

Provides high output and uniform spot lighting using an original optical design
Lineup of shapes selectable according to the installation space

L-Type



Cylindrical Type

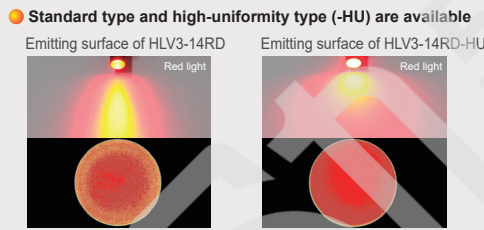


Applications

As a light source for a telecentric lens, light source for alignment of LCDs or circuit boards, light source for dimension measuring, light source for spot illumination, etc.

Lineup with Selection to Match Your Needs

Compact and Lightweight Models HLV3-14/-HU

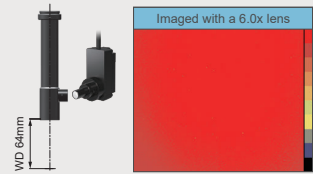


Note) Comparison using our measurement conditions. The data included is for reference only and the results for individual products may vary.

High Output Models HLV3-22-4S/-4C

Optimized for high-magnification telecentric lenses

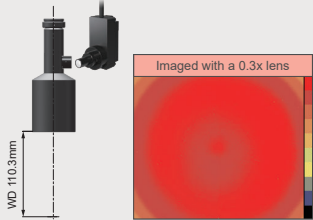
Spot Light, White
HLV3-22SW-4S/-4C
+
Telecentric Lens
6x WD65 mm
SE-65VT60-M



High Uniformity Models HLV3-22-4M

Optimized for low-magnification telecentric lenses

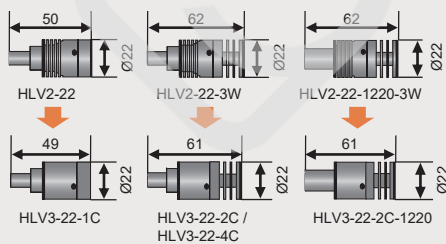
Spot Light, White
HLV3-22SW-4M
+
Telecentric Lens
0.3x WD110 mm
SE-110VT03-5M



Note) Each color represents the brightness in steps of 10% the maximum value. The results for individual products may vary.

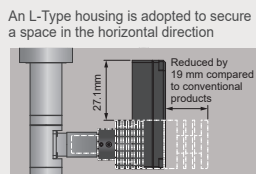
Cylindrical Type HLV3-C Series

Housing design suitable for changing from HLV2



L-Type Standard Model HLV3-22-1/-2

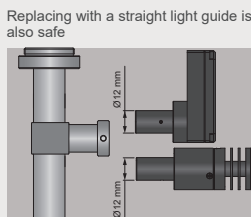
The housing design of the conventional product (HLV2) has been revised to save more space



Mounting holes on rear of Spot Light enable flexible installation. (See external dimensions)

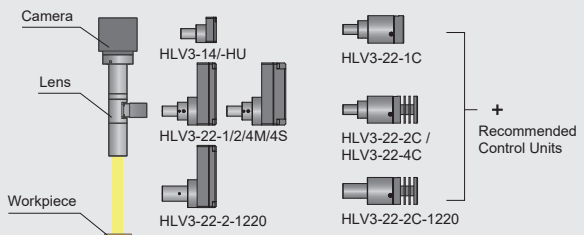
Emission tip diameter is Ø12 mm HLV3-22-2-1220/-2C-1220

Lens light mounting cap size compatible with Ø12 mm



Example Configuration

Spot light that achieves high output, high uniformity and high quality.



