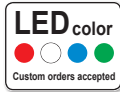
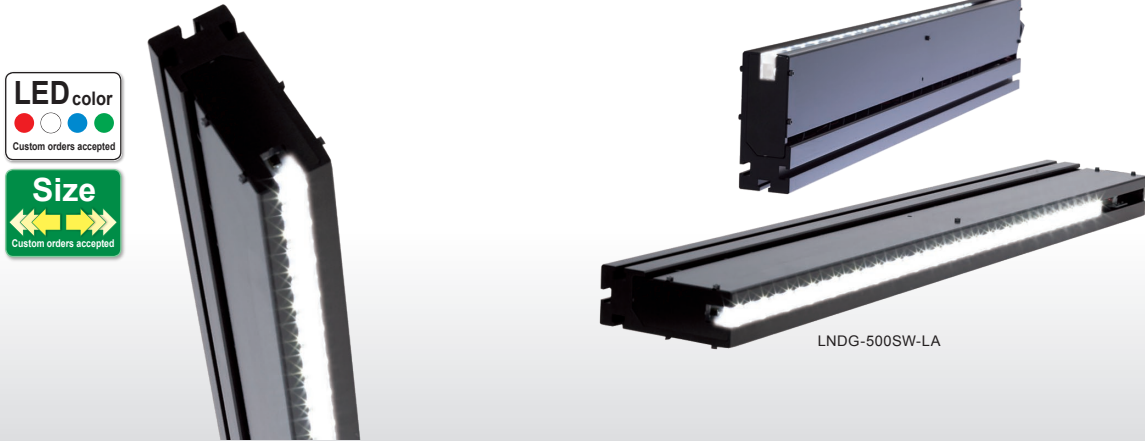




Achieves angled illumination using an original optical design  
Bumps and subtle vertical wrinkles can be detected



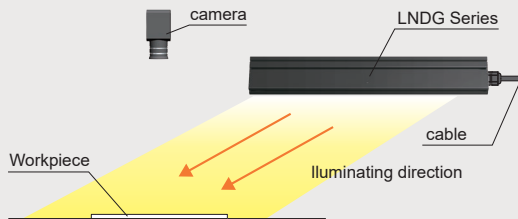
LNDG-500SW-LA

**Applications** Inspection for vertical wrinkles in paper, vertical striations in cardboard, vertical wrinkles and folding in non-woven fabric, wrinkles in bonded sheets, etc

**Achieves Angled Illumination**

The LNDG Series enables detection of bumps and subtle vertical wrinkles, which were difficult to detect with conventional line sensor lights, in paper or non-woven fabric that disperses light.

**Conceptual image of angled illumination**



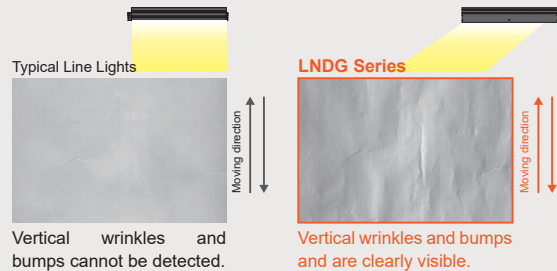
**Other features**

- 1) Fan-less (Natural air cooling)
  - 2) Error detection support
  - 3) Emitting surface 300 to 3,000 mm long (can be made in units of 100 mm)
- Error detection is a function included with the PSCC Series, the recommended control units.

**Bumps and Subtle Vertical Wrinkles Can Be Detected**

**Imaging samples**

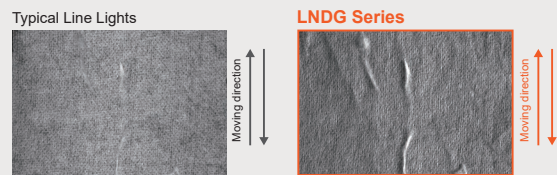
**Inspections for vertical wrinkles in paper labels**



Vertical wrinkles and bumps cannot be detected.

Vertical wrinkles and bumps are clearly visible.

**Inspecting non-woven fabric for defects**



Fiber fraying and kinks cannot be detected.

Fiber fraying and kinks are clearly visible.

