

Provides high output and uniformity spot lighting using an original optical design



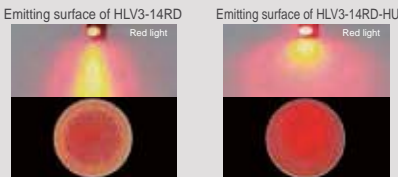
Applications

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

HLV3-14(-HU), with a lightweight and compact design

- Both standard and high-uniformity types are available

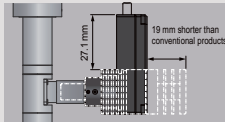


Comparison using our measurement conditions and the results for individual products may vary.

HLV3-22-1/-2, a standard model

- Housing has been redesigned and optimized from that of conventional products

Horizontal space saved by using an L-shaped housing.

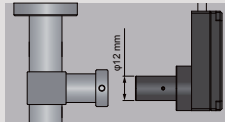


Mounting holes on rear of Spot Light enable flexible installation. (See the dimension diagrams.)

HLV3-22-2-1220, with a Ø12-mm light emitting tip

- Supports lenses with a 12-mm diameter socket for mounting Spot Light

Substitution from straight light guide also offers peace of mind.

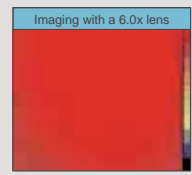


High Output Up to Double That of Conventional Products

HLV3-22-4S, a high output model

- Optimized for CCS's high-magnification telecentric lenses

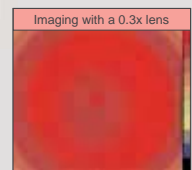
Spot Light (white)
HLV3-22SW-4S
+
Telecentric Lens
6x, WD: 65 mm
SE-65VT60-M



HLV3-22-4M, a high uniformity model

- Optimized for CCS's low-magnification telecentric lenses

Spot Light (white)
HLV3-22SW-4M
+
Telecentric Lens
0.3x, WD: 110 mm
SE-110VT03-5M



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

Custom Orders

Please contact your sales representative.

E.g.: Further reduced individual differences and higher brightness in light output

Customizable items

- External/internal diameter
- Wavelength/color
- Increase output
- Cable length
- Illuminating angle
- Format/material
- Connector format
- Installation/mounting
- Etc.

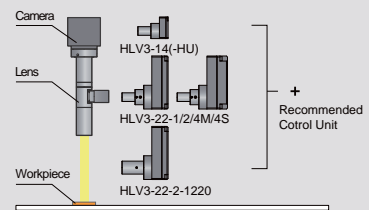
- Increase output
- Reduce individual differences



Example Configuration

Spot Light with high output and uniformity.

HLV3 series



HLV3 Series Comparison Table

| Model | Description | Input current (max.) | Brightness (index) | | | |
|------------|---|----------------------|--------------------|------------------|-------------------|------------------|
| | | | RD (red) | SW (white) | BL (blue) | GR (green) |
| HLV3-22-4S | High output model | 1,000 mA | 1.6 _x | 1.9 _x | 2.0 _x | 1.6 _x |
| HLV3-22-4M | High uniformity model | 1,000 mA | 1.0 _x | 1.3 _x | 1.2 _x | 1.0 _x |
| HLV3-22-2 | Standard model | 700 mA | 1.1 _x | 1.5 _x | 1.5 _x | 1.2 _x |
| HLV3-22-1 | Standard model | 385 mA | 0.6 _x | 0.9 _x | 0.9 _x | 0.8 _x |
| HLV3-14 | Compact model with condensed light | 275 mA | 1.0 _x | 0.8 _x | 1.3 _x | 1.1 _x |
| HLV3-14-HU | Compact model with diffused light | 275 mA | <0.1 _x | 0.1 _x | <0.1 _x | 0.1 _x |
| HLV2-22-3W | Brightest model in HLV2 series (Reference data) | 700 mA | 1.0 | 1.0 | 1.0 | 1.0 |

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

Reduced Individual Differences

(Excluding HLV3-14, HLV3-14-HU, and HLV3-22IR860)

The newly designed HLV3-series Spot Light allows for brightness adjustment to the standard value.

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

Optimum Spot Lights for lens magnifications.

High uniformity types are available for low magnification lenses and high output types are available 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.

