

NEW

# OMRON

## LED Lighting System 3Z4S-LT/LE Series Datasheet



## LED NEXT GENERATION



realizing

This document provides information mainly for selecting suitable models. Please read the Instruction Sheet carefully for information that the user must understand and accept before purchase, including information on warranty, limitations of liability, and precautions.

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# Next-generation MG-Wave® LED Illumination Combines with the Vision Sensor to Provide New Solutions

Illumination Devices are essential for finding solutions to many of the image-processing tasks of Vision Sensors. With this in mind, we have now combined advanced MG-Wave® LED Illumination from the broad Moritex range of original and innovative products based on superior illumination technologies with Vision Sensor image-processing technologies and know-how accumulated over the years by OMRON.

This powerful collaboration has yielded a variety of optimal solutions to inspection and measurement needs in automated production applications.

**A wide range of products allows you to select the optimal Illumination Device for each application.**



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# Strobe Controller

3Z4S-LT MLEK-C080E1LS (for F150-S1A, F160-S2 Camera)  
 3Z4S-LT MLEK-C100E1TS2 (for FZ Camera)  
 3Z4S-LT MLEK-C100E1TSX (for ZFX-S/SC Camera)

Combining good Vision Sensor compatibility and excellent cost-performance.



## Three Main Features

**No need of power supply.**

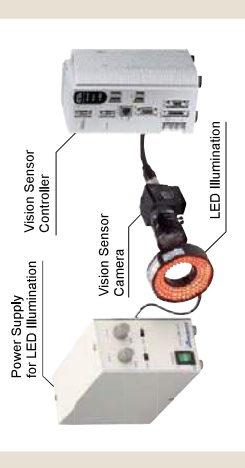
The Strobe Controller operates with power supplied from the Camera Head.

**No need of light-emission control.**

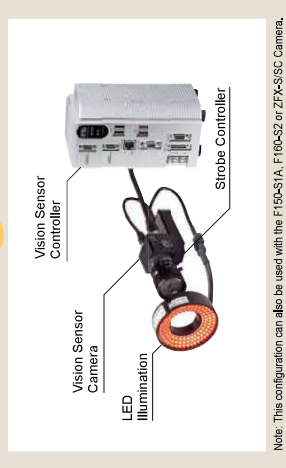
The illumination is turned ON when the Strobe Controller receives a trigger signal from the Camera Head.

**Minimal wiring.**

Simply connect the Camera and Illumination Device with a single cable.



## Adding the Strobe Controller



Note: This configuration can also be used with the F150-S1A, F160-S2 or ZFX-S/SC Camera.

Illumination Devices up to 1 A (Output current: See note) can be connected.



**No Power Supply Required = Large Cost Reduction**

Note: When using the MLEK-C100E1TS2 and MLEK-C100E1TSX

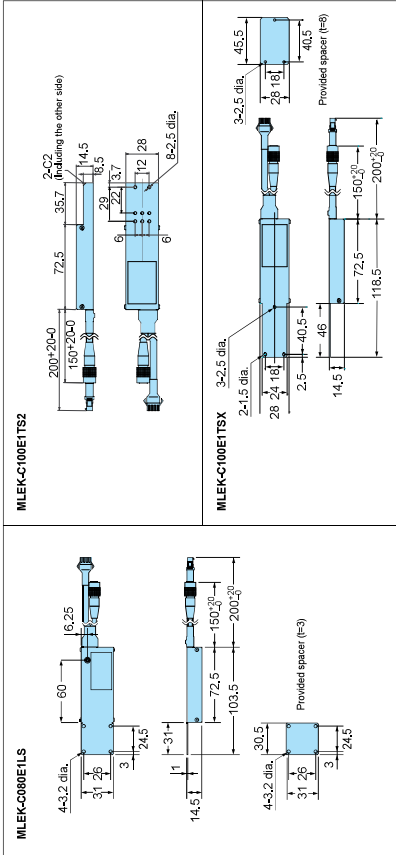
## Ratings and Specifications

The strobe intensity can be manually adjusted.

Model	3Z4S-LT MLEK-C080E1LS (See note 1)	3Z4S-LT MLEK-C100E1TS2	3Z4S-LT MLEK-C100E1TSX
No. of outputs	1-channel output	1-channel output	1-channel output
Output current	0.63 A max. (when using 0.8-A illumination) (See note 2)	1.0 A max. (when using 1.0-A illumination) (See note 2)	1.0 A max. (when using 1.0-A illumination) (See note 2)
Output control method	Constant current control	Constant current control	Constant current control
Output form	Strobe output (synchronized with rising edge trigger)	Strobe output (synchronized with rising edge trigger)	Strobe output (synchronized with rising edge trigger)
Output adjustment function	Manual dial only	External communications setting only (See note 3)	External communications setting only (See note 3)
Variable output range	0 to 100%	0 to 100%	0 to 100%
Strobe emission time	6.3 ms (standard)	Automatically set by FZI Controller	Automatically set by ZFX Controller
Strobe emission delay time	Ton: 30 μs max. (at max. setting) Toff: 10 μs max. (at max. setting)		
Allowable ON duty	100%	100%	100%
Usage environment	Indoor use at a max. altitude of 12,000 m, with no inflammable or corrosive gases present, and no adhesion of foreign matter		
Ambient temperature and humidity	0 to 45°C, 80% up to 31°C and then dropping linearly to 50% at 40°C		
Storage temperature and humidity	-20 to 85°C, 20 to 80% humidity (with no condensation)		
Mounting method	Connected and mounted to F160-S2 or F150-S1 Camera	Connected and mounted to FZS-ZFM Camera	Connected and mounted to ZFX-S/SC Camera
Cooling method	Natural air cooling	Natural air cooling	Natural air cooling
Degree of protection	IP30 (IEC 60529)	IP30 (IEC 60529)	IP30 (IEC 60529)
Weight	Approx. 80 g	Approx. 80 g	Approx. 80 g
Extension Cable (purchased separately)	MLRCB4 (L) (4-pin Extension Cable) (indicate length in the 2 square boxes (L1): 01=1m, 02=2 m, 03=3 m)		

Note 1: Illumination marked with \* in the Connection to Strobe Controller column of the Model Number Legend table can be used.  
 Note 2: Depends on the illumination used.  
 Note 3: Strobe intensity adjustment and variable ranges.

## Dimensions



# Direct Ring Light



### Model Number Legend

3Z4S-LT MDRL-C \* ○ ○ ○  
 Luminescent color (Red=R, Green=G, Blue=B, White=W)  
 Internal diameter of the ring (mm)

### List of Models

Model	Dimension	Luminescent Color	Max. rated current IFM (A)	Weight (g)	Power supply	Connection to strobe controller
MDRL-CR10	A	Red	0.11		080	○
MDRL-CG10	A	Green	0.17	50	080	○
MDRL-CB10	A	Blue	0.17		080	○
MDRL-CW10	A	White	0.17		080	○
MDRL-CR16	B	Red	0.24		080	○
MDRL-CG16	B	Green	0.37	65	080	○
MDRL-CB16	B	Blue	0.37		080	○
MDRL-CW16	B	White	0.37		080	○
MDRL-CR28	C	Red	0.20		080	○
MDRL-CG28	C	Green	0.31	65	080	○
MDRL-CB28	C	Blue	0.31		080	○
MDRL-CW28	C	White	0.31		080	○
MDRL-CR31	D	Red	0.36		080	○
MDRL-CG31	D	Green	0.55	130	080	○
MDRL-CB31	D	Blue	0.55		080	○
MDRL-CW31	D	White	0.55		080	○
MDRL-CR35	E	Red	0.34		080	○
MDRL-CG35	E	Green	0.52	150	080	○
MDRL-CB35	E	Blue	0.52		080	○
MDRL-CW35	E	White	0.52		080	○
MDRL-CR36	F	Red	0.36		080	○
MDRL-CG36	F	Green	0.55	120	080	○
MDRL-CB36	F	Blue	0.55		080	○
MDRL-CW36	F	White	0.55		080	○
MDRL-CR50	G	Red	0.64		080	○
MDRL-CG50	G	Green	0.96	180	230	○
MDRL-CB50	G	Blue	0.96		230	○
MDRL-CW50	G	White	0.96		230	○
MDRL-CR66	H	Red	1.12		230	○
MDRL-CG66	H	Green	1.55	520	230	○
MDRL-CB66	H	Blue	1.55		230	○
MDRL-CW66	H	White	1.55		230	○

\* Production by order

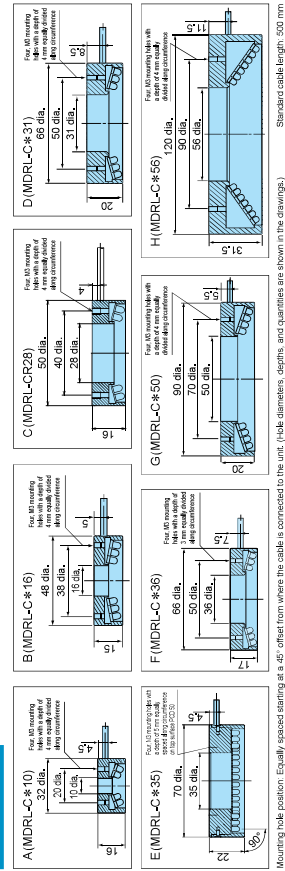
The recommended working distance is 60 mm or larger, and a reflective surface is being illuminated, the working distance can be as long as 200 mm.