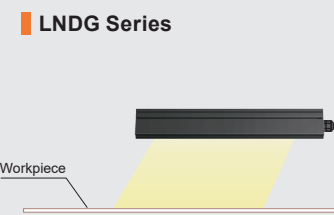
**Applications**

**Inspection for vertical wrinkles in paper labels**



**Example Configuration**

Achieves angled illumination using an original optical design. Lights for line sensors suitable for detecting irregularities and vertical wrinkles in the flow direction in a workpiece that diffuses light.



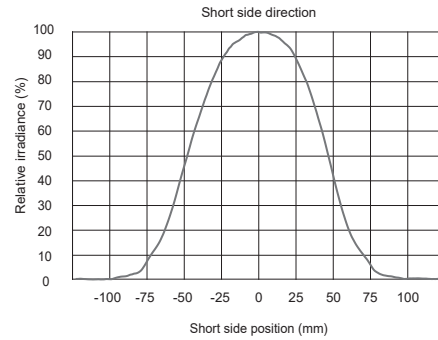
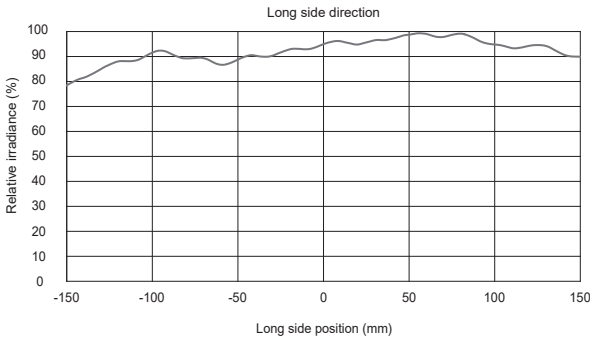
Ring (Direct)	LDR2 LDR2-LA LDR-LA1 Multi-stage Ring Light SQR SQR-TP
Ring (Convergent/Diffused)	HLDR3 HPR2 LFR LKR FPR
Square	FPQ3
Bar	LDL2 LDLB HLDL3 LB
Flat	TH2 (5 types) LFL
Dome	HPD2 LDM2 LAV LFXV LFX3 LFX3-PT
Coaxial	LFV3 LFV3-G
Coaxial	MSU MFU
Strobe	PF
Water-proof	HLDR-IP HSL-PCL
UV / Violet	UV3/VL3 UV LNSP-UV3-FN
Infrared	IR2 (Under 1000-nm Type) IR (Over 1000-nm Type) CIR
Reference Light Source	LDF-RLS
Intensity Control	IU
Spot, Etc.	HLV3 LV HFS/HFR HLV3-22-4-NR HLV3-3M-RGB-4 PFBR-2400SW PFBR-600SW2 PFBR-150 SLG-150V-CCS PFB3(A)
Line (Convergent)	LNLP LNSP2 Coaxial Units LNSP-FN LN/LN-HK
Line (Diffused)	LNSD LND2 LT LFXV (Rectangular Type) TH2 (Rectangular Type)
Line (Oblique Angled)	<b>LNDG</b> LNIS2 LNIS LNIS-FN
Lenses	Telecentric Lens Macro Lens
Other Products	LDF-NB

**Data** (Representative Example)

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

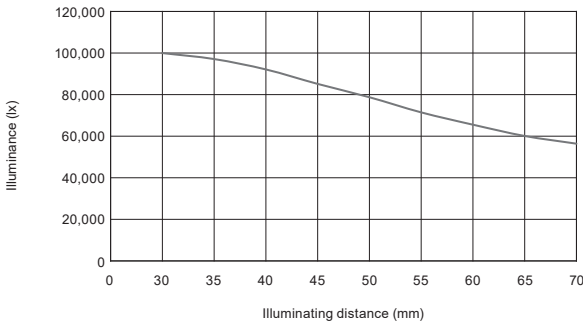
**LNDG-500SW-LA**

Relative irradiance distribution



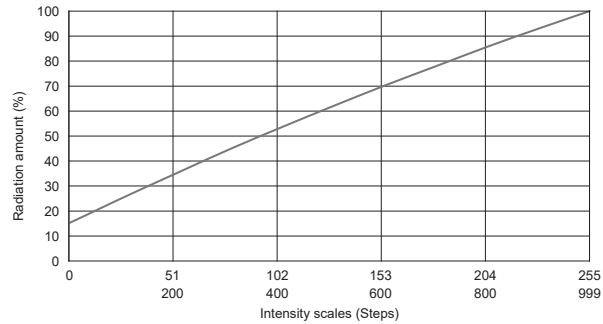
The graph included is for reference only. Actual values may vary.

