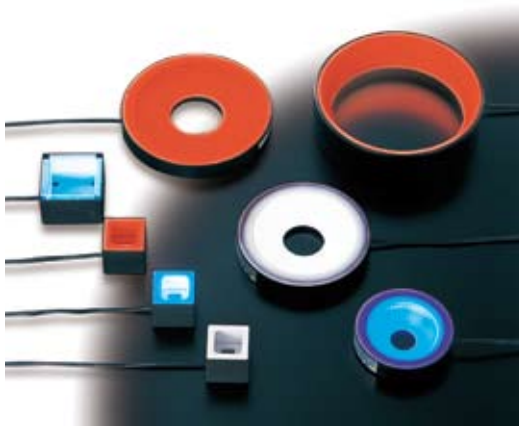




Shadowless Illuminations

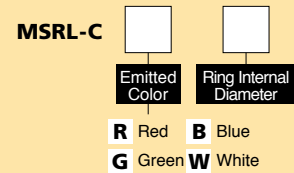
MSRL/MSLL/ MSQL Series



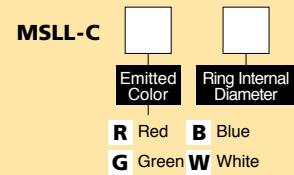
- Three types are available: the ring type, the low angle ring type and the low angle square type.
- Soft, uniform, diffused lighting on shiny objects.
- Best for preventing a halo effect. The shadowless, low angle square type is perfect for square shaped objects, such as BGAs and QFPs.

Explanation of Model Code

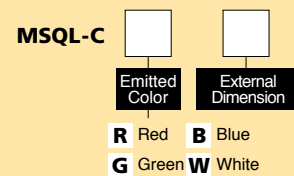
Shadowless Ring Type LEDs



Shadowless, Low Angle Ring Type LEDs



Shadowless, Low Angle Square Type LEDs



Shadowless Illuminations

Lineup of shadowless ring type LEDs

Model	Emitted Color	Maximum Related Current IFM (A)	Ring Internal Diameter (mm)	Ring External Diameter (mm)	Weight (g)	Product Code
MSRL-CR20	● Red	0.32	φ 20	φ 74	140	A-2042
★ MSRL-CG20	● Green	0.50	φ 20	φ 74	140	A-2126
MSRL-CB20	● Blue	0.50	φ 20	φ 74	140	A-2044
MSRL-CW20	○ White	0.50	φ 20	φ 74	140	A-2043
MSRL-CR33	● Red	0.45	φ 33	φ 104	210	A-2045
★ MSRL-CG33	● Green	0.69	φ 33	φ 104	210	A-2127
MSRL-CB33	● Blue	0.69	φ 33	φ 104	210	A-2047
MSRL-CW33	○ White	0.69	φ 33	φ 104	210	A-2046
MSRL-CR44	● Red	0.57	φ 44	φ 123	270	A-2039
★ MSRL-CG44	● Green	0.80	φ 44	φ 123	270	A-2128
MSRL-CB44	● Blue	0.80	φ 44	φ 123	270	A-2041
MSRL-CW44	○ White	0.80	φ 44	φ 123	270	A-2040

★Made-to-order products.

