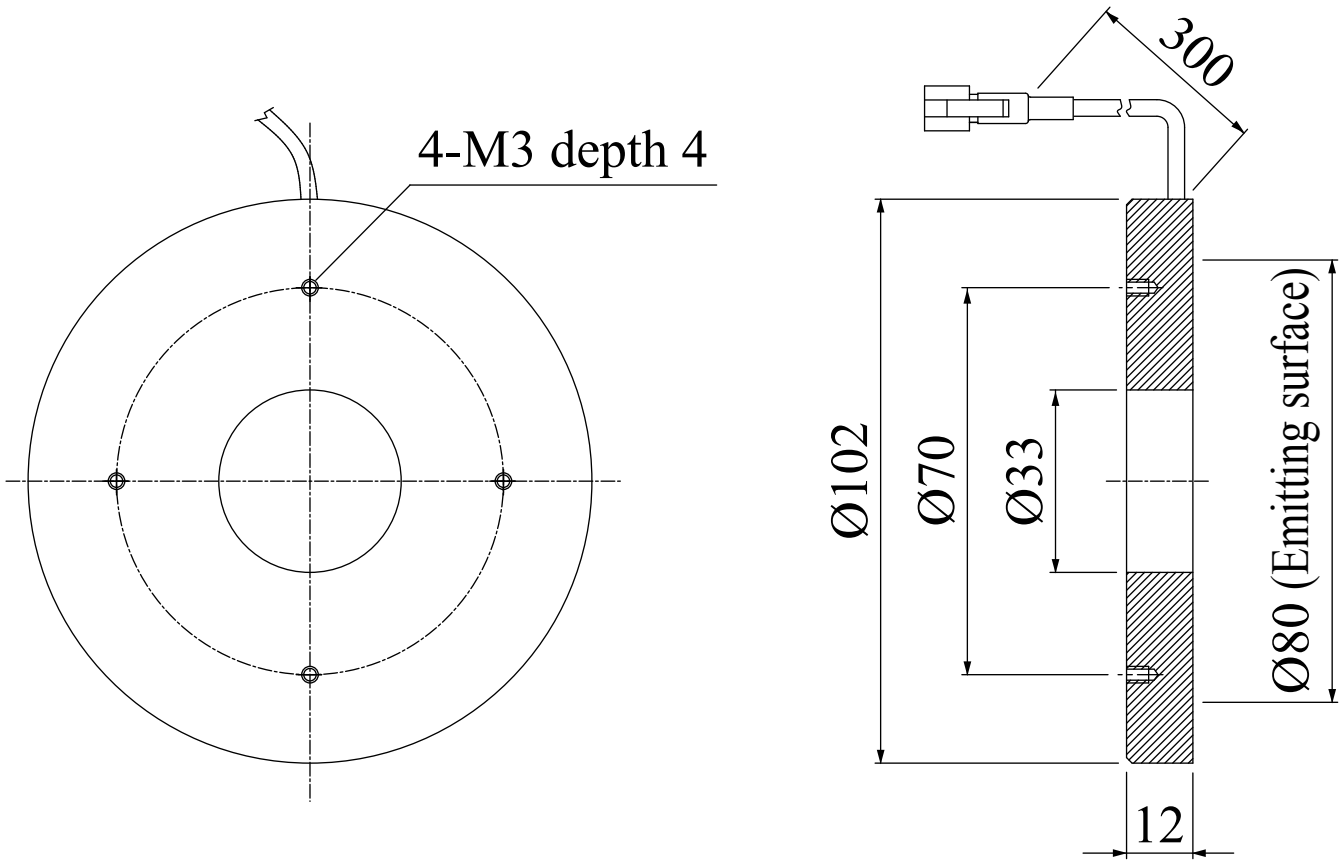


# LFR-100

Model	LFR-100
Voltage	12V DC
Power consumption	3.6W
Mass	120g
Connector type	2P (1: + , 2: -)