Change in illuminance



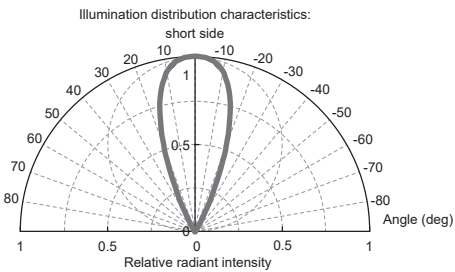
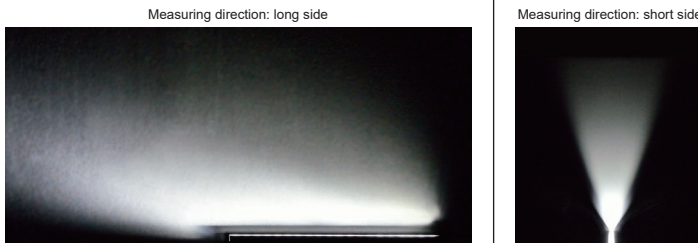
Actual measurement values at 100% intensity, in the center part of emission in each illuminating distance. Results for individual products may vary.

Graph of the correlation between intensity and output



Actual measurement values using the PSCC-30048(A) analog control unit. Results for individual products may vary.

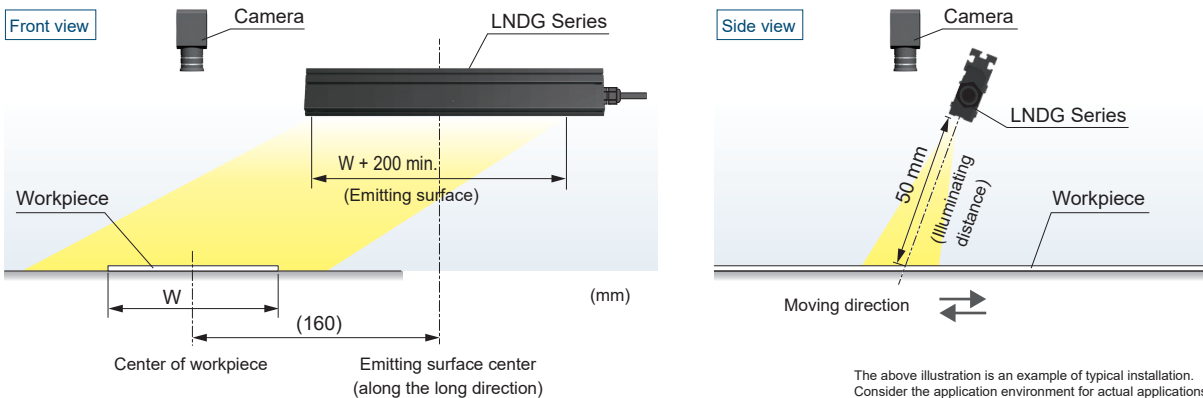
Characteristic of the illumination distribution



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

**Select a Light Unit That Is Longer Than the Width of the Workpiece.**

The LNDG Series light unit emits light at an angle to enable detecting "vertical wrinkles and bumps." When you select a light unit, select one that is at least 200 mm longer than the width of the workpiece to be inspected. We recommend a illuminating distance of 50 mm to obtain sufficient illumination.



The above illustration is an example of typical installation. Consider the application environment for actual applications.

You can inquire using our website.

- Sample Testing
- Light Unit Selection
- Free Product Trial
- Custom Orders
- Product Details
- Pricing/Quotation
- Discontinued Products

