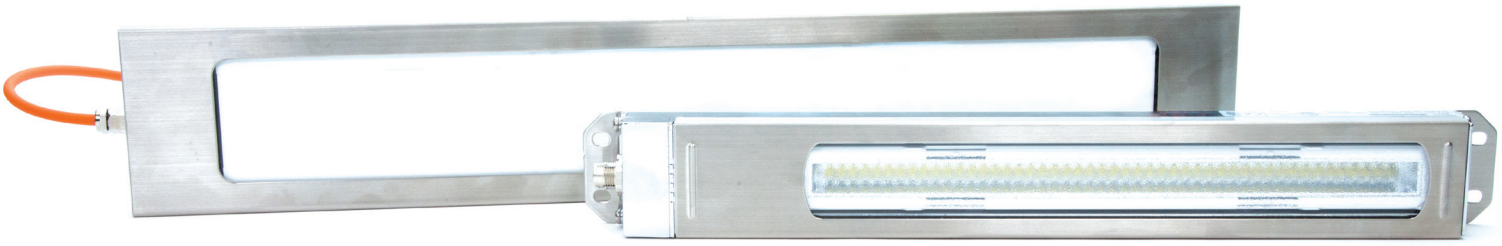
LUMIFA **LF1D & LF2D**

Machine Tools • Food & Beverage Processing Equipment • Pharmaceutical & Chemical • Automotive



PRODUCT DESCRIPTION

Thanks to their rugged construction and high brightness levels up to 3,000 lumens, the LF1D & LF2D series are ideal for machine tools, food and beverage processing equipment and automotive, pharmaceutical and chemical applications. With their IP67, IP67F, IP67G and IP69K ratings, stainless-steel cover and diecast aluminum housing, they can even be used in the presence of high-pressure, high-temperature washdown.

KEY FEATURES

- No glare, shadows or strip effect
- Heavy-duty aluminum housing with reinforced glass lens
- Long-lasting, maintenance-free LEDs
- Extremely bright illumination—up to 3,000 lumens
- Different lengths, mounts and connection options available

GENERAL SPECIFICATIONS

Model	MINI	SLIM		WIDE	LONG	
	LF1D-C	LF1D/2D-EN	LF1D/2D-EH	LF1D/2D-FH	LF1D-H	LF1D-J
Rated Voltage	24V DC					
Voltage Range	21.6 to 26.4V DC					
Rated Power (typ.), W	4.6	10	11	12.5	18.4	27.6
Insulation Resistance	100MΩ minimum (500V DC megger)					
Dielectric Strength	1000V AC, 50/60Hz, 1 minute					
Vibration Resistance (damage limits)	Frequency 5 to 55Hz, amplitude 0.5mm					
Shock Resistance (damage limits)	1000m/s2					
Operating Temperature	–30 to +55°C (no freezing)					
Operating Humidity	45 to 85% RH (no condensation)					
Storage Temperature	–35 to +70°C (no freezing)					
Operating Atmosphere	No corrosive gases					
Life[1]	50,000 hours (The illumination duration in which the illuminance maintains a minimum of 70% of the initial value at 25°C.)					
Degree of Protection[2]	IP67F (Reinforced Glass), IP67 (all models), IP67G (LF1D/LF2D-EN), IP69K (LF1D)					
Material[3]	Housing: Diecast Aluminum (LF1D/LF2D), Lens: Reinforced Glass (LF1D/LF2D) Cover: Stainless Steel (LF1D), Flange Cover: Diecast Aluminum (LF2D)					
Weight (approx.), g	420	LF1D-EH/EN-2W*: 750 LF1D-EH/EN-2W-A*: 950 LF2D-EH/EN-2W*: 850 LF2D-EH/EN-2W-A*: 1,000		LF1D-FH-2W*: 800 LF1D-FH-2W-A*: 1,000 LF2D-FH-2W*: 900 LF2D-FH-2W-A*: 1,050	1200	1600

1. LED life depends on the operating environment.
2. Waterproof or oil-proof characteristics specified by IEC 60529 and JIS0920. For illumination units without accessories, use a cable gland and cables that satisfy IP67F or IP67 degree of protection.
3. The reinforced glass and polycarbonate lens types have the same appearance, but have different degrees of protection (IP67F or IP67).

