

LED Spot Lights

HLV3 Series Cylindrical Type

Expanded lineup of high-power spot lights

Expanded lineup now includes cylindrical models.

Choose according to the inspection environment. * Same optical system as HLV3 Series L-type.



Standard Model **HLV3-22-1C**



Standard Model **HLV3-22-2C**



High Output Models **HLV3-22-4C**



Ø12-mm Light Emitting Tip **HLV3-22-2C-1220**

Features

■ Ideal for replacing equivalent HLV2 model

■ Max. 2.5 times higher power than HLV2*

* In comparing HLV2-22SW-3W (white) with HLV3-22SW-4C (white)

■ Optimized for CCS's high-resolution telecentric lenses

■ High-performing parallel and condenser lenses for greater versatility

Lineup

Standard Model HLV3-22-1C



Standard Model HLV3-22-2C



High Output Models HLV3-22-4C



Specialized models (compact, high uniformity, and reduced individual differences in brightness types) are also available.

Compact and Lightweight Models HLV3-14



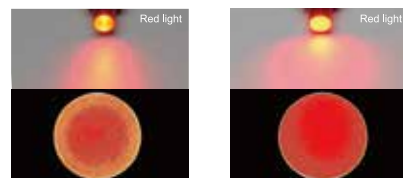
Ø12-mm Light Emitting Tip HLV3-22-2C-1220



High Uniformity Models HLV3-14-HU

* HLV3-22-HU are available as custom order.

Emitting surface of HLV3-14RD Emitting surface of HLV3-14RD-HU

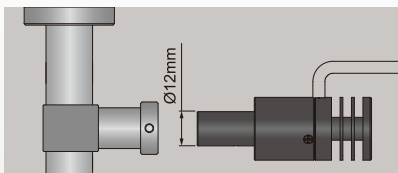


Comparison using our measurement conditions. The data included is for reference only and the results for individual products may vary.

Reduced individual differences in brightness HLV3-22-1/-2/-2-1220/4S/-4M



- Lens light mounting cap size compatible with Ø12mm
- Replacing with a straight light guide is also safe



Mounting holes on rear of Spot Light enable flexible installation.

▶ Revamped Line of Lights to Satisfy Your Specific Needs


Type	Comparison of brightness with conventional HLV2*1				Comparison of brightness within HLV3*2				Recommended magnification for telecentric lenses
	RD (red)	SW (white)	BL (blue)	GR (green)	RD (red)	SW (white)	BL (blue)	GR (green)	
HLV3-22-1C	1.6 _x	1.8 _x	1.4 _x	1.4 _x	1.0 _x	1.0 _x	1.0 _x	1.0 _x	1.0 <
HLV3-22-2C	1.6 _x	1.9 _x	1.5 _x	1.5 _x	1.7 _x	1.6 _x	1.6 _x	1.6 _x	1.0 <
HLV3-22-2C-1220	1.6 _x	1.9 _x	1.5 _x	1.5 _x	1.7 _x	1.6 _x	1.6 _x	1.6 _x	1.0 <
HLV3-22-4C	2.1 _x	2.5 _x	1.9 _x	1.9 _x	2.4 _x	2.2 _x	2.1 _x	2.0 _x	1.0 <

*1 Comparison using the same color and between a pair of the following units: , HLV3-22-1C and HLV2-22, or HLV3-22-2C/2C-1220/4C and HLV2-22-3W.
 *2 Comparison of brightness within HLV3 is based on HLV3-22-1C emission colors.

Strobe HLV3 series up to 2.4x brighter for high-speed applications*1


The combination of the power adapter and the strobe overdrive power supply provides the optimum imaging environment.

● Spot lighting
HLV3-22-4C/4M/4S series-related light emitting colors (red, white, blue, green) and HLV3-22IR860 (infrared)




● Straight-cable
FCB-1/-2/-3/-5

● Robotic Cable
FRCB-1/-2/-3/-5




● Power adapter
RB-16.4-48-HK

Special order product



● Strobe overdrive power
POD-5024-2-PEI/POD-22024-4-PEI

(2 Channel) (4 Channel)



+ + + +

*Branch cables cannot be used. *This adapter enables strobe overdrive mode with the HLV3 series

*1 This compares HLV3-22-4/IR860 with PJ2 power supply and with the power adapter and strobe overdrive power supply. This is a comparison based on our measurement conditions, etc., and does not guarantee quality or performance.

