

# Light Units for Line Sensors LNLP Series



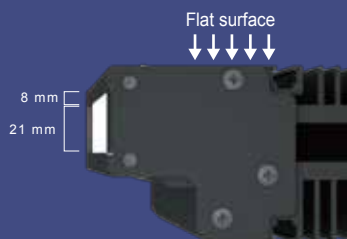
(Natural Air-cooling Type)

## An Illuminance of One Million lx Without Using Cooling Fans

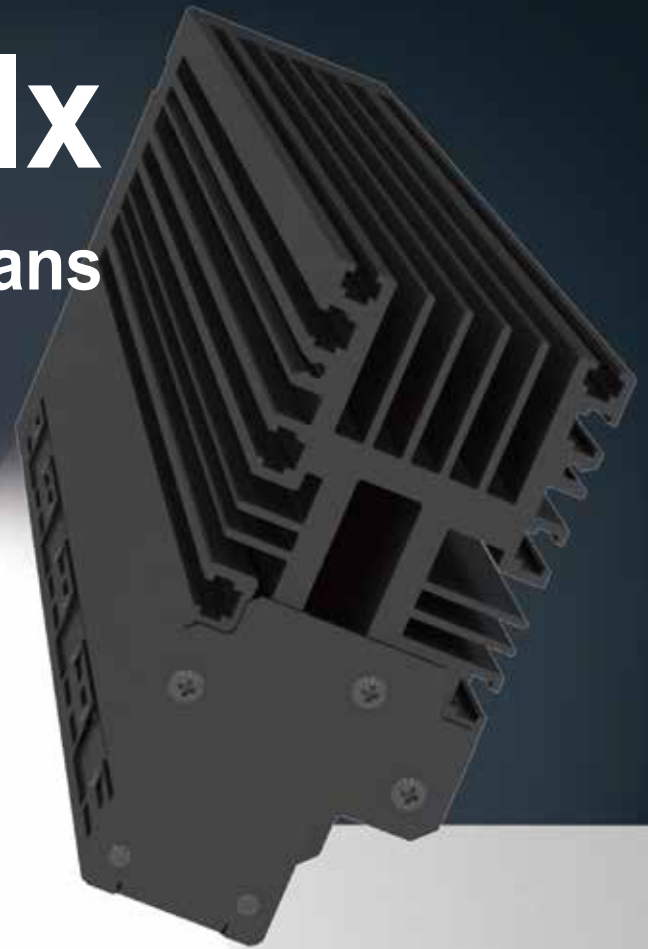
At the illuminating distance of 50 mm (Light Unit used: LNLP-400SW).

Fan-less design which is suitable for use in clean rooms

Optimum Light Unit shape  
for use at the inspection sites



- Can be installed close to the workpiece.
- Does not block the camera view.
- Low-angle illumination is possible.
- Semi-coaxial illumination can be performed with illumination from a high angle.



### Inspection Applications

- 1) Scratches on plate glass
- 2) Scratches and dents on sheet metal
- 3) Scratches and foreign substances on transparent film
- 4) Printing on paper
- 5) Appearance of plastic components

# One million (1,000,000) lx\* **Fan-less**

(Natural Air-cooling Type)

\* At the illuminating distance of 50 mm (Light Unit used: LNLP-400SW).

## Light Units for Line Sensors **LNLP Series**

**Fan-less**  
(Natural Air-cooling Type) **High-illuminance**

LED color **White**  
Emitting surface length **100 to 1,000 mm** (100-mm pitch)

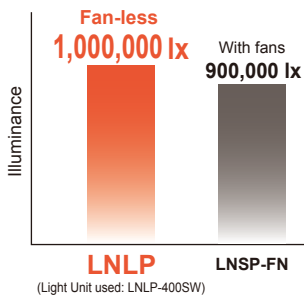
CCS accepts custom orders for the Light Units whose length is more than 1,000 mm. Please contact your CCS sales representative for details.



**1,000,000 lx** or more in illuminance

At the illuminating distance of 50 mm (Light Unit used: LNLP-400SW).

The LNLP Series is brighter than the fan-type unit, despite being fan-less. (Natural Air-cooling Type)



At the illuminating distance of 50 mm. This is a comparison using CCS products.