➤ Lineup that can be selected according to the application

HLV3 (L-Type)

Model Name	Compared to the brightness of conventional lighting*1				Compared to the brightness of HLV3 Series units*2				Uniformity	Compact design	Reduced individual brightness differences	Recommended magnification for telecentric lenses*3
	RD (red)	SW (white)	BL (blue)	GR (green)	RD (red)	SW (white)	BL (blue)	GR (green)				
HLV3-14	1.7 _x	1.1 _x	3.0 _x	1.3 _x	—	—	—	—	○	◎	—	1.0 <
HLV3-14-HU	0.9 _x	1.1 _x	1.0 _x	1.7 _x	—	—	—	—	◎	◎	—	1.0 <
HLV3-22-1	1.2 _x	1.4 _x	1.5 _x	1.2 _x	1.0 _x	1.0 _x	1.0 _x	1.0 _x	◎	○	○	1.0 <
HLV3-22-2	1.1 _x	1.5 _x	1.5 _x	1.2 _x	1.8 _x	1.7 _x	1.6 _x	1.5 _x	◎	○	○	1.0 <
HLV3-22-2-1220	1.1 _x	1.5 _x	1.5 _x	1.2 _x	1.8 _x	1.7 _x	1.6 _x	1.5 _x	◎	○	○	—
HLV3-22-4M	1.0 _x	1.3 _x	1.2 _x	1.0 _x	1.6 _x	1.4 _x	1.3 _x	1.3 _x	◎	△	○	0.8 >
HLV3-22-4S	1.6 _x	1.9 _x	2.0 _x	1.6 _x	2.5 _x	2.2 _x	2.1 _x	2.0 _x	◎	△	○	1.0 <
HLV3-22IR860	—	—	—	—	—	—	—	—	—	△	—	—

*1 When comparing conventional lighting brightness, the comparison for HLV3-14 is with HLV2-14 of the same color, HLV3-14-HU is with HLV2-14HU of the same color, HLV3-22-1 is with HLV2-22 of the same color, and HLV3-22-2/-2-1220/-4M/-4S are with HLV2-22-3W of the same color.
 *2 When comparing the brightness of the HLV3 Series, the comparison uses HLV3-22-1 standard values for each emission color. HLV3-14, HLV3-14-HU and HLV3-22IR860 have individual differences and are thus not used for the comparison.
 *3 Recommended magnification for our telecentric lenses.
 Note: Comparison using our measurement conditions.
 The data included is for reference only and the results for individual products may vary.

HLV3 (Cylindrical)

Model Name	Comparison of brightness with conventional HLV2*1				Comparison of brightness within HLV3*2				Reduced individual brightness differences	Recommended magnification for telecentric lenses*3
	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 When comparing conventional lighting brightness, the comparison for HLV3-22-1C is with HLV2-22 of the same color, and HLV3-22-2C/-2C-1220/-4C are with HLV2-22-3W of the same color.
 *2 When comparing the brightness of the HLV3 Series, the comparison uses HLV3-22-1C standard values for each emission color.
 *3 Recommended magnification for our telecentric lenses.
 Note: Comparison using our measurement conditions.
 The data included is for reference only and the results for individual products may vary.

➤ Reduced Individual Differences (Excluding HLV3-14/-14-HU,HLV3-22IR860,HLV3-22-1C/-2C/-2C-1220, and -4C)

The HLV3 Series (L-Type) uses a new design that allows the brightness to be adjusted within the standard values determined for each model.

In the production process, the brightness of each HLV3-Series Spot Light is measured and adjusted to the standard value established for each model. This allows us to produce high-quality Spot Lights with minimal variations in brightness between units of the same model.

The HLV3 Series helps reduce labor time to install, maintain, and adjust brightness of Spot Lights and helps reduce time required on site.

➤ Optimized for the Optical System of CCS High-Resolution Telecentric Lenses

We recommend lights suitable for the magnification of telecentric lenses. A high-uniformity type is available for low-magnification lenses, and a high-output type for high-magnification lenses.

Spot Lights use an original lens to maintain high quality with minimal deviation in the optical axis.

Use Spot Lights with our original telecentric lenses (coaxial type) to create a stable imaging environment.

Recommended Magnification of Our Telecentric Lenses

Telecentric lens	Magnification	0.3	0.5	0.8	1.0	1.5	2.0	3.0	4.0	6.0
	WD									
65 mm			SE-65 VT05-M	SE-65 VT08-M	SE-65 VT10-M		SE-65 VT20-M		SE-65 VT40-M	SE-65 VT60-M
	110 mm	SE-110 VT03-5M	SE-110 VT05-M	SE-110 VT08-M	SE-110 VT10-M	SE-110 VT15-M	SE-110 VT20-M	SE-110 VT30-M	SE-110 VT40-M	

Recommendation based on the test results using our measurement conditions.

