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MORITEX
Vision Creating Value

MORITEX Illumination



2017.11 Printed in Japan

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MG-Wave®

Constant Current Control System

The MG-Wave® is designed and manufacturerd for optimum performance in Machine Vision applications operating on high-performance processing equipment and inspection systems or in critical conditions in manufacturing facilities. The "Constant Current Control System" enables reduction of heat generation and provides high intensity and stable illumination when compared to other conventional LED illumination and halogen light source systems. The unique patented sensing circuit system addresses one of the most prominent disadvantages of versatility, which other current control systems suffer from, by automatically detecting the required current value of each individual illumination unit upon connection to the controller.

Before using MG-Wave®

● Note

- In the case of 2-channel LED controllers, they can work with up to 2 illumination devices simultaneously as long as the sum of rated current of the 2 devices stays within the current capacity of LED controller.
- Bifurcated or branch cables cannot be used.
- Custom-made devices and special design may be available on request.

Selection Criteria of LED Controller

1. Confirm Illumination Model

Check maximum rated current of each illumination (→ Product spec)

Example:
Direct ring illumination
MDRL-CR31 = 0.36A
MDRL-CW28 = 0.31A

2. Confirm LED Controller

Check current capacity of LED controller

MLEK-A 080□
0.8A (as current capacity)

Example:
Current capacity of
MLEK-A080W1LR
LED controller = 0.8A

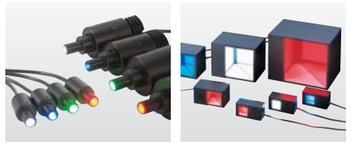
3. Verify Suitability of Configuration

Total current value of illumination shall not exceed LED controller's current capacity

Total required current value ≦ Controller's current capacity
Example: 0.67A Example: 0.8A

Configured system is operable

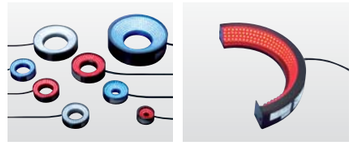
P4,5



Spot / Coaxial Illumination
MCEP/MCEC/ MCEL Series

Simulated Coaxial Illumination
MSCL Series

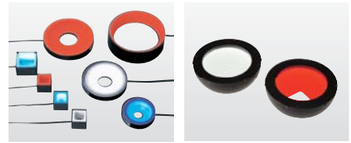
P6,7



Direct Ring Illumination
MDRL Series

Low Angle Ring Illumination
MLRL Series

P8,9



Shadowless Illumination
MSRL/MSLL/ MSQL Series

Dome Illumination
MSDC/MDML Series

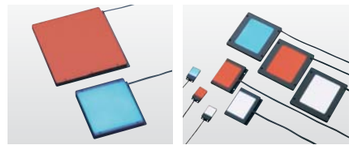
P10,11



Bar Illumination
MBRL/MBRC/ MHBC Series

Square Bar Type Illumination
MDQL Series

P12,13



Backlight
MDBL/MDBC/MEBL/ MEBC Series

Collimated Backlights
MCBP Series

P14,15



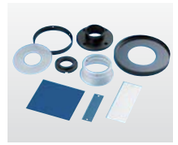
Other Illumination

P16,17



LED Controllers
MLEP/MLEK Series

P18



Accessories

Model Explanation

● Explanation of the model name

M □□□ -C □□
- ④Size
- ③LED Color
- ②LED Type
- ①Lighting Type

① Lighting type

CE : Coaxial	SC : Simulated coaxial
DR : Direct ring	LR : Low angle ring
BR : Bar	LN : Line
SR : Shadowless ring	SL : Shadowless low angle ring
SQ : Shadowless low angle square	DQ : Direct square
DM : Dome	CB : Collimated backlight
DB : Direct backlight	EB : Edge light transmitting
SD : Simple dome	

② LED type
L : LAMP LED C : SMD LED P : Power LED

③ LED color
R : Red G : Green B : Blue W : White IR : Infrared UV : Ultraviolet

④ Size

Lighting type	Size	Lighting type	Size
CE	Tip outsider diameter	SC	BOX hight
DR	Inner diameter	LR	Inner diameter
BR	Light emitting (long/short)	LN	Line length
SR	Inner diameter	SL	Inner diameter
SQ	Outline	DQ	Outline
DM	Outsider diameter	CB	Light emitting (long/short)
DB	Light emitting (long/short)	EB	Light emitting (long/short)
SD	Outsider diameter		

* Please note that specification is subject to change without notice.

※ For detailed specifications of products, see our WEB site. (http://www.moritex.com)

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High Power LED Spot Illumination and Coaxial Illuminatuion

MCEP/MCEC/MCEL Series CE

Ultra high intensity



MCEP 070-3 Series

- •Highest illumination in the industry ! By employing state of the art high-power LEDs and our unique heat dissipation technology that enhances luminance efficiency greatly, the series achieves triple illuminance compared to our conventional models
- Newly developed collimator and light guiding rod ensure high illumination uniformity



MCEP Series

- High power spot illumination also optimum for MML (Machine Micro Lens) Series coaxial illumination
- 4 colors available for various test objects and applications



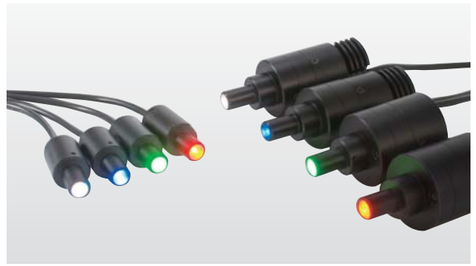
MCEC Series

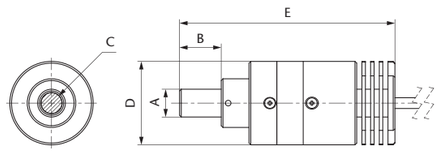
- Optimized for MML Series with high uniformity
- Suitable for applications that require greater brightness than MCEL Series
- Space-saving design with competitive prices

MCEL Series

- Miniaturized coaxial illumination for MML Series
- Best suited for objects with high-reflection or specular surface
- Compact and low price

High intensity

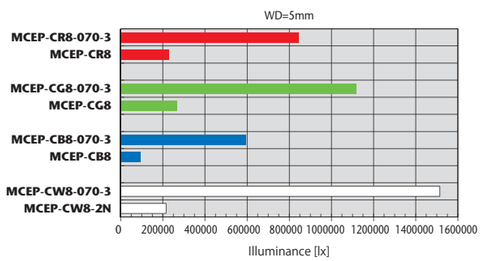




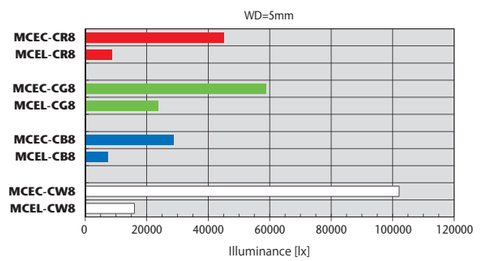
Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Tip External Diameter A (mm)	Tip Length B (mm)	Lighting Area Size C (mm)	Housing Diameter D (mm)	Housing Length E (mm)	Weight (g)	LED Controller
MCEP-C□8-070-3	●:R, ●:G, ●:B, ○:W	0.7	3.0	φ8	12	φ6	φ24	62	45	**MLEP-B070**
MCEP-C□8	●:R, ●:G, ●:B	0.35	1.5	φ8	12	φ6	φ27	50	50	**MLEP-B070**
MCEP-C□8-2N	○:W									
MCEC-C□8	●:R	0.14	1.7	φ8	12	φ6	φ14	34	35	**MLEK-A080**
	●:G, ●:B, ○:W	0.17	2.0							
MCEL-C□8	●:R	0.04	0.1	φ8	12	φ6	φ14	30	35	**MLEK-A080**
	★:G, ●:B, ○:W	0.03	0.1							

★Made-to-order products.

Illuminance Comparison Data
High Power LED Spot Illumination

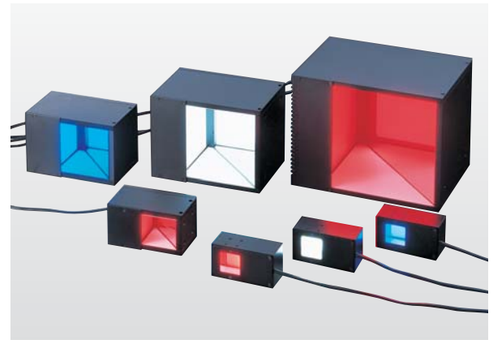


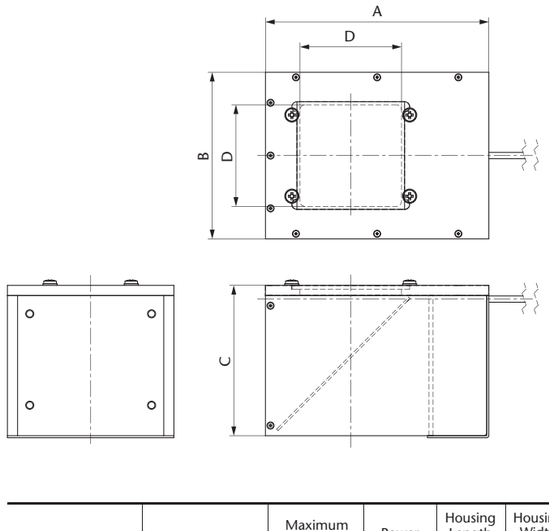
Illuminance Comparison Data
Coaxial Illuminatuion



Simulated Coaxial Illumination

MSCL Series CE



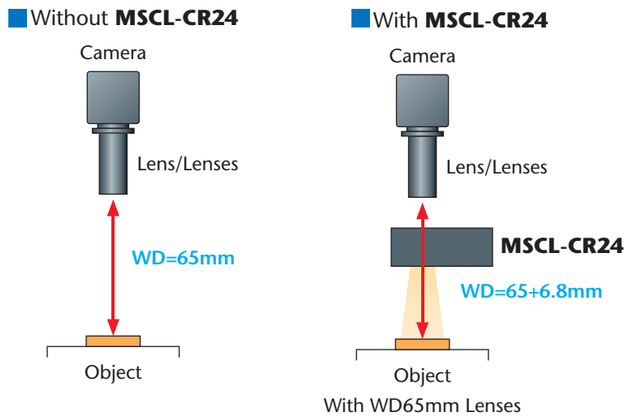


Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height C (mm)	Window Size D (mm)	Optical Path Length Extension (mm)	Weight (g)	LED Controller
MSCL-C□24	●:R	0.09	1.1	56	30	24	□18	6.8	110	**MLEK-A080**
	★:G, ●:B, ○:W	0.20	2.4							
MSCL-C□39	●:R	0.16	1.9	70	38	39	φ28	1.2	160	**MLEK-A080**
	★:G, ●:B, ○:W	0.31	3.7							
MSCL-C□56-B	●:R	0.33	4.0	93	60	56	φ28	1.2	320	**MLEK-A080**
	★:G, ●:B, ○:W	0.66	7.9							
MSCL-C□74-B	●:R	0.62	7.4	110	82	74	□50	1.2	520	**MLEK-A080**
	★:G, ●:B, ○:W	1.11	13							**MLEK-A230**
MSCL-C□105-B	●:R	2.14	26	145	110	105	□77	1.2	920	**MLEK-A230**
	★:G, ★:B, ○:W	2.07	25							

★Made-to-order products.

About Installation

Because glass components are used in the MSCL units, the internal optical path length will change when used. Be aware of the extended optical path when installing in a vision system.



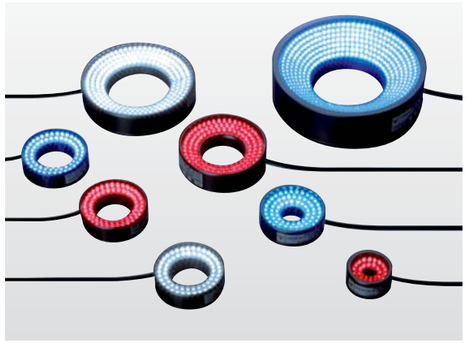
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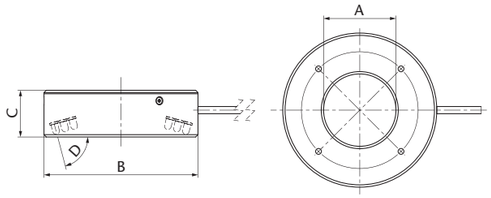
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Direct Ring Illumination

MDRL Series CE

- High intensity, bright-field, 360-degree uniform lighting
- Standard LED illumination for a wide range of applications





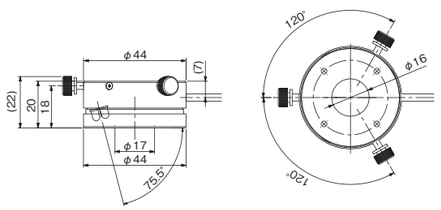
Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Internal Diameter A (mm)	External Diameter B (mm)	Height C (mm)	Lighting Angle D (Degree)	Weight (g)	LED Controller
MDRL-C□10	●:R	0.11	1.3	ϕ10	ϕ32	16	70	50	**MLEK-A080**
	★:G, ●:B, ○:W	0.17	2.0						
MDRL-C□16	●:R	0.24	2.9	ϕ16	ϕ48	15	76	65	**MLEK-A080**
	★:G, ●:B, ○:W	0.37	4.4						
MDRL-C□28	●:R	0.20	2.4	ϕ28	ϕ50	16	75	65	**MLEK-A080**
	★:G, ●:B, ○:W	0.31	3.7						
MDRL-C□31	●:R	0.36	4.3	ϕ31	ϕ66	20	75	130	**MLEK-A080**
	★:G, ●:B, ○:W	0.55	6.6						
MDRL-C□35	●:R	0.34	4.1	ϕ35	ϕ70	22	90	150	**MLEK-A080**
	★:G, ★:B, ○:W	0.52	6.2						
MDRL-C□36	●:R	0.36	4.3	ϕ36	ϕ66	17	75	120	**MLEK-A080**
	★:G, ●:B, ○:W	0.55	6.6						
MDRL-C□50	●:R	0.64	7.7	ϕ50	ϕ90	20	70	180	**MLEK-A080**
	★:G, ●:B, ○:W	0.96	12						**MLEK-A230**
MDRL-C□56	●:R	1.12	13	ϕ56	ϕ120	31.5	55	520	**MLEK-A230**
	★:G, ●:B, ○:W	1.55	19						

★Made-to-order products.

