

LED LIGHTING CATALOG

New Products Digest Edition

Lelmac
● CHALLENGE & HIGH QUALITY

1,200,000 lx Brimax Line Light [IDBC-LSR series]

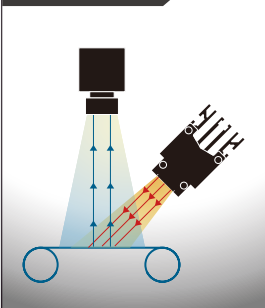
Achieves a high power output of over 1,200,000lx
(High uniform type is 900,000 lx)
New model release with higher luminance

Patent Pending

Application

- Film / Paper / Textile / FPD-related / Steel / Non-ferrous metal / Metalware / Glass industries
 - ➔ Surface scratch, contaminants, dirt, and irregularity inspection
- Electronic components industry
 - ➔ Pattern and scratch inspections for PCBs

LIGHTING STRUCTURE



Size lineup 100 - 1500mm (100mm increments)

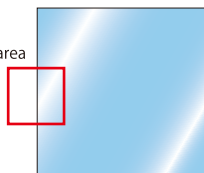


Available in 2 types to suit your application

Available in 2 types for light emitting type.

Due to the characteristics of the element/lens, the high-brightness type may produce uneven brightness when performing short-range imaging, but the high-uniformity type can irradiate with reduced uneven brightness by diffusing light widely.

Imaging area



Imaging sample: Half mirror

High-intensity Type
IDBC-LSR series



The high-brightness type is very bright because of its high focusing rate, but uneven brightness may occur when performing short-range imaging.

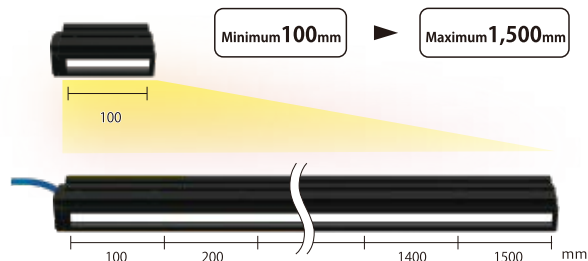
The high-uniformity type allows light to be diffused widely, and it allows irradiation with reduced uneven luminance even when performing short-range imaging.
IDBC-LSR-S series



The high-uniformity type allows light to be diffused widely, and it allows irradiation with reduced uneven luminance even when performing short-range imaging.

The high-uniformity type allows light to be diffused widely, and it allows irradiation with reduced uneven luminance even when performing short-range imaging.

Available in 100mm increments up to a maximum length of 1,500mm.



Easy installation according to your environment

Dedicated slide nut insertion slots are available on the side of the housing. Dedicated slide nuts of M4 are attached as the standard. By selecting an optional dedicated slide nut, it can be fixed with M5 or M3. An M5 hex nut insertion slot is available on the back of the housing. It can be fixed at any position for your needs.



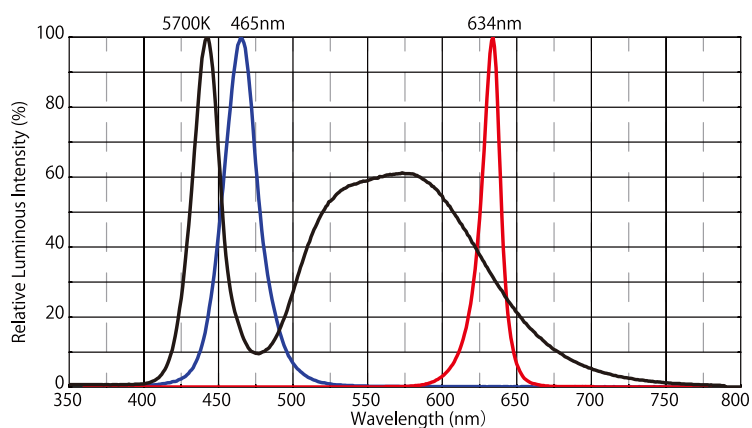
Slot for exclusive slide nut
Slot for (M5,M4,M3)



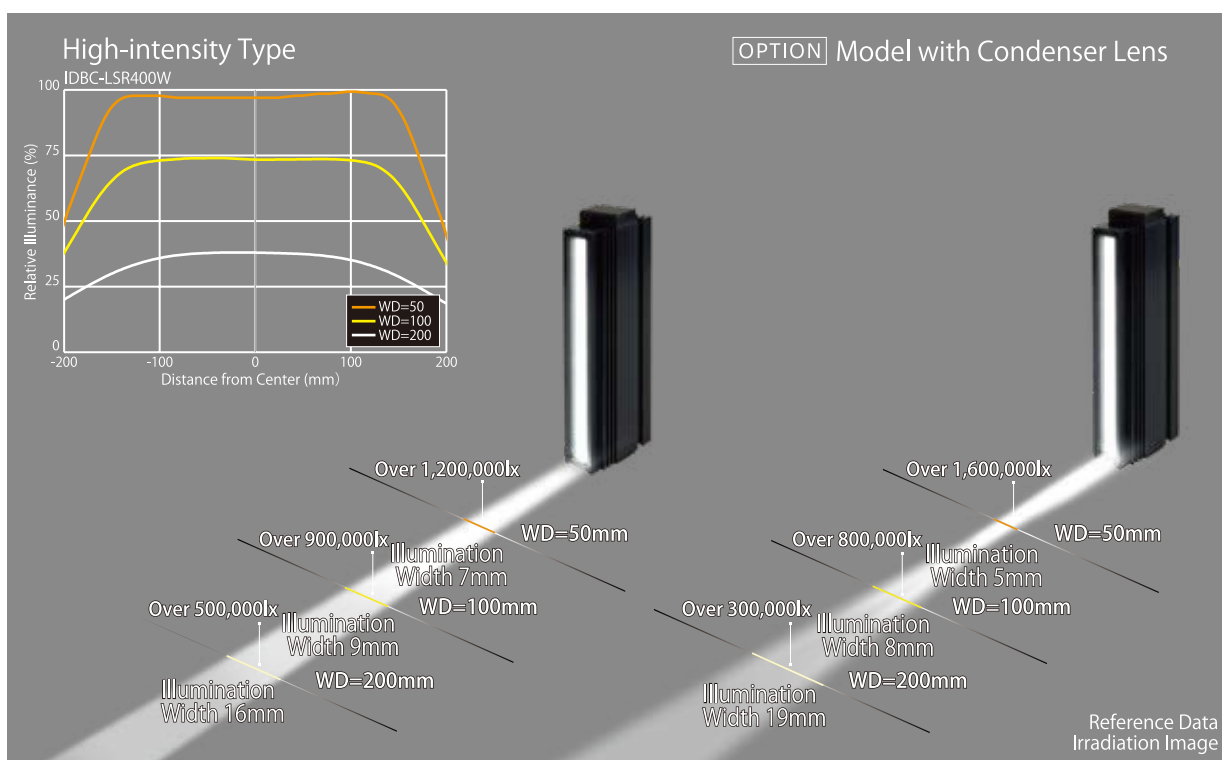
Slot for M5 hex nuts

	Dedicated slide nut model
For M3	INBB-M3-5P
For M4	INBB-M4-5P
For M5	INBB-M5-5P

Wavelength Characteristics (Reference Value)



Wavelength Characteristics (Reference Value)



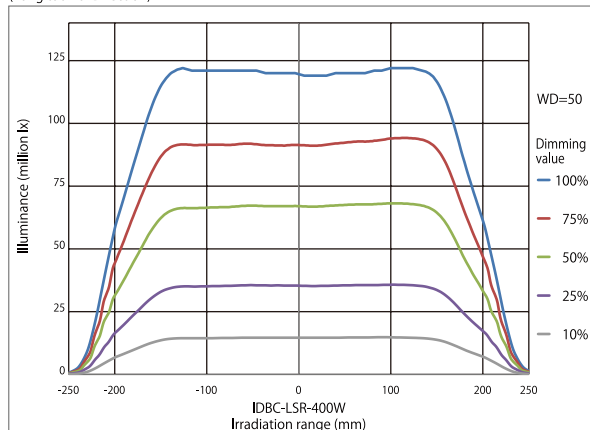
Irradiation Image



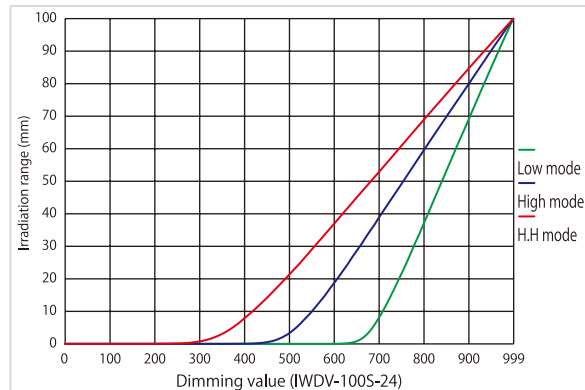
IDBC-LSR400W
〈Irradiation Image〉

Dimming change characteristics (reference value)

(Longitudinal Direction)

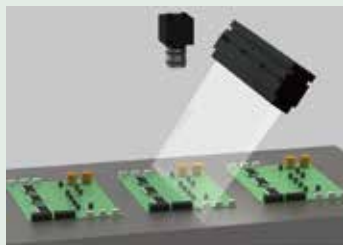


Dimming linearity (reference value)



Usage Example

Object: Electronic component mounting board

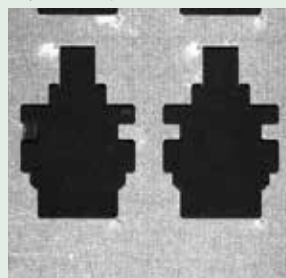


Object: Film surface inspection



Image Example

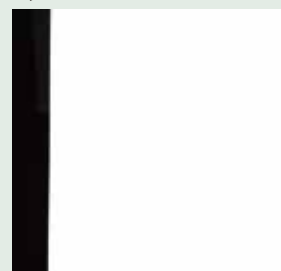
Object: Metal plate



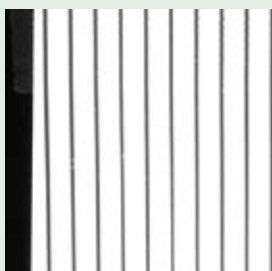
IDBC-LSR

With the IDBC-LSR series, it is possible to recognize fine scratches on metal surfaces and changes by laser processing in the surface.

Object: Half mirror



IDBC-LSR-S



IDBC-LSR

With the IDBC-LSR-S series, imaging without reflection of LEDs is possible even with highly reflective mirrors.

Model	Light Color	Power Consumption (W)	Input Voltage	Controller Type	Applicable controllers	Drawing
IDBC-LSR100□■	R W B	15 / 20 / 20	DC24V	①	【Controller type①】 IWDV-100S-24 IWDV-300S-24 IWDV-600M2-24	n=1
IDBC-LSR200□■	R W B	30 / 40 / 40				n=2
IDBC-LSR300□■	R W B	45 / 60 / 60				n=3
IDBC-LSR400□■	R W B	60 / 80 / 80				n=4
IDBC-LSR500□■	R W B	75 / 100 / 100				n=5
IDBC-LSR600□■	R W B	90 / 120 / 120		②	【Controller type②】 IWDV-300S-24 IWDV-600M2-24	n=6
IDBC-LSR700□■	R W B	105 / 140 / 140				n=7
IDBC-LSR800□■	R W B	120 / 160 / 160				n=8
IDBC-LSR900□■	R W B	135 / 180 / 180				n=9
IDBC-LSR1000□■	R W B	150 / 200 / 200				n=10
IDBC-LSR1100□■	R W B	165 / 220 / 220				n=11
IDBC-LSR1200□■	R W B	180 / 240 / 240				n=12
IDBC-LSR1300□■	R W B	195 / 260 / 260				n=13
IDBC-LSR1400□■	R W B	210 / 280 / 280				n=14
IDBC-LSR1500□■	R W B	225 / 300 / 300				n=15

★□ represents light color (R=Red, W=White, B=Blue).

★For high uniform specification, add -S on ■. (Blue is only for high uniform specifications.)

★For connecting the lightings and controllers, extension cables are required. Please order cables of the desired length.

★Please refer to I-CB-S▽R-MCB extension cables. ▽ represents the length (m) of extension cables. (▽=1, 2, 3, 4, 5, 7, 10)

★Please refer to IKBB-LSR▽△ for the diffusion plate.

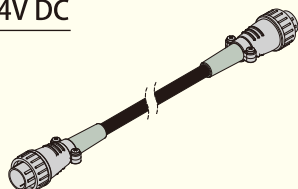
▽ represents the length (mm) of the diffusion plate. (▽=100,200,300,~,1400,1500) △ represents the transmittance (%).

Transmittance is available from 30%/60%/80%/90% and represented as -30/-60/-80/-90.

★Please refer to ILBB-▽ for the condenser lens. ▽ represents the length (mm). (▽=100,200,300,~,900,1000)

Extension cables for 24V DC

I-CB-S_R-MCB Series



It is an extension cable for DC24V lighting applicable to large capacity.

Controller (Voltage control)

IWDV-100S-24 (100W, 1CH)

IWDV-300S-24 (300W, 1CH)

IWDV-600M2-24 (600W, 2CH)



By connecting the IWDV-300M1-24 to the IWDV-600M2-24, it can control up to 4CH.

Output control: 1000 levels

External control: LAN, 10bit parallel

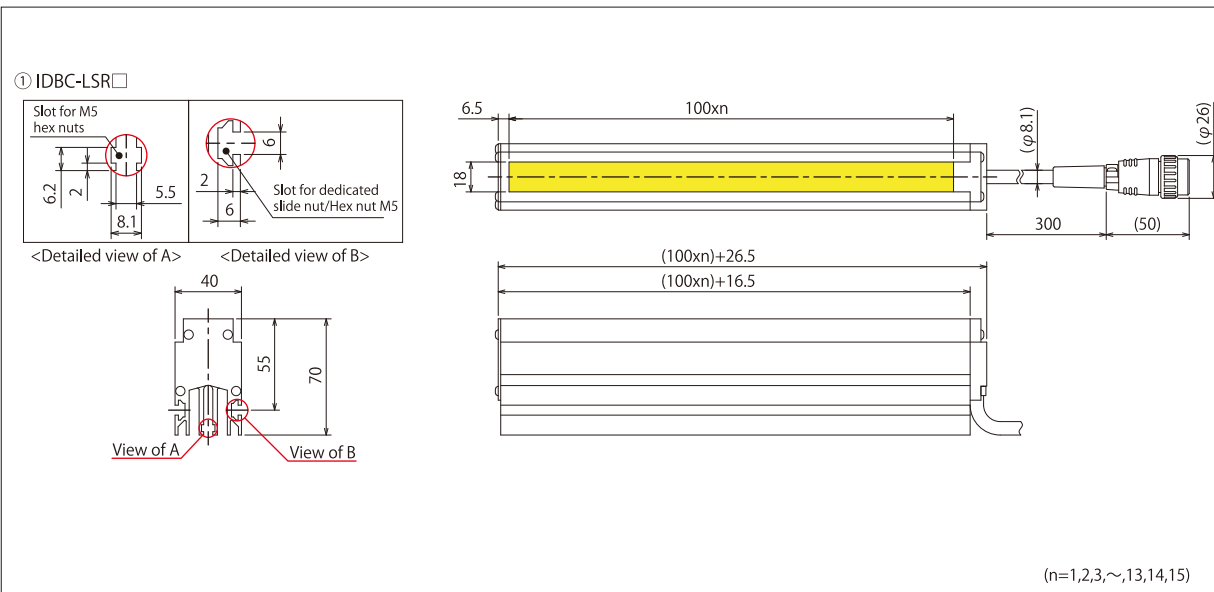
Half Mirror BOX for Line lighting

HMBOXB-LSR Series



Half Mirror BOX for Line lighting Optional unit that enables coaxial irradiation by mounting. High illumination and high contrast images can be obtained by regular reflection and backlight. It is available in 100mm increments up to 500mm according to the application.

Dimensions



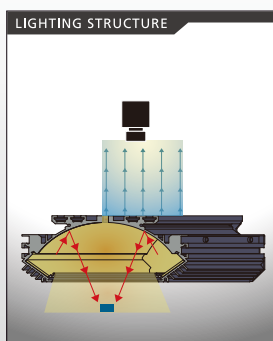
Half-pipe Light for Line Camera [IQDH-RE series]

High output of over 150,000 lx of central illumination (LWD=10mm)

High brightness & compact design

Application

- Packaging/Food Industries
 - ➔ Scanning characters and barcodes on irregular objects
- Pharmaceutical industry
 - ➔ Defect inspection of pill and medicine packaging and visual inspection of pills in blister packaging
- Food industries
 - ➔ Contaminants and color identification inspection

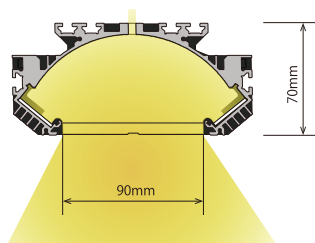


Size lineup 100 - 1000mm (100mm increments)

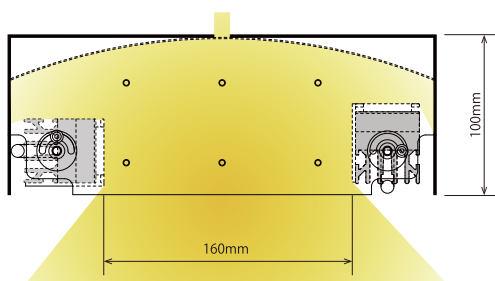


Compact housing

IQDH-RE series

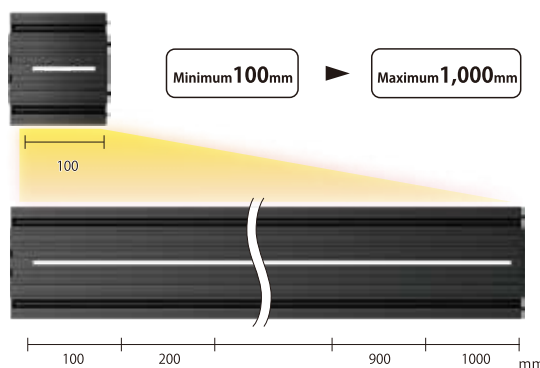


IQDH-LSR series (Conventional)



Wide-ranging size variations

Available in 100 mm increments up to a maximum length of 1,000mm.



Easy installation according to your environment

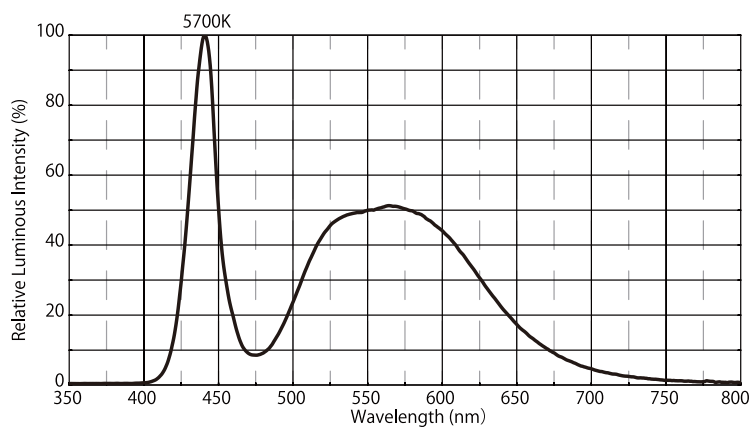
Dedicated slide nuts insertion slot are available on the front and side of the housing.
Dedicated slide nut of M4 are attached as the standard.
By selecting optional dedicated slide nuts, the IQDH-RE series can be fixed with M5 or M3.
The light can also be fixed using the M5 hex nut.
By using these nuts, it is possible to fix the light in any position for your needs.



Slot for exclusive slide nut
Slot for M5, M4, and M3

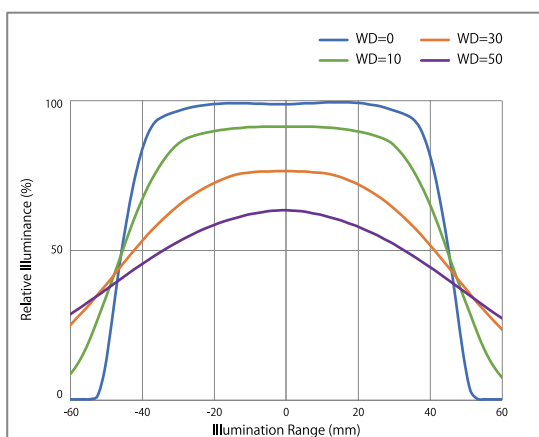
	Dedicated slide nut model
For M3	INBB-M3-5P
For M4	INBB-M4-5P
For M5	INBB-M5-5P

Wavelength Characteristics (reference value)

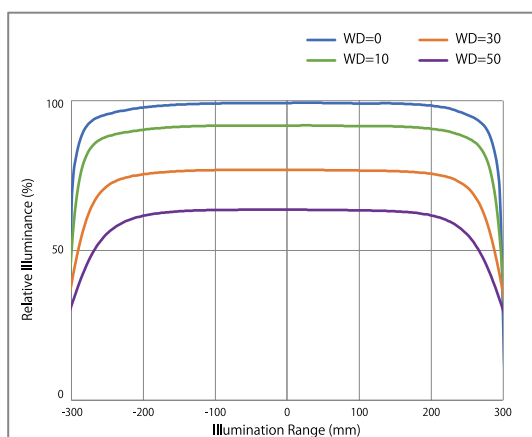


Wavelength Characteristics (Reference Value)

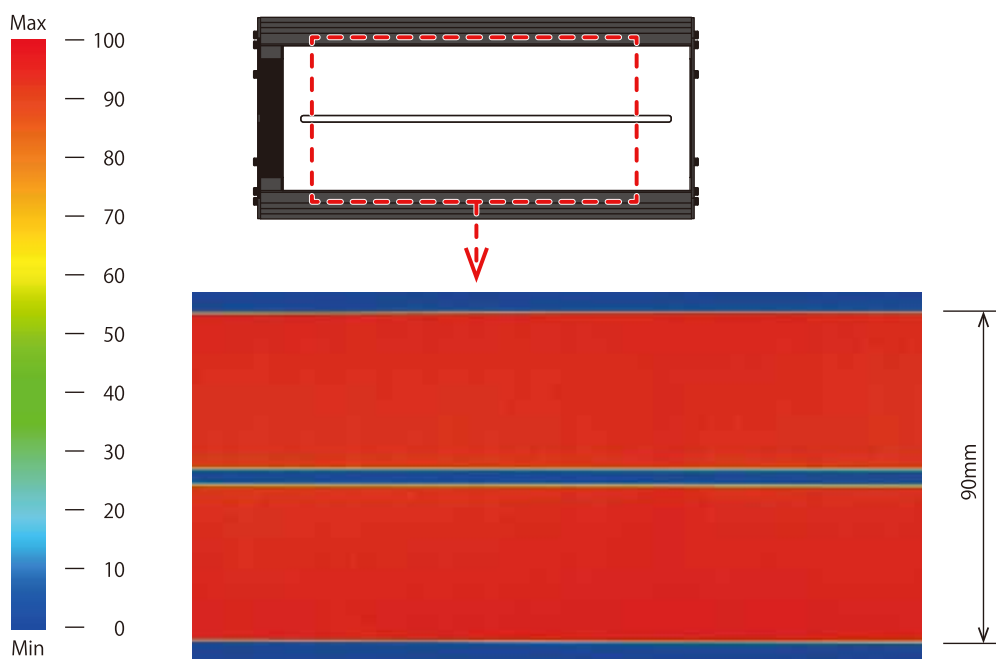
Lateral Direction: IQDH-RE600W



Longitudinal Direction: IQDH-RE600W



Luminance distribution (Reference Value)



IQDH-RE300W (central part)

Usage Example

Object: LCD panel inspection

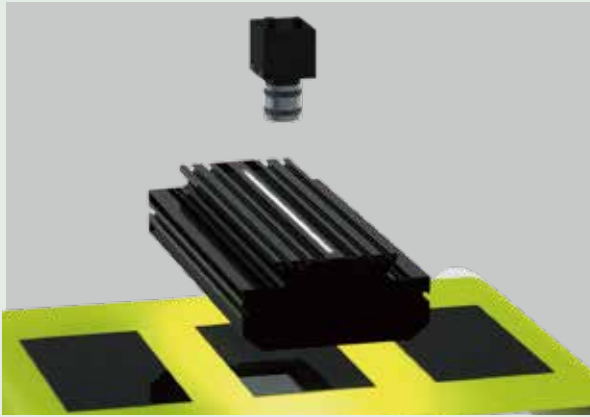


Image Example



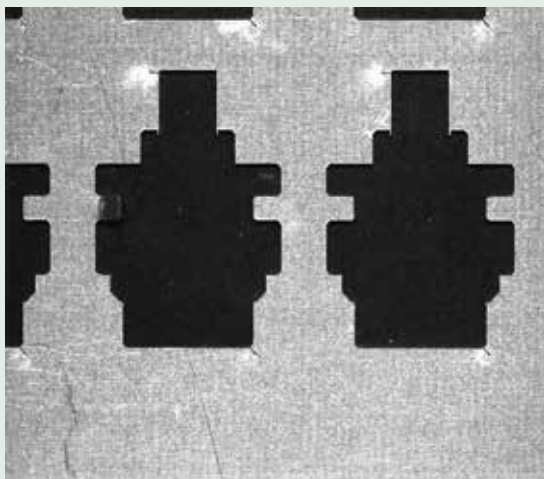
IDBB-LSRA400W

When using line lighting such as the IDBB-LSRA series, it is suitable for scratch inspection since it can detect satin processing and dust well, but it is not suitable for character recognition.

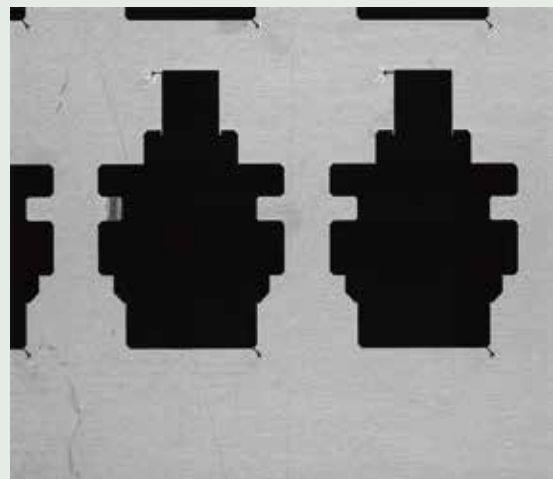
In addition, the direction of illumination also produces large uneven shadows. Using the IQDH-RE series, the halfpipe lighting for line scan cameras, fine unevenness of the pear can be made less noticeable, and it is ideal for character recognition inspection.



IQDH-RE



IDBC-LSR



IQDH-RE

When using line lighting such as the IDBC-LSR series, it enables the recognition of rough surfaces, scratches, and laser surface roughening. Using the IQDH-RE series, the halfpipe lighting for lines, fine unevenness of the pear can be made less noticeable, and it is ideal for shape recognition of cutouts and inspection of fine lines due to overall contrast improvement.

Model	Light Color	Power Consumption (W)	Input Voltage	Controller Type	Applicable Controller	Drawing
IQDH-RE100W	W	24	DC48V	①	【Controller ①】 IWDV-120S-48 IWDV-300S-48-C1 IWDV-600S-48-C1	①
IQDH-RE200W	W	48				
IQDH-RE300W	W	72				
IQDH-RE400W	W	96				
IQDH-RE500W	W	120		②	【Controller ②】 IWDV-300S-48-C1 IWDV-600S-48-C1	
IQDH-RE600W	W	144				
IQDH-RE700W	W	168				
IQDH-RE800W	W	192				
IQDH-RE900W	W	216				
IQDH-RE1000W	W	240				

★For connecting the lighting and a controller, an extension cable is required. Please order a cable of the desired length.

★Please refer to I-CB-S□R-DNEL2 extension cables. □ represents the length (m) of extension cables. (□ = 1, 2, 3, 5, 7, 10)

Extension cables for 48V DC

I-CB-S_R-DNEL2 Series

It is an extension cable for DC48V lighting corresponding to the new IWDV-48 series.



