



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 incused characters or scratches on metal surfaces.



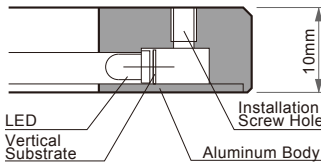
Low-angle illumination can be used to highlight characteristic features of workpieces

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 from the light of 5 to 10 mm, the system can emphasize edges and height variations when taking photographs.

Sample Edge Detection Using a 1-Yen Coin



Cross-Sectional Illustration of the LA-1 Series



LDR-146LA-1

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.



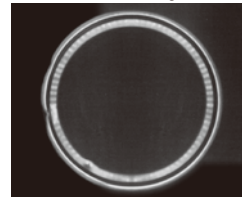
LDR2-74SW-LA

Compatible with Optional Diffusion Rings and Diffusion Plates

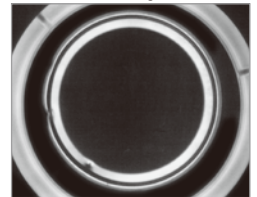
Comparison of can's dent image

Light used: LDR2-132RD-LA Diffusion Ring: DF-LDR-132LA

Without Diffusion Ring



With Diffusion Ring

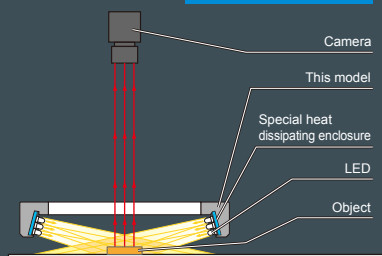


Using a Diffusion Ring or Diffusion Panel suppresses glare and LED reflections that may be a problem when capturing images of glossy workpieces.

Illumination structure of LDR2-132-LA

A flexible circuit board is fixed at the desired angle to illuminate the workpiece from a low angle.

Heat dissipating construction



Examples of Low-Angle Ring Light Images

Inspection of Printed Characters on the Bottom of a Battery

A WD of 15 mm emphasizes printed characters.

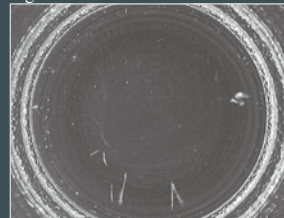
Light used: LDR-75LA-1



Inspection of Disposable Camera Lenses for Damage

Low-angle illumination emphasizes scratches on the lens surface.

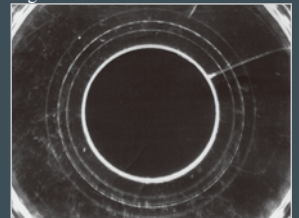
Light used: LDR2-132RD-LA



Inspection of CD-ROM for Inner Ring Cracking

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

Light used: LDR2-74RD-LA



Direct Number : A direct number is a 7-digit number assigned to a CCS product. You can easily access the web page providing information on any desired product by simply entering the direct number in the space provided on the CCS website pages for machine vision. (Refer to the back cover of this brochure.)