Direct Ring Illumination

MDRL-NS Series CE





Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Internal Diameter (mm)	External Diameter (mm)	Height (mm)	Lighting Angle (Degree)	Weight (g)	LED Controller
MDRL-C□16-NS	●:R	0.15	1.8	ϕ16	ϕ44	20	75.5	70	**MLEK-A080**
	★:G, ★:B, ○:W	0.24	2.9						

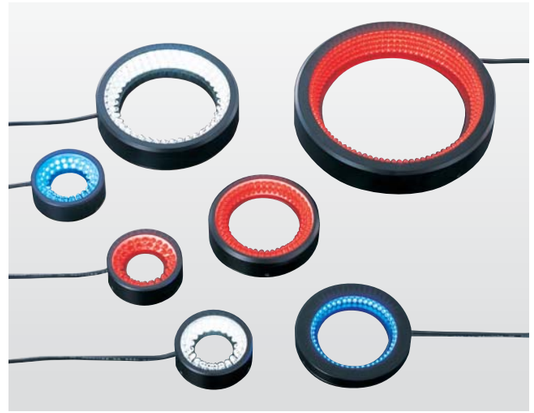
★Made-to-order products.

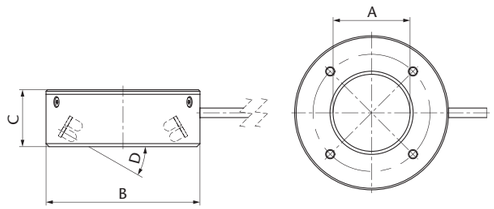
※ For LED controllers, see P16-17.

Low Angle Ring Illumination

MLRL Series CE

- Ideal for shiny or uneven surfaces, such as embossment and surface flaw detection
- MLRL-CR(G,B,W)46 Illuminates from 0 degree angle.

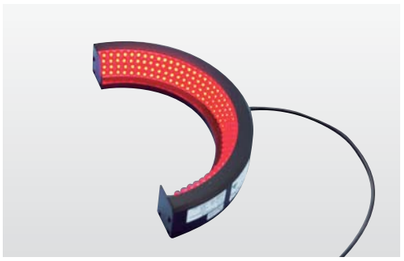


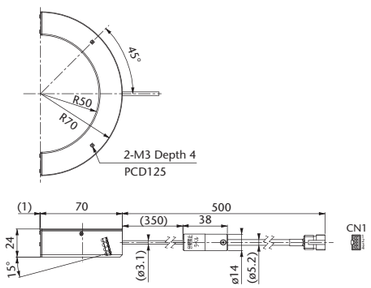


Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Internal Diameter A (mm)	External Diameter B (mm)	Height C (mm)	Lighting Angle D (Degree)	Weight (g)	LED Controller
MLRL-C□23	●:R	0.09	1.1	ϕ23	ϕ40	15	20	40	**MLEK-A080**
	★:G, ○:W	0.14	1.7						
MLRL-C□25	●:R	0.15	1.8	ϕ25	ϕ50	18.5	30	70	**MLEK-A080**
	★:G, ●:B, ○:W	0.24	2.9						
MLRL-C□46	●:R	0.17	2.0	ϕ46	ϕ75	10	0	80	**MLEK-A080**
	★:G, ●:B, ○:W	0.27	3.2						
MLRL-C□48	●:R	0.30	3.6	ϕ48	ϕ74	19	30	110	**MLEK-A080**
	★:G, ●:B, ○:W	0.47	5.6						
MLRL-C□68	●:R	0.57	6.8	ϕ68	ϕ100	22	30	190	**MLEK-A080**
	★:G, ●:B, ○:W	0.61	7.3						
MLRL-C□100	●:R	0.96	12	ϕ100	ϕ140	24	15	320	**MLEK-A230**
	★:G, ●:B, ○:W	1.03	12						
MLRL-C□172	☆:W	1.39	17	ϕ172	ϕ208	22	25	420	**MLEK-A230**

★Made-to-order products.

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





Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Internal Diameter (mm)	External Diameter (mm)	Height (mm)	Lighting Angle (Degree)	Weight (g)	LED Controller
MLRL-C□100-HF	★:R	0.53	6.4	R50	R70	24	15	170	**MLEK-A080**
	★:G, ★:B, ☆:W	0.80	9.6						

★Made-to-order products.

※ For LED controllers, see P16-17.

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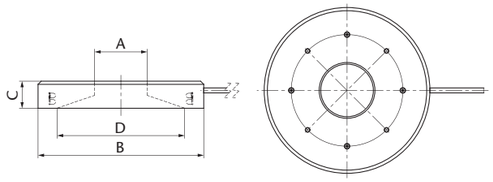
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Shadowless Ring Illumination

MSRL Series CE

- Optimal soft, uniform light for shiny surfaces
- Diffused, shadow less illumination preventing halation effect





Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Internal Diameter A (mm)	External Diameter B (mm)	Height C (mm)	Lighting Area Diameter D (mm)	Weight (g)	LED Controller
MSRL-C□20	●:R	0.32	3.8	ϕ20	ϕ74	18	ϕ46.1	140	**MLEK-A080**
	★:G, ●:B, ○:W	0.50	6.0						
MSRL-C□33	●:R	0.45	5.4	ϕ33	ϕ104	17	ϕ80	210	**MLEK-A080**
	★:G, ★:B, ○:W	0.69	8.3						
MSRL-C□44	●:R	0.57	6.8	ϕ44	ϕ123	17	ϕ101	270	**MLEK-A080**
	★:G, ●:B, ○:W	0.80	9.6						

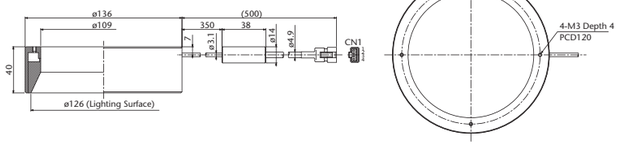
★Made-to-order products.

Shadowless Low Angle Ring Illumination

MSLL Series CE

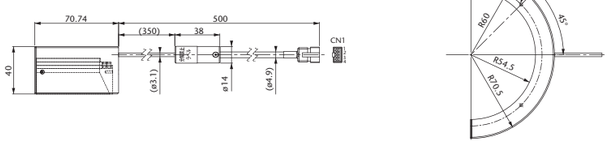


MSLL-C□109



Shadowless Low Angle Half-Ring Illumination

MSLL-C□109-HF



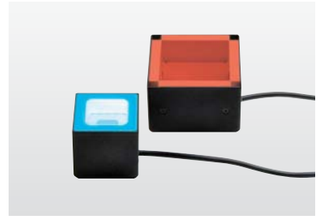
Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Internal Diameter (mm)	External Diameter (mm)	Height (mm)	Lighting Area Diameter (mm)	Weight (g)	LED Controller
MSLL-C□109	●:R	0.62	7.4	ϕ109	ϕ136	40	ϕ126	320	**MLEK-A080**
	★:G, ★:B, ○:W	1.10	13						**MLEK-A230**
MSLL-C□109-HF	★:R	0.30	3.6	R54.5	R70.5	40	R63	250	**MLEK-A080**
	★:G, ★:B, ☆:W	0.47	5.6						

★Made-to-order products.

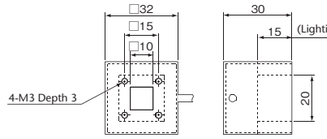
Shadowless Low Angle Square Illumination

MSQL Series CE

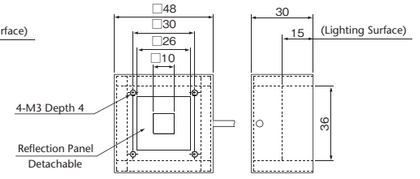
- Best suited for square shape objects, such as in BGA & QFPs



MSQL-C□32



MSQL-C□48



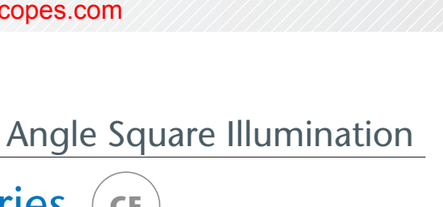
Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height (mm)	Window Size (mm)	Weight (g)	LED Controller
MSQL-C□32	★:R	0.09	1.1	32	32	30	□10	80	**MLEK-A080**
	★:G, ●:B, ○:W	0.14	1.7						
MSQL-C□48	★:R	0.13	1.6	48	48	30	□10 (With Reflector) □26 (Without Reflector)	120	**MLEK-A080**
	★:G, ★:B, ○:W	0.20	2.4						

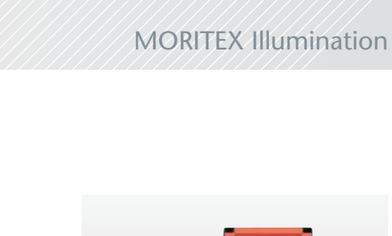
★Made-to-order products.

High Power Simple Dome Illumination

MSDC Series CE

- Perfectly diffused light provides extremely uniform illumination



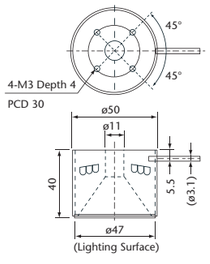


Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Internal Diameter (mm)	External Diameter (mm)	Height (mm)	Window Size (mm)	Weight (g)	LED Controller
MSDC-C□156	●:R, ★:G, ★:B, ○:W	1.49	18	ϕ110	ϕ156	66	□50	270	**MLEK-A230**

★Made-to-order products.

Dome Illumination

MDML Series CE





Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Internal Diameter (mm)	External Diameter (mm)	Height (mm)	Lighting Area Diameter (mm)	Weight (g)	LED Controller
MDML-C□50	●:R	0.24	2.9	ϕ11	ϕ50	40	ϕ47	130	**MLEK-A080**
	★:G, ★:B, ○:W	0.37	4.4						

★Made-to-order products.

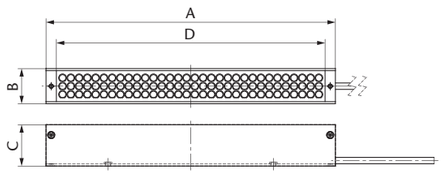
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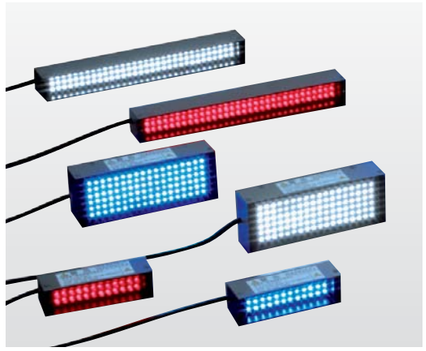
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Bar Illumination

MBRL Series CE

Can be directed at any angle to the surface for either direct, bright-field lighting or optimal oblique, dark-field lighting





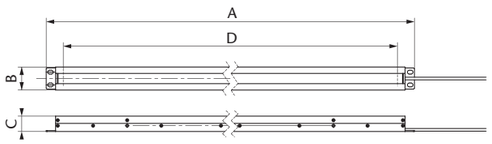
Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height C (mm)	Lighting Area Size D (mm)	LED Matrix	Weight (g)	LED Controller
MBRL-C□3408	★:R	0.09	1.1	44	10.4	15	34 × 8.4	2×8	35	**MLEK-A080**
	★:G, ★:B, ☆:W	0.17	2.0							
MBRL-C□5015	●:R	0.13	1.6	60	17	20	50 × 15	3×12	50	**MLEK-A080**
	★:G, ●:B, ○:W	0.26	3.1							
MBRL-C□7530	●:R	0.36	4.3	85	32	18	75 × 30	6×18	120	**MLEK-A080**
	★:G, ●:B, ○:W	0.52	6.2							
MBRL-C□13015	●:R	0.32	3.8	140	17	20	130 ×15	3×32	85	**MLEK-A080**
	★:G, ●:B, ○:W	0.53	6.4							
MBRL-C□24015	★:R	0.60	7.2	251	25	18	240 × 15	3×60	270	**MLEK-A080**
	★:G, ★:B, ☆:W	0.80	9.6							
MBRL-C□36015	★:R	0.80	9.6	371	25	18	360 × 15	3×90	380	**MLEK-A080**
	★:G, ★:B, ☆:W	1.09	13							**MLEK-A230**

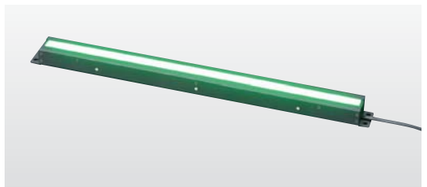
★Made-to-order products.

