

High-output LED Flood Lights

HLDL2 Series

Ideal for large-scale workpieces.



Flood Lights That Are Perfect for Large-scale Workpieces

HLDL2 Series



The irradiation shown here is an illustration only.

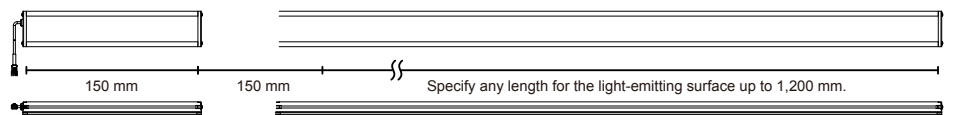


High Output Makes Long-distance Illumination Possible.



Select the Optimum Size

Available in any length up to 1,200 mm in 150-mm increments.



The design uses multiple LED boards connected together. You can therefore specify lengths in increments of 150 mm. With sizes ranging from a minimum of 150 mm to a maximum of 1,200 mm, these Flood Lights are suitable for a wide range of applications.



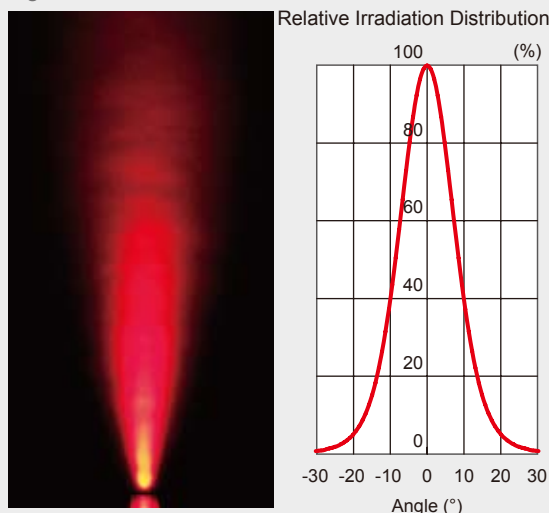
Selectable Directional Characteristics

Two models are available with different directional characteristics: a Narrow Model, which enables long-distance illumination, and a Wide Model, which provides diffuse illumination over a wide area.

Narrow Models



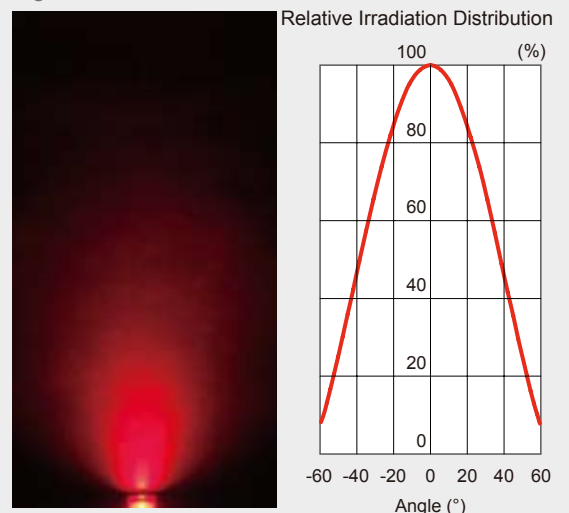
Light Distribution Characteristics



Wide Models



Light Distribution Characteristics

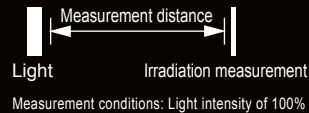


*The graphs provided here are for reference only. Results for individual Lights may vary.

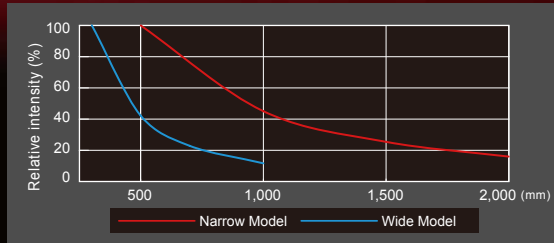
1,000 mm

2,000 mm

**Illuminate Objects
Up to 2,000 mm Away**



Irradiation Comparison Graph by Type (Red Lights)



