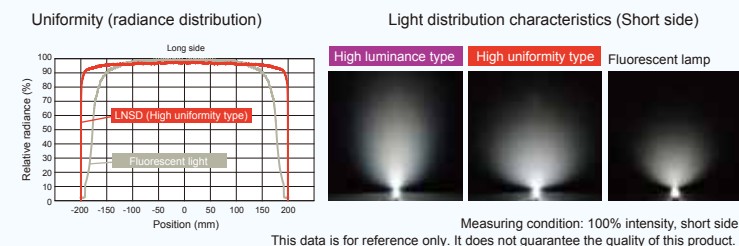


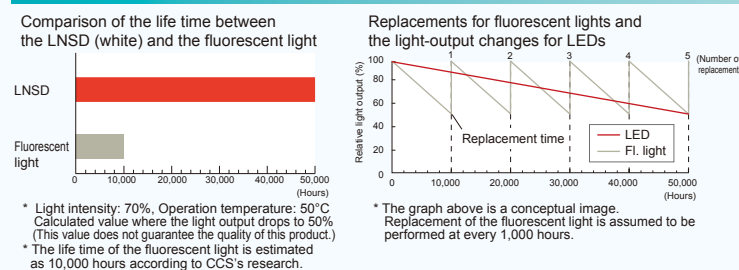
Try the LNSD! It's the quickest way.

Optimum for replacing your fluorescent lights!!

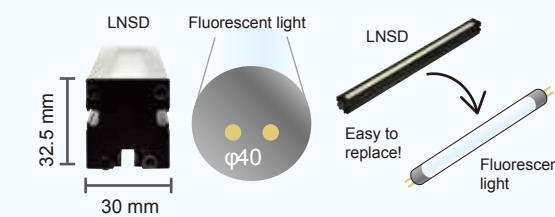
1 It has excellent brightness and the same uniformity as a fluorescent light.



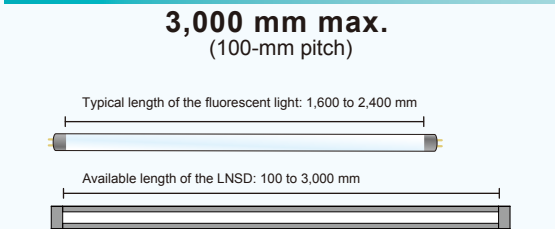
3 Cost-reducing



2 Great for replacing fluorescent lights due to the equal size



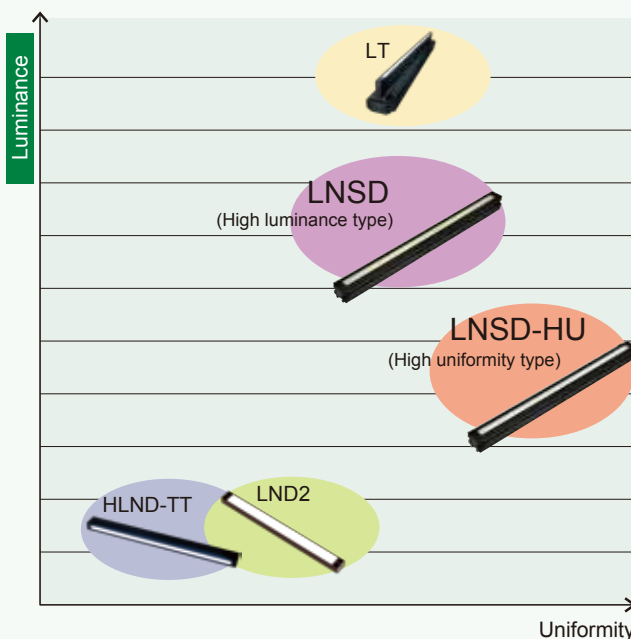
4 Supports 1,600 to 2,400 mm length as with the fluorescent light