You can inquire using our website.

- Sample Testing
- Light Unit Selection
- Free Product Trial
- Custom Orders
- Product Details
- Pricing/Quotation
- Discontinued Products

Inquire on our website here.
<https://www.ccs-grp.com/contact/>

- Direct Lighting
 - LDR2
 - LDR2-LA
 - LDR-LA1
 - SQR
 - SQR-TP
- Convergent Lighting
 - HLDR3
- Diffused Lighting
 - HPR2
 - LFR
 - LKR
 - FPR
 - FPQ3
- Direct Lighting / Convergent Lighting
 - LDL2
 - LDLB
 - HLDL3
 - HLDL2
- Diffused Lighting
 - TH2 (5 types)
 - LFL
 - HPD2
 - LDM2
 - LAV
 - PDM
 - LFXV
 - LFX3
 - LFX3-PT
 - LFV3
 - LFV3-G
- Colimated Lighting
 - MSU
 - MFU
- Stroke Lighting
 - PF
- Water-proof
 - HLDR-IP
 - HSL-PCL
- Small COB Lights
 - UV3/VL3
 - UV2
 - UV
 - LNSP-UV3-FN
 - LNSP-UV-FN
- Spot Lighting, Etc.
 - (Under 1000-nm IR Type)
 - (Over 1000-nm Type)
 - IR
 - CIR
- Intensity Control
 - IU
- HLV3
 - LV
 - LSP
 - HFS/HFR
 - HLV3-22-4-NR
 - HLV3-3M-RGB-4
 - PFBR-600
 - PFBR-150
 - PFB3
- Convergent Lighting
 - LNLPL
 - LNSP2
 - Coaxial Units
 - LNSP-FN
 - LN/LN-HK
- Diffused Lighting
 - LNSD
 - LND2
 - LT
 - LNV
 - LFXV (Rectangular Type)
 - TH2 (Rectangular Type)
- Oblique Angled Lighting
 - LNDG
 - LNIS2
 - LNIS
 - LNIS-FN
- Telecentric Lenses
 - Macro Lens

HLV3 Series



Refer to our website for product details.

Lineup

Shape	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)	IR (Infrared)					
L-Type	HLV3-14□□(-HU)	275 mA	0.7 W	0.9 W	0.9 W	1.1 W	-	-	FCB*3 Straight Cable FRCB Robot Cable FCB-HLV3-10*5 Straight Cable FRCB-HLV3-10*5 Robot cable *5 Only PJ2 can be used.	PD3*2 CC-PJ-0707 PJ PJ2	18 g	
	HLV3-22□□-1	385 mA	1.1 W	1.4 W	1.5 W	1.5 W	-	Condenser lens		PD3*2 CC-PJ-0707 PJ PJ2	46 g	
	HLV3-22□□-2	700 mA	2.1 W	2.5 W	2.7 W	2.8 W	-				-	PD3*2 CC-PJ-0707 PJ PJ2
	HLV3-22□□-2-1220		2.1 W	2.5 W	2.7 W	2.8 W	-					
	HLV3-22□□-4M	1000 mA	3.2 W	3.7 W	4.0 W	4.1 W	-	Condenser lens		PD3*2 CC-PJ-0707 PJ PJ2	53 g	
	HLV3-22□□-4S		3.2 W	3.7 W	4.0 W	4.1 W	-					
	HLV3-22IR860		-	-	-	-	4.1 W					
	HLV3-22IR950-SP*4	-	-	-	-	3.4 W	-	-		-	-	
	Cylindrical type	HLV3-22□□-1C	385 mA	1.1 W	1.3 W	1.4 W	1.4 W	-		Condenser lens	PD3*2 CC-PJ-0707 PJ PJ2	34 g
		HLV3-22□□-2C	700 mA	2.0 W	2.4 W	2.6 W	2.7 W	-				39 g
HLV3-22□□-2C-1220		700 mA	2.0 W	2.4 W	2.6 W	2.7 W	-	-	40 g			
HLV3-22□□-4C		1000 mA	3.0 W	3.5 W	3.8 W	4.0 W	-	Condenser lens	PJ2	39 g		

Extension Cables ▶ P.381

Control Unit Selection Guide ▶ P.321

List of Control Unit Specifications ▶ P.323

*1 □□ in the model name contains the LED 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 "-ME7", "-EL2", "-PF", or "-PF-EL9" are not included.
 *4 The warranty period of the custom order product is different from that of the CCS standard products. Contact our local sales office for details.