Recommended controller (Voltage control)

IWDV-120S-48 (100W, 1CH)

IWDV-300S-48-C1 (300W, 1CH)

IWDV-600S-48-C1 (600W, 1CH)

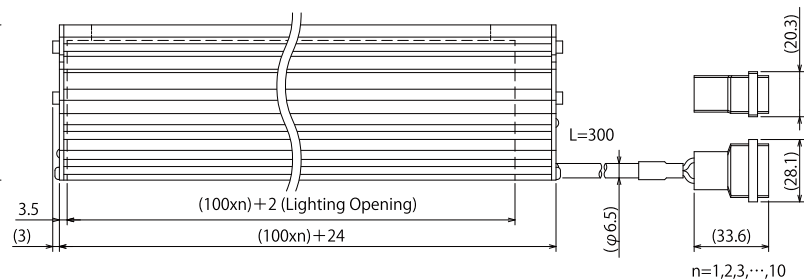
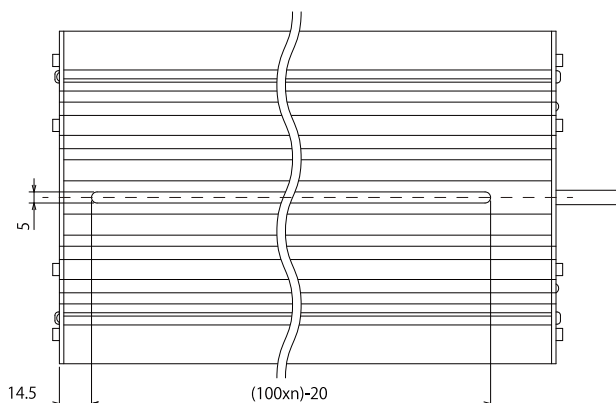
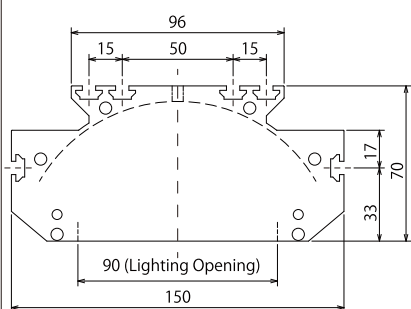
Output control: 1000 levels
External control: LAN, 10bit parallel



① IQDH-RE

Dedicated Slide Nut (M4)

n	(pcs.)	n	(pcs.)
1	2	6	8
2	4	7	
3		8	10
4	6	9	
5		10	



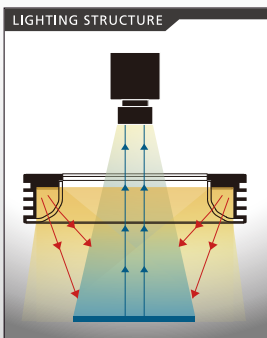
Multi-position Ring Light [IMAR_8ch series]

Multi-channel model that can irradiate from 8 segments
Ideal for visual inspection of uneven objects.

24V DC Models Available

Application

- Semiconductor/Electronic components industries
→ Dirt on chip parts. Edge inspection
- Beverage bottles and plastics industries:
Shape inspection
→ Top chipping inspection, peripheral chipping inspection, engraving inspection

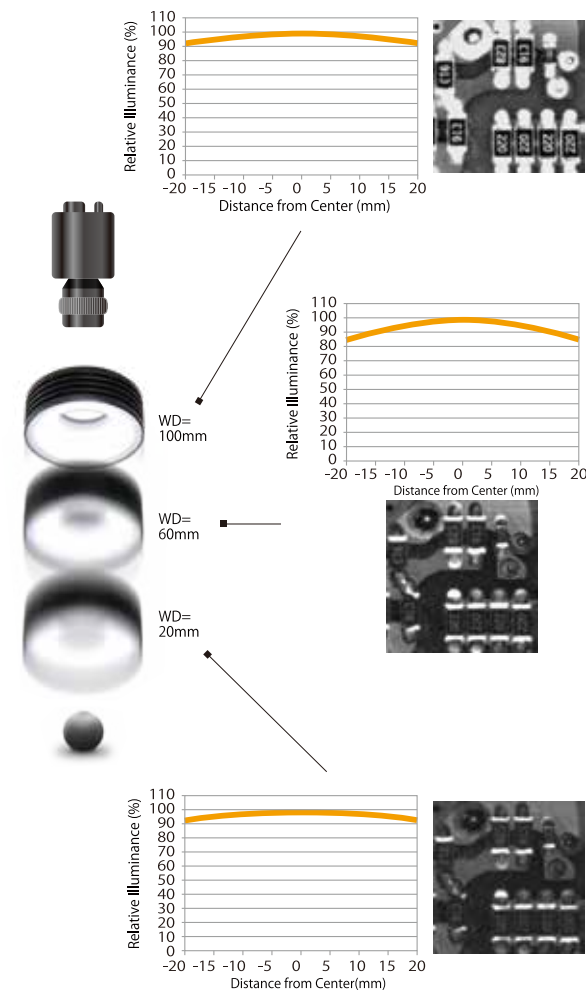


Size lineup

6 sizes of $\phi 80/\phi 110/\phi 130/\phi 160/\phi 200/\phi 250$



Irradiation image (reference value) IMAR-80DW-8ch (all lights)

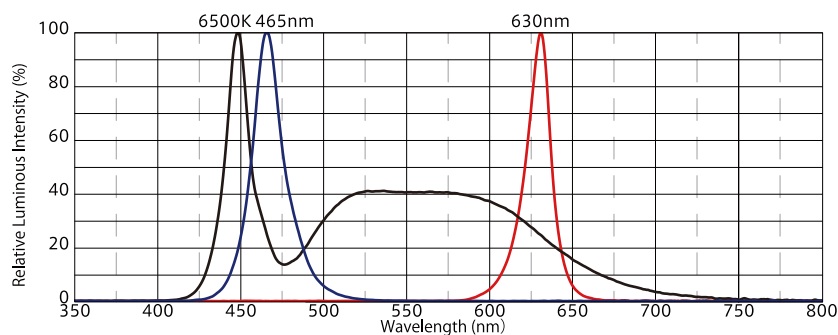


High-speed switching with overdrive controllers enables more detailed inspection



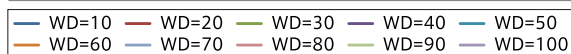
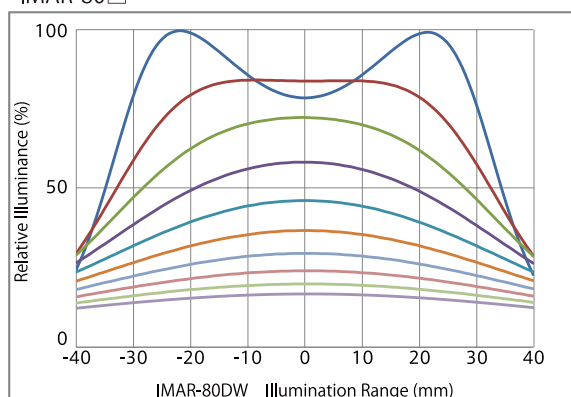
It enables rapid irradiation switching from eight directions by combining with the overdrive controller, IJS-40M8-TP.

Wavelength Characteristics (Reference Value)

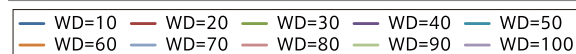
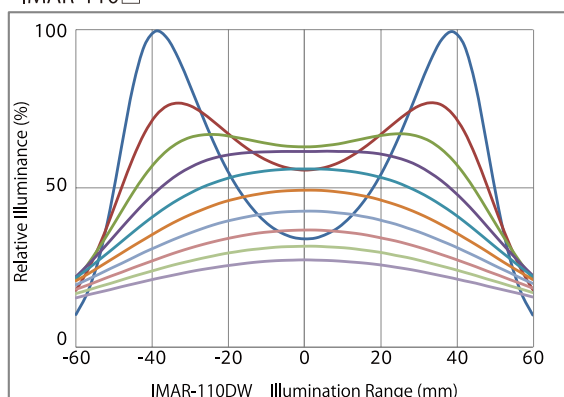


Illuminance Distribution Chart (reference value)

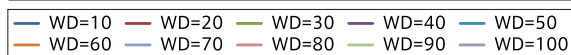
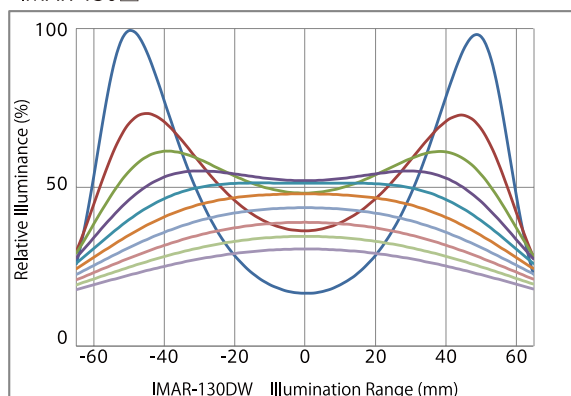
IMAR-80□



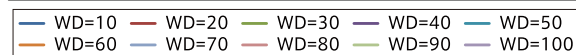
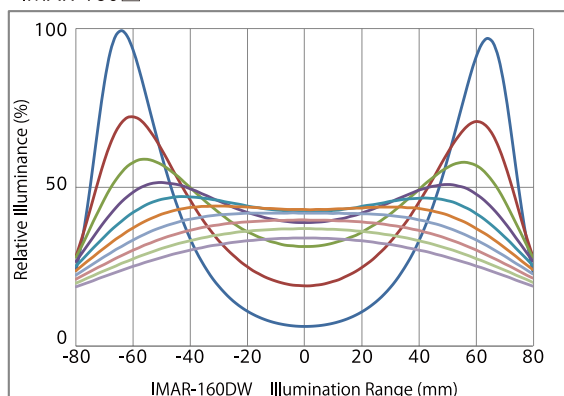
IMAR-110□



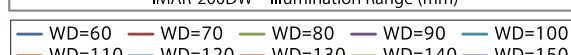
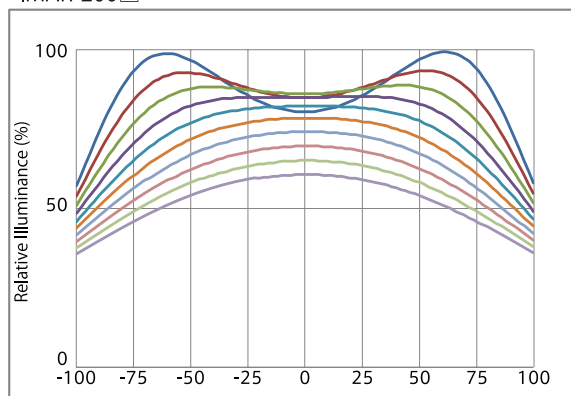
IMAR-130□



IMAR-160□



IMAR-200□



IMAR-250□HV

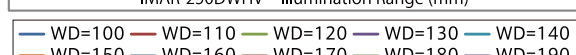
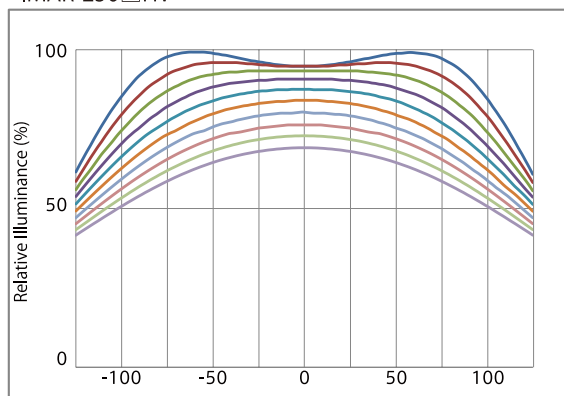


Image Example

Allows invisible defect detection that cannot be detected with omnidirectional irradiation.

Since irradiation from all directions uniformly irradiates the whole, scratches cannot be detected.



Even with irradiation in the same direction as the scratch, the scratch can not be emphasized.

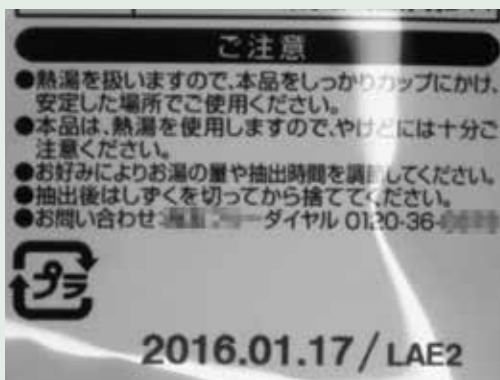


By irradiating perpendicular to the direction of the scratch it can be emphasized and detected.

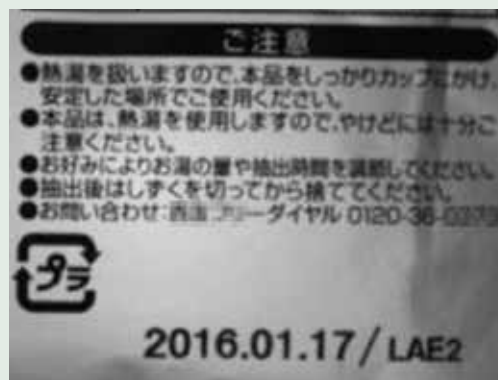


Inspection example by compositing images

By combining images obtained by individually irradiating objects that are prone to halation from eight directions, it is possible to capture images with reduced halation.



Lighting: IMAR-130DW



Lighting: IMAR-130DW-8ch
(composite image)



Lighting: IMAR-130DW-8ch (individually lit)

Model	Light Color	Power Consumption (W)	Input Voltage	SAG	Controller Type	Applicable controllers	Drawing	
IMAR-80□-8ch	DR	8.8	DC12V	E6	①	【Controller ①】 IDMU-P8B-12 IDGB-30M8 Series (Continuous Light) IJS-40M8-TP (Overdrive)	①	
	DW	10.4		C3			②	
	DB	10.4		A3				
IMAR-110□-8ch	DR	11.2		B5			②	
	DW	15.2		95				
	DB	14.4		85			③	
IMAR-130□-8ch	DR	15.2		95				
	DW	19.2		81			④	
	DB	16.8		7A				
IMAR-160□-8ch	DR	17.6		F5		【Controller ②】 IDMU-P8B-12 IDGB-50M8 Series (Continuous Light) IJS-40M8-TP (Overdrive)	④	
	DW	22.4		C1				
	DB	20		AC			⑤	
IMAR-200□-8ch	DR	23.2		B6				
	DW	28		99			⑤	
	DB	26.4		8A				
IMAR-250□HV-8ch	DR	29.6		DA	②		⑥	
	DW	36		B7				
	DB	32.8		A4				

★□ represents light color (DR=Red: 630nm, DW=White: 5000K(typ), DB=Blue: 465nm).

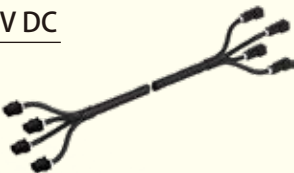
★24V DC models are also available for those with 12V DC input voltage ※The SAG indicates the maximum voltage setting for SAG controllers.

★The output capacity of the IDMU-P8B-12 is up to 36W in a total of 2 channels. (The paired channels are shown on the right [1-2, 3-4, 5-6, 7-8])

Extension cables for 12V DC

I-CB-F Series

When using in moving parts such as robots, please use the robot cables, I-CB-F_R series, that are resistant to bending. For DC24V lighting, please use I-CB-F_-24 or I-CB-S_F-24 series.



Recommended Controller (PWM control)

IDMU Series

Output control: 1000 gradations
Compact PWM controller with 24V DC input voltage that is ideal for in-board installation
It can be extended up to 40ch with unit linkage.
It is also equipped with programming and trigger output functions that can be used in a variety of applications.



<p>① IMAR-80□-8ch</p>	<p>② IMAR-110□-8ch</p>
<p>③ IMAR-130□-8ch</p>	<p>④ IMAR-160□-8ch</p>
<p>⑤ IMAR-200□-8ch</p>	<p>⑥ IMAR-250□-8ch</p>

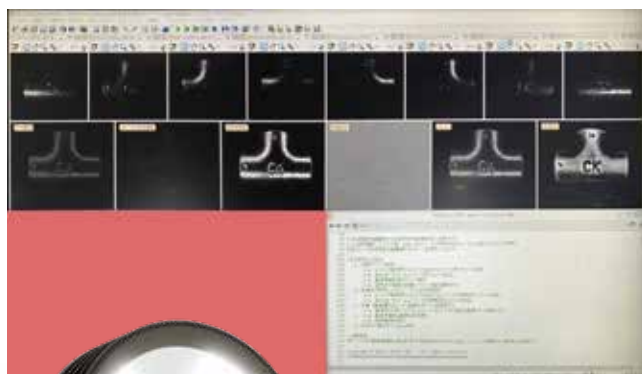
High Speed Synchronous Imaging Starter Kit

It can easily evaluate the image composition algorithms represented by "multiple imaging + photometric stereo" synchronized with illumination direction switch.

All in one solution of hardware and software algorithms such as [Split lighting] [Controller] [I/O Cable] [Sample Program]

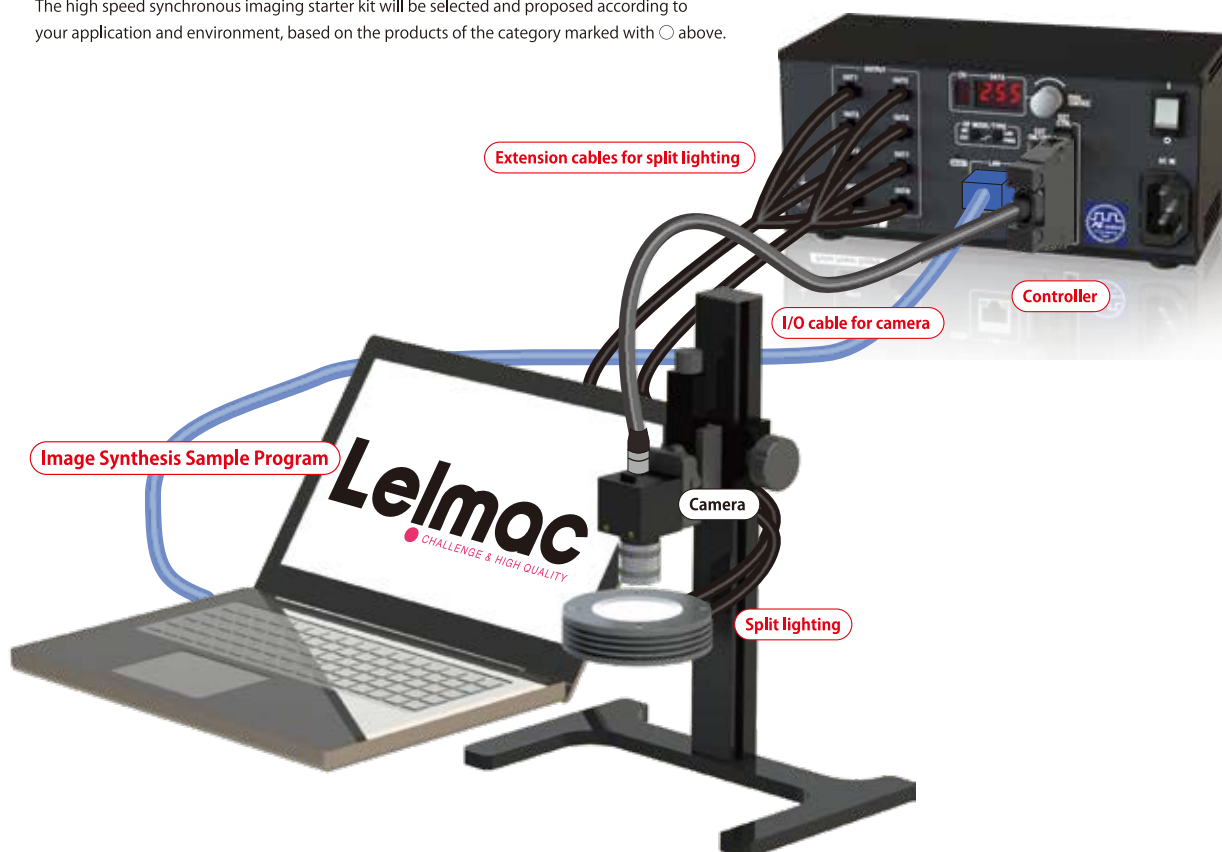
Application

- Metal / Resin industry
 - ➔Character inspection for glossy objects
 - ➔Marking and scintillation inspection of casting/patterned surfaces
 - ➔Fine scratch detection

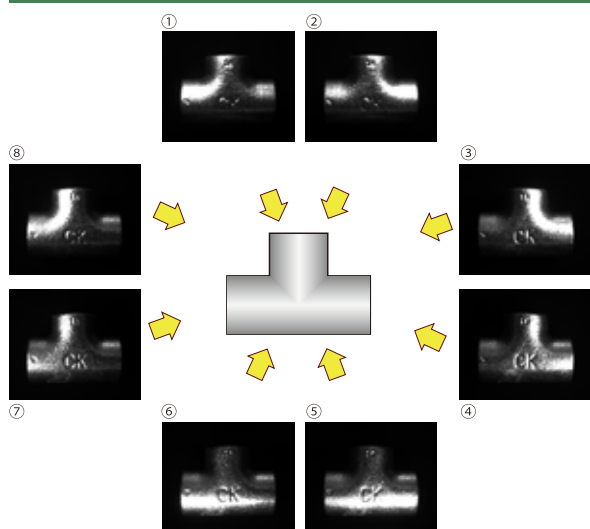


Basic System Configuration

The basic configuration for high-speed synchronous imaging consists of camera(●), split lighting(○), controller(○), I/O cable for camera(○), extension cable for split lighting(○), image processing software(●), image synthesis sample program(○), and other devices. The high speed synchronous imaging starter kit will be selected and proposed according to your application and environment, based on the products of the category marked with ○ above.



Imaging by multi-division illumination

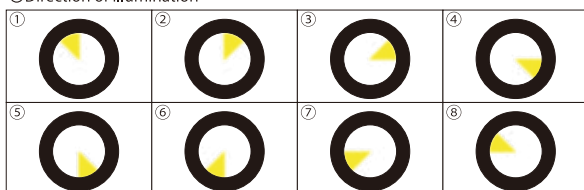


The following effects can be confirmed by illuminating light from different directions on the target object with the high-speed synchronous imaging starter kit.

- Halation removal
- Emphasis on defects

Imaging tests can be easily performed by combining our split lightings, high-performance controllers, and control softwares.

○ Direction of illumination



Sample application that supports configuration

The 8 images are generated as a composite image by using the image synthesis sample program.

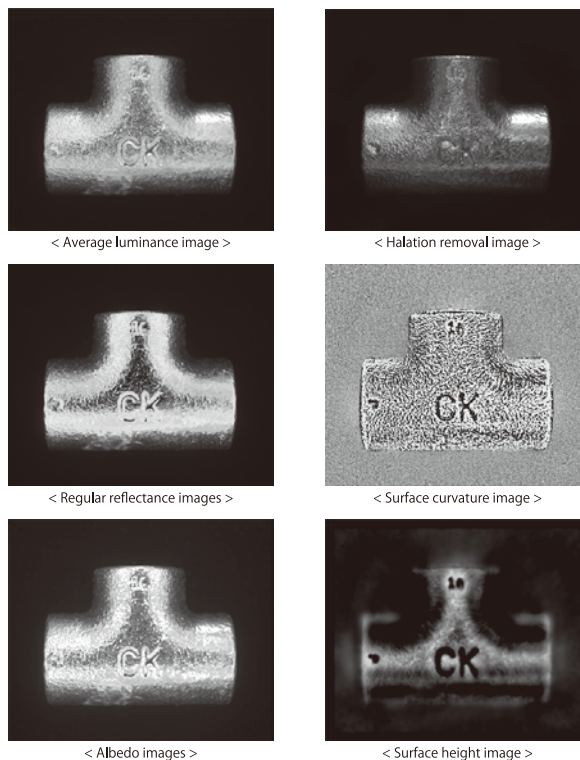


Image processing can be performed with the best composite image for the desired inspection content by combining the 8 captured images, images such as [Average brightness image] [Halation removal image] [Regular reflectance image] [Surface curvature image] [Albedo image] [Surface height image].

Image Example

Object: Product with package



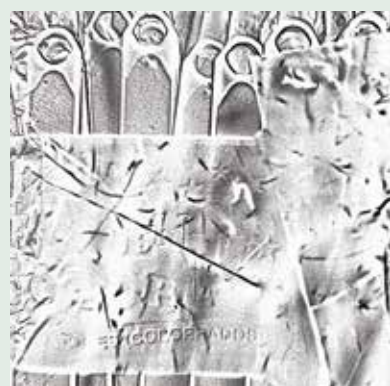
Product appearance (color)

Black and white images



Black and white images

High-speed synchronous imaging + image synthesis



Surface curvature image

The colorful glossy package makes it very difficult to recognize when scratches occur. If it is a black-and-white image, it is possible to distinguish the presence or absence of the scratch, but it may also not be detected as it might get blended in the pattern or due to halation. By performing image synthesis by high-speed synchronous imaging, surface curvature images can be generated, and scratches that are difficult to see due to changes in surface curvature can be clarified.

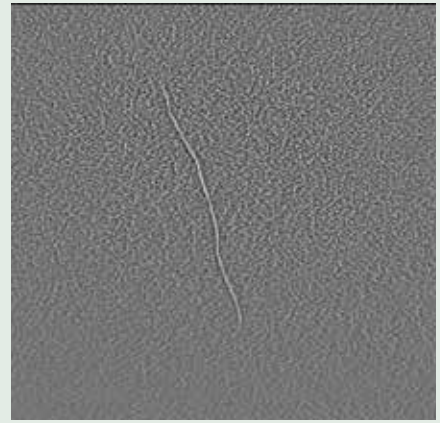
Image Example

Object: Scratches on wood grain table



Color image

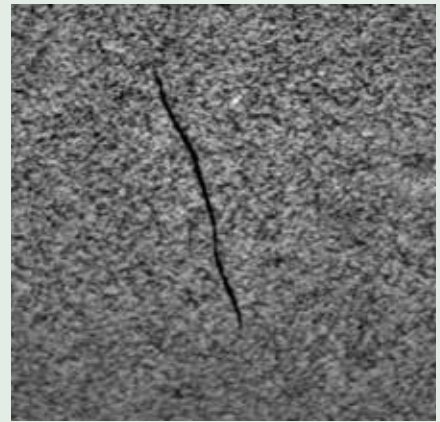
High-speed
synchronous imaging
+ image synthesis



Surface curvature image

High-speed
synchronous imaging
+ image synthesis

Wood material such as the top plate of the grain wood table or something like a mass of synthetic resin may crack due to drying, convergence, etc. Detection is easy if a scratch can be clearly seen in a single image, but the difficulty increases if the surface is uneven such as wood grain or a surface that halation can easily occur. Narrow and deep scratches such as cracks can be recognized with the surface curvature image, but the surface height image can be better clarified.



Surface height image

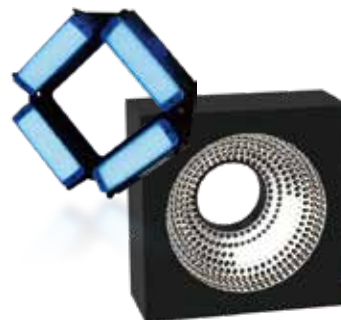
Split lighting lineup (example)

Lighting Type	Series	Channel Number	Light Color
Multi-position Ring Light	IMAR-8ch Series	8CH	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Low Angle Direct Ring Light	IDR-LA-8ch Series	8CH	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Horizontal Opposed Ring Light	IDRA-T-8ch Series	8CH	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Bar Light	IDBA-Q Series	4CH	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Dome Light with 16ch-division	IDD-CB Series	16CH	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

An example of illumination that can be divided into 4ch, 8ch, and 16ch.

In addition, we have an extensive line-up of customizable multi-split lighting.

Please contact our sales representative for details. We will assist you in selecting the most suitable lighting.



Supported controllers

Output Control Method	Series	Maximum number of channels
PWM	IDGB-PG Series	8CH
PWM	IDMU Series	8CH
OverDrive	IJS Series	8CH

It is a controller that supports high-speed synchronous imaging



I/O cable for camera

Series	Compatible Camera Series	Compatible Controller
IC-MIL-BA-26	BASLER ace Series	IDGB-PG Series
IC-MIL-BA-20	BASLER ace Series	IJS Series
IC-MIL-BA2-26	BASLER ace2 Series	IDGB-PG Series
IC-MIL-BA2-20	BASLER ace2 Series	IJS Series

It is the I/O cable for the camera with the trigger output function used for high-speed synchronous imaging.



Extension cables for split lighting

Series	Number of channel connections	Remarks
I-CB-F Series	4ch	Extension cables for 12V DC
I-CB-F_-24 Series	4ch	Extension cables for 24V DC
I-CB-F_R-C02 Series	4ch	Extension robot cables for 12V DC
I-CB-F_R-24-C02 Series	4ch	Extension robot cables for 24V DC

It is an extension cable for split lighting.

Robot cables have excellent flex resistance and torsion resistance, and are used for mechanical parts with moving parts.