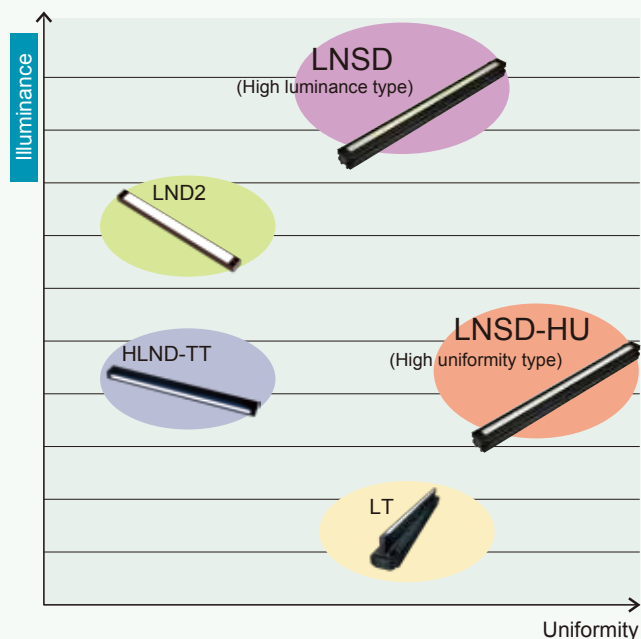
Balanced performance of the LNSD series

The performance balance map below shows the usability of the LNSD series.

Comparison between the luminance and the uniformity

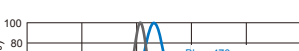


Comparison between the illuminance and the uniformity



Consider the LNSD series first for your workpiece inspection!

Common specifications

Type	High luminance/High uniformity (Add "-HU" at the end of the model name.)			Cable length	300 mm
LED color	White	Red (Scheduled to be released)	Blue (Scheduled to be released)	Operating environment	Temperature: 0 to 50°C, Humidity: 20% to 85% RH (with no condensation)
Correlated temp. (typ.)	6,600 K	—	—	Storage environment	Temperature: -20 to 60°C, Humidity: 20% to 85% RH (with no condensation)
Peak wavelength (typ.)	—	634 nm	470 nm	Cooling method	Natural air cooling
Input voltage (max.)	24 VDC			Light spectrum	
Connector	EL connector (ELP-02V)				
Polarity/signal	1: (+), 2: (-)				
CE marking	Safety standard: EN62471 compliant				
Environmental regulation	RoHS compliant				
Case material	Aluminum alloy, Resin				

* This data is for reference only. It does not guarantee the quality of this product. * Red and blue models are scheduled to be released in 2015 winter.

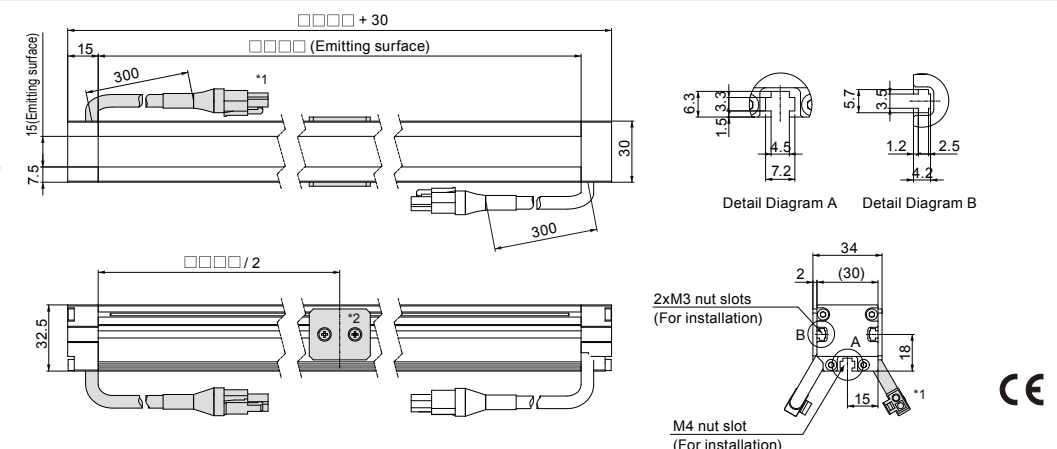
Dimensions (mm)

LNSD-□□□□SW/RD/BL

(□□□□: Emitting surface length)
("HU" is at the end of the model name for the High uniformity type.)

*1 There are two connectors only for the Light Unit whose length of the emitting surface is 1,300 mm or more.

*2 There are reinforcing metal fittings only for the Light Unit whose length of the emitting surface is more than 1,600 mm.

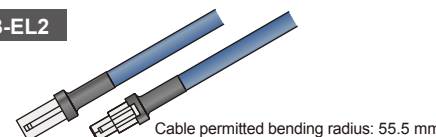


Optional Accessories

Extension cables (EL connector)

The length of the connecting cable of the Light Unit is 300 mm.
Use appropriate Extension cables in accordance with your installation environment.