Product Lineup Table

Series	Direct Number	Model Name	Color	Power Consumption	Option	Dimension
LDR2-LA	1005306	LDR2-48RD2-LA	●	24V / 2.1W	D	1
	1002724	LDR2-48SW2-LA	○	24V / 3.1W		
	1006096	LDR2-48BL2-LA	○			
	1001452	LDR2-48BL-LA	TBD			
	1006115	LDR2-48GR2-LA	●			
	1003004	LDR2-48GR-LA	TBD			
	1005307	LDR2-74RD2-LA	●		24V / 4.6W	D
	1002725	LDR2-74SW2-LA	○	24V / 5.7W		
	1006097	LDR2-74BL2-LA	●			
	1001487	LDR2-74BL-LA	TBD			
	1006118	LDR2-74GR2-LA	●			
	1001488	LDR2-74GR-LA	TBD			
	1005308	LDR2-100RD2-LA	●		24V / 9.1W	D
	1002726	LDR2-100SW2-LA	○	24V / 12W		
	1006098	LDR2-100BL2-LA	○			
	1001368	LDR2-100BL-LA	TBD			
	1006116	LDR2-100GR2-LA	●			
	1001369	LDR2-100GR-LA	TBD			
	1005309	LDR2-132RD2-LA	●		24V / 13W	D
	1002727	LDR2-132SW2-LA	○	24V / 16W		
	1006099	LDR2-132BL2-LA	●			
	1001391	LDR2-132BL-LA	TBD			
	1006117	LDR2-132GR2-LA	●			
	1001396	LDR2-132GR-LA	TBD			
	1005310	LDR2-170RD2-LA	●		24V / 18W	D
	1002757	LDR2-170SW2-LA	○	24V / 22W		
	1006100	LDR2-170BL2-LA	●			
	1001407	LDR2-170BL-LA	TBD			
	1006119	LDR2-170GR2-LA	●			
	1001409	LDR2-170GR-LA	TBD			
1005311	LDR2-208RD2-LA	●	24V / 22W		D	6
1002758	LDR2-208SW2-LA	○	24V / 28W			
1006101	LDR2-208BL2-LA	●				
1001417	LDR2-208BL-LA	TBD				
—	LDR2-208GR2-LA	●				
1001418	LDR2-208GR-LA	TBD				

Series	Direct Number	Model Name	Color	Power Consumption	Option	Dimension		
LDR-LA-1	1005312	LDR-75RD2-LA1	●	24V / 2.6W	—	7		
	1006144	LDR-75SW2-LA1	○	24V / 3.8W				
	1001323	LDR-75LA-1-SW	TBD	24V / 4.1W				
	1006102	LDR-75BL2-LA1	●	24V / 3.8W				
	1001318	LDR-75LA-1-BL	TBD	24V / 4.1W				
	1006121	LDR-75GR2-LA1	●	24V / 3.8W				
	1001319	LDR-75LA-1-GR	TBD	24V / 4.1W				
	1005313	LDR-96RD2-LA1	●	24V / 3.1W			—	8
	1006145	LDR-96SW2-LA1	○	24V / 3.8W				
	1001353	LDR-96LA-1-SW	TBD	24V / 4.1W				
	1006103	LDR-96BL2-LA1	●	24V / 3.8W				
	1001350	LDR-96LA-1-BL	TBD	24V / 4.1W				
	1006122	LDR-96GR2-LA1	●	24V / 3.8W				
	1001351	LDR-96LA-1-GR	TBD	24V / 4.1W				
	1005314	LDR-146RD2-LA1	●	24V / 4.6W	—	9		
	1006146	LDR-146SW2-LA1	○	24V / 6.0W				
	1001140	LDR-146LA-1-SW	TBD	24V / 6.5W				
	1006104	LDR-146BL2-LA1	●	24V / 6.1W				
	1001137	LDR-146LA-1-BL	TBD	24V / 6.5W				
	1006123	LDR-146GR2-LA1	●	24V / 6.1W				
	1001139	LDR-146LA-1-GR	TBD	24V / 6.5W				
	1005315	LDR-176RD2-LA1	●	24V / 6.1W			—	10
	1006148	LDR-176SW2-LA1	○	24V / 7.6W				
	1001166	LDR-176LA-1-SW	TBD	24V / 8.2W				
	1006105	LDR-176BL2-LA1	●	24V / 7.6W				
	1001164	LDR-176LA-1-BL	TBD	24V / 8.2W				
	—	LDR-176GR2-LA1	●	24V / 7.6W				
	1001165	LDR-176LA-1-GR	TBD	24V / 8.2W				
	1005316	LDR-206RD2-LA1	●	24V / 7.1W	—	11		
	1006147	LDR-206SW2-LA1	○	24V / 9.1W				
	1001172	LDR-206LA-1-SW	TBD	24V / 9.8W				
	1006106	LDR-206BL2-LA1	●	24V / 9.1W				
	1001170	LDR-206LA-1-BL	TBD	24V / 9.8W				
	1006125	LDR-206GR2-LA1	●	24V / 9.1W				
	1001171	LDR-206LA-1-GR	TBD	24V / 9.8W				

*The following letters indicate options.

