OOTSUKA
ILLUMINATED MAGNIFIER
It is our mission to provide the supreme technology
in the worldwide visual inspection market.
MAX
MIN

Seeing the real, using the real lens.

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LED illuminated magnifier

OLIGHT5 Series

Increasing lens area by 150%. Adopting BIG-RECTA-SYSTEM that standardized AR coat
Flagship model with overwhelming field of view and contrast power

BIG-RECTA-SYSTEM

2xAR	4xAR

Select the lens magnification and combine it with the main unit.

Example: OLIGHT5-F 2xAR
Series name Type name Magnification

We also sell only the main body without a lens.

- Lens Dimensions (mm) : 180×120
- AR-coated lens Line Up : standard feature
- Dimming function : 100% - 50% (CL type only 100 - 0%)
- Input voltage range : AC100 - 240V* • 50/60Hz
  (* When using at a voltage of 125V or higher, it can be handled by changing or purchasing a power cable separately.)
- AC Adapter Dimensions (mm) : 96×44×29
- Power Cord length (mm) : 1800 (AC side) 1800 (DC side)

OLIGHT5 Series

OLIGHT5-B

Product Dimension(WxHxD):188x331x320mm
Weight:2.2kg(Excluding lens)

OLIGHT5-F

Product Dimension(Arm length): 856mm
Weight: 2.1kg (Excluding lens)

OLIGHT5-CL

Product Dimension(WxHxD):340x340x353mm
Weight:3.3kg(Excluding lens)

LED illuminated magnifier

OLIGHT3L Series

A high-grade model that adds contrast power from one-way lighting to a rectangular lens with little distortion.

RECTA-SYSTEM

2x	3.5x
2x AR	3.5x AR

Select the lens magnification and combine it with the main unit.

Example: OLIGHT3L-F 2x AR
Series name / Type name / Magnification

We also sell only the main body without a lens.

- Lens Dimensions (mm) : 144×108
- Lineup of AR-Coated lens : option
- Dimming function : 100% - 50%
- Input voltage range : AC100 - 240V* • 50/60Hz
  (* When using at a voltage of 125V or higher, it can be handled by changing the cord with a plug.)
- Power Cord length (mm) : 1800

OLIGHT3L-B

Product Dimension (WxHxD):185x180x330mm
Weight: 2.3kg (Excluding lens)

OLIGHT3L-F

Product Dimension (Arm length) : 905mm
Weight: 2.5kg (Excluding lens)

OLIGHT3L-FD

Product Dimension (Arm length) : 940mm
Weight: 2.4kg (Excluding lens)

LED illuminated magnifier

SKKL Series

Basic model equipped with necessary and minimum functions

- Lens Dimensions (mm) : Rifer to p.28 (Specification comparison list of the illuminated magnifier)
- Lineup of AR-Coated lens : option
- Dimming function : none
- Input voltage range : AC 100 - 240V* • 50/60 Hz
  (* When using at a voltage of 125V or higher, it can be handled by changing or purchasing a power cable separately.)
- AC Adapter Dimensions (mm) : 96×44×29
- Power Cord length (mm):1800 (AC side)1800 (DC side)

Interchangeable lens system

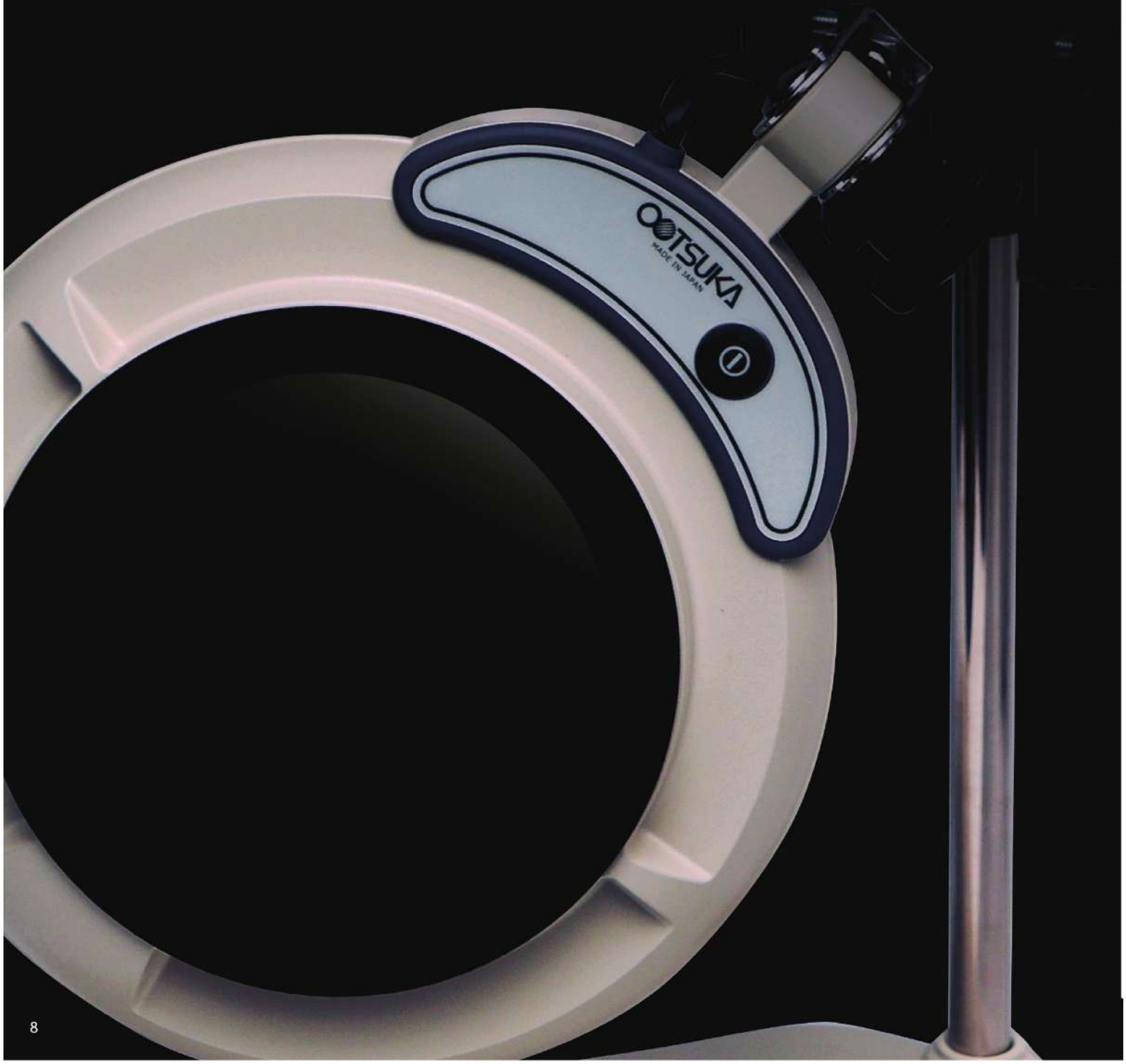
2x	3x	4x	6x	8x	10x
12x	15x				
2xAR	3xAR	4xAR	6xAR	8xAR	10xAR

Select the lens magnification and combine it with the main unit.

