

# Low Angle Ring Illumination MLRL Series



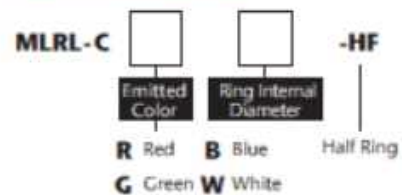
## Low Angle Half-Ring Type Illumination: MLRL-HF Series

- Reflection can be minimized by the low-angle, dark-field lighting configuration
- Ideal for shiny shiny or uneven surfaces, eg. embossment and surface flaw detection
- MLRL-C\*46 has an illumination angle of 0 degrees for short WD indirect illumination

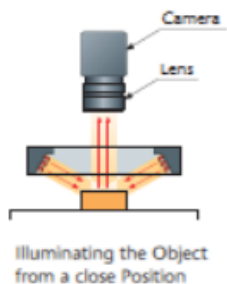
## Low Angle Ring Illumination: MLRL Series

- Ideal for applications where only one section of a surface must be illuminated or where space does not allow for a full ring

Explanation of Model Code



## Illumination Structure



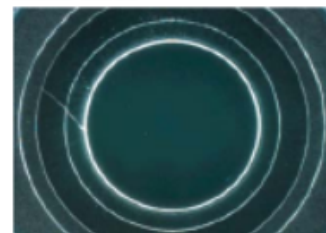
## Sample Images

MLRL-CW100



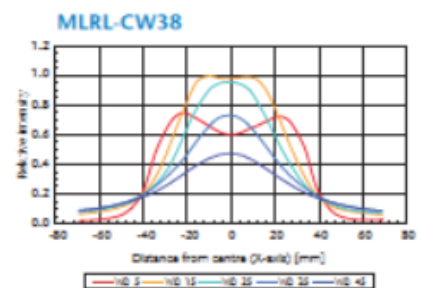
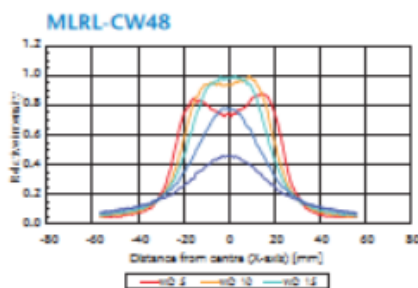
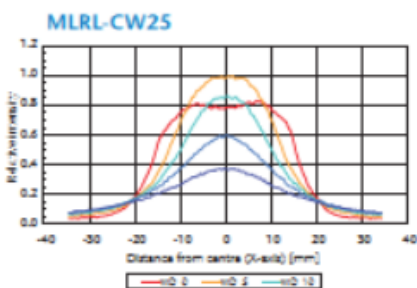
Button Components for Mobile Phone

MLRL-CW68



CD Inner Circumferential Scratch

## Light Distribution Characteristics



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## Lineup of Low Angle Ring Type LEDs

Model	Emitted Color	Maximum Rated Current IFM(A)	Ring Internal Diameter (mm)	Ring External Diameter (mm)	Lighting Angle	Weight (g)	LED Controller
MLRL-CR23	● Red	0.09	ø23	ø40	20°	40	MLEK-A080
★ MLRL-CG23	● Green	0.14	ø23	ø40	20°	40	MLEK-A080
MLRL-CB23	● Blue	0.14	ø23	ø40	20°	40	MLEK-A080
MLRL-CW23	○ White	0.14	ø23	ø40	20°	40	MLEK-A080
MLRL-CR25	● Red	0.15	ø25	ø50	30°	70	MLEK-A080
★ MLRL-CG25	● Green	0.24	ø25	ø50	30°	70	MLEK-A080
MLRL-CB25	● Blue	0.24	ø25	ø50	30°	70	MLEK-A080
MLRL-CW25	○ White	0.24	ø25	ø50	30°	70	MLEK-A080
MLRL-CR46	● Red	0.17	ø46	ø75	0°	80	MLEK-A080
★ MLRL-CG46	● Green	0.27	ø46	ø75	0°	80	MLEK-A080
MLRL-CB46	● Blue	0.27	ø46	ø75	0°	80	MLEK-A080
MLRL-CW46	○ White	0.27	ø46	ø75	0°	80	MLEK-A080
MLRL-CR48	● Red	0.30	ø48	ø74	30°	110	MLEK-A080
★ MLRL-CG48	● Green	0.47	ø48	ø74	30°	110	MLEK-A080
MLRL-CB48	● Blue	0.47	ø48	ø74	30°	110	MLEK-A080
MLRL-CW48	○ White	0.47	ø48	ø74	30°	110	MLEK-A080
MLRL-CR68	● Red	0.57	ø68	ø100	30°	190	MLEK-A080
★ MLRL-CG68	● Green	0.61	ø68	ø100	30°	190	MLEK-A080
MLRL-CB68	● Blue	0.61	ø68	ø100	30°	190	MLEK-A080
MLRL-CW68	○ White	0.61	ø68	ø100	30°	190	MLEK-A080
MLRL-CR100	● Red	0.96	ø100	ø140	15°	320	MLEK-A230
★ MLRL-CG100	● Green	1.03	ø100	ø140	15°	320	MLEK-A230
MLRL-CB100	● Blue	1.03	ø100	ø140	15°	320	MLEK-A230
MLRL-CW100	○ White	1.03	ø100	ø140	15°	320	MLEK-A230
★ MLRL-CR172	● Red	1.01	ø172	ø208	25°	420	MLEK-A230
★ MLRL-CG172	● Green	1.39	ø172	ø208	25°	420	MLEK-A230
★ MLRL-CB172	● Blue	1.39	ø172	ø208	25°	420	MLEK-A230
★ MLRL-CW172	○ White	1.39	ø172	ø208	25°	420	MLEK-A230