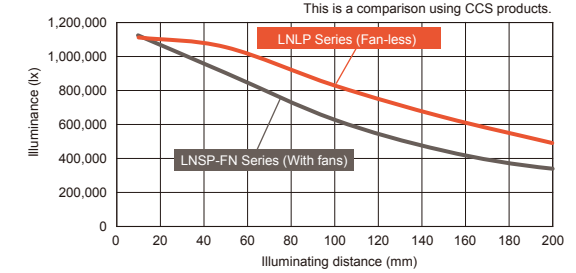
### LNLP Series



### Line Lights from CCS LNFP-FN Series



### Graph of the change in illuminance

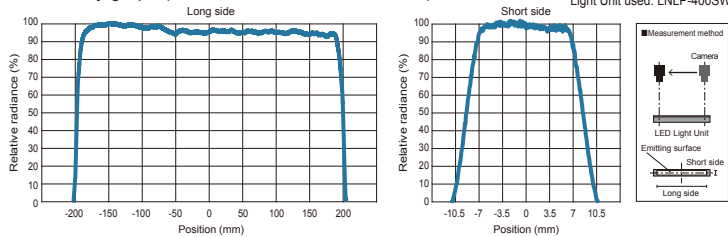


Actual measurement values at the center of the emitting surface, 100% intensity (Results for individual products may vary.)

## High-uniformity

Less variation in illuminance enables high uniformity in imaging.

### Uniformity graph (Distribution of relative radiance)



These graphs are for reference only. Actual values may vary.

### Error detection is supported!

Applicable Control Unit: Constant-current analog Control Unit PSCC Series



With key-lock function (PSCC-60048(A) only)



Adjust light intensity to 1,000 levels

Constant-current Analog Control Unit

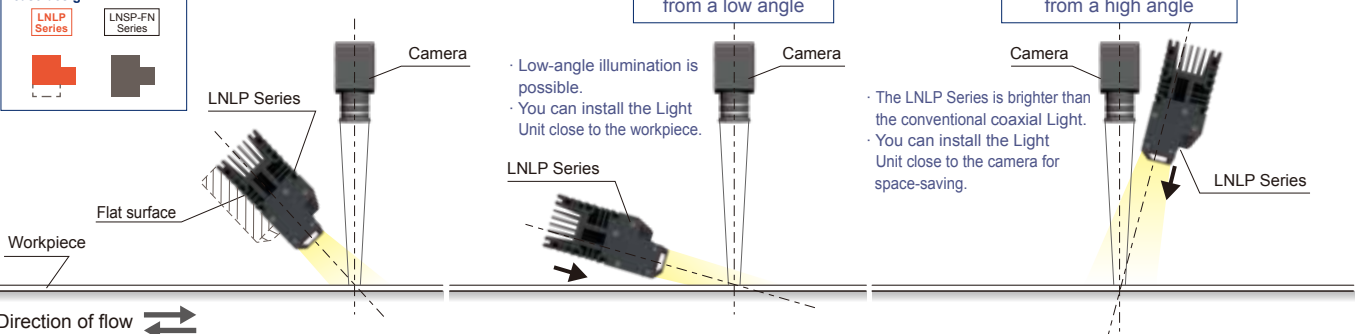
## Nice for use at the site of inspection

Well-designed Light Unit shape.

### Conceptual image of the case design



### Conceptual image of the illumination



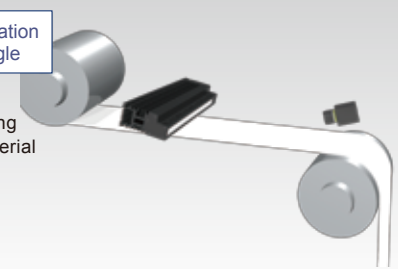
The above illustrations are of typical installation examples. Consider the application environment for actual applications.