Increase HLV3 Series brightness by 2.4x for high-speed lighting

Combine the power adapter and strobe overdrive control unit to suit the imaging environment.

• Spot Lighting
HLV3-22-4M/4S/4C Series emission colors
(red, white, blue, green),
HLV3-22IR860 (infrared)

• Straight Cable
FCB-1/-2/-3/-5

• Robot Cable
FRCB-1/-2/-3/-5

• Power Adapter
RB-16.4-48-HK
Special order

• Strobe Overdrive Control Unit
POD-5024-2-PEI / POD-22024-4-PEI

(2 channel) (4 channel)

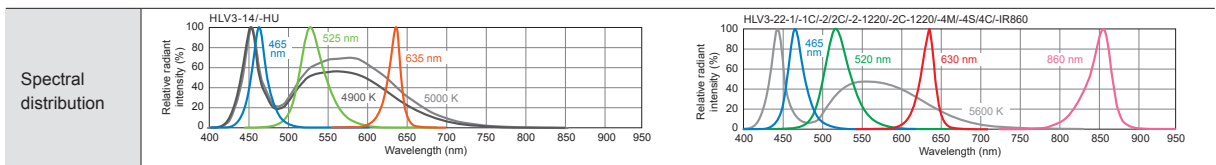
* Branch cables cannot be used. * This is an adapter for using the HLV3 Series with a strobe overdrive control unit or constant voltage control unit. ▶ P.339

Light and power adapter compatibility table (example)

Light Model Name	Emitting color					Power adapter model name (custom order)	
						Constant Voltage Control Unit PD2, PD3	Strobe Overdrive Control Unit PTU2, POD
HLV3-14	RD	-	-	GR	-	RB-82-24-15SP Quantity of light: 0.9x, Power consumption: 7.3 W*1	RB-56-48-W15 Quantity of light: 2.5x, Peak current: 0.86A RB-33-48-W15 Quantity of light: 4.8x, Peak current: 1.5 A
	-	SW	BL	-	-		
HLV3-22-1 / -1C	RD	SW	BL	GR	-	RB-56-24 Quantity of light: 0.8x, Power consumption: 11W*1	RB-22-48-HK Quantity of light: 4.6x, Peak current: 2.2 A
HLV3-22-2 / -2C	RD	SW	BL	GR	-	RB-33-24-HKTK Quantity of light: 0.8x, Power consumption: 18 W*1	RB-22-48-HK Quantity of light: 2.5x, Peak current: 2.2 A
HLV3-22-4S / 4M / -4C HLV3-22-NR-4 HLV3-22IR860	RD	SW	BL	GR	IR	RB-24-24-HK Quantity of light: 0.7x, Power consumption: 25 W*1	RB-16.4-48-HK Quantity of light: 2.4x, Peak current: 2.9 A

*1 Power consumption is the total value of the applicable light and power adapter. **Note:** The quantity of light may decrease depending on the combination. Contact our local sales office for details.

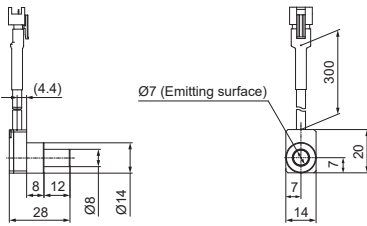
LED Properties



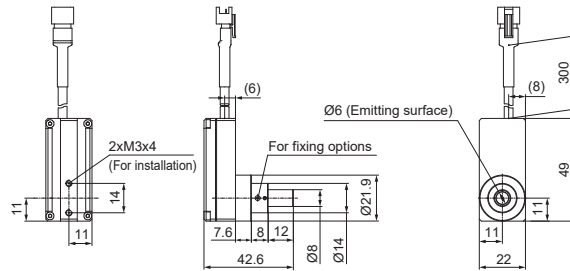
Be sure to read the "Instruction Guide" included with the product before use and follow the safety precautions upon use.
 The data included is for reference only. Actual values may vary. See P.369 for details about lens filters.