Inquire on our website here. <https://www.ccs-grp.com/contact/>

LDR2	Ring (Direct)
LDR2-LA	Ring (Direct)
LDR-LA1	Ring (Direct)
Multi-stage Ring Light	Ring (Direct)
SQR	Ring (Convergent/Diffused)
SQR-TP	Ring (Convergent/Diffused)
HLDR3	Ring (Convergent/Diffused)
HPR2	Ring (Convergent/Diffused)
LFR	Ring (Convergent/Diffused)
LKR	Ring (Convergent/Diffused)
FPR	Ring (Convergent/Diffused)
FPQ3	Square
LDL2	Bar
LDLB	Bar
HLDL3	Bar
LB	Bar
TH2 (5 types)	Flat
LFL	Flat
HPD2	Dome
LDM2	Dome
LAV	Dome
LFXV	Dome
LFX3	Dome
LFX3-PT	Dome
LFV3	Coaxial
LFV3-G	Coaxial
MSU	Coaxial
MFU	Coaxial
PF	Strobe
HLDR-IP	Water-proof
HSL-PCL	Water-proof
UV3/VL3	UV / Violet
UV	UV / Violet
LNSP-UV3-FN	UV / Violet
IR2 (Under 1000-nm Type)	Infrared
IR (Over 1000-nm Type)	Infrared
CIR	Infrared
LDF-RLS	Reference Light Source
IU	Intensity Control
HLV3	Spot Etc.
LV	Spot Etc.
HFS/HFR	Spot Etc.
HLV3-22-4-NR	Spot Etc.
HLV3-3M-RGB-4	Spot Etc.
PFBR-2400SW	Spot Etc.
PFBR-600SW2	Spot Etc.
PFBR-150	Spot Etc.
SLG-150V-CCS	Spot Etc.
PF3(A)	Spot Etc.
LNL	Line (Convergent)
LNSP2	Line (Convergent)
Coaxial Units	Line (Convergent)
LNSP-FN	Line (Convergent)
LN/LN-HK	Line (Convergent)
LNSD	Line (Diffused)
LND2	Line (Diffused)
LT	Line (Diffused)
LFXV (Rectangular Type)	Line (Diffused)
TH2 (Rectangular Type)	Line (Diffused)
LNDG	Line (Oblique Angled)
LNIS2	Line (Oblique Angled)
LNIS	Line (Oblique Angled)
LNIS-FN	Line (Oblique Angled)
Telecentric Lens	Lenses
Macro Lens	Lenses
LDF-NB	Other Products



CCS LNDG

Search



Lineup

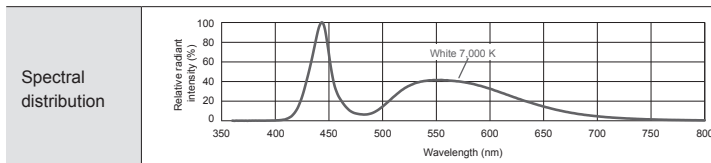
Model Name	LED Color	Power Consumption	Correlated Color Temperature	Extension Cables	Recommended Control Units	Weight
LNDG-300SW-LA	White	39 W	7,000 K			1,600 g
LNDG-400SW-LA		52 W				2,000 g
LNDG-500SW-LA		65 W				2,400 g
LNDG-600SW-LA		78 W				2,800 g
LNDG-700SW-LA		91 W				3,200 g
LNDG-800SW-LA		104 W				3,600 g
LNDG-900SW-LA		117 W				4,000 g
LNDG-1000SW-LA		130 W				4,400 g
LNDG-1100SW-LA		143 W				4,800 g
LNDG-1200SW-LA		156 W				5,200 g
LNDG-1300SW-LA		169 W				5,500 g
LNDG-1400SW-LA		182 W				5,900 g
LNDG-1500SW-LA		195 W				6,300 g
LNDG-1600SW-LA		208 W				6,700 g
LNDG-1700SW-LA		221 W				7,100 g
LNDG-1800SW-LA		234 W				7,500 g
LNDG-1900SW-LA		247 W				7,900 g
LNDG-2000SW-LA		260 W				8,300 g
LNDG-2100SW-LA		273 W				8,700 g
LNDG-2200SW-LA		286 W				9,100 g
LNDG-2300SW-LA		299 W				9,500 g
LNDG-2400SW-LA		312 W				9,900 g
LNDG-2500SW-LA		325 W				10,300 g
LNDG-2600SW-LA		338 W				10,700 g
LNDG-2700SW-LA		351 W				11,100 g
LNDG-2800SW-LA		364 W				11,500 g
LNDG-2900SW-LA		377 W				11,900 g
LNDG-3000SW-LA		390 W				12,300 g

Extension Cables ▶ P.234

PSCC Series Product Page ▶ P.343

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.). 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.