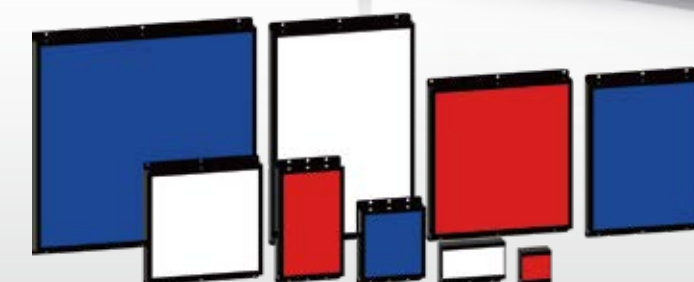
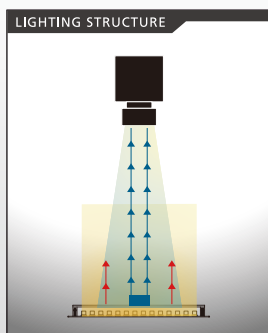
High Intensity Backlighting [IHMA series]

Transmissive lighting using the latest chip LEDs
High output, light weight, and low cost

24V DC Models Available

Application

- Connector industry
 - ➔ Pitch measurement of connector pins
- LCD related
 - ➔ Mark inspection and data code scanning



Size lineup 9 sizes of 25x30, 30x66, 66x60, 108x60, 108x114, 150x114, 150x142, 214x142, 214x226 (mm)

Increased Brightness

Approx. 170% increase in white brightness with a 108x114 size. It can also be used for high-speed inspection.

IHM-108/114AW



Shutter speed: 1/10,000 sec
Lighting output: 100%

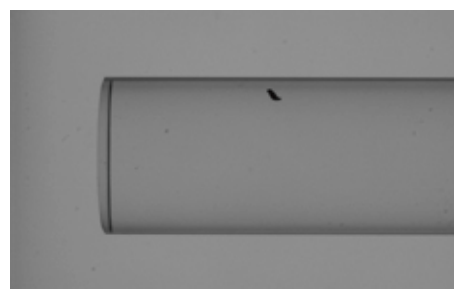
IHMA-108/114W



Shutter speed: 1/10,000 sec
Lighting output: 100%

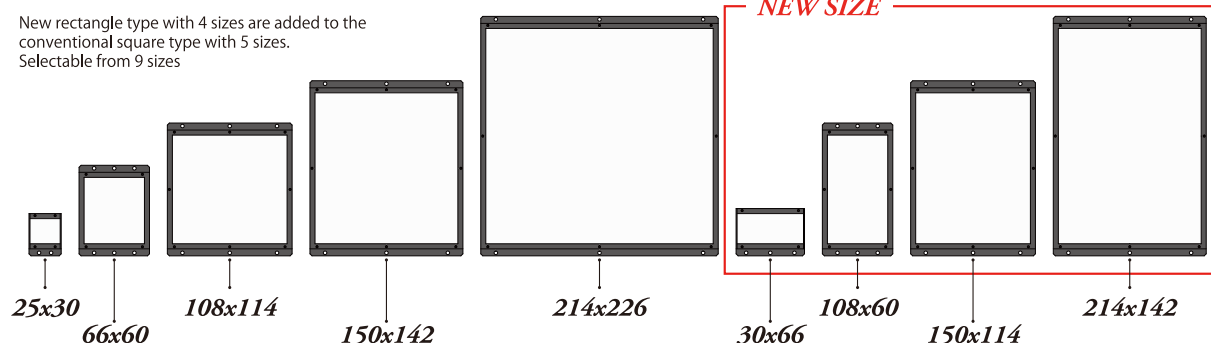
Distribution characteristics of the Diffused light type

For contamination inspection inside of translucent resin products, the diffused light type IHMA series is ideal for clearly recognizing the entirety to the edge.

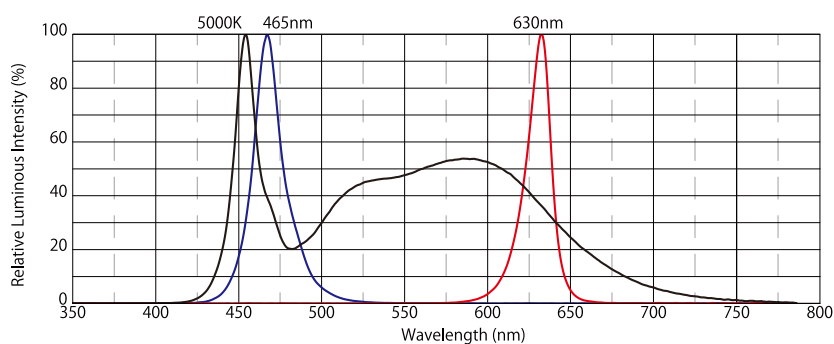


Extensive Product Lineup

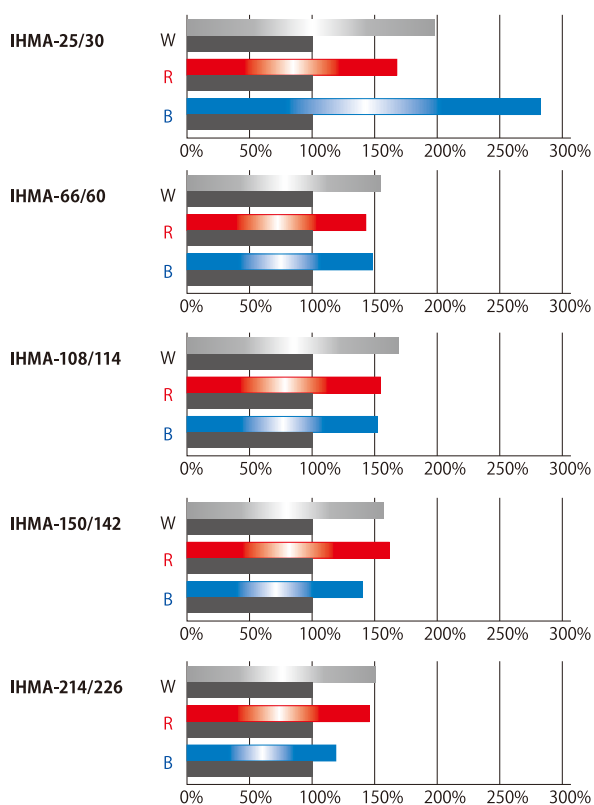
New rectangle type with 4 sizes are added to the conventional square type with 5 sizes. Selectable from 9 sizes



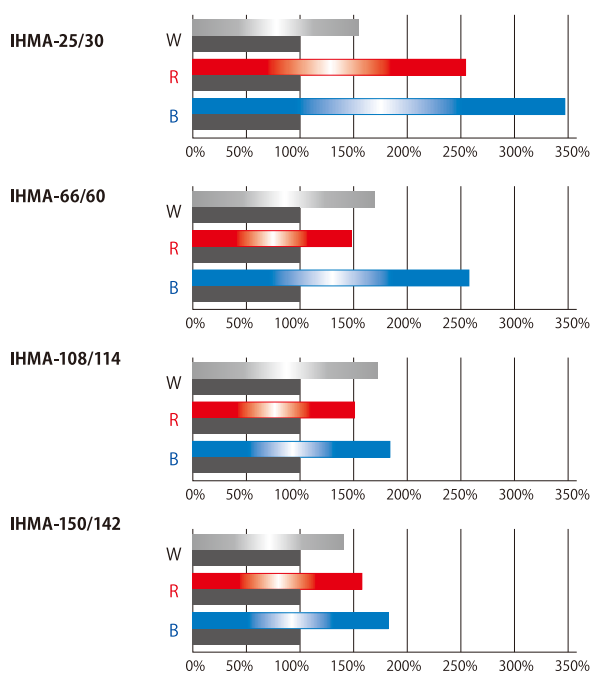
Wavelength Characteristics (reference value)



Brightness Comparison with Conventional Products (Reference values: continuous lighting)



Brightness Comparison with Conventional Products (Reference values: overdrive emission)



Usage Example



The 2-sided transparent illumination allows the target object to be sandwiched, resulting in a dome-like effect.

Model	Light Color	Power Consumption (W)	Input Voltage	SAG	Controller Type	Applicable controllers	Drawing
IHMA-25/30□	R	2.3	DC12V	DE	①	【Controller type①】 IDMU-P■B-12 ILP-30M2 IDGB Series Overdrive controller, etc.	①
	W	2.8		B8			
	B	2.7		A0			
IHMA-66/60□	R	7.5		FF			②
	W	9		FF			
	B	8		FF			
IHMA-108/114□	R	15		FF			③
	W	18		FF			
	B	17		FF			
IHMA-150/142□	R	22		FF			④
	W	27		CA			
	B	24		DB			
IHMA-214/226□HV	R	39	DC24V	-	②	【Controller type②】 IDMU-P■B-24 ILP-60M2-24 IDGB-24 Series	⑤
	W	48					
	B	44					
IHMA-30/66□	R	4.5	DC12V	FF	①		⑥
	W	5.5		FF			
	B	5		E8			
IHMA-108/60□	R	10		FF			⑦
	W	12		FF			
	B	11		FF			
IHMA-150/114□	R	18		FF			⑧
	W	23		E0			
	B	21		F5			
IHMA-214/142□	R	26		FF			⑨
	W	30		B5			
	B	28		C4			

★□ represents light color (R=Red: 630nm, W=White: 5000K(typ), B=Blue: 465nm).

★24V DC models are also available for those with 12V DC input voltage. ※The SAG indicates the maximum voltage setting for SAG controllers.

★■ represents the number of channels (4=4 channels, 8=8 channels).

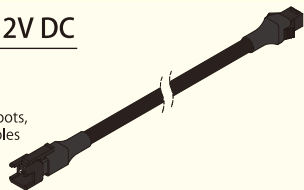
The output maximum capacity of the IDMU-P■B-12 series is up to 36W in a total of 2 channels. (The paired channels are shown on the right [1-2, 3-4, 5-6, 7-8])

The output maximum capacity of the IDMU-P■B-24 series is up to 72W in a total of 2 channels. (The paired channels are shown on the right [1-2, 3-4, 5-6, 7-8])

Extension cables for 12V DC

I-CB-S Series

When using in moving parts such as robots, please use the I-CB-S_R series robot cables that are resistant to bending. For DC24V lighting, please use the I-CB-F_24 or I-CB-S_F-24 series.

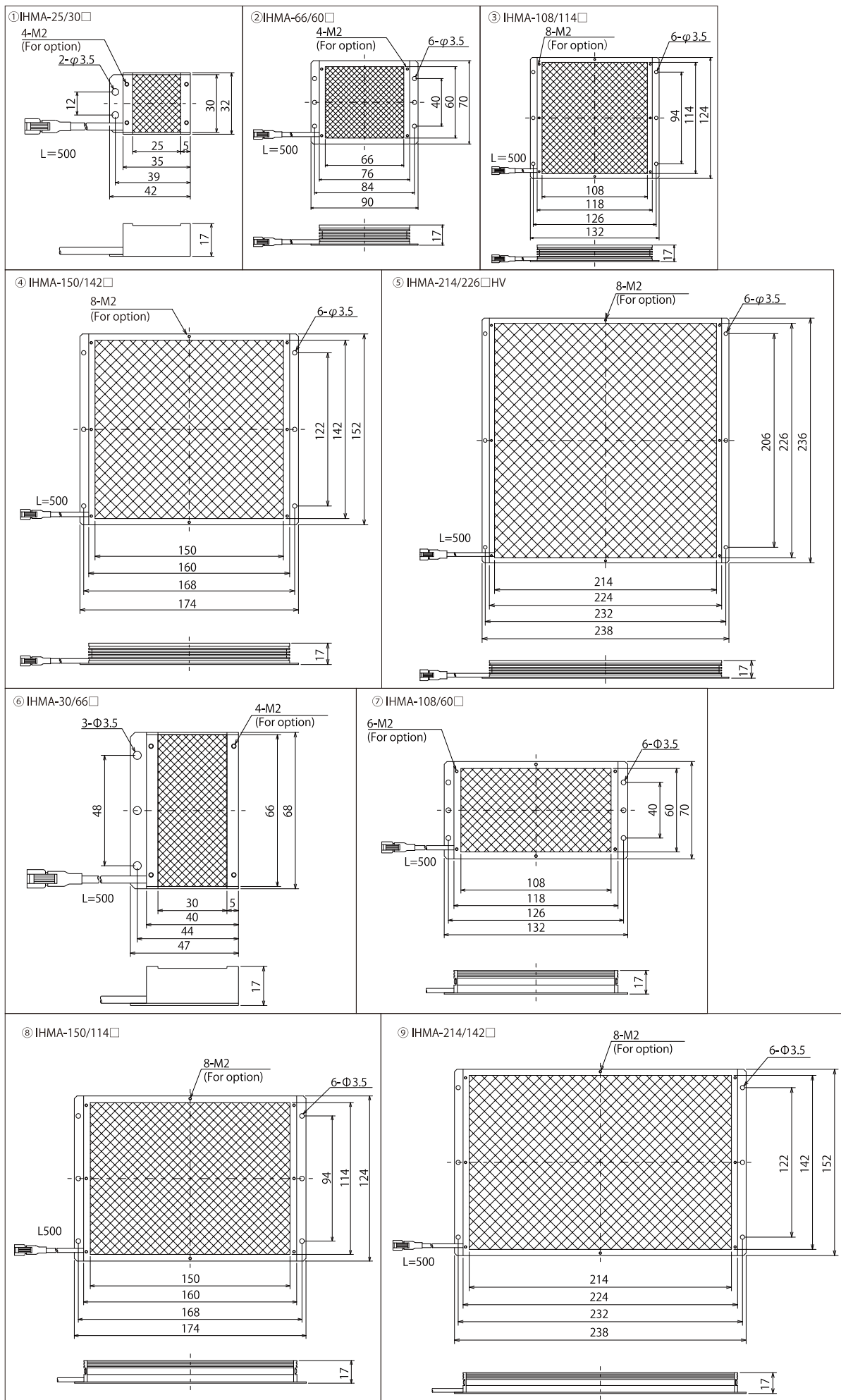


Recommended Controller (PWM control)

IDMU Series

Output control: 1000 levels
Compact PWM controller with 24V DC input voltage that is ideal for in-board installation
It can be extended up to 40ch with unit linkage.
It is also equipped with programming and trigger output functions that can be used in a variety of applications.





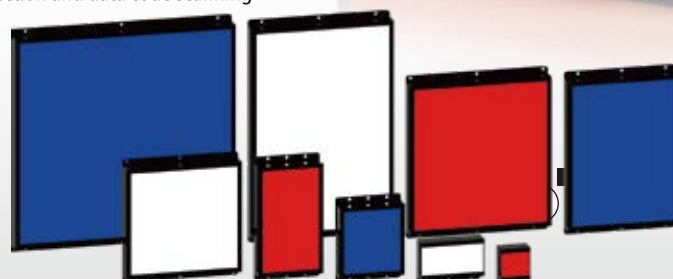
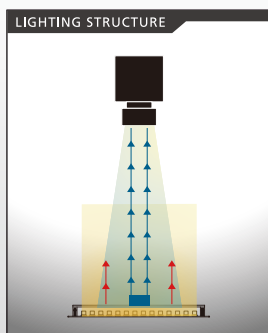
Back Light with Narrow-angle Light Distribution [IHMA-V series]

Narrow-angle light distribution prevents light diffraction.
Ideal for edge detection of cylindrical and glossy objects

24V DC Models Available

Application

- Connector industry
 - ➔ Pitch measurement of connector pins
- LCD related
 - ➔ Mark inspection and data code scanning



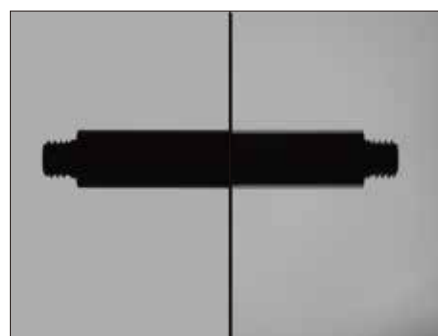
Size lineup

9 sizes of 25x30, 30x66, 66x60, 108x60, 108x114, 150x114, 150x142, 214x142, 214x226 (mm)

Narrow-angle light distribution prevents light diffraction.

Narrow-angle light distribution prevents the light diffusion around shiny metallic cylinders and enables edge detection.

The narrow-angle light distribution type IHMA-V series makes edge detection more accurate and easy for dimensional inspection of metal cylindrical products that are prone to halation due to the light being straight, largely preventing light diffusion.

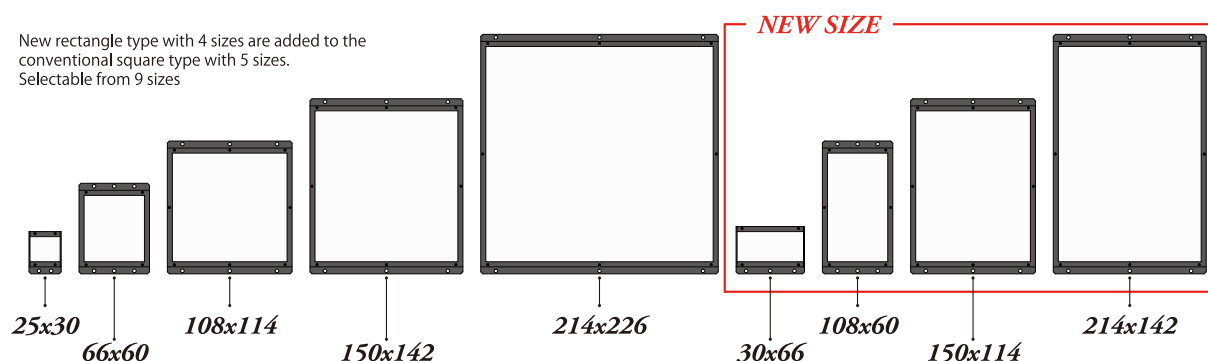


IHMA-108/114W-V
(Narrow-angle light distribution type)

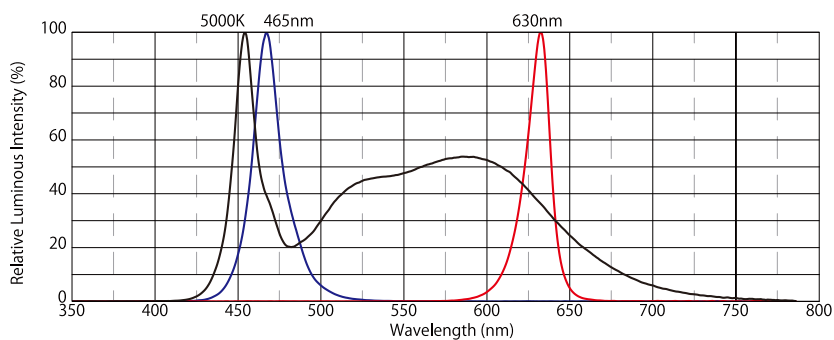
IHMA-108/114W
(Wide-angle light distribution type)

Extensive Product Lineup

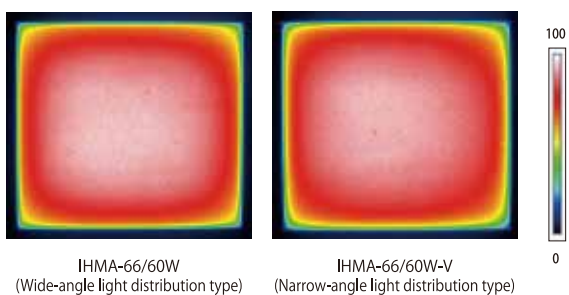
New rectangle type with 4 sizes are added to the conventional square type with 5 sizes.
Selectable from 9 sizes



Wavelength Characteristics (reference value)



Emission surface luminance distribution (reference value)



Higher intensity (reference value) IHMA-66/60 output comparison

The intensity improved by about 1.6 times compared with the diffused light type IHMA series and the narrow angle light distribution type IHMA-V series. It can also be used with high-speed shutters.

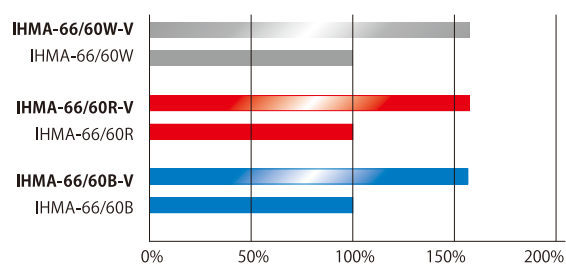


Image Sample

● Spark plug



IHMA-108/114W

The silhouette becomes ambiguous due to the light diffusion that makes dimension measurement not ideal, but for scratches that occur on the surface of the part where the tap is cut, it may be visible because the reflection of the light is different.



IHMA-108/114W-V

The silhouette is clear due to low light diffusion. Ideal for dimensional measurement of the part where the tap is cut

● Vial bottle with water



IHMA-108/114W

Light is transmitted to the edge part that enables contamination inspection to the edge.



IHMA-108/114W-V

The edges of the glass bottle periphery are emphasized. Ideal for dimensional inspection of transparent materials.

Model	Light Color	Power Consumption (W)	Input Voltage	SAG (※)	Controller Type	Applicable Controller	Drawing						
IHMA-25/30□-V	R	2.3	DC12V	DE	①	【Controller type①】 IDMU-P■B-12 ILP-30M2 IDGB Series Overdrive controller, etc.	①						
	W	2.8		B8									
	B	2.7		A0									
IHMA-66/60□-V	R	7.5		FF			②	【Controller type②】 IDMU-P■B-24 ILP-60M2-24 IDGB-24 Series	②				
	W	9		FF									
	B	8		FF									
IHMA-108/114□-V	R	15		FF					③	③			
	W	18		FF									
	B	17		FF									
IHMA-150/142□-V	R	22		FF							④	④	
	W	27		CA									
	B	24		DB									
IHMA-214/226□HV-V	R	39	DC24V	-	②	【Controller type②】 IDMU-P■B-24 ILP-60M2-24 IDGB-24 Series							⑤
	W	48											
	B	44											
IHMA-30/66□-V	R	4.5	DC12V	FF	①		⑥						
	W	5.5		FF									
	B	5		E8									
IHMA-108/60□-V	R	10		FF				⑦					
	W	12		FF									
	B	11		FF									
IHMA-150/114□-V	R	18		FF					⑧				
	W	23		E0									
	B	21		F5									
IHMA-214/142□-V	R	26		FF						⑨			
	W	30		B5									
	B	28		C4									

★□ represents light color (R=Red: 630nm, W=White: 5000K(typ), B=Blue: 465nm).

★24V DC models are also available for those with 12V DC input voltage. *The SAG indicates the maximum voltage setting for SAG controllers.

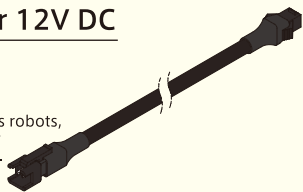
★■ represents the number of channels (4=4 channels, 8=8 channels).

The output maximum capacity of the IDMU-P■B-12 series is up to 36W in a total of 2 channels. (The paired channels are shown on the right [1-2, 3-4, 5-6, 7-8])
The output maximum capacity of the IDMU-P■B-24 series is up to 72W in a total of 2 channels. (The paired channels are shown on the right [1-2, 3-4, 5-6, 7-8])

Extension cables for 12V DC

I-CB-S Series

When using in moving parts such as robots, please use the I-CB-S_R series robot cables that are resistant to bending. For DC24V lighting, please use the I-CB-F_24 or I-CB-S_F-24 series.

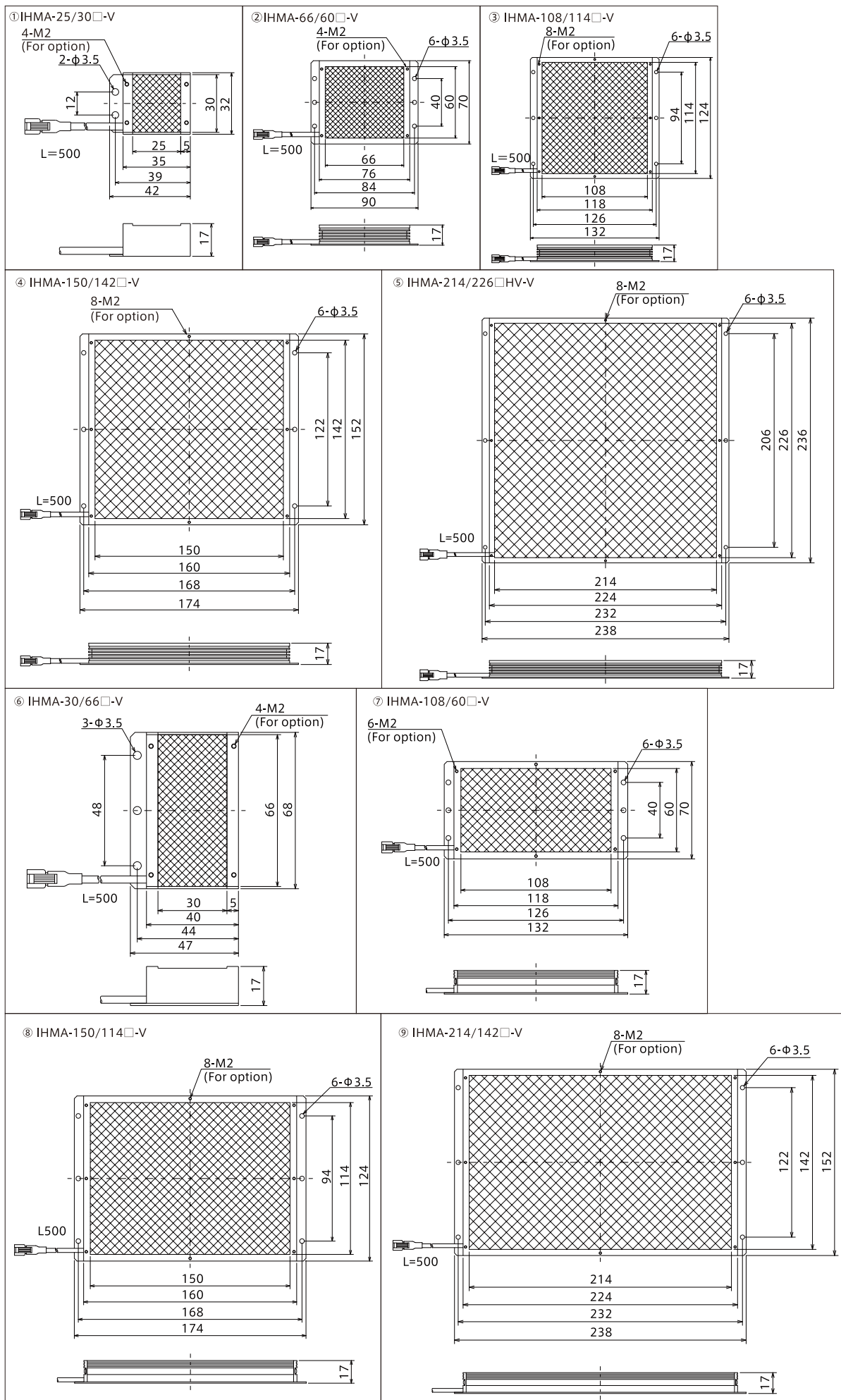


Recommended Controller (PWM control)

IDMU Series

Recommended Controller (PWM control)
Output control: 1000 gradations
Compact PWM controller with 24V DC input voltage that is ideal for in-board installation
It can be extended up to 40ch with unit linkage.
It is also equipped with programming and trigger output functions that can be used in a variety of applications.





IP65 compliant, ultra-thin, ultra-bright, highly uniform backlight [SLLUB series]

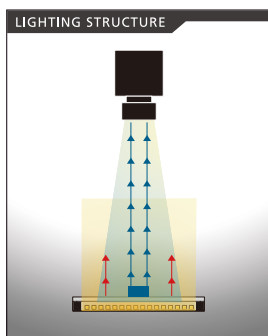
High brightness surface illumination of 90,000 cd/m² or more
(□100mm reference value)

IP65 compliant as the standard and the thickness of 8.5mm while saving space.

Special optical design for narrow angle light distribution

Application

- Connector industry
 - ➔ Pitch measurement of connector pins
- LCD industry
 - ➔ Mark inspection and data code scanning



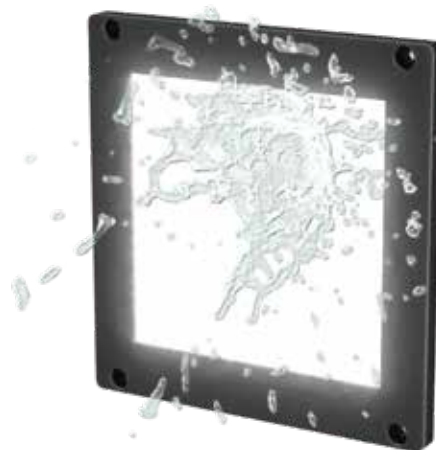
Size lineup 5 sizes with □50, □100, □200, 150x40, and 160x120

High brightness backlight (reference value)

Approximately 1.5 to 4 times brighter than the LLUB series of the same color and size.

Size of Light-emitting Surface (mm)	SLLUB Series (cd/m ²)	LLUB Series (cd/m ²)
□50	100000	45000
□100	90000	60000
□200	45000	20000
150x40	100000	27000
160x120	34000	20000

IP65 waterproof and dustproof as the standard

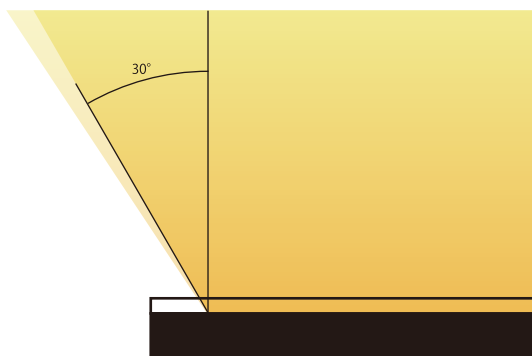


It boasts high dust and water resistance with a protection characteristic standard to IP65 dust and water resistance.

