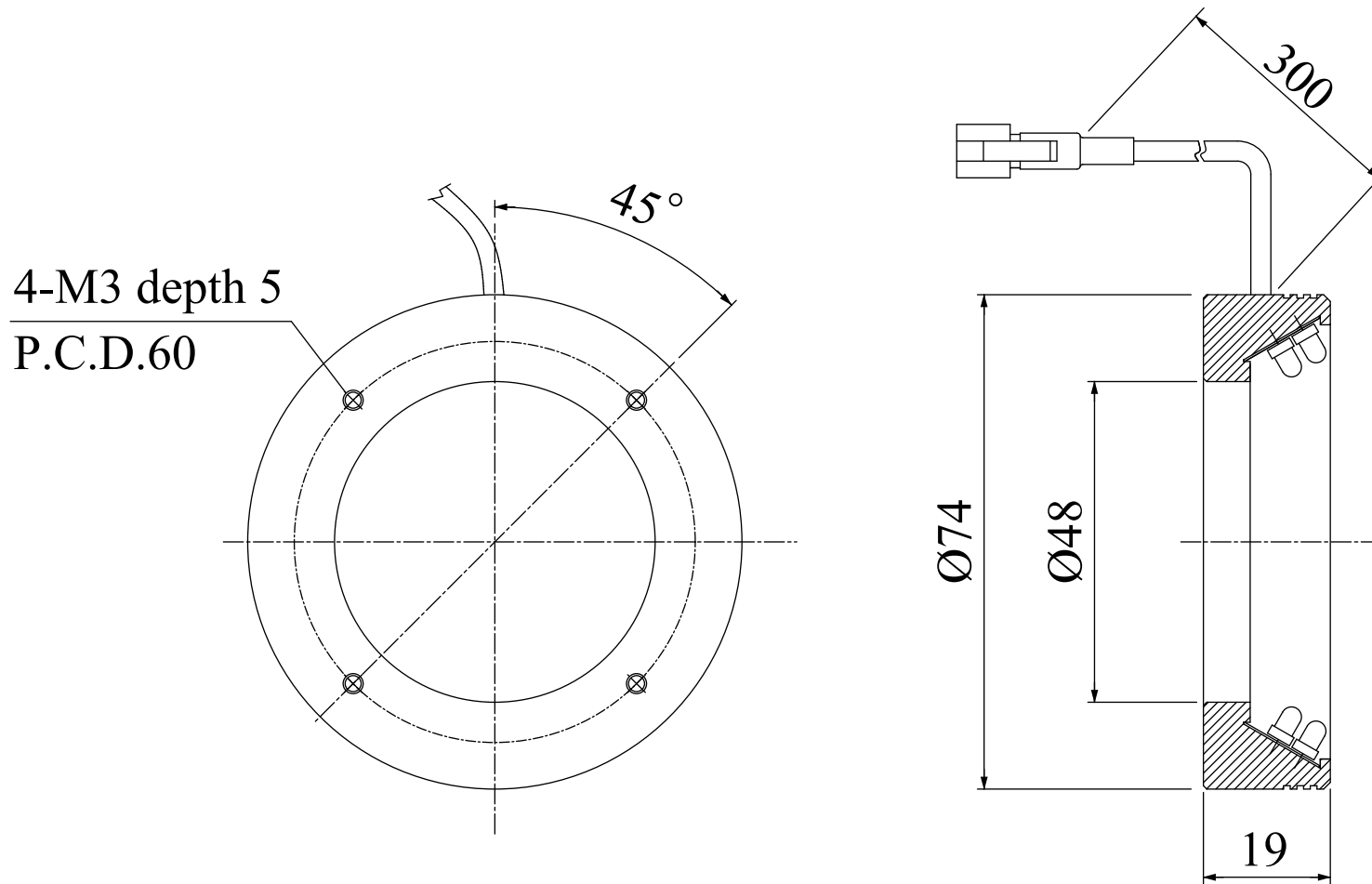


# LDR2-74RD-LA/SW-LA/GR-LA/BL-LA

Model	LDR2-74RD-LA	LDR2-74SW-LA/GR-LA/BL-LA
Voltage	12V DC	24V DC
Power consumption	4.5W	6.1W
Mass	90g	90g
Connector type	2P (1: +, 2: -)	3P (1: +, 2: NC, 3: -)