### Options

Diffusion and Polarizing plates are available to prevent the vignetting of image.

For detail, see "Adapter: MAD Series" on page 25.

### Dimensions



Mounting hole position: Equally spaced starting at a 45° offset from where the cable is connected to the unit. (Hole diameters, depths, and quantities are shown in the drawings.) Standard cable length: 500 mm

# Low Angle Ring Light



### Model Number Legend

3Z4S-LT MLRL-C \* ○ ○ ○  
 Luminescent color (Red=R, Green=G, Blue=B, White=W)  
 Internal diameter of the ring (mm)

### List of Models

Model	Dimension	Luminescent Color	Max. rated current IFM (A)	Weight (g)	Power supply	Connection to strobe controller
MLRL-CR25	A	Red	0.15		080	○
MLRL-CG25	A	Green	0.24		080	○
MLRL-CB25	A	Blue	0.24	70	080	○
MLRL-CW25	A	White	0.24		080	○
MLRL-CR46	B	Red	0.17		080	○
MLRL-CG46	B	Green	0.27	80	080	○
MLRL-CB46	B	Blue	0.27		080	○
MLRL-CW46	B	White	0.27		080	○
MLRL-CR48	C	Red	0.30		080	○
MLRL-CG48	C	Green	0.47	110	080	○
MLRL-CB48	C	Blue	0.47		080	○
MLRL-CW48	C	White	0.47		080	○
MLRL-CR88	D	Red	0.57		080	○
MLRL-CG88	D	Green	0.61	190	080	○
MLRL-CB88	D	Blue	0.61		080	○
MLRL-CW88	D	White	0.61		080	○
MLRL-CR100	E	Red	0.56		230	○
MLRL-CG100	E	Green	1.03	330	230	○
MLRL-CB100	E	Blue	1.03		230	○
MLRL-CW100	E	White	1.03		230	○

\* Production by order

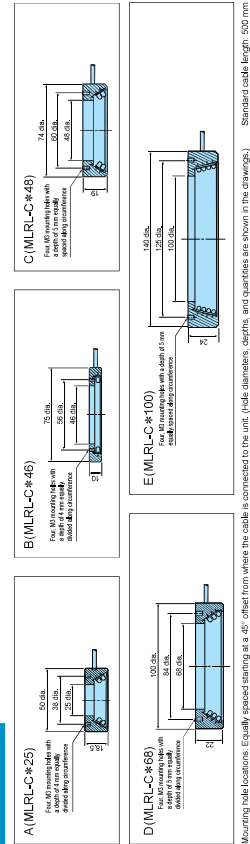
### Options

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

### Diffusion ring



### Dimensions



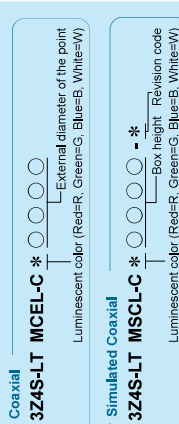
Mounting hole position: Equally spaced starting at a 45° offset from where the cable is connected to the unit. (Hole diameters, depths, and quantities are shown in the drawings.) Standard cable length: 500 mm

# Coaxial Light/Simulated Coaxial Episcopic Light

MCEL Series  
MSCL series



## Model Number Legend



## List of Models

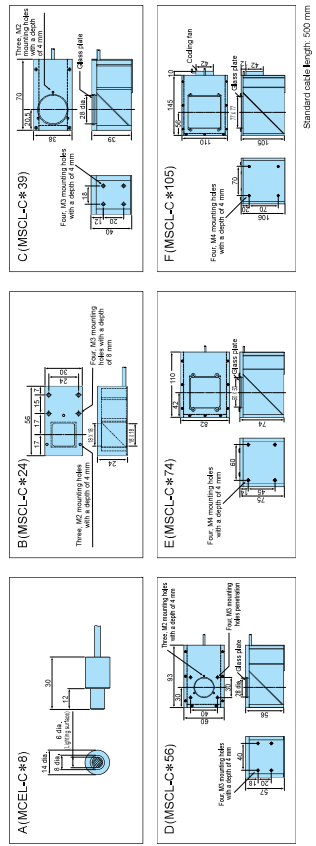
Lineup of Coaxial Light						
Model	Dimension	Luminescent Color	Max. rated current I <sub>FM</sub> (A)	Weight (g)	Power supply	Connection to strobe controller
MCEL-CR8	A	Red	0.04	080	080	X
MCEL-CG8	A	Green	0.03	080	080	X
MCEL-CB8	A	Blue	0.03	080	080	X
MCEL-CW8	A	White	0.03	080	080	X

Lineup of Simulated Coaxial Episcopic Light						
Model	Dimension	Luminescent Color	Max. rated current I <sub>FM</sub> (A)	Weight (g)	Power supply	Connection to strobe controller
MSCL-CR24	B	Red	0.09	080	080	○
* MSCL-CG24	B	Green	0.20	110	080	○
MSCL-CB24	B	Blue	0.20	080	080	○
MSCL-CW24	B	White	0.20	080	080	○
MSCL-CR39	C	Red	0.16	080	080	○
* MSCL-CG39	C	Green	0.31	160	080	○
MSCL-CB39	C	Blue	0.31	080	080	○
MSCL-CW39	C	White	0.31	080	080	○
MSCL-CR46	D	Red	0.23	080	080	○
* MSCL-CG46	D	Green	0.66	320	080	○
MSCL-CB46	D	Blue	0.66	080	080	○
MSCL-CW46	D	White	0.66	080	080	○
MSCL-CR74	E	Red	0.62	080	230	X
* MSCL-CG74	E	Green	1.11	530	230	X
MSCL-CB74	E	Blue	1.11	080	230	X
MSCL-CW74	E	White	1.11	080	230	X
MSCL-CR74-B	F	Red	2.07	920	230	X
* MSCL-CG74-B	F	Green	2.07	920	230	X
MSCL-CB74-B	F	Blue	2.07	920	230	X
MSCL-CW74-B	F	White	2.07	920	230	X

\*Always run the cooling fan to prevent heat buildup.  
 \*Always run the cooling fan to prevent heat buildup. This is in addition to the normal Extension Cable. [Click here for more info.](#)  
 \* Production by order.

