



# Achieves bi-directional angled illumination using an original optical design



LNIS2-300SW

**Applications**

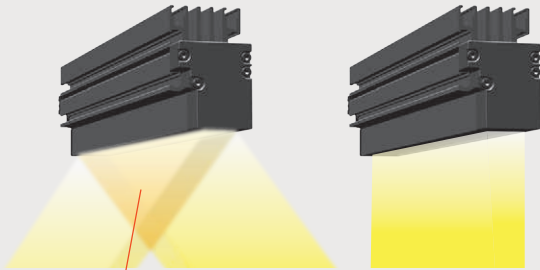
Streak inspection of sheet surfaces, scratch inspection on clear film, scratch inspection on glass panels, damage inspection on sheet metal, etc.

## Achieves Bi-Directional Angled Illumination

The LNIS2 Series is a completely new concept product that was developed to detect "moving-direction scratches," which were difficult to detect with conventional line sensor lights.

### Difference between bi-directional angled illumination and conventional illumination

Cross angled illumination      Conventional illumination



Recommended illuminating range

### Other features

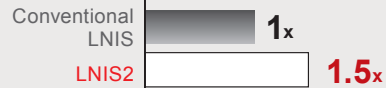
- 1) Fan-less (Natural air cooling)
- 2) Compact design
- 3) Emitting surface 100 to 1,000 mm long (can be made in units of 100 mm)

## Brightness Up to 1.5x

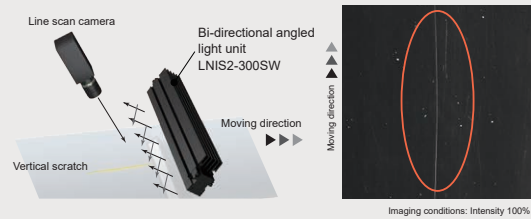
The LNIS2 Series has achieved the brightness up to 1.5x that of the conventional LNIS Series. This expands the range of applications.

### Higher output power than the conventional products

#### Illuminance comparison graph



### Imaging of vertical scratches (moving-direction scratches) on film

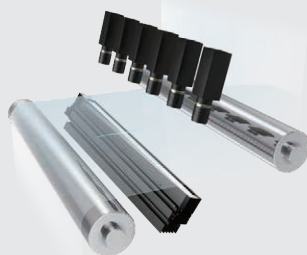


Emphasizes only the vertical scratch. Even if you increase the output, the background noise and brightness do not increase.

The data included is for reference only. Actual values may vary.