Diffuse Chip Type Bar Illumination

MBRC Series CE

- **Realization of a slim, lightweight compact design**
- **High brightness and high uniformity achieved by high density mounting of chip type LEDs**





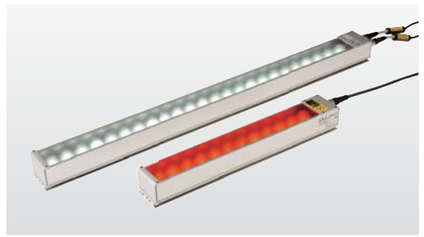
Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height C (mm)	Lighting Area Size D (mm)	Weight (g)	LED Controller
MBRC-C□15012-DF	★:R	0.50	6.0	190	27	18	150 × 12	130	**MLEK-A080**
	★:G, ★:B, ☆:W	0.55	6.6						
MBRC-C□30012-DF	●:R	0.99	12	340	27	18	300 × 12	230	**MLEK-A230**
	★:G, ★:B, ○:W	1.10	13						
MBRC-C□60012-DF	★:R	1.98	24	640	27	18	600 × 12	420	**MLEK-A230**
	★:G, ★:B, ○:W	2.20	26						
MBRC-C□90012-DF-2CH	★:R	1.98(CH1) 0.99(CH2)	36 (Total)	940	27	18	900 × 12	620	**MLEK-D770**
	★:G, ★:B, ○:W	2.20(CH1) 1.10(CH2)	39 (Total)						

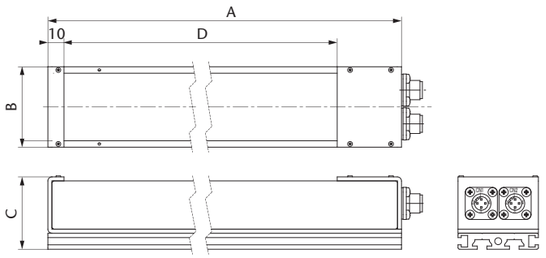
★Made-to-order products.

High Power Bar Illumination

MHBC Series CE

- **High intensity illumination over wide areas**
- **Illuminated uniformly for A3 size area**
- **Integrated mounting rail system**





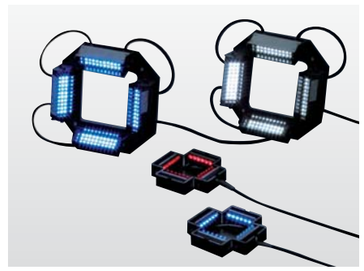
Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height C (mm)	Lighting Area Length D (mm)	Channel (Lighting Length each CH)	Weight (g)	LED Controller
MHBC-C□150-DF	★:R, ○:W	1.15	14	200	50	45	150 × 42	1CH(150mm)	450	**MLEK-A230**
MHBC-C□300-DF	★:R, ○:W	2.3	28	350	50	45	300 × 42	1CH(300mm)	850	**MLEK-A230**
MHBC-C□450-DF-2CH	★:R, ○:W	3.45(Total)	42(Total)	500	50	45	450 × 42	2CH(300mm, 150mm)	1,300	**MLEK-D770**
MHBC-C□600-DF-2CH	★:R, ○:W	4.6(Total)	56(Total)	650	50	45	600 × 42	2CH(300mm, 300mm)	1,600	**MLEK-D770**

★Made-to-order products.

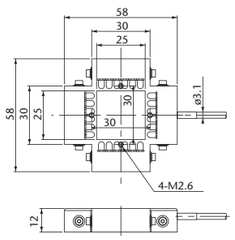
Square Bar Type Illumination

MDQL Series CE

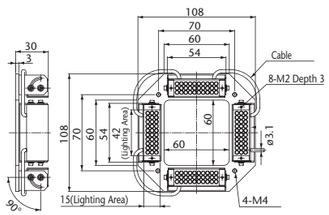
- **Four high-intensity bar LED mounted to 1 single cable with individual angle adjustment from each bar LED**



MDQL-C□58



MDQL-C□108



Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Housing Length (mm)	Housing Width (mm)	Height (mm)	Window Size (mm)	Weight (g)	LED Controller
MDQL-C□58	●:R	0.09	1.1	58	58	12	□25	55	**MLEK-A080**
	★:G, ★:B, ○:W	0.17	2.0						
MDQL-C□108	●:R	0.42	5.0	108	108	30	□60	210	**MLEK-A080**
	★:G, ★:B, ○:W	0.84	10						**MLEK-A230**

★Made-to-order products.

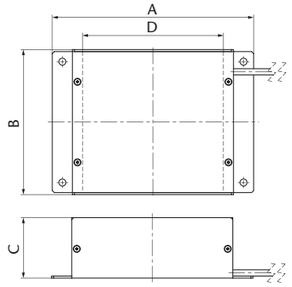
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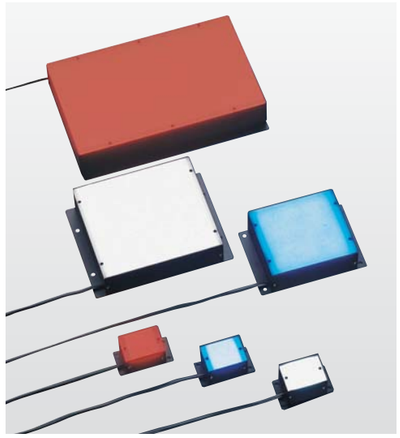
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Direct Backlights (Discrete Type)

MDBL Series CE

- **Due to the LEDs mounted immediately beneath the diffusion plate surface, this unit achieves a higher luminance**





Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height C (mm)	Lighting Area Size D (mm)	Weight (g)	LED Controller
MDBL-C□25	●:R	0.14	1.7	49	27	24	□25	60	**MLEK-A080**
	★:G, ●:B, ○:W	0.27	3.2						
MDBL-C□70	●:R	0.48	5.8	100	72	30	□70	190	**MLEK-A080**
	★:G, ●:B, ○:W	0.96	12						**MLEK-A230**
MDBL-C□100	●:R	1.43	17	130	102	30	□100	290	**MLEK-A230**
	★:G, ●:B, ○:W	1.55	19						
MDBL-C□180100	●:R ★:G, ●:B, ○:W	2.30	28	130	182	30	180 × 100	520	**MLEK-A230**

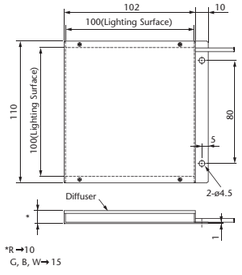
★Made-to-order products.

Direct Backlights (Chip Mount Type)

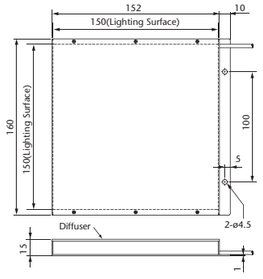
MDBC Series CE

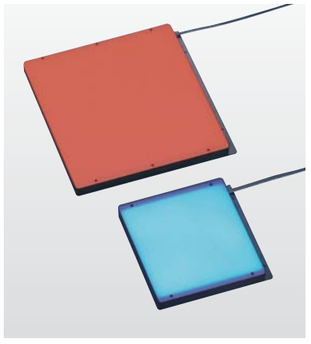
- **Provides intense and diffused versatile lighting**

MDBC-C□100



MDBC-C□150





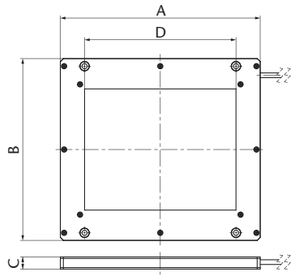
Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Housing Length (mm)	Housing Width (mm)	Height (mm)	Lighting Area Size (mm)	Weight (g)	LED Controller
MDBC-C□100	●:R	0.80	9.6	112	110	15 (R : 10)	□100	170	MLEK-A080
	★:G, ★:B	0.95	11						MLEK-A230
MDBC-CW100-2	○:W	0.99	12	112	110	15	□100	170	MLEK-A230
MDBC-C□150	●:R	0.99	12	162	160	15	□150	310	MLEK-A230
	★:G, ★:B	2.14	26						
MDBC-CW150-2	○:W	2.21	27	162	160	15	□150	310	MLEK-A230

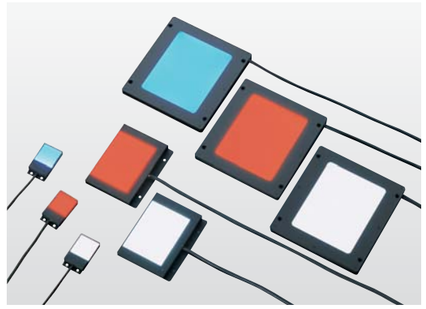
★Made-to-order products.

Edge Type Backlights

MEBL/MEBC Series CE

- **Requires very little space due to slim, compact design**
- **Provides very uniform irradiation**





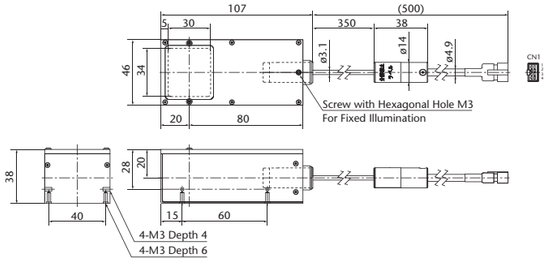
Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height C (mm)	Lighting Area Size D (mm)	Weight (g)	LED Controller
MEBL-C□25	●:R	0.03	0.4	45	27	6.5	□25	45	**MLEK-A080**
	★:G, ●:B, ○:W	0.04	0.5						
MEBL-C□50	●:R	0.17	2.0	90	74	8	□50	110	**MLEK-A080**
	★:G, ●:B, ○:W	0.29	3.5						
MEBL-C□7050	●:R	0.15	1.8	94	71	7.5	70 × 50	140	**MLEK-A080**
	★:G, ●:B, ○:W	0.25	3.0						
MEBL-C□10080	●:R	0.32	3.8	132	120	8	100 × 80	230	**MLEK-A080**
	★:G, ★:B, ○:W	0.57	6.8						
MEBL-C□145	●:R	0.45	5.4	195	185	8	□145	460	**MLEK-A080**
	★:G, ●:B, ○:W	0.80	9.6						
MEBC-C□360250※1	★:R	1.32	16	410	310	12	360 × 250	2,500	**MLEK-A230**
	★:G, ★:B, ☆:W	3.96	48						**MLEK-A800**

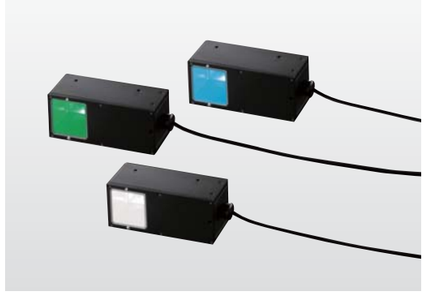
★ Made-to-order products.
※1 MEBC-C□360250 is not CE compliant.

Collimated Backlights

MCBP Series CE

- **Capable of capturing the shape of an object with higher precision due to decreasing a diffraction light**





Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Housing Length (mm)	Housing Width (mm)	Height (mm)	Window Size (mm)	Weight (g)	LED Controller
MDML-C□50	★:R, ★:G, ●:B, ☆:W	0.07	0.3	107	46	38	34 × 30	260	**MLEK-A080**

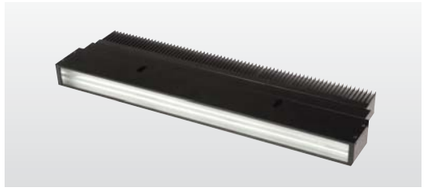
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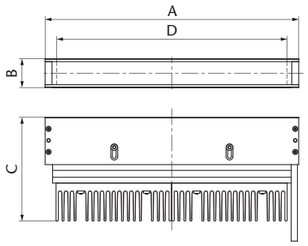
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High Brightness LED Light Line

MLNC Series CE



- Realization 700,000 lux at W = 50mm
- Equipped with a light focusing position adjustment mechanism
- Outstanding high power output and the thinnest body with end width of only 25mm



Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height C (mm)	Lighting Area Size D (mm)	Channel	Weight (g)	LED Controller
MLNC-C□100-DF	★:R, ○:W	2.3	30	120	25	90～98	100 × 20	1CH	580	**MLEK-A230**
MLNC-C□200-DF-2CH	★:R, ○:W	CH1:2.3 CH2:2.3	60 (Total)	220	25	90～98	200 × 20	2CH	1,000	**MLEK-D770**
MLNC-C□300-DF-3CH	★:R, ○:W	CH1:2.3 CH2:2.3 CH3:2.3	90 (Total)	320	25	90～98	300 × 20	3CH	1,400	**MLEK-D770**

★Made-to-order products.

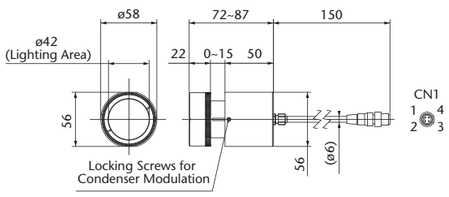
LED Spot Projectors

MSPP Series CE IP67

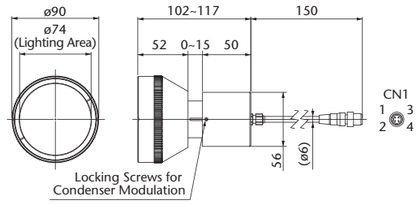


- For use in long working distance applications (up to 2m)
- Structure allows for a variable illumination area range
- Two types offered for narrow and wide illumination areas
- Ease of maintenance possible with glass cover replacement
- Possible to use cables which resist spatter
- Low temperature emission and low energy consumption

MSPP-C□42
MSPP-CR42-2



MCEP-C□74
MCEP-CW74-2N

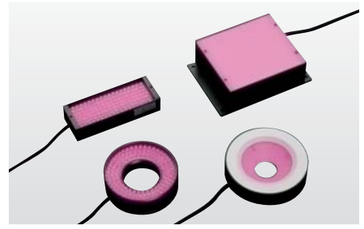


Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Housing Diameter (mm)	Housing Height (mm)	Lighting Area Diameter (mm)	Weight (g)	LED Controller
MSPP-C□42	★:G, ★:B, ○:W	0.7	3.0	ϕ58	72～87	ϕ42	460	**MLEP-B070**
MSPP-CR42-2	★:R							
MCEP-C□74	●:R, ★:G, ★:B	0.7	3.0	ϕ90	102～117	ϕ74	600	**MLEP-B070**
MCEP-CW74-2N	○:W							

★Made-to-order products.