Narrow Model: HLDL2-450x45RD-DF-N
Wide Model: HLDL2-450x45RD-DF-W



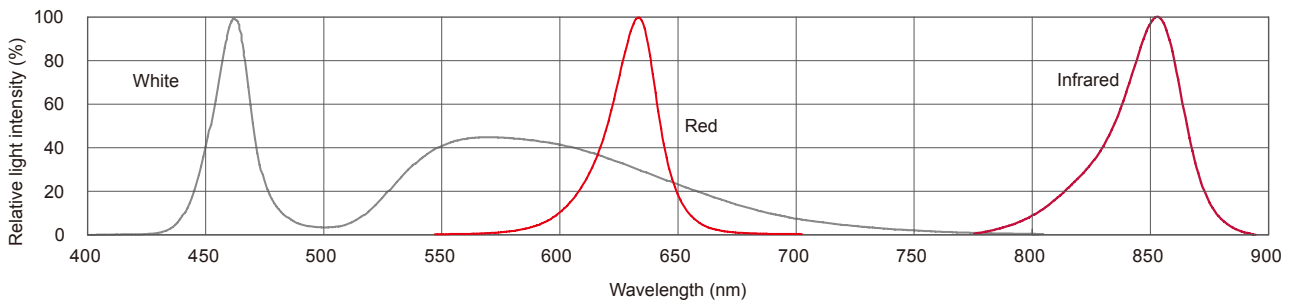
Lineup Includes LED Colors of Red, White, and Infrared

A wide range of colors, from visible light to infrared, is available to meet different inspection needs.

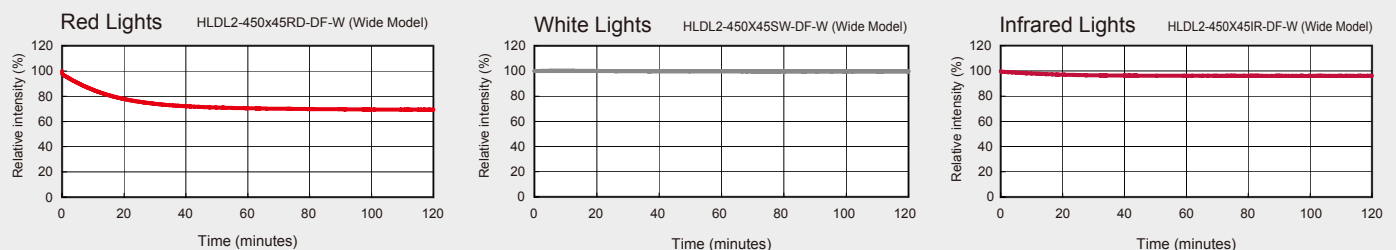


Lights are available in any of eight light-emitting surface lengths, two directional characteristics, and three LED colors.

Spectral Distribution



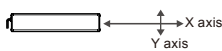
Temporal Changes in Irradiation Output



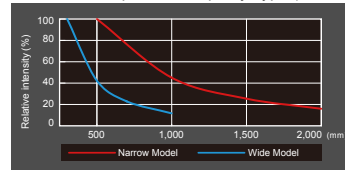
*The graphs provided here are for reference only. Results for individual Lights may vary.

Irradiation Comparison Data

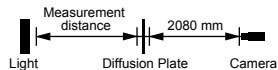
*Narrow Model: LDL2-450X45RD-DF-N
Wide Model: HLDL2-450X45RD-DF-W



Irradiation Comparison Graph by Type (Red Lights)

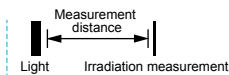
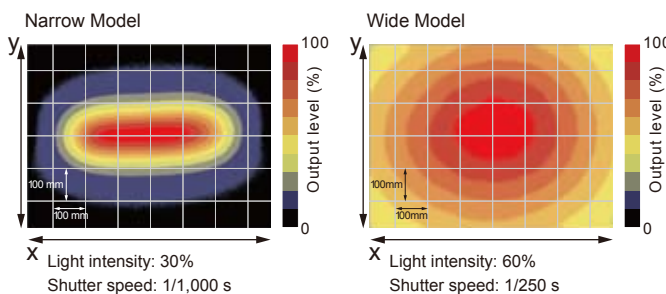


Measurement distance
Light Irradiation measurement
Measurement conditions: Light intensity of 100%
Narrow Model: HLDL2-450x45RD-DF-N
Wide Model: HLDL2-450x45RD-DF-W