Model name*1	Input current (max.)	Power Consumption (max.)				Options	Extension cables	Recommended Control Units	Weight (max.)
		RD (red)	SW (white)	BL (blue)	GR (green)				
HLV3-22□□-1C	385 mA	1.1 W	1.3 W	1.4 W	1.4 W	Condenser Lens	FCB ³ Straight Cable FRCB Robot Cable	PD3 ²	34 g
HLV3-22□□-2C	700 mA	2.0 W	2.4 W	2.6 W	2.7 W			CC-PJ-0707	
HLV3-22□□-2C-1220	700 mA	2.0 W	2.4 W	2.6 W	2.7 W	—	PJ	PJ2 ²	40 g
HLV3-22□□-4C	1000 mA	3.0 W	3.5 W	3.8 W	4.0 W	Condenser Lens	FCB ³ Straight Cable FRCB Robot Cable FCB-HLV3-10 Straight Cable FRCB-HLV3-10 Robot Cable	PJ2 ²	39 g

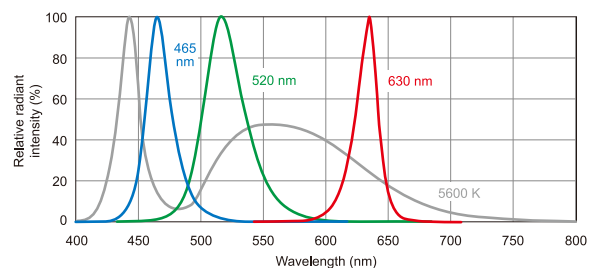
*1 □□ in the model name indicates the LED emission color. RD: Red, SW: White, BL: Blue, GR: Green

*2 The PD3-3024-3 and PD3-5024-3 series are not applicable to these products. *3 The cables with a model name that ends with "-PF", "-PF-EL9", "-ME7", or "-EL2" are not included.

● Common Specifications

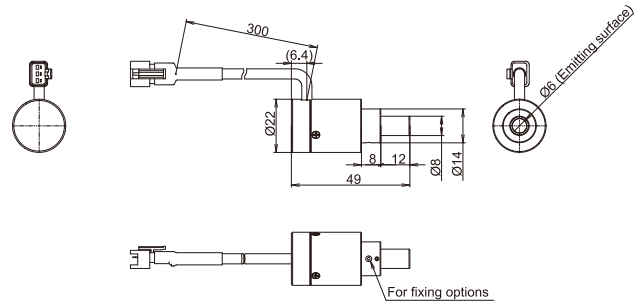
Color of LED	Red (630nm), White (5600K), Blue (465nm), Green (520nm)
Connector	SMR-03V-B
Polarity	1: Signal, 2: (+), 3: (-)
Operating env. (indoors only)	Temperature: 0 to 40°C, Humidity: 20 to 85%RH (with no condensation)
Storage environment	Temperature: -20 to 60°C, Humidity: 20 to 85%RH (with no condensation)
CE marking	Safety standard: Conforms to EN62471
Cable material	Aluminum alloy