List of the recommended combination of telecentric lens and HLV3 series

| Telecentric lens | Magnification | 0.3 | 0.5 | 0.8 | 1.0 | 1.5 | 2.0 | 3.0 | 4.0 | 6.0 |
|------------------|---------------|-------------------|------------------|------------------|---|------------------|------------------|------------------|------------------|-----------------|
| | WD | | | | | | | | | |
| 65 mm | 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 | |
| HLV3 series | | HLV3-22-4M | | | HLV3-22-1, HLV3-22-2, HLV3-22-4S, HLV3-14, and HLV3-14-HU | | | | | |

Recommendation based on the test results using our measurement conditions.

CCS high-resolution telecentric lenses SE-65-M/SE-110-M series

▶ P.243

WD 65 mm type SE-65-M Series

WD 110 mm type SE-110-M Series



- Direct Lighting
 - LDR2
 - LDR2-LA
 - LDR-LA1
 - SQR
 - SQR-TP
- Diffused Lighting
 - HPR2
 - LFR
 - LKR
 - FPR
 - FPQ2
- Direct Lighting
 - LDL2
 - LDLB
 - HLDL2
 - HL
- Diffused Lighting
 - TH2 (5 types)
 - TH
 - LFL
 - HPD2
 - LDM2
 - LAV
 - PDM
 - LFX3
 - LFX3-PT
 - LFV3
- Coaxial Lighting
 - MSU
 - MFU
- Strobe Lighting
 - PF
- Water-proof
 - HLDR-IP/
 - HSL-PCL
- Ultraviolet Lighting
 - UV2
 - UV
 - LNSP-UV-FN
- Infrared Lighting
 - IR2
- Intensity Control Lighting
 - IU
- Spot Lighting, Etc.
 - HLV3
 - HLV2
 - LV
 - LSP
 - HFS/HFR
 - HLV3-NR
 - HLV3-3M-RGB-4
 - HLV2-NR
 - HLV2-3M-RGB-3W
 - PFBR
 - PFB3
 - PFB2
- Convergent Lighting
 - LNL
 - LNSP2
 - LNSP
 - Coaxial Units
 - LNSP-FN
 - LN/LN-HK
- Diffused Lighting
 - LNSD
 - LND2
 - HLND
 - LT
 - LNV
- Oblique-Angled Lighting
 - LNDG
 - LNS2
 - LNIS
 - LNIS-FN
- Lenses
 - Telecentric Lens
 - Macro Lens

HLV3 series



Lineup

| Model name | LED color | Peak wavelength/ correlated color temperature (typ.) | Input current (max.) | Power consumption (max.) | Options | Extension cables | Recommended Control Units | Weight (max.) |
|----------------------------|-----------|--|-------------------------|--------------------------------|----------------|--|------------------------------|------------------|
| HLV3-14RD | Red | 635 nm | 275 mA | 0.7 W | - | | | 18 g |
| HLV3-14SW | White | 5,000 K | | 0.9 W | | | | |
| HLV3-14BL | Blue | 465 nm | | 0.9 W | | | | |
| HLV3-14GR | Green | 525 nm | | 1.1 W | | | | |
| HLV3-14RD-HU | Red | 635 nm | | 0.7 W | | | | |
| HLV3-14SW-HU | White | 4,900 K | | 0.9 W | | | | |
| HLV3-14BL-HU | Blue | 465 nm | | 0.9 W | | | | |
| HLV3-14GR-HU | Green | 525 nm | | 1.1 W | | | | |
| HLV3-22RD-1 | Red | 630 nm | | 385 mA | | | | |
| HLV3-22SW-1 | White | 5,600 K | 1.4 W | | | | | |
| HLV3-22BL-1 | Blue | 465 nm | 1.5 W | | | | | |
| HLV3-22GR-1 | Green | 520 nm | 1.5 W | | | | | |
| HLV3-22RD-2 | Red | 630 nm | 700 mA | 2.1 W | - | | | 47 g |
| HLV3-22SW-2 | White | 5,600 K | | 2.5 W | | | | |
| HLV3-22BL-2 | Blue | 465 nm | | 2.7 W | | | | |
| HLV3-22GR-2 | Green | 520 nm | | 2.8 W | | | | |
| HLV3-22RD-2-1220 | Red | 630 nm | 700 mA | 2.1 W | - | | | 47 g |
| HLV3-22SW-2-1220 | White | 5,600 K | | 2.5 W | | | | |
| HLV3-22BL-2-1220 | Blue | 465 nm | | 2.7 W | | | | |
| HLV3-22GR-2-1220 | Green | 520 nm | | 2.8 W | | | | |
| HLV3-22RD-4M ^{*3} | Red | 630 nm | 1000 mA | 3.2 W | Condenser lens | FCB ^{*2} Straight Cable | PJ2 ^{*3} | 53 g |
| HLV3-22SW-4M ^{*3} | White | 5,600 K | | 3.7 W | | | | |
| HLV3-22BL-4M ^{*3} | Blue | 465 nm | | 4.0 W | | | | |
| HLV3-22GR-4M ^{*3} | Green | 520 nm | | 4.1 W | | | | |
| HLV3-22RD-4S ^{*3} | Red | 630 nm | | 3.2 W | | | | |
| HLV3-22SW-4S ^{*3} | White | 5,600 K | | 3.7 W | | | | |
| HLV3-22BL-4S ^{*3} | Blue | 465 nm | | 4.0 W | | | | |
| HLV3-22GR-4S ^{*3} | Green | 520 nm | | 4.1 W | | | | |
| HLV3-22IR860 ^{*3} | Infrared | 860 nm | | 4.1 W | | | | |

