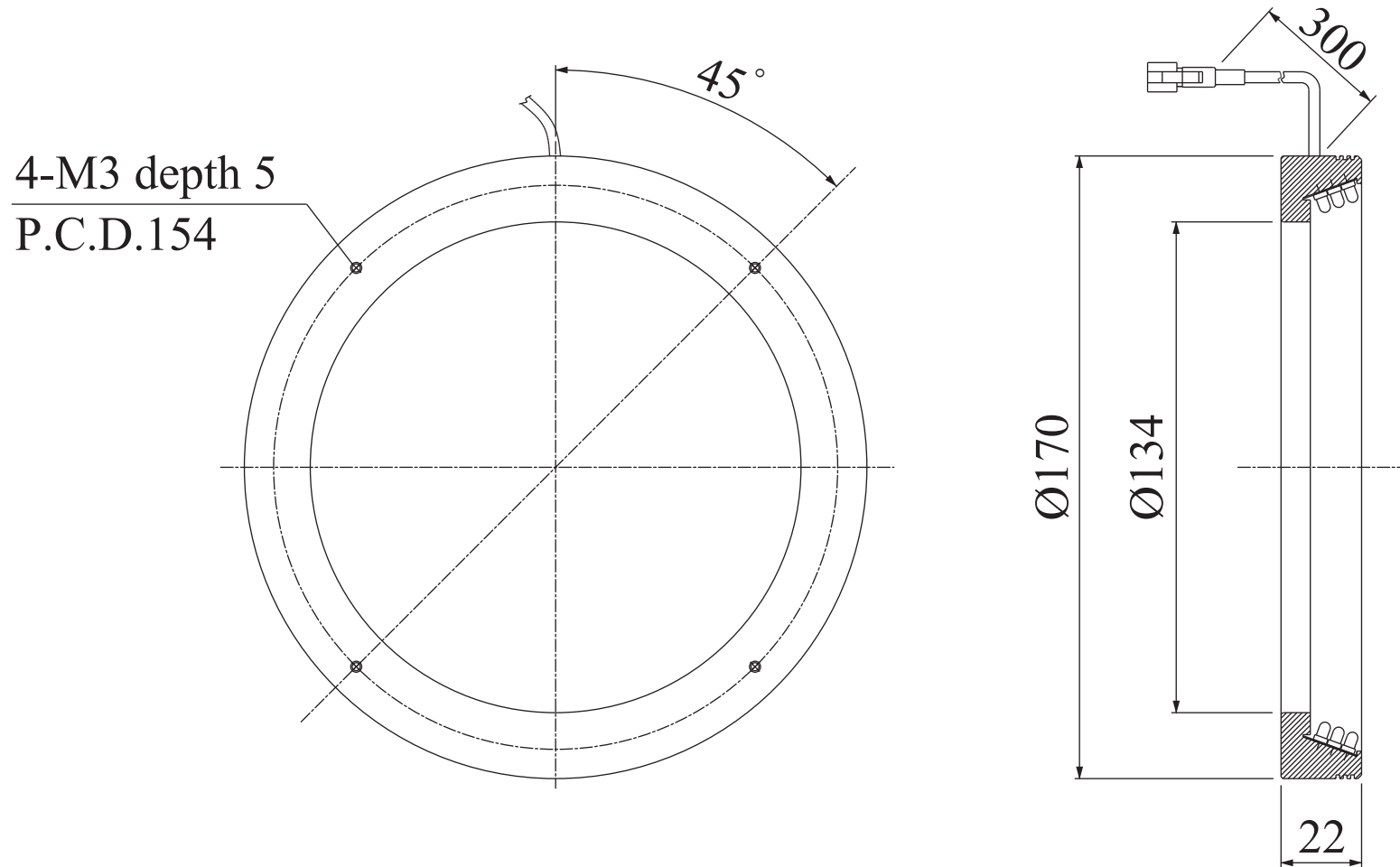


LDR2-170RD-LA/SW-LA/GR-LA/BL-LA

Model	LDR2-170RD-LA	LDR2-170SW-LA/GR-LA/BL-LA
Voltage	12V DC	24V DC
Power consumption	18W	23W
Mass	350g	350g
Connector type	2P (1: +, 2: -)	3P (1: +, 2: NC, 3: -)