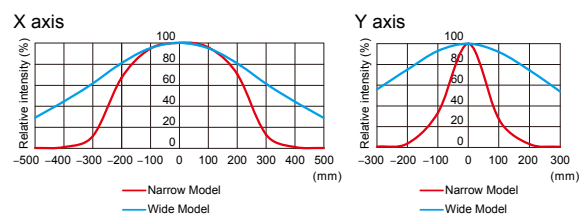


Irradiation Distribution Graphs and Relative Intensity Graphs for Irradiation Distance of 500 mm

Irradiance Distribution Graphs



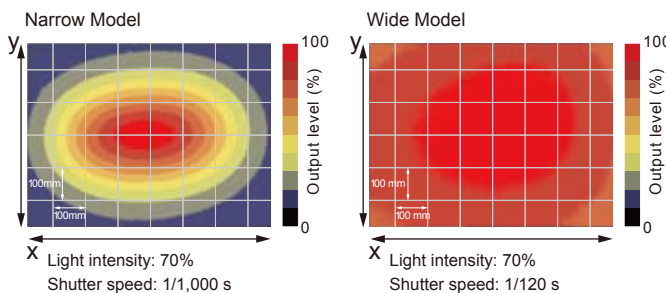
Relative Intensity Graphs



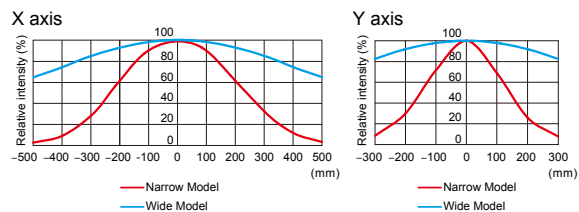
500 mm

Irradiation Distribution Graphs and Relative Intensity Graphs for Irradiation Distance of 1,000 mm

Irradiance Distribution Graphs



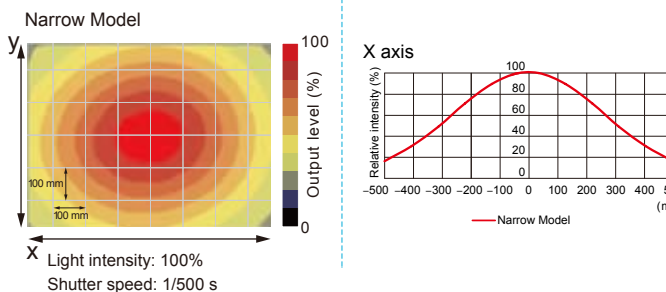
Relative Intensity Graphs



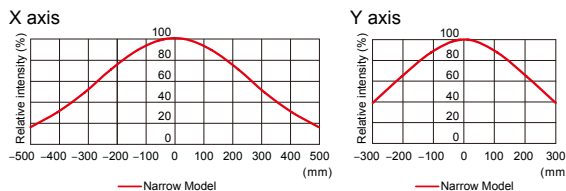
1,000 mm

Irradiation Distribution Graphs and Relative Intensity Graphs for Irradiation Distance of 2,000 mm

Irradiance Distribution Graphs



Relative Intensity Graphs



2,000 mm

*Measurement conditions for irradiation distribution graphs: Constant lighting, f16 lens, 2,080-mm WD, 750 × 750-mm field of vision.

*Measurement Conditions for relative strength graphs: 100% light intensity, constant lighting.

*Brightness will depend on the camera's spectral response. *The graphs provided here are for reference only. Results for individual Lights may vary.

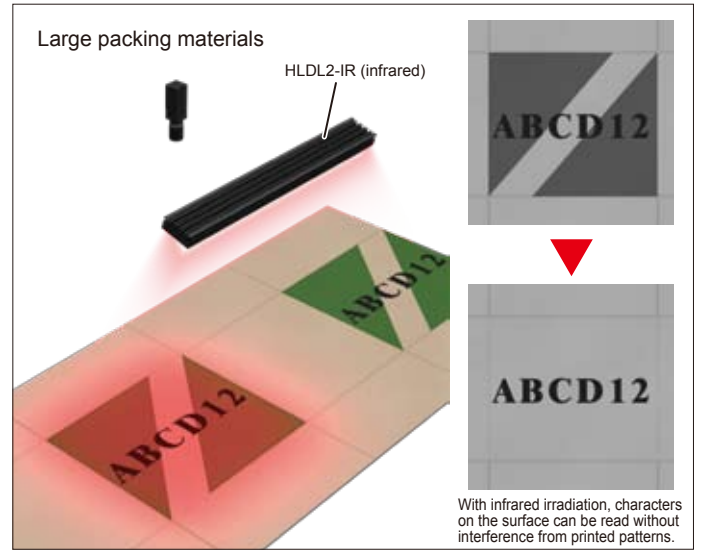
Application Examples

Perfect for Large-scale Applications That Are Currently Using Fluorescent Lights.