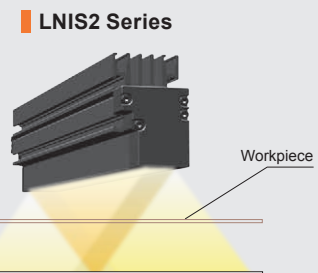
## Applications

### Inspection for scratches on transparent films



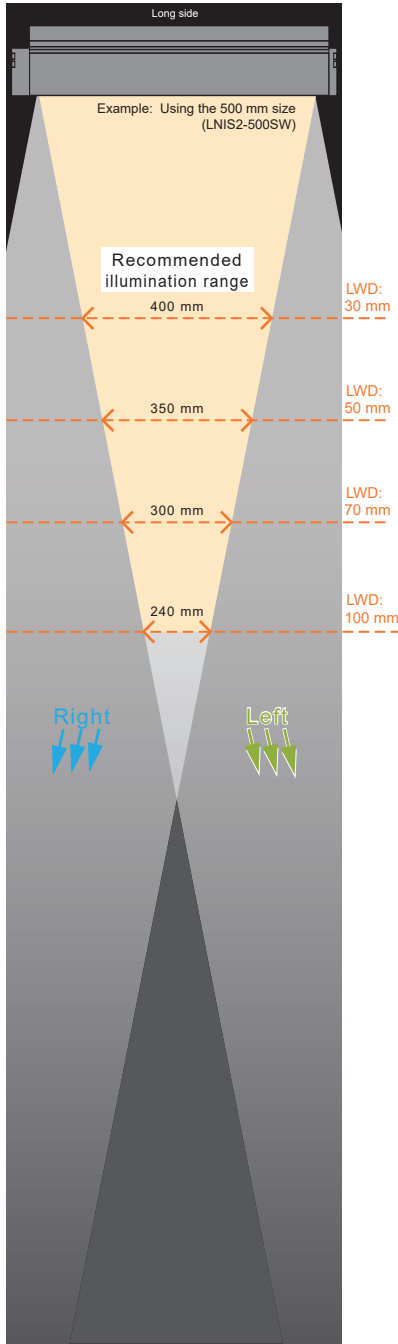
## Example Configuration

Achieves bi-directional angled illumination using an original optical design. Line sensor light suitable for detecting scratches in the flow direction.



Ring (Direct)	LDR2 LDR2-LA LDR-LA1 SQR SQR-TP
Ring (Convergent/Diffused)	HLDR3 HPR2 LFR LKR FPR
Square	FPQ3
Bar	LDL2 LDLB HLDL3 LB
Flat	TH2 (5 types) LFL
Dome	HPD2 LDM2 LAV PDM LFXV LFX3 LFX3-PT
Coaxial	LFV3 LFV3-G MSU MFU
Strobe	PF
Water-proof	HLDR-IP HSL-PCL
COB	Small COB Lights
UV / Violet	UV3/VL3 UV LNSP-UV3-FN
Infrared	IR2 (Under 1000-nm Type) IR (Over 1000-nm Type) CIR
Intensity Control	IU
Spot, Etc.	HLV3 LV LSP HFS/HFR HLV3-22-4-NR HLV3-3M-RGB-4 PFBR-600SW2 PFBR-150 PFBR3
Line (Convergent)	LNLP LNSP2 Coaxial Units LNSP-FN LN/LN-HK
Line (Diffused)	LNSD LND2 LT LNV LFXV (Rectangular Type) TH2 (Rectangular Type)
Line (Oblique Angled)	LNDS LNIS2 LNIS LNIS-FN
Lenses	Telecentric Lens Macro Lens

**Recommended Illumination Range** Light unit in use: LNIS2-500SW

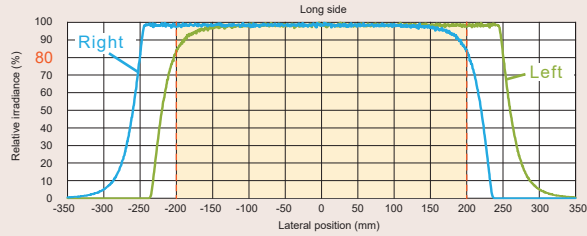


LWD is the distance from the line light to the workpiece.

**Graph of effective illumination range**

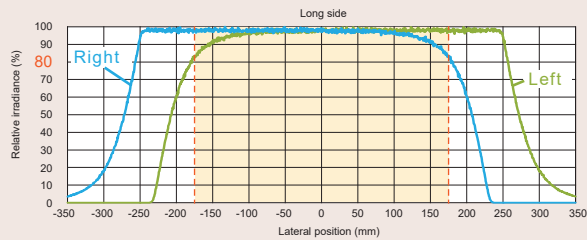
**Illuminating distance: 30 mm**

The values are based on the simulation. Actual values may vary.



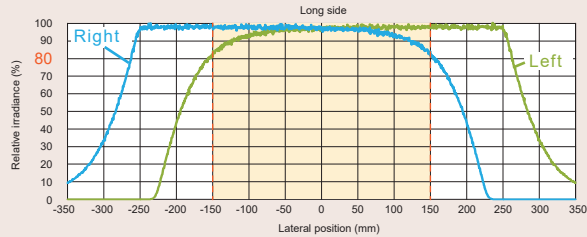
**Illuminating distance: 50 mm**

The values are based on the simulation. Actual values may vary.