# High-illuminance Line Lights

## Imaging Examples

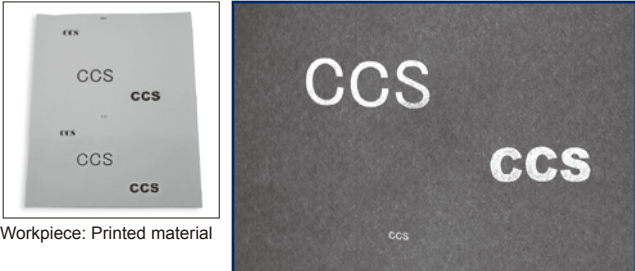
**Close-up illumination from a low angle**

Character imaging on a printed material



When you configure the system at a shallow angle to the horizontal plane, you can emphasize and take advantage of the marginal difference in reflectivity between the white paper and the ink.

Workpiece: Printed material

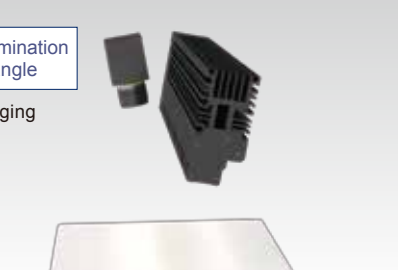


Direction of flow

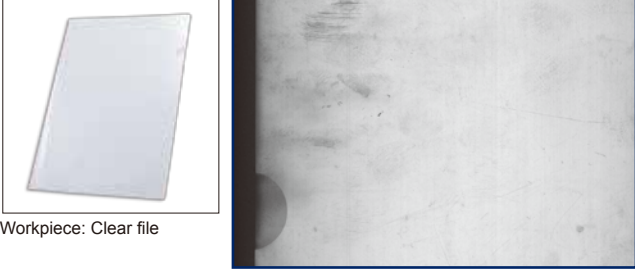
A white paper, which has a low reflectivity, can be imaged as black. Black characters (ink), which have a high reflectivity, can be imaged as white.

**Semi-coaxial illumination from a high angle**

Appearance imaging of a clear file



Workpiece: Clear file

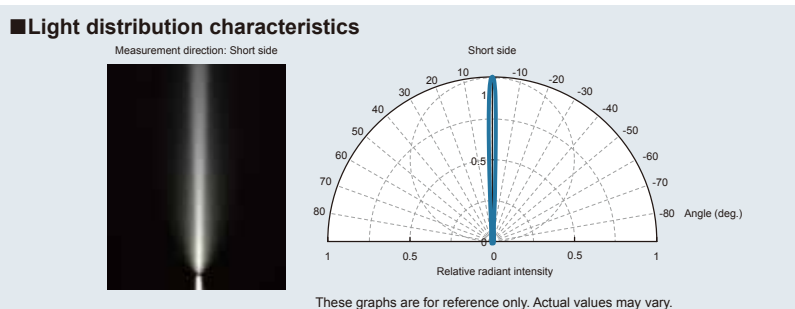
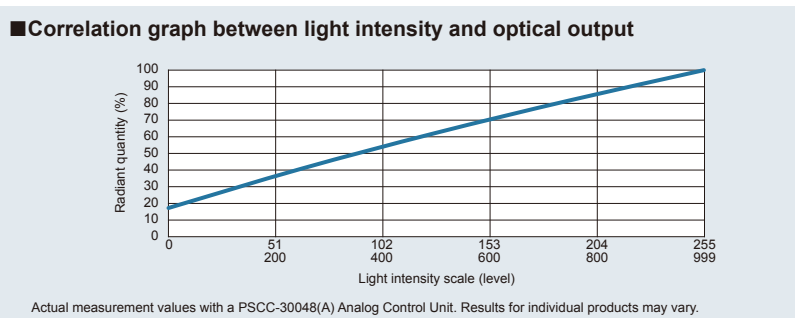
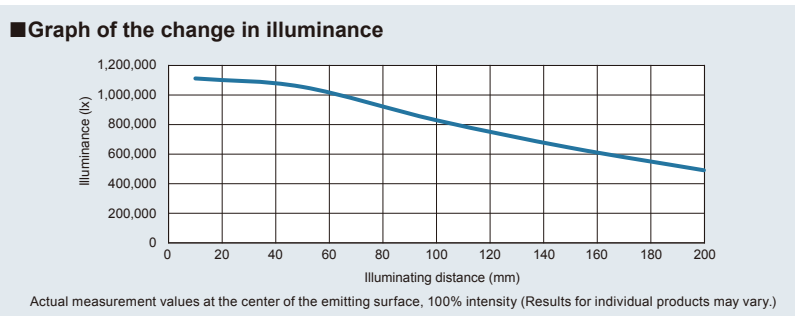
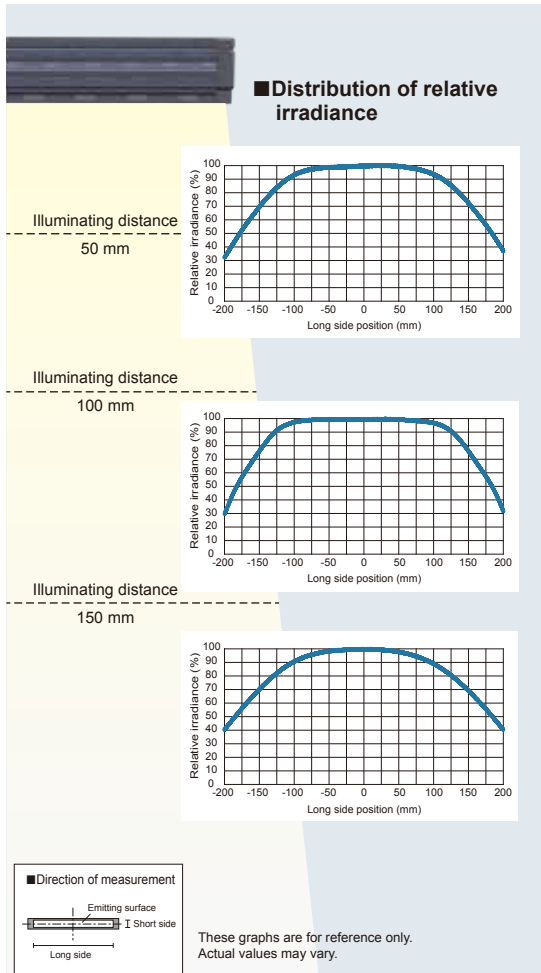