Example: SKKL-F 2x

Series name Type name Magnification

We also sell only the main body without a lens.



SKKL Series

SKKL-B
With table stand

Product Dimension (W x H x D):188x331x320mm
Weight: 1.9kg (Excluding lens)

SKKL-F
Free arm and clamp type

Product Dimension(Arm length):995mm
Weight: 2kg(Excluding lens)

SKKL-CL
Light box With transmission illumination

Product Dimension (W x H x D):340x340x353mm
Weight: 3.2kg (Excluding lens)

SKKL-CF
Compact free arm and clamp type

Product Dimension(Arm length):675mm
Weight: 1.9kg (Excluding lens)

SKKL-FD
Free arm and fixed, desk holder type

Product Dimension (Arm length) :1015mm
Weight:1.9kg (Excluding lens)

SKKL-FL
Free-Arm Caster Stand Set

Product Dimension (Depth / Arm length):310mm / 1466mm
Weight:12.1kg (Excluding lens)

SKKL-D
Desk holder type

Product size (a pillar / a cross bar):
376mm / 290mm
Weight: 1.1kg (Excluding lens)

SKKL-MS
Magnet stand type

Product size (a pillar / a cross bar):
368mm / 130mm
Weight: 2.1kg (Excluding lens)

SKKL-ST
Long bar and clamp type

Product size (a pillar / a cross bar):
345mm / 290mm
Weight: 1.2kg (Excluding lens)

LED illuminated magnifier

ENVL Series

Standard model equipped with dimming function

Interchangeable lens system

2x	3x	4x	6x
8x	10x	12x	15x
2xAR	3xAR	4xAR	6xAR
8xAR	10xAR		

Select the lens magnification and combine it with the main unit.

Example: ENVL-F 2x

Series name / Type name / Magnification

We also sell only the main body without a lens.

- Lens Dimensions (mm) : Rifer to p.28 (Specification comparison list of the illuminated magnifier)
- Lineup of AR-Coated lens : option
- Dimming function : 100% - 10%
- Input voltage range : AC100 - 240V* ・ 50/60Hz
  (* When using at a voltage of 125V or higher, it can be handled by changing or purchasing a power cable separately.)
- AC Adapter Dimensions (mm) : 96×44×29
- Power Cord length（mm）: 1800 (AC side)　1800 (DC side)

ENVL Series

ENVL-B

With table stand

Product Dimension(W x H x D):188x331x320mm
Weight:1.9kg (Excluding lens)

ENVL-F

Free arm and clamp type

Product Dimension(Arm length): 995mm
Weight: 2kg (Excluding ens)

ENVL-CL

Light box With transmission illumination

Product Dimension(W x H x D):340x340x353mm
Weight: 3.2kg (Excluding lens)

ENVL-CF

Compact free arm and clamp type

Product Dimension(Arm length): 675mm
Weight: 1.8kg (Excluding lens)

ENVL-FD

Free arm and Fixed desk holder type

Product Dimension(Arm length):1015mm
Weight: 1.9kg(Excluding lens)

ENVL-FL

Free-Arm Caster Stand Set

Product Dimension（Depth / Arm length):310mm/ 1906mm
Weight: 12.1kg (Excluding lens)

ENVL-D

Desk holder type

Product size (a pillar / a cross bar):376mm / 290mm
Weight: 1.1kg (Excluding lens)

ENVL-MS

Magnet stand type

Product size (a pillar / a cross bar): 368mm / 130mm
Weight: 2.1kg(Excluding lens)

ENVL-ST

Long bar and clamp type

Product size (a pillar / a cross bar): 345mm / 290mm
Weight: 1.2kg (Excluding lens)

LED illuminated magnifier

LSK WIDE Series

High-grade model equipped with a 150 mm WIDE lens in the AR-coated standard specifications

WIDE interchangeable lens system

2xAR

3xAR

4xAR

Select the lens magnification and combine it with the main unit.

Example: LSK WIDE-F 2×AR

Series name Type name Magnification

We also sell only the main body without a lens.

- Lens Dimensions (mm) : φ150
- Lineup of AR-Coated lens : Standard feature
- Dimming function : 100% - 50%
- Input voltage range : AC100 - 240V* ・ 50/60Hz
  (* When using at a voltage of 125V or higher, it can be handled by changing the cord with a plug.)
- Power Cord length (mm) : 1800

LSK WIDE Series

LSK WIDE-B

With table stand

Product Dimension (W x H x D): 242x320x353mm
Weight: 3.6kg (Excluding lens)

LSK WIDE-F

Free arm and clamp type

Product Dimension(Arm length): 1044mm
Weight: 2.9kg (Excluding ens)

LSK WIDE-CL

Light box With transmission illumination

Product Dimension (W x H x D): 340x340x353mm
Weight: 3.4kg (Excluding lens)

LSK WIDE-CF

Compact free arm and clamp type

Product Dimension (Arm length) : 724mm
Weight: 2.6kg (Excluding lens)

LSK WIDE-FD

Free arm and fixed desk holder type

Product Dimension (Arm length) : 1080mm
Weight: 2.7kg (Excluding ens)

LSK WIDE-D

Desk holder type

Product size (a pillar / a cross bar): 376mm / 290mm
Weight: 2.7kg (Excluding lens)

LSK WIDE-MS

Magnet stand type

Product size (a pillar / a cross bar): 369.5mm / 290mm
Weight: 1.7kg (Excluding lens)

LSK WIDE-ST

Long bar and clamp type

Product size (a pillar / a cross bar): 245mm / 290mm
Weight: 1.9kg (Excluding lens)