IR Illumination

IR CE



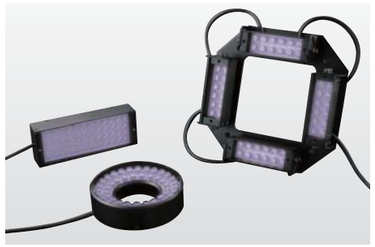
- Provides image recognition at high contrast especially for items that are difficult to view invisible light
- Effective for materials that chemically react to visible light rays or allow IR wavelength transmission

Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Illumination Type	Housing External Size (mm)	Weight (g)	LED Controller
MCEL-CIR8-2	●:IR	0.06	0.2	Coaxial Illumination	ϕ14×30	35	**MLEK-A080**
MCEL-CIR8-940	★:IR	0.06	0.2	Coaxial Illumination	ϕ14×30	35	**MLEK-A080**
MSCL-CIR24	★:IR	0.09	1.1	Simulated Coaxial Illumination	56×30×24	110	**MLEK-A080**
MSCL-CIR39	★:IR	0.16	1.9	Simulated Coaxial Illumination	70×38×40	160	**MLEK-A080**
MSCL-CIR56-B	★:IR	0.33	4.0	Simulated Coaxial Illumination	93×60×57	320	**MLEK-A080**
MSCL-CIR105-B	★:IR	2.14	26	Simulated Coaxial Illumination	145×110×106	920	**MLEK-A230**
MDRL-CIR16	★:IR	0.27	3.2	Direct Ring Illumination	ϕ48×15	65	**MLEK-A080**
MDRL-CIR31	●:IR	0.42	5.0	Direct Ring Illumination	ϕ66×20	130	**MLEK-A080**
MLRL-CIR25	★:IR	0.16	1.9	Low Angle Ring Illumination	ϕ50×18.5	70	**MLEK-A080**
MLRL-CIR46	★:IR	0.18	2.2	Low Angle Ring Illumination	ϕ75×10	80	**MLEK-A080**
MLRL-CIR48	★:IR	0.33	4.0	Low Angle Ring Illumination	ϕ74×19	110	**MLEK-A080**
MSRL-CIR20	●:IR	0.36	4.3	Shadowless Ring Illumination	ϕ74×18	140	**MLEK-A080**
MBRL-CIR7530	●:IR	0.40	4.8	Bar Illumination	85×32×18	120	**MLEK-A080**
MDBL-CIR70	●:IR	0.53	6.4	Direct Backlight	100×72×30	190	**MLEK-A080**
MDBL-CIR100	★:IR	1.35	16	Direct Backlight	130×102×30	290	**MLEK-A230**

★Made-to-order products.
Peak wavelength is 850 nm. (" MCEL-CIR8-940 " is 940 nm.)

UV Illumination

UV CE



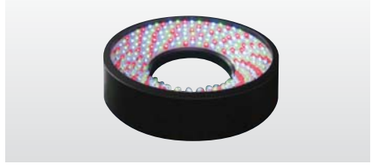
- Provides image recognition at high contrast especially for items that are difficult to view invisible light
- Effective in detection of dirt on glass substrates and dust on elements

Model	Emitted Color	Maximum Rated Current (A)	Power (W)	Illumination Type	Housing External Size (mm)	Weight (g)	LED Controller
MCEL-CUV8-405	★:UV	0.03	0.2	Coaxial Illumination	ϕ14×30	35	**MLEK-A080**
MDRL-CUV31-2	●:UV	0.36	4.3	Direct Ring Illumination	ϕ66×20	130	**MLEK-A080**
MBRL-CUV7530-2	●:UV	0.36	4.3	Bar illumination	85×32×18	120	**MLEK-A080**
MBRL-CUV7530-405	★:UV	0.52	6.2	Bar illumination	85×32×18	120	**MLEK-A080**
MDQL-CUV108-2	★:UV	0.36	4.3	Square Bar Type Illumination	108×108×30	210	**MLEK-A080**

★Made-to-order products.
Peak wavelength is 365 nm. (" MCEL-CUV8-405 " and "MBRL-CUV7530-405" are 405 nm.)

Variable Color RGB Illumination

RGB CE



- Individual control for each color (1 channel with 1 color)
- Ideal for ID Inspection, experimental use and color filter inspection

Model	Emitted Color	Total Maximum Rated Current (A)	Total Power (W)	Illumination Type	Housing External Size (mm)	Weight (g)	LED Controller
★ MEBL-CRGB25-3CH	RGB	0.11	1.4	Edge Type Backlight	56×28×15	80	**MLEK-D770**
★ MEBL-CRGB10080-3CH	RGB	1.26	15	Edge Type Backlight	132×120×18	500	**MLEK-D770**
★ MDRL-CRGB56-3CH	RGB	0.99	12	Direct Ring illumination	ϕ120×31.5	530	**MLEK-D770**
★ MBRL-CRGB7530-3CH	RGB	0.48	5.8	Bar illumination	85×32×18	140	**MLEK-D770**

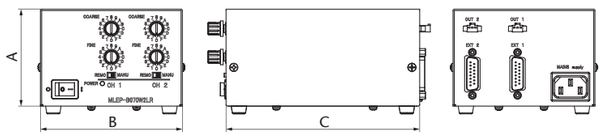
★Made-to-order products.

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LED Controllers for MCEP/MSPP Series

MLEP Series CE

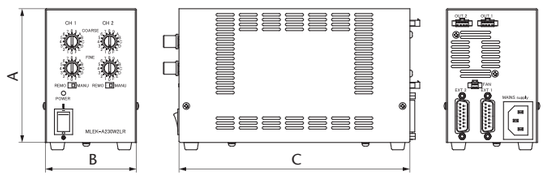




Model	Output Channel	Output Current (A)	Input Voltage (V)	Input Current (A)	Operating System	External Light Control	Weight (g)	Size A x B x C (mm)
MLEP-B070W1LR-100V **MLEP-B070W1LR-200V**	1CH	0.35 / 0.7A	AC100-240 (50/60Hz)	0.11 @100V 0.07 @240V	DC Continuous Output Constant Current Control	0-5V Analog	1,000	90 x 75 x 150
MLEP-B070W2LR-100V **MLEP-B070W2LR-200V**	2CH	0.35 / 0.7A (Each CH)	AC100-240 (50/60Hz)	0.20 @100V 0.11 @240V	DC Continuous Output Constant Current Control	0-5V Analog	1,300	110 x 75 x 190
MLEP-B070W1LRD-100V **MLEP-B070W1LRD-200V**	1CH	0.35 / 0.7A	AC100-240 (50/60Hz)	0.11 @100V 0.07 @240V	DC Continuous Output Constant Current Control	8-bit Digital	1,000	90 x 75 x 150
MLEP-B070W2LRD-100V **MLEP-B070W2LRD-200V**	2CH	0.35 / 0.7A (Each CH)	AC100-240 (50/60Hz)	0.20 @100V 0.11 @240V	DC Continuous Output Constant Current Control	8-bit Digital	1,300	110 x 75 x 190

LED Controllers for MG-Wave®

MLEK Series CE



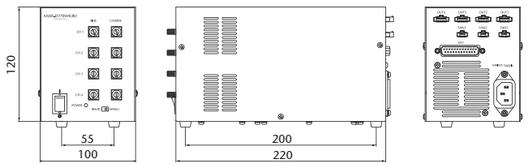


Model	Output Channel	Output Current (A)	Input Voltage (V)	Input Current (A)	Operating System	External Light Control	Weight (g)	Size A x B x C (mm)
MLEK-A080W1LR-100V **MLEK-A080W1LR-200V**	1CH	0.8A	AC100-240 (50/60Hz)	0.3 @100V 0.15 @240V	DC Continuous Output Constant Current Control	0-5V Analog	1,000	90 x 75 x 150
MLEK-A080W2LR-100V **MLEK-A080W2LR-200V**	2CH	0.8A (2CH Total)	AC100-240 (50/60Hz)	0.3 @100V 0.15 @240V	DC Continuous Output Constant Current Control	0-5V Analog	1,300	110 x 75 x 190
MLEK-A080W1LRD-100V **MLEK-A080W1LRD-200V**	1CH	0.8A	AC100-240 (50/60Hz)	0.3 @100V 0.15 @240V	DC Continuous Output Constant Current Control	8-bit Digital	1,000	90 x 75 x 150
MLEK-A080W2LRD-100V **MLEK-A080W2LRD-200V**	2CH	0.8A (2CH Total)	AC100-240 (50/60Hz)	0.3 @100V 0.15 @240V	DC Continuous Output Constant Current Control	8-bit Digital	1,300	110 x 75 x 190
MLEK-A230W1LR-100V **MLEK-A230W1LR-200V**	1CH	2.3A	AC100-240 (50/60Hz)	0.7 @100V 0.4 @240V	DC Continuous Output Constant Current Control	0-5V Analog	1,100	90 x 75 x 150
MLEK-A230W2LR-100V **MLEK-A230W2LR-200V**	2CH	2.3A (2CH Total)	AC100-240 (50/60Hz)	0.7 @100V 0.4 @240V	DC Continuous Output Constant Current Control	0-5V Analog	1,400	110 x 75 x 190
MLEK-A230W1LRD-100V **MLEK-A230W1LRD-200V**	1CH	2.3A	AC100-240 (50/60Hz)	0.7 @100V 0.4 @240V	DC Continuous Output Constant Current Control	8-bit Digital	1,100	90 x 75 x 150
MLEK-A230W2LRDB-100V **MLEK-A230W2LRDB-200V**	2CH	2.3A (2CH Total)	AC100-240 (50/60Hz)	0.7 @100V 0.4 @240V	DC Continuous Output Constant Current Control	8-bit Digital	1,400	110 x 75 x 190

Supports up to 7.7A

Multi Channel Series CE

- **Four independent channel digital controller**
- **External digital control with 10-bit, 1024 level capability**

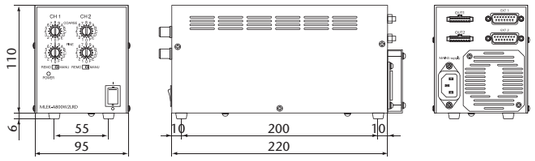




Model	Output Channel	Output Current (A)	Input Voltage (V)	Input Current (A)	Operating System	External Light Control	Weight (g)	Size (mm)
MLEK-D770W4LRD-100V **MLEK-D770W4LRD-200V**	4CH	2.3 (CH1-3) 0.8 (CH4)	AC100-240 (50/60Hz)	1.2 @100V 0.6 @240V	DC Continuous Output Constant Current Control	8 or 10-bit Digital	2,000	220 x 100 x 120

High wattage Series

- **High wattage LED controller with digital intensity control**





Model	Output Channel	Output Current (A)	Input Voltage (V)	Input Current (A)	Operating System	External Light Control	Weight (g)	Size (mm)
MLEK-A800W2LRD-100V **MLEK-A800W2LRD-200V**	2CH	4.0 (Each CH)	AC100-240 (50/60Hz)	1.2 @100V 0.6 @240V	DC Continuous Output Constant Current Control	8-bit Digital	1,800	220 x 95 x 1 1 0

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MG-Wave®

Accessories



Diffuser Plates: MDF Series

These diffuser plates, which can be attached to the illumination using the dedicated adapters, help prevent unwanted lighting reflection.



Adapters: MAD Series

Adapter for attaching dedicated diffuser plates and polarizing plate for MG-Wave ring illumination.



Polarizing Plate: MPL Series

Attaching these polarizing plates on the lens side (inside the polarizer) cuts specular reflection in particular areas and reduces glare in the resulting image.



Light Control Film: MLM Series

The MLM Series are resin films that transform diffused illumination into parallel illumination. Attaching to a simulated coaxial illumination makes the light distribution pattern smoother.



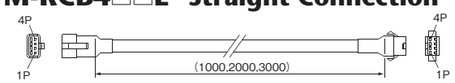
Sharp Cut Filter ML-R Series

When using red illumination, attachment to the tip of the CCTV lens is effective in preventing ambient light.