● Light Spectrum

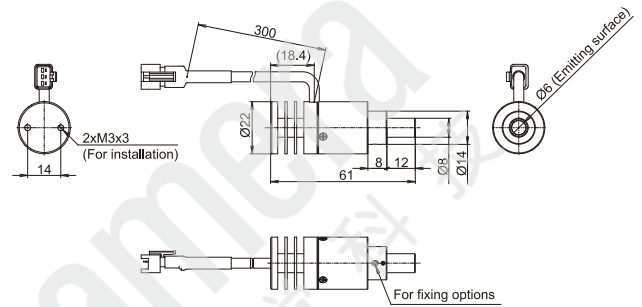


► Dimensions

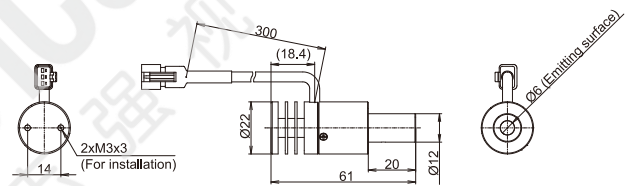
Standard Model **HLV3-22-1C**



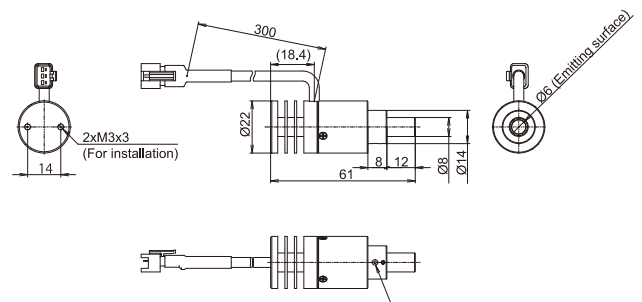
Standard Model **HLV3-22-2C**



Ø12-mm Light Emitting Tip **HLV3-22-2C-1220**



High Output Models **HLV3-22-4C**

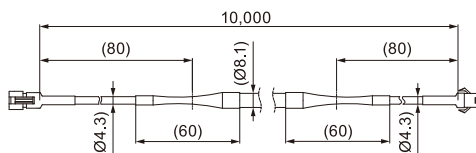


► Optional Cables (Sold Separately)

Extension cables	Robot cables	
	FCB-1/-2/-3/-5 (1 m / 2 m / 3 m / 5 m)	FRCB-1/-2/-3/-5 (1 m / 2 m / 3 m / 5 m)
FCB-HLV3-10 (10 m)*	FRCB-HLV3-10 (10 m)*	

* These 10-m extension cables connect the HLV3-series Spot Light and the PJ2-series Control Unit.

**FCB-HLV3-10
Straight Cable**
(Unit: mm)

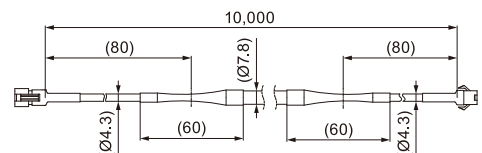


Weight: 1,200 g max., Cable permitted bending radius: 65 mm

Notes

- The total length of the FCB-1/-2/-3/-5 and FRCB-1/-2/-3/-5 Extension Cables must be no longer than 5 m.
- Branch cables are not available for the HLV3 Spot Lights.

**FRCB-HLV3-10
Robot Cable**
(Unit: mm)



Weight: 1,200 g max., Cable permitted bending radius: 35 mm

▶ Control Units

Dedicated Control Units for the HLV3/HLV2-Spot Lights Series

PJ2 Series

100 to 240 VAC

AC input type

Ethernet

Parallel



PJ2-1505-2CA-PE
2 channels



PJ2-3005-4CA-PE
4 channels

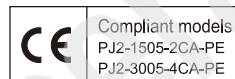
Installable on

• All models of the HLV3/HLV2 Series

▶ Easily Check and Set Operation of Spot Lights with the Built-in LCD

■ Analog control unit compatible with all HLV3/HLV2 series models.

Light intensity can be set in 1024 steps. The built-in LCD allows for excellent reproducibility and detailed control. Equipped with Ethernet and parallel communications for external control. Available in 2-channel and 4-channel Spot Light output types. Select the type for your application.



Dedicated Control Units for the HLV3/HLV2-Spot Lights Series

PJ Series

100 to 240 VAC

AC input type



PJ-1505-2CA
2 channels



PJ-1505-3CA
3 channels



PJ-1505-2CD24
2 channels



PJ-1505-3CD24
3 channels

Installable on

• HLV3-14, HLV3-14-HU
• HLV3-22-1/1C, HLV3-22-2/2C, HLV3-22-2-1220/2C-1220
• All models of the HLV2 Series

N.B.: HLV3-22-4C /4S /4M cannot be connected.

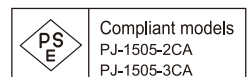
24 VDC

DC input type

▶ Four Types to Match Your Use Environment

■ Dedicated Analog Control Units for HLV3/HLV2 Series

Step-less intensity control is performed by varying the current. There are 2 and 3-channel Spot Light output types. You can select AC or DC power supply types.



Digital Control Units

PD3 Series

100 to 240 VAC

AC input type



PD3-5024-4 Series
4 channels



PD3-10024-8 Series
8 channels

Ethernet

EIA-485

Parallel



PD3-5024-4 Series
4 channels



Ethernet

Parallel

Installable on

• HLV3-14, HLV3-14-HU
• HLV3-22-1/1C, HLV3-22-2/2C, HLV3-22-2-1220/2C-1220
• All models of the HLV2 Series

N.B.: HLV3-22-4C /4S /4M cannot be connected.