FCB-EL2



Straight cables

Model	FCB-1-EL2	FCB-2-EL2	FCB-3-EL2	FCB-5-EL2	FCB-10-EL2	FCB-15-EL2
Cable length	1 m	2 m	3 m	5 m	10 m	15 m
Usage	Extends the cable length between the Light Unit and the Control Unit.					

* For details of other optional cables, refer to the CCS website or General Catalog of LED Lighting for Machine Vision Applications.

Control Units

Analog Control Unit (Constant voltage)

PSB3-30024

- Constant voltage system
- Intensity control with variable voltage
- 300 W capacity (EL connectors: 150 W max./connector)
- AC input
- 1 channel (2 connectors)
- 3 ways of external control in a single Unit
 - Parallel communications
 - Analog input
 - EIA-485 communications



Refer to the CCS website.



Digital Control Unit

PD3-10024-8 Series

- PWM intensity control
- 95 W capacity (One EL connector)
- AC input
- 3 ways of external control
 - Parallel communications
 - Ethernet communications
 - EIA-485 communications

* Custom products with a PWM frequency of 500 kHz are also available. Please contact your CCS sales representative for details.



Refer to the CCS website.



• "CCS", "LIGHTING SOLUTION", "LNSD", and "PSB" are 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.
- 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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LNSD series



Line Sensor Light Unit LNSD Series



Versatile Light Unit of High Luminance and High Uniformity

LED colors: White, red, and blue

(Red and blue models are scheduled to be released in the beginning of 2015.)

Emitting surface length: 100 to 3,000 mm

Inspection Applications

- 1) Dents, foreign substances, and fish-eye holes on transparent film
- 2) Blots, unevenness, and scratches on metallic foil
- 3) Oil spots, holes, and edge breaking on paper
- 4) Blots, mixing of hairs, and crude density on non-woven fabric

LIGHTING SOLUTION
CCS Inc.

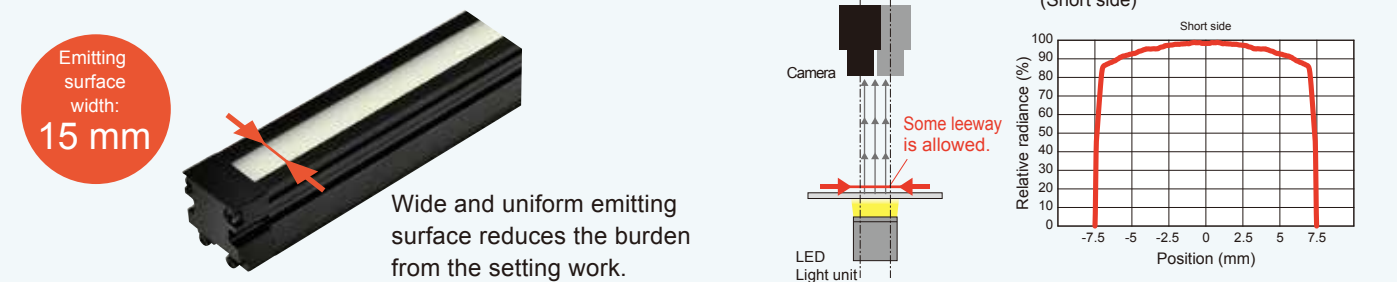
Easy-to-use, compact, and lightweight!

2 types (High luminance/high uniformity) X 3 colors (White, red, and blue) X 30 sizes (100 mm to 3,000 mm) = 180 models to meet your needs

Features

1 Easy to set up with a Line camera

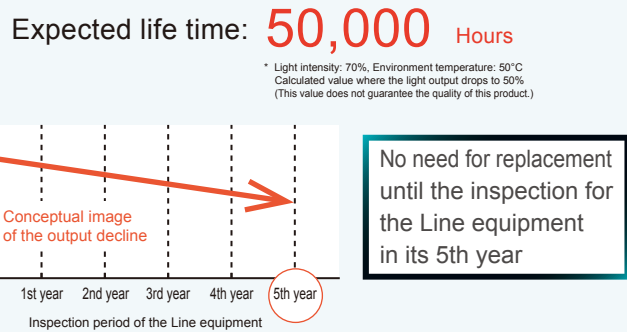
The wide and uniform emitting surface facilitates the positioning of the camera. You can improve the efficiency of the setting work.