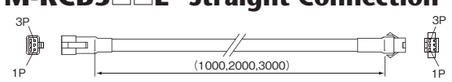
Extension Cables

Entire M-RCB Series meet robot cable requirements and all 1m & 2m products are CE compliant

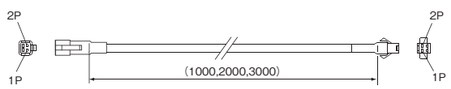
M-RCB4□□L *Straight Connection



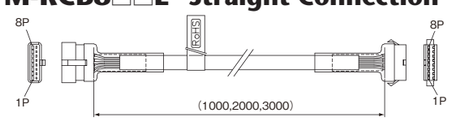
M-RCB3□□L *Straight Connection



M-RCB0□□L *Straight Connection

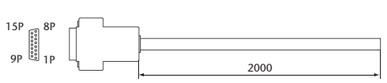


M-RCB8□□L *Straight Connection

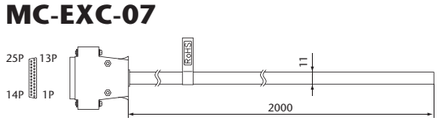


External Control Cables

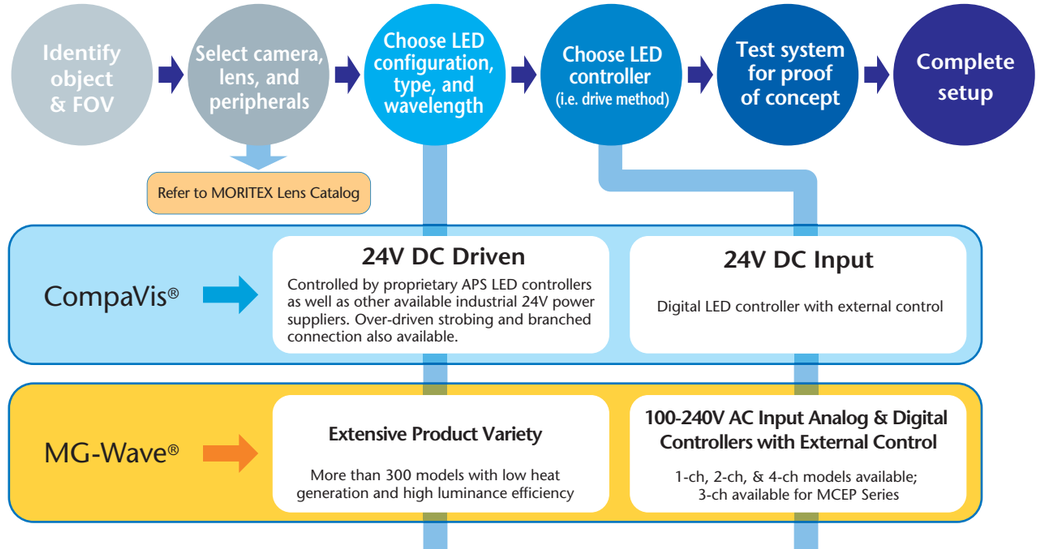
MC-EXC-02



MC-EXC-07



Selection flowchart



LED Lineup Reference Table

Illumination Type	CompaVis® Series	MG-Wave® Series
Direct Ring Illumination	CV-R/SQ	MDRL
Low Angle Ring Illumination	CV-RLA/RLA-00	MLRL
Shadowless Illumination	CV-FR/DR/DSQ	MSRL/MSLL/MSQL
Bar Illumination	CV-BA	MBRL
High Power Bar Illumination	—	MHBC
Square Bar Type Illumination	CV-BAQ	MDQL
Dome Illumination	—	MSDC/MDML
Simulated Coaxial Illumination	CV-CX	MSCL
Direct Backlights (Chip Mount Type)	CV-FL	MDBC
Direct Backlights (Discrete Type)	—	MDBL
Edge Type Backlights	—	MEBL/MEBC
Collimated Backlights	—	MCBP
High Brightness LED Light Line	—	MLNC
Diffuse Chip Type Bar Illumination	—	MBRC
High Power LED Spot Illumination	—	MCEP
Coaxial Illumination	CV-CE	MCEC/MCEL
LED Spot Projectors	—	MSPP
IR Illumination	IR	IR
UV Illumination	—	UV
Variable Color RGB Illumination	—	RGB

Input	CompaVis®	DC24V
	MG-Wave®	AC100V~240V
Channel	CompaVis®	2ch
	MG-Wave®	1ch, 2ch, 4ch
External Control	CompaVis®	Ethernet Digital (Pararell/8bit)
	MG-Wave®	Analog (0-5V) Digital (Pararell/8bit)

LED SAFETY STANDARD (CEI/IEC 62471:2006)

Groups	Definition and Emission limit
Exempt	Not more than 1.0 W·m^{-2}. Small source defined as one with <0.011 radian.
Low Risk	Not more than 1.0 W·m^{-2}
Moderate Risk	Not more than 400 W·m^{-2}
High Risk	Higher than 400 W·m^{-2}

Lamp Classification based on IEC standards are applicable to LED lighting units. Criteria for classification is shown above. LEDs are narrow bandwidth light sources with emission levels based on "Blue light, small source" where the wavelength is from 300nm to 700nm. The LED illumination products listed in the catalog are considered to be in either the low risk or exempt group.

LED Controller Lineup Reference



MLEF Series Digital LED Controllers for CompaVis®
For CompaVis™
24V DC, DIN rail mountable



LED Controllers for MG-Wave®
Constant current sensing control system



LED Controllers for MCEP/MSPP Series
For high power LED spot illumination

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CompaVis®

24V DC Driven

CompaVis® employs the constant voltage control system that can be controlled not only by APS MLEF LED controllers but also by industry available 24V DC power supplies directly. Overdriven strobing for instantaneous high intensity illumination is also available. The series can support customer's various image processing environments with a broad range of lighting solutions.

P22,23



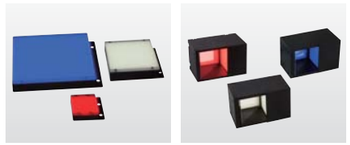
Direct Ring Illumination
CV-R/SQ Series
Low Angle Ring Illumination
CV-RLA/RLA-00 Series

P24,25



Shadowless Illumination
CV-FR/DR/DSQ Series
Bar Illumination
CV-BA Series
Square Bar Type Illumination
CV-BAQ Series

P26,27



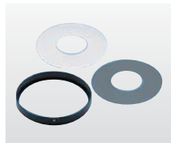
Direct Backlights (Chip Mount Type)
CV-FL Series
Coaxial Illumination
CV-CE Series
Simulated Coaxial Illumination
CV-CX Series
IR Illumination

P28



Dedicated LED Digital Controller
MLEF Series

P29



Accessories

Model Explanation

● Model name of LED illumination indicates the following items.

CV- □□ - □□ X □□□ - □□
- ④Connector
- ③LED Color
- ②Size
- ①Illumination Type

① Illumination Type

R	Direct Ring	SQ	Square Ring
RLA	Low Angle Ring	FR	Shadowless Ring
DR	Shadowless Low Angle Ring	DSQ	Shadowless Low Angle Square
BA	Bar	BAQ	Square Bar
FL	Direct Backlight	CE	Coaxial
CX	Simulated Coaxial		

② Size

Type	Size	Type	Size
R	External Diameter X Internal Diameter X Lighting Angle	SQ	Housing Length X Width X Height
RLA	External Diameter X Internal Diameter X Lighting Angle	FR	External Diameter X Internal Diameter
DR	External Diameter X Internal Diameter	DSQ	Housing Length X Width X Height
BA	Lighting Area Length X Width	BAQ	Housing Length X Width
FL	Lighting Area Length X Width	CE	Housing External Diameter X Tip External Diameter
CX	Housing Length X Width X Height		

③ LED Color
R：Red G：Green B：Blue W：White IR：Infrared UV：Ultraviolet

④ Connecter
(Non)：SMR-03V-B (JST)
-M12：M12 Male (HARTING)

* Please note that specification is subject to change without notice.

※ For detailed specifications of products, see our WEB site. (http://www.moritex.com)

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Direct Ring Illumination

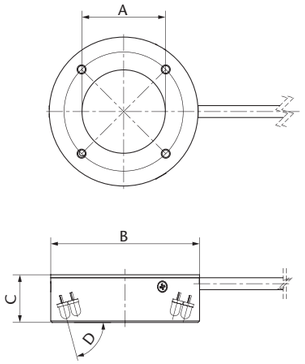
CV-R/SQ Series CE



Direct Ring Illumination: CV-R Series

- High intensity uniform illumination by 360-degree lighting
- Standard LED illumination for a wide range of applications

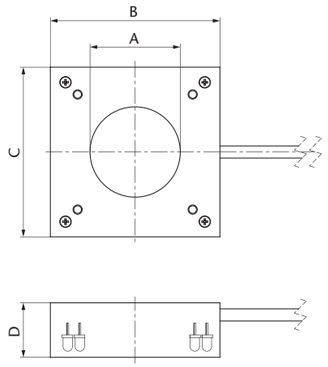
Model	Emitted Color	Power (W)	Internal Diameter A (mm)	External Diameter B (mm)	Height C (mm)	Lighting Angle D (Degree)	Weight (g)
CV-R-32X10-70□	●:R	0.9	ϕ10	ϕ32	16	70	35
	●:B	1.7					
	○:W	1.7					
CV-R-42X18-65□	●:R	1.5	ϕ18	ϕ42	18	65	55
	●:B	2.7					
	○:W	2.7					
CV-R-50X28-75□	●:R	0.7	ϕ28	ϕ50	16	75	55
	●:B	2.6					
	○:W	2.8					
CV-R-70X35-90□	●:R	1.5	ϕ35	ϕ70	22	90	140
	●:B	5.5					
	○:W	5.5					
CV-R-90X30-80□	●:R	5.3	ϕ30	ϕ90	20	83	260
	●:B	9.3					
	○:W	10.3					
CV-R-90X50-70□	●:R	3.5	ϕ50	ϕ90	20	71	180
	●:B	6.2					
	○:W	6.4					
CV-R-120X58-50□	●:R	3.1	ϕ58	ϕ120	31.5	52	560
	●:B	13.1					
	○:W	13.5					



Square Ring Illumination: CV-SQ Series

- Ring illumination with LEDs mounted vertically onto a planar substrate in a square chassis

Model	Emitted Color	Power (W)	Internal Diameter A (mm)	Housing Length B (mm)	Housing Width C (mm)	Height D (mm)	Weight (g)
CV-SQ-56X56X30□	●:R	1.0	ϕ30	56	56	18	85
	●:B	2.5					
	○:W	2.6					
CV-SQ-70X70X34□	●:R	2.0	ϕ34	70	70	18	110
	●:B	4.6					
	○:W	4.6					



Low Angle Ring Illumination

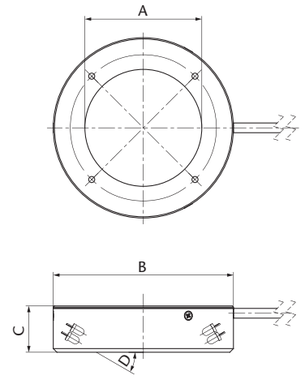
CV-RLA/RLA-00 Series CE



Low Angle Ring Illumination: CV-RLA Series

- Ideal for imaging of uneven surfaces such as embossment and surface flaw detection

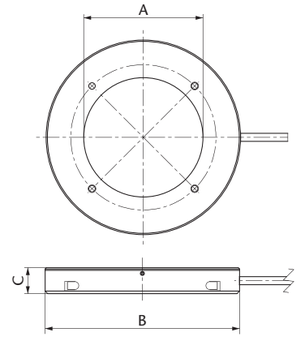
Model	Emitted Color	Power (W)	Internal Diameter A (mm)	External Diameter B (mm)	Height C (mm)	Lighting Angle D (Degree)	Weight (g)
CV-RLA-74X48-30□	●:R	2.2	ϕ48	ϕ74	19	30	95
	●:B	5.6					
	○:W	5.3					
CV-RLA-100X70-30□	●:R	1.8	ϕ70	ϕ100	22	30	170
	●:B	8.7					
	○:W	8.4					
CV-RLA-132-96X15□	●:R	2.5	ϕ96	ϕ132	22	15	280
	●:B	7.1					
	○:W	7.2					



Zero Angle Ring Illumination: CV-RLA-00 Series

- Installation possible from close range of object from horizontal inner diameter illumination from 360-degree

Model	Emitted Color	Power (W)	Internal Diameter A (mm)	External Diameter B (mm)	Height C (mm)	Weight (g)
CV-RLA-75X46-00□	●:R	0.5	ϕ46	ϕ75	10	70
	●:B	2.5				
	○:W	2.8				
CV-RLA-96X60-00□	●:R	0.7	ϕ60	ϕ96	10	110
	●:B	3.1				
	○:W	3.5				
CV-RLA-200X170-00□	●:R	2.0	ϕ170	ϕ200	10	160
	●:B	5.9				
	○:W	6.1				



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Shadowless Illumination

CV-FR/DR/DSQ Series CE



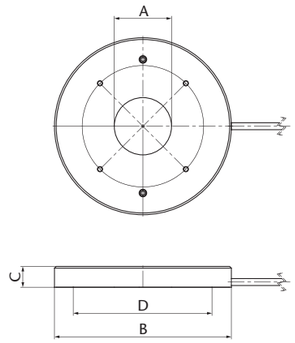
Shadowless Ring Illumination: CV-FR Series

- Optimal soft, uniform light for shiny surfaces

Shadowless Low Angle Ring Illumination: CV-DR Series

- Shallow angle LED illumination that provides diffused, soft light
- Ideal for flaw or edge detection on reflective surfaces

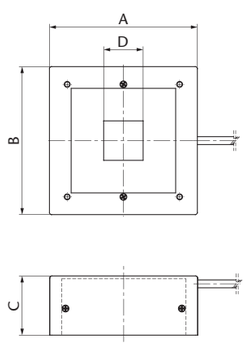
Model	Emitted Color	Power (W)	Internal Diameter A (mm)	External Diameter B (mm)	Height C (mm)	Lighting Area D (mm)	Weight (g)
CV-FR-102X33□	●:R	1.2	ϕ33	ϕ102	12	ϕ80	190
	●:B	3.3					
	○:W	3.2					
CV-FR-125X44□	●:R	2.3	ϕ44	ϕ125	12	ϕ102.5	280
	●:B	3.8					
	○:W	4.0					
CV-DR-100X73□	●:R	1.7	ϕ73	ϕ100	40	ϕ93.5	230
	●:B	5.0					
	○:W	5.8					
CV-DR-136X109□	●:R	1.7	ϕ109	ϕ136	40	ϕ129.5	340
	●:B	8.6					
	○:W	8.4					
CV-DR-180X153□	●:R	2.3	ϕ153	ϕ180	40	ϕ173.5	420
	●:B	10.3					
	○:W	11.6					



Square Shadowless Low Angle Illumination: CV-DSQ Series

- Diffused illumination best suited for square shape objects, such as in BGA & QFP applications

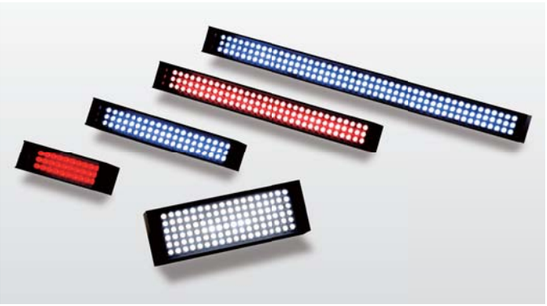
Model	Emitted Color	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height C (mm)	Window Size D (mm)	Weight (g)
CV-DSQ-48X48-15□	●:R	0.4	48	48	30	□10(With Reflector) □26(Without Reflector)	110
	●:B	2.0					
	○:W	1.1					
CV-DSQ-75X75-15□	●:R	0.7	75	75	30	□20(With Reflector) □53(Without Reflector)	180
	●:B	2.6					
	○:W	3.0					
CV-DSQ-96X96-15□	●:R	0.9	96	96	30	□74	190
	●:B	4.3					
	○:W	2.6					
CV-DSQ-120X120-15□	●:R	1.1	120	120	30	□98	240
	●:B	5.2					
	○:W	6.0					



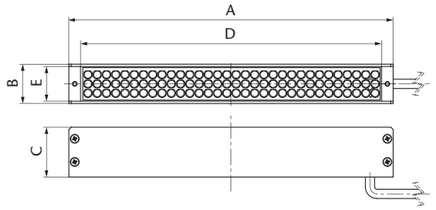
※ For LED controllers, see P28.