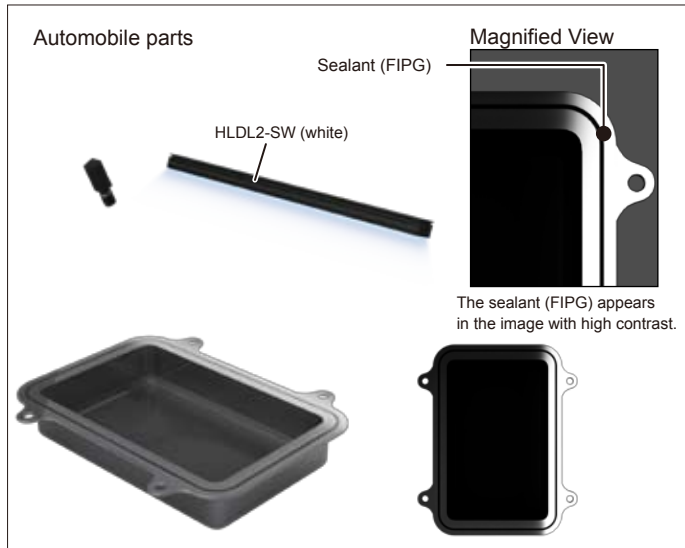
Picking Operations with Robots



Character Recognition on Cardboard



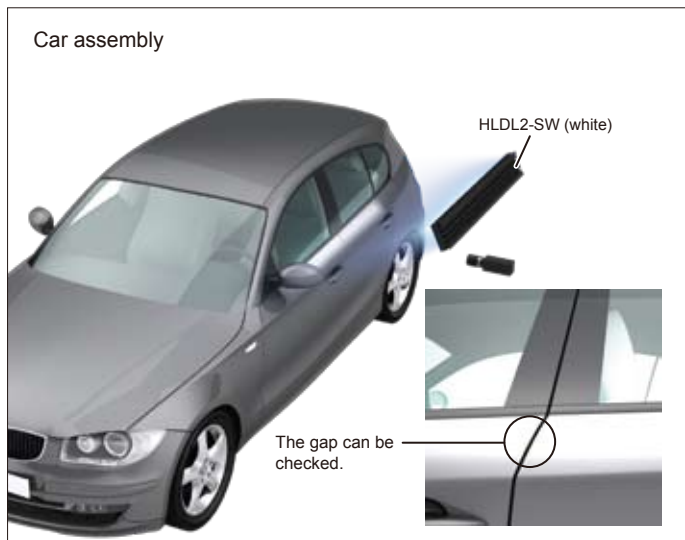
Inspections for Presence of Sealant (FIGP) Coating



Hole Position Inspections



Inspection of Door Assembly Gaps



Reading Car Model Numbers



Lineup

With the HLDL2 Series, the Control Units that can be used depend on the model of the Light. Select the model that is best for your application using the following table for reference.

Red Lights

*To extend the cable for Lights with light-emitting lengths of 150 to 450 mm, use a 24-V Extension Cable with an SM Connector. Refer to the CCS website or the Expansion Cable Catalog for information on Extension Cables.
*To extend the cable for Lights with light-emitting lengths of 600 to 1,200 mm, use a 24-V Extension Cable with an EL Connector. Refer to the back cover of this brochure for information on Extension Cables.