LED illuminated magnifier

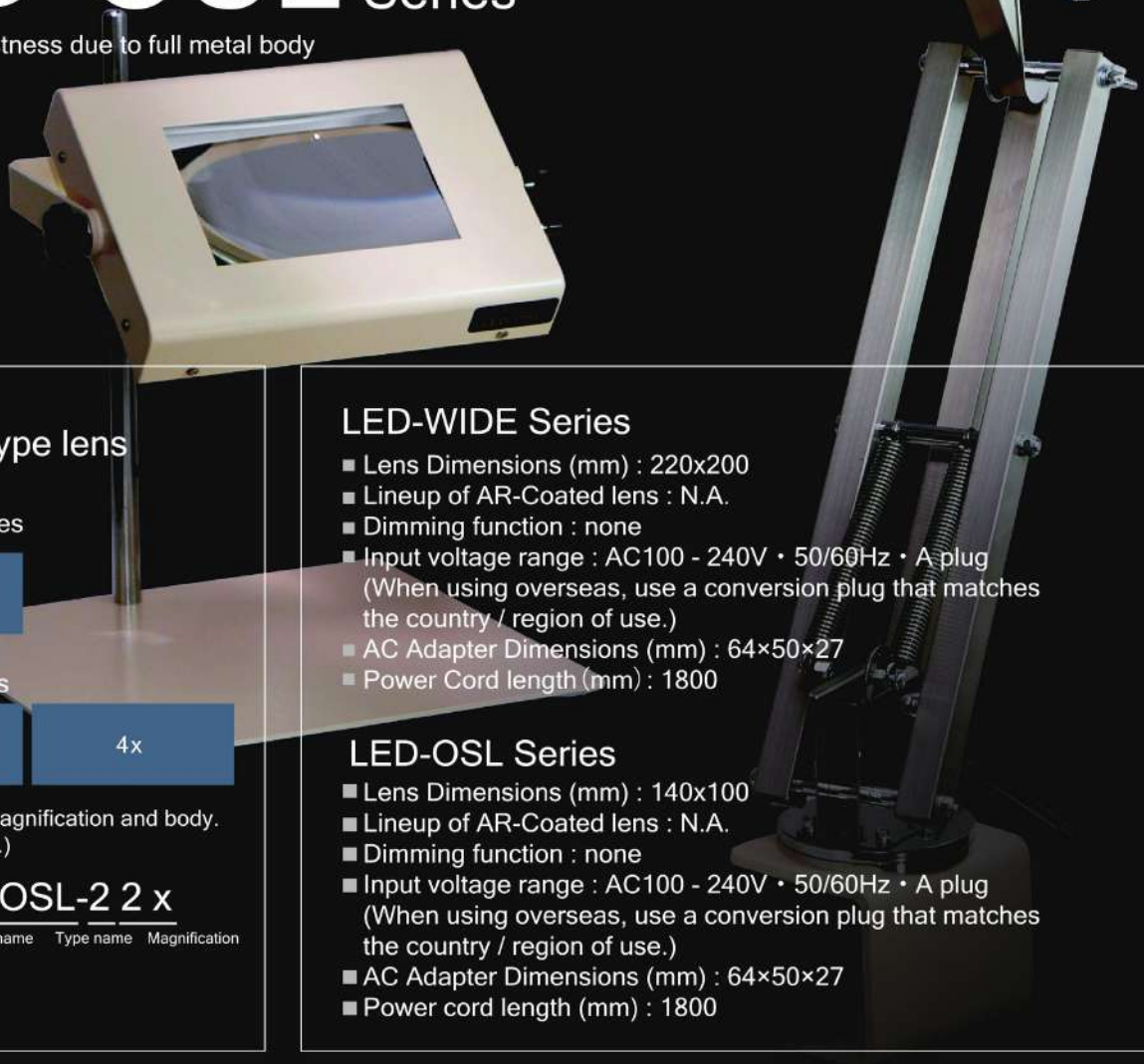
LED-WIDE Series

Equipped with a 220x200mm ultra-large aperture lens

LED illuminated magnifier

LED-OSL Series

Outstanding robustness due to full metal body



Fix type lens

LED-WIDE Series

2x

LED-OSL Series

2x | 4x

Select the lens magnification and body.
(The lens is fixed.)

Example: LED-OSL-2 2 x

Series name | Type name | Magnification

LED-WIDE Series

- Lens Dimensions (mm) : 220x200
- Lineup of AR-Coated lens : N.A.
- Dimming function : none
- Input voltage range : AC100 - 240V・50/60Hz・A plug
  (When using overseas, use a conversion plug that matches the country / region of use.)
- AC Adapter Dimensions (mm) : 64×50×27
- Power Cord length (mm) : 1800

LED-OSL Series

- Lens Dimensions (mm) : 140x100
- Lineup of AR-Coated lens : N.A.
- Dimming function : none
- Input voltage range : AC100 - 240V・50/60Hz・A plug
  (When using overseas, use a conversion plug that matches the country / region of use.)
- AC Adapter Dimensions (mm) : 64×50×27
- Power cord length (mm) : 1800

LED-WIDE Series

LED-WIDE-2

With table stand

Product Dimension (W x H x D): 400x330x420mm
Weight: 12.7kg

LED-WIDE-3

long bar and clamp type

Product Dimension (a cross bar / a pillar to lens center) :
375mm / 535mm
Weight: 8.9kg

LED-WIDE-4

Free arm and clamp type

Product Dimension (Arm length) : 940mm
Weight: 10.8kg

LED-OSL Series

LED-OSL-2

With table stand

Product Dimension (W x H x D): 300x310x380mm
Weight: 5kg (2x), 6kg (4x)

LED-OSL-3

long bar and clamp type

Product Dimension (a cross bar / a pillar to lens center) :
355mm / 475mm
Weight: 2.9kg (2x), 3.9kg (4x)

LED-OSL-4

Free arm and clamp type

Size of product (Arm length): 995mm
Weight: 3.5kg (2x), 4.5kg (4x)

LED illuminated magnifier

OLIGHT3L-F 6500K

Free arm and clamp type (Clampable Width:15 - 60mm)
Lens : 2x , 3.5x rectangular lenses
Lineup of AR-Coated lens : option
Material of lens : optical glass (144x108mm)
Light source : LED lamp
Color temperature of LED lamp : 6500K
Design life of LED lamp : More than 40,000 hours
Input voltage range : 100 - 240V • 50/60 Hz
Power consumption : 12W
Light with dimmer : 100% - 0%
Weight : (With 2X Lens)2.8kg(With 3.5X Lens)2.9kg

RECTA-SYSTEM

2x	3.5x
2xAR	3.5xAR

Select the lens magnification and combine it with the main unit.

Example: OLIGHT3L-F 6500K 2 x
Series name Magnification

We also sell only the main body without a lens.

LED illuminated magnifier

SKK Series

Light source : LED circular tube
Input voltage :100 - 240V • 50/60 Hz
Power consumption : 10W

SKK-B

With table stand

Product Dimension(W x H x D): 185x330x300mm
Weight (Kg) 2.1kg (Excluding lens)

SKK-F

Free arm and clamp type

Product Dimension(Arm length): 1000mm
Weight (Kg) 2.7kg (Excluding lens)

SKK-CF

Compact free arm and clamp type

Product Dimension(Arm length): 680mm
Weight (Kg) 2.5kg (Excluding lens)

Interchangeable lens system

2x	3x	4x	6x	8x	10x	12x	15x	2xAR	3xAR	4xAR	6xAR	8xAR	10xAR

Select the lens magnification and combine it with the main unit.

We also sell only the main body without a lens.

Example: SKK-F 2x
Series name Type name Magnification

BORELOUPE-F

Free arm and clamp type

lens magnification: Switchable between
2X and 3X (Line magnification)
Effective diameter of lens:Φ 40
Light source: LED light (estimated life time: 40,000 hours)
Product Dimension(Arm length): 726mm
Weight: 2.0kg
Input voltage range: AC 100 - 240V・50/60 Hz
Power consumption: 1.2W
Dustproof and waterproof protection grade: IP30

BORELOUPE-ST

Long bar and clamp type

Lens magnification: Switchable between
2X and 3X (line magnification)
Effective diameter of lens: Φ40
Light source: LED light(estimated life time: 40,000 hours)
Product size (a pillar / a cross bar): 350mm / 440mm
Weight: 1.3kg
Input voltage range: AC 100 - 240V 50/60 Hz
Power consumption: 1.2W
Dustproof and waterproof protection grade: IP30

Comparison of between BORELOUPE and nearby lighting method

	Inside of pen cap	Burrs in horizontal hole	Deep hole made by die casting
Object			
Field of view of BORELOUPE			
Field of view of nearby lighting			

- BORELOUPE is an illuminated loupe consisting of two lenses.
- Since the coaxial lighting optical system is employed. BORELOUPE can light up parts which cannot be lit up and are difficult to check with an ordinary illuminated magnifier of an illuminated loupe.
- A bright white LED is used at the light source and the line magnification of the loupe lens can be switched between 2x and 3x.
  The dust prevention cover is installed to the objective lens and the protection cover is installed to the upper lens.
- There are two types of the stand: model F of free arm type and Model ST in which the crossbar is jointed to the stand pillar.