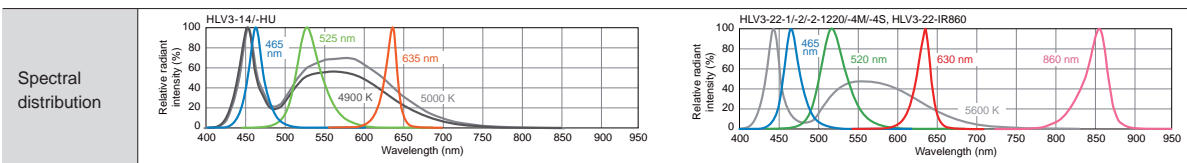
Extension Cables ▶ P.308

Control Unit Selection Guide ▶ P.251

List of Control Unit Specifications ▶ P.253

*1 The PD3-3024-3 and PD3-5024-3 series are not applicable to these products.
 *2 The cables with a model name that ends with "-ME7", "-EL2", "-PF", or "-PF-EL9" are not included.
 *3 The PJ2-series Control Units are scheduled to be released soon.

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.

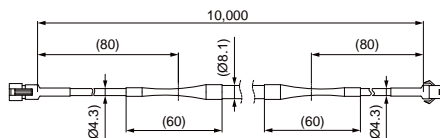
Optional Cables (Sold Separately)

| Extension cables | Straight cables | | Robot cables | | Notes |
|------------------|---|--|--|--|-------|
| | FCB-1/-2/-3/-5 (1 m / 2 m / 3 m / 5 m) | | FCRB-1/-2/-3/-5 (1 m / 2 m / 3 m / 5 m) | | |
| | FCB-HLV3-10 (10 m) * | | FCRB-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

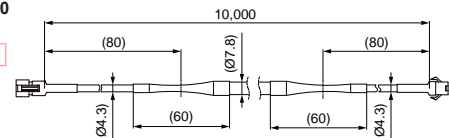
Coming Soon
(Unit: mm)



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

FCRB-HLV3-10 Robot Cable

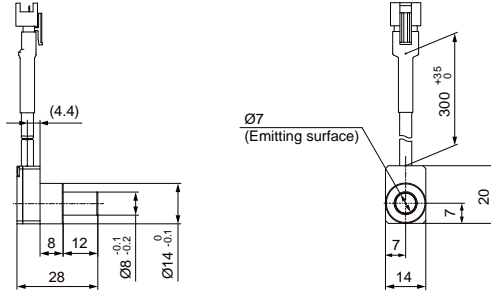
Coming Soon
(Unit: mm)



