

Flat-ring Lights

LFR/LKR Series

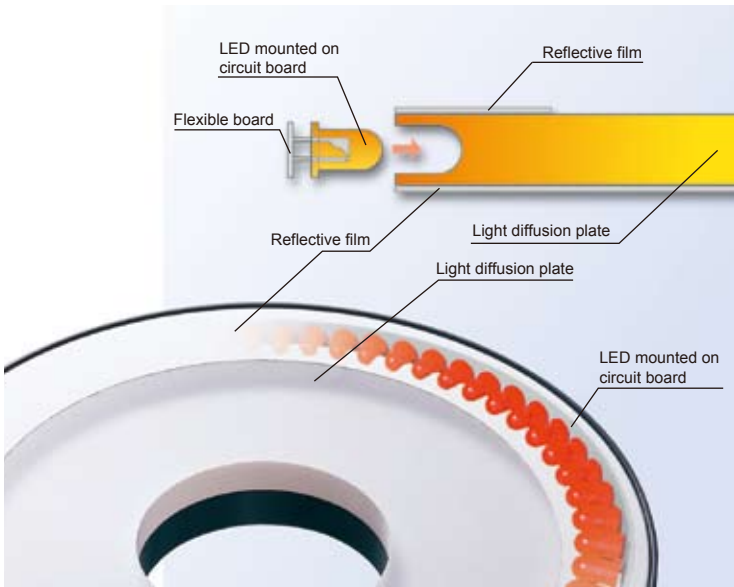
Evenly diffused top lighting

A unique light guiding method provides uniform diffused illumination and eliminates LED glare and shadows.



Thin Flat Ring with a Unique Light Guiding Method

The LEDs are arranged in a straight line on a flexible circuit board, 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.

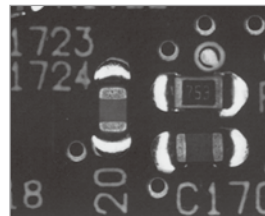
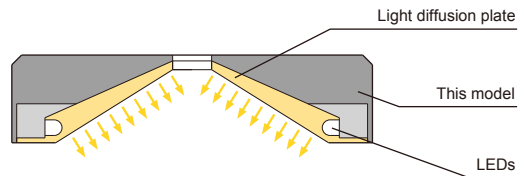


Even illumination without shadows (LKR)

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



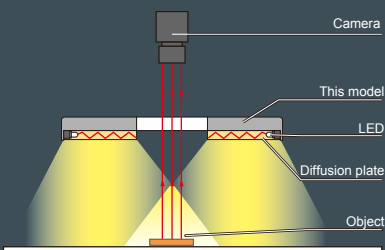
LKR-70-8



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 diffused light that illuminates from directly overhead.

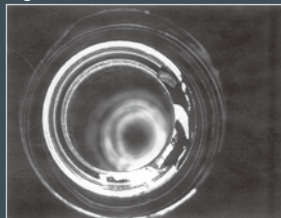


Examples of Flat Ring Light Images

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.

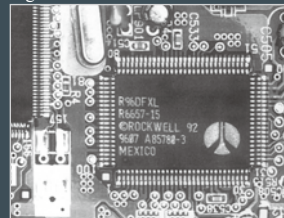
Light used: LFR-100



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

Direct Number : You can easily access the web page providing information on any desired product by simply entering the 7-digit direct number in the space provided. (Refer to the back cover of this brochure.)

Series	Direct Number	Model Name	Color	Power Consumption	Option	Dimension
LFR	1001715	LFR-100	●	12V / 3.6W	—	1
	1004300	LFR-100SW2	○	24V / 4.6W		
	1001720	LFR-100-BL	●	24V / 4.9W		
	1001723	LFR-100-GR	●			
	1001728	LFR-100K	●	12V / 3.6W	—	2
	1004301	LFR-100KSW2	○	24V / 4.6W		
	1001730	LFR-100K-BL	●	24V / 4.9W		
	1001731	LFR-100K-GR	●			
	1001740	LFR-130	●	12V / 4.5W	—	3
	1004302	LFR-130SW2	○	24V / 5.7W		
	1001745	LFR-130-BL	●	24V / 6.1W		
	1001746	LFR-130-GR	●			
	1001750	LFR-130K	●	12V / 4.5W	—	4
	1004303	LFR-130KSW2	○	24V / 5.7W		
	1001751	LFR-130K-BL	●	24V / 6.2W		
	1001752	LFR-130K-GR	●			
	1001757	LFR-200	●	12V / 7.8W	—	5
	1004304	LFR-200SW2	○	24V / 11W		
	1001758	LFR-200-BL	●		24V / 14W	—
	1001762	LFR-250	●	12V / 9.0W		
1004305	LFR-250SW2	○	24V / 13W			
1001764	LFR-250-BL	●				
1001765	LFR-250-GR	●	12V / 14W	—	7	
1001768	LFR-330	●				

Series	Direct Number	Model Name	Color	Power Consumption	Option	Dimension
LKR	1002082	LKR-70A	●	12V / 3.0W	—	8
	1004205	LKR-70SW2	○	24V / 3.8W		
	1002085	LKR-70A-BL	●	24V / 4.1W		
	1002087	LKR-70A-GR	●			
	1002077	LKR-70-8	●	12V / 3.0W	—	9
	1004204	LKR-70-8SW2	○	24V / 3.8W		
	1002078	LKR-70-8-BL	●	24V / 4.1W		
	1002079	LKR-70-8-GR	●			
	1002063	LKR-125	●	12V / 4.5W	—	10
	1004203	LKR-125SW2	○	24V / 5.7W		
	1002066	LKR-125-BL	●	24V / 6.1W		
	1002067	LKR-125-GR	●			

Dimension Diagrams (Unit: mm)