Selection process and standard for lenses

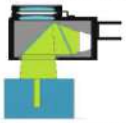
Lens magnification (line magnification)	How to change lenses	Eye-point (mm)	Working distance (mm)
2x	Use by swinging the top lens. If the top lens is in the way, attach the lens cap.	10～200	147
3x	Use by layering 2 lenses.	10～200	55

Magnification is a theoretical value calculated from the lens curvature. Eye-point and working distance will vary in accordance to the eyesight and age of the viewer. The table shows the average distance that is most magnified and focused. Find the position that looks most comfortable.

Difference in lighting methods

Proximity lighting system

BORELOUPE



It can light up not only surface brightly but also inside deep hole.

Illuminated loupe

It can light up the surface brightly. But the end of deep hole is shaded, because the light is applied obliquely.

LED illuminated magnifier

It can light up the surface evenly and brightly, but the end of deep hole is shaded and dark since the light is applied obliquely.

The polarizing filter for BORELOUPE
(Exclusive use for 3X lens)

The polarizing filter has acharacteristic of transmitting only the light wave components in one oscillating direction among components in random oscillating directions.Using this characteristic,unnecessary surface reflecting to improved observation and inspection efficiency,
andreduce fatigue.This filter also has dimmingeffect and can reduce the intensity of light from a florescent lamp.

BORELOUPE-PUL
(Exclusive use for 3x lens)

When 3x or large magnification is necessary, you can increase the magnification to 3.3x by simply mounting this lens onto the upper lens.
If this option is used, the working distance (the distance between the bottom of theBORELOUPE and the specimen) becomes veryshort.Take care not to hit the specimen againstthe glass parts in the BORELOUPE.

BORELOUPE-PUL
(Exclusive use for 3x lens)

Mounting it on 3x lens could make working distance 100mm (not changing magnification, normally working distance is 55mm).
If you use the power up lens for BORELOUPEwith it, magnification could become 3.8x and working distance could become 38mm.

LED work and inspection lighting

MODELIGHT Series

Lighting that can be widely used from inspection to work. Toughness specifications that can be used for industrial use.

MODELIGHT Series

ML-230F

LED work and inspection lighting

Free arm and clamp type

Light source : A white LED light panel
Illumination intensity (lx) : 3700/160mm, 5250/130mm,
6430/100mm (When the amount of light is 100%)
Ra 90 and above
Color temperature (K) : 4700
Input voltage range : AC100 - 240V・50/60Hz・A plug
Power consumption (w) : 9.5
Dimming function : 100% - 10%
Size of the Illumination head unit (mm) : 324x62
Clampable width (mm) : 15 - 60
Weight of product (Kg) : 2.3

ML-WAL

Work assistance lens

ML-230F mounting example

The ML230F can be used as an illuminated magnifier.
Ideal for detailed work and inspections that are difficult to see with the naked eye.
You can freely change the angle between the observation object and lighting.
It is a combination of a super-large wide lens with a high transparency of 1.8x and a high-magnification lens of 4x and 7x.

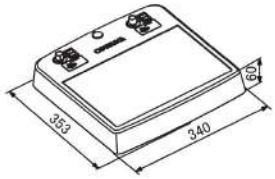
Lens size
・1.8x : 142×106(mm)
・4x : Φ30
・7x : Φ25

LZ-1

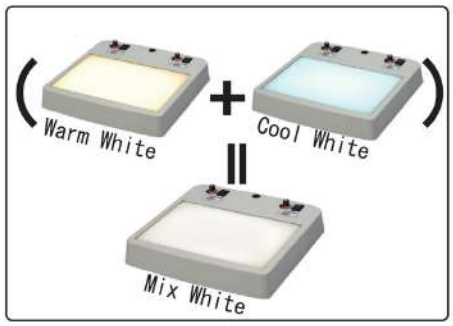
Dimming / Toning LED Light Box

LZ-1 is an auxiliary lighting device for visual inspection with dimming / color temperature selection / toning function.
Equipped as standard with a function that allows you to select the color temperature of the light emitting part from two types, Warm White and Cool White.
It is brighter than the edge light type and has less uneven illuminance than the fluorescent light type.
It has achieved high reliability with a design that does not easily break down.

Approximate dimensions: AC cord length 1800mm
Light emitting part dimensions 210x298mm



Main specifications of LZ-1
Maximum power consumption: 20W
(maximum illuminance on both sides)
Maximum illuminance : 24klux (maximum illuminance on both sides)
Dimming rate : 100 - 0%
Illuminance measurement conditions : Measured at a position 0 mm at the center of the diffused plate.
Illuminance is the data measured by the cut product, not the guaranteed value.



Toning image diagram

Example of simultaneous use of magnifier
By using it in combination with your existing illuminated magnifier, the range of inspections can be greatly expanded.

* Arm type illuminated magnifier is not included.

BARLIGHT Series

Inspection lighting that visualizes fine irregularities on the surface, from scratches and dents to dust.

BARLIGHT 2

BARLIGHT 3

BARLIGHT 2 / 3

Reducing operator eye fatigue, responding to variations in color to be inspected, material gloss, etc.

A-type (Amber color)
YG-type (Yellowish green color)

BARLIGHT 530

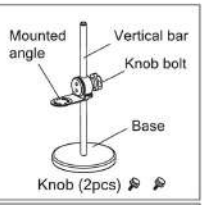
Main Specifications

		BARLIGHT 2	BARLIGHT 3	BARLIGHT 530
Light source		High illumination white LED 7 bulbs		High illumination white LED 21 bulbs
Dimming function (100% - 50%)		×	○	×
Irradiation spread angle adjustment function		×	○	×
Illuminance *2	Irradiation spread angle 6 °	150mm:15000Lx, 200mm:10000Lx,	300mm:5800LX, 400mm:3600Lx	150mm:19000Lx, 200mm:15000Lx, 300mm:10300Lx, 400mm:7100Lx
	Irradiation spread angle 30 °		150mm:10000Lx, 200mm:6500Lx, 300mm:3300Lx, 400mm:2000Lx	
Input voltage		AC100・50/60Hz	AC100・50/60Hz *1	AC100・50/60Hz
Cord length (mm)		AC adapter: 1800	Power cord: 1800 Relay code: 1500	Power cord: 1800
Power consumption		8W	9W	24W
Specification temperature range		0℃~40℃		0℃~40℃
Dustproof and waterproof protection grade		IP40		IP20
Weight		370g	945g	1.6kg
Weight of irradiation head only		300g	420g	800g
Irradiation head part total length (mm)		224		570

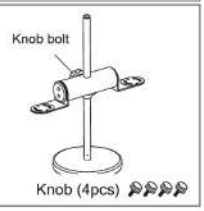
* 1 BARIGHT 3 and BARLIGHT 530 can be used up to 240V by changing the cord with plug.
* 2 Illuminance data is measured at the center of the irradiation head in a dark room.
It is the data extracted from one mass-produced product, not the guaranteed value.