\* LED Controller on P.152-156

★ Made to order products.

\* In case of a plurality of LED illuminations used, please check the "Selection Criteria LED Controller" on P.99.

## Lineup of Low Angle Half Ring Type LEDs

Model	Emitted Color	Maximum Rated Current IFM(A)	Ring Internal Diameter (mm)	Ring External Diameter (mm)	Lighting Angle	Weight (g)	LED Controller
★ MLRL-CR100-HF	● Red	0.53	R50	R70	15°	170	MLEK-A080
★ MLRL-CG100-HF	● Green	0.80	R50	R70	15°	170	MLEK-A080
★ MLRL-CB100-HF	● Blue	0.80	R50	R70	15°	170	MLEK-A080
★ MLRL-CW100-HF	○ White	0.80	R50	R70	15°	170	MLEK-A080

\* LED Controller on P.152-156

★ Made to order products.

\* In case of a plurality of LED illuminations used, please check the "Selection Criteria LED Controller" on P.99.



## Accessories for Low Angle Ring Lights

Good for producing more uniform illumination than with direct lighting and for reducing glare and reflections.

Diffuser Ring (P.157)



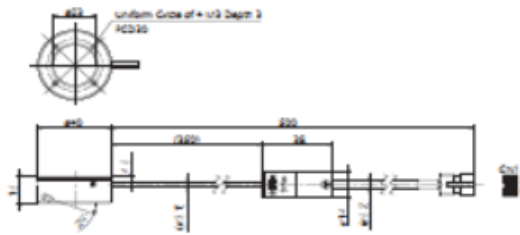
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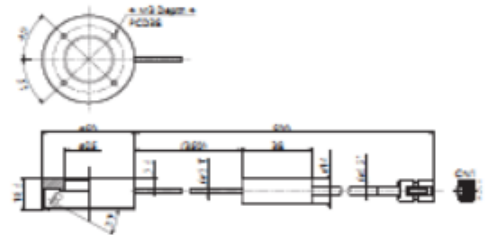
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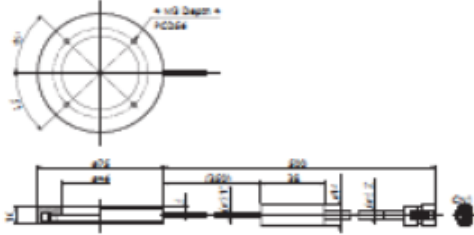
### MLRL-CR (CG,CB,CW) 23



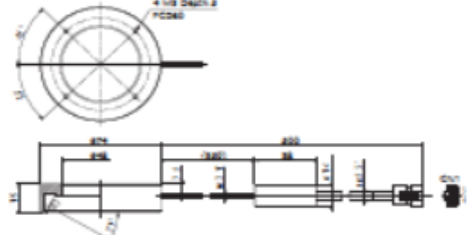
### MLRL-CR (CG,CB,CW) 25



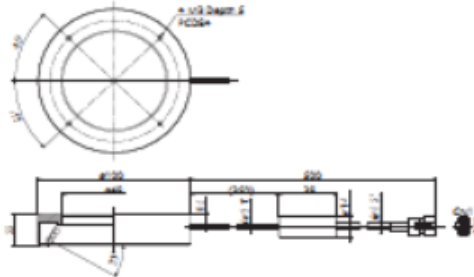
### MLRL-CR (CG,CB,CW) 46



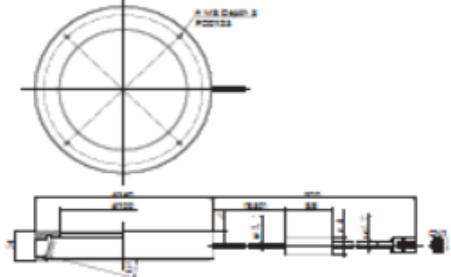
### MLRL-CR (CG,CB,CW) 48



### MLRL-CR (CG,CB,CW) 68



### MLRL-CR (CG,CB,CW) 100



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