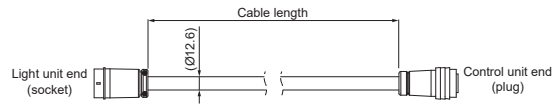
- Ring (Direct)
  - LDR2
  - LDR2-LA
  - LDR-LA1
  - Multi-stage Ring Light
  - SQR
  - SQR-TP
- Ring (Convergent/Diffused)
  - HLDR3
  - HPR2
  - LFR
  - LKR
  - FPR
- Square
  - FPQ3
- Bar
  - LDL2
  - LDLB
  - HLDL3
  - LB
- Flat (5 types)
  - TH2
  - LFL
- Dome
  - HPD2
  - LDM2
  - LAV
  - LFXV
  - LFX3
  - LFX3-PT
- Coaxial
  - LFV3
  - LFV3-G
- Strobe Coaxial
  - MSU
  - MFU
- Water-proof
  - HLDR-IP
  - HSL-PCL
- UV / Violet
  - UV3/VL3
  - UV
  - LNSP-UV3-FN
- Infrared
  - IR2 (Under 1000-nm Type)
  - IR (Over 1000-nm Type)
  - CIR
- Reference Light Source
  - LDF-RLS
- Intensity Control
  - IU
- Spot, Etc.
  - HLV3
  - LV
  - HFS/HFR
  - HLV3-22-4-NR
  - HLV3-3M-RGB-4
  - PFBR-2400SW
  - PFBR-600SW2
  - PFBR-150
  - SLG-150V-CCS
  - PFB3(A)
- Line (Convergent)
  - LNLP
  - LNSP2
  - Coaxial Units
  - LNSP-FN
  - LN/LN-HK
- Line (Diffused)
  - LNSD
  - LND2
  - LT
  - LFXV (Rectangular Type)
  - TH2 (Rectangular Type)
- Line (Oblique Angle)
  - LNDG
  - LNIS2
  - LNIS
  - LNIS-FN
- Lenses
  - Telecentric Lens
  - Macro Lens
- Other Products
  - LDF-NB

## Extension Cables

Necessary when connecting the light unit to the recommended control unit, the PSCC Series. Make sure to connect the appropriate extension cables to the control unit.

### QCBM

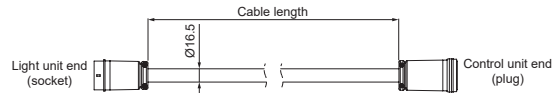
Model name	Cable length	Weight	Applicable Control Unit
QCBM-2	2 m	800 g	PSCC-30048(A)
QCBM-3	3 m	1,000 g	
QCBM-5	5 m	1,500 g	
QCBM-10	10 m	2,700 g	
QCBM-20	20 m	5,000 g	



Cable permitted bending radius: 75.6 mm

### QCB

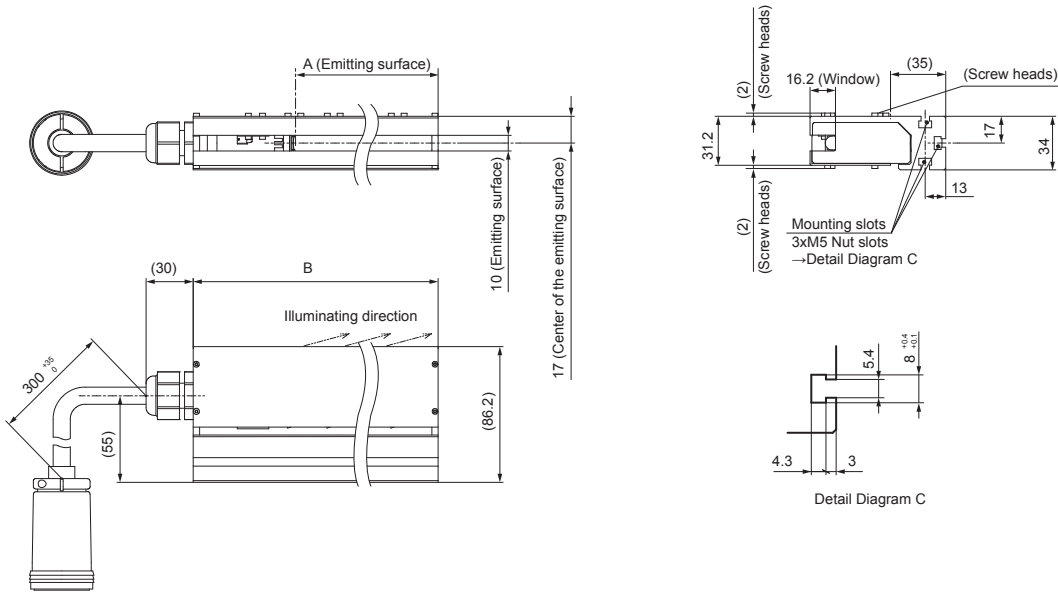
Model name	Cable length	Weight	Applicable Control Unit
QCB-2	2 m	1,100 g	PSCC-60048(A)
QCB-3	3 m	1,500 g	
QCB-5	5 m	2,400 g	
QCB-10	10 m	4,600 g	
QCB-20	20 m	8,900 g	