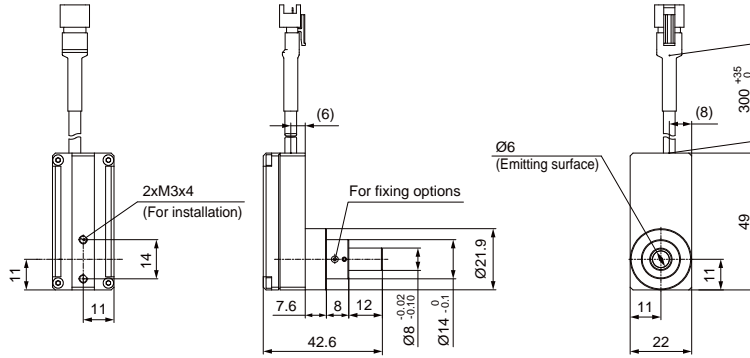
Weight: 1,200 g max., Cable permitted bending radius: 35 mm

Dimensions (mm)

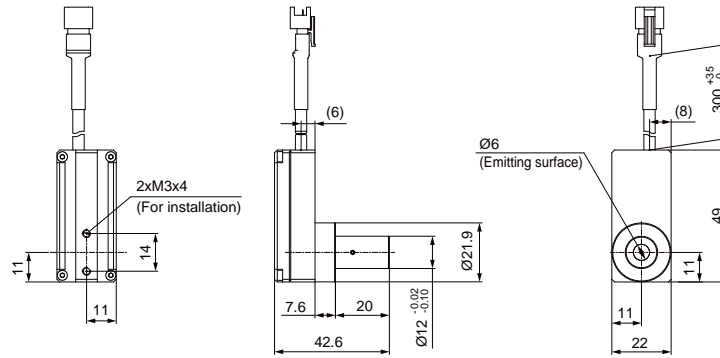
HLV3-14RD/SW/BL/GR
HLV3-14RD-HU/SW-HU/BL-HU/GR-HU



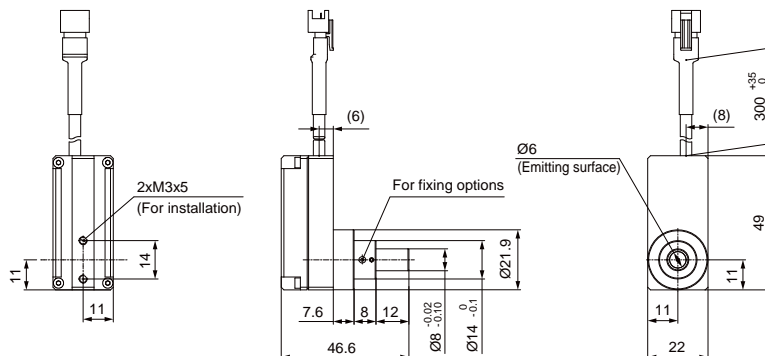
HLV3-22RD-1/SW-1/BL-1/GR-1
HLV3-22RD-2/SW-2/BL-2/GR-2



HLV3-22RD-2-1220/SW-2-1220/BL-2-1220/GR-2-1220



HLV3-22RD-4M/SW-4M/BL-4M/GR-4M
HLV3-22RD-4S/SW-4S/BL-4S/GR-4S
HLV3-221R860



| | |
|----------------------|---|
| Direct Lighting | LDR2 LDR2-LA LDR-LA1 SQR SQR-TP |
| Diffused Lighting | HPR2 LFR LKR FPR FPQ2 |
| Direct Lighting | LDL2 LDLB HLDL2 HL |
| Diffused Lighting | TH2 (5 types) TH LFL HPD2 LDM2 LAV PDM LFX3 LFX3-PT LFV3 |
| Coaxial Lighting | MSU MFU |
| Strobe Lighting | PF |
| Water-proof Lighting | HLDR-IP/ HSL-PCL |
| Ultraviolet Lighting | UV2 UV LNSP-UV-FN |
| Intensified Lighting | IR2 |
| Control Lighting | IU |

| | |
|---------------------|---|
| Spot Lighting, Etc. | HLV3 HLV2 LV LSP HFS/HFR HLV3-NR HLV3-3M-RGB-4 HLV2-NR HLV2-3M-RGB-3W PFBR PFB3 PFB2 |
|---------------------|---|

| | |
|-------------------------|---|
| Convergent Lighting | LNLP LNSP2 LNSP Coaxial Units LNSP-FN LN/LN-HK |
| Diffused Lighting | LNSD LND2 HLND LT LNV |
| Oblique/Angled Lighting | LNDG LNIS2 LNIS LNIS-FN |
| Lenses | Telecentric Lens Macro Lens |