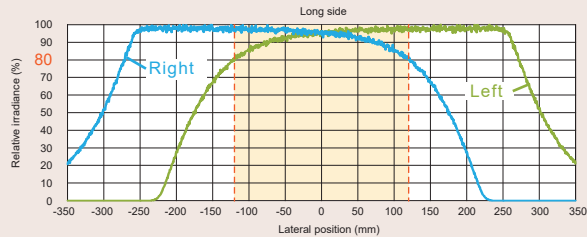
**Illuminating distance: 70 mm**

The values are based on the simulation. Actual values may vary.



**Illuminating distance: 100 mm**

The values are based on the simulation. Actual values may vary.



The section on the graph where "Left" and "Right" overlap is the section where light from the left and right sides overlaps. The recommended illumination range is the range in this overlapping section where each illumination is ensured for 80% or higher of the peak.

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

**Table of the recommended illumination range** (Where illuminance of the left/right beam is 80% of the peak value or more.) (mm)

LWD: Illuminating distance	Emitting surface length									
	100	200	300	400	500	600	700	800	900	1,000
10	40	140	240	340	440	540	640	740	840	940
30		100	200	300	400	500	600	700	800	900
50		50	150	250	350	450	550	650	750	850
70			100	200	300	400	500	600	700	800
100			40	140	240	340	440	540	640	740

These values are based on the simulation. Actual range of the effective illumination depends on your imaging environment.

LDR2 LDR2-LA LDR-LA1 SQR SQR-TP	Ring (Direct)
HLDR3 HPR2 LFR LKR FPR	Ring (Convergent/Diffused)
FPQ3	Square
LDL2 LDLB HLDL3 LB	Bar
TH2 (5 types) LFL	Flat
HPD2 LDM2 LAV PDM LFXV LFX3 LFX3-PT	Dome
LFV3 LFV3-G	Coaxial
MSU MFU	Coaxial
PF	Strobe
HLDR-IP HSL-PCL	Water-proof
Small COB Lights	COB
UV3/VL3 UV LNSP-UV3-FN	UV / Violet
IR2 (Under 1000-nm Type) IF (Over 1000-nm Type) CIR	Infrared
IU	Intensity Control
HLV3 LV LSP HFS/HFR HLV3-22-4-NR HLV3-3M-RGB-4 PFBR-600SW2 PFBR-150 PFB3	Spot, Etc.
LNLP LNSP2 Coaxial Units LNSP-FN LN/LN-HK	Line (Convergent)
LNSD LND2 LT LNV LFXV (Rectangular Type) TH2 (Rectangular Type)	Line (Diffused)
LNDG LNIS2 LNIS LNIS-FN	Line (Oblique Angled)
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# LNIS2 Series



Refer to our website for product details.

CCS LNIS2

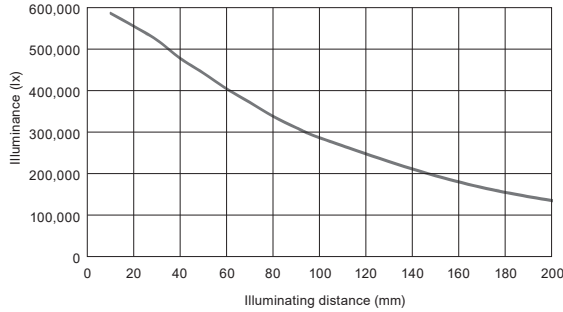
Search



## Data (Representative Example)

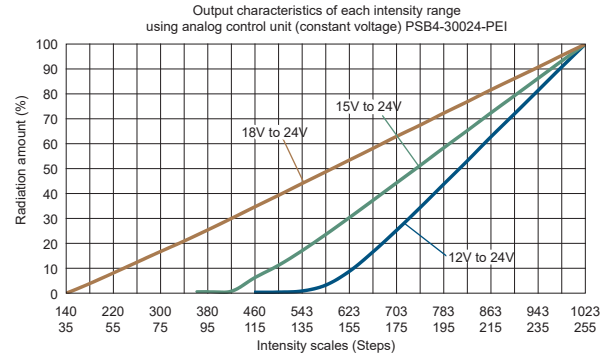
The graph included is for reference only. Actual values may vary.