Dimensions (mm)

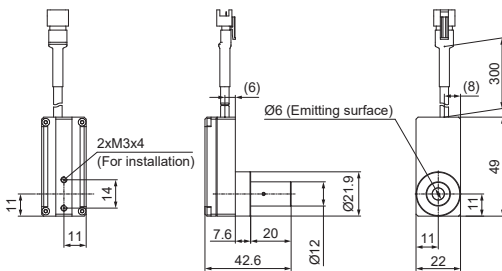
Compact Model HLV3-14 (-HU)



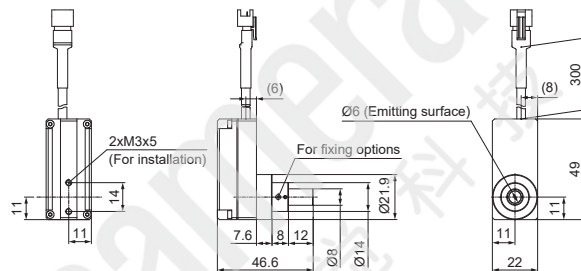
Standard Model HLV3-22-1 / -2



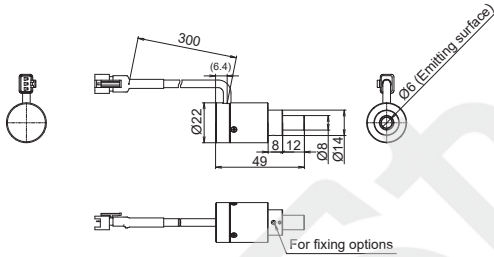
Ø12-mm Light Emitting Tip HLV3-22-2-1220



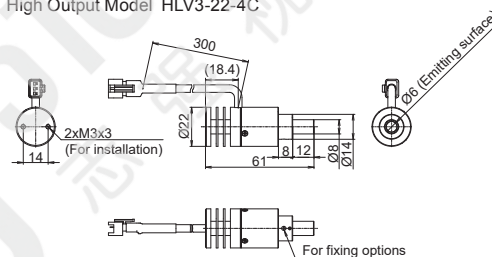
High Output Model HLV3-22-4S/4M
Infrared Model HLV3-22IR860



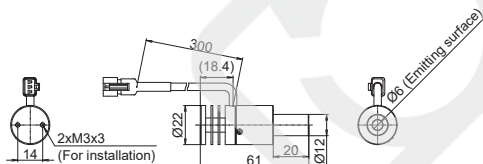
Standard Model HLV3-22-1C



Standard Model HLV3-22-2C
High Output Model HLV3-22-4C



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



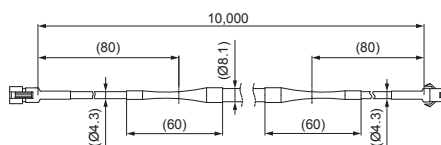
Optional Cables (Sold Separately)

Extension cables	Straight 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

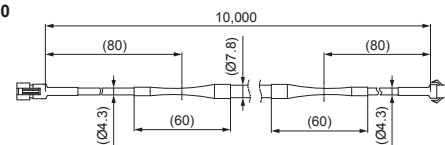
(Unit: mm)



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

FRCB-HLV3-10
Robot Cable

(Unit: mm)



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

Notes
<ul style="list-style-type: none"> 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.