Option (BARLIGHT 2, 3)

TILT STAND (unit: mm)	
Adjusting direction	Z (Height) θ(Angle of elevation and depression) Φ(Horizontal angle)
Vertical bar	Φ13
Size	BaseΦ129 Height307
Weight	1.6kg
Specification temperature range	0 ℃ ~ 40℃



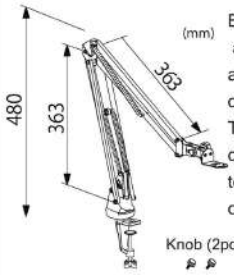
DOUBLE TILT STAND (unit: mm)	
Adjusting direction	Z (Height) θ(Angle of elevation and depression) α(Horizontal angle) Horizontal angle is adjustable
Vertical bar	Φ13
Size	BaseΦ129 Height307
Weight	2.1kg
Specification temperature range	0 ℃ ~ 40℃



BARLIGHT GRIP

This grip is attachable to the BARLIGHT with decorative screws. It is most suitable for viewing large works or internal observation of large equipment.
Innumerable mounting forms can be selected by combining the four mounting positions of the BARLIGHT and the multiple mounting holes of the BARLIGHT grip.

BARLIGHT FREEARM



BARLIGHT FREEARM is a movable arm type clamp stand that can attach the BARLIGHT with two decorative screws.
The free arm with overwhelming degree of freedom makes it easy to finely adjust the irradiation angle of the work.

Clampable width: 15 - 60

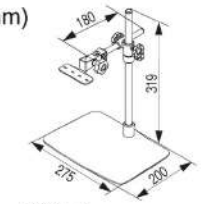
Option (BARLIGHT 530)

Table stand

(unit: mm)

This table stand can be attached to the BARLIGHT 530 using 4 Knob for use after placing it up on a desk, etc.

(Warning)
Moving and tilting the illumination head beyond the specified range of motion may result in the product tipping over and damaging the object being observed.



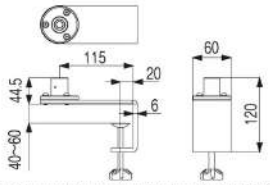
Free arm

Free-Arm Clamp stand is a movable arm-type stand that can attached the BARLIGHT 530 using 4 Knob.
The free arm with overwhelming degree of freedom makes it easy to finely adjust the irradiation angle of the work.

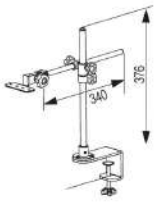
(Warning)
This product cannot pass the relay cord of the BARLIGHT-530 through its arm.

Clamp Stand

(unit: mm)



This clamp stand can be attached to the BARLIGHT 530 using 4 Knob, and be used to affix the product to a surface area such as a desk.



Clampable width: 4 - 60mm

Free-Arm Caster Stand Set

The Free-Arm Caster Stand is a movable arm-type stand that can attached the BARLIGHT 530 using 4 Knob.
The free arm with overwhelming degree of freedom makes it easy to finely adjust the irradiation angle of the work.

(Warning)
This product cannot pass the relay cord of the BARLIGHT-530 through its arm.

Features and explanation

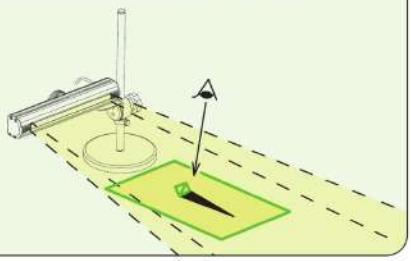
- Contrast cannot be obtained if coaxial lighting is used.
- Scratches on a painted surface or dusts before painting are not visible.
- Due to vast number of inspection for molded articles, oversights occurs.
- Scratches, etc., become visible by increasing the magnification of a magnifier, but doing so can fatigue workers' eyes.

- Roughness casts shadows and enhances contrast against surroundings.
- It emphasizes the detailed roughness and fine deposits on surface.
- The workers do not need to strain their eyes to check for defects, and can work easily.
- It makes possible to find defects even with lower magnification lenses.

Two inspection methods that Otsuka proposes.

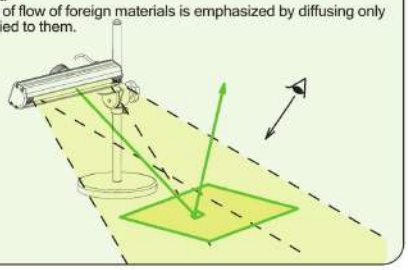
Surface irradiation method

A plane light is radiated along the surface to be inspected to emphasize unevenness and detect flaws, dust, or defects.



Diffused reflection method

A wide light radiated over the workpiece at a certain angle to check the reflected light.
Unevenness of flow of foreign materials is emphasized by diffusing only the light applied to them.



Comparison of sink marks and roughness on surfaces of plastic injection molded parts.
(Surface irradiation method)

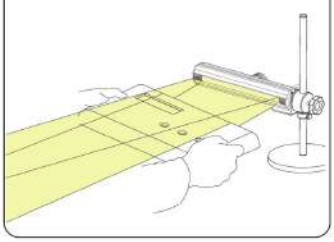
Illuminated by BARLIGHT 3

Normal indoor lighting

Usage examples

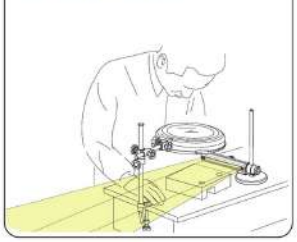
Tilt Stand、Double Tilt Stand, BARLIGHT Free-arm and BARLIGHT Grip are optional.

Surface irradiation method

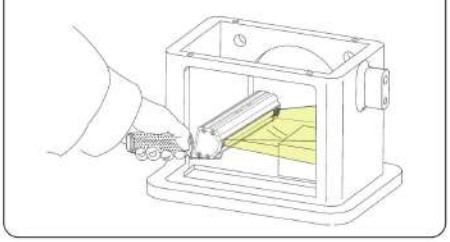


Inspection of parts in a tray by diffused reflection method

Auxiliary lighting for illuminated magnifier (Power off)



Use Light Bar grip at the narrow



The list of interchangeable lens system

Magnification lineup of ROUND-Series

Area magnification (approximate)	Round 2x	Round 3x	Round 4x	Round 6x
Images of models				
Lens diameter (lens composition)	Φ130 (single piece lens)	Φ130 (single piece lens)	Φ130 (double lens)	Φ105 (double lens)

Area magnification (approximate)	Round 8x	Round 10x	Round 12x	Round 15x
Images of models				
Lens diameter (lens composition)	Φ90 (quadruplet lens)	Φ90 (quadruplet lens)	Φ90 (3 groups, quintuple lens)	Φ90 (3 groups, sextuplet lens)

Magnification of our product is expressed in term of area magnification.
This is comparison of area magnification and line magnification, expressingin term of line magnification.