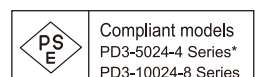
24 VDC

DC input type

▶ Select from Three Types of External Control for Your Network Environment

■ Digital Control Units selectable by control function

Compatible with two lighting modes: continuous lighting and ON/OFF lighting. Three types of external control: Ethernet, EIA-485, and parallel. Available in 4-channel and 8-channel light unit output types. Select the power supply from AC type and DC type.



* Excluding PD3-5024-4-PT(A), PD3-5024-4-ET(A).

Parallel light/condenser lens

Installable on · HLV3-22 Model * Excluding HLV3-22-2-1220, HLV3-22-NR

■ Select lenses according to illuminating distance, illuminating range, and uniform region to achieve optimum illumination, even in imaging environments in which the workpiece is far away.

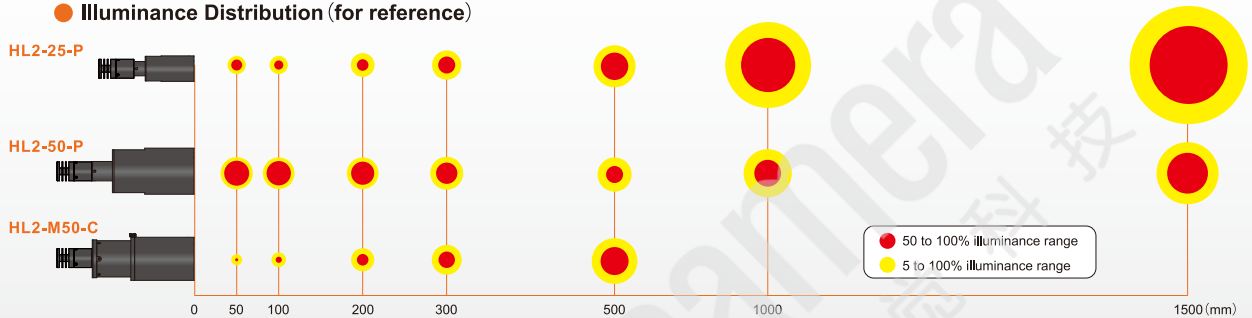


HL2-25-P
Compact condenser lens for spot illumination with high parallelism.

HL2-50-P
Condenser lens for spot illumination with high parallelism.

HL2-M50-C
Condenser lens with variable lens barrel length that allows adjustment of irradiation distance and irradiation range.

● Illuminance Distribution (for reference)



Measured with HLV3-22SW-4S (white), which has the same optical system as HLV3-22SW-4C(white). Comparison using our measurement conditions. The data included is for reference only and the results for individual products may vary.

● Illuminance Distributions (LWD*1 Characteristics)

HL2-25-P		(Unit of length used for the diameter of illuminated range: mm)						
LWD	50mm	100mm	200mm	300mm	500mm	1000mm	1500mm	
50 to 100% illuminance	Ø18	Ø15	Ø19	Ø28	Ø45	Ø89	Ø128	
5 to 100% illuminance	Ø30	Ø30	Ø39	Ø48	Ø69	Ø141	Ø194	

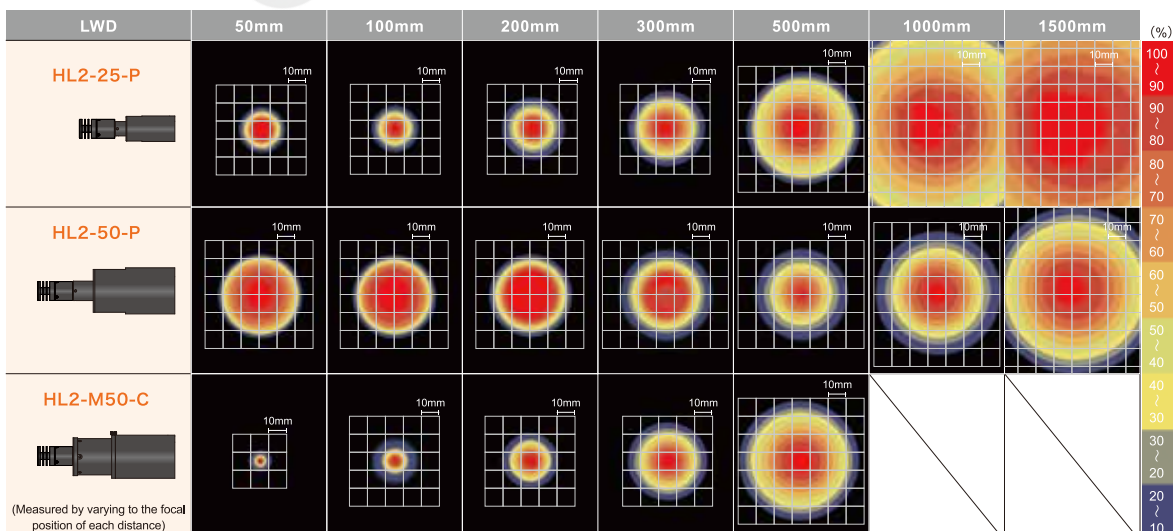
HL2-50-P		(Unit of length used for the diameter of illuminated range: mm)						
LWD	50mm	100mm	200mm	300mm	500mm	1000mm	1500mm	
50 to 100% illuminance	Ø41	Ø40	Ø38	Ø35	Ø28	Ø44	Ø67	
5 to 100% illuminance	Ø53	Ø52	Ø52	Ø54	Ø56	Ø79	Ø102	