Bar Illumination

CV-BA Series CE



- High-intensity LED block array
- Can be directed at any angle to the surface for either direct bright field or optimal oblique dark field lighting



Model	Emitted Color	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height C (mm)	Lighting Area Size D (mm)	LED Matrix	Weight (g)
CV-BA-42X15□	●:R	0.8	52	17	21.5	42 × 15	3 × 12	35
	●:B	1.4						
	○:W	1.5						
CV-BA-74X27□	●:R	1.8	86	29	18.5	74 × 27	6 × 18	110
	●:B	3.9						
	○:W	3.8						
CV-BA-82X15□	●:R	0.7	92	17	21.5	82 × 15	3 × 32	45
	●:B	2.8						
	○:W	2.7						
CV-BA-130X15□	●:R	1.0	140	17	21.5	130 × 15	3 × 60	65
	●:B	4.5						
	○:W	4.4						
CV-BA-200X15□	●:R	1.7	204	17	21.5	194 × 15	3 × 128	80
	●:B	6.8						
	○:W	7.2						

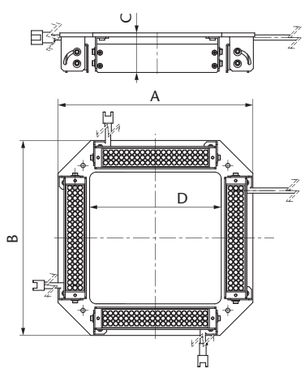
Square Bar Type Illumination

CV-BAQ Series CE



- Four high-intensity bar LED mounted to 1 single cable with individual angle adjustment from each bar LED

Model	Emitted Color	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height C (mm)	Window Size D (mm)	Weight (g)
CV-BAQ-108X108□	●:R	3.1	108	108	30	□60	220
	●:B	5.7					
	○:W	6.0					
CV-BAQ-148X148□	●:R	2.6	148	148	30	□100	290
	●:B	11.3					
	○:W	10.9					
CV-BAQ-200X200□	●:R	4.1	200	200	30	□152	390
	●:B	18.1					
	○:W	17.5					



※ For LED controllers, see P28.

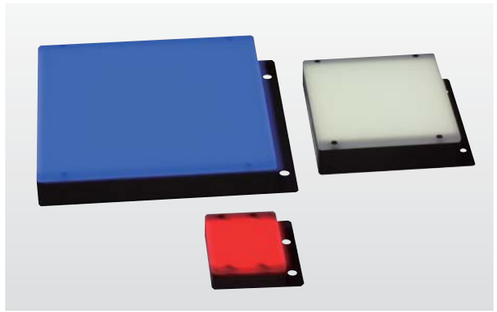
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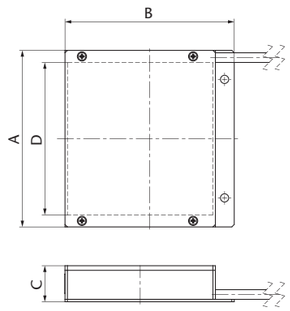
Direct Backlights (Chip Mount Type)

CV-FL Series CE

- **Densely packaged chip LEDs in thin chassis (Height: 15 mm)**



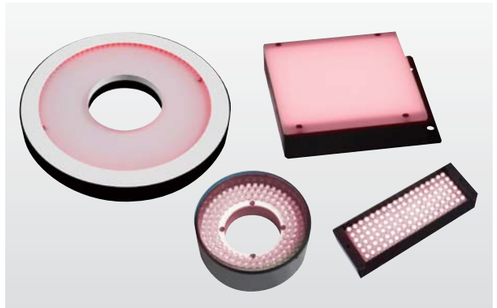
Model	Emitted Color	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height C (mm)	Lighting Area Size D (mm)	Weight (g)
CV-FL-27X27□	●:R	0.6	37	37	15	□27	35
	●:B	1.4					
	○:W	1.5					
CV-FL-51X51□	●:R	4.5	61	61	15	□51	70
	●:B	5.9					
	○:W	6.3					
CV-FL-63X60□	●:R	1.2	73	70	15	63 × 60	85
	●:B	3.4					
	○:W	3.2					
CV-FL-83X75□	●:R	4.7	85	95	15	83 × 75	110
	●:B	7.2					
	○:W	6.9					
CV-FL-100X100□	●:R	3.5	110	112	15	□100	160
	●:B	10.4					
	○:W	9.9					
CV-FL-230X230□	●:R	25	240	268	15	□230	760
	●:B	24					
	○:W	24					



IR Illumination

IR CE

- **Provides image recognition at high contrast especially for items that are difficult to view invisible light**
- **Effective for materials that chemically react to visible light rays or allow IR wavelength transmission**



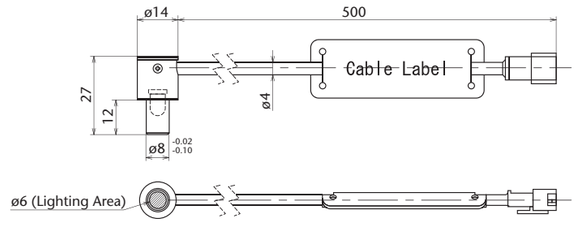
Model	Emitted Color	Power (W)	Illumination Type	Housing External Size (mm)	Weight (g)
CV-BA-42X15IR	●:IR	0.9	Bar Illumination	52×17×21.5	35

※ For LED controllers, see P28.

Coaxial Illumination

CV-CE Series CE

- **Body design has been miniaturized and this series is even smaller than its compact predecessors**
- **L-shaped (right angle) illumination cable design enables further space savings**



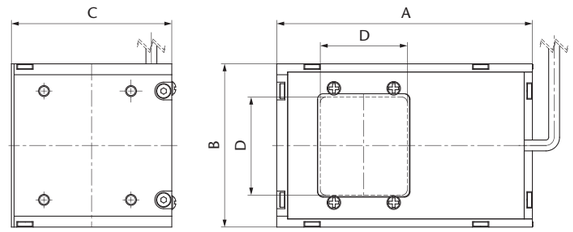


Model	Emitted Color	Power (W)	Tip External Diameter (mm)	Tip Length (mm)	Lighting Area Size (mm)	Housing Diameter (mm)	Housing Length (mm)	Weight (g)
CV-CE-14X8□	●:R	0.4	ϕ8	12	ϕ6	14	27	20
	●:B	0.8						
	○:W	0.8						

Simulated Coaxial Illumination

CV-CX Series CE

- **Highly uniform pseudo-coaxial (on-axis) lighting**
- **Designed for use with our lenses without built-in coaxial illumination**





Model	Emitted Color	Power (W)	Housing Length A (mm)	Housing Width B (mm)	Height C (mm)	Window Size D (mm)	Optical Path Length Extension (mm)	Weight (g)
CV-CX-75X46X40□	●:R	1.5	75	46	41	28×26	1.2	190
	●:B	2.2						
	○:W	2.1						
CV-CX-94X60X58□	●:R	1.1	94	60	59	36×32	1.2	350
	●:B	6.4						
	○:W	6.2						
CV-CX-120X84X79□	●:R	4.9	120	84	80	□50	1.2	580
	●:B	5.8						
	○:W	6.1						

※ For LED controllers, see P28.

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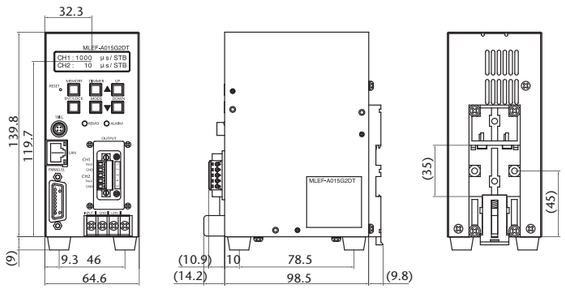
Dedicated LED Digital Controller

MLEF Series

Two in one multifunctional digital controllers for Strobe/PWM

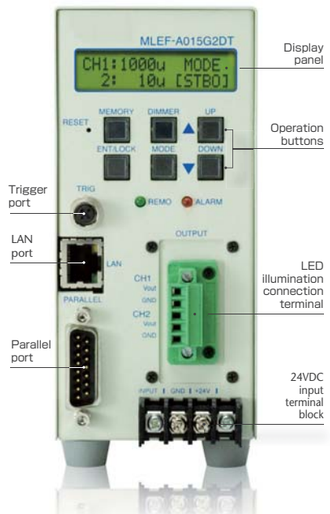
- **Ethernet communication**
  Ethernet/parallel (8-bit) port provided for external interfacing
- **Mode selectable between strobe overdrive, strobe, and PWM**
  Adaptable to various lighting modes ranging from strobe overdrive to continuous lighting
- **Compact and lightweight body allows flexible installation to a DIN rail or direct mounting**





Specifications

Model name	MLEF-A015G2DT
Input voltage	24VDC +/-10% (21.6-26.4V)
Input current	1.7A (Maximum)
Output channel	2 channels
Output power	PWM / STB : 30W (Two channel total), STBO : 16W (Two channel total)
Output voltage	PWM/STB : 24Vp-p, STBO : 40Vp-p
Output current	PWM/STB : 1.25Ap-p, STBO : 4.0Ap-p
Variable output range	PWM/STB : 0 to 100%, STBO : 10 to 40V *1
Remote control	Ethernet LAN port / Parallel port
PWM mode	PWM frequency: 100kHz (Control step: 250 steps)
STB mode	Light emitting time: 1.1 to 10.0ms (90 steps in 0.1ms increments) * Effective bit setting: From 101 to 190 among the 8 bits
STBO mode	Light emitting time : 10 to 1000µs (100 steps in 10µs increments) Flashing duty cycle limit: 10% * Effective bit setting: From 0 to 100 among the 8 bits Vout adjustment : 0 to 100% (256 steps)
Trigger input range	5 to 24VDC STB/STBO_TRG Input response time : Less than 10µs PWM_ON/OFF Input response time : Less than 10µs
Setup mode	STB : 5ms / 10ms, STBO : 10µs / 1000µs
Memory function	Manual memory (ROM) : Up to 3 memory settings Remote LAN memory (RAM) : Up to 3memory settings Remote parallel memory (RAM) : Up to 4 memory settings
Safety feature	Overcurrent / Overvoltage / STB(O) output overtime protection *2 Fuse rating: 4.0A (input)
Set reclosing interval	Not less than 1 second
External dimensions	W65 x H140 x D99mm (Projecting parts excluded)
Weight	Approx. 800g



*1 The minimum voltage is a reference value.
*2 To reset a protection function (but not applicable to blowout of a fuse), restore the main supply with a 2 to 3 second interval after turning it off.

CompaVis®

Accessories

Diffuse Plates: CV-DF Series

These diffuser plates, which can be attached to the illumination using the dedicated adapters, help prevent unwanted lighting reflection.



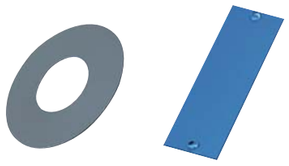
Adapters: CV-AD Series

Adapter for attaching dedicated diffuser plates and polarizing plate for CompaVis® ring illumination.



Polarizing Plate: CV-PL Series

Attaching these polarizing plates on the lens side (inside the polarizer) cuts specular reflection in particular areas and reduces glare in the resulting image.



Light Control Film: CV-LC Series

Diffused illumination are transformed into collimated illumination by this films.



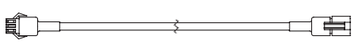
Support Plates: CV-SP Sreies

This supporter plate to reduce the deflection of polarizing plate for bar.

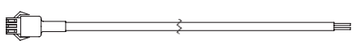
Cable

The cable of M12 connector also is possible provided.

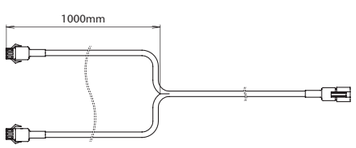
Extension Cable



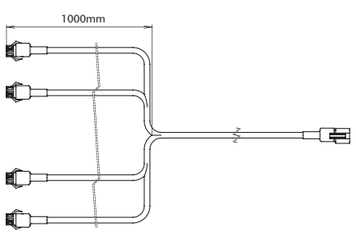
Connection Cable for MLEF



Branch Cable - 2 Way



Branch Cable - 4 Way



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Halogen/Metal Halide Light Source Light Guide Series

The MHAA / AB series Halogen light sources are compact with a robust design. These light sources are suitable for mounting. The complete product range includes 100W, 150W and 100W NIR (1127nm). The light source can be controlled manually and through external controls, including 0-5V analog control and parallel 8-bit digital control.