	Direct Number	Model Name	Power Consumption (max.)	Emitting Surface (L × W)	Cable Connector	Applicable Control Units	
						Analog Control Units	Digital Control Units
Narrow Models	1005676	HLDL2-150x45RD-DF-N	14 W	150x45 mm	SM connector	PSB-3024 Series Stepless intensity control.	PD3/PD2/BB Series PWM control of intensity to 256 levels, external control.
	1005677	HLDL2-300x45RD-DF-N	28 W	300x45 mm		---	PD3/PD2/BB Series PWM control of intensity to 256 levels, external control.
	1005678	HLDL2-450x45RD-DF-N	42 W	450x45 mm		---	PD3/PD2 Series PWM control of intensity to 256 levels, external control.
	1005679	HLDL2-600x45RD-DF-N	56 W	600x45 mm	EL connector	PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005680	HLDL2-750x45RD-DF-N	70 W	750x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005681	HLDL2-900x45RD-DF-N	84 W	900x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005682	HLDL2-1050x45RD-DF-N	98 W	1050x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	---
	1005683	HLDL2-1200x45RD-DF-N	111 W	1200x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	---
Wide Models	1005700	HLDL2-150x45RD-DF-W	14 W	150x45 mm	SM connector	PSB-3024 Series Stepless intensity control.	PD3/PD2/BB Series PWM control of intensity to 256 levels, external control.
	1005701	HLDL2-300x45RD-DF-W	28 W	300x45 mm		---	PD3/PD2/BB Series PWM control of intensity to 256 levels, external control.
	1005702	HLDL2-450x45RD-DF-W	42 W	450x45 mm		---	PD3/PD2 Series PWM control of intensity to 256 levels, external control.
	1005703	HLDL2-600x45RD-DF-W	56 W	600x45 mm	EL connector	PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005704	HLDL2-750x45RD-DF-W	70 W	750x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005705	HLDL2-900x45RD-DF-W	84 W	900x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005706	HLDL2-1050x45RD-DF-W	98 W	1050x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	---
	1005707	HLDL2-1200x45RD-DF-W	111 W	1200x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	---

*The Lights that can be connected depend on the model of the Control Unit. Confirm the output power before using a Control Unit.
*Refer to the product information page on the CCS website or the Control Unit Catalog for information on Control Units.

White Lights

*To extend the cable for Lights with light-emitting lengths of 150 to 450 mm, use a 24-V Extension Cable with an SM Connector. Refer to the CCS website or the Expansion Cable Catalog for information on Extension Cables.
*To extend the cable for Lights with light-emitting lengths of 600 to 1,200 mm, use a 24-V Extension Cable with an EL Connector. Refer to the back cover of this brochure for information on Extension Cables.

	Direct Number	Model Name	Power Consumption (max.)	Emitting Surface (L × W)	Cable Connector	Applicable Control Units	
						Analog Control Units	Digital Control Units
Narrow Models	1005668	HLDL2-150x45SW-DF-N	16 W	150x45 mm	SM connector	PSB-3024 Series Stepless intensity control.	PD3/PD2/BB Series PWM control of intensity to 256 levels, external control.
	1005669	HLDL2-300x45SW-DF-N	31 W	300x45 mm		---	PD3/PD2 Series PWM control of intensity to 256 levels, external control.
	1005670	HLDL2-450x45SW-DF-N	46 W	450x45 mm		---	PD3/PD2 Series PWM control of intensity to 256 levels, external control.
	1005671	HLDL2-600x45SW-DF-N	61 W	600x45 mm	EL connector	PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005672	HLDL2-750x45SW-DF-N	76 W	750x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005673	HLDL2-900x45SW-DF-N	91 W	900x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005674	HLDL2-1050x45SW-DF-N	106 W	1050x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	---
	1005675	HLDL2-1200x45SW-DF-N	121 W	1200x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	---
Wide Models	1005692	HLDL2-150x45SW-DF-W	16 W	150x45 mm	SM connector	PSB-3024 Series Stepless intensity control.	PD3/PD2/BB Series PWM control of intensity to 256 levels, external control.
	1005693	HLDL2-300x45SW-DF-W	31 W	300x45 mm		---	PD3/PD2 Series PWM control of intensity to 256 levels, external control.
	1005694	HLDL2-450x45SW-DF-W	46 W	450x45 mm		---	PD3/PD2 Series PWM control of intensity to 256 levels, external control.
	1005695	HLDL2-600x45SW-DF-W	61 W	600x45 mm	EL connector	PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005696	HLDL2-750x45SW-DF-W	76 W	750x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005697	HLDL2-900x45SW-DF-W	91 W	900x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005698	HLDL2-1050x45SW-DF-W	106 W	1050x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	---
	1005699	HLDL2-1200x45SW-DF-W	121 W	1200x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	---

*The Lights that can be connected depend on the model of the Control Unit. Confirm the output power before using a Control Unit.
*Refer to the product information page on the CCS website or the Control Unit Catalog for information on Control Units.