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/>

LDR2 LDR2-LA LDR-LA1 SQR SQR-TP	Direct Lighting
HLDR3	Convergent Lighting
HPR2 LFR LKR FPR FPQ3	Diffused Lighting
LDL2 LDLB HLDL3 HLDL2	Direct Lighting / Convergent Lighting
TH2 (5 types) LFL HPD2 LDM2 LAV PDM LFXV LFX3 LFX3-PT LFX3 LFX3-G	Diffused Lighting
MSU MFU	Colimated Lighting
PF	Stroke Lighting
HLDR-IP HSL-PCL	Water-proof
Small COB Lights	COB Lights
UV3/VL3 UV2 UV LNSP-UV3-FN LNSP-UV-FN	UV / Violet Lighting
(Under 1000-nm Type) IR (Over 1000-nm Type) CIR	Infrared Lighting
IU	Intensity Control
HLV3 LV LSP HFS/HFR HLV3-22-4-NR HLV3-3M-RGB-4 PFBR-600 PFBR-150 PFB3	Spot Lighting, Etc.
LNLP LNSP2 Coaxial Units LNFP-FN LN/LN-HK	Convergent Lighting
LNSD LND2 LT LNV LFXV (Rectangular Type) TH2 (Rectangular Type)	Diffused Lighting
LNDG LNIS2 LNIS LNIS-FN	Oblique Angled Lighting
Telecentric Lens Lenses Macro Lens	

HLV3 Series



Refer to our website for product details.

Introduction to Condenser Lenses

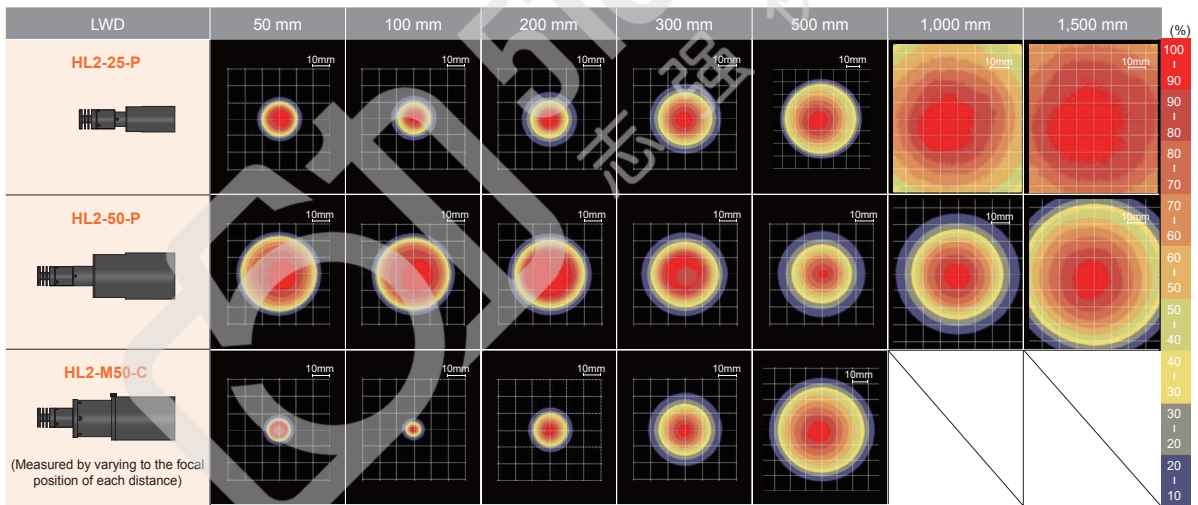
Even in an imaging environment where there is a long distance from the workpiece, illumination suitable for the imaging conditions can be achieved by selecting a condenser lens according to the illumination distance, range and uniform area.

Recommended models for installation | HL3-22 model *Excludes HL3-22-2(C)-1220 and HL3-22-NR



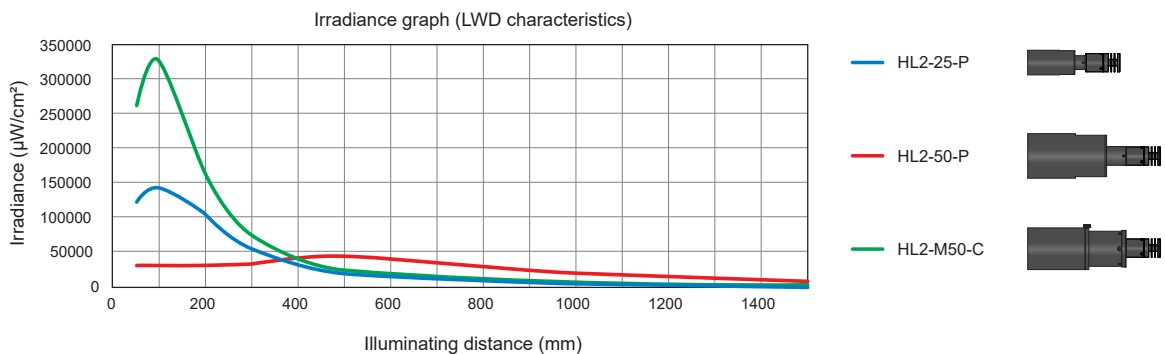
Measured when HL3-22SW-4C (white) is mounted on the lens. Comparison using our measurement conditions. The data included is for reference only and the results for individual products may vary.