Cable permitted bending radius: 99 mm

The above cable permitted bending radii are reference values. Actual values may vary.

## Dimensions (mm)



Model name	A (Emitting surface)	B (Full length)	Model name	A (Emitting surface)	B (Full length)
LNDG-300SW-LA	300	365	LNDG-1700SW-LA	1,700	1,765
LNDG-400SW-LA	400	465	LNDG-1800SW-LA	1,800	1,865
LNDG-500SW-LA	500	565	LNDG-1900SW-LA	1,900	1,965
LNDG-600SW-LA	600	665	LNDG-2000SW-LA	2,000	2,065
LNDG-700SW-LA	700	765	LNDG-2100SW-LA	2,100	2,165
LNDG-800SW-LA	800	865	LNDG-2200SW-LA	2,200	2,265
LNDG-900SW-LA	900	965	LNDG-2300SW-LA	2,300	2,365
LNDG-1000SW-LA	1,000	1,065	LNDG-2400SW-LA	2,400	2,465
LNDG-1100SW-LA	1,100	1,165	LNDG-2500SW-LA	2,500	2,565
LNDG-1200SW-LA	1,200	1,265	LNDG-2600SW-LA	2,600	2,665
LNDG-1300SW-LA	1,300	1,365	LNDG-2700SW-LA	2,700	2,765
LNDG-1400SW-LA	1,400	1,465	LNDG-2800SW-LA	2,800	2,865
LNDG-1500SW-LA	1,500	1,565	LNDG-2900SW-LA	2,900	2,965
LNDG-1600SW-LA	1,600	1,665	LNDG-3000SW-LA	3,000	3,065

LDR2	Ring	(Direct)
LDR2-LA	Multi-stage Ring Light	Ring (Direct)
LDR-LA1		
SQR		
SQR-TP		
HLDR3	Ring	(Convergent/Diffused)
HPR2	Ring (Convergent/Diffused)	
LFR		
LKR		
FPR	Square	
FPQ3		
LDL2	Bar	
LDLB		
HLDL3		
LB		
TH2 (5 types)	Flat	
LFL	Dome	
HPD2		
LDM2		
LAV		
LFVX		
LFX3	Coaxial	
LFX3-PT		
LFV3	Coaxial	
LFV3-G		
MSU	Strobe	
MFU		
PF	Water-proof	Violet
HLDR-IP		
HSL-PCL		
UV3/VL3	UV / Violet	
UV		
LNSP-UV3-FN	Infrared	
IR2 (Under 1000-nm Type)		
IR (Over 1000-nm Type)		
CIR		
LDF-RLS	Reference Light Source	
IU	Intensity Control	
HLV3	Spot Etc.	
LV		
HFS/HFR		
HLV3-22-4-NR		
HLV3-3M-RGB-4		
PFBR-2400SW		
PFBR-600SW2		
PFBR-150	Line (Convergent)	
SLG-150V-CCS		
PFB3(A)		
LNL	Line (Diffused)	
LNSP2		
Coaxial Units		
LNSP-FN		
LN/LN-HK	Line (Oblique Angled)	
LNSD		
LND2		
LT		
LFVX (Rectangular Type)		
TH2 (Rectangular Type)	Line (Oblique Angled)	
LNDG		
LNIS2		
LNIS		
LNIS-FN	Telecentric Lens	Macro Lens
LDF-NB		

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