LED OPTICAL SPECIFICATIONS

Model	MINI	SLIM		WIDE	LONG	
	LF1D-C	LF1D/2D-EN	LF1D/2D-EH	LF1D/2D-FH	LF1D-H	LF1D-J
Illumination Color	Cool White				Neutral White	
Luminous Flux, lm	560	1530	1260	1540	2000	3000
Color Temperature, k	5700				4700	
Reference Illuminance at 1.0m, lx	180	1700	1800	1500	560	840

LED modules and illumination units may vary in color and brilliance. Luminous flux, color temperature, and illuminance values shown are typical.

PART NUMBERS

MINI (LF1D-C)		
Cable		Part Number
Location	Length	
Side	3m	LF1D-C2F-2W-330
	5m	LF1D-C2F-2W-350
Back	3m	LF1D-C2F-2W-430
	5m	LF1D-C2F-2W-450

LONG (LF1D-H 365mm)		
Cable		Part Number
Location	Length	
Side	5m	LF1D-H2F-2N-350
	1.5m + M12 connector	LF1D-H2F-2N-3B0
Back	5m	LF1D-H2F-2N-450
	1.5m + M12 connector	LF1D-H2F-2N-4B0

LONG (LF1D-J 510mm)		
Cable		Part Number
Location	Length	
Side	5m	LF1D-J2F-2N-350
	1.5m + M12 connector	LF1D-J2F-2N-3B0
Back	5m	LF1D-J2F-2N-450
	1.5m + M12 connector	LF1D-J2F-2N-4B0

Model	SLIM				WIDE	
	Reinforced Glass			Polycarbonate	Reinforced Glass	Polycarbonate
	Standard	Diffuse	Standard	Standard	Standard	Standard
LF1D						
	LF1D-EN2F-2W-A	LF1D-EN21F-2W-A	LF1D-EH2F-2W-A	LF1D-EH3G-2W-A	LF1D-FH2F-2W-A	LF1D-FH3G-2W-A
	LF1D-EN2F-2W-451	LF1D-EN21F-2W-451	LF1D-EH2F-2W-451	LF1D-EH3G-2W-451	LF1D-FH2F-2W-451	LF1D-FH3G-2W-451
	LF1D-EN2F-2W-56S01	N/A	N/A	N/A	LF1D-FH2F-2W-56S01	N/A
LF2D						
	LF2D-EN2F-2W-A	LF2D-EN21F-2W-A	LF2D-EH2F-2W-A	LF2D-EH3G-2W-A	LF2D-FH2F-2W-A	LF2D-FH3G-2W-A
	LF2D-EN2F-2W-450	LF2D-EN21F-2W-450	LF2D-EH2F-2W-450	LF2D-EH3G-2W-450	LF2D-FH2F-2W-450	LF2D-FH3G-2W-450

PART NUMBER STRUCTURE (USE FOR INTERPRETING PART NUMBERS ONLY)

L F 1 D - EN 2F - 2 W - A

Shape
1: Surface Mount
2: Recessed Mount

Size
(LED Arrangement)
C: Mini 100mm (3.94")
EN: Slim Model (48 LEDs x 1 Row)
EH: Slim Model (10 LEDs x 1 Row)
FH: Wide Model (7 LEDs x 2 Rows)
H: Long 365mm (14.37")
J: Long 510mm (20.08")