IP65 grade is a level where dust does not penetrate inside and is not affected by direct jets of water from nozzles, etc., from any direction.

It can withstand use in an environment where water is used at all times.

Light distribution angle of 30° and narrow angle light distribution



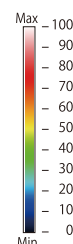
Like the LLUB series, the SLLUB series also has a narrow light distribution angle of 30°. It enables edge detection due to low light diffusion.

High Uniformity

Phlox-LedW-BL-100×100-SLLUB-Q-1R-24V



Illuminance Distribution Chart (LWD=500mm)



A wider illumination area can be captured due to high-uniform illumination to the periphery.

Model	Light Color	Power Consumption (W)	Input Voltage	Controller Type	Applicable Controller	Drawing
PHLOX-LEDW-BL-50x50-SLLUB-Q-1R-24V-SM	W	10.8	DC24V	①	【Controller type①】 IDMU-P■B-24 ILP-60M2-24 IDGB-24 Series	①
PHLOX-LEDW-BL-100x100-SLLUB-Q-1R-24V-SM-V2	W	21.6				②
PHLOX-LEDW-BL-200x200-SLLUB-Q-1R-24V-SM	W	48				③
PHLOX-LEDW-BL-150x40-SLLUB-Q-1R-24V-SM	W	16.8				④
PHLOX-LEDW-BL-160x120-SLLUB-Q-1R-24V-SM	W	28.8				⑤

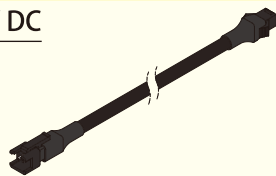
★ ■ represents the number of channels (4=4 channels, 8=8 channels).

The output maximum capacity of the IDMU-P■B-24 series is up to 36W in a total of 2 channels. (The paired channels are shown on the right [1-2, 3-4])

Extension cables for 24V DC

I-CB-S_-24 Series

When using in moving parts such as robots, please use the I-CB-S_R-24 series robot cables that are resistant to bending.



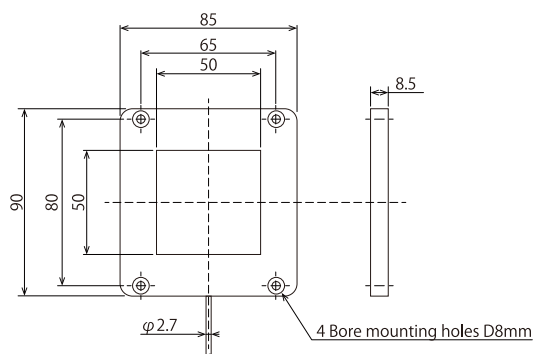
Recommended Controller (PWM control)

IDMU Series

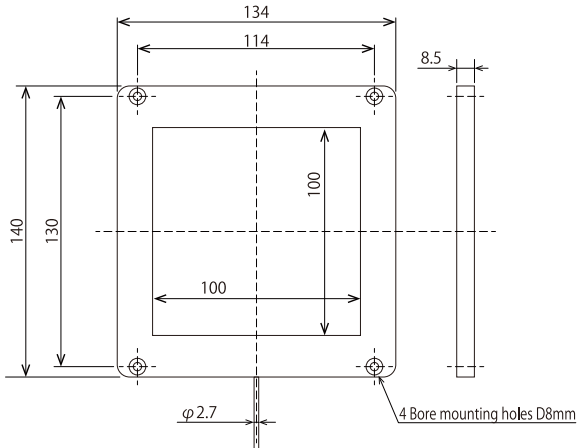
Output control: 1000 gradations
Compact PWM controller with 24V DC input voltage that is ideal for in-board installation
It can be extended up to 40ch with unit linkage.
It is also equipped with programming and trigger output functions that can be used in a variety of applications.



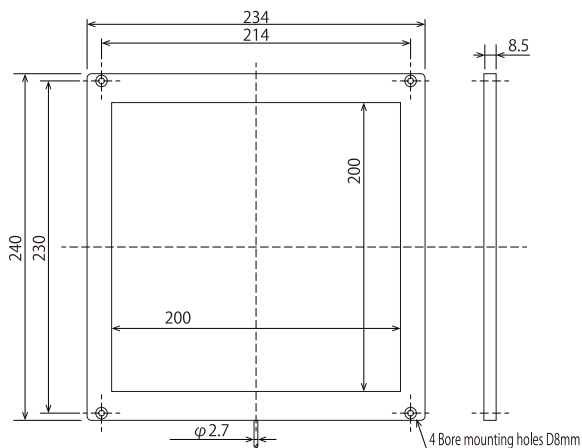
① PHLOX-LEDW-BL-50x50-SLLUB-Q-1R-24V-SM



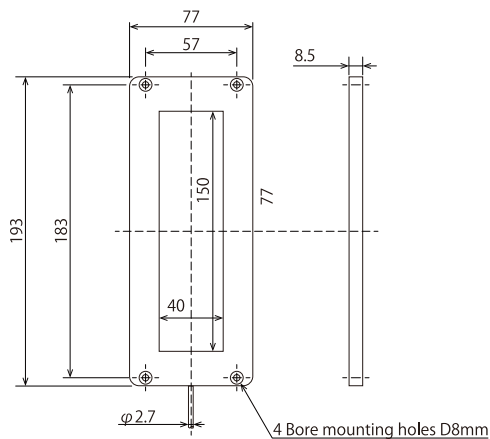
② PHLOX-LEDW-BL-100x100-SLLUB-Q-1R-24V-SM-V2



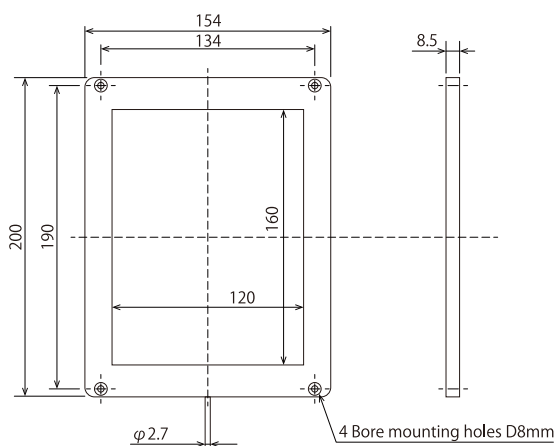
③ PHLOX-LEDW-BL-200x200-SLLUB-Q-1R-24V-SM



④ PHLOX-LEDW-BL-150x40-SLLUB-Q-1R-24V-SM



⑤ PHLOX-LEDW-BL-160x120-SLLUB-Q-1R-24V-SM

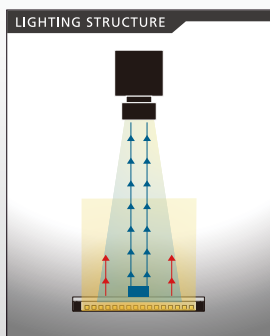


IP65 compliant, ultra-thin, ultra-bright, and highly uniform backlight [LLUB series]

Low-cost backlight of 60000cd/m² or more.
IP65 compliant as standard and the thickness of 8.5 mm while saving space.
Special optical design for narrow angle light distribution

Application

- Connector industry
→ Pitch measurement of connector pins
- LCD industry
→ Mark inspection and data code scanning



Size lineup

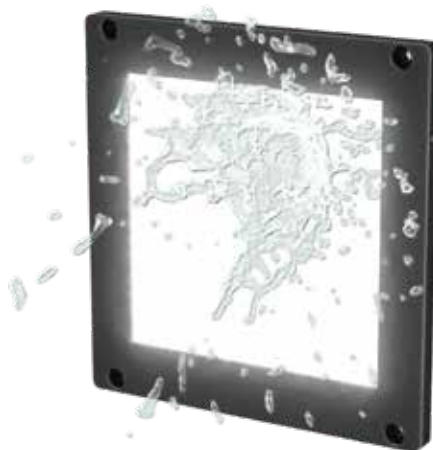
8 sizes with □20, □50, □100, □200, 150x40, 160x120, 300x220, and 400x200.



High brightness backlight (reference value)

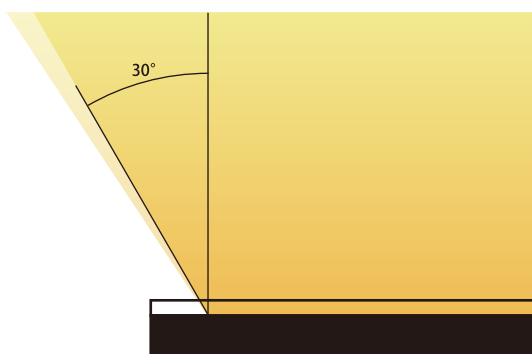
Size of Light-emitting Surface(mm)	White (cd/m ²)	Red (cd/m ²)
□20	70000	16000
□50	45000	20000
□100	60000	14000
□200	20000	10000
150x40	27000	12000
160x120	20000	10500
300x220	20000	6000
400x200	18000	6000

IP65 waterproof and dustproof as the standard



It boasts high dust and water resistance with an IP65 grade standard of protection.
IP65 grade is a level where dust does not penetrate inside and is not affected by direct jets of water from nozzles, etc., from any direction.
It can withstand use in an environment where water is used at all times.

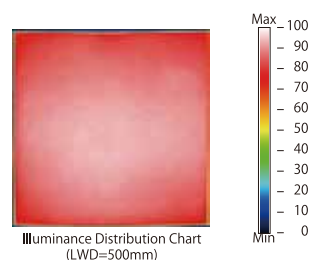
Light distribution angle of 30° and narrow angle light distribution



The LLUB series also has a narrow light distribution angle of 30°. It enables edge detection due to low light diffusion.

High Uniformity

Phlox-LedW-BL-100×100-LLUB-Q-1R-24V



A wider illumination area can be captured due to high-uniform illumination to the periphery.

Image Example

It has the characteristics of narrow-angle light distribution like the IHMA-V series, so light diffusion happens less and the edge stands out.

Object: Pen
Shutter speed: 500μs



IHMA-150/142W-V
(Narrow-angle light distribution type)



PHLOX-LEDW-BL-160x120-LLUB-Q-1R-24V-SM

Model	Light Color	Power Consumption (W)	Input Voltage	Controller Type	Applicable Controller	Drawing
PHLOX-LED□-BL-20x20-LLUB-Q-1R-24V-SM	R	2.88	DC24V	①	【Controller type①】 IDMU-P■B-24 ILP-60M2-24 IDGB-24 Series	①
	W	2.88				
PHLOX-LED□-BL-50x50-LLUB-Q-1R-24V-SM	R	6				②
	W	6				
PHLOX-LED□-BL-100x100-LLUB-Q-1R-24V-SM-V2	R	13.2				③
	W	14.4				
PHLOX-LED□-BL-200x200-LLUB-Q-1R-24V-SM	R	28.8				④
	W	24				
PHLOX-LED□-BL-150x40-LLUB-Q-1R-24V-SM	R	9.6				⑤
	W	8.4				
PHLOX-LED□-BL-160x120-LLUB-Q-1R-24V-SM	R	16.8				⑥
	W	16.8				
PHLOX-LED□-BL-300x220-LLUB-Q-1R-24V-SM	R	38.4				⑦
	W	48				
PHLOX-LED□-BL-400x200-LLUB-Q-1R-24V-SM	R	43.2				⑧
	W	43.2				

★□ of the model table represents the emission color (R=red: 625nm, W=white: 5,700K (typ)).

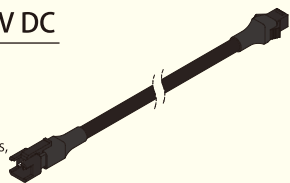
★■ represents the number of channels (4=4 channels, 8=8 channels).

The output maximum capacity of the IDMU-P■B-24 series is up to 36W in a total of 2 channels. (The paired channels are shown on the right[1-2, 3-4,])

Extension cables for 24V DC

I-CB-S_24 Series

When using in moving parts such as robots, please use the I-CB-S_R-24 series robot cables that are resistant to bending.



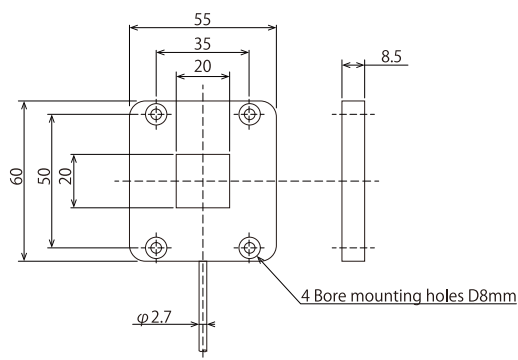
Recommended Controller (PWM control)

IDMU Series

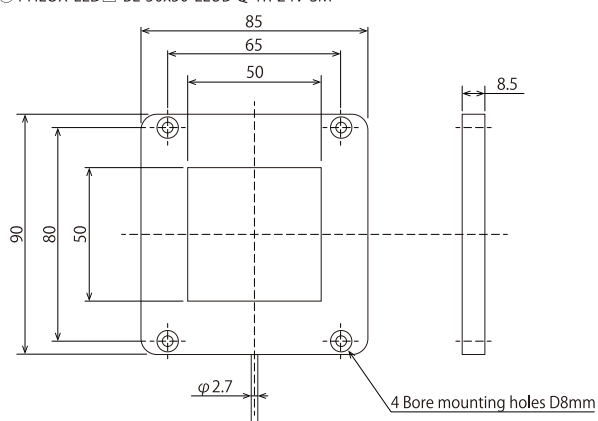
Output control: 1000 gradations
Compact PWM controller with 24V DC input voltage that is ideal for in-board installation
It can be extended up to 40ch with unit linkage.
It is also equipped with programming and trigger output functions that can be used in a variety of applications.



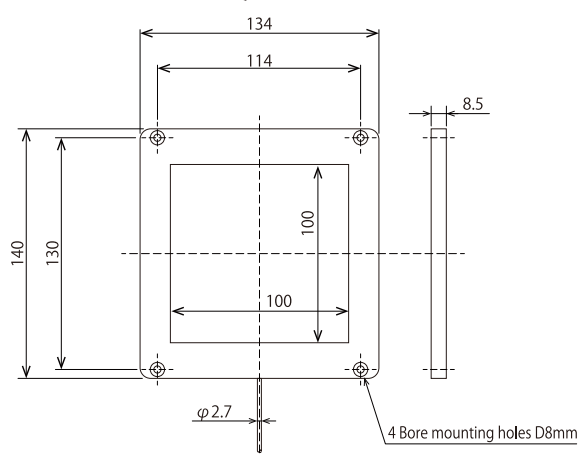
① PHLOX-LED□-BL-20x20-LLUB-Q-1R-24V-SM



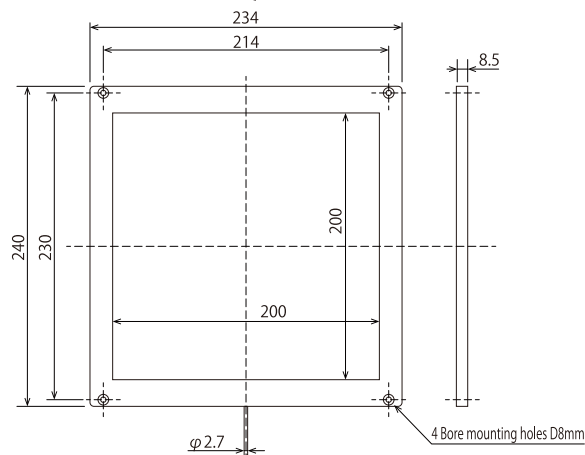
② PHLOX-LED□-BL-50x50-LLUB-Q-1R-24V-SM



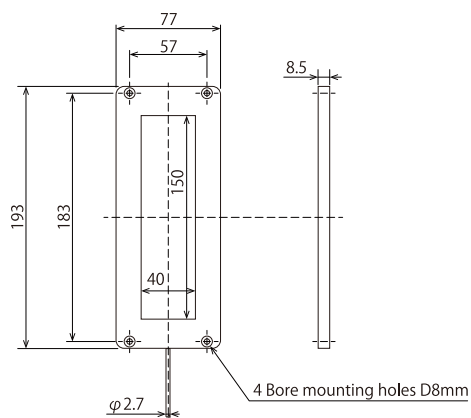
③ PHLOX-LED□-BL-100x100-LLUB-Q-1R-24V-SM-V2



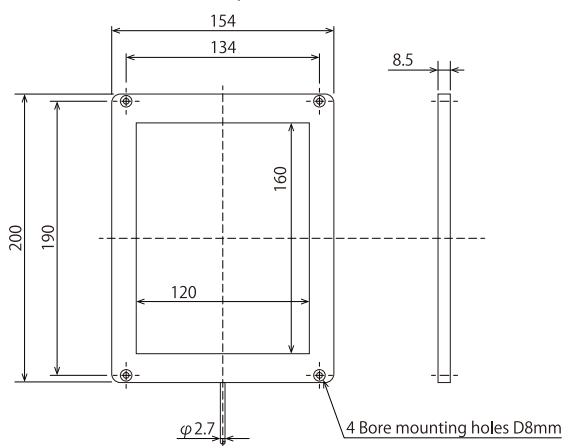
④ PHLOX-LED□-BL-200x200-LLUB-Q-1R-24V-SM



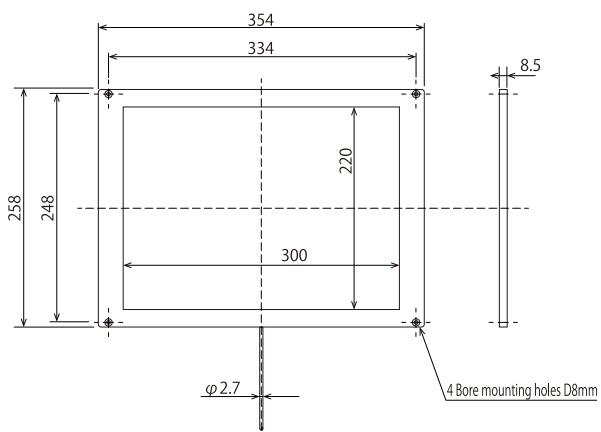
⑤ PHLOX-LED□-BL-150x40-LLUB-Q-1R-24V-SM



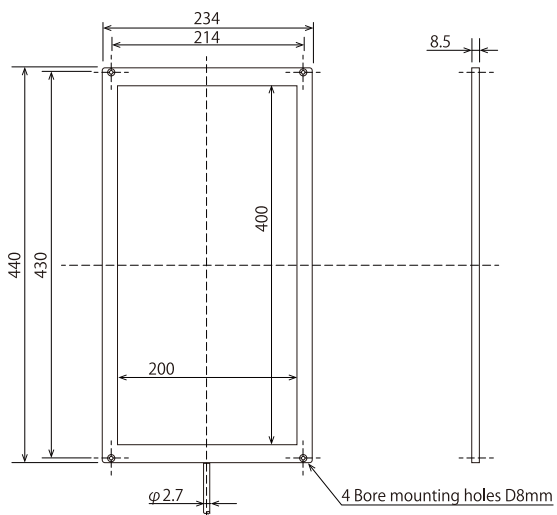
⑥ PHLOX-LED□-BL-160x120-LLUB-Q-1R-24V-SM



⑦ PHLOX-LED□-BL-300x220-LLUB-Q-1R-24V-SM



⑧ PHLOX-LED□-BL-400x200-LLUB-Q-1R-24V-SM



Handling of PHLOX products



We are pleased to announce that we will be distributing products by PHLOX,
a French lighting manufacturer,
as their sole agent in Asia.

PHLOX started with the production of backlighting for LCDs,
and now applies these technologies to various applications
worldwide as backlighting for the machine vision industry.

The special optical design of the light guide plate developed
by the backlight for liquid crystals achieves high brightness and thin illumination
with high luminous efficiency, and we believe that it can respond to
the increasing demand for illumination amount due to the speed of image inspection in recent years.

In addition, it supports IP65 as a standard which allows
it to be used even in environments where water scatters.



<Company Information>

Company Name: PHLOX Corp.

Headquarters location: France

Established: 1996

For more information about PHLOX, please visit their website.
<https://www.phlox-gc.com/>

Square Dome Light [IFHA series]

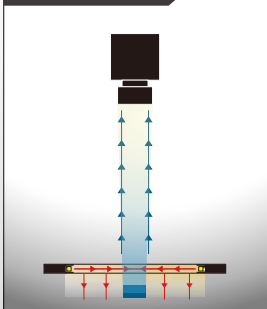
Thin lightweight 8mm dome lighting
Brighter and sharper illumination
Its design without a camera window allows
it to illuminate a wide range uniformly.

24V DC Models Available

Application

- Can and aluminum industries
 - ➔ Marks and character inspection on the bottom of aluminum cans
- Food, pharmaceutical, and packaging industries
 - ➔ Tablet chipping inspection, sheet tearing, character inspection
- Lithium battery

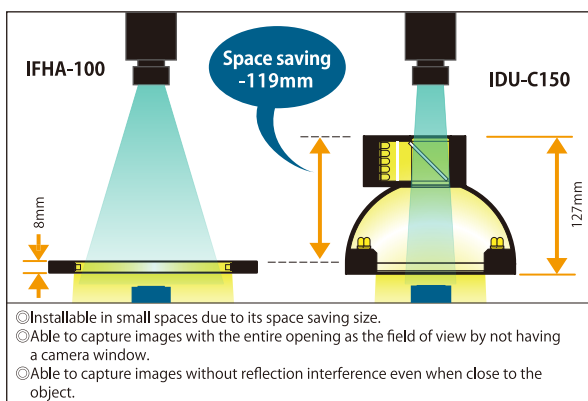
LIGHTING STRUCTURE



Size lineup

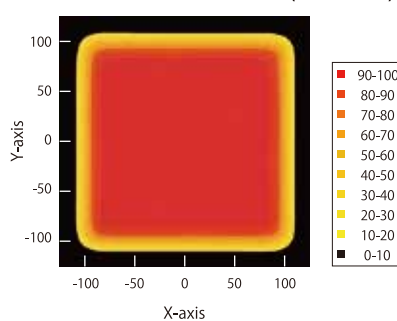
Square type consists of 7 sizes: □25/□50/□75/□100/□150/□200/□300 (mm)
Rectangular type consists of 73 sizes: 200x100/300x150/400x200 (mm)

Lightweight, thin, and easy to install. It enables image capturing in a wide field of view by not having a camera window.



Significantly Improved Uniformity (reference value)

IFHA-200WHV
Illuminance Distribution Chart (LWD=10mm)



The sharpness is also greatly improved

The print is now clearly visible and even faint text can be accurately identified.



Object: Coffee Package

IFH-150/150DW (conventional product)

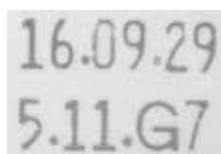


Barcodes that look like ripples are clearly visible, and you can accurately determine the spacing of the codes and the thickness of the lines.



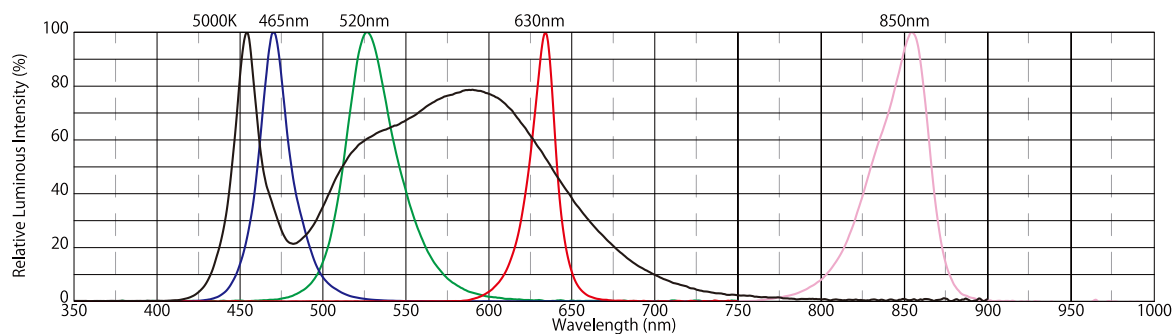
Camera: Black and white USB3.0
Shutter: 1/10000 seconds
Lens: 25mm
Aperture: 4

IFHA-150W

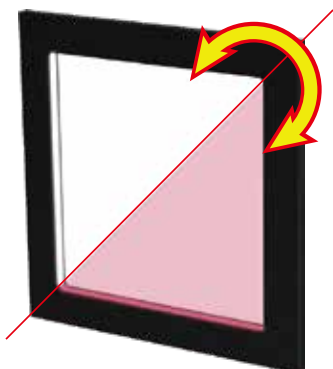


Camera: Black and white USB3.0
Shutter: 1/10000 seconds
Lens: 25mm
Aperture: 6

Wavelength Characteristics (reference value)

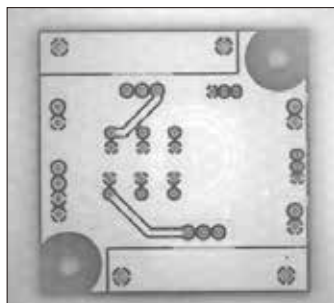


Any combination of desired emission colors can be customized.



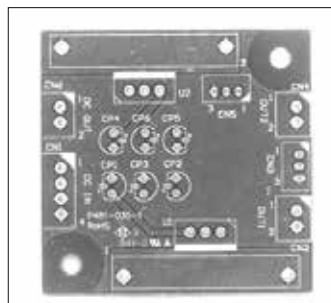
By selecting a customized configuration, it enables different types of emission colors. For example, by making the two sides facing different emission colors, it enables light illumination of different properties such as white or infrared light without changing the position of the object to clarify differences in a short time or to compact the inspection line by storing 2 units (2 colors) in 1 unit.

*The intensity of the illumination for each color will decrease by combining colors.



<Infrared Light Illumination>

The PCB's circuit pattern can be detected by penetrating the printing, resist layer, etc.

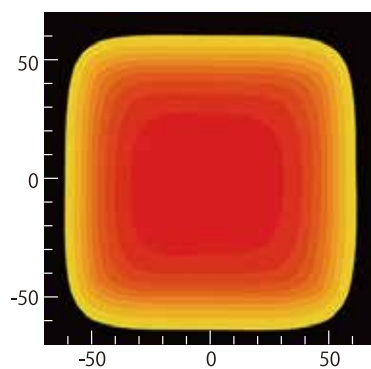


<White Light Illumination>

It is able to detect silk-screen printings clearly on the PCB.

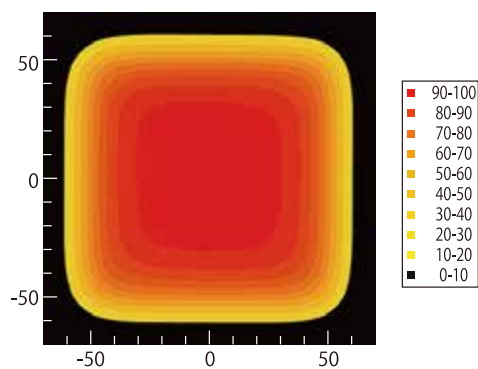
<IFHA-100WIR: White and Infrared Combination>

White Monochromatic Illumination
Illuminance Distribution Chart (LWD=10mm)



<IFHA-100W>

Illuminance Distribution Chart (LWD=10mm)



The comparison of illuminance distribution shows that there is a high uniformity even with a two-color combination configuration.

Image Example

Quantity inspection in plastic bag



Object: Screws in a polyethylene bag



Ring light: IMAR-130DW (LWD=100mm)
Halation occurs on the surface of the bag and is not ideal for quantity inspection in the plastic bag.



Light: IFHA-150W (LWD=10mm)
The surface halation is reduced and internal quantity can be easily inspected.

Printing inspection of curved surfaces such as cans



Object: Beverage can



Bar Light: 2 bar lights of oblique illumination
Barcodes, etc., on the curved surface cannot be recognized due to the light reflection.



Light: IFHA-150W (LWD=10mm)
The effect of reflections is small even on a curved surface, and the recognizable area is wide.

Printing inspection of a recess



Object: Paper container (bottom)



Ring light: IMAR-130DW (LWD=60mm)
Shadows are reflected around the printed area that make it difficult to recognize characters.



Light: IFHA-150W (LWD=10mm)
Characters can be easily recognized due to low shadow reflection.

Print inspection of film



Object: Aluminum vapor deposition film



Ring light: IMAR-130DW (LWD=50mm)
Color irregularity occurs on the printed area due to halation on the film surface.



Light: IFHA-150W (LWD=20mm)
No color irregularity due to halation, and printing and peripheral characters can be clearly recognized.

Printing, scratches, and contamination inspection



Object: Shrink packaging of metal lid



Light: IFHA-150W (LWD=15mm)
The reflection on paints and the shrink-wrapped surface is suppressed and the printing is clearly recognized.



Light: IFHA-150IR-850 (LWD=15mm)
Infrared can erase printing other than printed letters, and can recognize the printed area in addition to scratches, contamination, etc.