### LNIS2-500SW Change in illuminance



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

### Graph of the correlation between intensity and output

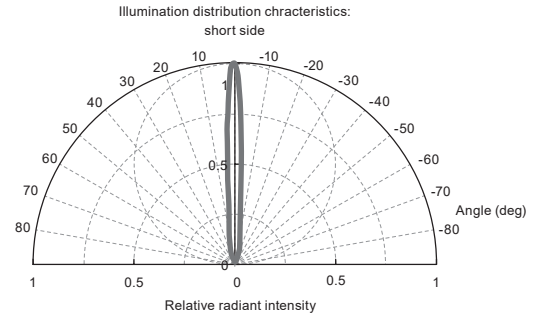
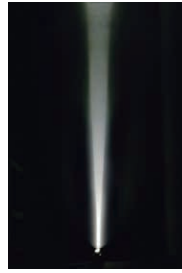
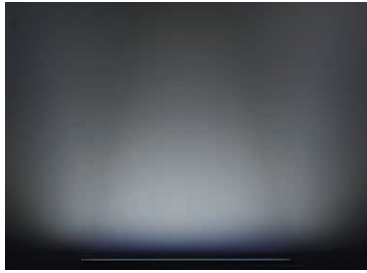


Actual measurement values using PSB4-30024-PEI analog control unit. Results for individual products may vary.

Measured in each voltage range because the PSB4-30024-PEI analog control unit has a switching function for the lower limit of output voltage.

### LNIS2-400SW Characteristics of the illumination distribution

Measuring direction: long side      Measuring direction: short side



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

## Lineup

Model Name	LED Color	Power Consumption	Correlated Color Temperature	Extension Cables	Recommended Control Units	Weight
LNIS2-100SW	White	24 V / 18 W	6,500 K	FCB-EL2	PSB4 PD4-12024 PD3-10024-8"	400 g
LNIS2-200SW		24 V / 35 W				700 g
LNIS2-300SW		24 V / 52 W				1,000 g
LNIS2-400SW		24 V / 69 W				1,300 g
LNIS2-500SW		24 V / 86 W				1,600 g
LNIS2-600SW		24 V / 103 W				1,900 g
LNIS2-700SW		24 V / 120 W				2,200 g
LNIS2-800SW		24 V / 138 W				2,500 g
LNIS2-900SW		24 V / 155 W				2,800 g
LNIS2-1000SW		24 V / 172 W				3,100 g

\* Custom products with a PWM frequency of 500 kHz are available for PD3 Series digital control unit. Please contact your CCS sales representative for details.

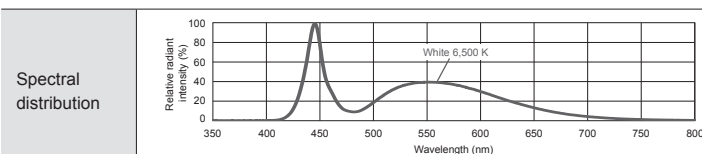
Extension Cables ▶ P.248

List of Control Unit Specifications ▶ P.307

The emitting surface is available in sizes of 100 mm units. For details about other sizes, inquire with your CCS sales representative.

In addition, we accept custom orders, such as changes to the LED color (red/blue/IR, etc.) and size changes. Inquire at your CCS sales representative for details.

## LED Properties



Be sure to read the User Manual included with the product before use and follow the safety precautions upon use.

The data included is for reference only. Actual values may vary.

Various technical documents available.

PDF Drawings

DXF Drawings

Product Brochures

Instruction Guides

3D CAD

Data Sheets

Imaging Examples

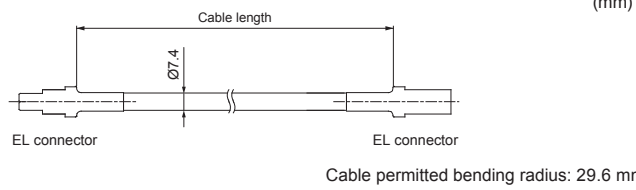
Digital Catalogs

Register to use them.