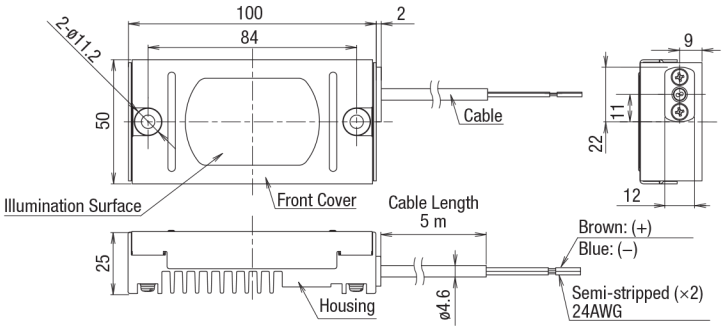
Lens Type Degree Of Protection
2F: Reinforced Glass IP67F, IP69K (LF1D) IP67F (LF2D), IP67G (EN)
3G: Polycarbonate (EH, FH only)

Illumination Color
W: Cool White
N: Neutral White

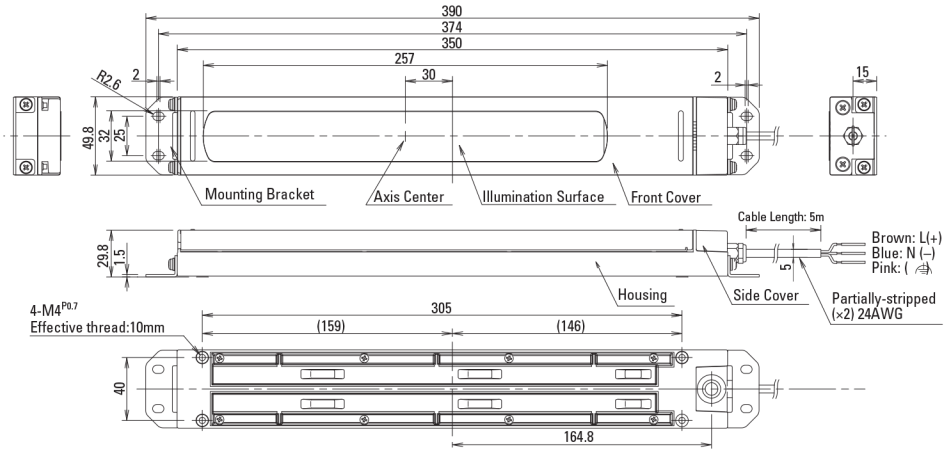
Cable Options
(see chart on page 15)

DIMENSIONS (mm)

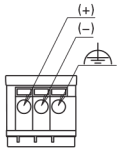
LF1D MINI



LF1D SLIM (Pre-wired)