HLV3 series



Introduction to Condenser Lenses

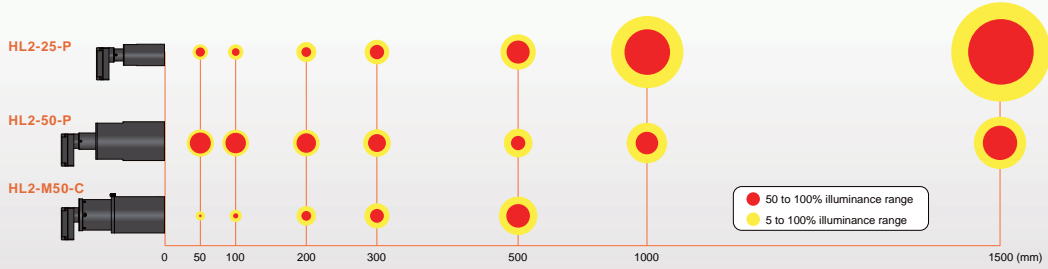
Select lenses according to illuminating distance, illuminating range, and uniform region to achieve optimum illumination, even in imaging environments in which the workpiece is far away.

Installable on HLV3-22-1, HLV3-22-2, HLV3-22-4M, HLV3-22-4S, and HLV3-22-IR860



Condenser lens for spot illumination with high parallelism.

Condenser lens with adjustable illuminating distance and range by variable barrel length.



Measured when HLV3-22SW-4S (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)

HL2-25-P + HLV3-22SW-4S

(Unit of length used for the diameter of illuminated range: mm)

| LWD | 50 mm | 100 mm | 200 mm | 300 mm | 500 mm | 1,000 mm | 1,500 mm |
|------------------------|-------|--------|--------|--------|--------|----------|----------|
| 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 + HLV3-22SW-4S

(Unit of length used for the diameter of illuminated range: mm)

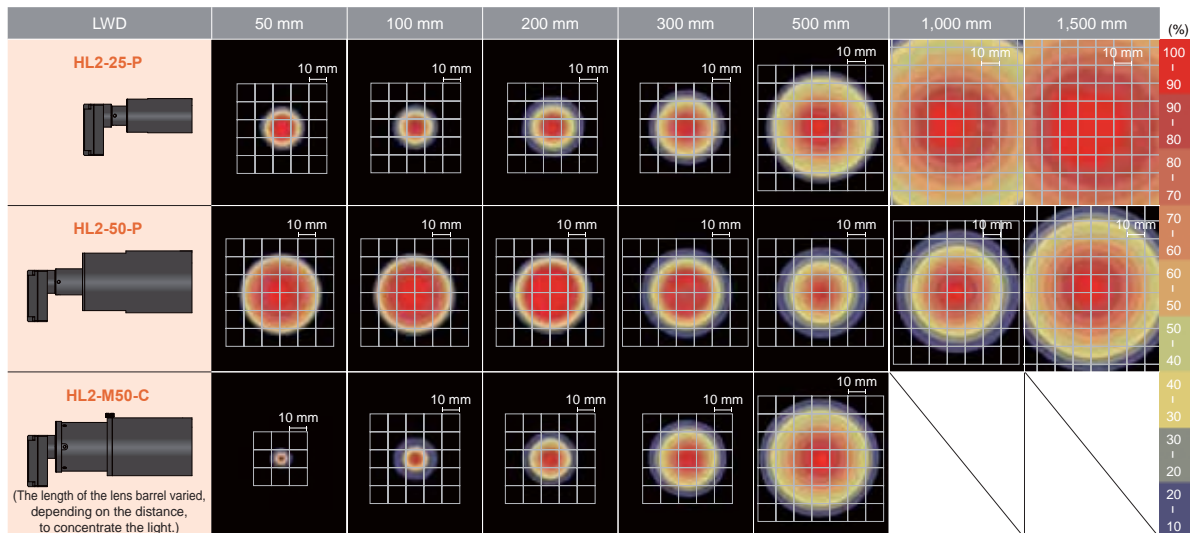
| LWD | 50 mm | 100 mm | 200 mm | 300 mm | 500 mm | 1,000 mm | 1,500 mm |
|------------------------|-------|--------|--------|--------|--------|----------|----------|
| 50 to 100% illuminance | Ø41 | Ø40 | Ø38 | Ø35 | Ø28 | Ø44 | Ø67 |
| 5 to 100% illuminance | Ø53 | Ø52 | Ø52 | Ø54 | Ø56 | Ø79 | Ø102 |

