

Collimated Lighting

Lens-integrated Parallelism-variable Coaxial Lights

MSU Series

Integrated lens for easy light source and camera optical axis adjustment

Built to order

This is a made-to-order product. For queries and details, contact your CCS sales representative.



MSU-47X34SW+TH2SP

Custom order products

The warranty period of the custom order product is different from that of the CCS standard products. Contact our local sales office for details.

Applications

Imaging where the degree of extraction of minor scratches, dents, and dents on the glossy surface is adjusted / Imaging that improves the reproducibility of verification conditions, etc.

Features

- Lens-integrated coaxial lights with the light source built into the telecentric lens
- The NA of the light source side and imaging side can be adjusted
- The parallelism of the light can be changed by adjusting the aperture on the lens side and light side
- Enables easy light source and camera optical axis adjustment
- A unique optical design that achieves a compact housing
- Compatible with high-megapixel cameras such as 2/3-type 5 MP and 1-type 9 MP

Light Aperture Adjustment Example

Imaging the Appearance of Button Battery



Workpiece: Button battery



Light aperture status



Light aperture status



Light aperture status

LDR2
LDR2-LA
LDR-LA1
SQR
SQR-TP
HPR2
LFR
LKR
FPR
FPQ3
LDL2
LDLB
HDL2
TH2 (5 types)
LFL
HPD2
LDM2
LAV
PDM
LFXV
LFX3
LFX3-PT
LFV3
LFV3-G

MSU
MFU

PF

HLDR-IP/
HSL-PCL

Small
COB Lights

UV2
UV

LNSP-UV-FN

IR2 (Under 1000-nm Type)

IR (Over 1000-nm Type)

CIR

IU

HLV3
HLV2
LV

LSP

HFS/HFR

HLV3-NR

HLV3-3M-RGB-4

HLV2-NR

HLV2-3M-RGB-3W

PFBR-600

PFBR-150

PFB3

LNLP

LNSP2

LNSP

Coaxial Units

LNSP-FN

LN/LN-HK

LNSD

LND2

HLND

LT

LNV

LNDG

LNIS2

LNIS

LNIS-FN

Telecentric Lens

Macro Lens

 Lineup

Model Name	Input Voltage	Power Consumption	LED color	Correlated color temperature	Options	Extension Cables	Recommended Control Units
MSU-47X34SW+TH2SP	24 V	2.9 W	White	5800 K	-	FCB*2 Straight Cable FCB-F 2-Branch Cable FCB-W*3 4-Branch Cable FRCB Robot Cable *2 The cables with a model name that ends with "-ME7", "-EL2", "-PF", or "-PF-EL9" are not included. *3 The cables with a model name that ends with "-EL2" are not included.	PD3 CC-ST-1024 PSB POD
LED Properties: Spectral Distribution ▶ P.396 Extension Cables ▶ P.377 Control Unit Selection Guide ▶ P.319 List of Control Unit Specifications ▶ P.321							

*1 This product is custom-made. Contact our local sales office for details.

Parts/Usage

- **Parts**

Camera (C-mount)

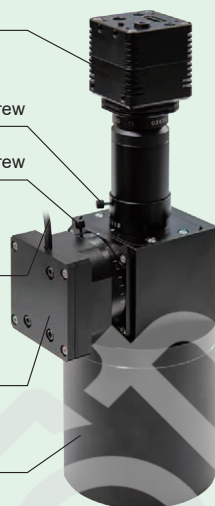
Lens Aperture Adjustment Screw

Light Aperture Adjustment Screw

Illumination cable

Light

Lens



- Usage

(1) Camera installation

The field of view changes by the sensor size of the mounted camera.
Select and install the camera according to the workpiece.

(2) Installing the main body

Secure the main body so that the working distance (WD) is around 160 mm.

(3) Adjusting the optical axis

The camera's optical axis and the workpiece must be vertically aligned. Use a mirror for easier adjustment of the optical axis alignment. We recommend dimming the light while adjusting the alignment. Align the optical axis by adjusting the tilt of the light unit or the brightness to evenly illuminate the entire field of view.

(4) Imaging the workpiece

Slide the "light aperture adjustment screw" and observe the change in the workpiece.

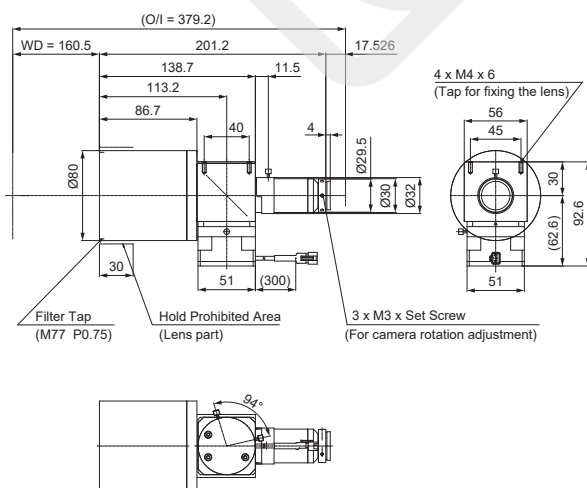
Fix the light aperture adjustment screw near where appropriate images can be obtained.

If it is necessary to obtain depth of field, slide the lens aperture adjustment screw and fix it near the appropriate depth of field.

(5) Setting the light intensity

Adjust the light brightness and the exposure time of the camera to set the appropriate brightness.

➤ Dimensions (mm)



Specifications

Model Name	MSU-47X34SW+TH2SP	
Lens Shape	Object-side Telecentric Lens	Fixed Magnification Lens
Optical Magnification	0.3x ±5%	
Working Distance (WD)	(160.5 ±5)mm	
Depth of Field	4.44 to 33.3 mm *Calculated with a permissible confusion circle diameter of 40 μm	
Resolution	11.2-83.9 μm *Theoretical resolution at a wavelength of 550 nm	
NA	0.03 to 0.004 (design value)	
Effective F Value (Fe)	5 to 34.7 (design value)	
TV Distortion	-0.01% (design value)	
Weight	Approx. 1.1 kg	
Filter Diameter	M77 P0.75	
Mount	C mount	
Applicable Image Size*	10.3 x 14.1 mm (diagonal 17.6 mm, 1.1 type)	
Field of View (VxH)	1/3 type: 12 x 16 mm, 1/2 type: 16 x 21.3 mm, 1/1.8 type: 18.0 x 23.6 mm, 2/3 type: 23.6 x 28.3 mm, 1 type: 34 x 42.6 mm, 1.1 type: 34.5 x 47.1 mm	
Light Model Name	TH2-27X27SW (LED color: white, correlated color temperature: 5800 K)	
Light Input Voltage (max.)	DC24 V	
Light Power Consumption (typ.)	2.9 W	
Distance Between Objects (O/I)	379.2 mm (design value)	
Focal Length	475.5 mm (design value)	
Exit Pupil Position	-142.7 mm	
Operating environment humidity	Temperature: 0 to 40°C, Humidity: 20 to 80% RH (with no condensation)	
Storage temperature/humidity	Temperature: -10 to 50°C, Humidity: 20 to 80% RH (with no condensation)	

*As the image size is in inches, the field of view is an approximation.

You can inquire
using our website.

Sample Testing	Light Unit Selection	Free Product Trial	Custom Orders	Product Details	Pricing/Quotation	Discontinued Products
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Inquire on our website here.
<https://www.ccs-grp.com/contact/>