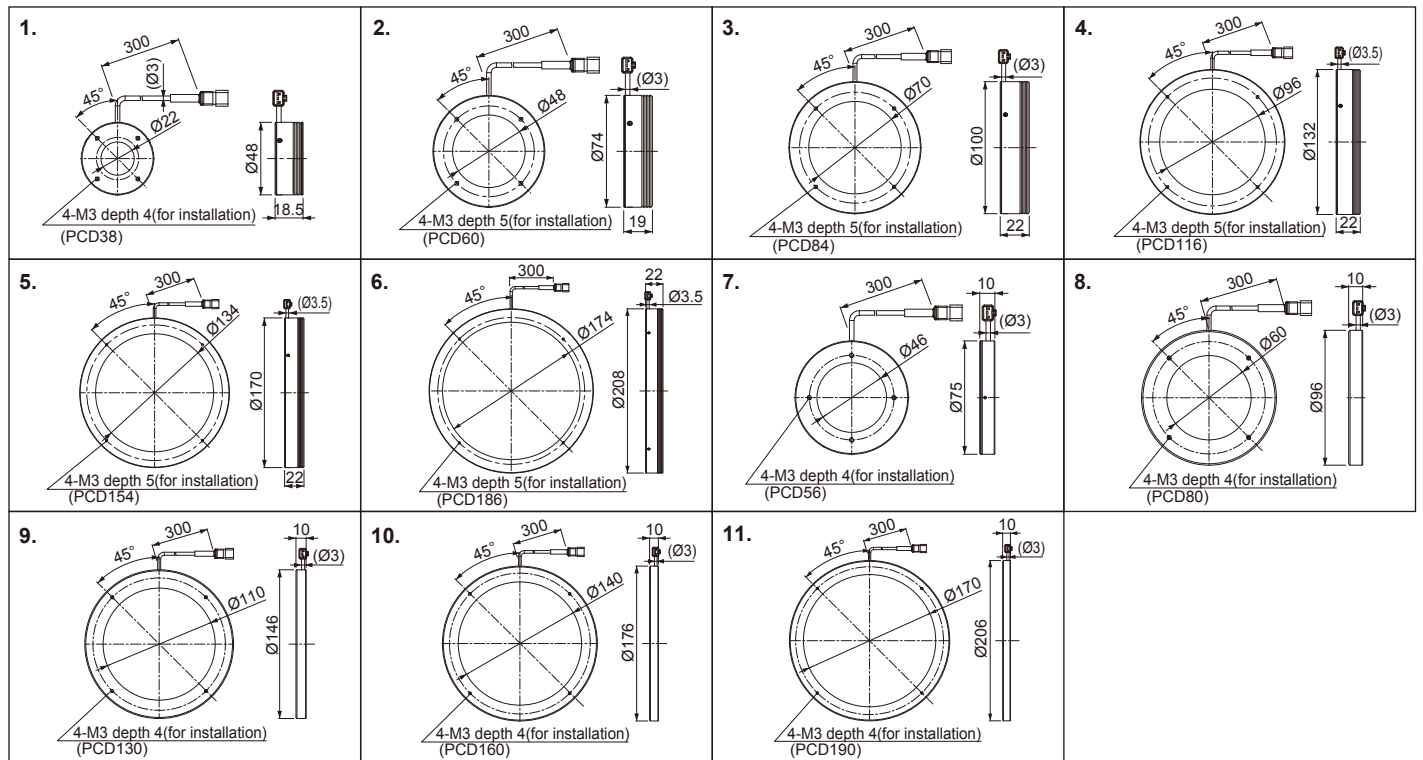
D: Diffusion Plate

*For further details on these options, refer to page 104.

Products with the "TBD" mark are scheduled to be discontinued.

Refer to the discontinued product information on the CCS website for specific discontinuation schedules.

Dimension Diagrams (Unit: mm)



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