Illuminance Distributions (LWD Characteristics)



Measured values are in steps of 10%, where the maximum illuminance within the range is expressed as 100%, using our measurement conditions. Measured when HL3-22SW-4S (white) is mounted on the lens. Results for individual products may vary.

Data: Irradiance Comparison Graph



Measurement when HL3-22SW-4C (white) is mounted on the lens. Measured values using our measurement conditions. Results for individual products may vary.

Various technical documents available.

- [PDF Drawings](#)
- [DXF Drawings](#)
- [Product Brochures](#)
- [Instruction Guides](#)
- [3D CAD](#)
- [Data Sheets](#)
- [Imaging Examples](#)
- [Digital Catalogs](#)

[Register to use them.](#)

Condenser Lens (HL Series)

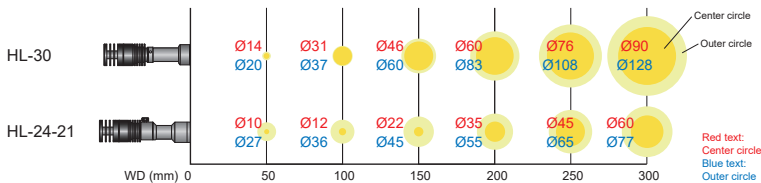
Dedicated condenser lens for HLV3-22 (L-shaped/cylindrical)

HL-30/HL-24-21



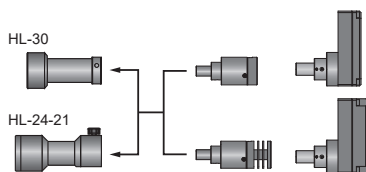
Cannot be used with HLV3-14/HLV3-22-2-1220/HLV3-22-2C-1220/HLV3-22-4-NR Series.

HL-30/HL-24-21 illumination range



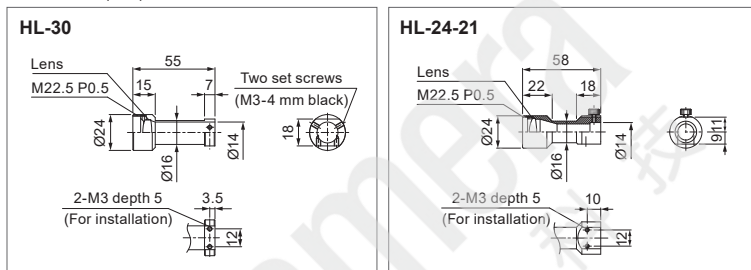
When connected with HL2-22-3W. Data listed here represents actual measurement values. Not a guaranteed value.