## Dimensions

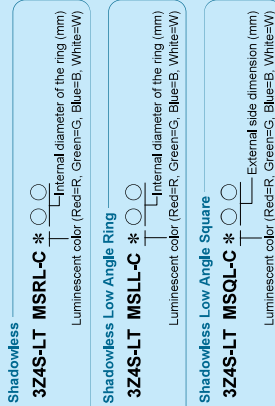


# Shadowless Light

MSRL Series  
MSLL Series  
MSQL Series



## Model Number Legend



## List of Models

Line up of Shadowless						
Model	Dimension	Luminescent Color	Max. rated current I <sub>FM</sub> (A)	Weight (g)	Power supply	Connection to strobe controller
MSRL-CR20	A	Red	0.32	080	080	○
* MSRL-CG20	A	Green	0.50	140	080	○
MSRL-CB20	A	Blue	0.50	080	080	○
MSRL-CW20	A	White	0.50	080	080	○
MSRL-CR33	B	Red	0.45	080	080	○
* MSRL-CG33	B	Green	0.69	210	080	○
MSRL-CB33	B	Blue	0.69	080	080	○
MSRL-CW33	B	White	0.69	080	080	○
MSRL-CR44	C	Red	0.57	080	080	○
* MSRL-CG44	C	Green	0.80	270	080	○
MSRL-CB44	C	Blue	0.80	080	080	○
MSRL-CW44	C	White	0.80	080	080	○

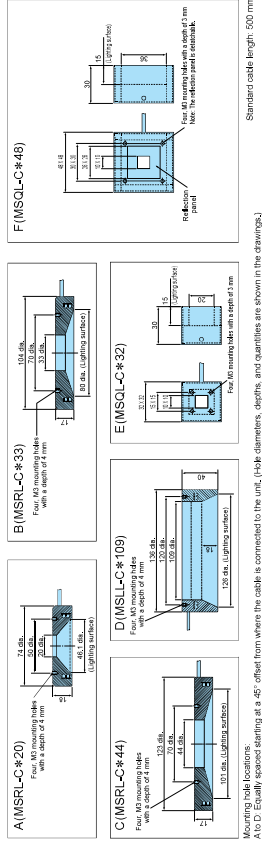
Line up of Shadowless Low Angle Ring						
Model	Dimension	Luminescent Color	Max. rated current I <sub>FM</sub> (A)	Weight (g)	Power supply	Connection to strobe controller
MSLL-CR109	D	Red	0.62	080	080	○
* MSLL-CG109	D	Green	1.10	320	230	X
MSLL-CB109	D	Blue	1.10	080	230	X
MSLL-CW109	D	White	1.10	080	230	X

Line up of Shadowless Low Angle Square						
Model	Dimension	Luminescent Color	Max. rated current I <sub>FM</sub> (A)	Weight (g)	Power supply	Connection to strobe controller
MSQL-CR32	E	Red	0.09	080	080	○
* MSQL-CG32	E	Green	0.14	80	080	○
MSQL-CB32	E	Blue	0.14	080	080	○
MSQL-CW32	E	White	0.14	080	080	○
MSQL-CR46	F	Red	0.13	080	080	○
* MSQL-CG46	F	Green	0.20	120	080	○
MSQL-CB46	F	Blue	0.20	080	080	○
MSQL-CW46	F	White	0.20	080	080	○

\* Production by order.

## Dimensions



# Bar Light/Line Light

MBRL Series  
MLNL Series

## Model Number Legend

MBRL Series  
3Z4S-LT MBRL-C \* ○ ○ ○ ○ ○  
Luminescent color (Red=R, Green=G, Blue=B, White=W)

MLNL Series  
3Z4S-LT MLNL-C \* ○ ○ ○ ○ ○  
Luminescent color (Red=R, Green=G, Blue=B, White=W)



## List of Models

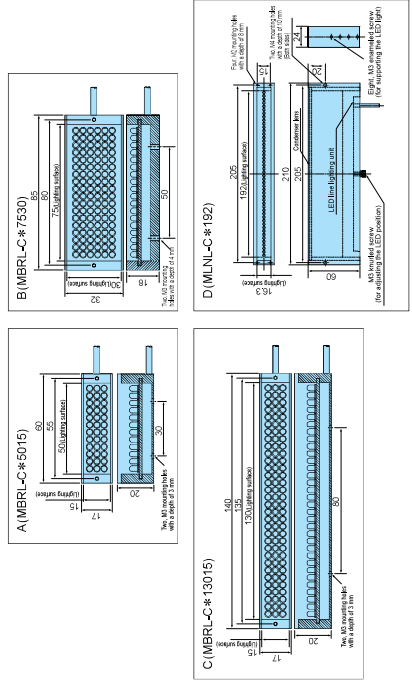
Model	Dimension	Luminescent Color	Max. rated current IFM (A)	Weight (g)	Power supply	Connection to strobe controller
MBRL-CR015	A	Red	0.13		000	○
* MBRL-CG015	A	Green	0.26	50	000	○
MBRL-CB015	A	Blue	0.26		000	○
MBRL-CW015	A	White	0.26		000	○
MBRL-CR750	B	Red	0.36		000	○
* MBRL-CG750	B	Green	0.52	120	000	○
MBRL-CB750	B	Blue	0.52		000	○
MBRL-CW750	B	White	0.52		000	○
MBRL-CR13015	C	Red	0.32		000	○
* MBRL-CG13015	C	Green	0.53	85	000	○
MBRL-CB13015	C	Blue	0.53		000	○
MBRL-CW13015	C	White	0.53		000	○

## Lineup of Bar Light

Model	Dimension	Luminescent Color	Max. rated current IFM (A)	Weight (g)	Power supply	Connection to strobe controller
MLNL-CR192	D	Red	0.18		000	○
* MLNL-CG192	D	Green	0.36	420	000	○
MLNL-CB192	D	Blue	0.36		000	○
MLNL-CW192	D	White	0.36		000	○

\* Production by oyle

## Dimensions



Standard cable length: 500 mm

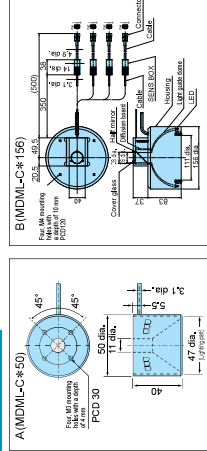
# Dome Light

MDML Series

## Model Number Legend

3Z4S-LT MDML-C \* ○ ○ ○ ○ ○  
Luminescent color (Red=R, Green=G, Blue=B, White=W)

## Dimensions



## List of Models

Model	Dimension	Luminescent Color	Max. rated current IFM (A)	Weight (g)	Power supply	Connection to strobe controller
MDML-CR50	A	Red	0.24		000	○
* MDML-CG50	A	Green	0.37	130	000	○
MDML-CB50	A	Blue	0.37		000	○
MDML-CW50	A	White	0.37		000	○
MDML-CR156	B	Red	1.16		230	X
* MDML-CG156	B	Green	1.46	1800	230	X
MDML-CB156	B	Blue	1.46		230	X
MDML-CW156	B	White	1.46		230	X

\* Production by oyle

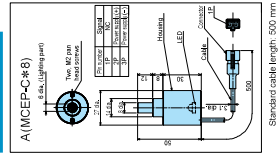
# High-powered Spot LED Light

MCEP Series

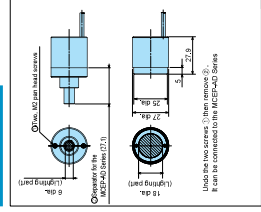
## Model Number Legend

3Z4S-LT MCEP-C \* 8  
Luminescent color (Red=R, Green=G, Blue=B, White=W)

## Dimensions



## Removing the Point Rod



## List of Models

Model	Dimension	Dominant wavelength	Color temperature	Max. rated current IFM (A)	Weight (g)	Connection to strobe controller
MCEP-CR8	A	Red	620.5~645nm	0.35		X
MCEP-CG8	A	Green	525~535nm	0.35	50	X
MCEP-CB8	A	Blue	470~480nm	0.35		X
MCEP-CW8	A	White	All	5000~6000K	0.35	X

\* The dominant wavelength/visible color according to IEC color coordinates. There are differences in the illuminated spot for the same model number. Weights of these LEDs. Colors may appear to be different even for the same model number.

# IR Light

- MDRL Series
- MSRL Series
- MBRL Series
- MDBL Series

## Model Number Legend

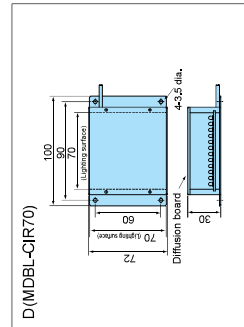
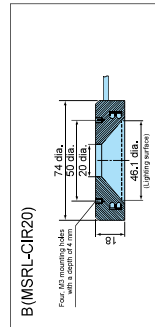
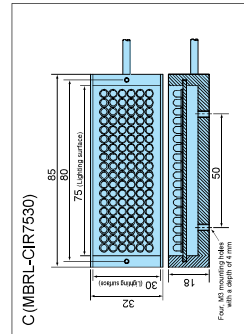
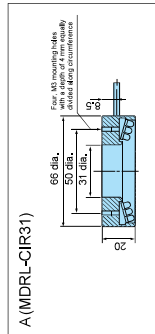


## List of Models

Model	Dimension	Luminiscent Color	Max. rated current (PM (A))	Weight (g)	Power supply	Connection to strobe controller
MDRL-CIR31	A	Infrared	0.42	130	080	○
MSRL-CIR20	B	Infrared	0.36	140	080	○
MBRL-CIR750	C	Infrared	0.40	120	080	○
MDBL-CIR70	D	Infrared	0.53	160	080	○

\*The dominant wavelength of visible color according to CIE color coordinates. There are differences in the luminiscent color for the dominant wavelengths of these LEDs. Colors may appear to be different even for the same model number.