Third Angle Projection      Units: mm





# Flat-ring Lights

## LFR/LKR Series

### Evenly diffused top lighting

Overhead diffuse light eliminates LED glare and shadows for even illumination

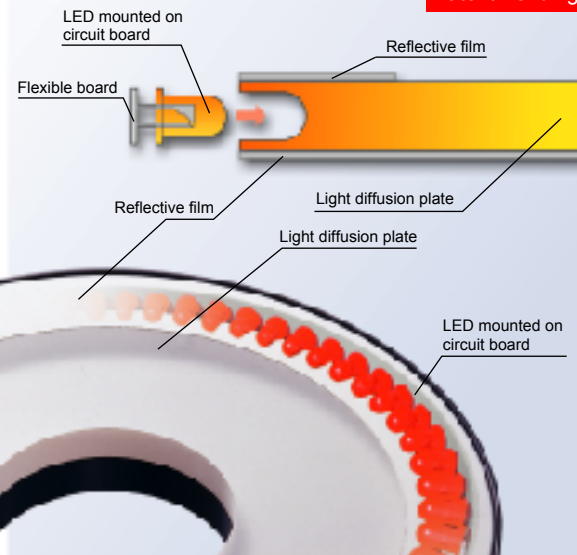


#### Thin flat ring using CCS light conduction

The LEDs are arranged on a flexible board in a straight line, and then wrapped around the perimeter of a light diffusion plate. This channels the light directly from the LEDs into the light diffusion plate.

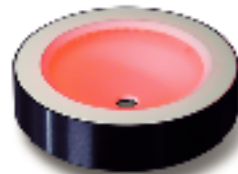
In addition, a reflective film is applied to the surfaces of the light diffusion plate to refract and scatter the light in a complex way after it is introduced from the emitters. The light will spread evenly through the entire light diffusion plate and produce a very even light distribution.

Patent Pending

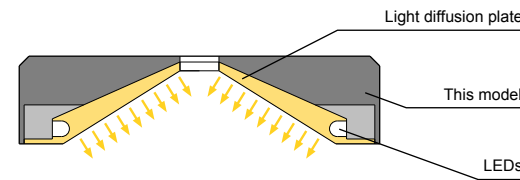


#### Even illumination without shadows (LKR)

LKR Series. Light shines from the conical emitting surface at all angles, making it possible to evenly illuminate the work without forming shadows.



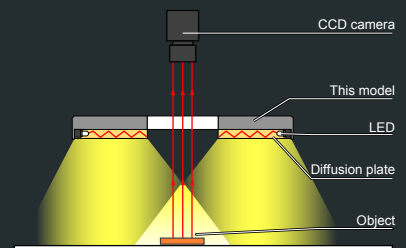
LKR-70-8



Solder joint inspection for chip components on printed circuit board.  
FOV 10mm, LWD 10mm  
No hot spots, uniform illumination, only the solder joints stand out in white.  
Lighting: LKR-70A

#### Illumination structure of LFR-100

Light from the LEDs around the periphery of the light diffusion plate is scattered and reflected within the plate to create diffuse light that illuminates from directly overhead.

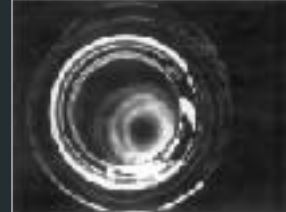


#### Examples of Flat Ring Illumination Images

##### Inspecting for nicks on a glass bottle

Normal areas of the bottle appear illuminated as a white ring. Broken parts can be detected as dark spots within the rings.

Light used: LFR-100



##### Inspecting characters on a QFP package

The characters are illuminated with good contrast.

Light used: LFR-130



##### Inspecting of stains on plastic caps

The stains on inside and bottom face of plastic caps can be detected.