Mounting to HLV3-22

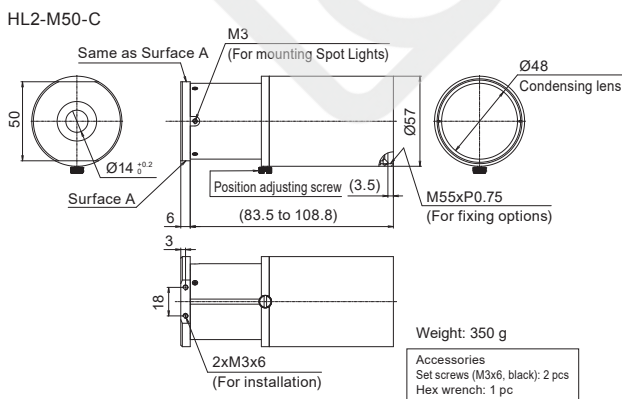
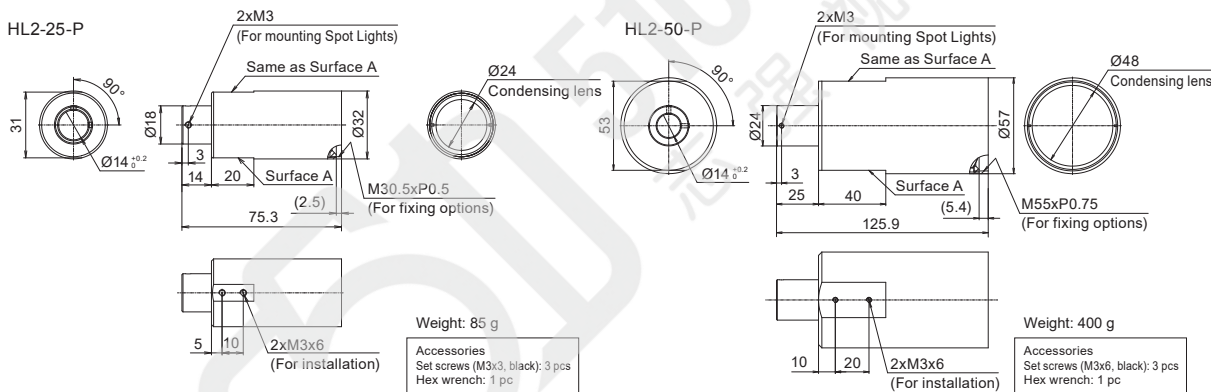


Compatible models
HLV3-22-1/1C/2/2C/4M/4S/4C Series

Dimensions (mm)

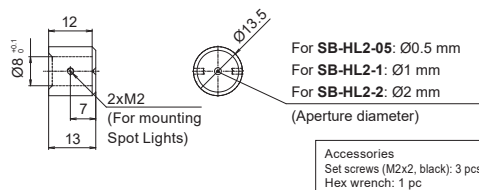


Condenser Lens Dimensions (mm)

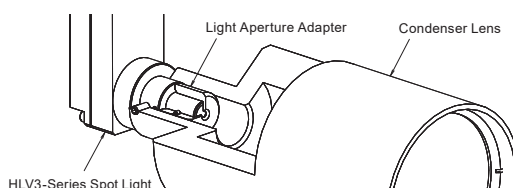


Light aperture adapter (sold separately)

Attach the light aperture adapter to the HLV3-Series 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.



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: PL-255-NL (with a screw to lock the polarizing direction)
- For HL-30/-24-21
Model: PL-22-NL (with screw lock) * This is a custom-order product. Contact our sales representative for details.

LDR2 LDR2-LA LDR-LA1 SQR SQR-TP	Direct Lighting
HLDR3	Convergent Lighting
HPR2 LFR LKR FPR FPQ3	Diffused Lighting
LDL2 LDLB HLDL3 HLDL2	Direct Lighting / Convergent Lighting
TH2 (5 types) LFL HPD2 LDM2 LAV PDM LFXV LFX3 LFX3-PT LFX3 LFX3-G	Diffused Lighting
MSU MFU	Colimated Lighting
PF	Stroke Lighting
HLDR-IP HSL-PCL	Water-proof
Small COB Lights	COB Lights
UV3/VL3 UV2 UV LNSP-UV3-FN LNSP-UV-FN	UV / Violet Lighting
(Under 1000-nm Type) (Over 1000-nm Type)	IR / Infrared Lighting
IU	Intensity Control
HLV3 LV LSP HFS/HFR HLV3-22-4-NR HLV3-3M-RGB-4 PFBR-600 PFBR-150 PFB3	Spot Lighting, Etc.
LNLPL LNSP2 Coaxial Units LNFP-FN LN/LN-HK	Convergent Lighting
LNSD LND2 LT LNV LFXV (Rectangular Type) TH2 (Rectangular Type)	Diffused Lighting
LNDG LNIS2 LNIS LNIS-FN	Oblique Angled Lighting
Telecentric Lens Macro Lens	Lenses

You can inquire using our website.

- Sample Testing
- Light Unit Selection
- Free Product Trial
- Custom Orders
- Product Details
- Pricing/Quotation
- Discontinued Products

Inquire on our website here.
<https://www.ccs-grp.com/contact/>