

# Low Angle Direct Ring Series



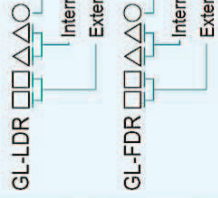
## Features

- 360° illumination from a low angle without reflection. Specially for slightly uneven surfaces and scratches
- For FDR series, high illumination LEDs are horizontally mounted in a ring shape

## Major applications

- BGA solder ball position, shape and area in inspection.
- Inspection of wafers or glass substrates for scratches and stain.
- Reading laser engraving
- Edge detection and defect inspection

## Model explanation

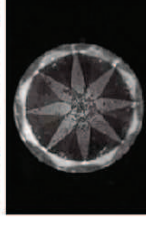


## Available Models

Model	Color	Power Consumption	Weight (g)	Dimension
GL-LDR4822R	●	12V/1.9W		
GL-LDR4822WB/G	○	12V/2.8W		
GL-LDR4822R	●	12V/1.9W	47	1
GL-LDR4822R-24	●	24V/1.9W		
GL-LDR4822WB/G-24	○	24V/2.8W		
GL-LDR4822IR-24	●	24V/1.9W		
GL-LDR7448R	●	12V/3.9W		
GL-LDR7448WB/G	○	12V/5.8W		
GL-LDR7448R	●	12V/3.9W	81	2
GL-LDR7448R-24	●	24V/3.9W		
GL-LDR7448WB/G-24	○	24V/5.8W		
GL-LDR7448IR-24	●	24V/3.9W		
GL-LDR10068R	●	12V/7.2W		
GL-LDR10068WB/G	○	12V/5.8W		
GL-LDR10068R-24	●	12V/7.2W	140	3
GL-LDR10068WB/G-24	○	24V/10.6W		
GL-LDR10068IR-24	●	24V/7.2W		
GL-LDR13296R-24	●	24V/10.6W		
GL-LDR13296WB/G-24	○	24V/15.9W	177	4
GL-LDR13296IR-24	●	24V/10.6W		
GL-LDR170134R-24	●	24V/13.5W		
GL-LDR170134WB/G-24	○	24V/20.2W	231	5
GL-LDR170134IR-24	●	24V/13.5W		
GL-FDR7546R	●	12V/2.0W		
GL-FDR7546WB/G	○	12V/2.9W		
GL-FDR7546R-24	●	12V/2.0W	55	6
GL-FDR7546WB/G-24	○	24V/2.9W		
GL-FDR7546IR-24	●	24V/2.0W		

Model	Color	Power Consumption	Weight (g)	Dimension
GL-FDR8454R	●	12V/2.0W		
GL-FDR8454WB/G	○	12V/2.9W		
GL-FDR8454R-24	●	12V/2.0W	65	7
GL-FDR8454WB/G-24	○	24V/2.9W		
GL-FDR8454IR-24	●	24V/2.0W		
GL-FDR9660R	●	12V/2.4W		
GL-FDR9660WB/G	○	12V/3.8W	91	8
GL-FDR9660R-24	●	12V/2.4W		

## Imaging examples



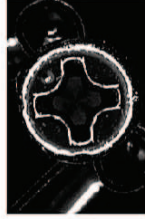
GL-LDR7448W  
Diamond Cutting



GL-LDR7448W  
Diode Characters



GL-FDR7546W  
PCB Edge Abrade

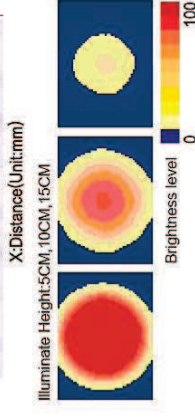
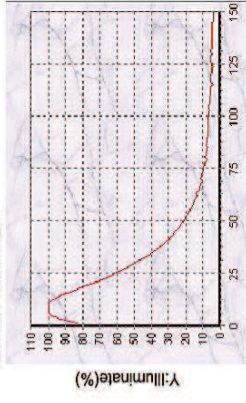


GL-FDR156108R  
Screw Edge

Model	Color	Power Consumption	Weight (g)	Dimension
GL-FDR12292R	●	12V/2.9W		
GL-FDR12292WB/G	○	12V/4.4W		
GL-FDR12292R-24	●	12V/2.9W	95	9
GL-FDR12292WB/G-24	○	24V/4.4W		
GL-FDR12292IR-24	●	24V/2.9W		
GL-FDR156108R	●	12V/3.9W		
GL-FDR156108WB/G	○	12V/5.8W		
GL-FDR156108R-24	●	12V/3.9W	165	10
GL-FDR156108WB/G-24	○	24V/5.8W		
GL-FDR156108IR-24	●	24V/3.9W		

## Luminous intensity distribution characteristics

GL-LDR7448R Graph



## Dimensional Diagrams(mm)