## Dimensions

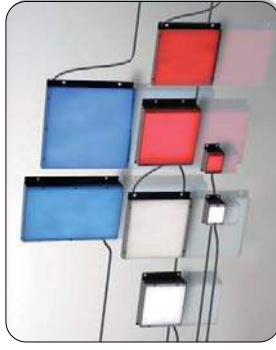
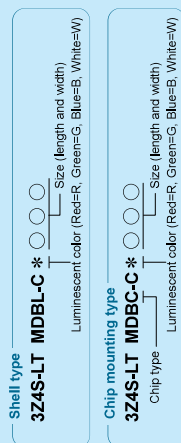


Mounting hole locations:  
 A and B: Equally spaced starting at a 4.5° offset from where the cable is connected to the unit. (Hole diameters, depths, and quantities are shown in the drawings.)  
 C: Arranged around the center of the mounting surface.

# Direct Backlight

- MDBL Series
- MDBC Series

## Model Number Legend



## List of Models

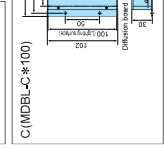
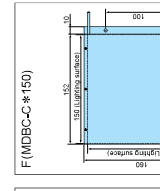
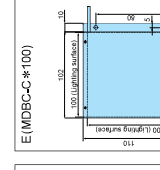
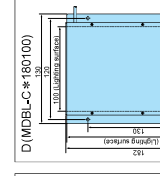
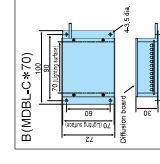
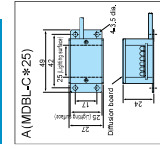
### Lineup of Shell type

Model	Dimension	Luminiscent Color	Max. rated current (PM (A))	Weight (g)	Power supply	Connection to strobe controller
MDBL-CR25	A	Red	0.14		080	○
* MDBL-CG25	A	Green	0.27	60	080	○
MDBL-CB25	A	Blue	0.27		080	○
MDBL-CW25	A	White	0.27		080	○
MDBL-CR70	B	Red	0.48		230	×
* MDBL-CG70	B	Green	0.96	160	230	×
MDBL-CB70	B	Blue	0.96		230	×
MDBL-CW70	B	White	0.96		230	×
MDBL-CR100	C	Red	1.43		230	×
* MDBL-CG100	C	Green	1.55	290	230	×
MDBL-CB100	C	Blue	1.55		230	×
MDBL-CW100	C	White	1.55		230	×
MDBL-CR180	D	Red	2.30		230	×
* MDBL-CG180	D	Green	2.30	520	230	×
MDBL-CB180	D	Blue	2.30		230	×
MDBL-CW180	D	White	2.30		230	×

### Lineup of Chip mounting type

Model	Dimension	Luminiscent Color	Max. rated current (PM (A))	Weight (g)	Power supply	Connection to strobe controller
MDBC-CR70	E	Red	0.81		230	×
* MDBC-CG70	E	Green	0.95	170	230	×
MDBC-CB70	E	Blue	0.95		230	×
MDBC-CW70	E	White	0.95		230	×
MDBC-CR150	F	Red	0.99		230	×
* MDBC-CG150	F	Green	2.14	310	230	×
MDBC-CB150	F	Blue	2.14		230	×
MDBC-CW150	F	White	2.14		230	×

## Dimensions



Standard cable length: 500 mm

# Edge-type Backlight

## Model Number Legend

3Z4S-LT MEBL-C \* ○ ○ ○ ○ ○

Size (length and width)  
Luminiscent color (Red=R, Green=G, Blue=B, White=W)

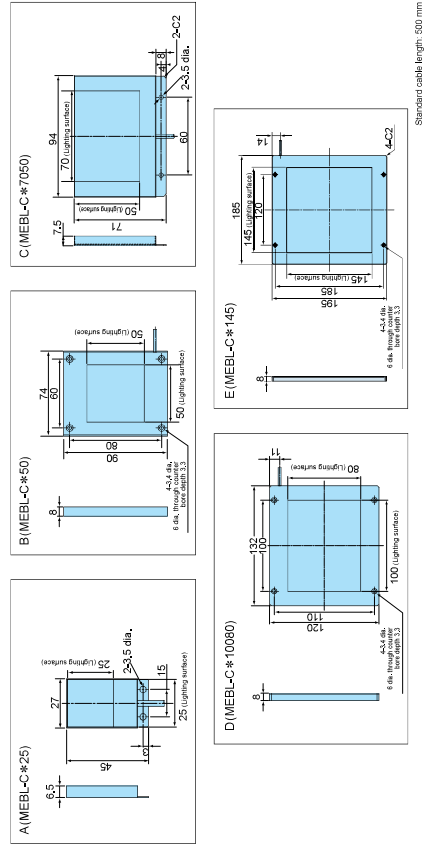


## List of Models

Model	Dimension	Luminiscent Color	Max. rated current (F/M) (A)	Weight (g)	Power supply	Connection to strobe controller
MEBL-CR25	A	Red	0.03	090	090	○
* MEBL-CG25	A	Green	0.04	090	090	○
MEBL-CB25	A	Blue	0.04	090	090	○
MEBL-CW25	A	White	0.04	090	090	○
MEBL-CR50	B	Red	0.17	090	090	○
* MEBL-CG50	B	Green	0.29	090	090	○
MEBL-CB50	B	Blue	0.29	090	090	○
MEBL-CW50	B	White	0.29	090	090	○
MEBL-CR100	C	Red	0.15	090	090	○
* MEBL-CG100	C	Green	0.25	090	090	○
MEBL-CB100	C	Blue	0.25	090	090	○
MEBL-CW100	C	White	0.25	090	090	○
MEBL-CR150	D	Red	0.32	090	090	○
* MEBL-CG150	D	Green	0.57	090	090	○
MEBL-CB150	D	Blue	0.57	090	090	○
MEBL-CW150	D	White	0.57	090	090	○
MEBL-CR145	E	Red	0.45	090	090	○
* MEBL-CG145	E	Green	0.8	090	090	○
MEBL-CB145	E	Blue	0.8	090	090	○
MEBL-CW145	E	White	0.8	090	090	○

\* Production by order

## Dimensions

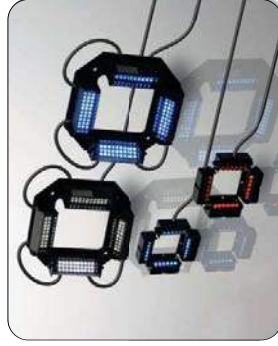


# Square Oblique Light

## Model Number Legend

3Z4S-LT MDQL-C \* ○ ○ ○ ○ ○

External size  
Luminiscent color (Red=R, Green=G, Blue=B, White=W)

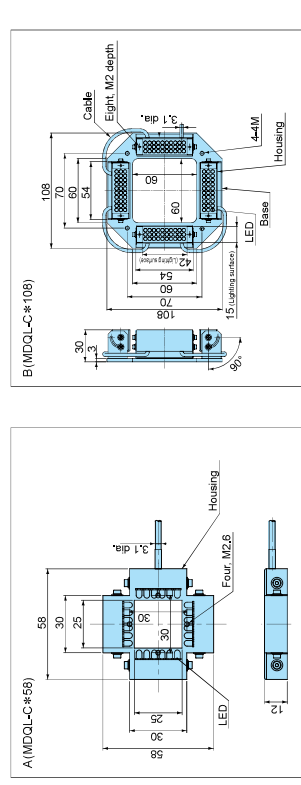


## List of Models

Model	Dimension	Luminiscent Color	Max. rated current (F/M) (A)	Weight (g)	Power supply	Connection to strobe controller
MDQL-CR88	A	Red	0.09	090	090	○
* MDQL-CG88	A	Green	0.17	95	090	○
MDQL-CB88	A	Blue	0.17	95	090	○
MDQL-CW88	A	White	0.17	95	090	○
MDQL-CR108	B	Red	0.42	090	090	○
* MDQL-CG108	B	Green	0.64	210	230	X
MDQL-CB108	B	Blue	0.64	210	230	X
MDQL-CW108	B	White	0.64	210	230	X