Advantages of Fiber Optic Light Guides:

- Compact Illuminating Unit Size
- Highest Intensity Output
- Uniform Light
- All Visible Wavelengths and IR When Required
- Directional Light Control
- External Heat and Noise From Illuminated Area

Light Sources and Available Light Guides

Light Source	Light Guide				Other Options
	Plastic		Compound Glass		
	Fiber Bundle Diameter (Light Source Side)		Standard	Heat Resistant	Internal Filter (*1)
	Below 6 Dia.	6 Dia. or More			
MHAA-100W	○	KA-03 (*3)	○	○	○
MHAB-100W-IR	×	×	×	○	× (*2)
MHAB-150W	×	×	○	○	△

*1 The characteristics may be changed by deterioration under the operating environment.
*2 Deterioration may be caused by use at high output.
*3 This is when the product is used at the environmental temperature of 40˚C or less.



Halogen Light Sources
MHAA/AB
MHAB-IR



Ring Light Guides
MRG/P
Straight Light Guides
MSG/P
Bifurcated Light Guides
MWG/P
Multifurcated Light Guides
M#G#
Plate Type Light Guides
MPP
Line Light Guides
MKG/P
Long Width Line Light Guides
MFKG/P



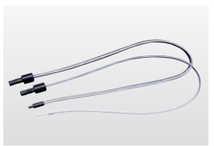
Condenser Lenses
Light Guide Options

P32,33



Halogen Light Sources
MHAA MHAB

P34



Straight Light Guides
MSG/P MWG/P M3G/M4G

P35



Ring Light Guides
MRG/P Series
Plate Type Light Guides
MPP Series

P36,37



Line Light Guides
MKG/P MFKG/P
Accessories

※ For detailed specifications of products, see our WEB site. (http://www.moritex.com)

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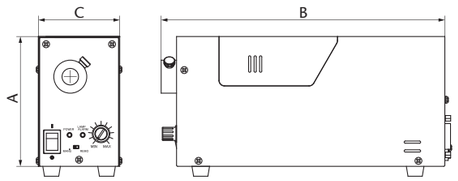
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Halogen Light Sources

MHAA-100W Series
MHAB-150W Series
MHAB-100W-IR



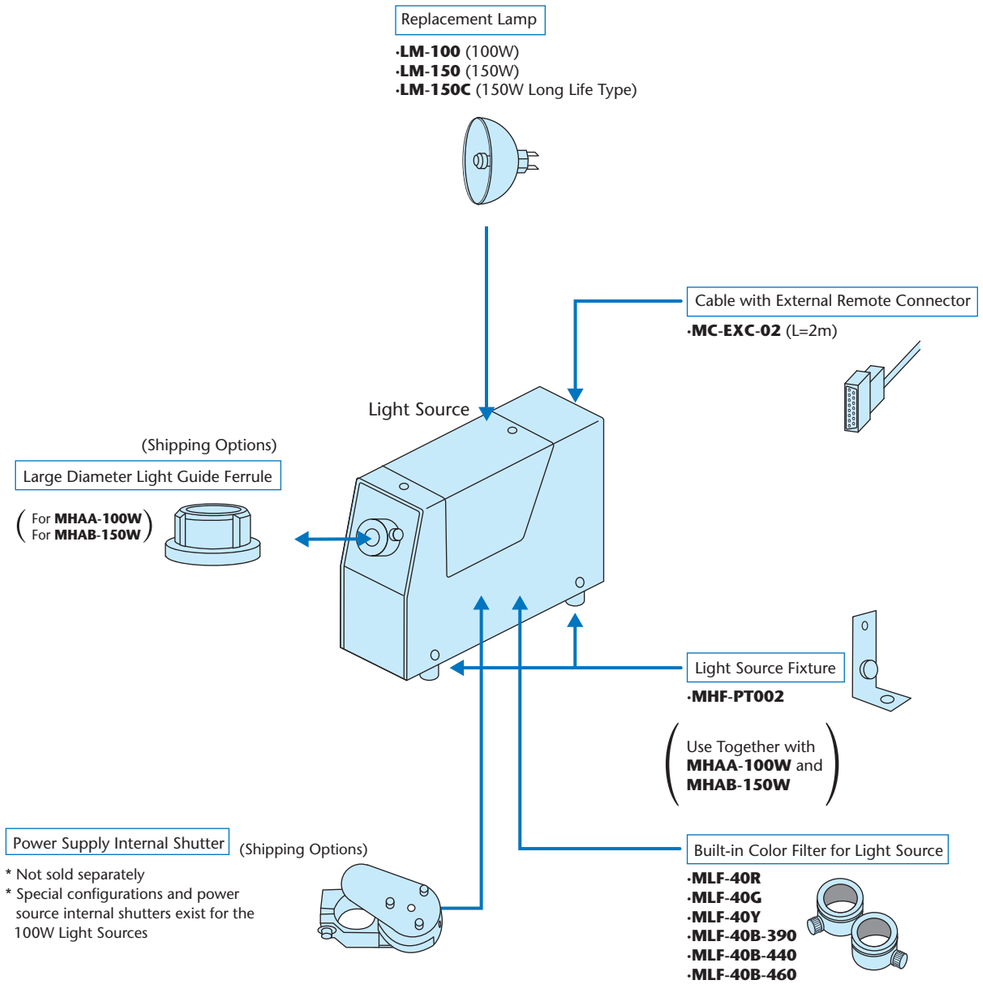
- **Wide wavelength**
- **Realized Illumination to close to natural light not to be emitted with an LED source**
- **Compact, lightweight**
- **Ease of maintenance possible with Lamp replacement**



Model]	Input Voltage (V)	Input Current (A)	Compatible Lamp	Average of Lamp Life Time (Hours Nominal)	Average Illuminance (lx)	Color Temperature (K)	External Light Control	Size A x B x C (mm)	Weight (kg)
MHAA-100W-100V **MHAA-100W-200V**	AC100-120/ AC200-240 (50/60Hz)	2.4 @AC100V 1.2 @AC200V	LM-100	1,000	30,000	3,100	0-5V Analog	127 x 258 x 74	2
MHAB-150W-100V **MHAB-150W-200V**	AC100-240 (50/60Hz)	(100W Lamp) 1.6 @AC100V 0.7 @AC240V (150W Lamp) 2.2 @AC100V 1.0 @AC240V	LM-100 LM-150 LM-150C	1,000(LM-100) 50(LM-150) 500(LM-150C)	30,000(LM-100) 80,000(LM-150) 45,000 (LM-150C)	3,100(LM-100) 3,400(LM-150) 3,200 (LM-150C)	0-5V Analog	119 x 278 x 120	3.2
MHAB-100W-IR-100V **MHAB-100W-IR-200V**	AC100-240 (50/60Hz)	1.6 @AC100V 0.7 @AC240V	LM-100-IR	1,000	-	-	0-5V Analog	119 x 278 x 120	3.2

Options

Option Attachment Drawing for Halogen Light Sources



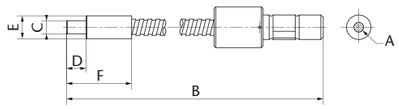
For light source compatibility and specifications, see corresponding pages.

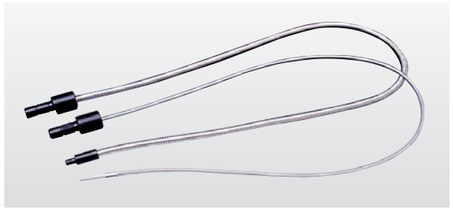
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Straight Light Guides

MSG/P Series

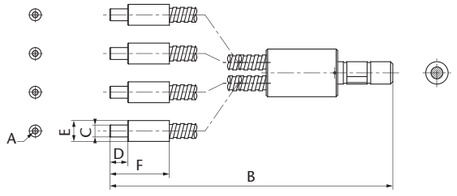




Model	Fiber Type	Bundle Diameter A (mm)	Light guide Length B (mm)	Tip External Diameter C (mm)	Tip Length D (mm)	Housing Diameter E (mm)	Housing Length F (mm)
MSG3-1100S-SD	Glass	ϕ3	1,100	ϕ5	30	ϕ8	45
MSG4-500R	Glass	ϕ4	500	ϕ8	12	ϕ14	40
MSG4-1100S	Glass	ϕ4	1,100	ϕ8	12	ϕ14	40
MSP4-1100S	Plastic	ϕ4	1,100	ϕ8	12	ϕ14	40
MSG4-2200S	Glass	ϕ4	2,200	ϕ8	12	ϕ14	40
MSG4-1100S-RM	Glass	ϕ4	1,100	ϕ8	12	ϕ14	40
MSG4-2200S-RM	Glass	ϕ4	2,200	ϕ8	12	ϕ14	40
MSG6-1100S	Glass	ϕ6	1,100	ϕ8	12	ϕ14	40
MSG6-2200S	Glass	ϕ6	2,200	ϕ8	12	ϕ14	40
MSG6-1100S-RM	Glass	ϕ6	1,100	ϕ8	12	ϕ14	40
MSG6-2200S-RM	Glass	ϕ6	2,200	ϕ8	12	ϕ14	40
MSG8-1100S	Glass	ϕ8	1,100	ϕ14	40	ϕ20	60
MSG8-2200S	Glass	ϕ8	2,200	ϕ14	40	ϕ20	60
MSG10-1100S	Glass	ϕ10	1,100	ϕ14	40	ϕ20	60
MSG10-2200S	Glass	ϕ10	2,200	ϕ14	40	ϕ20	60

Bifurcated Light Guides

MWG/P Series





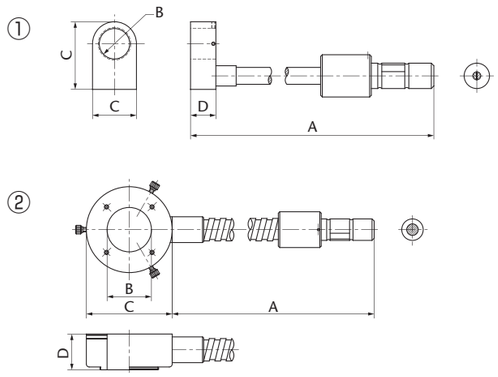
Model	Fiber Type	Branched Number	Bundle Diameter of Object Side A (mm)	Light guide Length B (mm)	Tip External Diameter C (mm)	Tip Length D (mm)	Housing Diameter E (mm)	Housing Length F (mm)
MWG-500R	Glass	2	ϕ4	500	ϕ8	12	ϕ14	40
MWG-L-650R	Glass	2	ϕ4	650	ϕ8	12	ϕ14	40
MWG-1000S	Glass	2	ϕ4	1,000	ϕ8	12	ϕ14	40
MWG-2000S	Glass	2	ϕ4	2,000	ϕ8	12	ϕ14	40
MWG-1000V	Glass	2	ϕ4	1,000	ϕ8	12	ϕ14	40
MWP-1000V	Plastic	2	ϕ4	1,000	ϕ8	12	ϕ14	40
MWG-1000SR	Glass	2	ϕ4	1,000	ϕ8	12	ϕ14	40
MWG7-1000S	Glass	2	ϕ7	1,000	ϕ14	40	ϕ20	60
MWG-1000S-SD	Glass	2	ϕ3	1,000	ϕ5	30	ϕ8	45
M3G4-1000S	Glass	3	ϕ4	1,000	ϕ8	12	ϕ14	40
M3G4-2000S	Glass	3	ϕ4	2,000	ϕ8	12	ϕ14	40
M4G4-1000S	Glass	4	ϕ4	1,000	ϕ8	12	ϕ14	40
M4G4-2000S	Glass	4	ϕ4	2,000	ϕ8	12	ϕ14	40
M3G3-1000S-SD	Glass	3	ϕ3	1,000	ϕ5	30	ϕ8	45
M3G3-2000S-SD	Glass	3	ϕ3	2,000	ϕ5	30	ϕ8	45
M4G3-1000S-SD	Glass	4	ϕ3	1,000	ϕ5	30	ϕ8	45
M4G3-2000S-SD	Glass	4	ϕ3	2,000	ϕ5	30	ϕ8	45

Multifurcated Light Guides

M3G/M4G Series

Ring Light Guides

MRG/P Series

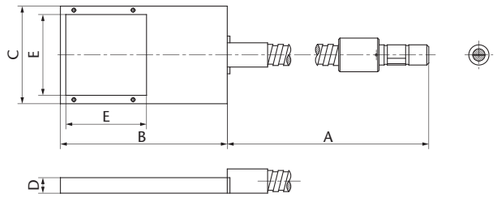




Model	Fiber Type	Shape Type	Light guide Length A (mm)	Internal Diameter B (mm)	Lighting Area Size C (mm)	Height D (mm)
MRP16-1500V	Plastic	1	1,500	ϕ16	40×20	15
MRP18-1500V	Plastic	1	1,500	ϕ18	40×26	15
MRG25-1500S	Glass	1	1,500	ϕ25	50×34	15
MRG31-1000S	Glass	2	1,000	ϕ31	ϕ60	25
MRG31-1500S	Glass	2	1,500	ϕ31	ϕ60	25
MRP31-1000S	Plastic	2	1,000	ϕ31	ϕ60	25
MRP35-1500S	Plastic	2	1,500	ϕ35	ϕ50	22
MRG40-1500S	Glass	2	1,500	ϕ40	ϕ75	25
MRG48-1000S	Glass	2	1,000	ϕ48	ϕ75	25
MRG48-1500S	Glass	2	1,500	ϕ48	ϕ75	25
MRG53-1000S	Glass	2	1,000	ϕ53	ϕ80	25
MRG53-1500S	Glass	2	1,500	ϕ53	ϕ80	25
MRG61-1000S	Glass	2	1,000	ϕ61	ϕ90	25
MRG61-1500S	Glass	2	1,500	ϕ61	ϕ90	25
MRG75-1000S	Glass	2	1,000	ϕ75	ϕ110	25
MRG75-1500S	Glass	2	1,500	ϕ75	ϕ110	25

Plate Type Light Guides

MPP Series





Model	Fiber Type	Light guide Length A (mm)	Housing Length B (mm)	Housing Width C (mm)	Height D (mm)	Lighting Area Size E (mm)
MPP30-1500S-2	Plastic	1,500	76	42.5	9.5	□30
MPP60-1500S-2	Plastic	1,500	124	72.5	11.5	□60
MPP90-1500S-2	Plastic	1,500	154	102.5	13.5	□90