Direction of flow

It is possible to take advantage of surface reflection of a clear file; scratches and finger prints, which have a low reflectivity, can be imaged as black.

## Data

Light Unit used: LNL-400SW



## Specifications

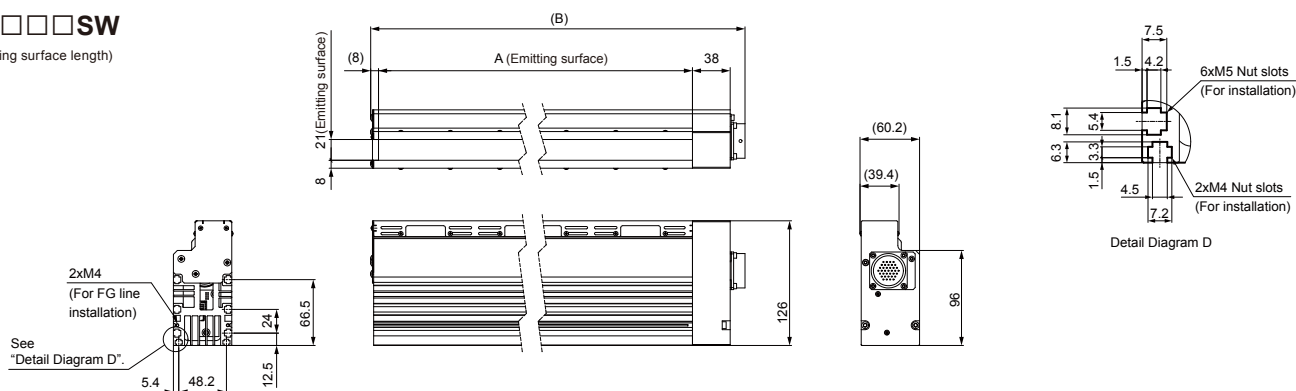
LED color	White (SW)	Cooling method	Natural air-cooling
Correlated color temperature	5,800 K (typ.)	Accessories	Instruction Guide, FG line (2 m) x1, M4 mounting screw x1
Case material	Aluminum alloy, Steel plate, Resin	Spectral distribution	
Connector	Metal connector (PRC04-21A26S-37M)		
Operating environment	0 to 40°C, Humidity: 20 to 85%RH (with no condensation)		
Storage environment	-20 to 60°C, Humidity: 20 to 85%RH (with no condensation)		
CE marking	Safety standard: Conforms to EN 62471, EMC standard: Conforms to EN61000-6-2, EN61000-6-4		
Environmental regulations	RoHS compliant		

The data above is for reference only. Results for individual products may vary.