Model	Light Color	Power Consumption (W)	Input Voltage	SAG (※)	Controller Type	Applicable Controller	Drawing	
IFHA-25□	R	2.1	DC12V	89	①	【Controller ①】 IDMU-P■B-12 ILP-30M2 IDGB Series Overdrive controller, etc.	①	
	W	2.4		83				
	B			73				
	G			6F				
IFHA-50□	R			9.5			D0	②
	W	CB						
	B	AD						
	G	AB						
	IR-850	8.5		FF			③	
		6		DC				
	R	14		E0				
	W			B6				
B	B4							
G	FF							
IFHA-75□	IR-850	11		C3			④	
		9		BC				
	R	22		A5				
	W			BE				
B	FF							
G	15			DA				
IFHA-100□	IR-850	12.5	B8	⑤				
			B6					
	R	30	CA					
	W		FF					
B	20							
G								
IR-850		17						
IFHA-150□								
	R	33	DC24V	-	②	【Controller ②】 IDMU-P■B-24 ILP-60M2-24 IDGB-24 Series	⑥	
	W							
	B							
G								
IFHA-200□HV	IR-850	20.5	DC12V	FF	①			
IFHA-300□HV	R	46	DC24V	-	②		⑦	
	W							
	B							
	G							
IFHA-300IRHV-850	IR-850	38						
IFHA-200/100□	R	20	DC12V	FF	①		⑧	
	W			FF				
	B			F1				
	G			CE				
	IR-850	17.5	FF					
IFHA-300/150□HV	R	30	DC24V	-	②	⑨		
	W							
	B							
	G							
IFHA-300/150IRHV-850	IR-850	26						
IFHA-400/200□HV	R	44			-			⑩
	W							
	B							
	G							

★□ represents light color (R=Red: 630nm, W=White: 5000K(typ), B=Blue: 465nm, G=Green: 520nm, IR-850=Infrared: 850nm)

★24V DC models are also available for those with 12V DC input voltage. ※The SAG indicates the maximum voltage setting for SAG controllers excluding IFHA-75IR-850.

★■ represents the number of channels (4=4 channels, 8=8 channels).

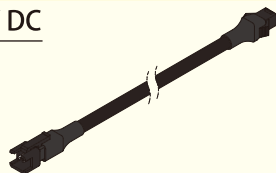
The output maximum capacity of the IDMU-P■B-12 series is up to 36W in a total of 2 channels. (The paired channels are shown on the right [1-2, 3-4, 5-6, 7-8])

The output maximum capacity of the IDMU-P■B-24 series is up to 72W in a total of 2 channels. (The paired channels are shown on the right [1-2, 3-4, 5-6, 7-8])

Extension cables for 12V DC

I-CB-S Series

When using in moving parts such as robots, please use the I-CB-S_R series robot cables that are resistant to bending. For DC24V lighting, please use the I-CB-F_24 or I-CB-S_F-24 series.



Recommended Controller (PWM control)

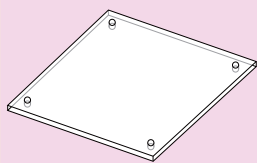
IDMU Series

Output control: 1000 gradations
Compact PWM controller with 24V DC input voltage that is ideal for in-board installation
It can be extended up to 40ch with unit linkage.
It is also equipped with programming and trigger output functions which can be used in a variety of applications.



Protection Cover for IFHA

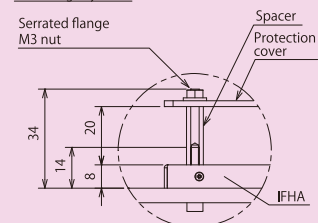
IKFHA-AR Series



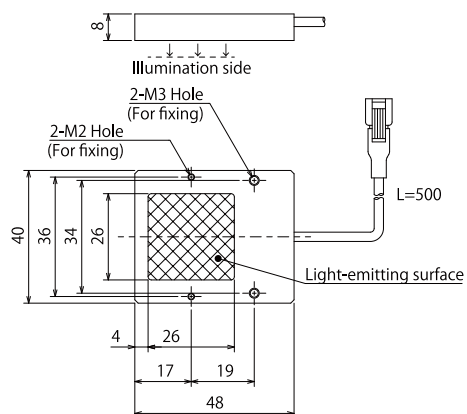
This is a protection cover to protect the surface of the non-illumination side of IFHA. AR multilayer film layer coating on both sides, and water repellent layer coating on the AR coat on one side.

Model	Applicable Light	Model	Applicable Light
IKFHA-50-AR	IFHA-50□	IKFHA-200/100-AR	IFHA-200/100□
IKFHA-75-AR	IFHA-75□	IKFHA-300/150-AR	IFHA-300/150□HV
IKFHA-100-AR	IFHA-100□	IKFHA-400/200-AR	IFHA-400/200□HV
IKFHA-150-AR	IFHA-150□		
IKFHA-200-AR	IFHA-200□HV		
IKFHA-300-AR	IFHA-300□HV		

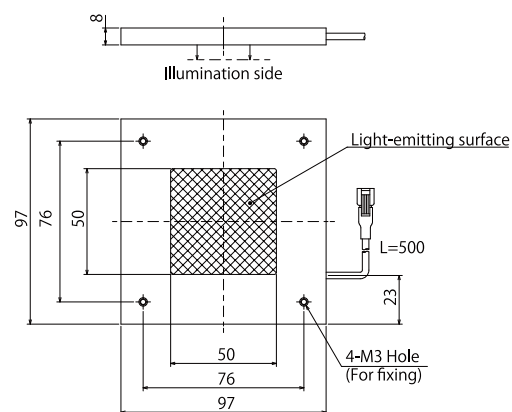
Mounting Layout



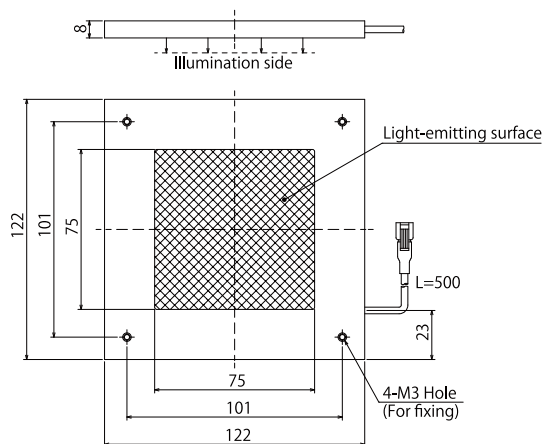
① IFHA-25□



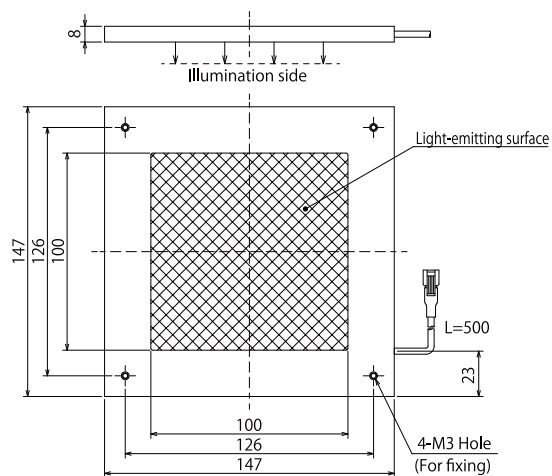
② IFHA-50□



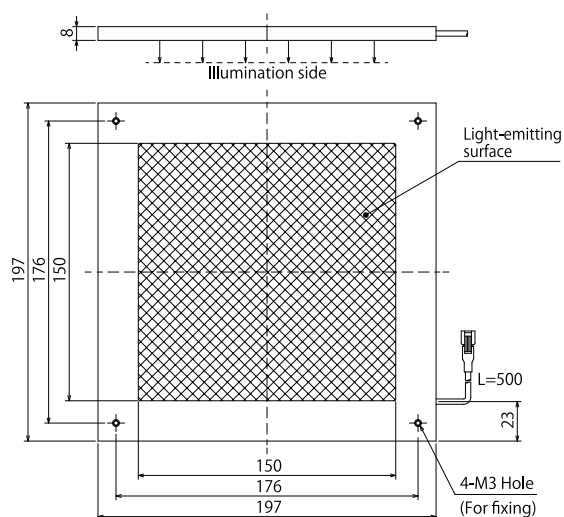
③ IFHA-75□



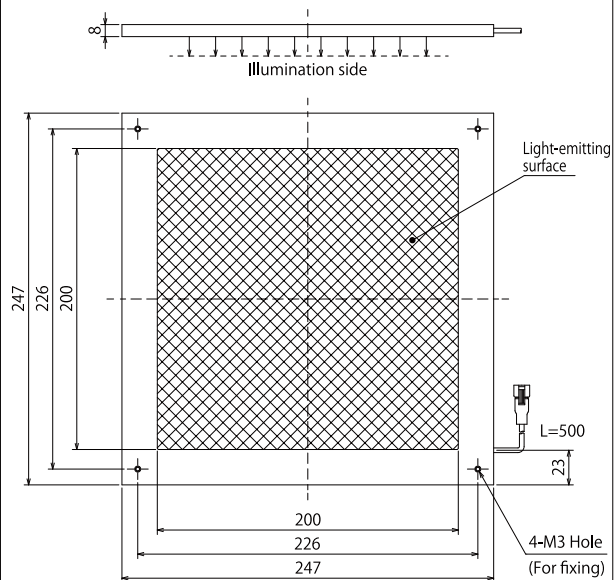
④ IFHA-100□

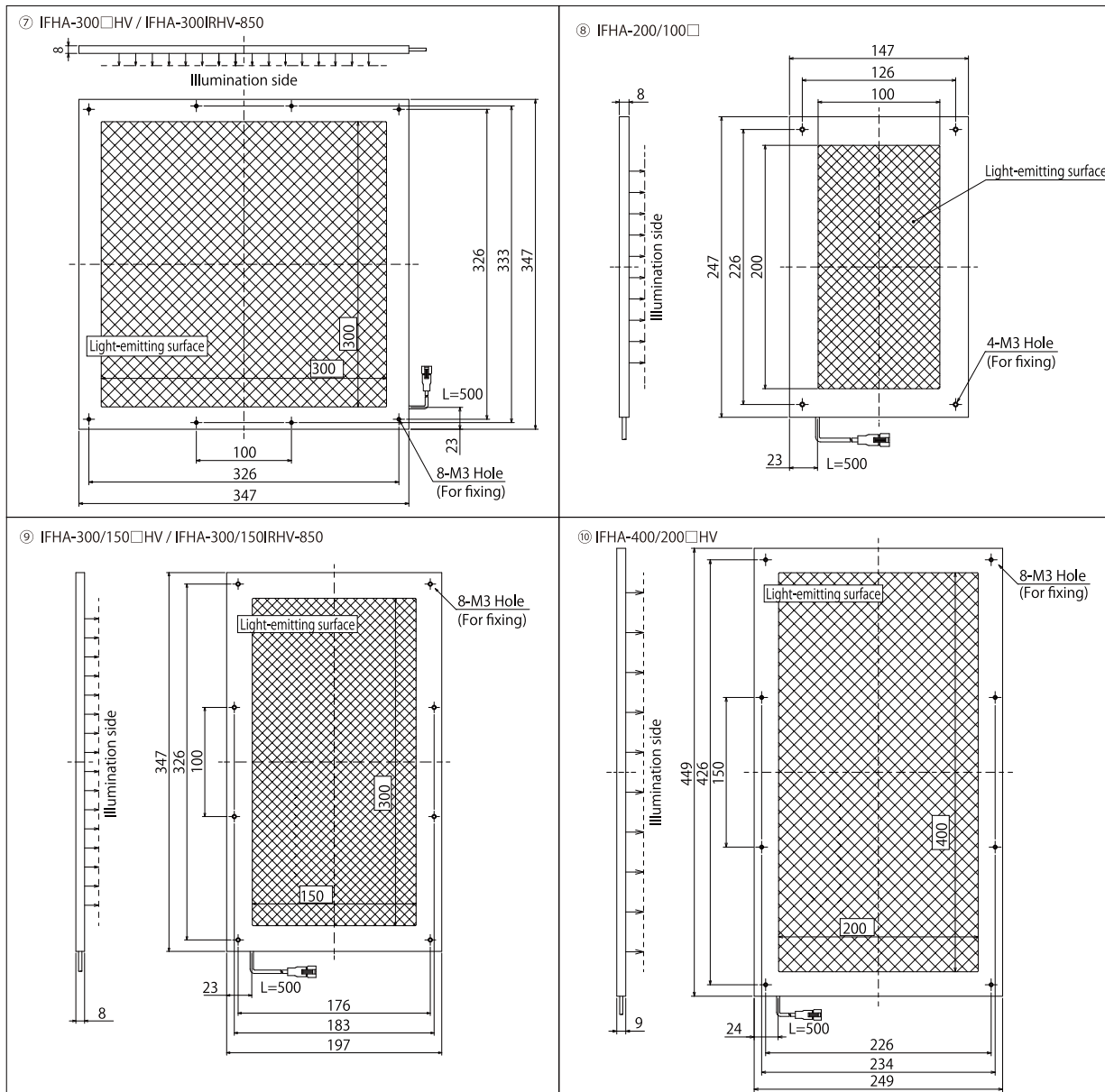


⑤ IFHA-150□



⑥ IFHA-200□HV / IFHA-200IR-850



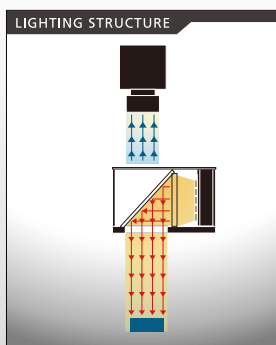


Coaxial Light [IFVA/IFVB series]

High-illuminance, high-uniformity,
compact coaxial light

Application

- Semiconductor/Electronic components industries
 - ➔ Pattern inspection of substrates, marking inspection of wafers
- Food/Packaging/Pharmaceutical industries
 - ➔ Marking of glossy surfaces and surface scratches inspection



Size lineup 7 sizes of □20, □40, □50, □70, □100, □140, □200

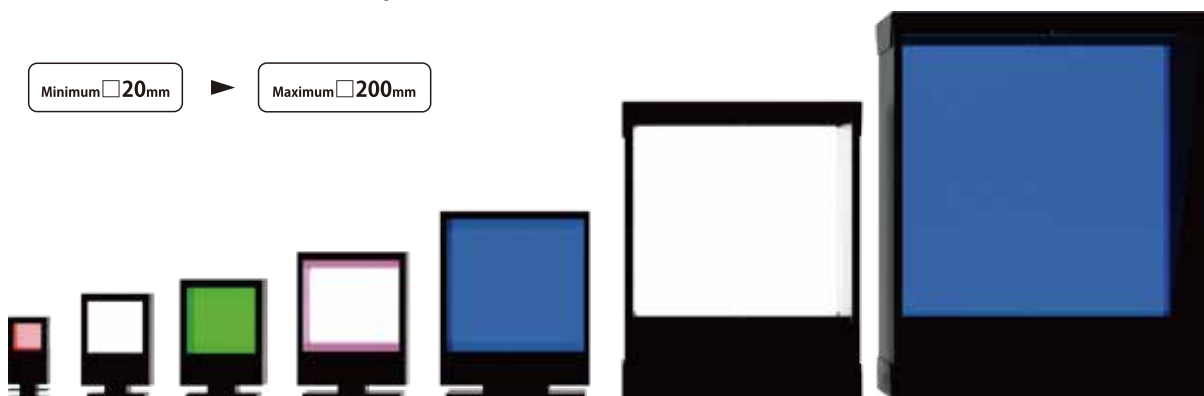
Wide-range of size variations

Opening size is available from 7 sizes with the smallest of □20mm to the largest of □200mm.
5 emission colors are available: white / red / blue / green / infrared. (140 / 200 is white / red / blue)

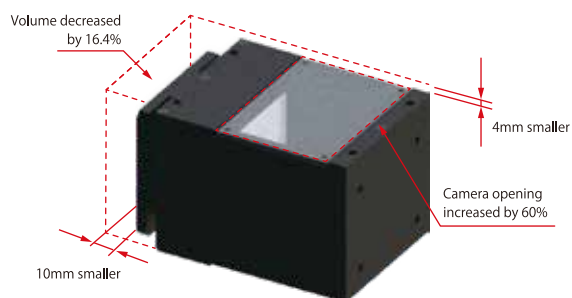
Minimum □20mm



Maximum □200mm



Compact housing



Comparing IFVA-50W with IFV-C50DW:

1. Decreased housing size by 16.4% by adopting the latest chip LEDs
2. Maintains a wide field of view due to the opening size on the camera side being increased by 60%
3. Easier installation by removing overhangs of screws on the camera side
4. Higher heat dissipation due to the all-aluminum housing and its original heat sink design

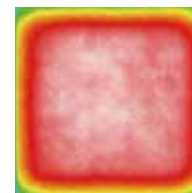
*Please note that the housing gets hot and be cautious.

High Uniformity

Narrow-angle
light distribution
type
IFVA-50W

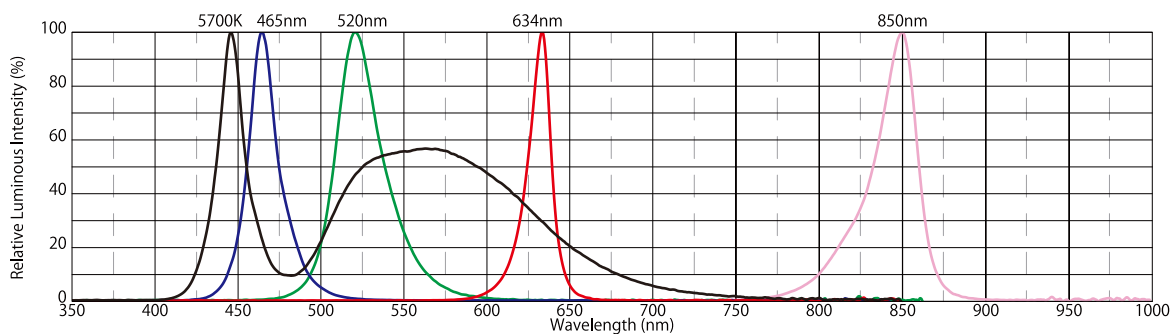


Diffusion type
IFV-C50DW



A wider illumination area can be captured due to high-uniform illumination to the periphery.

Wavelength Characteristics (reference value)

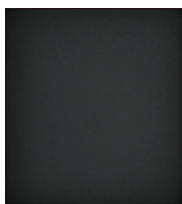


Comparison of illuminance by overdrive

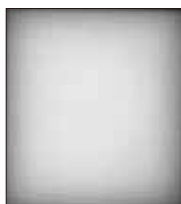
Overdrive controller enables 250% higher illuminance than continuous light.



Overdrive controller for IJS series, etc.

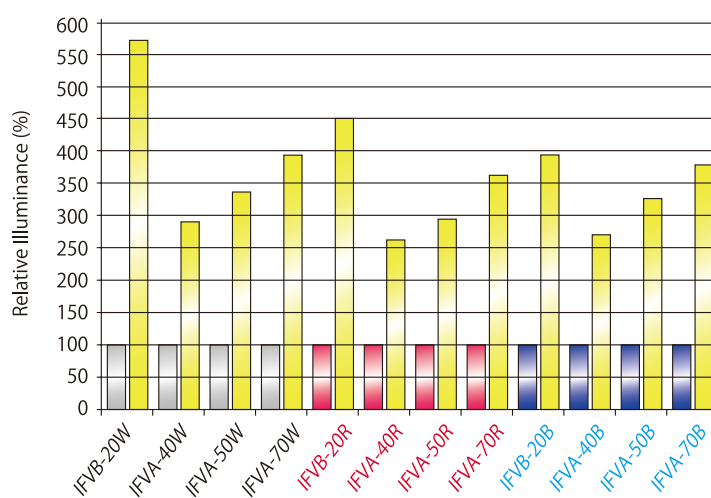


Continuous lighting



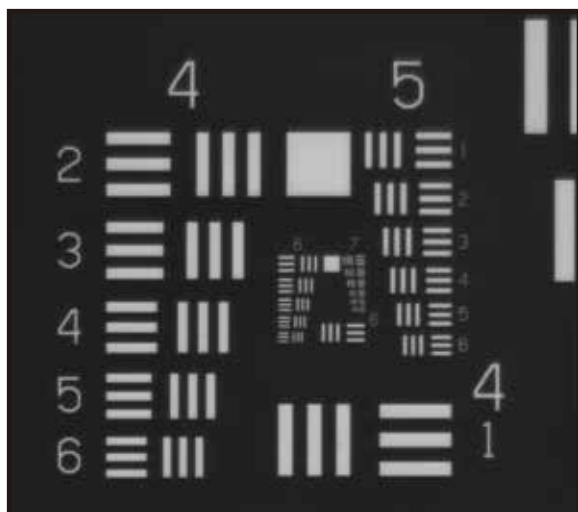
Overdrive lighting

Illuminance Comparison of continues lighting, and overdrive lighting (WD=50mm)

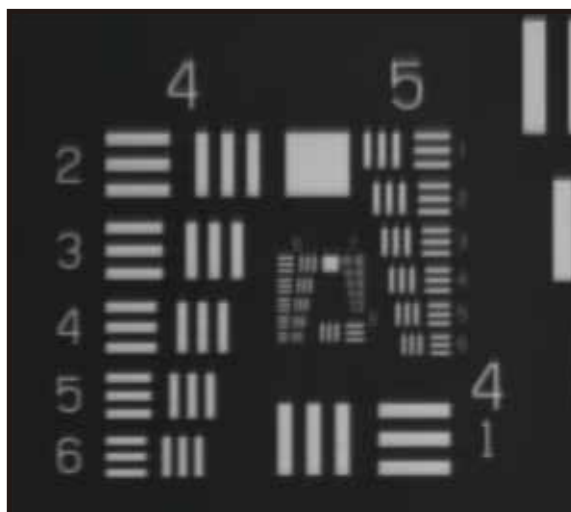


Increased Clarity

The IFVB-20 series is a coaxial light with an ultra-thin half mirror installed for imaging with high-resolution and a high-magnification cameras. High-definition images can be captured by suppressing the occurrence of ghosting.



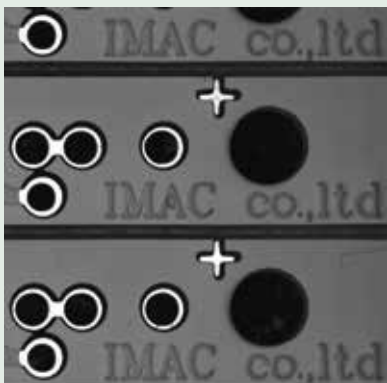
High-definition imaging type
IFVB-20W



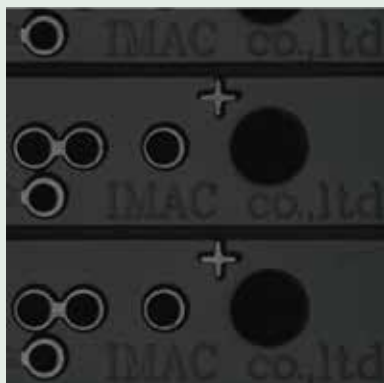
Diffusion type
IFV-C50DW

Image Example

● Printed Circuit Board



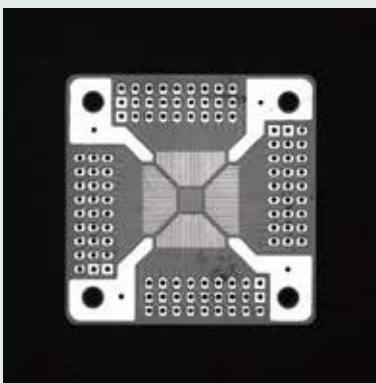
Narrow-angle light distribution type IFVA-50W
Shutter speed: 1/10,000
Continuous lighting: 100%



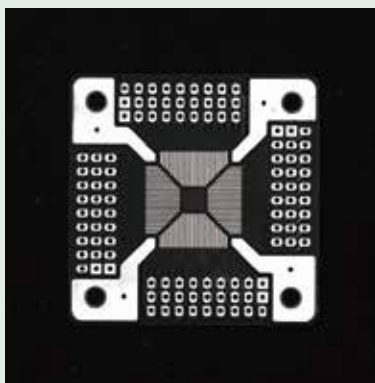
Diffusion type IFV-C50DW
Shutter speed: 1/10,000
Continuous lighting: 100%

Due to the narrow angle light distribution, the IFVA series is much brighter than the IFV-C series, which has diffused light distribution.

● Printed Circuit Board



IFVA-140WHV



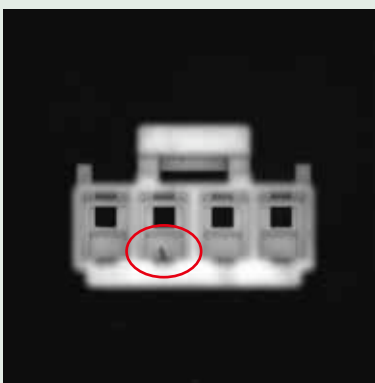
IDBA-HM200W x 2

By its high uniform illumination over a wide range, the circuit pattern under the solder resist can be determined.

● Connector



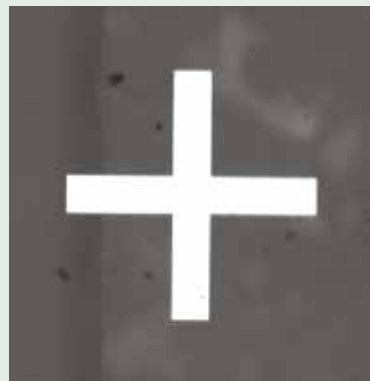
Without polarizing plates



With polarizing plates

By using coaxial light, it enables opening inspection where the entrance is narrow and deep, such as the insertion part of the connectors. In addition, the use of a polarizing plate/polarizing filter may improve the detection of defects that are difficult to distinguish.

● Alignment



IFVA-50W

● Coin cell battery



IFVA-50W

Model	Light Color	Power Consumption (W)	Input Voltage	SAG (※)	Controller Type	Applicable Controller	Drawing
IFVB-20□	R	4.2	DC12V	FF	①	【Controller ①】 IDMU-P■B-12 ILP-30M2 IDGB Series Overdrive controller, etc.	①
	W	4.2		FF			
	B	4.2		FF			
	G	4		FF			
IFVA-20IR-850	IR-850	2.4		FF			②
IFVA-40□	R	10.5		AA			
	W	10.5		98			
	B	10.5		98			
	G	9		8F			
IFVA-50□	IR-850	7		FF			③
	R	14		B9			
	W	14		A7			
	B	14		A7			
	G	12		A0			
IFVA-70□	IR-850	11		FF			④
	R	24		D9			
	W	24		B9			
	B	24		B9			
	G	18		C2			
IFVA-100□HV	IR-850	17		FF			⑤
	R	32	DC24V	-	②	【Controller ②】 IDMU-P■B-24 ILP-60M2-24 IDGB-24 Series	
	W	32					
	B	32					
	G	27					
IR-850	24						
IFVA-140□HV	R	45	DC24V	-	②	【Controller ②】 IDMU-P■B-24 ILP-60M2-24 IDGB-24 Series	⑥
	W	45					
	B	45					
IFVA-200□HV	R	65					⑦
	W	70					
	B	70					

★□ represents light color (R=Red, W=White, B=Blue, G=Green, and IR-850=Infrared).

★24V DC models are also available for those with 12V DC input voltage. *The SAG indicates the maximum voltage setting for SAG controllers.

★■ represents the number of channels (4=4 channels, 8=8 channels).

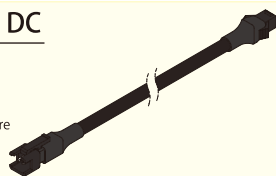
The output maximum capacity of the IDMU-P■B-12 series is up to 36W in a total of 2 channels. (The paired channels are shown on the right [1-2, 3-4, 5-6, 7-8])

The output maximum capacity of the IDMU-P■B-24 series is up to 72W in a total of 2 channels. (The paired channels are shown on the right [1-2, 3-4, 5-6, 7-8])

Extension cables for 12V DC

I-CB-S Series

When using in moving parts such as robots, please use the I-CB-S_R series robot cables that are resistant to bending. For DC24V lighting, please use the I-CB-F_24 or I-CB-S_F-24 series.



Recommended Controller (PWM control)

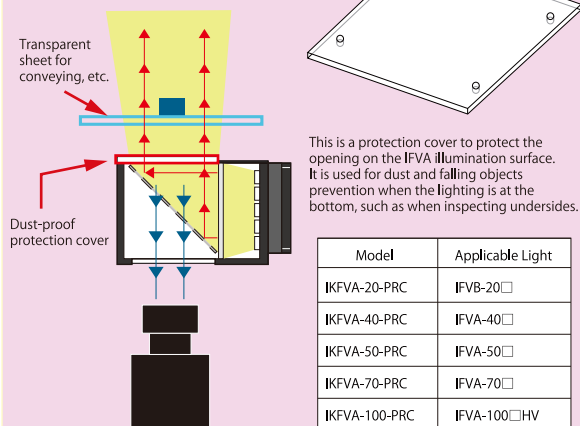
IDMU Series

Output control: 1000 gradations
Compact PWM controller with 24V DC input voltage that is ideal for in-board installation
It can be extended up to 40ch with unit linkage.
It is also equipped with programming and trigger output functions that can be used in a variety of applications.