HL2-M50-C		(Unit of length used for the diameter of illuminated range: mm)						
LWD	50mm	100mm	200mm	300mm	500mm	1000mm	1500mm	
50 to 100% illuminance	Ø5	Ø10	Ø19	Ø27	Ø46	-	-	
5 to 100% illuminance	Ø18	Ø24	Ø38	Ø49	Ø75	-	-	

*1 Irradiation distance from lighting to workpiece

Measured values, where the maximum illuminance within the range is 100%.

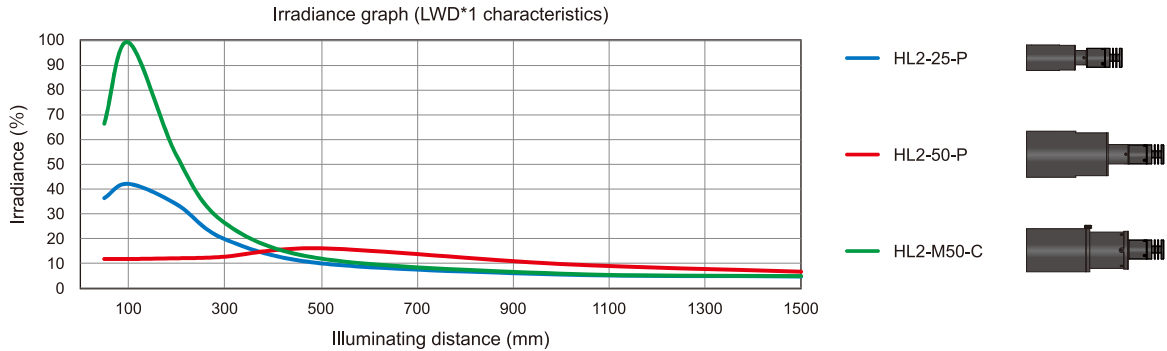
Measured with HLV3-22SW-4S (white), which has the same optical system as HLV3-22SW-4C(white). Comparison using our measurement conditions. The data included is for reference only and the results for individual products may vary.



Indicates the value in units of 10% when the maximum value in the illuminance distribution is measured as 100%.