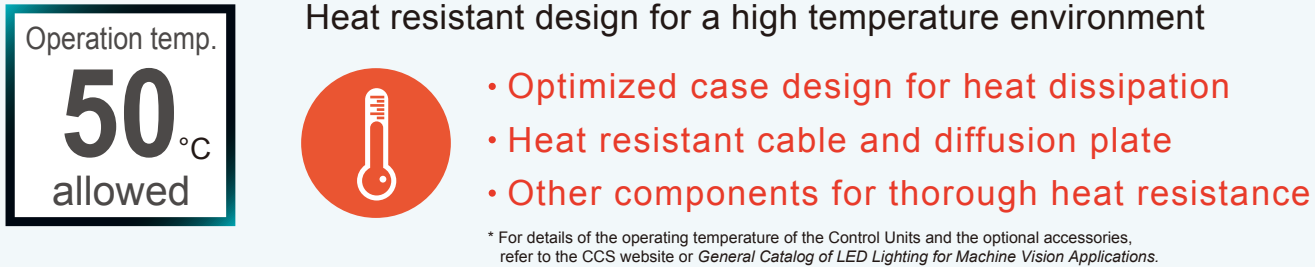
2 Compact and lightweight



3 No need for replacement for 5 years



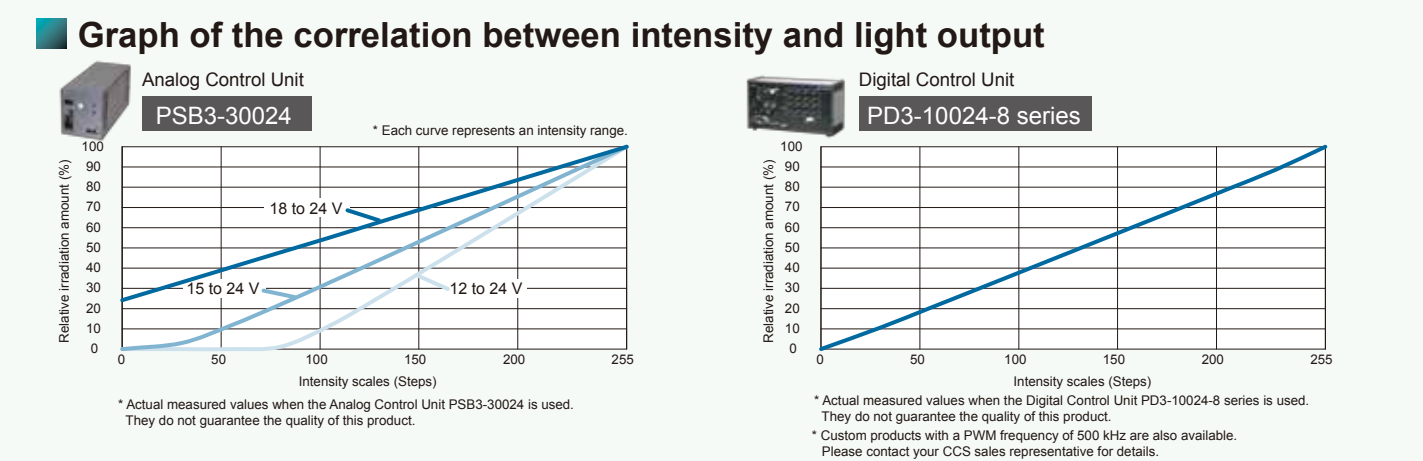
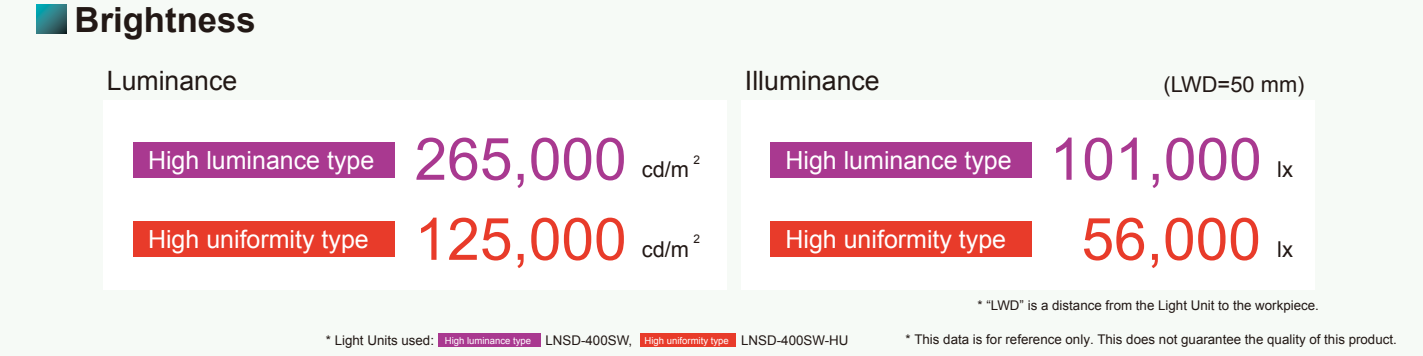
4 Stable quality even in a harsh environment