Protection Cover for IFVA

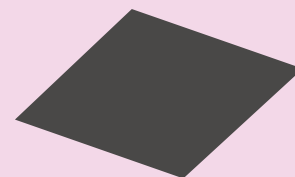
IKFVA-PRC Series



Polarizer for IFVA

IKFVA-PL Series

Model	Applicable Light
IKFVA-20-PL	IFVB-20□
IKFVA-40-PL	IFVA-40□
IKFVA-50-PL	IFVA-50□
IKFVA-70-PL	IFVA-70□
IKFVA-100-PL	IFVA-100□HV



This polarizer is a type that is embedded inside the IFVA. By also attaching a PL filter to the camera lens side, it enables the cancellation of object glare and surface reflection.

Polarizing filter with screw lock

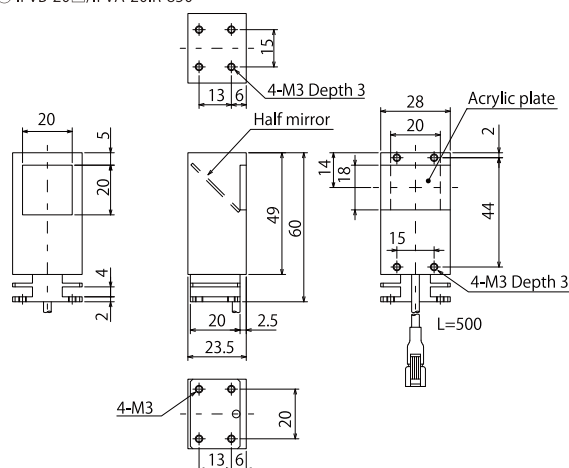
IMPL Series

Model	Lens filter diameter
IMPL-M255	M25.5 x P0.5
IMPL-M270	M27.0 x P0.5
IMPL-M305	M30.5 x P0.5

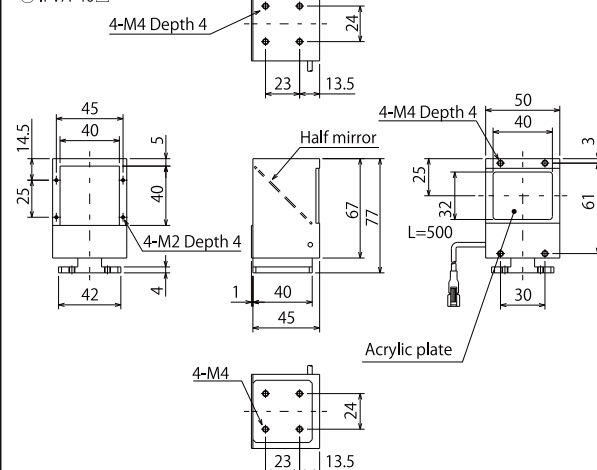


This type of polarizing filter is attached to the tip of the camera lens. Please use it with a polarizing plate on the lighting side as a set.

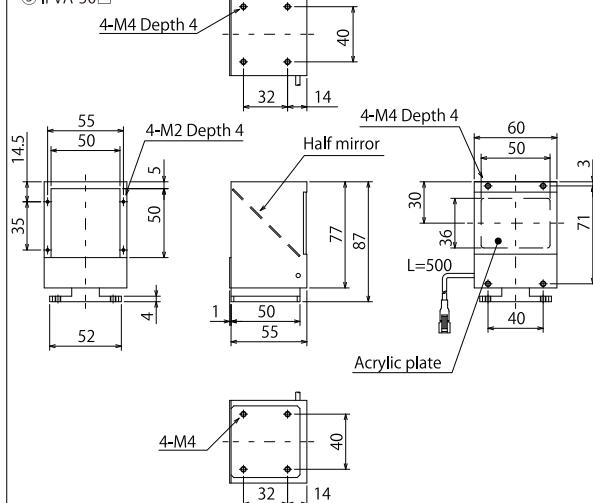
① IFVB-20□/IFVA-20IR-850



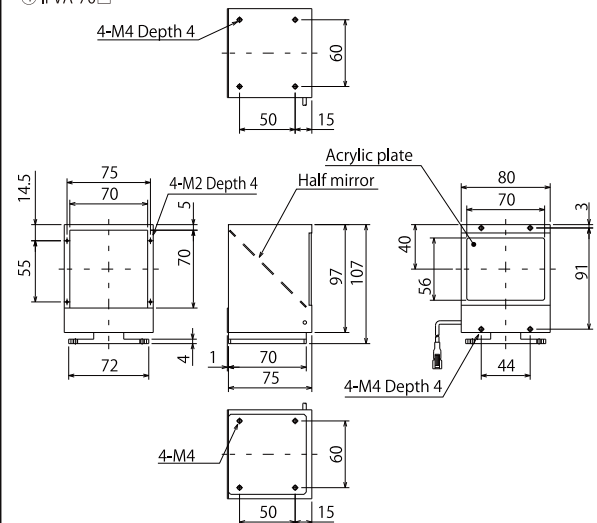
② IFVA-40□



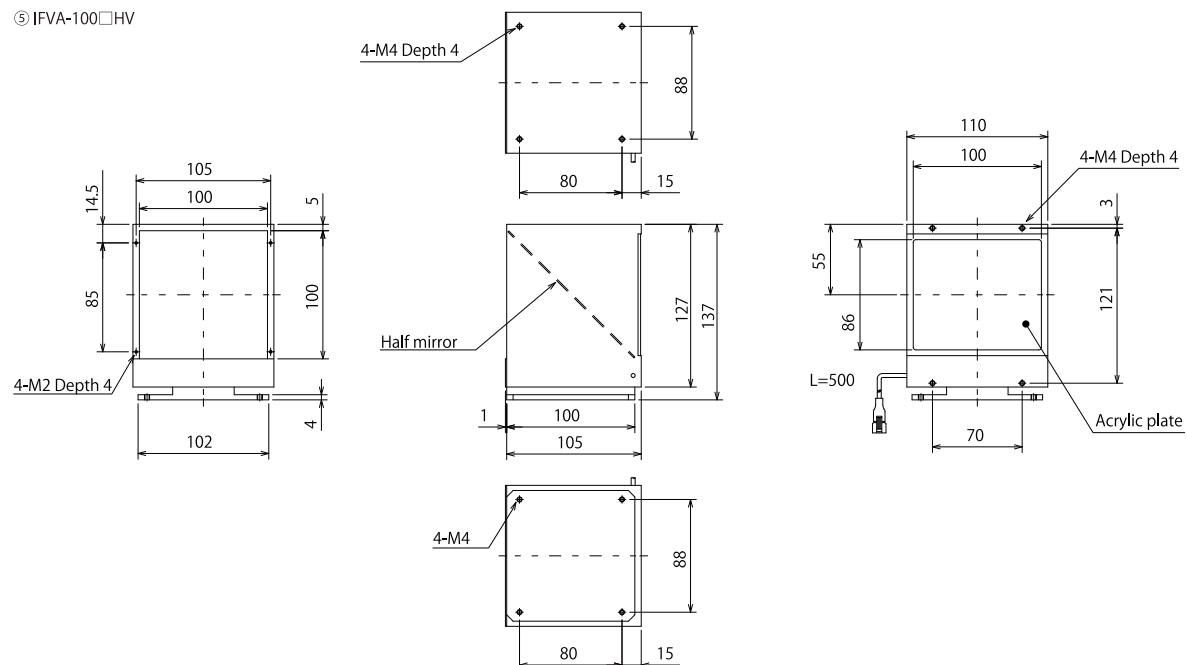
③ IFVA-50□



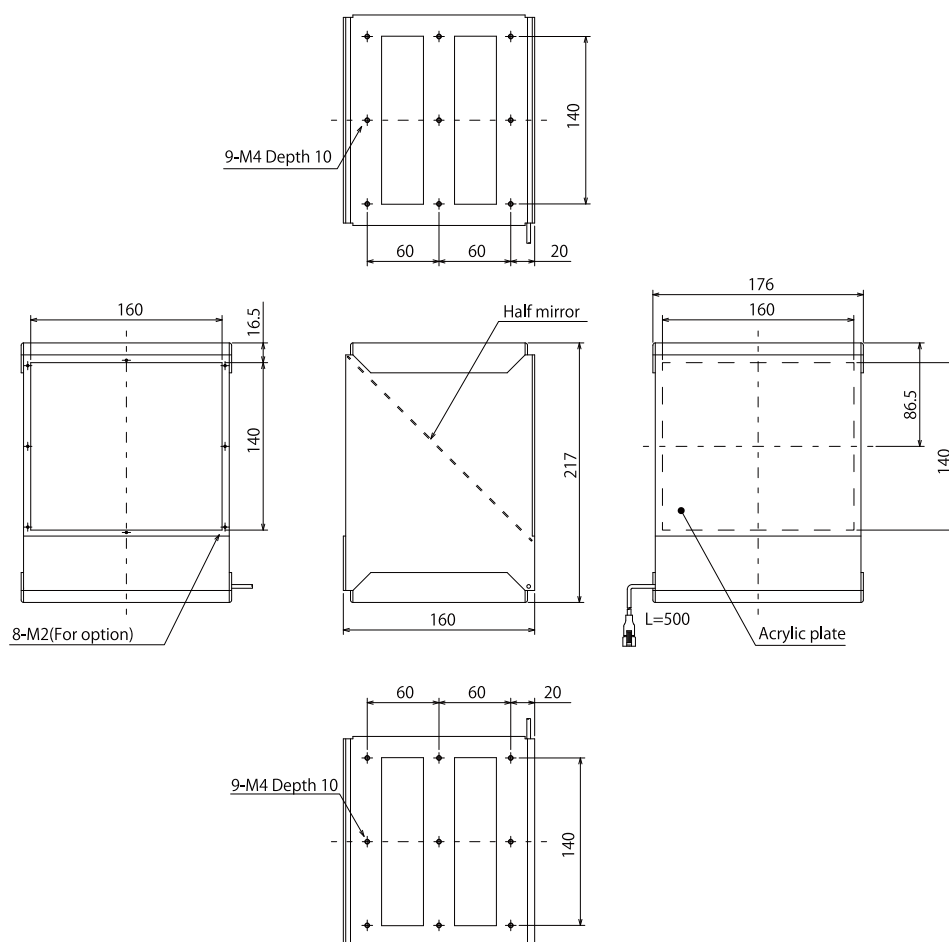
④ IFVA-70□



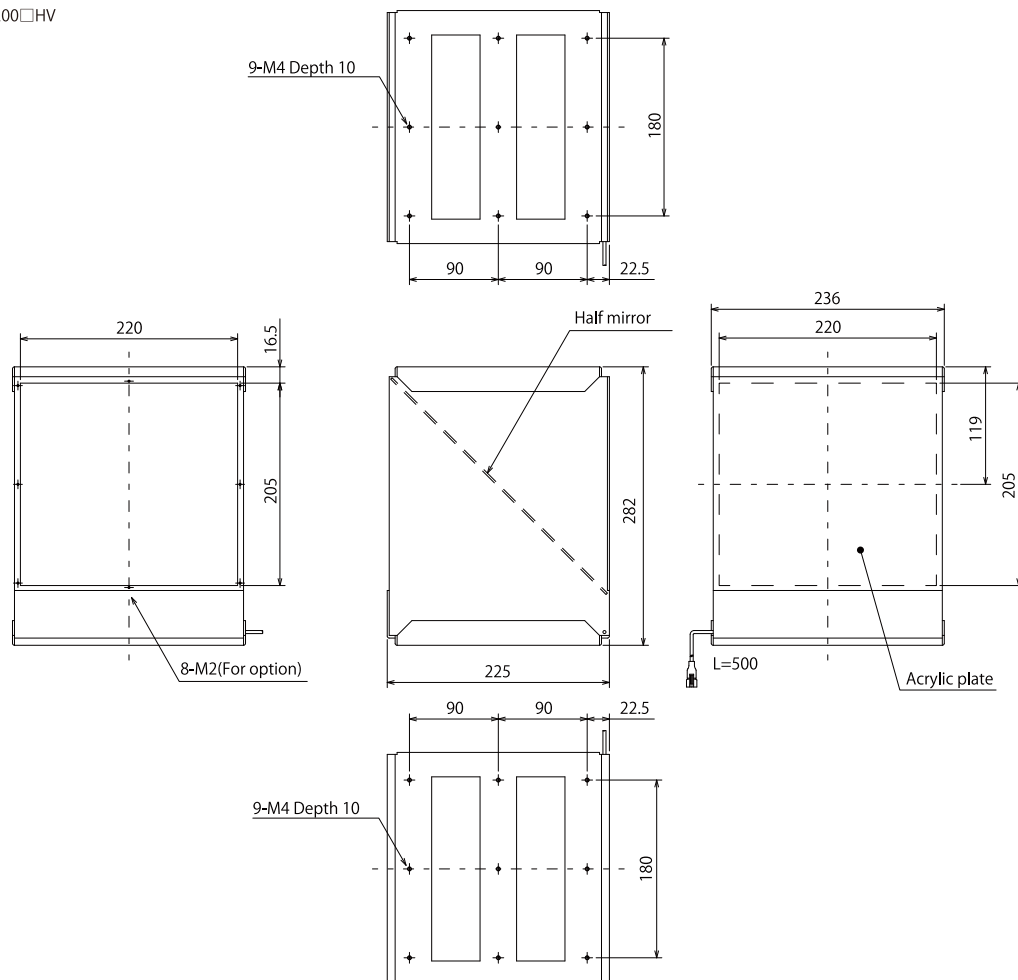
⑤ IFVA-100□HV



⑥ IFVA-140 □ HV



⑦ IFVA-200 □ HV



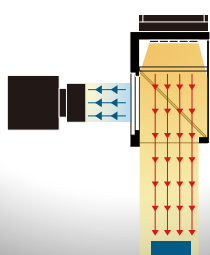
Straight Coaxial Light [IFVA-ST series]

Its straight Illumination design can contribute to saving vertical space.

Application

- Semiconductor/Electronic components industries
 - ➔ Pattern inspection of substrates, marking inspection of wafers
- Food, Packaging, Pharmaceutical industries
 - ➔ Marking of glossy surfaces and surface scratches inspection

LIGHTING STRUCTURE

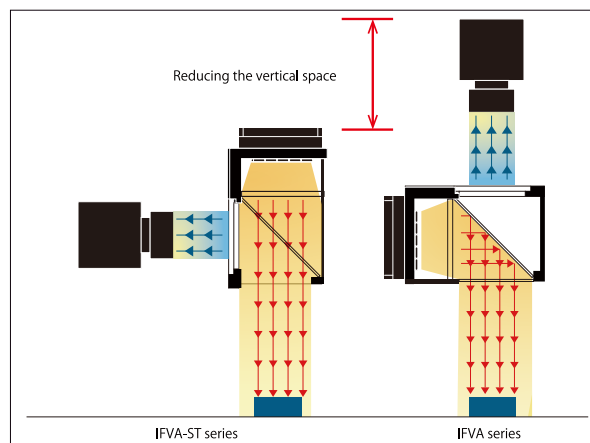


Size lineup

3 opening sizes of □40 / □50 / □70.

Ideal for space saving

- The IFVA-ST series can change the imaging direction of the camera 90 degrees by reflecting the image object in the internal half mirror. That can reduce the vertical space and contribute to miniaturizing systems.
- The brightness and parallelism are improved from the conventional product (IFV-C **-C01).



Illumination image



IFVA-ST series

Wavelength Characteristics (reference value)

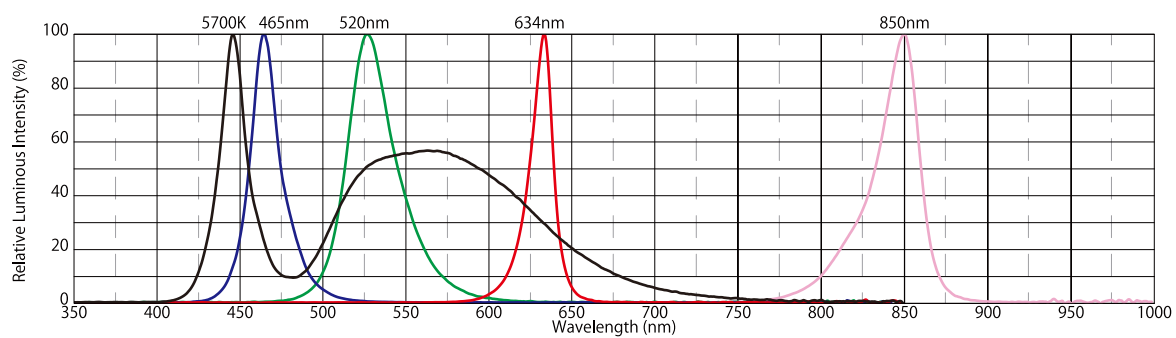


Image Example



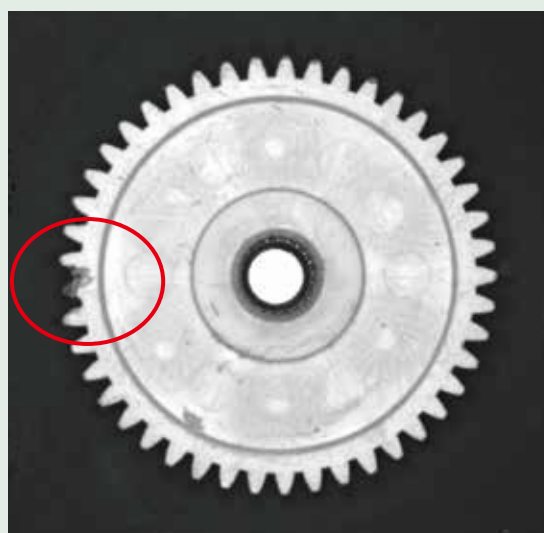
Object: Terminal block



IFVA-50W-ST



Object: Gear



IFVA-50W-ST

Model	Light Color	Power Consumption (W)	Input Voltage	SAG (※)	Controller Type	Applicable Controller	Drawing
IFVA-40□-ST	R	10.5	DC12V	AA	①	【Controller type①】 IDMU-P■B-12 ILP-30M2 IDGB Series Overdrive controller, etc.	①
	W	10.5		98			
	B	10.5		98			
	G	9		8F			
	IR-850	7		FF			
IFVA-50□-ST	R	14		B9			②
	W	14		A7			
	B	14		A7			
	G	12		A0			
	IR-850	11		FF			
IFVA-70□-ST	R	24		D9			③
	W	24		B9			
	B	24		B9			
	G	18		C2			
	IR-850	17		FF			

★□ represents light color (R=Red, W=White, B=Blue, G=Green and IR-850=Infrared).

★24V DC models are also available for those with 12V DC input voltage. *The SAG indicates the maximum voltage setting for SAG controllers.

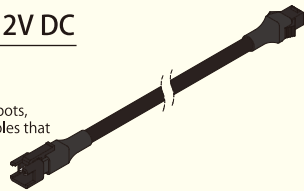
★■ represents the number of channels (4=4 channels, 8=8 channels).

The output maximum capacity of the IDMU-P■B-12 series is up to 36W in a total of 2 channels. (The paired channels are shown on the right [1-2, 3-4, 5-6, 7-8])

Extension cables for 12V DC

I-CB-S Series

When using in moving parts such as robots, please use the I-CB-S_R series robot cables that are resistant to bending.



Recommended Controller (PWM control)

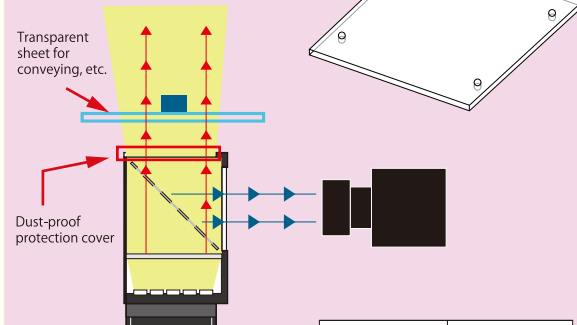
IDMU Series

Output control: 1000 gradations
Compact PWM controller with 24V DC input voltage that is ideal for in-board installation
It can be extended up to 40ch with unit linkage.
It is also equipped with programming and trigger output functions that can be used in a variety of applications.



Protection Cover for IFVA

IKFVA-ST-PRC Series



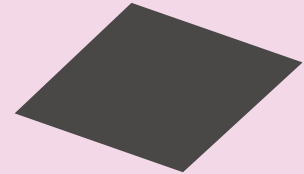
This is a protection cover to protect the opening on the IFVA illumination surface. It is used for dust and falling objects prevention when the lighting is at the bottom, such as when inspecting undersides.

Model	Applicable Light
IKFVA-40ST-PRC	IFVA-40□-ST
IKFVA-50ST-PRC	IFVA-50□-ST
IKFVA-70ST-PRC	IFVA-70□-ST

Polarizer for IFVA

IKFVA-PL Series

Model	Applicable Light
IKFVA-40-PL	IFVA-40□-ST
IKFVA-50-PL	IFVA-50□-ST
IKFVA-70-PL	IFVA-70□-ST



This polarizer is a type that is embedded inside the IFVA.
By also attaching a PL filter to the camera lens side, it enables the cancellation of object glare and surface reflection.

Polarizing filter with screw lock

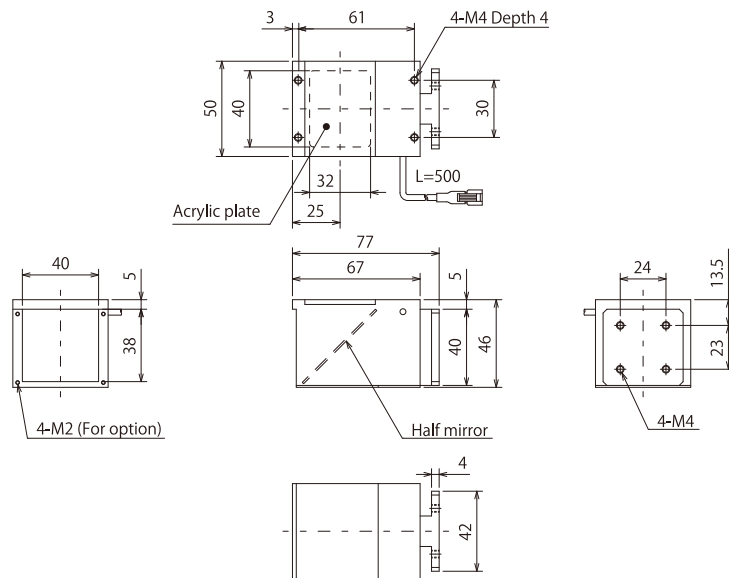
IMPL Series

Model	Lens filter diameter
IMPL-M255	M25.5 x P0.5
IMPL-M270	M27.0 x P0.5
IMPL-M305	M30.5 x P0.5

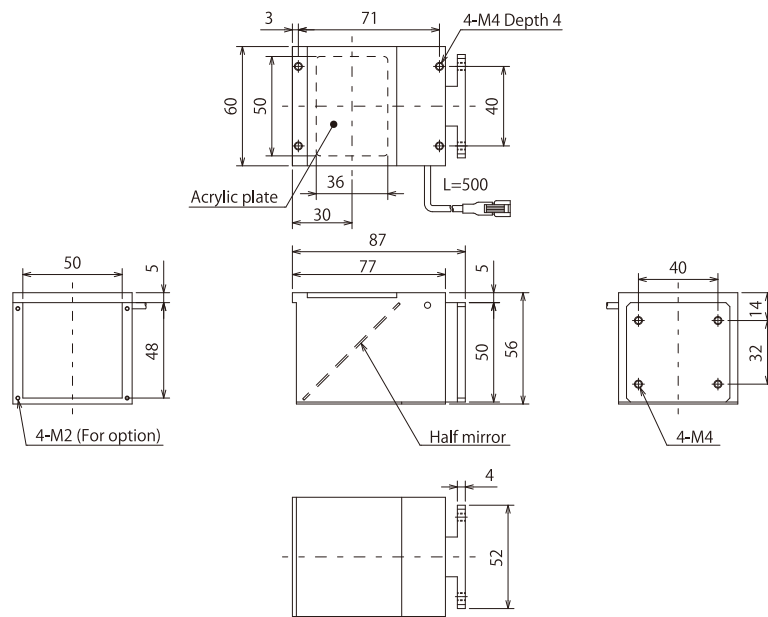


This type of polarizing filter is attached to the tip of the camera lens.
Please use it with a polarizing plate on the lighting side as a set.

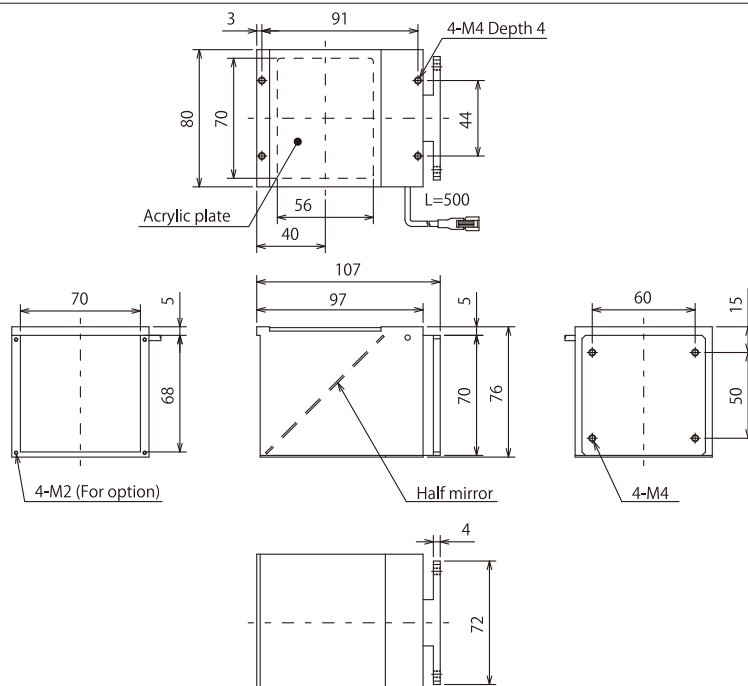
① IFVA-40□-ST



② IFVA-50□-ST



③ IFVA-70□-ST



LED Light Sources IFIC-100W

- Easy maintenance, LED Light Sources

Feature

- The IFIC-100W is an energy-saving and long-life LED light source device to replace conventional halogen light sources.
- Control boards that enable light intensity adjustment in the low-light range is equipped as the standard. Fanless models are also available for equipment that does not tolerate dust and vibration.

Main applications

- For Machine Vision, Microscope, Endoscope.
- For Inspection of wafers, Metal and other highly reflective materials.
- For inspection of materials with high transmittance such as films.

Options

- LED Replacement Unit
- Metal fixing bracket
- Light intensity High/Low 2-step manual switching specification



Product Specifications

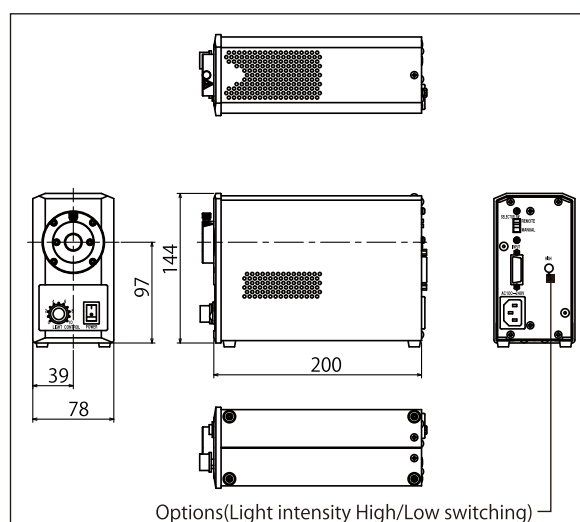
Model	IFIC-100W
Light Color	W (※1)
White color temperature	6,500K (typ)
Average illumination	300,000lx (※2)
LED Lifetime	30,000h (※3)
Rated input voltage	AC100V-240V±10%
Rated input frequency	50/60Hz
Lighting method	Direct Current Lighting
Power Consumption	18W
Cooling method	Natural Air Cooling
Operating Temperature/Humidity	0°C~40°C / 20%~80%RH(No condensation)
Manual Dimming	Continuous dimming by the front dimmer volume
External Control Functions	LED ON/OFF
	Analog Dimming(DC0V - +5V)
Dimensions	W78×H144×D200mm(Excluding protrusions)
Weight	1.8kg
Compatible Standards	CE,PSE

※1 Red, Blue, Light bulb color and IR are available by customizing.

※2 Reference values for initial illuminance at a distance of 50 mm from the emitting surface, with a light guide of 8 mm in diameter and 500 mm in length.

※3 Depends on operating environment. Not a guaranteed value.