\* Production by order

## Dimensions







# CCTV Lens

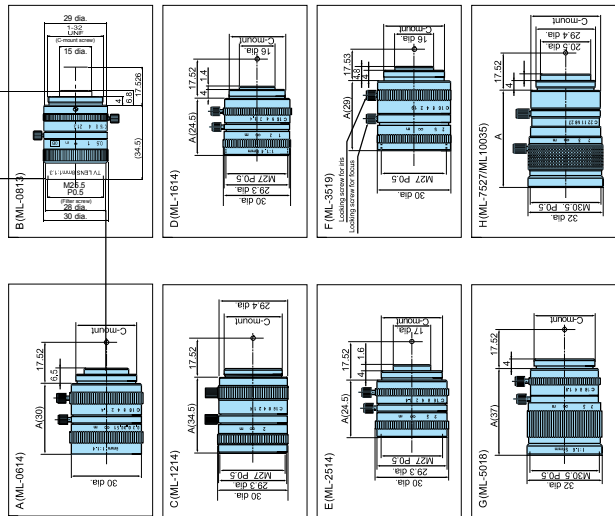
ML Series



## List of Models

Model	Dimension	Focal distance (mm)	F-number (F No.)	Field of view (V x H)	Closest distance (m)	Filter screw	Weight (g)	Total length (mm)	Maximum diameter (mm)	Camera Mount
3Z4S-LE ML-0614	A	6	F1.4 - Close	42.3° x 54.6°	0.2	M27 P0.5	60	34.5	30	1/2 inch
3Z4S-LE ML-0613	B	8	F1.3 - Close	45.0° x 57.6°	0.3	M25.5 P0.5	60	34.5	30	2/3 inch
3Z4S-LE ML-1214	C	12	F1.4 - Close	21.9° x 29.0°	0.3	M27 P0.5	40	24.5	22	1 inch
3Z4S-LE ML-1214	D	15	F1.4 - Close	23.0° x 30.4°	0.4	M27 P0.5	45	24.5	22	1 inch
3Z4S-LE ML-2514	E	25	F1.8 - Close	21.8° x 28.5°	0.5	M27 P0.5	60	32	30	2/3 inch
3Z4S-LE ML-3519	F	35	F1.8 - Close	10.8° x 14.4°	1	M25.5 P0.5	65	43.5	43.5	2/3 inch
3Z4S-LE ML-5018	G	50	F2.7 - Close	7.9° x 10.5°	1	M25.5 P0.5	65	43.5	43.5	2/3 inch
3Z4S-LE ML-7527	H	75	F3.5 - Close	3.9° x 5.1°	1	M25.5 P0.5	65	43.5	43.5	2/3 inch
3Z4S-LE ML-10035	H	100	F3.5 - Close	3.9° x 5.1°	1	M25.5 P0.5	65	43.5	43.5	2/3 inch

## Dimensions



# CCTV Lens Option

ML Series

## Polarizing Filter

Model	Length (mm)
3Z4S-LE ML-PZ70	70
3Z4S-LE ML-PZ25	25
3Z4S-LE ML-PZ35	35

## Close-up Ring

Model	Length (mm)
3Z4S-LE ML-EXR*	70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590, 610, 630, 650, 670, 690, 710, 730, 750, 770, 790, 810, 830, 850, 870, 890, 910, 930, 950, 970, 990, 1010, 1030, 1050, 1070, 1090, 1110, 1130, 1150, 1170, 1190, 1210, 1230, 1250, 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610, 1630, 1650, 1670, 1690, 1710, 1730, 1750, 1770, 1790, 1810, 1830, 1850, 1870, 1890, 1910, 1930, 1950, 1970, 1990, 2010, 2030, 2050, 2070, 2090, 2110, 2130, 2150, 2170, 2190, 2210, 2230, 2250, 2270, 2290, 2310, 2330, 2350, 2370, 2390, 2410, 2430, 2450, 2470, 2490, 2510, 2530, 2550, 2570, 2590, 2610, 2630, 2650, 2670, 2690, 2710, 2730, 2750, 2770, 2790, 2810, 2830, 2850, 2870, 2890, 2910, 2930, 2950, 2970, 2990, 3010, 3030, 3050, 3070, 3090, 3110, 3130, 3150, 3170, 3190, 3210, 3230, 3250, 3270, 3290, 3310, 3330, 3350, 3370, 3390, 3410, 3430, 3450, 3470, 3490, 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# New Power Supplies for MCEP/MSPP Series

These constant-current power supplies are designed specifically for the MCEP Series of High-power LED Spot Lights and MSPP Series of LED Spot Lights.

## NEW MLEP Series

### Model Number Legend

**3Z4SLT MLEP-A \*\*\*W\*LR\* - \*\*V**  
 Maximum output current      AC type  
 Output channel      Digital type(D)



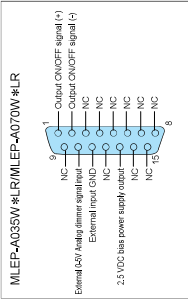
## NEW MLEP Analog Series

Models are available with an analog light adjustment and for either one or three channels. A wide voltage input (100 to 240 VAC) is supported, along with CE Marking.

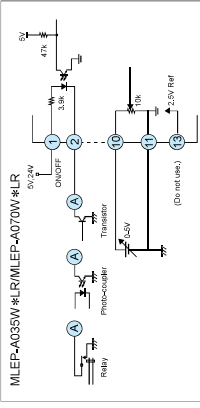
### Ratings and Specifications

Model	MLEP-A035W1LR-100V	MLEP-A035W1LR-200V	MLEP-A035W3LR-100V	MLEP-A035W3LR-200V	MLEP-A070W1LR-100V	MLEP-A070W1LR-200V	MLEP-A070W3LR-100V	MLEP-A070W3LR-200V
AC Type	100V	200V	100V	200V	100V	200V	100V	200V
Output	Single-channel out put max.350 mA	Single-channel out put max.350 mA	3-channel out put for each channel max.350 mA	3-channel out put for each channel max.350 mA	Single-channel out put max.700 mA	Single-channel out put max.700 mA	3-channel out put for each channel max.700 mA	3-channel out put for each channel max.700 mA
Dimension	A							
Input voltage	100~240V AC 50/60Hz							
Input current	0.35 (0.35A (at AC 100/240V))							
Surge current	20A or lower (at 100V AC) 40A or lower (at 240V AC)							
Operating temperature	0 to +45°C							
Output system	Continuous DC output							
Output control system	Constant current control (the current can be changed)							
External light control	Supported (0 to 5V)							
Lighting on/off function	Supported (photocoupler insulation)							
Cooling system	Natural air cooling							
Installation	Horizontal installation on the rubber supports at the bottom of the unit							
Weight	Approximately 0.3kg							

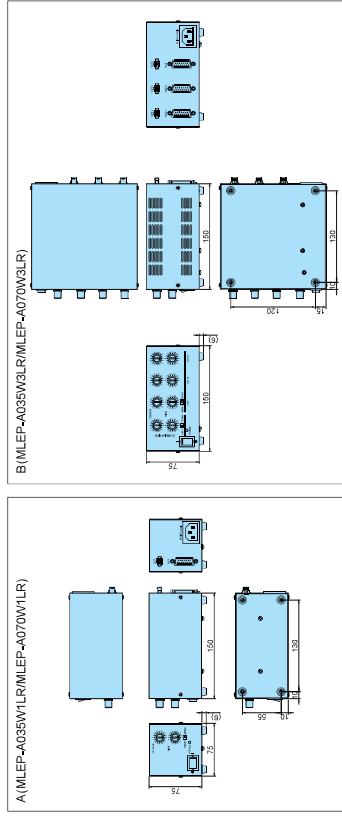
### Connection Specifications



### I/O Circuit Diagrams



### Dimensions



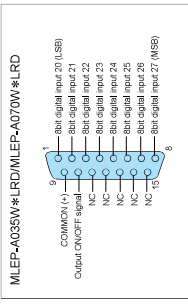
## NEW MLEP Digital Series

Models are available with a digital light adjustment and for either one or three channels. A wide voltage input (100 to 240 VAC) is supported, along with CE Marking.