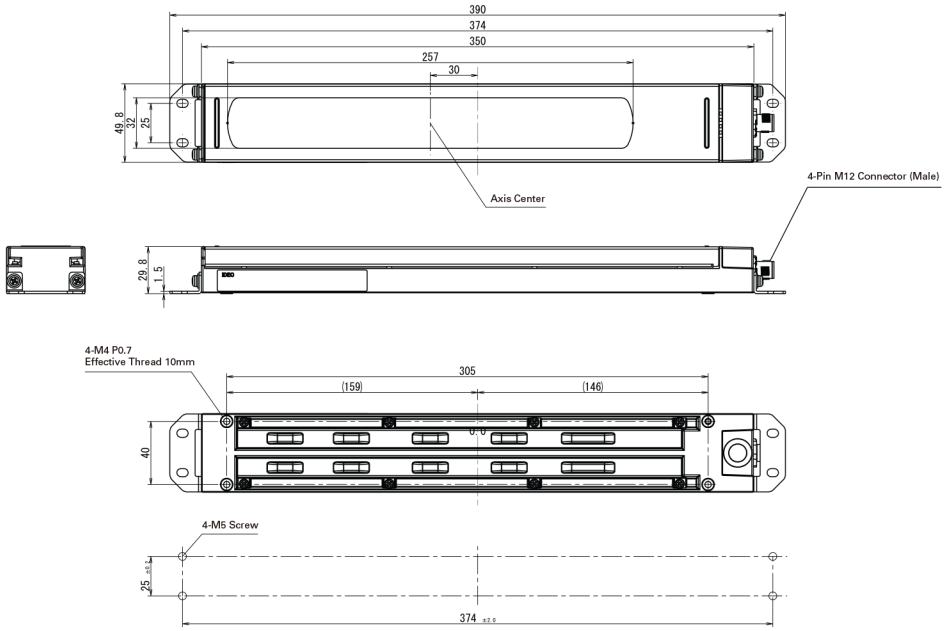


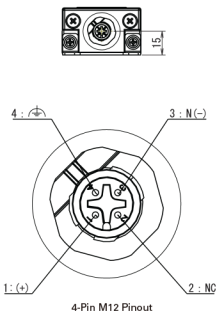
TERMINAL BLOCK WIRING



Slim Type

LF1D SLIM (M12 Quick Connect)

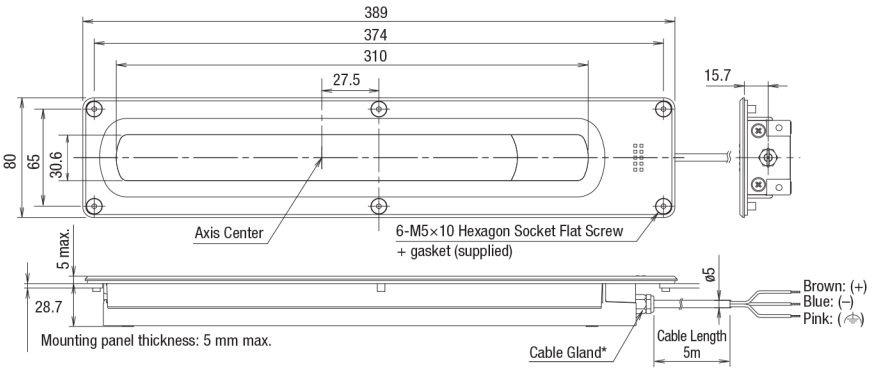




4-Pin M12 Pinout

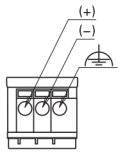
DIMENSIONS (mm)

LF2D SLIM



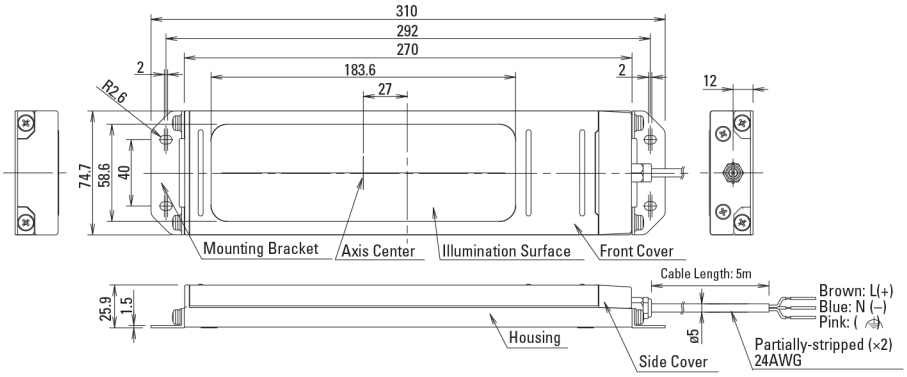
* When the cable gland is prepared by the user, make sure that the cable diameter is ø20 mm at maximum.