Area magnification	Line magnification
2x	1.4x
3x	1.7x
4x	2x
6x	2.4x
8x	2.8x
10x	3.1x
12x	3.4x
15x	3.8x

Lens (area magnification)	(1) Eye point (mm)	(2) Lens diameter (mm)	(3) Working distance (mm)	(4) View (mm)	(5) Weight (g)	Optical multi-coaled lens Option
2x	150	ϕ130	160	ϕ170	400	○
3x	150	ϕ130	130	ϕ140	500	○
4x	150	ϕ130	110	ϕ120	700	○
6x	100	ϕ105	82	ϕ70	600	○
8x	105	ϕ90	54	ϕ40	1300	○
10x	80	ϕ90	43	ϕ40	1300	○
12x	80	ϕ90	35	ϕ40	1400	×
15x	65	ϕ90	30	ϕ30	1400	×

Magnification lineup of RECTA-SYSTEM

Area magnification (approximate)	2x	3.5x	PUL
Images of models			
Lens diameter (lens composition)	144×108 (single piece lens)	144×108 (single piece lens)	144×108 (single piece lens)

Lens (area magnification)	(1)Eye point (mm)	(2)Effective lens diameter(mm)	(3)Working distance(mm)	Weight(kg)
RECTA-SYSTEM 2x	150	139×103	160	0.56
RECTA-SYSTEM 3.5x	150	139×103	120	0.73

Lens Configuration
Number of lenses set for 1 interchangeable lens.

Images of models

■ Round series

*The photo is composite.

Area magnification (approximate)	Round 2x	Round 3x	Round 4x	Round 6x
Images of models				

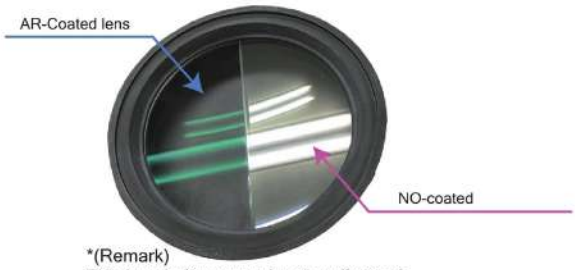
AR-Coated lens

Proposal of fatigue reduction by AR (Anti-reflective) -Coated lens

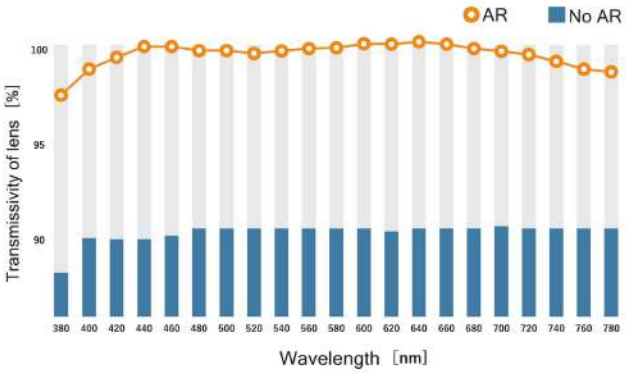
You can reduce workers' "eye fatigue" and "decrease in work efficiency" by mounting the AR-coated interchangeable lens onto and Otsuka Optics Illuminated magnifier which you are using currently.

Area magnification (approximate)	Round 2 x AR	Round 3 x AR	Round 4 x AR	Round 6 x AR	Round 8 x AR	Round 10 x AR
Images of models						
Lens diameter (lens composition)	Φ130 single piece lens	Φ130 single piece lens	Φ130 double lens	Φ105 double lens	Φ90 quadruplet lens	Φ90 quadruplet lens

Area magnification (approximate)	WIDE 2xAR	WIDE 3xAR	WIDE 4xAR
Images of models			
Lens diameter (lens composition)	Φ150 single piece lens	Φ150 single piece lens	Φ150 double lens



*(Remark)
This lens is for comparing the effects of standard lenses (uncoated lenses) / AR coated lenses, and is not a product.



- Glare of the sunlight or ceiling illumination on lens surfaces, which often occurs on the conventional illuminated magnifier, is prevented and the workers can concentrate on inspection work and other tasks.
- Transmittance ratio is improved about 10% compared to conventional lenses (our products comparison), and it is possible to make clear inspection .
- It is possible to improve workability and feel of use by replacing the conventional lens of an illuminated loupe in use with the AR-coated lens.

*(Remark)
In cause of fatigue while using illuminated loupe is not only originated by lens, but there are many other factors exist.
There are case that fatigue reducing effect by mounting the AR-coated lens may not be observed depending on intensity of illumination, work environment, inspection method or inspection accuracy.

Magnification lineup of BIG-RECTA-Lens System

Area magnification (approximate)	2x AR	4x AR
Images of models		
Lens diameter (lens composition)	180×120 single piece lens	180×120 doublet lens

Lens Configuration
Number of lenses set for 1 interchangeable lens.

Magnification lineup of RECTA-System

Area magnification (approximate)	2x AR	3.5x AR	PUL AR
Images of models			
Lens diameter (lens composition)	144×108 single piece lens	144×108 single piece lens	144×108 single piece lens

Magnification Sample A sample of view through lens. Does not guarantee magnification.

*The photo is composite.

Area magnification (approximate)	Round 8x	Round 10x	Round 12x	Round 15x
Images of models				

Option Loupe

OTS-3

lens magnification : 3X (area magnification) AR-Coated lens
Fluorescent lamp : Straight type 8W(FL8)
Circuit method : Inverter circuit
Weight : 4.5kg
Input voltage range : AC100V・50-60 Hz only with AC adapter
Power consumption : 16W
Height from surface to light box : 48 mm
Illumination surface dimensions : 260 x 150 mm

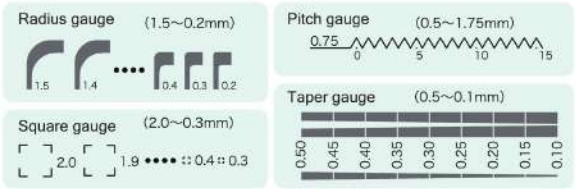
OTS-3 Light Box

Fluorescent lamp : Straight type 8W(FL8)
Circuit method : Inverter circuit
Weight : 1.1kg
Input voltage range : AC100V・50-60 Hz only with AC adaptor
Power consumption : 16W
Height from surface to light box : 48 mm
Illumination surface dimensions : 260 x 150 mm

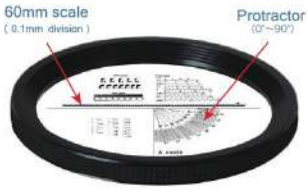
Big-diameter Glass Scale

This is precision rules with divisions and various gauges drawn on the glass surface.

Shapes of objects can be directly measured by contacting the magnifying glass, etc., to the objects.
In the φ76 mm of the field of view, six kinds of scales are drawn.
An aluminum frame is used to prevent glass breakage.
The periphery is covered with knurled rubber to prevent the hand from slipping during measurement.