*Product Number Guide: You can easily access the information page for any of our products by entering the item's 7-digit product number in the designated box on the CCS website (image processing page).

Infrared Lights

*To extend the cable for Lights with light-emitting lengths of 150 to 450 mm, use a 24-V Extension Cable with an SM Connector. Refer to the CCS website or the Expansion Cable Catalog for information on Extension Cables.
 *To extend the cable for Lights with light-emitting lengths of 600 to 1,200 mm, use a 24-V Extension Cable with an EL Connector. Refer to the back cover of this brochure for information on Extension Cables.

	Direct Number	Model Name	Power Consumption (max.)	Emitting Surface (L × W)	Cable Connector	Applicable Control Units	
						Applicable Control Units	Digital Control Units
Narrow Models	1005684	HLDL2-150x45IR-DF-N	12 W	150x45 mm	SM connector	PSB-3024 Series Stepless intensity control.	PD3/PD2/BB Series PWM control of intensity to 256 levels, external control.
	1005685	HLDL2-300x45IR-DF-N	24 W	300x45 mm		---	PD3/PD2/BB Series PWM control of intensity to 256 levels, external control.
	1005686	HLDL2-450x45IR-DF-N	36 W	450x45 mm		---	PD3/PD2 Series PWM control of intensity to 256 levels, external control.
	1005687	HLDL2-600x45IR-DF-N	48 W	600x45 mm	EL connector	PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005688	HLDL2-750x45IR-DF-N	60 W	750x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005689	HLDL2-900x45IR-DF-N	72 W	900x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005690	HLDL2-1050x45IR-DF-N	84 W	1050x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005691	HLDL2-1200x45IR-DF-N	96 W	1200x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	---
Wide Models	1005708	HLDL2-150x45IR-DF-W	12 W	150x45 mm	SM connector	PSB-3024 Series Stepless intensity control.	PD3/PD2/BB Series PWM control of intensity to 256 levels, external control.
	1005709	HLDL2-300x45IR-DF-W	24 W	300x45 mm		---	PD3/PD2/BB Series PWM control of intensity to 256 levels, external control.
	1005710	HLDL2-450x45IR-DF-W	36 W	450x45 mm		---	PD3/PD2 Series PWM control of intensity to 256 levels, external control.
	1005711	HLDL2-600x45IR-DF-W	48 W	600x45 mm	EL connector	PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005712	HLDL2-750x45IR-DF-W	60 W	750x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005713	HLDL2-900x45IR-DF-W	72 W	900x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005714	HLDL2-1050x45IR-DF-W	84 W	1050x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	PD3-10024-8 Series PWM control of intensity to 256 levels, external control.
	1005715	HLDL2-1200x45IR-DF-W	96 W	1200x45 mm		PSB3-30024 Variable voltage control of intensity to 256 levels, external control.	---

*The Lights that can be connected depend on the model of the Control Unit. Confirm the output power before using a Control Unit.
 *Refer to the product information page on the CCS website or the Control Unit Catalog for information on Control Units.