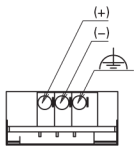
TERMINAL BLOCK WIRING



Slim Type

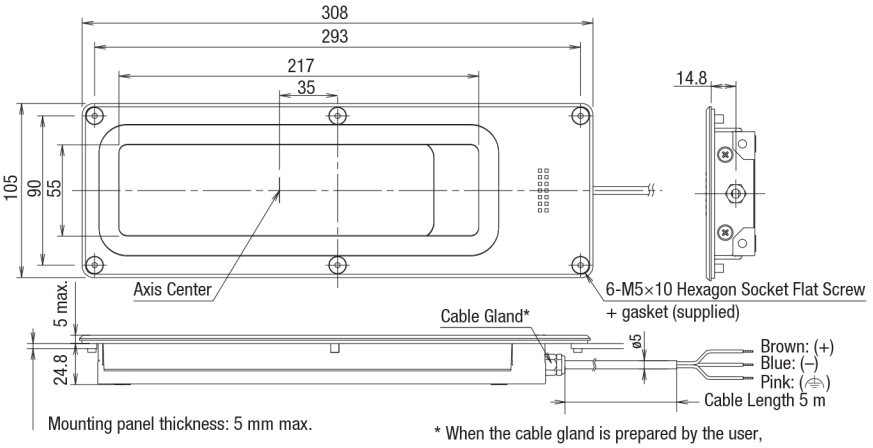
LF1D WIDE



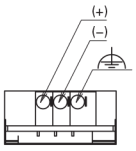


Wide Type

LF2D WIDE



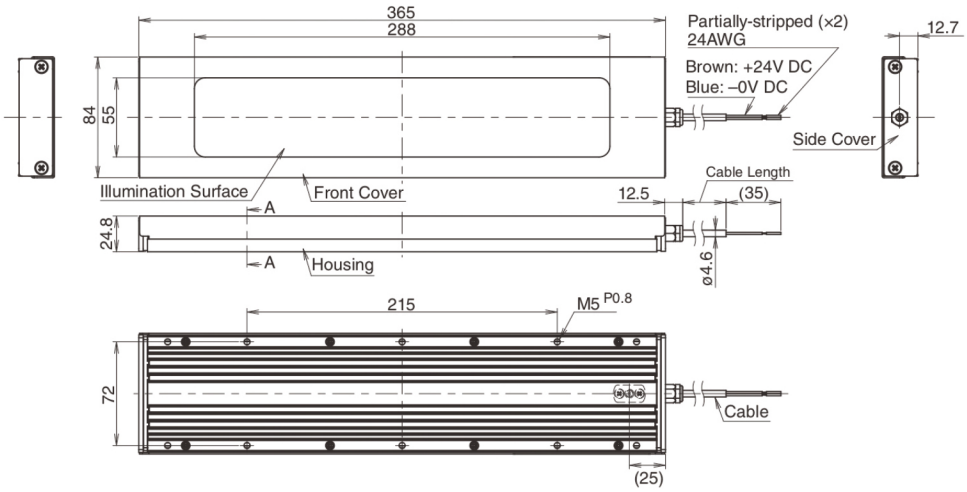
* When the cable gland is prepared by the user, make sure that the cable diameter is ø20 mm at maximum.



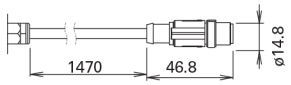
Wide Type

DIMENSIONS (mm)

LF1D-H (Long)