5 Abundant lineup, total of 180 models



Data (White)



Product lineup

Model name	Emitting surface length	LED color	Power consumption (max.)	Extension cable	Recommended Control Unit	Weight (max.)
LNSD-100	100 mm	White(SW)/Red(RD, Scheduled to be released)/Blue(BL, Scheduled to be released)	11 W	FCB-EL2 (1 m, 2 m, 3 m, 5 m, 10 m, 15 m)	Analog Control Unit PSB3-30024 or Digital Control Unit PD3-10024-8 ^{*2}	200 g
LNSD-200	200 mm		21 W			320 g
LNSD-300	300 mm		31 W			460 g
LNSD-400	400 mm		41 W			590 g
LNSD-500	500 mm		51 W			720 g
LNSD-600	600 mm		61 W			860 g
LNSD-700	700 mm		71 W			990 g
LNSD-800	800 mm		81 W			1,120 g
LNSD-900	900 mm		91 W			1,240 g
LNSD-1000	1,000 mm		101 W			1,370 g
LNSD-1100	1,100 mm		111 W	A pair of FCB-EL2 ^{*1} (1 m, 2 m, 3 m, 5 m, 10 m, 15 m)	Analog Control Unit PSB3-30024	1,500 g
LNSD-1200	1,200 mm		121 W			1,640 g
LNSD-1300	1,300 mm		White: 131 W Red: 132 W/Blue: 131 W			1,770 g
LNSD-1400	1,400 mm		White: 141 W Red: 142 W/Blue: 141 W			1,910 g
LNSD-1500	1,500 mm		White: 151 W Red: 152 W/Blue: 151 W			2,040 g
LNSD-1600	1,600 mm		White: 161 W Red: 162 W/Blue: 161 W			2,170 g
LNSD-1700	1,700 mm		White: 171 W Red: 172 W/Blue: 171 W			2,300 g
LNSD-1800	1,800 mm		White: 181 W Red: 182 W/Blue: 181 W			2,440 g
LNSD-1900	1,900 mm		192 W			2,570 g
LNSD-2000	2,000 mm		202 W			2,700 g
LNSD-2100	2,100 mm		212 W			2,830 g
LNSD-2200	2,200 mm		222 W			2,960 g
LNSD-2300	2,300 mm		232 W			3,090 g
LNSD-2400	2,400 mm		242 W			3,220 g
LNSD-2500	2,500 mm		White: 230 W Red: 227 W/Blue: 230 W			3,350 g
LNSD-2600	2,600 mm		White: 239 W Red: 236 W/Blue: 239 W			3,480 g
LNSD-2700	2,700 mm		White: 248 W Red: 245 W/Blue: 248 W			3,610 g
LNSD-2800	2,800 mm		White: 257 W Red: 255 W/Blue: 257 W			3,740 g
LNSD-2900	2,900 mm		White: 267 W Red: 264 W/Blue: 267 W			3,870 g
LNSD-3000	3,000 mm		White: 276 W Red: 273 W/Blue: 276 W			4,000 g

^{*1} There are two input connectors for the Light Unit whose length of the emitting surface is 1,300 mm or more. To install the Light Unit, use two Extension cables of the same length. Using the cables of different length may cause uneven emission due to a difference in voltage drop by DC resistance of the cables.
^{*2} Custom products with a PWM frequency of 500 kHz are also available for the Digital Control Unit PD3 series. Please contact your CCS sales representative for details.