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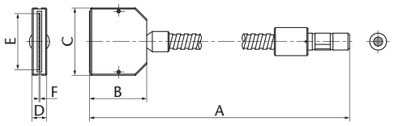
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Line Light Guides

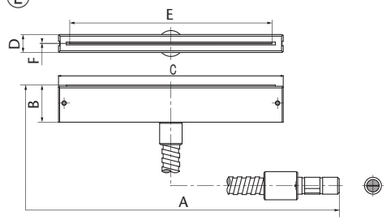
MKG/P Series



①



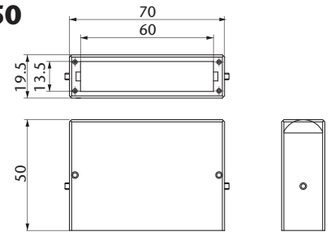
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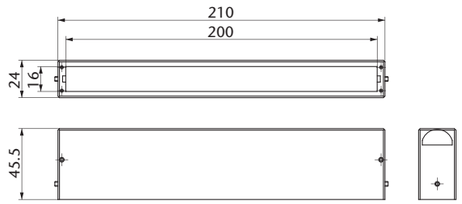
Model	Fiber Type	Shape Type	Branched Number	Light guide Length A (mm)	Housing Length B (mm)	Housing Width C (mm)	Housing Height D (mm)	Lighting Area Length E (mm)	Lighting Area Width F (mm)
MKG50-1500S	Glass	1	1	1,500	51	60	13	50	1
MKG50×0.5W-1500S	Glass	1	2	1,500	51	60	13	50	0.5
MKG180-1500S	Glass	2	1	1,500	66	200	16	180	0.5
MKP180-1500S	Plastic	2	1	1,500	33	200	16	180	0.5

Condenser Lenses for Line Light Guides

MLK-50



MLP-180



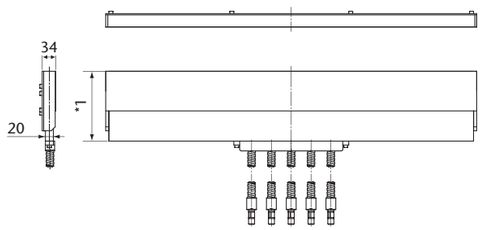
Long Width Line Light Guides

MFKG/P Series

Model	Fiber Type	Line Length (mm)	Required Quantity of Light Source
★ **MFKG360-2000S-SRM-L**	Glass	360	2
★ **MFKG540-2000S-SRM-L**	Glass	540	3
★ **MFKG720-2000S-SRM-L**	Glass	720	4
★ **MFKG900-2000S-SRM-L**	Glass	900	5
★ **MFKG1080-2000S-SRM-L**	Glass	1,080	6
★ **MFKG1260-2000S-SRM-L**	Glass	1,260	7
★ **MFKG1440-2000S-SRM-L**	Glass	1,440	8
★ **MFKP360-2000S-SRM-L**	Plastic	360	2
★ **MFKP540-2000S-SRM-L**	Plastic	540	3
★ **MFKP720-2000S-SRM-L**	Plastic	720	4
★ **MFKP900-2000S-SRM-L**	Plastic	900	5
★ **MFKP1080-2000S-SRM-L**	Plastic	1,080	6
★ **MFKP1260-2000S-SRM-L**	Plastic	1,260	7
★ **MFKP1440-2000S-SRM-L**	Plastic	1,440	8

★Made-to-order products.

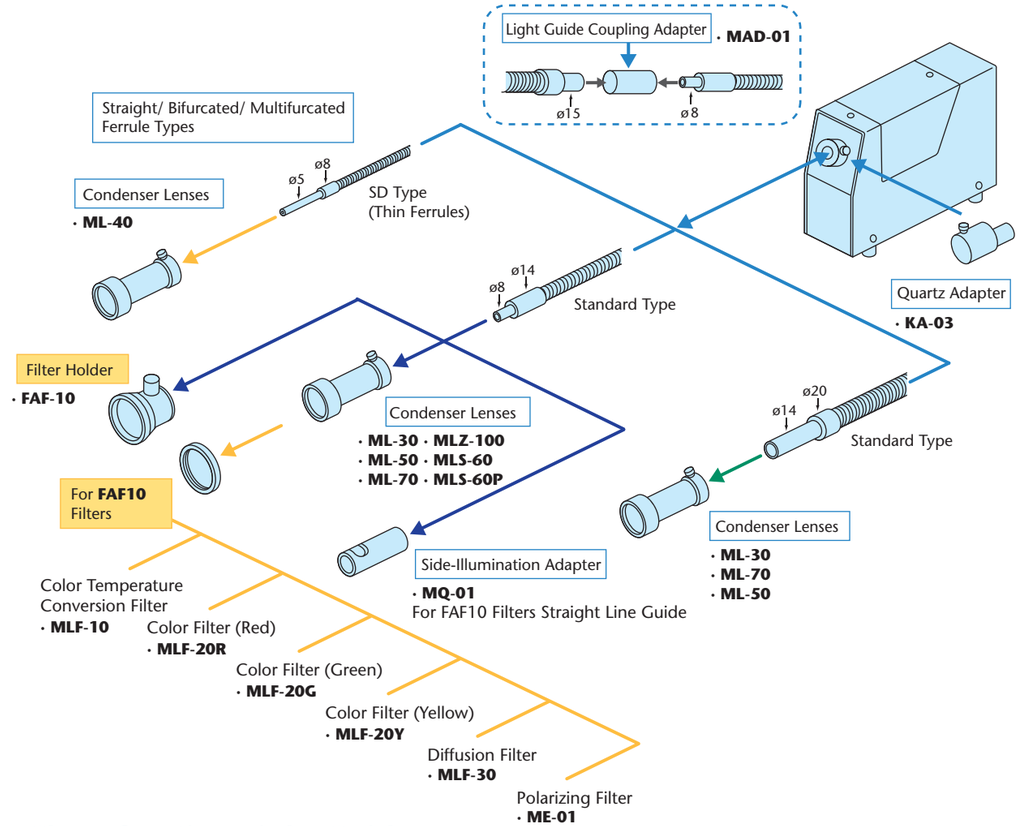
Light Guides



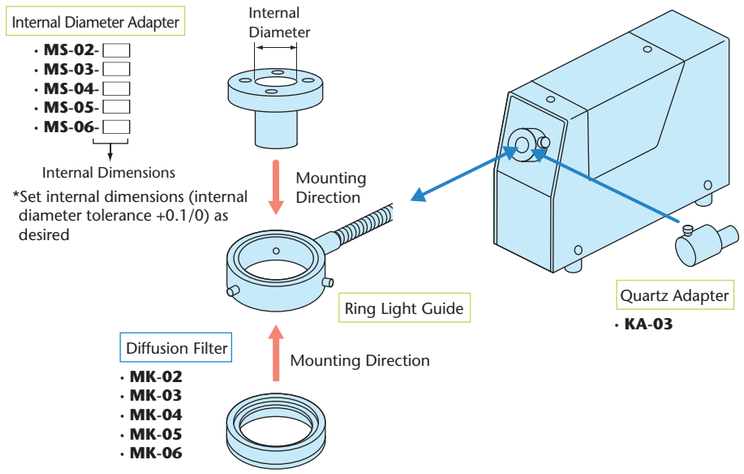
*1 Operable in Range from 159.5 to 194.5mm

Light Guide Accessories

Accessory Attachment Drawing for Straight/ Bifurcated/ Multifurcated Light Guides



System Chart for Ring Light Guides



For light source compatibility and specifications, see corresponding pages.

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Quartz UV Light Guide

UV

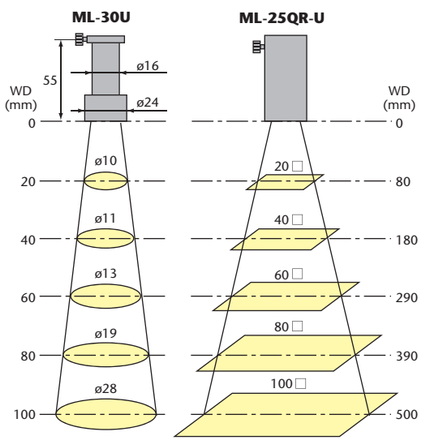
	Model	Notes
	MSS5-1000S-UVIII	ø5×1000L
	MWS5-1000S-UVIII	ø5 x 2-Branch x 1000L
	M4S5-1000S-UVIII	ø5 x 4-Branch x 1000L
★	**MSS3.5-1000S-UVIII**	ø3.5×1000L
★	**MWS3.5-1000S-UVIII**	ø3.5 x 2-Branch x 1000L
★	**M3S3.5-1000S-UVIII**	ø3.5 x 3-Branch x 1000L
★	**M4S3.5-1000S-UVIII**	ø3.5 x 4-Branch x 1000L
★	**MSS10-1000S-UVIII**	ø10×1000L
★	**MKS50-1000S-UVIII**	Line Width: 50mm
★	**MKS50X0.4W-1000S-UVIII**	Line Width: 50mm x 0.4mm (2-Branch Type)

★Made-to-order products.



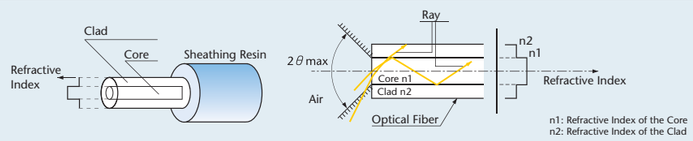
Quartz UV Light Guide Options

Unit for Condenser Lenses



Model	Notes
ML-30U	Condenser Lenses
ML-25QR-U	Uniform Light Irradiate Quartz Lens

Glossary

Measured Light Quantity	Light Flex (lumen)	The quality of light emitted from a light source. The unit is lumen (lm) 1lm=1cd×sr
	Luminous Intensity (candela)	Light source quantity representing the quantity of light emitted from a light source per unit solid angle. The unit is candela (cd)
	Intensity (lux)	Brightness on an object surface irradiated by light emitted from a light source. The unit is lux (lx) 1lx=1lm/m² where m² is the area of the object surface
	Illuminance (nit)	Light source quantity representing the luminous intensity of light emitted from a light source per unit area. The unit is nit (nt) 1nt=1cd/m² or 1sb=1cd/cm²
Filter	Color Temperature K	Color temperature representing the spectral energy distribution of light emitted from a light source. The unit is kelvin (K). A light source of a low value is reddish and one of a high value is bluish. To change the color temperature of a light source, use a color temperature conversion filter.
	Polarizing Filter	A filter to block light being reflected from glass, metal, or liquid surfaces that is too strong and detrimental.
	ND Filter	A filter to reduce the light quantity only, without affecting color reproduction. Also known as a gray filter.
	Color Temperature Conversion Filter	A filter to change the color temperature. The wavelength can be selected.
	Diffusion Filter	A filter to diffuse light from a light source and suppress illumination irregularity.
	IR Cut Filter	This filter can be classified into two types: heat-ray absorbing filters (or, catathermic filters), which absorb infrared rays, and cold filters, which reflect infrared rays by a multilayer film.
	Light Control Film	By laminating a micro-louver film with PET or other types of film, diffused light becomes more parallel.
Lamp	Halogen Lamp	An incandescent lamp with a trace of halogen gas added to the sealed gas. The halogen cycle prevents the blackening of the bulb wall. The optical output and color temperature are stable with less attenuation compared with that of an ordinary incandescent.
	Metal Halide Lamp	A lamp of great color rendering and high intensity using illumination by various metal halogen compounds and mercury.
	LED	A Light Emitting Diode (LED) is a semi-conductor element that applys a fixed-direction current to a crystalline substance with a semi-conductor PN junction, generating energy in the substance and emitting the energy as light. The basic theory was found early in the 20th century and silicon carbide was confirmed, experimentally, to emit light if a current was applied. Following this research, the current technology was established in the 1960's. Red and green were developed first, yellow in the 1970's, blue in 1993 and white in 1996.
	Constant-Current Power Supply	A power supply that can supply a fixed current even if infinite impedance and load voltage change.
	Constant-Voltage Power Supply	A power supply that can supply a fixed voltage even if 0 impedance and load voltage change.
	Resistance	Resistance (R) represents the difficulty of a current to pass: R = V/I. The unit is ohm (Ω). If the potential of a current drops by 1 volt (V) per ampere (A), the resistance is 1Ω.
Fiber	Optical Fiber	
	Numerical Aperture NA	The characteristic of receiving rays transmitted through the end face of an optical fiber. This is determined by the refractive indexes of the core and clad of the optical fiber. $NA=\sqrt{n_1^2-n_2^2}$
	Light-Reception Angle θ	An angle where the optical fiber can receive light. $\theta=2\sin^{-1}(NA)$
	Transmittance	The amount of incident light that passes through an optical fiber, typically at a given wavelength, represented as a fraction or rate. The higher the transmission rate or transmittance, the better.
	Attenuation	The reduction or loss in intensity of light as it travels through an optical fiber, also known as transmission loss. Lower attenuation means better performance. Unit is dB/km.

Catalog Icon Key

CE — It means that the product has declared conformity to CE standards and RoHS (2011/65 / EU), or has obtained third party certification. The CE marking (CE mark) is a mandatory conformity mark on many products placed on the single market in the European Economic Area (EEA). The CE marking certifies that a product has met EU consumer safety, health or environmental requirements.

IP67 — IP (Ingress Protection) is a set of standard measurements related to the protection of products from solid foreign objects and water. IP is prescribed by the Japanese Industrial Standards Committee (JISC0920) and the International Organization for Standardization (IEC60529). IP67 is a level of protection that can withstand being submerged in water at a depth of 1 meter for 30 minutes.

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