Third Angle Projection Units: mm



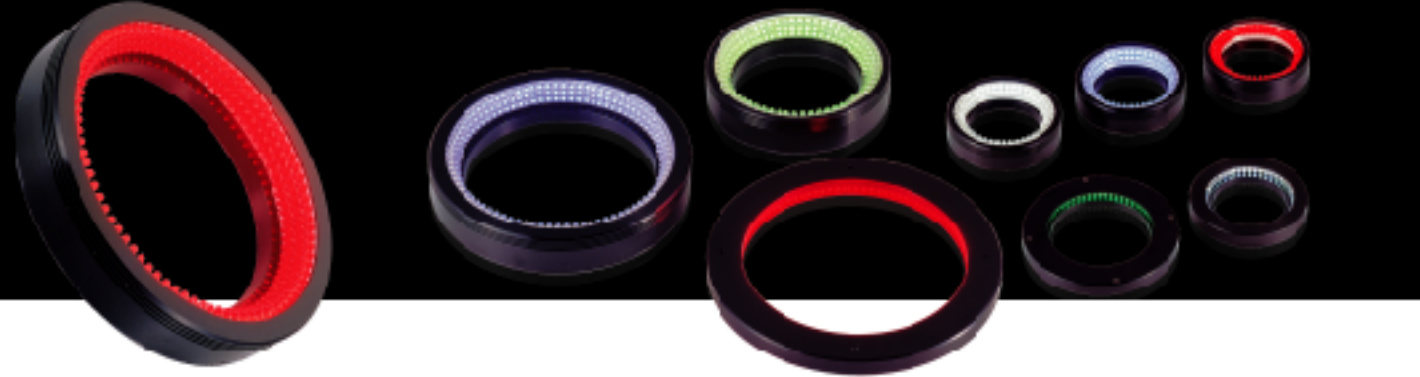


Low-angle Ring Lights

LDR2-LA/LDR-LA-1 Series

Ideal for edge detection and highlighting scratches on glossy surfaces

Low-angle illumination is ideally suited for edge detection and for emphasizing printing, damage, etc., on metal surfaces.



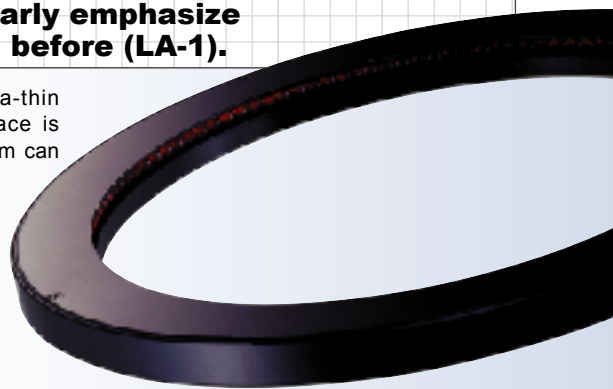
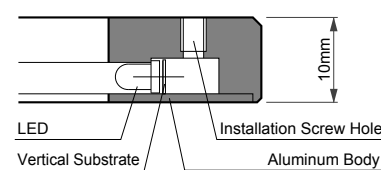
Low-angle illumination can clearly emphasize things that could not be seen before (LA-1).

The LDR-LA-1 is an ultra-low-angle illumination system with an ultra-thin design of just 10 mm. The thin design means that only minimal space is required for installation. At a working distance of 5 to 10 mm, the system can emphasize edges and height variations, as shown in the photograph below.

Sample Edge Detection Using a 1-Yen Coin



Cross-Sectional Illustration of the LA-1 Series



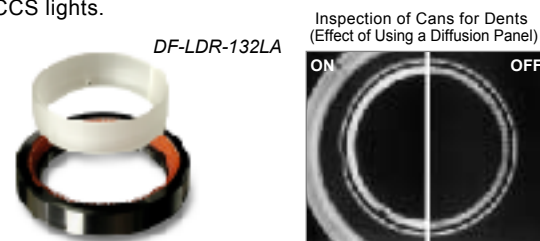
Aluminum Body Also Acts As a Highly-Effective Heat Sink

Aluminum is used as the outer material for nearly all of the image processing LEDs systems produced by CCS. Aluminum is a good heat conductor and acts as a heat sink to keep the internal temperature of the illumination system from rising. Heat can be a major problem for LED illumination systems, decreasing light intensity and reducing the life of the LEDs. The use of an aluminum body helps minimize these problems.



Compatible with Diffusion Rings and Plates

Optional diffusion rings and plates are available for many CCS lights.



Using a diffusion ring or panel suppresses glare and LED reflections that may be a problem when capturing images of glossy applications.