Lineup of shadowless, low angle ring type LEDs

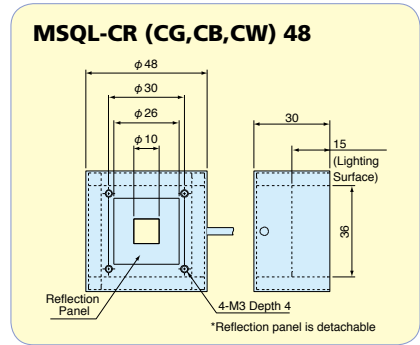
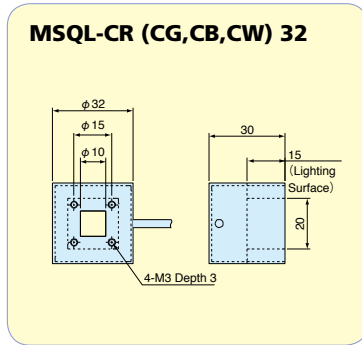
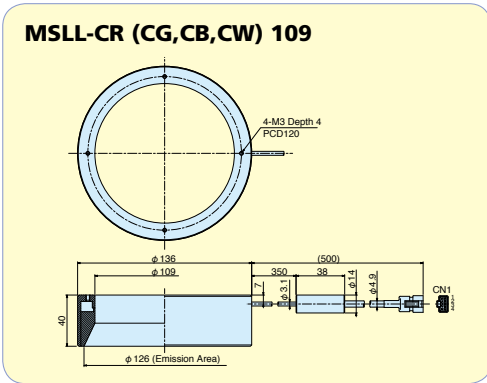
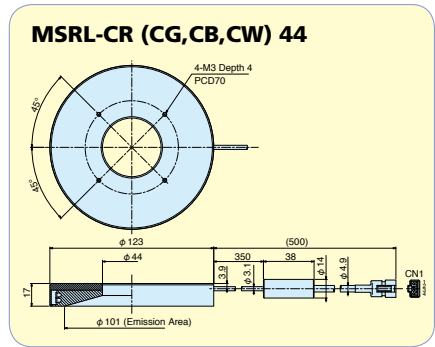
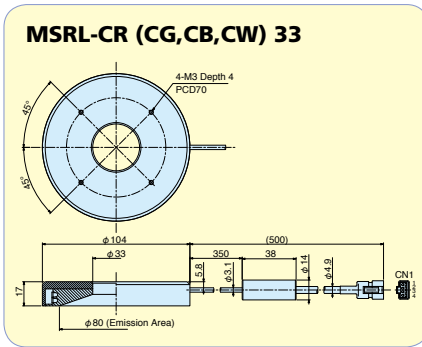
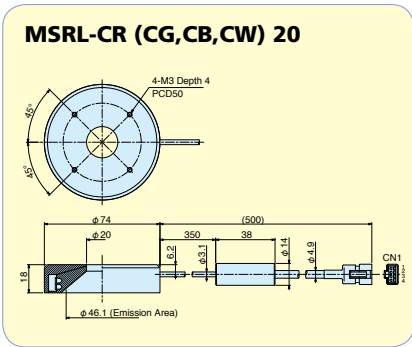
Model	Emitted Color	Maximum Related Current IFM (A)	Ring Internal Diameter (mm)	Ring External Diameter (mm)	Weight (g)	Product Code
MSLL-CR109	● Red	0.62	φ 109	φ 136	320	A-2033
★ MSLL-CG109	● Green	1.10	φ 109	φ 136	320	A-2129
MSLL-CB109	● Blue	1.10	φ 109	φ 136	320	A-2035
MSLL-CW109	○ White	1.10	φ 109	φ 136	320	A-2034

★Made-to-order products.

Lineup of shadowless, low angle square type LEDs

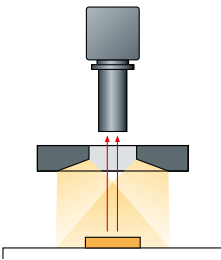
Model	Emitted Color	Maximum Related Current IFM (A)	External Dimensions (mm)	Weight (g)	Product Code
MSQL-CR32	● Red	0.09	32×32	80	A-2036
★ MSQL-CG32	● Green	0.14	32×32	80	A-2130
MSQL-CB32	● Blue	0.14	32×32	80	A-2038
MSQL-CW32	○ White	0.14	32×32	80	A-2037
MSQL-CR48	● Red	0.13	48×48	120	A-2030
★ MSQL-CG48	● Green	0.20	48×48	120	A-2131
MSQL-CB48	● Blue	0.20	48×48	120	A-2032
MSQL-CW48	○ White	0.20	48×48	120	A-2031

★Made-to-order products.

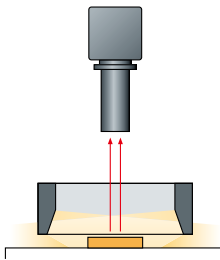


Illumination Structure

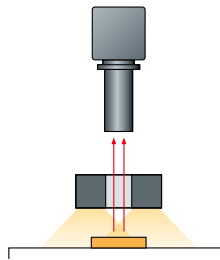
MSRL Series



MSLL Series



MSQL Series



Sample Images

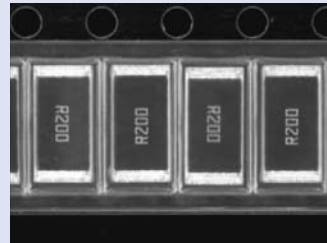
MSLL-CR109



D-Subconnector



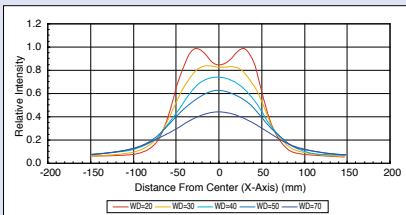
Bottom of Can



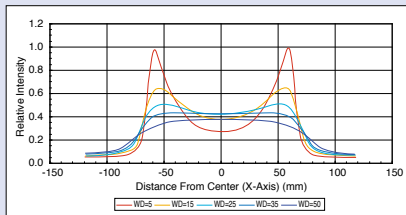
Resistor Chips

Light Distribution Characteristic

MSRL-CW44



MSLL-CW109



MSQL-CW32