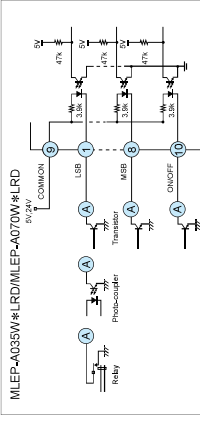
### Ratings and Specifications

Model	MLEP-A035W1LRD-100V	MLEP-A035W1LRD-200V	MLEP-A070W1LRD-100V	MLEP-A070W1LRD-200V	MLEP-A035W3LRD-100V	MLEP-A035W3LRD-200V	MLEP-A070W3LRD-100V	MLEP-A070W3LRD-200V
AC Type	100V	200V	100V	200V	100V	200V	100V	200V
Output	Single-channel out put max.350 mA	Single-channel out put max.350 mA	Single-channel out put max.700 mA	Single-channel out put max.700 mA	3-channel out put for each channel max.350 mA	3-channel out put for each channel max.350 mA	3-channel out put for each channel max.700 mA	3-channel out put for each channel max.700 mA
Dimension	A							
Input voltage	100~240V AC 50/60Hz							
Input current	0.35 (0.35A (at AC 100/240V))							
Surge current	20A or lower (at 100V AC) 40A or lower (at 240V AC)							
Operating temperature	0 to +45°C							
Output system	Continuous DC output							
Output control system	Constant current control (the current can be changed)							
External light control	Supported (8bit digital)							
Lighting on/off function	Supported (photocoupler insulation)							
Cooling system	Natural air cooling							
Installation	Horizontal installation on the rubber supports at the bottom of the unit							
Weight	Approximately 0.8kg							

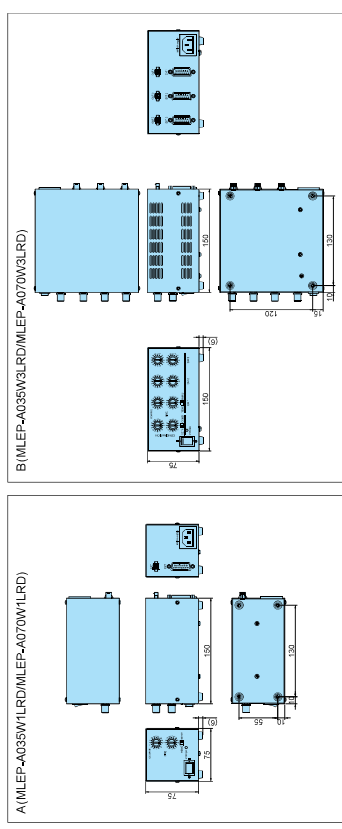
### Connection Specifications



### I/O Circuit Diagrams



### Dimensions





Model Number Legend

3Z4S-LT MLEK-A \*\*\*W\*\*LR\* - \*\*V

- AC type
- Output channel
- Digital type (D)
- Maximum output current

# New Power Supplies for MG-Wave Series

These new power supplies are designed specifically for MG-Wave Constant-current LED Lights (except for the MCEP Series). Even when combining with an LED Light from the broad lineup and possible applications, you can select the ideal Constant-current Power Supply for the required current consumption. The Power Supplies suppress heat generation and will make the most of the characteristics of any of the LED Light. External output controls and other features are also provided.

## A080/230W Analog Series (Total current: 0.8 A or 2.3 A)

Models are available with an analog light adjustment and for either one or two channels. A wide voltage input (100 to 240 VAC) is supported, along with CE Marking, Ratings and Specifications

Model	MLEK-A080W1LR-100V	MLEK-A080W2LR-100V	MLEK-A080W2LR-200V	MLEK-A080W2LR-200V
AC Type	100V	100V	200V	200V
Output	Single-channel output of 0.8A (for connection to all lights except the MCEP Series)	Two-channel maximum output of 0.8A for each channel (for connection to all lights except the MCEP Series)	Two-channel maximum output of 0.8A for each channel (for connection to all lights except the MCEP Series)	Two-channel maximum output of 0.8A for each channel (for connection to all lights except the MCEP Series)
Input voltage	100~240V AC 50/60Hz	100~240V AC 50/60Hz	100~240V AC 50/60Hz	100~240V AC 50/60Hz
Dimension	A B			
Input current	0.3 / 0.15A (at AC 100/240V)	0.3 / 0.15A (at AC 100/240V)	0.3 / 0.15A (at AC 100/240V)	0.3 / 0.15A (at AC 100/240V)
Surge current	15A or lower (at 100V AC) 35A or lower (at 240V AC)	15A or lower (at 100V AC) 35A or lower (at 240V AC)	15A or lower (at 100V AC) 35A or lower (at 240V AC)	15A or lower (at 100V AC) 35A or lower (at 240V AC)
Operating temperature	0 to +45°C	0 to +45°C	0 to +45°C	0 to +45°C
Output system	Continuous DC output	Continuous DC output	Continuous DC output	Continuous DC output
Output control system	Constant current control (the current can be changed)	Constant current control (the current can be changed)	Constant current control (the current can be changed)	Constant current control (the current can be changed)
External light control	Supported (photoconductor insulation)	Supported (photoconductor insulation)	Supported (0 to 5V)	Supported (photoconductor insulation)
Error output	Supported (photoconductor insulation, control error)	Supported (photoconductor insulation, control error)	Supported (photoconductor insulation, control error)	Supported (photoconductor insulation, control error)
Cooling system	Natural air cooling	Natural air cooling	Natural air cooling	Natural air cooling
Installation	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit
Weight	Approximately 1.1kg	Approximately 1.3kg	Approximately 1.1kg	Approximately 1.3kg

## A080/230W Digital Series (Total current: 0.8 A or 2.3 A)

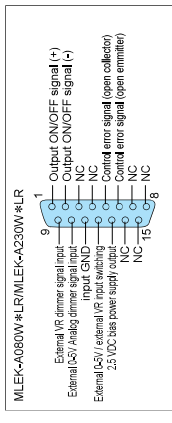
Models are available with a digital light adjustment and for either one or two channels. A wide voltage input (100 to 240 VAC) is supported, along with CE Marking, Ratings and Specifications

Model	MLEK-A080W1LRD-100V	MLEK-A080W2LRD-100V	MLEK-A080W2LRD-200V	MLEK-A080W2LRD-200V
AC Type	100V	100V	200V	200V
Output	Single-channel output of 0.8A (for connection to all lights except the MCEP Series)	Two-channel maximum output of 0.8A for each channel (for connection to all lights except the MCEP Series)	Two-channel maximum output of 0.8A for each channel (for connection to all lights except the MCEP Series)	Two-channel maximum output of 0.8A for each channel (for connection to all lights except the MCEP Series)
Input voltage	100~240V AC 50/60Hz	100~240V AC 50/60Hz	100~240V AC 50/60Hz	100~240V AC 50/60Hz
Dimension	A B			
Input current	0.3 / 0.15A (at AC 100/240V)	0.3 / 0.15A (at AC 100/240V)	0.3 / 0.15A (at AC 100/240V)	0.3 / 0.15A (at AC 100/240V)
Surge current	15A or lower (at 100V AC) 35A or lower (at 240V AC)	15A or lower (at 100V AC) 35A or lower (at 240V AC)	15A or lower (at 100V AC) 35A or lower (at 240V AC)	15A or lower (at 100V AC) 35A or lower (at 240V AC)
Operating temperature	0 to +45°C	0 to +45°C	0 to +45°C	0 to +45°C
Output system	Continuous DC output	Continuous DC output	Continuous DC output	Continuous DC output
Output control system	Constant current control (the current can be changed)	Constant current control (the current can be changed)	Constant current control (the current can be changed)	Constant current control (the current can be changed)
External light control	Supported (photoconductor insulation)	Supported (photoconductor insulation)	Supported (photoconductor insulation)	Supported (photoconductor insulation)
Error output	Supported (photoconductor insulation, control error)	Supported (photoconductor insulation, control error)	Supported (photoconductor insulation, control error)	Supported (photoconductor insulation, control error)
Cooling system	Natural air cooling	Natural air cooling	Natural air cooling	Natural air cooling
Installation	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit
Weight	Approximately 1.1kg	Approximately 1.3kg	Approximately 1.1kg	Approximately 1.3kg