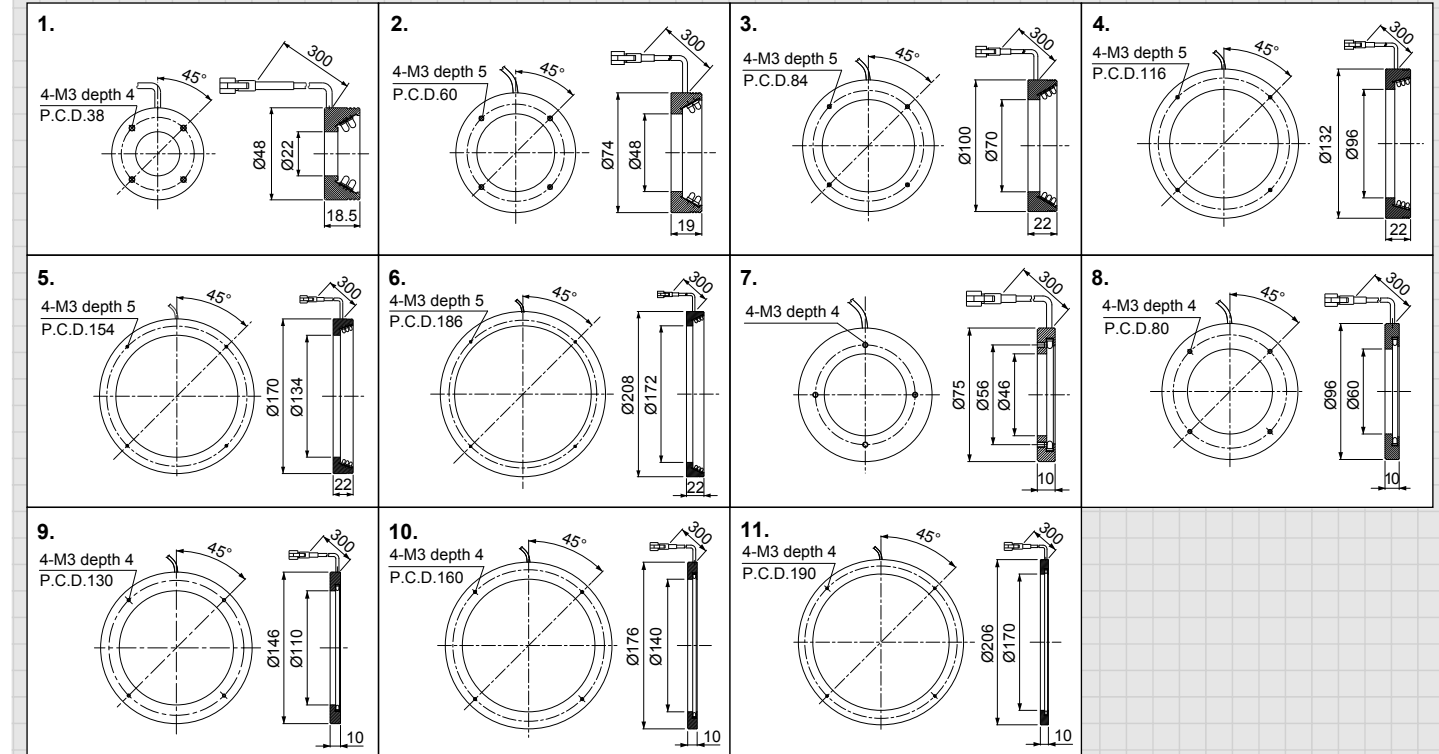
Product Lineup Table

Series	Model Name	Color	Power Consumption	Option	Dimension
LDR2-LA	LDR2-48RD-LA	●	12V/2.4W	D	1 □
	LDR2-48SW-LA/GR-LA/BL-LA	○/●/●	24V/3.1W	D	1 □
	LDR2-74RD-LA	●	12V/4.5W	D	2
	LDR2-74SW-LA/GR-LA/BL-LA	○/●/●	24V/6.1W	D	2
	LDR2-100RD-LA	●	12V/9.0W	D	3
	LDR2-100SW-LA/GR-LA/BL-LA	○/●/●	24V/12W	D	3
	LDR2-132RD-LA	●	12V/13W	D	4
	LDR2-132SW-LA/GR-LA/BL-LA	○/●/●	24V/17W	D	4
	LDR2-170RD-LA	●	12V/18W	D	5
	LDR2-170SW-LA/GR-LA/BL-LA	○/●/●	24V/23W	D	5
	LDR2-208RD-LA	●	12V/22W	D	6 □
LDR2-208SW-LA/GR-LA/BL-LA	○/●/●	24V/28W	D	6 □	

Series	Model Name	Color	Power Consumption	Option	Dimension
LDR-LA-1	LDR-75LA-1	●	12V/3.0W	—	7
	LDR-75LA-1-SW /-GR/-BL	○/●/●	24V/4.1W	—	7
	LDR-96LA-1	●	12V/3.0W	—	8
	LDR-96LA-1-SW /-GR/-BL	○/●/●	24V/4.1W	—	8
	LDR-146LA-1	●	12V/4.8W	—	9
	LDR-146LA-1-SW /-GR/-BL	○/●/●	24V/6.5W	—	9
	LDR-176LA-1	●	12V/6.0W	—	10
	LDR-176LA-1-SW /-GR/-BL	○/●/●	24V/8.2W	—	10
	LDR-206LA-1	●	12V/7.2W	—	11
	LDR-206LA-1-SW /-GR/-BL	○/●/●	24V/9.8W	—	11

*1: LDR2-LA Series includes "SW2", white light with higher light intensity than "SW (white)". Please contact us for more details.