Light used: LKR-70A

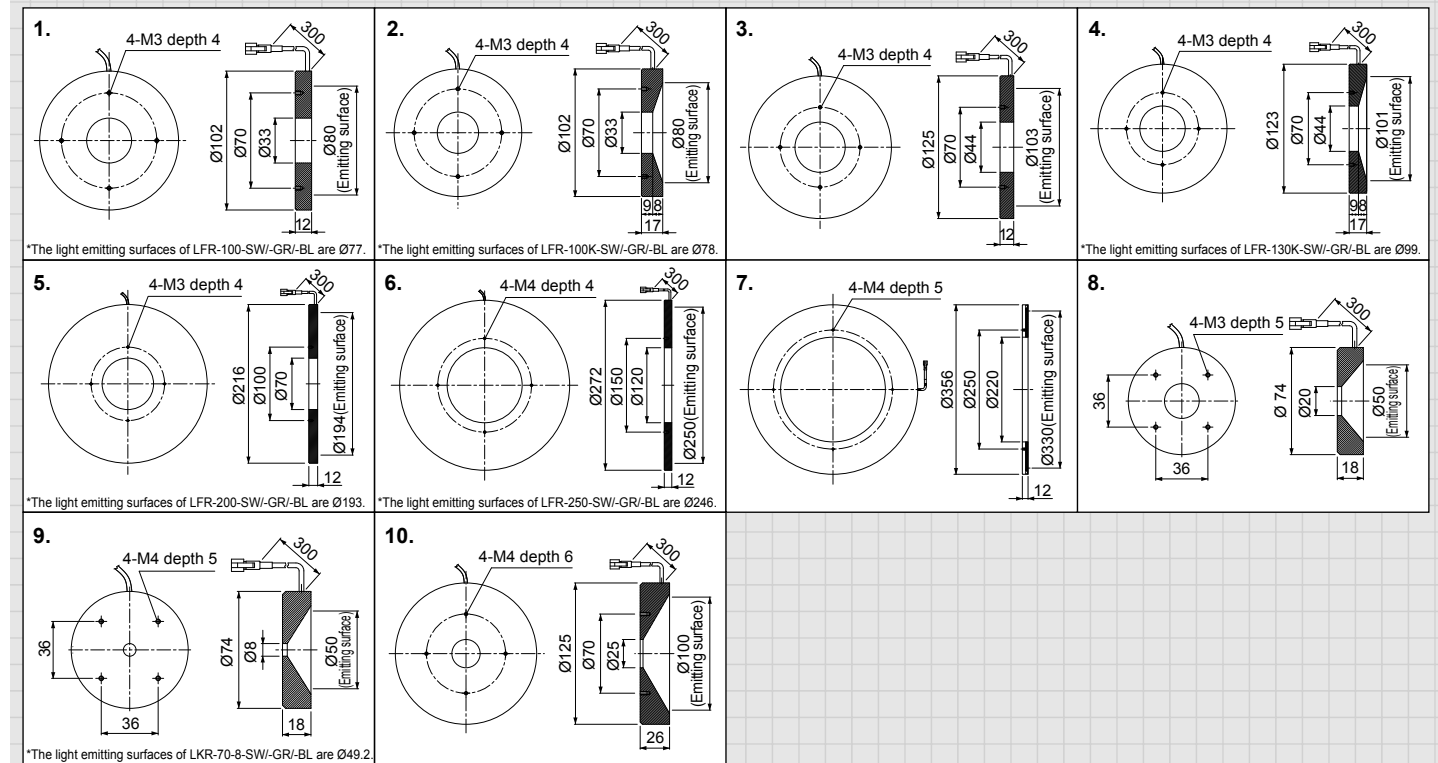


#### Product Lineup Table

Series	Model Name	Color	Power Consumption	Options	Dimension
LFR	LFR-100	Red	12V/3.6W	—	1□
	LFR-100-SW/-GR/-BL	○/●/●	24V/4.9W	—	2
	LFR-100K	Red	12V/3.6W	—	
	LFR-100K-SW/-GR/-BL	○/●/●	24V/4.9W	—	3
	LFR-130	Red	12V/4.5W	—	
	LFR-130-SW/-GR/-BL	○/●/●	24V/6.1W	—	4
	LFR-130K	Red	12V/4.5W	—	
	LFR-130K-SW/-GR/-BL	○/●/●	24V/6.2W	—	5
	LFR-200	Red	12V/7.8W	—	
	LFR-200-SW/-GR/-BL	○/●/●	24V/11W	—	6
	LFR-250	Red	12V/9.0W	—	
	LFR-250-SW/-GR/-BL	○/●/●	24V/14W	—	