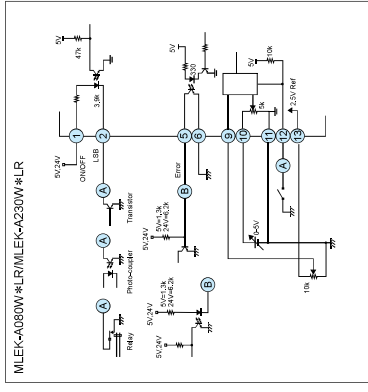
Model	MLEK-A230W1LR-100V	MLEK-A230W2LR-100V	MLEK-A230W2LR-200V	MLEK-A230W2LR-200V
AC Type	100V	100V	200V	200V
Output	Single-channel output of 2.3A (for connection to all lights except the MCEP Series)	Two-channel maximum output of 2.3A for each channel (for connection to all lights except the MCEP Series)	Two-channel maximum output of 2.3A for each channel (for connection to all lights except the MCEP Series)	Two-channel maximum output of 2.3A for each channel (for connection to all lights except the MCEP Series)
Input voltage	100~240V AC 50/60Hz	100~240V AC 50/60Hz	100~240V AC 50/60Hz	100~240V AC 50/60Hz
Dimension	A B			
Input current	0.7 / 0.4A (at AC 100/240V)	0.7 / 0.4A (at AC 100/240V)	0.7 / 0.4A (at AC 100/240V)	0.7 / 0.4A (at AC 100/240V)
Surge current	15A or lower (at 100V AC) 35A or lower (at 240V AC)	15A or lower (at 100V AC) 35A or lower (at 240V AC)	15A or lower (at 100V AC) 35A or lower (at 240V AC)	15A or lower (at 100V AC) 35A or lower (at 240V AC)
Operating temperature	0 to +45°C	0 to +45°C	0 to +45°C	0 to +45°C
Output system	Continuous DC output	Continuous DC output	Continuous DC output	Continuous DC output
Output control system	Constant current control (the current can be changed)	Constant current control (the current can be changed)	Constant current control (the current can be changed)	Constant current control (the current can be changed)
External light control	Supported (0 to 5V dimmer signal / External VR input)	Supported (0 to 5V dimmer signal / External VR input)	Supported (0 to 5V dimmer signal / External VR input)	Supported (0 to 5V dimmer signal / External VR input)
Lighting on/off function	Supported (photoconductor insulation)	Supported (photoconductor insulation)	Supported (photoconductor insulation)	Supported (photoconductor insulation)
Error output	Supported (photoconductor insulation, control error)	Supported (photoconductor insulation, control error)	Supported (photoconductor insulation, control error)	Supported (photoconductor insulation, control error)
Cooling system	Natural air cooling	Natural air cooling	Natural air cooling	Natural air cooling
Installation	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit
Weight	Approximately 1.1kg	Approximately 1.4kg	Approximately 1.1kg	Approximately 1.4kg

Model	MLEK-A230W1LRD-100V	MLEK-A230W2LRD-100V	MLEK-A230W2LRD-200V	MLEK-A230W2LRD-200V
AC Type	100V	100V	200V	200V
Output	Single-channel output of 2.3A (for connection to all lights except the MCEP Series)	Two-channel maximum output of 2.3A for each channel (for connection to all lights except the MCEP Series)	Two-channel maximum output of 2.3A for each channel (for connection to all lights except the MCEP Series)	Two-channel maximum output of 2.3A for each channel (for connection to all lights except the MCEP Series)
Input voltage	100~240V AC 50/60Hz	100~240V AC 50/60Hz	100~240V AC 50/60Hz	100~240V AC 50/60Hz
Dimension	A B			
Input current	0.7 / 0.4A (at AC 100/240V)	0.7 / 0.4A (at AC 100/240V)	0.7 / 0.4A (at AC 100/240V)	0.7 / 0.4A (at AC 100/240V)
Surge current	15A or lower (at 100V AC) 35A or lower (at 240V AC)	15A or lower (at 100V AC) 35A or lower (at 240V AC)	15A or lower (at 100V AC) 35A or lower (at 240V AC)	15A or lower (at 100V AC) 35A or lower (at 240V AC)
Operating temperature	0 to +45°C	0 to +45°C	0 to +45°C	0 to +45°C
Output system	Continuous DC output	Continuous DC output	Continuous DC output	Continuous DC output
Output control system	Constant current control (the current can be changed)	Constant current control (the current can be changed)	Constant current control (the current can be changed)	Constant current control (the current can be changed)
External light control	Supported (0 to 5V dimmer signal / External VR input)	Supported (0 to 5V dimmer signal / External VR input)	Supported (0 to 5V dimmer signal / External VR input)	Supported (0 to 5V dimmer signal / External VR input)
Lighting on/off function	Supported (photoconductor insulation)	Supported (photoconductor insulation)	Supported (photoconductor insulation)	Supported (photoconductor insulation)
Error output	Supported (photoconductor insulation, control error)	Supported (photoconductor insulation, control error)	Supported (photoconductor insulation, control error)	Supported (photoconductor insulation, control error)
Cooling system	Natural air cooling	Natural air cooling	Natural air cooling	Natural air cooling
Installation	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit
Weight	Approximately 1.1kg	Approximately 1.4kg	Approximately 1.1kg	Approximately 1.4kg

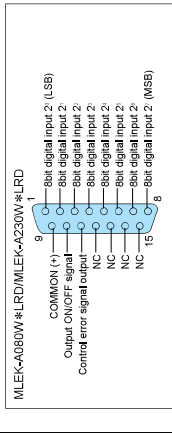
### Connection Specifications



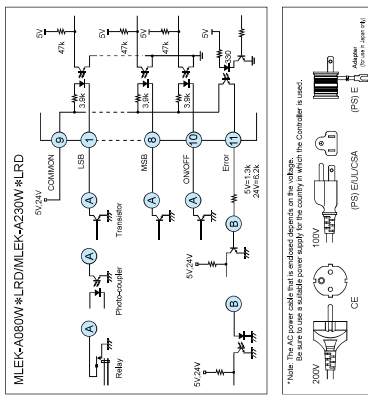
### I/O Circuit Diagrams



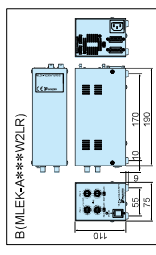
### Connection Specifications



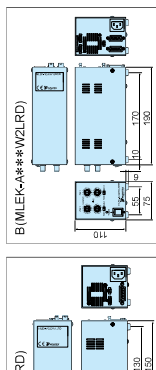
### I/O Circuit Diagrams



### Dimensions



### Dimensions



Model Number Legend Multichannel series

3Z4S-LT MLEK-D770W4LRD-\*\*\*V  
AC type



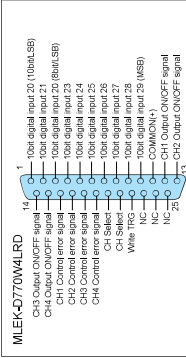
Models are available with a digital light adjustment and for four channels. A wide voltage input (100 to 240 VAC) is supported, along with RoHS compliance. The digital light adjustment provides the previous 6-bit, 256-step control and a new 10-bit, 1,024-step control. \*CE Marking.

Multichannel series

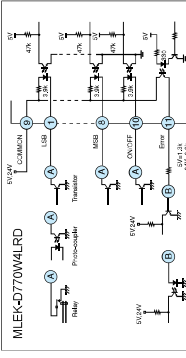
Ratings and Specifications

Model	MLEK-D770W4LRD-100V	MLEK-D770W4LRD-200V
AC Type	100V	200V
Output	4-channel output Total max. 77A (CH1~ CH4 max. 23A CH max. 33A) (for connection to MCEP Series)	4-channel output Total max. 77A (CH1~ CH4 max. 23A CH max. 33A) (for connection to MCEP Series)
Input voltage	100~240V AC 50/60Hz	100~240V AC 50/60Hz
Dimension	A	A
Input current	1.708 A (at AC)	1.708 A (at AC)
Surge current	18A or lower (at 100V AC)	18A or lower (at 230V AC)
Operating temperature	0 to +45°C	0 to +45°C
Output system	Continuous DC output	Continuous DC output
Output control system	Constant current control (the current can be changed)	Constant current control (the current can be changed)
External light control	Supported (for each channel, bit digital or 10 bit digital)	Supported (for each channel, bit digital or 10 bit digital)
Lighting on/off function	Supported (photocoupler insulation, control error)	Supported (photocoupler insulation, control error)
Error output	Supported (photocoupler insulation, control error)	Supported (photocoupler insulation, control error)
Cooling system	Forcible air cooling	Forcible air cooling
Installation	Horizontal installation on the rubber supports at the bottom of the unit	Horizontal installation on the rubber supports at the bottom of the unit
Weight	Approximate/2kg	Approximate/2kg

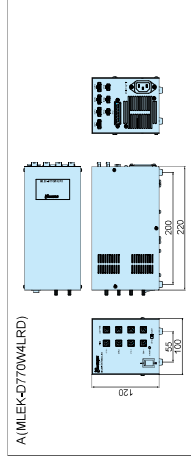
Connection Specifications



I/O Circuit Diagrams



Dimensions



Optional Accessories

\*When ordering, provide the specific model number after "SZ4S-LT" (example: SZ4S-LT, MDF-DR10).