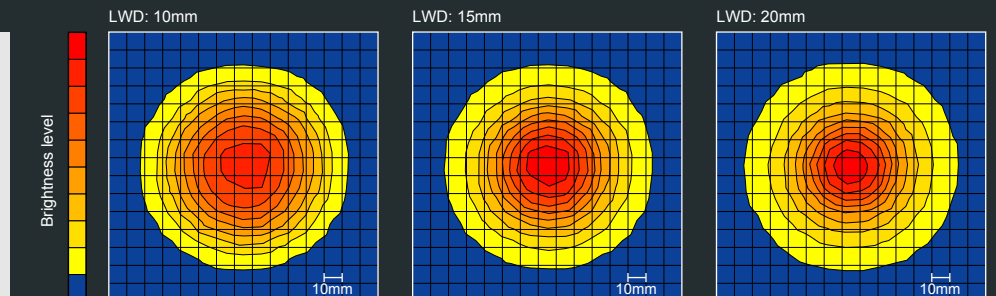
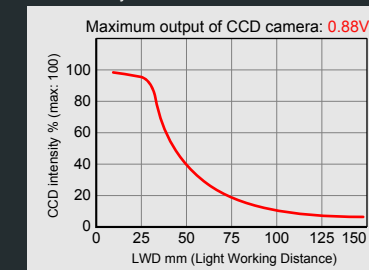
Dimensions (Unit: mm)



CCD Sensitivity Chart and Brightness Distribution LDR2-132LA

At the range of LWD 5-30mm, the oblique lighting is concentrated at the center.

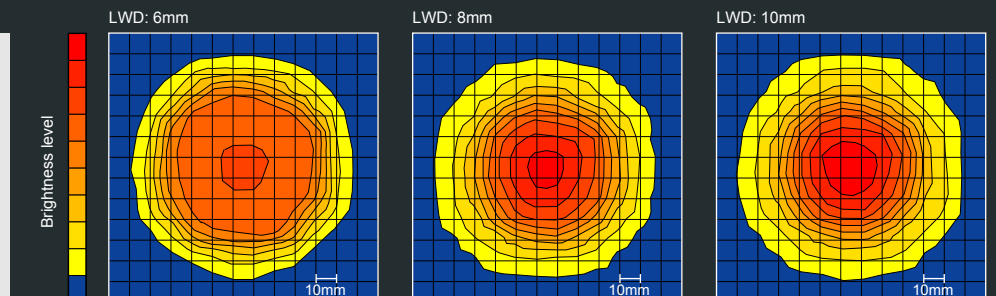
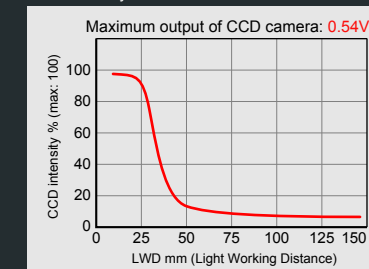
CCD intensity vs LWD



CCD Sensitivity Chart and Brightness Distribution LDR-146LA-1

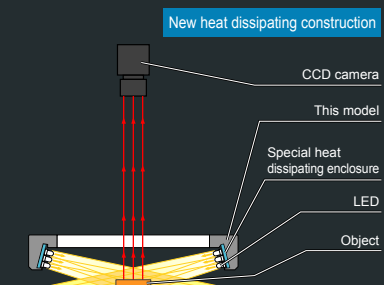
Allows illuminating even closer to the object.

CCD intensity vs LWD



Illumination structure of LDR-132LA

A flexible board is fixed at the desired angle to illuminate the work piece from a low angle.



Examples of Low-Angle Type Images

Inspection of Printed Characters on the Bottom of a Battery

A WD of 15 mm emphasizes printed characters.



Inspection of Disposable Camera Lenses for Damage

Low-angle illumination emphasizes scratches on the lens surface.



Inspection of CD-ROM for Inner Ring Cracking

Low-angle illumination emphasizes cracks while preventing LED reflections from appearing in the photographed image.