Glass Scale	GS-A
Diameter thickness	φ90mm、t=8mm
Effective diameter	φ74mm
Material of scale	Optical glass
Scale processing	Cr vapor deposition
Weight	50g
Precision accuracy	±0.005mm



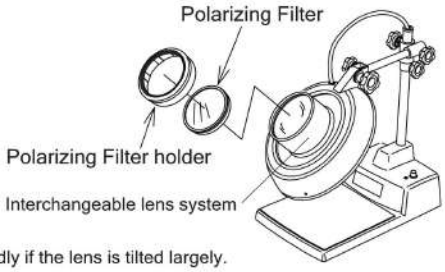
Illuminated magnifiers, microscopes or stand-type loupes etc. are suitable as magnifying devices and 10x magnification of higher is recommended when an illuminated magnifier is used.
When measuring a thick workpiece such as a screw, die-cast part, pressed part, etc., fix the lens position and hold the workpiece with the hand.

Polarizing filter

A polarizing filter as a characteristic of transmitting a component of light wave in only one direction out of random directions.
This eliminates unnecessary light reflected on the surfaces of the observed objects, thus inspection efficiency is improved and the operator is less fatigued.
Since this filter has light intensity of the lighting.

- Φ130 Polarizing filter (for 2x to 6x)
- Φ90 Polarizing filter (for 8x to 15x)
- Polarizing filter holder (for 8x to 15x)

Polarizing Filter holder (rabber)



The standard polarizing filter holder (for 8x to 15x) is simply placed on a lens for the normal usage and may fall unexpectedly if the lens is tilted largely.
Use of this polarizing filter holder will hold the filter firmly and prevent accidents.

Wide View Stand loupe

■Features

Applicable to from outside inspection to magnification observation, and precision work.
A super large wide lens of 1.8x with high light transmittance and small lenses of 4x and 7x are combined.
The hard-coated plastic lenses are not scratched easily and can be folded to the A5 size for easy storage and transportation.

- Model: Wide View Stand loupe
- Magnification: Rectangular lenses: 1.8x, segment lens: 4x, 7x
- Weight: 1.9kg
- Size: 200x160x45mm (When folded)

Option Loupe

POWER UP LENS (PUL) ROUND SERIES, OSL SERIES, WIDE SERIES,

Only available for 2x

■ Lens Diameter: φ100mm
Not suitable for WIDE series
■ ROUND Series 2X + PUL = **5X**

■ Lens Dimensions:50×100mm
■ OSL 2X + OSL - PUL = **4X**

■ Lens Dimensions:100×180mm
■ WIDE 2X + WIDE - PUL = **4X**

Type-B Conductive Base Mat

This is the Type-B Conductive Base Mat.
Use it individually to prevent stains/dirt to tables and
provide protection to the work, or use it along with the
ground wire set for combining static electricity,

Ground Resistance (of Mat) R
$10^6\Omega \leqq R \leqq 10^8\Omega$
IEC(61340-5-1/5-2 Within the required range)

* All photos are mounting images. Illuminated magnifying lens is not be included.

Side Extension Stick

Attach this product to the side stick of the magnifying lens, then after attaching to a crank bulb, you will be able to widen and increase the range of movement of the side slick.

■ Shah Diameter : φ13mm
■ Length of Shaft : 97mm

Ground Wire Set

Use this with the Type-B Conductive Base Matt by directly connecting to the ground to turn a table stand into a temporary static-free work space.

VITA-LITE

Full Spectrum fluorescent lamp

<Circular fluorescent lamp>

Unlike ordinary fluorescent lamps,
it is designed to be as close as possible to the wavelength of natural light.

■ Ra 91
■ Made in China
■ 22W

Lens cleaner kit

A cleaner kit exclusively for illuminated magnifiers that is actually used by in-house lens assemblers and combines carefully selected products.

■ Kit contents

Wiping cloth with OTSUKA logo
Large format 200 x 200mm luxury wiping cloth x 1

Water-soluble safety multi-cleaner
Contains 18 ml Herbal formulation / cleaning / antibacterial / antistatic

Off-Set Clamp

In situations where a wall is close by, or a clamp is too bulky, you can attach the free-arm (F-type, CF-type) on a slightly offset position.

Flange Base

By attaching to a work desk using screws, F/CF/ST-type models can be used without a clamp stand.

Type-FL Caster Base

Possible to move within range of the power cord.

Regarding illuminated magnifier Product specification list

Features of Products

B — **With table stand**
A product placed and used on a desk, etc.

CL — **Light box With transmission illumination**
This product has two illuminating functions of epi-illumination and trans-illumination.

D — **Fixed desk holder type**
A product having a box, the bottom of which is fixed with screws when used.

MS — **Magnet stand type**
A product attached onto a metal surface by magnetic force of magnets when used.

ST — **Long bar and clamp type**
A product consisting of a cross bar, a pillar, and a desk clamp.

F — **Free arm and clamp type**
It has an arm with high degree of freedom, and is clamped to a desk for use.

CF — **Compact free arm and clamp type**
A product having a shorter arm than model F, and handled easier.

FD — **Free arm and fixed, desk holder type**
Desk holder which is fixed with screws and free arm.

FL — **Free arm with casters stand**
A product made by combining a free-arm type illuminated magnifier and a stand with casters.

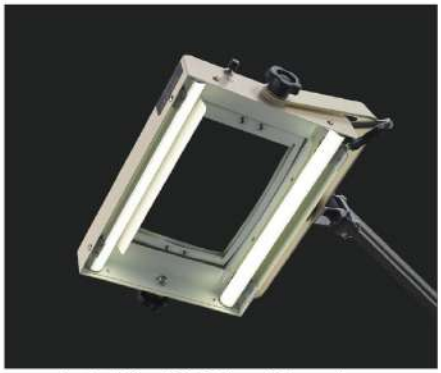
LED LINE UP

SKKL/ENVL Series

SKK Series

LSK WIDE Series

OLIGHT3L/5 Series


LED-OSL Series

LED-WIDE Series

Above models adopt LED illuminations which have advantages of "long service life" and "lower power consumption".
LED adopts "integrated lamp cover" type.

* Regarding LED
LED bulb is manufactured under strict control, although color temperatures may differ depending on whether the colors of adjacent LEDs in the product are different or when the LEDs are manufactured.
Neither is a product failure or defect. Please note.

Regarding illuminated magnifier Product specification list

Features of Products

Our products are made for uses inside Japan.
Please note the following when using outside Japan.

Matters that needs to be checked.

◇ Please check the input voltage, frequency, and the type of AC plug.
◇ Please look at the product specifications in our catalog.

Products with a specification: "Input Voltage: 100 - 240 V 50/60 Hz)" cannot be changed to the specification for uses outside Japan (Excluding BARLIGHT 2 and BORELOUPE Series).
Products with a specification: "Input Voltage: Only 100 - 240 V 50/60 Hz)" cannot be changed to the specification for uses outside Japan.
*Please contact us for changes in overseas specifications for "products without any input voltage notation".

Notes for When Placing Orders

◇ Please specify the "type of AC plug" of the country in which you will be using the product.

* Our products are equipped with AC plug cords of "A plug 125V rating for Japan" as standard specifications.
When using overseas, it is necessary to change the AC plug cord. (Paid)

(1) For SKKL, ENVL, OLIGHT5 series, MODELIGHT ML-230F, as shown in Fig. 1 on the right, the AC power cords of these two models can be replaced individually.

It is possible to respond by instructing the change at the time of ordering or by purchasing the power cord separately after purchasing the product.