Drawing



LED Light Sources

IFIC-150W

- Easy maintenance, LED Light Sources

Feature

- The IFIC-150W is an energy-saving and long-life LED light source device to replace conventional halogen light sources.
- Control boards that enable light intensity adjustment in the low-light range is equipped as the standard. Fanless models are also available for equipment that does not tolerate dust and vibration.

Main applications

- For Machine Vision, Microscope, Endoscope.
- For Inspection of wafers, metal and other highly reflective materials.
- For inspection of materials with high transmittance such as films.

Options

- LED Replacement Unit
- Metal fixing bracket
- Light intensity High/Low 2-Steps manual switching specification



Product Specifications

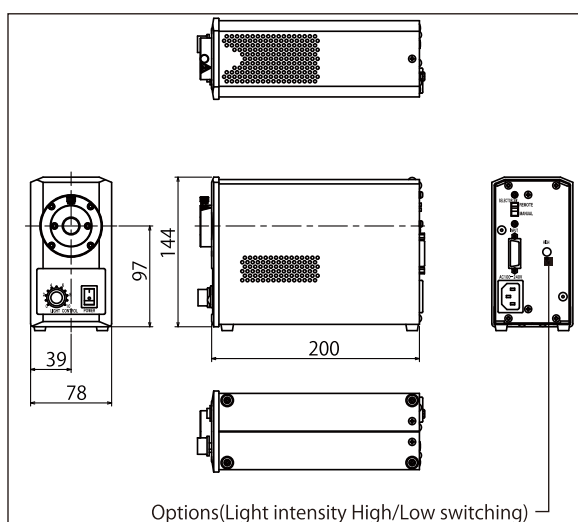
Model	IFIC-150W
Light Color	W (※1)
White color temperature	6,500K (typ)
Average illumination	400,000lx (※2)
LED Lifetime	30,000h (※3)
Rated input voltage	AC100V-240V±10%
Rated input frequency	50/60Hz
Lighting method	Direct Current Lighting
Power Consumption	20W
Cooling method	Forced Fan Cooling
Operating Temperature/Humidity	0°C~40°C / 20%~80%RH(No condensation)
Manual Dimming	Continuous dimming by the front dimmer volume
External Control Functions	LED ON/OFF
	Analog Dimming(DC0V - +5V)
Dimensions	W78×H144×D200mm(Excluding protrusions)
Weight	2.0kg
Compatible Standards	CE,PSE

※1 Red, Blue, Light bulb color and IR are available by customizing.

※2 Reference values for initial illuminance at a distance of 50 mm from the emitting surface, with a light guide of 8 mm in diameter and 500 mm in length.

※3 Depends on operating environment. Not a guaranteed value.

Drawing



LED Light Sources

IFIC-250W

- Provides high output to easily replace metal halide light sources.
- Varies external control interfaces : 8 bit digital/ 232C

Feature

- Adopting High-brightness white LEDs.
Ideal for replacing conventional metal halide light sources.
Light output is approximately 4 times higher than that of a 150W halogen light source.
- Optimal housing design for high heat dissipation.
The large-sized housing provides excellent heat dissipation, contributing to a longer product lifetime.
- Various protection functions are provided to deal with abnormalities.
Humidity and LED abnormality detection functions are installed as the standard.
- Compatible with 8-bit digital, RS-232C, and LAN interfaces.



Main applications

- For imaging with High-speed cameras
 - For long line light guides for image processing.
 - For industrial endoscopes
- Compatible adapters for various companies are available.

Product Specifications

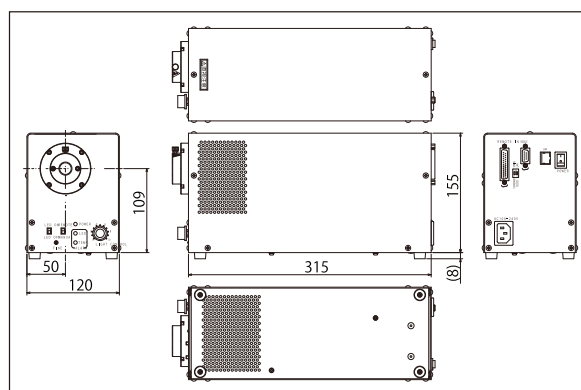
Model	IFIC-250W
Light Color	W
White color temperature	6,500K (typ)
Average illumination	1,800,000lx (※1)
LED Lifetime	30,000h (※2)
Rated input voltage	AC100V-240V±10%
Rated input frequency	50/60Hz
Lighting method	Direct Current Lighting
Power Consumption	125W
Cooling method	Forced Fan Cooling
Operating Temperature/Humidity	0°C~40°C / 20%~80%RH(No condensation)
Manual Dimming	Continuous dimming by the front dimmer volume
External Control Functions	LED ON/OFF, LED Humidity and LED abnormality detection function Digital Dimming(8bit/RS-232C/LAN) (※3)
Dimensions	W120×H155×D315mm(Excluding protrusions)
Weight	Approx. 4.6kg
Compatible Standards	PSE

※1 Reference values for initial illuminance at a distance of 50 mm from the emitting surface, with a light guide of 11 mm in diameter and 500 mm in length.

※2 Depends on operating environment. Not a guaranteed value.

※3 Analog DCOV - +5V remote dimming is available as an option.

Drawing



LED Light Sources

IFIC-300W

- 1.5 times brighter and more compact by 50% than that of IFIC-250W.
- In addition to analog 0~+5V, RS-232C, and LAN for external control Interface, digital control is expanded from conventional 8bit to 10bit.



Feature

- Adopting industry's top class high brightness LEDs. Approximately 1.5 times brighter light intensity than that of IFIC-250W.
- Significantly reduced size. The AC adapter specification reduces its size by approximately 50% than that of the IFIC-250W.
- Various protection functions are provided to deal with abnormalities. Humidity and LED abnormality detection functions are installed as the standard.
- Analog 0~+5V, 10-bit digital, RS-232C, and LAN interface are installed as the standard.

Main applications

- For imaging with High-speed cameras
 - For long line light guides for image processing.
 - For inspection of low-reflectance objects.
 - For Industrial Endoscopy
- Compatible adapters for various companies are available.

Product Specifications

Model	IFIC-300W
Light Color	W
White color temperature	6,500K (typ)
Average illumination	2,700,000lx (※1)
LED Lifetime	30,000h (※2)
Rated input voltage	DC24V, 6.25A
Lighting method	Direct Current Lighting
Cooling method	Forced Fan Cooling
Operating Temperature/Humidity	0°C~40°C / 20%~80%RH(No condensation)
Manual Dimming	Continuous dimming by the front dimmer volume
External Control Functions	LED ON/OFF, LED Humidity and LED abnormality detection function
	Analog Dimming(DC0V ~ +5V)
	Digital Dimming(8bit/RS-232C/LAN) (※3)
Dimensions	W110×H145×D185mm(Excluding protrusions)
Weight	Approx. 2.8kg

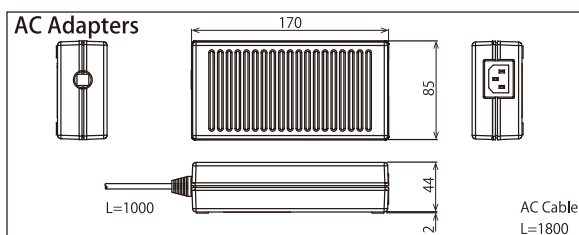
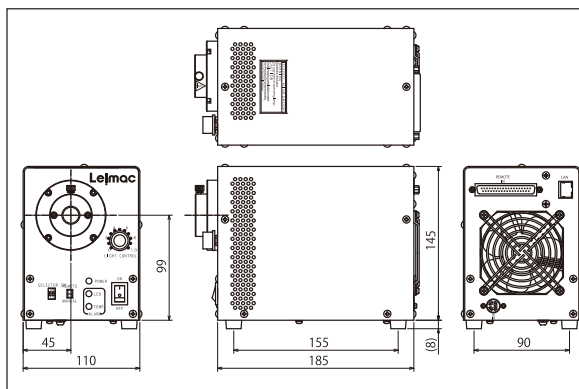
※1 Reference values for initial illuminance at a distance of 50 mm from the emitting surface, with a light guide of 11 mm in diameter and 500 mm in length.

※2 Depends on operating environment. Not a guaranteed value.

AC Adapters

Model	PW-150A-1Y240H
Rated input voltage	AC100V-240V±10%, 2A
Rated input frequency	50/60Hz
Power Consumption	120W
Operating Temperature/Humidity	0°C~40°C / 20%~80%RH(No condensation.)
Dimensions	W85×H44×D170mm(Excluding protrusions)
Weight	Approx. 0.78kg
Compatible Standards	PSE

Drawing



High-brightness LD excitation light sources

IFIC-1000FC

- Achieving long product lifetime and high power.

Feature

- The Highest-power light source of the series.
- Long product lifetime of 20,000 hours.
- Custom-made light guides are available.
- Wide lineup of lens accessories for light guides.
- Built-in filter changer. (RGB 3-color filter)

End-face thermally bonded light guide + load lens for fiber.



Main unit + road lens



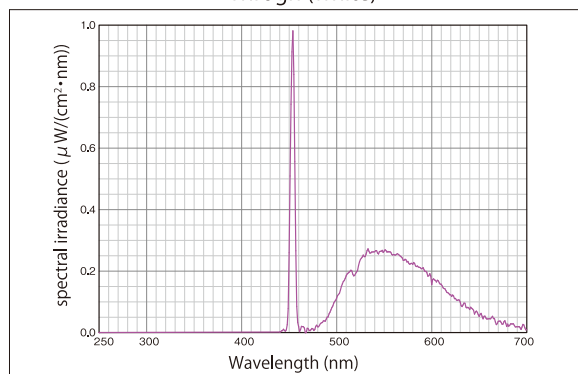
Specifications

Model	IFIC-1000FC
Rated input voltage	AC100V~240V±10% 50/60Hz
Power consumption	Approx. 350W
Light intensity (initial value)	Average 8,000lm ※ At our specified load lens with an irradiation area of 280 x 280.
Laser lifetime	Approx. 20,000 hours ※ When light intensity is reduced by 40% relative to the initial value.
White color temperature	Approx. 7,500K
Dimming Method	Front panel operation or remote control. ※ Remote control via D-Sub connector on rear panel. (256 shades)
Built-in Filter	Switching by front panel switch or remote control.
Cooling Method	Forced Fan Cooling
Operating Environment	Temperature 5 to 35°C Humidity ~70°C (No condensation)
Temperature Abnormal Protection	When the light source abnormally rises in temperature, the output is stopped by the temperature protector. (Return to normal operation when power is turned back on.)
Dimensions	W212×D333.5×H240「mm」 ※ Excluding rubber feet and projections.
Weight	Approx. 11kg

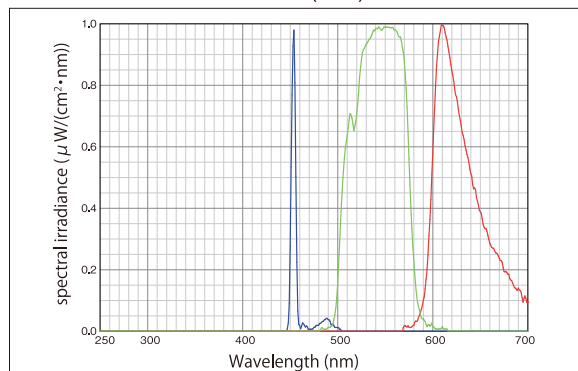
※ Light intensity and laser lifetime are for reference only and are not guaranteed values.

Wavelength distribution and Relative output

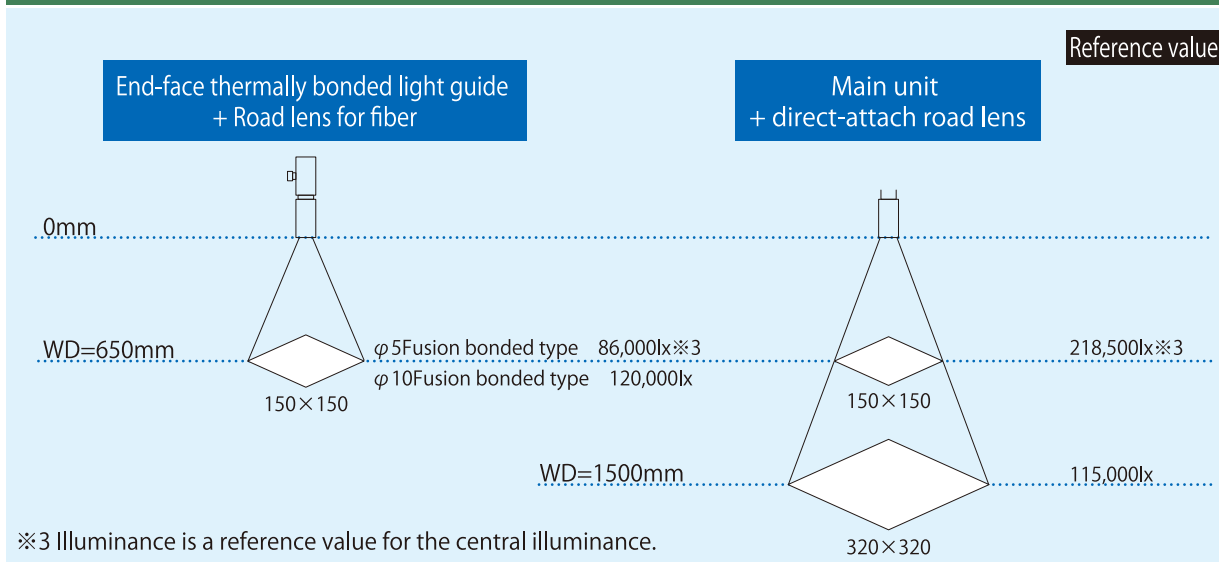
Throgh (white)



Filters (RGB)



Light projection characteristics



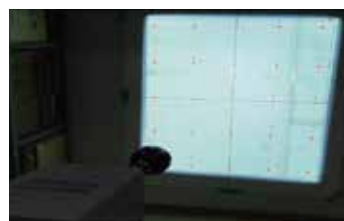
Ideal for FPD and glass substrate visual inspection.

Various types of lens-mounted, highly uniform, directional projection light sources are available.

WD : 1800mm (From the front panel)
Irradiation size : 1200mm × 1000mm
Uniformity : Approx. ±7.5%



1000mm				
(unit : lx)				
8300	7900	7800	7700	7800
7900	7900	8100	7800	7600
8100	8200	8100	7900	7500
7700	7800	7900	7600	7500
7900	7700	7600	7500	7400



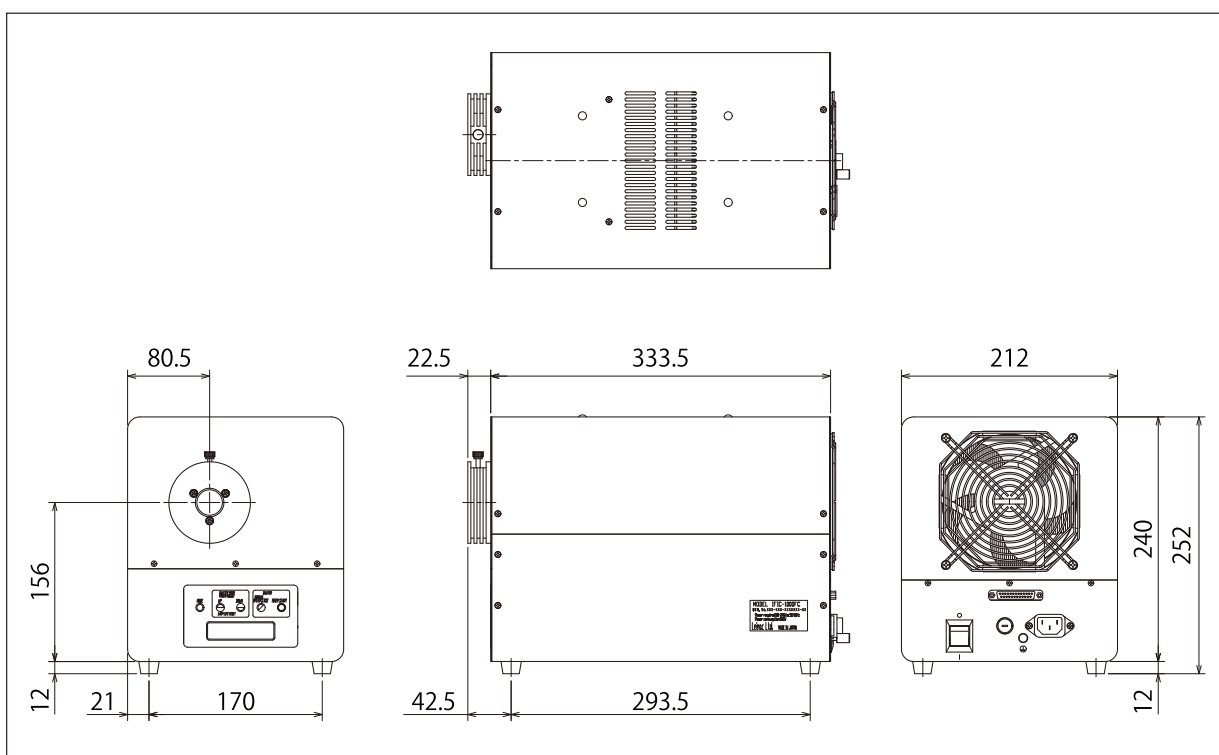
<Specification>

Outside Ddiameter : See drawing
WD : 1800mm (From the front panel)
Irradiation size : 1200mm × 1000mm
Uniformity : Approx. ±7.5%

<Application>

Ideal for FPD and glass substrate visual inspection.

Drawing



DC24V IN Build-in Dimming Controller [IDMU series] - LEIMIX[®] -

Flexible hardware configuration.
Expandable to 40 channels.
Precise camera and light synchronization.
Easy configuration via GeniCam parameter.



Series Lineup 8 types total consisting of base and edge unit both with 4ch and 8ch specifications and an output specification of 12V and 24V

The external trigger output function allows external synchronization.

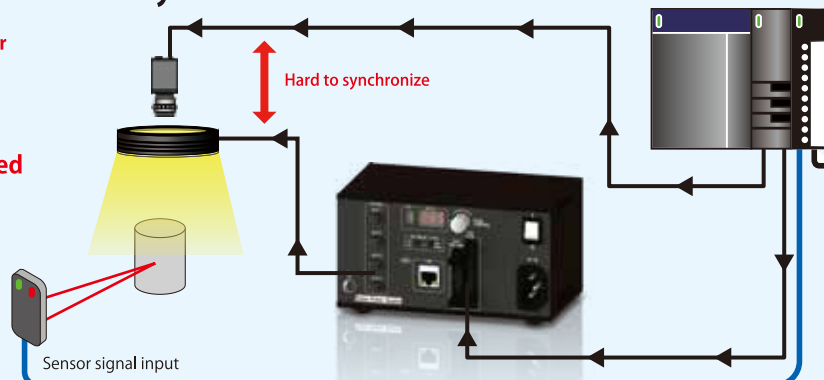
Equipped with an external trigger output function other than the trigger input.
By using programming mode, the controller enable you to synchronize cameras and lights precisely even without PLC.

Conventional Initiated by PLC

What to do with PLC ladder

- Camera: ON/OFF signal
- Lighting: ON/OFF signal

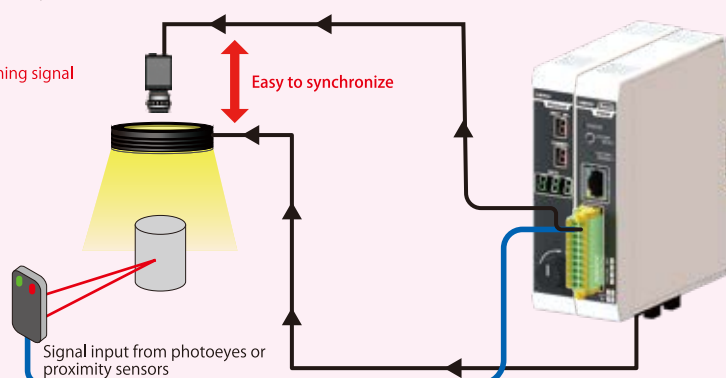
PLC expertise required



IDMU Initiated by IDMU

No PLC is required

*Only the inspection timing signal



Up to 40channels in combination of your choosing

The base unit (4ch/8ch) and the edge unit (4ch/8ch) can be combined to collectively control up to 40channels.
Mixing of dimming method / output voltage is also possible.

Example combination



Optional unit: Yes
Base unit : 4ch x1

Total : 4ch



Optional unit: Yes
Base unit : 8ch x1
Edge unit : 4ch x1

Total : 12ch



Optional unit: Yes
Base unit : 8ch x1
Edge unit : 8ch x1, 4ch x1

Total : 20ch



Option unit: None
Base unit : 8ch x1
Edge unit : 8ch x4

Total : 40ch

Easy installation, easy wiring and space saving

The compact body can be easily mounted on a DIN rail, even if it is expanded up to 40ch, it is significantly slimmer than the existing controller with a width of about 250 mm.
Easy connection between units with the bus connectors on the back, and wiring work can be saved even when expanding or adding.
A plug-type EXT I/O connector that can be easily attached and detached is used for wiring, improving workability.

○ IDGB installation example



◎ IDMU installation example



Space saving

Easy configuration via programming function



It is possible to turn off multiple lights in sequence with one trigger signal by programming mode.

Programming Mode can set

- Emission order
- Output control
- Delay time
- Output pattern
- External trigger output and other settings for cameras

GeniCam support

Supports control via GeniCam (SFNC v2.4)
Provides a consistent and familiar GeniCam interface, regardless of which vision software platform is deployed.
It also supports control by conventional Leimac commands.

Other functions

- Lighting ON/OFF control via communication
- DHCP/LLA support (Automatic IP address acquisition)
- GigE Vision support (100Mbps)

Lineup

Model	Type	Input Voltage	Output Voltage	Channel Number	Trigger Input Channel Number	Capacity	Drawing
IDMU-P4B-12	Base	DC24V	DC12V	4ch	4	72W (36W/2ch) ※1	①
IDMU-P8B-12				8ch	8	144W (36W/2ch) ※1	②
IDMU-P4E-12	Edge			4ch	4	72W (36W/2ch) ※1	③
IDMU-P8E-12				8ch	8	144W (36W/2ch) ※1	④
IDMU-P4B-24	Base		DC24V	4ch	4	144W (72W/2ch) ※1	① ※2
IDMU-P8B-24				8ch	8	288W (72W/2ch) ※1	② ※2
IDMU-P4E-24	Edge			4ch	4	144W (72W/2ch) ※1	③ ※2
IDMU-P8E-24				8ch	8	288W (72W/2ch) ※1	④ ※2

※1 This is the total channel capacity as a pair. (The paired channels are shown on the right [1-2, 3-4, 5-6, 7-8])

※2 The drawings display 12V output specifications. For 24V output specification, the lighting output connectors change from SMP-02V-BC to SMP-03V-BC.

Common Specifications (Base and Edge units)

Input Voltage	DC24V
Light Control Method	Approximately 125kHz PWM, 1000 levels
Trigger Input Channel Number	4 (4ch type) / 8 (8ch type) (NPN / PNP supporting)
Trigger Input Mode	Level High / Level Low / Rising Edge / Falling Edge
Lighting time	0.1 - 999.9ms (100μsec step)
Lighting Delay Time	0 - 9000μsec (1μsec step)
Trigger Output Channel Number	4 (NPN / PNP correspondence)
Function	Trigger Output Programming Mode

Option: Manual control unit

IDMU-OP-M

It is an optional unit that connects to the base unit to control it manually.
Connection is possible only to the left of the base unit.

Drawing: ⑤



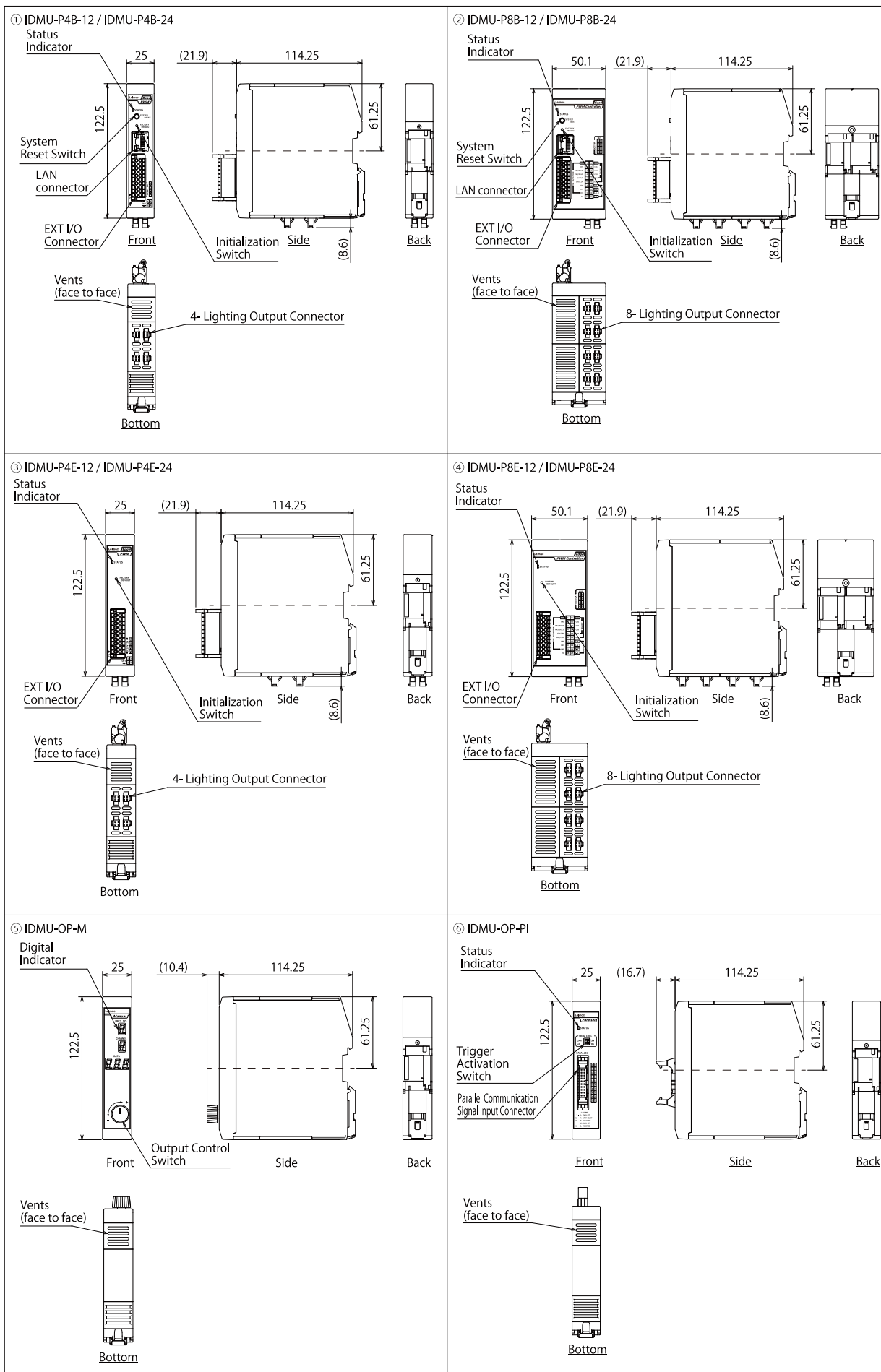
Options: I/O control unit

IDMU-OP-PI

It is an optional unit that connects to the base unit to control it using parallel communication.
Connection is possible only to the left of the base unit.

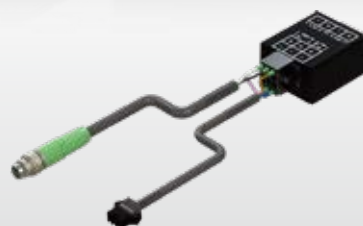
Drawing: ⑥





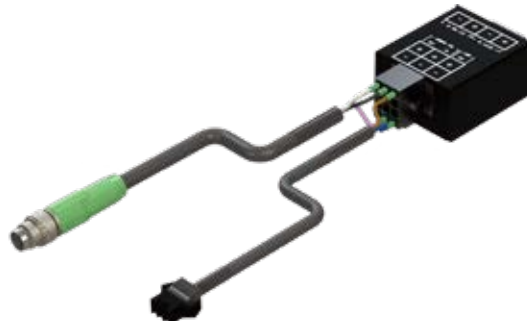
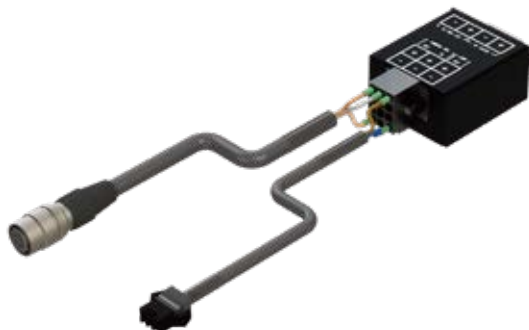
Lighting strobe controller compatible with each company's cameras [ISC-24 series]

Easy lighting control
Lighting is turned ON/OFF in conjunction with exposure time



Cable lineup 4 types are available for camera input/output connectors

Lighting is turned ON/OFF in conjunction with exposure time

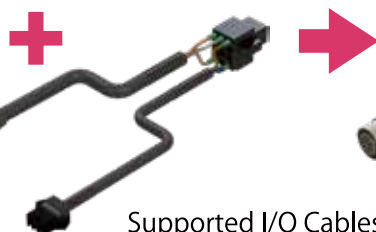


Lighting is turned ON/OFF in conjunction with exposure time
It can easily connect to cameras from various manufacturers, such as Basler, Toshiba Teli, Omron SENTECH, and FLIR.
It is a DC 24V output 1ch lighting strobe controller with a maximum capacity of 36W. Due to its light weight of 40g, it is suitable for robots vision, etc.