Third Angle Projection Units: mm



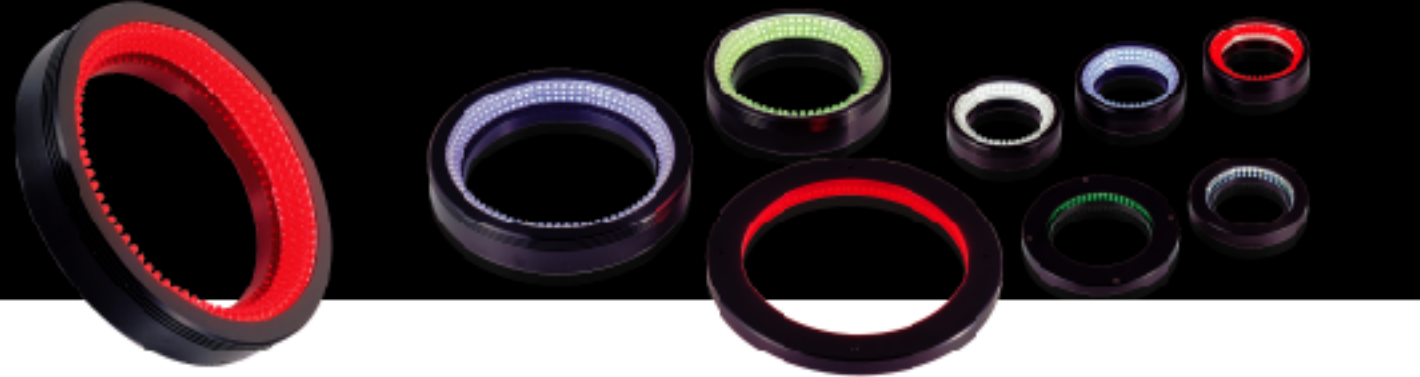


# Low-angle Ring Lights

## 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.



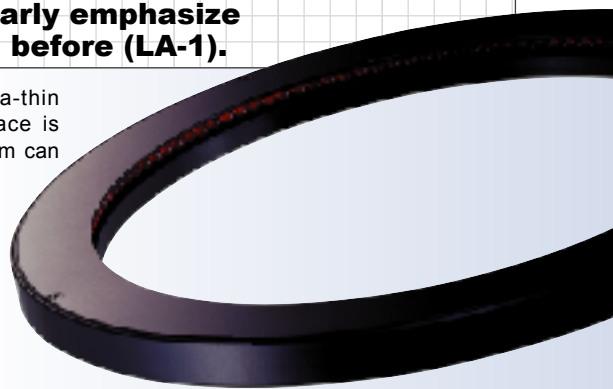
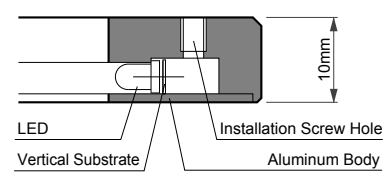
### Low-angle illumination can clearly emphasize things that could not be seen before (LA-1).

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



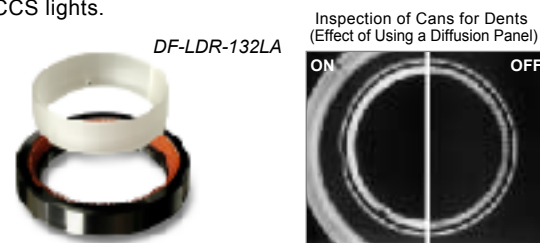
### Aluminum Body Also Acts As a Highly-Effective Heat Sink

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.