Series	Model Name	Color	Power Consumption	Options	Dimension
LFR	LFR-330	Red	12V/14W	—	7
LKR	LKR-70A	Red	12V/3.0W	—	8
	LKR-70A-SW/-GR/-BL	○/●/●	24V/4.1W	—	
	LKR-70-8	Red	12V/3.0W	—	9
	LKR-70-8-SW/-GR/-BL	○/●/●	24V/4.1W	—	
	LKR-125	Red	12V/4.5W	—	10
	LKR-125-SW/-GR/-BL	○/●/●	24V/6.1W	—	

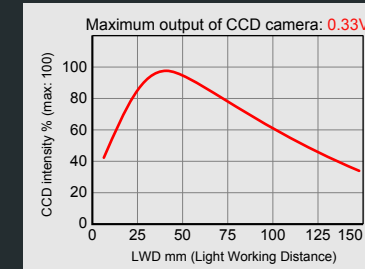
#### Dimensions (Unit: mm)



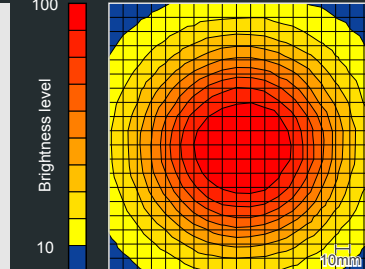
#### CCD Sensitivity Chart and Brightness Distribution LFR-130

Although the level of brightness is not high, the LFR-130 has excellent uniformity and is capable of astral lighting over a broad range.

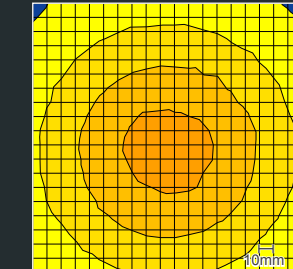
CCD intensity vs LWD



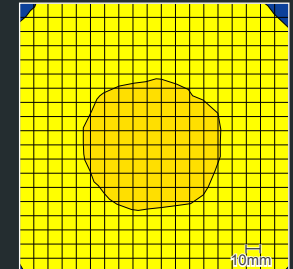
LWD: 50mm



LWD: 100mm



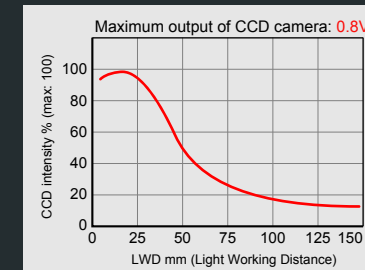
LWD: 150mm



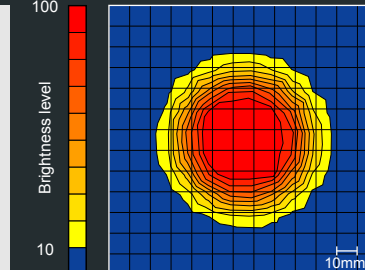
#### CCD Sensitivity Chart and Brightness Distribution LKR-70A

The center of the light has a conical light-emitting surface to deliver bright and even illumination, allowing the object to be evenly illuminated without producing shadows.

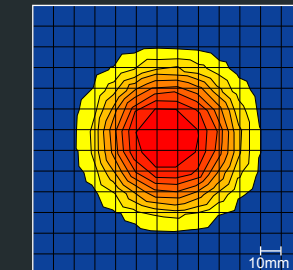
CCD intensity vs LWD



LWD: 10mm



LWD: 15mm



LWD: 20mm