Common Specifications

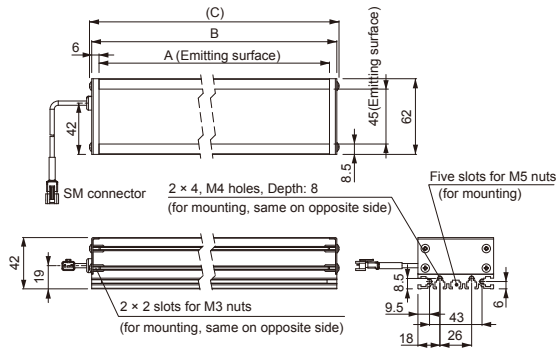
Illumination type	Narrow Models			Wide Models		
	Model Name	HLDL2-△△△x45RD-DF-N	HLDL2-△△△x45SW-DF-N	HLDL2-△△△x45IR-DF-N	HLDL2-△△△x45RD-DF-W	HLDL2-△△△x45SW-DF-W
△△△	"△△△" is the light-emitting surface length between 150 and 1,200 mm in 150-mm increments.					
LED color	Red	White	Infrared	Red	White	Infrared
Input voltage (max.)	24 VDC					
Peak wavelength (typ.)	640 nm	---	860 nm	640 nm	---	860 nm
Correlated color temperature (typ.)	---	5,600 K	---	---	5,600 K	---
Cable length	0.3 m					
Connector	Light-emitting surface length of 150 to 450 mm: SM Connector (SMR-03V-B), Light-emitting surface length of 600 to 1,200 mm: EL Connector (ELP-02V)					
Polarity and signals	SM Connector (1: Anode (+), 2: NC, 3: Cathode (-)), EL Connector (1: Anode (+), 2: Cathode (-))					
Cooling method	Natural air cooling					
Operating temperature and humidity	Temperature: 0 to 40°C, Humidity: 20% to 85%RH (With no condensation)					
Storage temperature and humidity	Temperature: -20 to 60°C, Humidity: 20% to 85%RH (with no condensation)					
Case material	Aluminum base with black alumite surface					
Spectral distribution	<p>The graph plots Relative light intensity (%) on the y-axis (0 to 100) against Wavelength (nm) on the x-axis (400 to 900). Three curves are shown: 'White' (peaking at ~450 nm), 'Red' (peaking at ~640 nm), and 'Infrared' (peaking at ~860 nm). The White curve has a secondary broad peak around 550-600 nm. The Red and Infrared curves are narrow and sharp peaks.</p>					

*Direct Numbers: You can easily access the information page for any of our products by entering the product's 7-digit direct number in the designated box on the CCS website (image processing page).

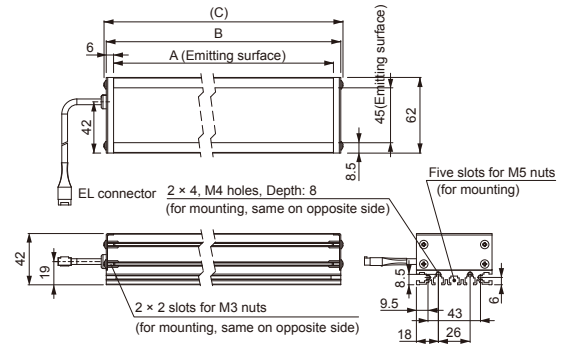
Dimension Diagrams (Unit: mm)

Narrow Models

Light-emitting Surface: 150 to 450 mm

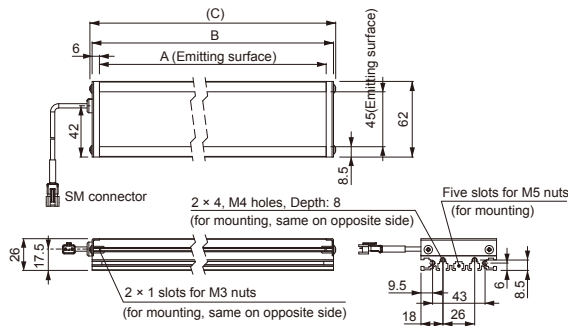


Light-emitting Surface: 600 to 1,200 mm

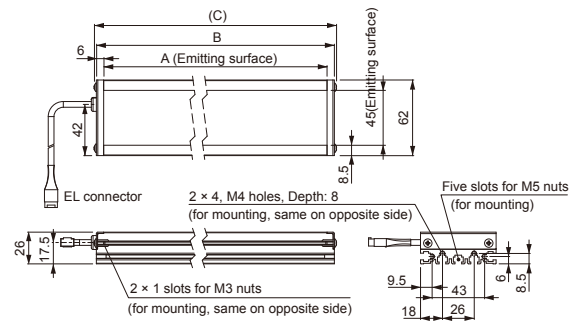


Wide Models

Light-emitting Surface: 150 to 450 mm



Light-emitting Surface: 600 to 1,200 mm



*These Flood Lights cannot be used with Strobe Light Control Units (PTU2-3024, BB-V24S30-M, and BB-V24S30-S). PD3-series Control Units can be used for Strobe Mode and ON/OFF Mode, and Constant Lighting Control Units (PD2 Series, BB-V24P30-M, BB-V24P30-S, etc.) can be used for ON/OFF light control.

*The peak emitted light wavelength of the Red Lights is 640 nm. For a Sharp-cut Filter, use the optional R60 Sharp-cut Filter.