Easy configuration with cameras



ISC-24-BASE-P



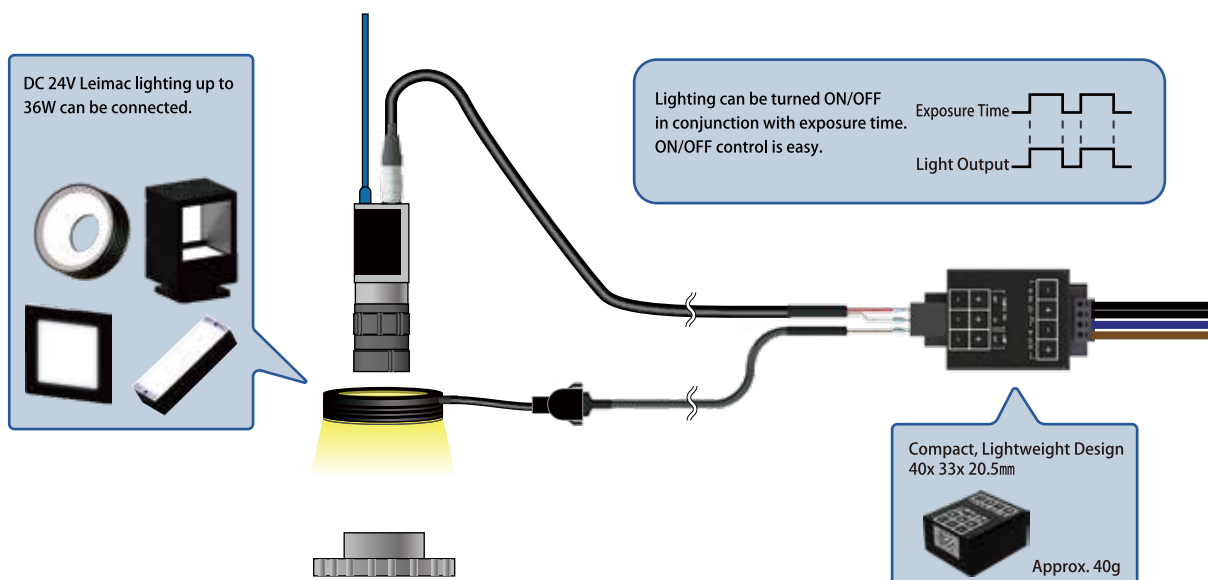
Supported I/O Cables



ISC-24 Series

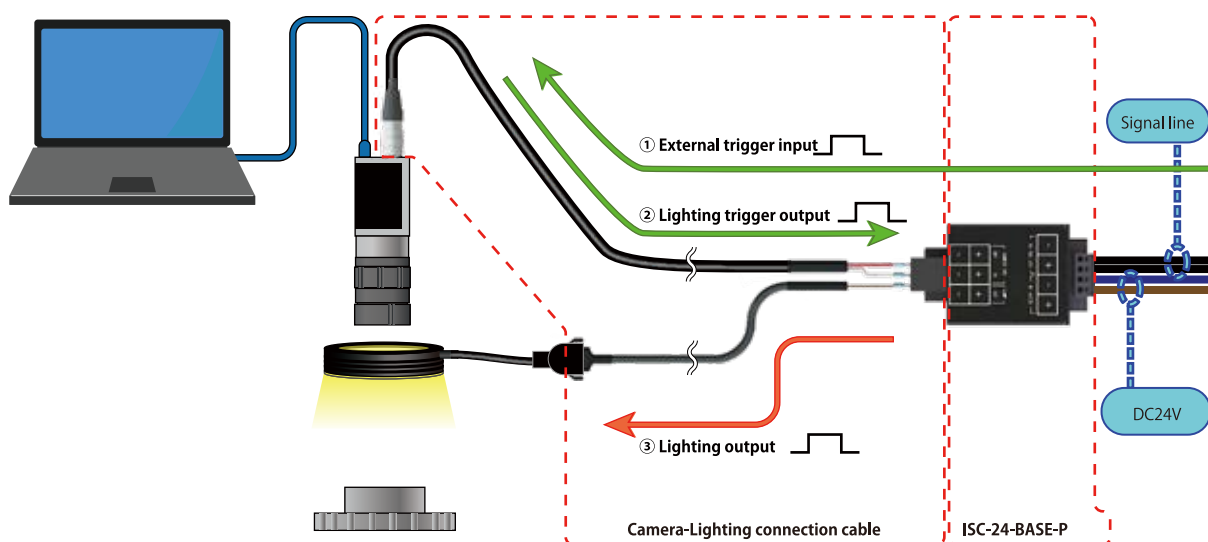
The ISC-24 consists of the ISC-24-BASE-P control adapter and I/O cables for various cameras.
It can connect DC 24V lighting of up to 36W, and turn the lighting ON/OFF in conjunction with the camera.

Main Features



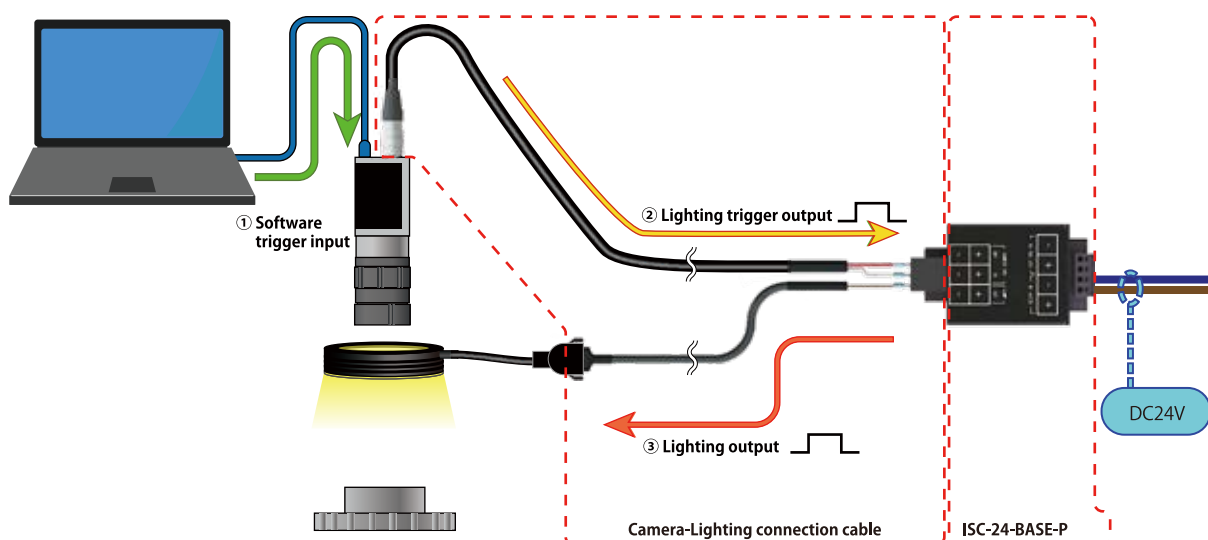
Connection Image

① Lighting control by using external triggers



※ISC controllers do not output power, please prepare the power supply for the camera separately.

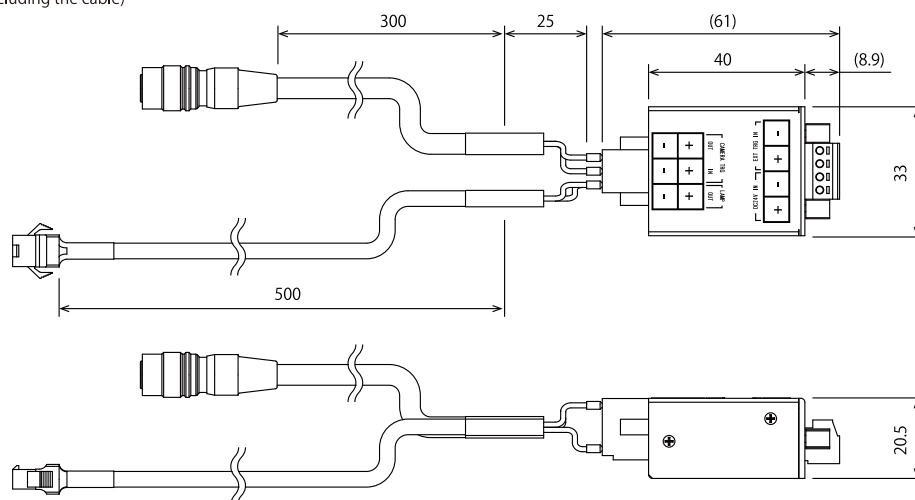
② Lighting control synchronized with exposure of continuous shooting



ISC controllers do not output power, please prepare the power supply for the camera separately.

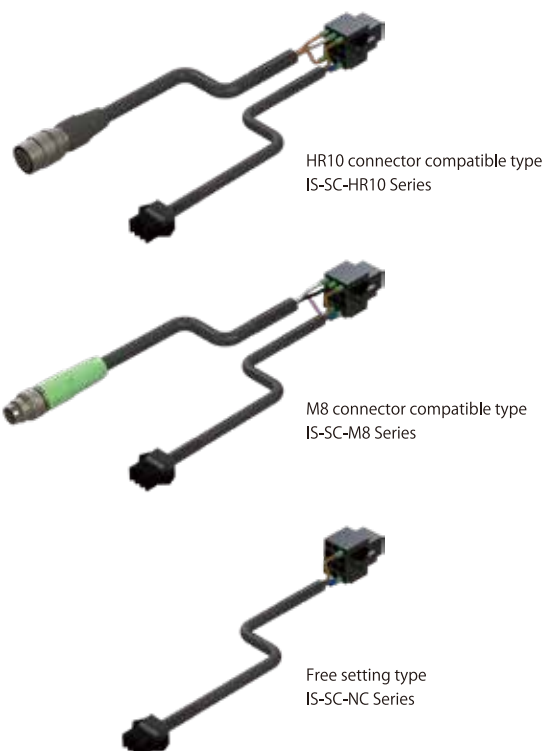
Compact body

The controller has a compact housing size of 40x33x20.5 (mm).
Even if the cable connector or contact is included, it does not take place because it is about 65mm.
It is also lightweight at about 40g. (Excluding the cable)
ideal for robot vision.



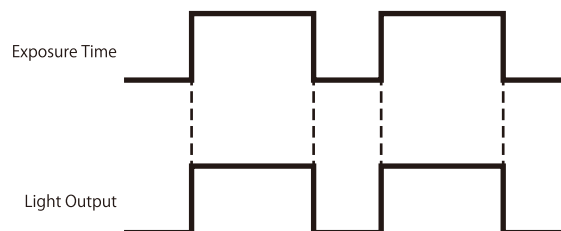
Camera and lighting connection cables are available for various cameras of each company.

Various cables with different pin configurations and camera connector shapes are also available.
Please choose IC-SC-NC to create compatible cables for other cameras.



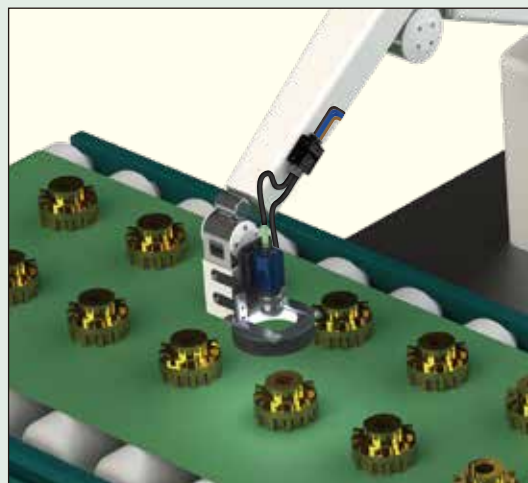
High-speed and precise response

High speed lighting response of 1μs or less when ON and 2μs or less when OFF.



Usage Example

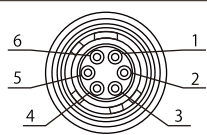
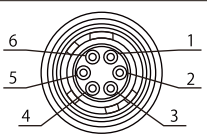
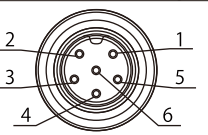
Because it is lightweight and compact, it can be used even at the tip of the robot arm.



Controller

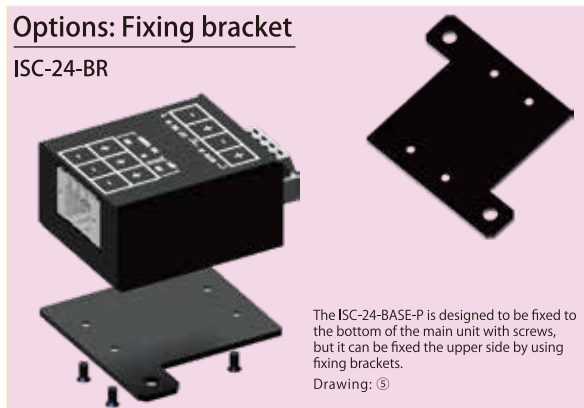
Model	ISC-24-BASE-P
Input Voltage	DC24V
Output Voltage	DC24V
Rated Capacity	MAX 36W
Light Control Method	External Trigger ON/OFF Control
Number of Channels	1 channel
Trigger Input Specification	Compliant with the specifications of the camera to be connected
Emission Width	Depends on the trigger width output from the connected camera
Lighting Response	ON: 1 μ s or less OFF: 2 μ s or less
Weight	40g or less
Operating Temperature and Humidity	Temperature: 0 to 40°C, humidity 20 to 70% RH (without condensation)
Storage temperature and humidity	Temperature: -20 to 65°C, humidity 20 to 70% RH (without condensation)
Cooling Method	Natural Air Cooling
Environmental Regulations	RoHS Compliant
Drawing	①

Camera-Lighting connection cable

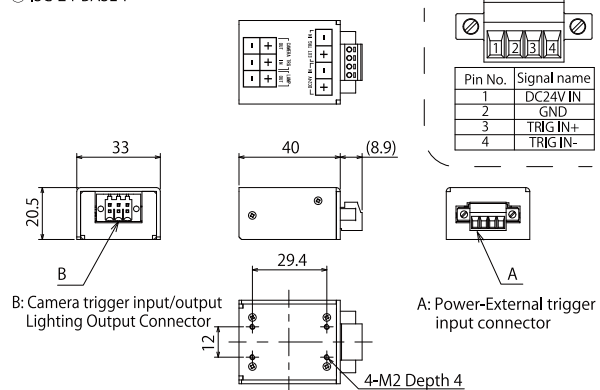
Model	IC-SC-HR10-4525	IC-SC-HR10-3121	IC-SC-M8-4623	IC-SC-NC
Lighting Output Connector	SMP-03-BC (1:+, 2:NC, 3:-)	SMP-03-BC (1:+, 2:NC, 3:-)	SMP-03-BC (1:+, 2:NC, 3:-)	SMP-03-BC (1:+, 2:NC, 3:-)
Camera Input/Output Connector	HR10A-7P-6S(73)	HR10A-7P-6S(73)	M8 6pin Male Plug	
				For cameras that do not conform to the connector specifications on the left. Please prepare the suitable separately.
Pin No.1	NC	CAMERA TRG IN/OUT -	NC	
Pin No.2	CAMERA TRG OUT +	CAMERA TRG OUT +	CAMERA TRG OUT +	
Pin No.3	NC	CAMERA TRG IN +	CAMERA TRG OUT -	
Pin No.4	CAMERA TRG IN +	NC	CAMERA TRG IN +	
Pin No.5	CAMERA TRG IN/OUT -	NC	NC	
Pin No.6	NC	NC	CAMERA TRG IN -	
Drawing	②	②	③	④

Options: Fixing bracket

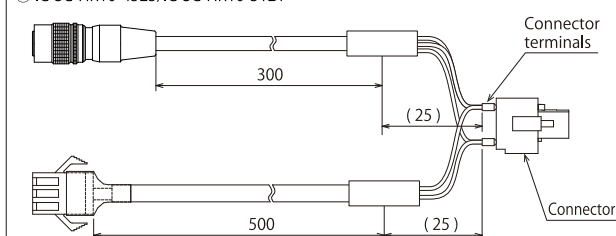
ISC-24-BR



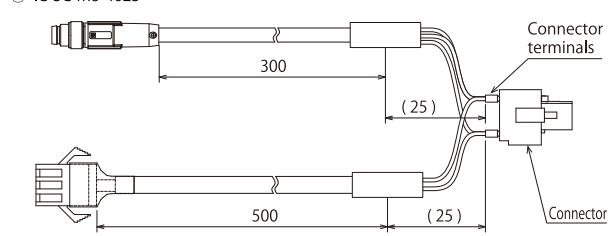
① ISC-24-BASE-P



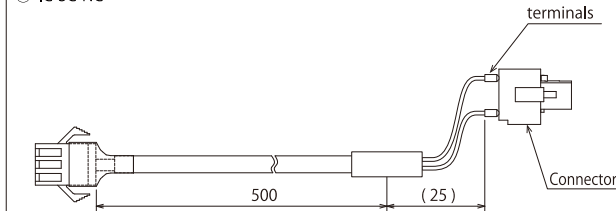
② IC-SC-HR10-4525/IC-SC-HR10-3121



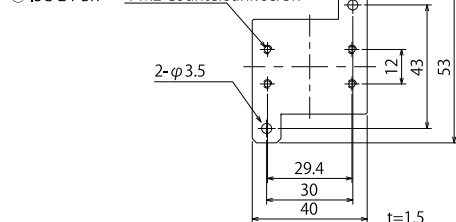
③ IC-SC-M8-4623



④ IC-SC-NC



⑤ ISC-24-BR



Operating environment

Lighting

- Ambient temperature: 0 to +40°C
- Ambient humidity: 35 to 85% RH (without condensation)

Controller

- Ambient temperature: 0 to +40°C
- Ambient humidity: 20 to 70% RH (without condensation)

Cable

- Ambient temperature: 0 to +40°C
- Ambient humidity: 35 to 70% RH (without condensation)

※The above values are typical values and do not apply to all products. Please read the instruction manual carefully before use and use it correctly.

Storage Environment

Lighting

- Ambient temperature: -20 to +65°C
- Ambient humidity: 20 to 85% RH (without condensation)

Controller

- Ambient temperature: -20 to +65°C
- Ambient humidity: 20 to 85% RH (without condensation)

Cable

- Ambient temperature: -20 to +65°C
- Ambient humidity: 20 to 85% RH (without condensation)

※The above values are typical values and do not apply to all products. Please read the instruction manual carefully before use and use it correctly.



Safety precautions (Please follow)

This product is LED lighting mainly used for image processing and industrial inspection. Please do not use for other applications. It is designed with sufficient consideration for safety, but please read the following carefully and use it in the correct way to prevent malfunction or accident due to incorrect usage.



Conditions of Use and Environment	
Usage Environment	●Low humidity ●Low vibration and impact ●No direct sunlight ●Do not allow to get hot ●Low dust and good ventilation ●No water, oil, chemicals, steam, etc. ●No corrosive or flammable gases ●Prevent static electricity generation
Operating Temperature and Humidity	0 to +40°C, humidity: 35 to 85% RH (without condensation)
Storage Temperature and Humidity	-20 to +65°C, humidity: 20 to 85% RH (without condensation) *1
Environmental Regulations	RoHS Compliant



*1 Options and cables are

■In the following display, we will explain the degree of danger that occurs when you ignore the display contents and use it incorrectly.

 Warning	This column indicates that the situation is likely to cause death or serious illness.
 Caution	This column indicates that the situation is likely to cause injury or property damage is expected to occur.

■In the following display, we will explain the degree of danger that occurs when you ignore the display contents and use it incorrectly.

	These display fields are prohibited situations that should not be done.
	These display fields are situations that must be performed.

<div>Warning</div>			
Do not disassemble or remodel this product. There is a risk of fire and electric shock.	Please do not look directly at the light-emitting part while lit. It can adversely affect the eyes.	Please be careful not to allow water to enter this product or get it wet. There is a risk of fire and electric shock.	
Do not touch the lighting or cable with wet hands.		Please do not touch this product once while on or immediately after turning off the power due to its high temperature. There is a risk of burns.	
Please switch the lighting controller off for connection and removal. It may cause fire or electric shock.		When smoke, abnormal heat generation, strange smells, or abnormal noise occur, stop use immediately and turn off and unplug the controller. There is a risk of fire and electric shock if use continues.	
<div>Caution</div>			
Please do not drop or strongly impact this product. It will cause a malfunction.	Please use our dedicated cable.	Please use a mounting screw of the specified length.	Please take measures to prevent vibration, impact, and falling when installing.
Do not cause excessive stress, scratches, etc., to the cable. It may cause electric shock or short circuits due to poor contact or disconnection.		Please use our power supply based on the rating of this product. Using an incorrect power supply can cause malfunction.	

Product Warranty

1. Warranty Period and Warranty Details

Warranty period: 2 years from the date of shipment (However, the radiation output guarantee is 1 year from the date of shipment.)

In the event of a product malfunction within the warranty period specified above, we will repair or replace the product as stipulated in "2. Scope of Warranty." Please present the applicable product and contact us.

2. Scope of Warranty

- Under the terms of use specified by Leimac in accordance with the instruction manual, if a malfunction occurs within the warranty period, Leimac shall repair or replace the faulty part free of charge.
- However, even if it is within the warranty period, charges will be required in the following cases.
 - a) In case of failure or damage caused by connecting a load other than one made by our company
 - b) In case of failure or damage due to usage errors or improper repair, modification, or disassembly
 - c) In case of failure or damage caused by vibration, dropping, other impact, or improper handling
 - d) In the event of fire, pollution, riots, etc., or external factors such as earthquakes, lightning, floods, or other natural disasters, or in the case of failure or damage due to use in a special environment (abnormal voltage, high temperature, etc.), the Company shall not be liable for any direct, indirect, incidental, consequential, or punitive damages.
 - e) Other cases in which liability is not attributable to Leimac.

3. Limitation of Liability

Secondary disasters (damage to equipment, lost opportunity, lost profit, etc.) incurred by the customer as a result of the malfunction of or damage to a Leimac product and any damages whatsoever shall not be subject to compensation.

4. Limitations of Warranty

The "Product Warranty" promises the warranty details described above under the specified warranty period and conditions. Accordingly, it does not undertake any other guarantees, whether expressed or implied.

Our products are primarily designed for use with image processing and industrial inspection applications.

Do not use it in the following situations:

- Use in conditions and environments not described in this manual
- Use in applications that may result in personal injury (nuclear power controls, railways, aviation, safety equipment) and particularly in applications that require reliability
- Use in medical equipment that directly affects human life
- Use in applications that have the potential to significantly affect property

Please contact us for equipment maintenance after the warranty period has passed.

Company Profile



Firm name	Leimac Ltd.	Location	Headquarters
CEO	CEO Mamoru Tanaka		1551 Sazukawa-cho, Moriyama-City, Shiga, 524-0215, JAPAN
Establishment	May 1993		Phone: +81-77-585-6767 Fax: +81-77-585-6790
Capital	20 million yen		<Direct Line to LED Light Equipment Group Headquarters>
Employees	149		Phone: +81-77-585-6771 Fax: +81-77-585-6773
			<Direct Line to FA Equipment Group>
			Phone: +81-77-585-6770 Fax: +81-77-585-6790
			<Healthcare Group >
			Phone: +81-77-585-6770 Fax: +81-77-585-6790

■ Sales Office / Testing Room



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2nd floor of Kameda Building
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FAX: +81-3-6206-4575



Osaka Office
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Shin-Osaka Chiyoda Building Annex 8th floor
Phone: +81-77-585-6771
Fax: +81-77-585-6773



Sendai Office
980-0014
1-3-9 Honmachi, Aoba-ku, Sendai City, Miyagi
Prefecture, 5th floor, sixth Hirose Building
TEL: +81-3-6206-4838
FAX: +81-3-6206-4575



Nagoya Testing Room
453-0014
1-8-7 Noritake, Nakamura-ku, Nagoya-shi,
Aichi 2nd Mutsumi Building Room 302
Phone: +81-77-585-6771
Fax: +81-77-585-6773

Testing Room

As of May 2022, there are 5 test rooms available for various evaluations in the head office, Tokyo office, Osaka office, Sendai office, and Nagoya testing room.

A testing room is equipped with imaging equipment such as various lightings, various cameras, and stands. We will select the ideal lighting and propose the use conditions if you can send us the object.

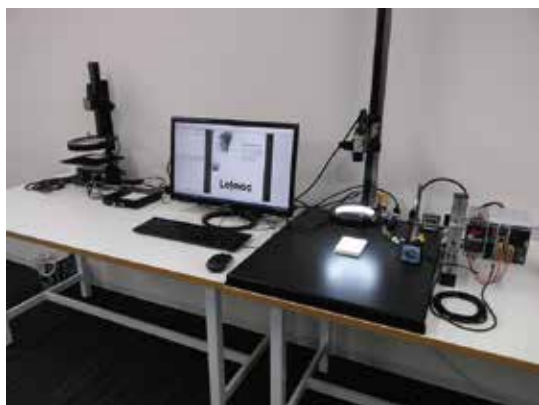
Customers can bring objects into the testing room. Our sales staff will support customers for lighting selection.

You can also request a demo trial on the spot to take it back with you.

■Tokyo Office / Testing Room



■Osaka Office / Testing Room



■Sendai Office / Testing Room



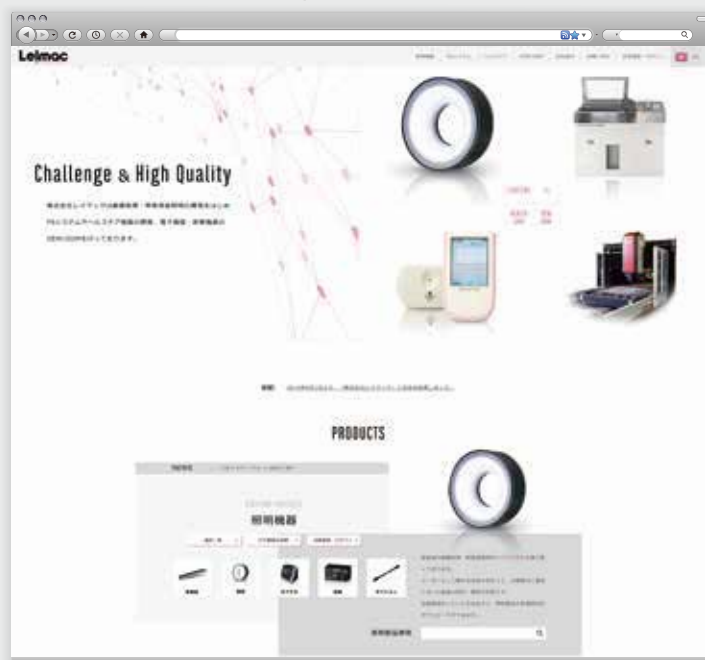
Check the WEB!!

We are updating new product information
that are not in our catalogue on the website.

You can find more about our product lineup on our website.

We are also constantly updating our latest information.

We will continue developing products that help our customers
and submitting that information online.



Full of
new product
information

<https://leimac.jp/en/>

Join us to be IMAC LED members!

Upon registering our membership, you can download PDF/DXF data of diagrams, sample software, and sample sourcecode easily.

If you wish, we can deliver our email magazine which has new product and up-to-date information so we can provide a better service for all our members. Please join us.

Easy! Search Products

Searchable by category, "LED lighting", "Power Supplies", "Option", or by keyword.

Product Lineup Variety

Each category has full lineup information.
Please look out for updating new product information.

Leimac

CHALLENGE & HIGH QUALITY

Leimac Ltd.

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Nagoya Testing Room : #302, Mutsumi Building 2, 1-8-7 Noritake, Nakamura-ku, Nagoya-City, Aichi, 453-0014, JAPAN

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TEL : +81-77-585-6771 FAX : +81-77-585-6773
TEL : +81-3-6206-4838 FAX : +81-3-6206-4575
TEL : +81-77-585-6771 FAX : +81-77-585-6773

- Product specifications and design are subject to change without notice.
- Lighting selections in this catalog are provided for reference purposes only.
Always confirm lighting equipment, reference date, and other conditions before purchasing.
- Color tones of depicted products may differ from those of actual products due to printing.
- Display units are depicted using inlaid composite images. Actual display may differ slightly.
- Unauthorized reproduction and reprinting prohibited.



ISO9001:2015 certified
ISO14001:2015 certified

* Both are registered at the head office

Retailer :