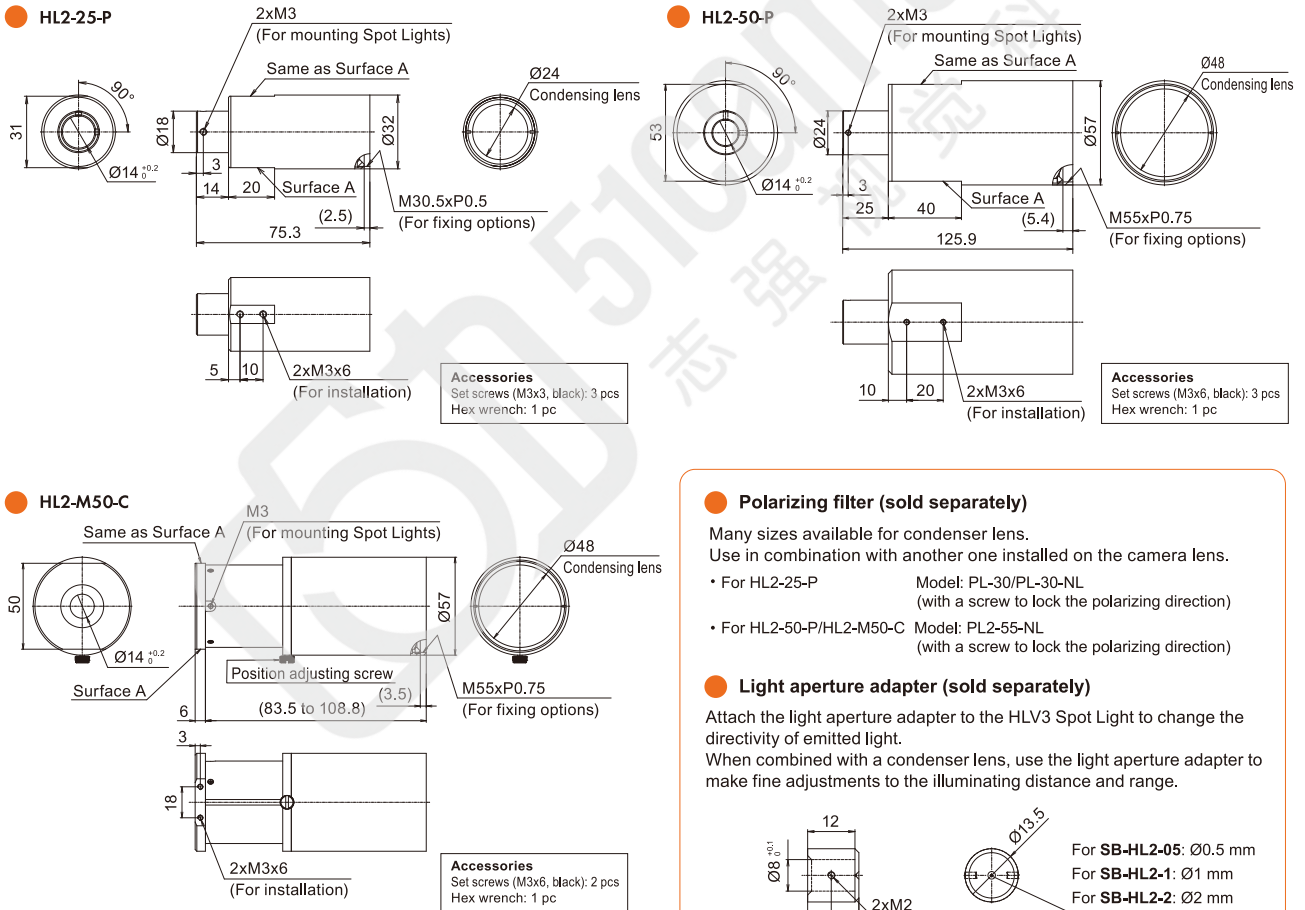
Measured with HLV3-22SW-4S (white), which has the same optical system as HLV3-22SW-4C(white). Comparison using our measurement conditions. The data included is for reference only and the results for individual products may vary.

Irradiance Comparison



*1 Irradiance distance from lighting to workpiece
 Measured with HLV3-22SW-4S (white), which has the same optical system as HLV3-22SW-4C(white), Comparison using our measurement conditions.
 The data included is for reference only and the results for individual products may vary.

Condenser Lens Dimensions



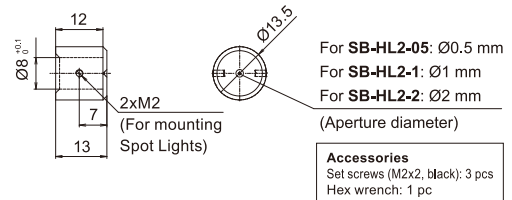
Polarizing filter (sold separately)

Many sizes available for condenser lens.
 Use in combination with another one installed on the camera lens.