Corresponding plug: SE plug, BF plug

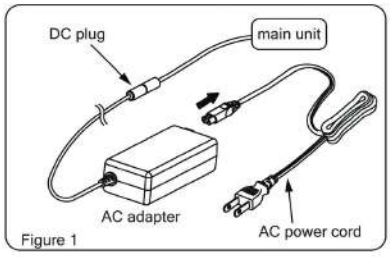


Figure 1

(2) For products other than the above

We accept changes to AC plug cords at the time of manufacture.
If you are unsure of the shape of the AC plug, please refer to the table below.

A plug

grounded SE plug

grounded BF plug

Specification comparison list of the illuminated magnifier

LED illuminated magnifier

	OLIGHT5 Series P.04	OLIGHT3L Series P.06	SKKL Series P.08	ENVL Series P.10
Type name ■B With table stand A product placed and used on a desk.	OLIGHT5-B	OLIGHT3L-B	SKKL-B	ENVL-B
■CL Light box With transmission illumination This product has two illuminating functions of epi-illumination and trans-illumination	OLIGHT5-CL	–	SKKL-CL	ENVL-CL
■F Free arm and clamp type It has an arm with high degree of freedom and is clamped to a desk for use.	OLIGHT5-F	OLIGHT3L-F	SKKL-F	ENVL-F
■CF Compact free arm type A product having a shorter arm than model F and is clamped to a desk for use.	–	–	SKKL-CF	ENVL-CF
■FD Free arm and fixed, desk holder type Desk holder which is fixed with screws and free arm.	–	OLIGHT3L-FD	SKKL-FD	ENVL-FD
■FL Free arm and caster stand type A product made by combining a free-arm type illuminated magnifier and a stand with casters.	–	–	SKKL-FL	ENVL-FL
■D Fixed, desk holder type A product having a box, the bottom of which is fixed with screws when used.	–	–	SKKL-D	ENVL-D
■MS Magnet stand type A product attached onto a metal surface by magnetic force of magnets when used.	–	–	SKKL-MS	ENVL-MS
■ST Long bar type A product clamped to a desk for use.	–	–	SKKL-ST	ENVL-ST
Lighting Light source	LED	LED	LED	LED
Lighting Light intensity adjustment function	(100 - 10%),(CL type only 100 - 0%)	(100 - 50%)	×	(100 - 10%),(CL type only 100 - 50%)
Lens [Lineup of lens] Size・Magnification AR = Anti-reflective coated lens	[BIG-RECTA-SYSTEM] 180×120mm(2xAR,4xAR)	[RECTA-SYSTEM] 144×108mm (2x,3.5x,2xAR,3.5xAR)	[ROUND-Series interchangeable lens system] 130Φ(2x,3x,4x,2xAR,3xAR,4xAR) 105Φ(6x,6xAR) 90Φ(8x,10x,12x,15x,8xAR,10xAR)	[ROUND-Series interchangeable lens system] 130Φ(2x,3x,4x,2xAR,3xAR,4xAR) 105Φ(6x,6xAR) 90Φ(8x,10x,12x,15x,8xAR,10xAR)
Power supply Input power supply	AC100V - 240V・50/60 Hz 125V - 240V requires plug replacement	AC100V - 240V・50/60 Hz 125V - 240V requires plug replacement	AC100V - 240V・50/60 Hz	AC100V - 240V・50/60 Hz
Power supply Power consumption	9W(CL type only 10W+10W)	9W	7W(CL type only 7W+5W)	10W(CL type only 10W+9W)
Option [Power up lens] You can increase the magnification by stacking lenses.	–	[RECTA-PUL] [RECTA-PUL AR] RECTA-SYSTEM2x/2xAR + RECTA-PUL/AR=4x/4xAR RECTA-SYSTEM3.5x/3.5xAR + RECTA-PUL/AR=5x/5xAR	[SKK-PUL (Only for 2x)] ROUND SERIES 2x + PUL = 5x	[SKK-PUL (Only for 2x)] ROUND SERIES 2x + PUL = 5x
Option [The polarizing filter] By stacking lenses, unnecessary surface reflected light is removed from the observed object. It has a dimming effect.	–	–	[130ΦPolarizing filter](2x,3x,4x,6x, 2xAR,3xAR,4xAR,6xAR) [90ΦPolarizing filter](8x,10x,12x,15x, 8xAR,10xAR)	[130ΦPolarizing filter](2x,3x,4x,6x, 2xAR,3xAR,4xAR,6xAR) [90ΦPolarizing filter](8x,10x,12x,15x, 8xAR,10xAR)

LED illuminated magnifier

LSK WIDE Series P.12	LED-OSL Series P.14	LED-WIDE Series P.14	OLIGHT3L6500K P.16	SKK Series P.16
			–	
LSK WIDE-B	LED-OSL-2	LED-WIDE-2		SKK-B
	–	–	–	–
LSK WIDE-CL				
LSK WIDE-F	LED-OSL-4	LED-WIDE-4	OLIGHT3L-F 6500K	SKK-F
	–	–	–	
LSK WIDE-CF				SKK-CF
	–	–	–	–
LSK WIDE-FD				
–	–	–	–	–
	–	–	–	–
LSK WIDE-D				
	–	–	–	–
LSK WIDE-MS				
			–	–
LSK WIDE-ST	LED-OSL-3	LED-WIDE-3		
LED	LED	LED	LED6500K	LED
(100 - 50%)	×	×	(100 - 0%)	×
[WIDE interchangeable lens system] 150Φ(2xAR,3xAR,4xAR)	[Fix type lens] 100x140mm(2x,4x)	[Fix type lens] 180x220mm(2x)	[RECTA-SYSTEM] 144×108mm (2x,3.5x,2xAR,3.5xAR)	[ROUND-Series interchangeable lens system] 130Φ(2x,3x,4x,2xAR,3xAR,4xAR) 105Φ(6x,6xAR) 90Φ(8x,10x,12x,15x,8xAR,10xAR)
AC100V - 240V・50/60 Hz 125V - 240V requires plug replacement	AC100V - 240V・50/60 Hz	AC100V - 240V・50/60 Hz	AC100V - 240V・50/60 Hz	AC100V - 240V・50/60 Hz
11W	9W	9W	12W	10W
–	[OSL-PUL (Only for 2x)] 2x + OSL-PUL = 4X	[WIDE-PUL (Only for 2x)] 2x + WIDE-PUL = 4x	[RECTA-PUL] [RECTA-PUL AR] RECTA-SYSTEM2x/2xAR + RECTA-PUL/AR=4x/4xAR RECTA-SYSTEM3.5x/3.5xAR + RECTA-PUL/AR=5x/5xAR	[SKK-PUL (Only for 2x)] ROUND SERIES 2x + PUL = 5x
–	–	–	–	[130ΦPolarizing filter](2x,3x,4x,6x,2xAR,3xAR,4xAR,6xAR) [90ΦPolarizing filter](8x,10x,12x,15x,8xAR,10xAR)

memo

OTSUKA

Contact

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https://www.otsuka-op.com

Attention

*The LED is a little different from the fluorescent lamp in color, intensity and light distribution,
*Magnifications arc all expressed by areal magnifications.
*Specifications and prices are subject to change without prior notice.
*Color of the products may be slightly different from the print.

cotalogue No.32