Options for lights

The following optional accessories are available to improve the functionality of the lighting devices.

Diffusion plate:MDF Series

The MDF series features a diffusion plate that increases the light diffusion and reduces reflection and glare from the element.

Model	Product type	Compatible light models
MDF-DR108	Square oblique light diffusion plate	MDFL-CR(CG,GB,OW) for 108_4 pieces/set
MDF-DR10	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 10
MDF-DR16	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 16
MDF-DR28	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 28
MDF-DR31	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 31
MDF-DR50	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 50
MDF-DR56	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 56
MDF-DR25	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 25
MDF-DR48	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 48
MDF-DR88	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 88
MDF-DR100	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 100
MDF-DR1016	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 1016
MDF-DR7500	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 7500
MDF-DR13015	Diffusion plate for directing lights	MDFL-CR(CG,GB,OW) for 13015

An asterisk (\*) in "compatible light models" refers to any LED color (R,G,B or W) of the light.

Polarizing plate:MPL Series

The MPL series polarizing plates are attached to LEDs to reduce unwanted glare and reflection during image processing.

Model	Product type	Compatible light models
MPL-DR108	Square oblique light polarizing plate	MDFL-CR(CG,GB,OW) for 108_4 pieces/set
MPL-DR56	Simulated coaxial light polarizing plate	MDFL-CR(CG,GB,OW) for 56
MPL-DR74	Simulated coaxial light polarizing plate	MDFL-CR(CG,GB,OW) for 74
MPL-DR105	Simulated coaxial light polarizing plate	MDFL-CR(CG,GB,OW) for 105
MPL-DR108	Polarizing plate for directing lights	MDFL-CR(CG,GB,OW) for 108
MPL-DR16	Polarizing plate for directing lights	MDFL-CR(CG,GB,OW) for 16
MPL-DR28	Polarizing plate for directing lights	MDFL-CR(CG,GB,OW) for 28
MPL-DR31	Polarizing plate for directing lights	MDFL-CR(CG,GB,OW) for 31
MPL-DR50	Polarizing plate for directing lights	MDFL-CR(CG,GB,OW) for 50
MPL-DR56	Polarizing plate for directing lights	MDFL-CR(CG,GB,OW) for 56
MPL-DR25	Polarizing plate for directing lights	MDFL-CR(CG,GB,OW) for 25
MPL-DR48	Polarizing plate for directing lights	MDFL-CR(CG,GB,OW) for 48
MPL-DR100	Polarizing plate for directing lights	MDFL-CR(CG,GB,OW) for 100
MPL-DR1016	Polarizing plate for directing lights	MDFL-CR(CG,GB,OW) for 1016
MPL-DR7500	Polarizing plate for directing lights	MDFL-CR(CG,GB,OW) for 7500
MPL-DR13015	Polarizing plate for directing lights	MDFL-CR(CG,GB,OW) for 13015

An asterisk (\*) in "compatible light models" refers to any LED color (R,G,B or W) of the light.

Adapter : MAD Series

The MAD series is essential when a diffusion or polarizing plate is attached to a ring light.

Model	Product type	Compatible light models
MAD-DR10	Plate attachment adapter for directing lights	MDFL-CR(CG,GB,OW) for 10
MAD-DR16	Plate attachment adapter for directing lights	MDFL-CR(CG,GB,OW) for 16
MAD-DR28	Plate attachment adapter for directing lights	MDFL-CR(CG,GB,OW) for 28
MAD-DR31	Plate attachment adapter for directing lights	MDFL-CR(CG,GB,OW) for 31
MAD-DR50	Plate attachment adapter for directing lights	MDFL-CR(CG,GB,OW) for 50
MAD-DR56	Plate attachment adapter for directing lights	MDFL-CR(CG,GB,OW) for 56

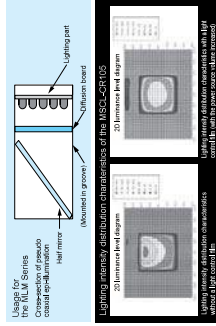
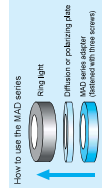
An asterisk (\*) in "compatible light models" refers to any LED color (R,G,B or W) of the light.

Light control film : MLM Series

The MLM series are resin films that transform diffused light into near-parallel light. Attached to a simulated coaxial light, it makes the light distribution pattern smoother.

Model	Product type	Compatible light models
MLM-DR56	Light control film for simulated coaxial lights	MDFL-CR(CG,GB,OW) for 56
MLM-DR74	Light control film for simulated coaxial lights	MDFL-CR(CG,GB,OW) for 74
MLM-DR105	Light control film for simulated coaxial lights	MDFL-CR(CG,GB,OW) for 105

An asterisk (\*) in "compatible light models" refers to any LED color (R,G,B or W) of the light.



- Options for bridging lights with lenses
- The following optional adapters are designed to be used with Moritex's lenses.



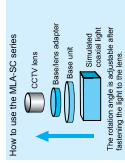
## Simulated Coaxial Light/CCTV Lens Adapter: MLA-SC Series

The MLA-SC Series enables small simulated coaxial lights to be mounted at the end of CCTV lenses.

Model	Product type	Compatible light models
MLA-SCB5	Mount base for simulated coaxial lights	MSCL-C24/30/35
MLA-SCM25	Base/lens adapter for simulated coaxial lights	M25.F0.5 lens
MLA-SCM70	Base/lens adapter for simulated coaxial lights	M27.F0.5 lens
MLA-SCM05	Base/lens adapter for simulated coaxial lights	M30.F0.5 lens

An asterisk (\*) in "compatible light models" refers to any LED color (R,G,B or W) of the light.

\*Do not apply any unnecessary load to the lens.

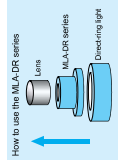


## MML/CCTV Lens Adapter

The adapter can be easily used in combination with Moritex's lenses.

Model	Product type	Compatible light models
MLA-DR1616	Lens attachment adapter	MDR-C*16 and R-16 mm lenses
MLA-DR1725	Lens attachment adapter	MDR-C*31 and R-25 mm lenses
MLA-DR1330	Lens attachment adapter	MDR-C*31 and R-30 mm lenses
MLA-DR1M255	Lens attachment adapter	MDR-C*31 and M25.F0.5 lenses
MLA-DR1M270	Lens attachment adapter	MDR-C*31 and M27.F0.5 lenses
MLA-DR1M305	Lens attachment adapter	MDR-C*31 and M30.F0.5 lenses

An asterisk (\*) in "compatible light models" refers to any LED color (R,G,B or W) of the light.



## Sharp-cut Filter R64 Series

These Filters can be attached to the end of a CCTV lens to prevent light interference when using red light.

Model	Product type	Size
ML-R64-25	Sharp-cut filter for mounting to end of lens	M25.5 F0.5 lens
ML-R64-27	Sharp-cut filter for mounting to end of lens	M27 F0.5 lens
ML-R64-30	Sharp-cut filter for mounting to end of lens	M30.5 F0.5 lens

## Cables

Model	Cable Diagram	Product type	Applications	Length
M-RCE401L	A	4.2cm type extension cable	• For all lights (except the MCEP series)	1m
M-RCE402L	A	4.2cm type extension cable		2m
M-RCE403L	A	4.2cm type extension cable		3m
M-RCE301L	B	3.2cm type extension cable	• For the MCEP series	1m
M-RCE302L	B	3.2cm type extension cable		2m
M-RCE303L	B	3.2cm type extension cable		3m
M-SS400C	C	Phi type extension cable	• For the MSPP series	2m
M-SS405C	C	Phi type extension cable		5m
M-SS410C	C	Phi type extension cable		10m
M-RCE301XS	D	Phi type M5PM-ER-A070 conversion cable	• For the MSPP series and MLEP-A070	1m
M-RCE001L	E	2.2cm type extension cable		1m
M-RCE002L	E	2.2cm type extension cable		2m
M-RCE003L	E	2.2cm type extension cable	• For power sources for built-in lens	3m
MC-EXC-02	—	Cable for DSUB15 pin external control		—
MC-EXC-07	—	Cable for DSUB15 pin external control	—	—

### Cable Diagrams