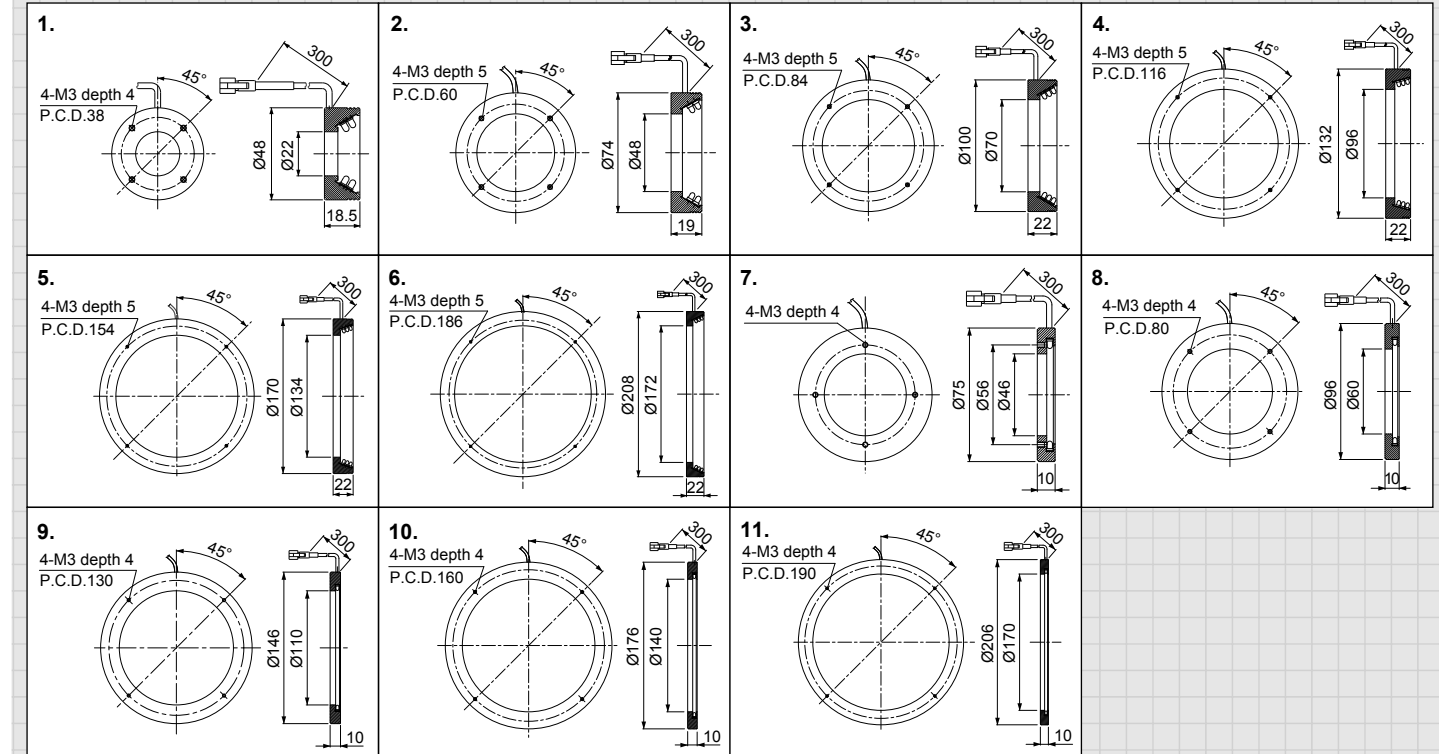
### Product Lineup Table

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.

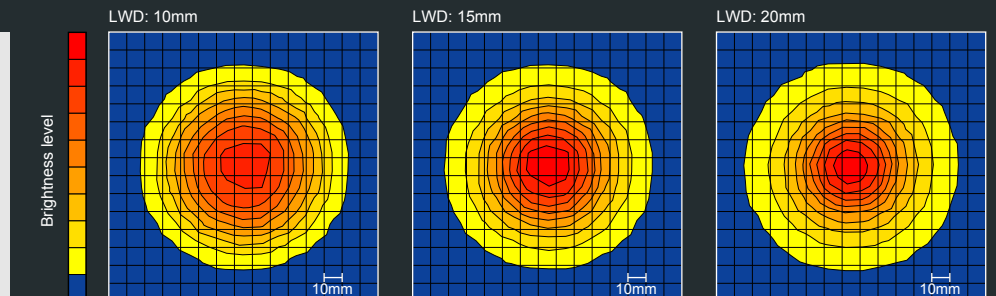
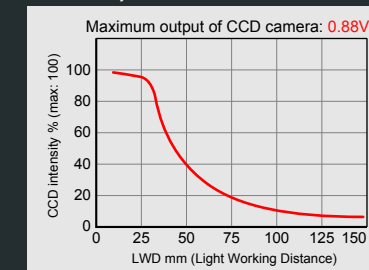
### Dimensions (Unit: mm)



### CCD Sensitivity Chart and Brightness Distribution LDR2-132LA

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

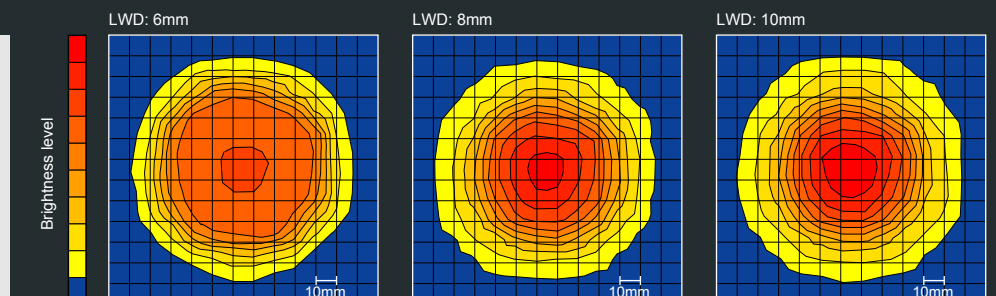
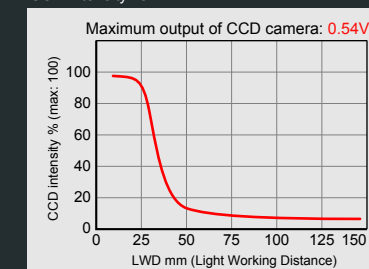
CCD intensity vs LWD



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

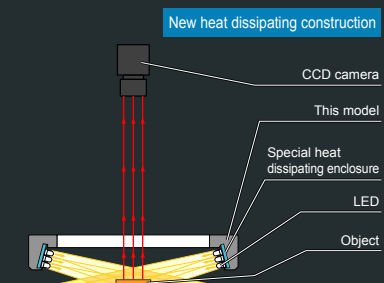
Allows illuminating even closer to the object.

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.