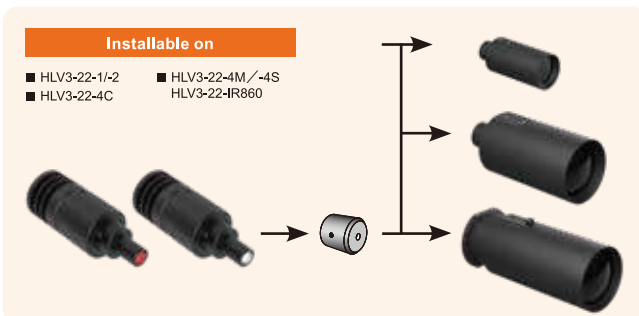
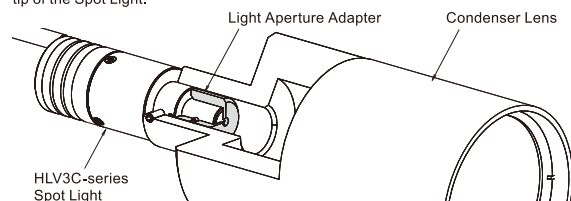
- For HL2-25-P Model: PL-30/PL-30-NL (with a screw to lock the polarizing direction)
- For HL2-50-P/HL2-M50-C Model: PL2-55-NL (with a screw to lock the polarizing direction)

Light aperture adapter (sold separately)

Attach the light aperture adapter to the HLV3 Spot Light to change the directivity of emitted light.
 When combined with a condenser lens, use the light aperture adapter to make fine adjustments to the illuminating distance and range.



Put the Light Aperture Adapter and Condenser Lens all the way onto the tip of the Spot Light.



CCS High-Resolution Telecentric Lenses

SE-65-M series / SE-110-M series

5-megapixel camera-compatible models available*

* 2/3L Inches (5.98 mm vertical x 11.26mm horizontal) 5.5µm/PIX, Compatible models: SE-110VT03-5M/SE-110ST03-5M

Ideal for combining with megapixel cameras

* Approx. 4.65µm/PIX min.

WD65mm and WD110mm

Coaxial epi-illumination type and straight type

Optical magnification 0.3x~6.0x*

* For optical magnification of 0.3x to 0.8x, the recommended illumination is HLV3-22-4M.

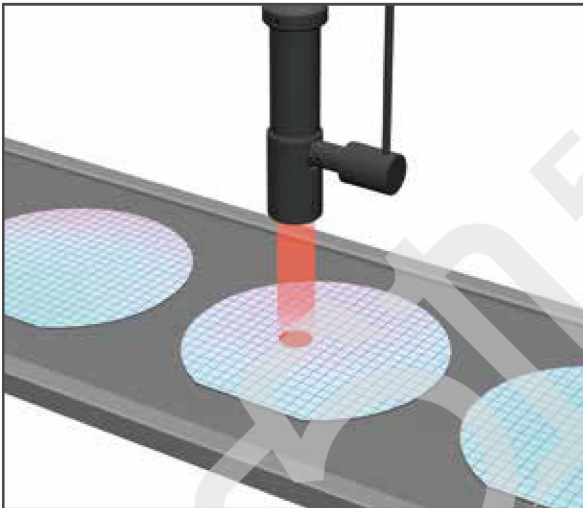
Total of
28
Models

6x, WD: 65 mm
SE-65VT60-M

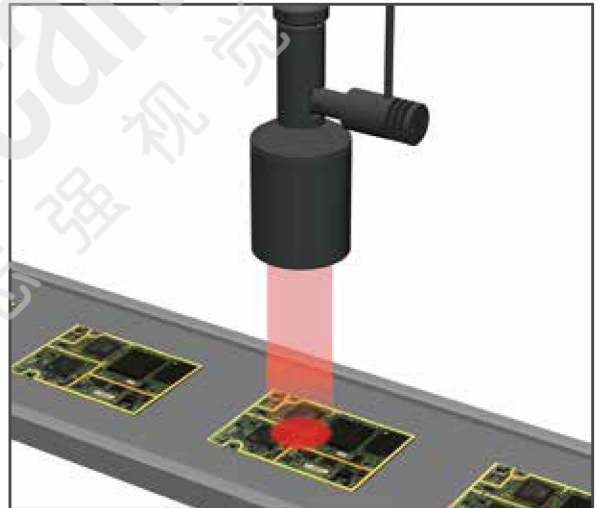


0.3x, WD: 110 mm
SE-110VT03-5M

HLV3-22-1C



HLV3-22RD-4C



For product details, visit the website

CCS telecentric lens

Search

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CAUTION

- To ensure proper and safe use of the product, please read the Instruction Guide completely before using the product.
- The design and specifications of this product are subject to change without notification for product improvement.
- The workpiece imaging examples included in this brochure are intended to serve only as references to help you select a suitable light unit. Please verify the functionality and conditions required for your particular application before you make a final selection. The sample workpieces used in this brochure have been processed specifically for sample imaging. They are not intended to represent product quality and performance.



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