HL2-M50-C + HLV3-22SW-4S

(Unit of length used for the diameter of illuminated range: mm)

| LWD | 50 mm | 100 mm | 200 mm | 300 mm | 500 mm | 1,000 mm | 1,500 mm |
|------------------------|-------|--------|--------|--------|--------|----------|----------|
| 50 to 100% illuminance | Ø5 | Ø10 | Ø19 | Ø27 | Ø46 | - | - |
| 5 to 100% illuminance | Ø18 | Ø24 | Ø38 | Ø49 | Ø75 | - | - |

Measured values, where the maximum illuminance within the range is expressed as 100%, using our measurement conditions. Results for individual products may vary.

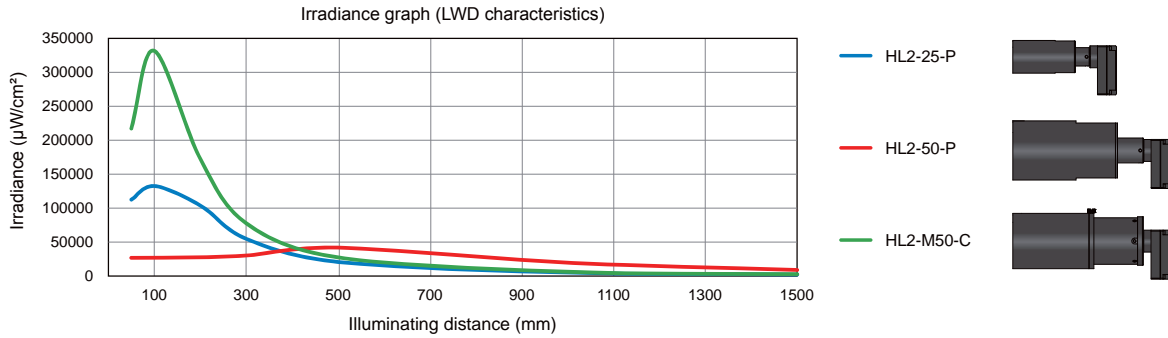


Measured values are in steps of 10%, where the maximum illuminance within the range is expressed as 100%, using our measurement conditions. Measured when HLV3-22SW-4S (white) is mounted on the lens. Results for individual products may vary.

Various technical documents available.

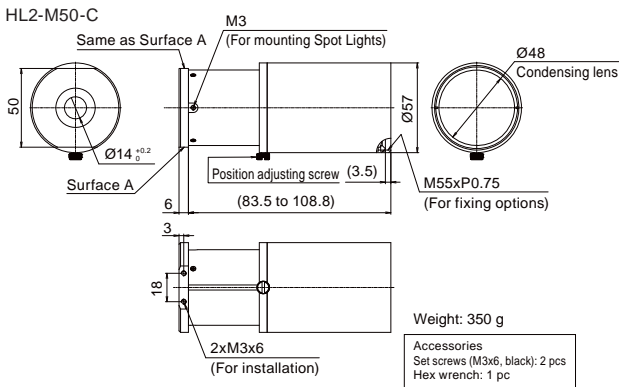
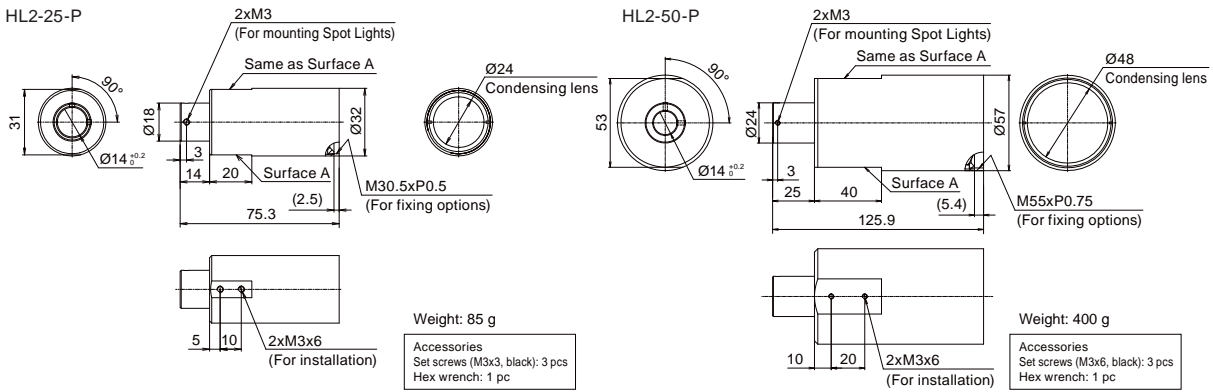
- PDF Drawings
- DXF Drawings
- Product Brochures
- Instruction Guides
- 3D CAD
- Data Sheets
- Imaging Examples
- Digital Catalogs