Model-specific Dimensions

Model Name for Narrow Model	Dimension A (Emitting Surface)	Dimension B	Dimension C	Weight	Model Name for Narrow Model	Dimension A (Emitting Surface)	Dimension B	Dimension C	Weight
HLDL2-150x45RD-DF-N / SW-DF-N / IR-DF-N	150 mm	162 mm	165.6 mm	390 g	HLDL2-150x45RD-DF-W / SW-DF-W / IR-DF-W	150 mm	162 mm	165.6 mm	300 g
HLDL2-300x45RD-DF-N / SW-DF-N / IR-DF-N	300 mm	312 mm	315.6 mm	770 g	HLDL2-300x45RD-DF-W / SW-DF-W / IR-DF-W	300 mm	312 mm	315.6 mm	590 g
HLDL2-450x45RD-DF-N / SW-DF-N / IR-DF-N	450 mm	462 mm	465.6 mm	1,160 g	HLDL2-450x45RD-DF-W / SW-DF-W / IR-DF-W	450 mm	462 mm	465.6 mm	880 g
HLDL2-600x45RD-DF-N / SW-DF-N / IR-DF-N	600 mm	612 mm	615.6 mm	1,540 g	HLDL2-600x45RD-DF-W / SW-DF-W / IR-DF-W	600 mm	612 mm	615.6 mm	1,170 g
HLDL2-750x45RD-DF-N / SW-DF-N / IR-DF-N	750 mm	762 mm	765.6 mm	1,930 g	HLDL2-750x45RD-DF-W / SW-DF-W / IR-DF-W	750 mm	762 mm	765.6 mm	1,460 g
HLDL2-900x45RD-DF-N / SW-DF-N / IR-DF-N	900 mm	912 mm	915.6 mm	2,310 g	HLDL2-900x45RD-DF-W / SW-DF-W / IR-DF-W	900 mm	912 mm	915.6 mm	1,750 g
HLDL2-1050x45RD-DF-N / SW-DF-N / IR-DF-N	1,050 mm	1,062 mm	1,065.6 mm	2,700 g	HLDL2-1050x45RD-DF-W / SW-DF-W / IR-DF-W	1,050 mm	1,062 mm	1,065.6 mm	2,040 g
HLDL2-1200x45RD-DF-N / SW-DF-N / IR-DF-N	1,200 mm	1,212 mm	1,215.6 mm	3,080 g	HLDL2-1200x45RD-DF-W / SW-DF-W / IR-DF-W	1,200 mm	1,212 mm	1,215.6 mm	2,330 g

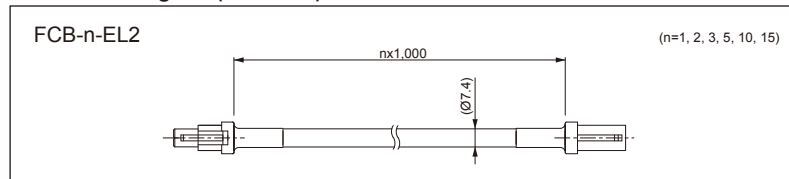
Cable Lengths for EL Connectors on Models with Light-emitting Surface of 600 to 1,200 mm

*To extend the cable for Lights with light-emitting lengths of 150 to 450 mm, use a 24-V Extension Cable with an SM Connector. Refer to the CCS website or the Expansion Cable General Catalog for information on Extension Cables.

Model-specific Dimensions

Direct Number	Model	Cable Length (m)
3000690	FCB-1-EL2	1 m
3000766	FCB-2-EL2	2 m
3000691	FCB-3-EL2	3 m
3000692	FCB-5-EL2	5 m
3000693	FCB-10-EL2	10 m
3000760	FCB-15-EL2	15 m

Dimension Diagram (Unit: mm)



●CCS and LIGHTING SOLUTION are all registered trademarks or trademarks of CCS, Inc.

Caution

- To ensure proper and safe use of the product, please read the Instruction Guide completely before using the product.
- For product improvement, specifications and designs are subject to change without notice.



Headquarters

Shimodachiuri-agaru, Karasuma-dori, Kamigyo-ku, Kyoto 602-8011 Japan

Phone: +81-75-415-8284 / Fax: +81-75-415-8278

URL: <http://www.ccs-grp.com> E-mail: intlsales@ccs-inc.co.jp