## Dimensions (mm)

### LNLP-□□□SW

(□□□: Emitting surface length)



Model name	A: Emitting surface (mm)	B: Total length (mm)	Power consumption (W)	Weight (g) (max.)	Applicable Control Unit	Applicable cable	Model name	A: Emitting surface (mm)	B: Total length (mm)	Power consumption (W)	Weight (g) (max.)	Applicable Control Unit	Applicable cable		
LNLP-100SW	100	161	36	1,400	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">PSCC-30048(A)</div> <div style="border: 1px solid black; padding: 2px;">QCBM-DA</div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">QCBM-DA</div> <div style="border: 1px solid black; padding: 2px;">QCB-DA</div> </div>	LNLP-600SW	600	661	216	5,400	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">PSCC-30048(A)</div> <div style="border: 1px solid black; padding: 2px;">PSCC-60048(A)</div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">QCBM-DA</div> <div style="border: 1px solid black; padding: 2px;">QCB-DA</div> </div>		
LNLP-200SW	200	261	72	2,200			LNLP-700SW	700	761	252	6,200				
LNLP-300SW	300	361	108	3,000			<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">PSCC-60048(A)</div> <div style="border: 1px solid black; padding: 2px;">QCB-DA</div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">QCBM-DA</div> <div style="border: 1px solid black; padding: 2px;">QCB-DA</div> </div>	LNLP-800SW	800	861	288	7,000	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">PSCC-60048(A)</div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">QCBM-DA</div> <div style="border: 1px solid black; padding: 2px;">QCB-DA</div> </div>
LNLP-400SW	400	461	144	3,800					LNLP-900SW	900	961	324	7,800		
LNLP-500SW	500	561	180	4,600					LNLP-1000SW	1,000	1,061	360	8,600		

## Options

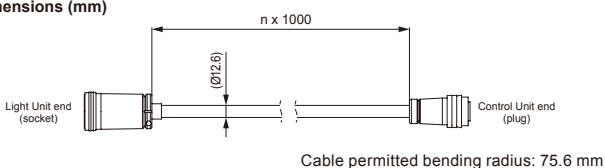
■ **Light Unit cables** These cables are used to connect the Light Unit and the Control Unit. You can choose the cable length that is suitable for your installation site.

These cable permitted bending radii are reference values. Actual values may vary.

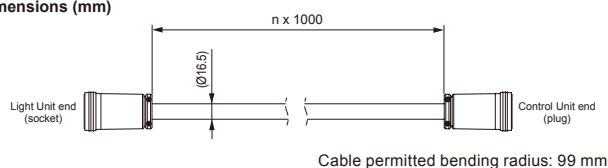
**QCBM-DA** Applicable Control Unit: PSCC-30048(A)

**QCB-DA** Applicable Control Unit: PSCC-60048(A)

### ● Dimensions (mm)



### ● Dimensions (mm)



Model name	QCBM-2-DA	QCBM-3-DA	QCBM-5-DA	QCBM-10-DA	QCBM-20-DA
Cable length	2 m	3 m	5 m	10 m	20 m
Weight	800 g	1,000 g	1,500 g	2,700 g	5,000 g

Model name	QCB-2-DA	QCB-3-DA	QCB-5-DA	QCB-10-DA	QCB-20-DA
Cable length	2 m	3 m	5 m	10 m	20 m
Weight	1,100 g	1,500 g	2,400 g	4,600 g	8,900 g

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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 pamphlet 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 pamphlet have been processed specifically for sample imaging. They are not intended to represent product quality and performance.

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