## Extension Cables Necessary when connecting the light unit to the recommended control unit.

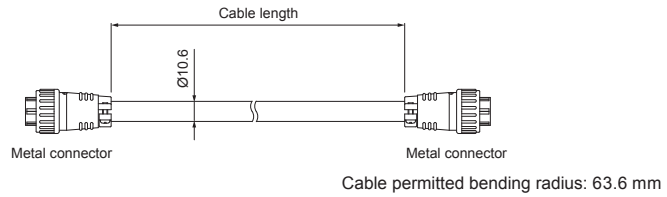
### FCB-EL2

Model Name	Cable Length	Weight
FCB-1-EL2	1 m	85 g
FCB-2-EL2	2 m	165 g
FCB-3-EL2	3 m	245 g
FCB-5-EL2	5 m	405 g
FCB-10-EL2	10 m	805 g
FCB-15-EL2	15 m	1,205 g



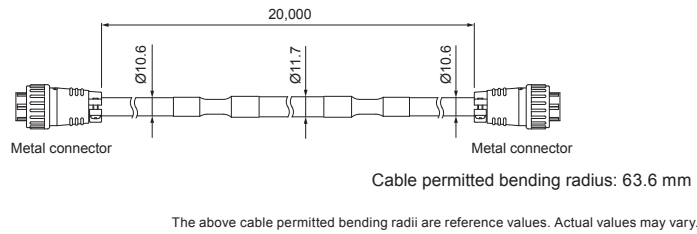
### FCB-1.25SQ-ME7

Model Name	Cable Length	Weight
FCB-2-1.25SQ-ME7	2 m	430 g
FCB-3-1.25SQ-ME7	3 m	580 g
FCB-5-1.25SQ-ME7	5 m	1,000 g
FCB-10-1.25SQ-ME7	10 m	2,000 g

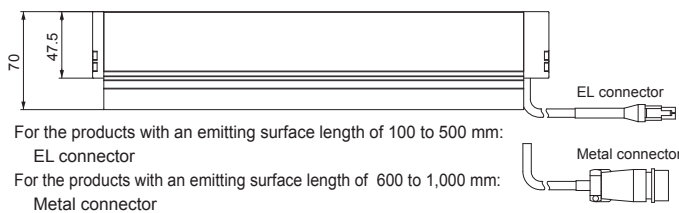
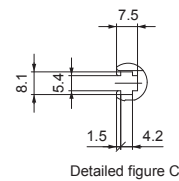
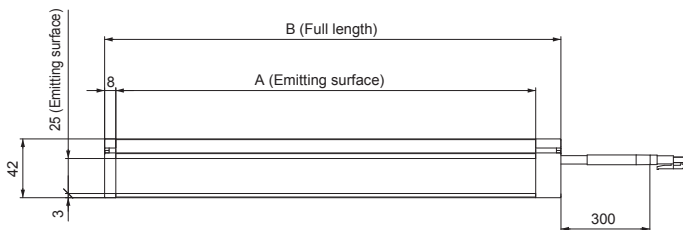


### FCB-20-2.0SQ-ME7

Model Name	Cable Length	Weight
FCB-20-2.0SQ-ME7	20 m	5,000 g



## Dimensions (mm)



CCS accepts custom orders for such as the position where the light cable comes out of the case.  
Please contact your CCS sales representative for details.

Model Name	A (Emitting surface)	B (Full length)	Connector
LNIS2-100SW	100	126	EL connector
LNIS2-200SW	200	226	
LNIS2-300SW	300	326	
LNIS2-400SW	400	426	
LNIS2-500SW	500	526	

Model Name	A (Emitting surface)	B (Full length)	Connector
LNIS2-600SW	600	626	Metal connector
LNIS2-700SW	700	726	
LNIS2-800SW	800	826	
LNIS2-900SW	900	926	
LNIS2-1000SW	1,000	1,026	

LDR2 LDR2-LA LDR-LA1 SQR SQR-TP	Ring (Direct)
HLDR3 HPR2 LFR LKR FPR	Ring (Convergent/Diffused)
FPQ3	Square
LDL2 LDLB HLDL3 LB	Bar
TH2 (5 types) LFL	Flat
HPD2 LDM2 LAV PDM LFXV LFX3 LFX3-PT	Dome
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