➤ Data: Irradiance Comparison Graph



Measurement when HLV3-22SW-4S (white) is mounted on the lens. Measured values using our measurement conditions. Results for individual products may vary.

➤ Condenser Lens Dimensions (mm)



● Polarizing filter (sold separately)

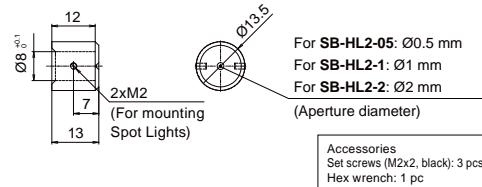
Many sizes available for condenser lens. Use in combination with another one installed on the camera lens.

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

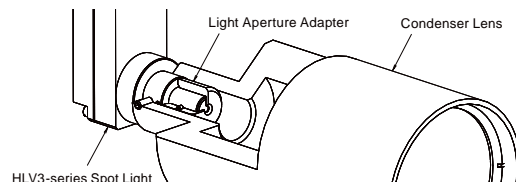
● Light aperture adapter (sold separately)

Attach the light aperture adapter to the HLV3-series Spot Light to change the directivity of emitted light.

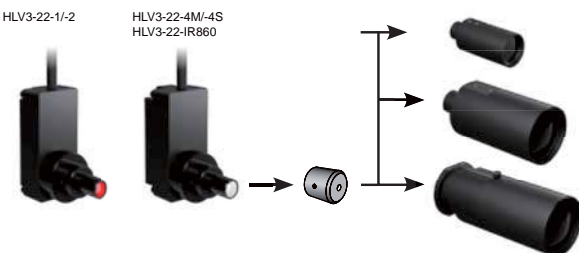
When used with a condenser lens, the light aperture adapter enables fine adjustment of light to the illuminating distance and range.



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



Installable on



| | |
|----------------------------|---|
| Direct Lighting | LDR2 LDR2-LA LDR-LA1 SQR SQR-TP |
| Diffused Lighting | HPR2 LFR LKR FPR FPQ2 |
| Direct Lighting | LDL2 LDLB HLDL2 HL |
| Diffused Lighting | TH2 (5 types) TH LFL HPD2 LDM2 LAV PDM LFX3 LFX3-PT LFV3 |
| Collimated Lighting | MSU MFU |
| Strobe Lighting | PF |
| Water-proof Lighting | HLDR-IP/ HSL-PCL |
| Ultraviolet Lighting | UV2 UV LNSP-UV-FN |
| Intensity Control Lighting | IR2 IU |
| Spot Lighting, Etc. | HLV3 HLV2 LV LSP HFS/HFR HLV3-NR HLV3-3M-RGB-4 HLV2-NR HLV2-3M-RGB-3W PFBR PFB3 PFB2 |
| Convergent Lighting | LNLP LNSP2 LNSP Coaxial Units LNSP-FN LN/LN-HK |
| Diffused Lighting | LNSD LND2 HLND LT LNV |
| Oblique-Angled Lighting | LNDG LNIS2 LNIS LNIS-FN |
| Lenses | Telecentric Lens Macro Lens |