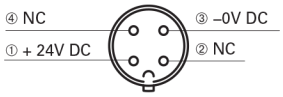


CONNECTOR WIRING

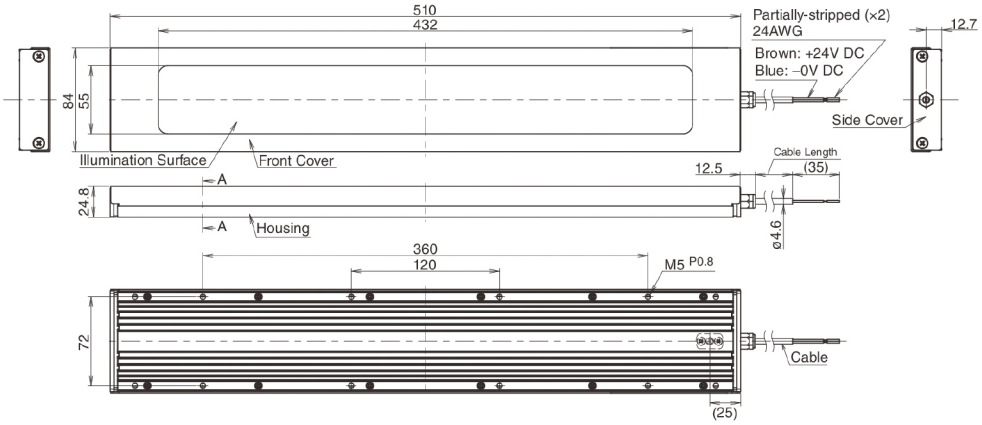


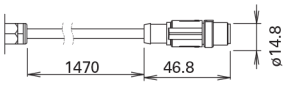
M12 connector: SAC-4P-MS SCO/150/1.5

Plug 4-pin assignment



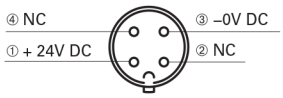
LF1D-J (Long)





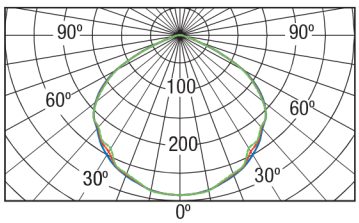
M12 connector: SAC-4P-MS SCO/150/1.5

Plug 4-pin assignment

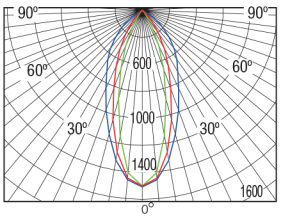


ILLUMINANCE DISTRIBUTION CHARTS (Reference value/unit: cd/1000lm)

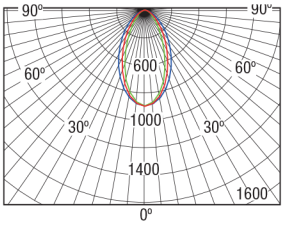
LF1D-C



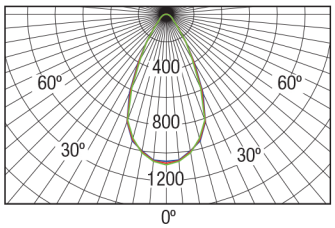
LF1D/2D-EN2F



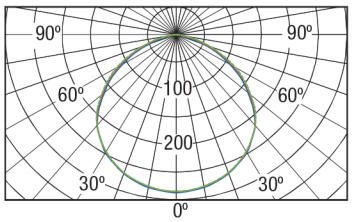
LF1D/LF2D-EN21F



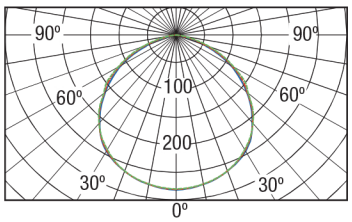
LF1D/2D-FH



LF1D-H

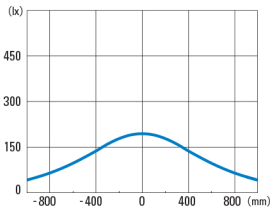


LF1D-J

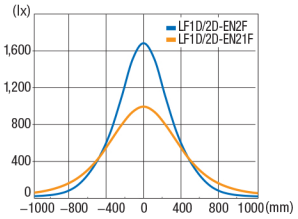


DISTRIBUTION CHARACTERISTICS

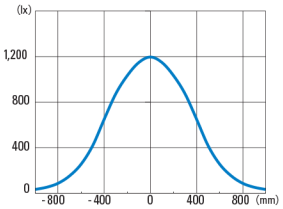
LF1D-C



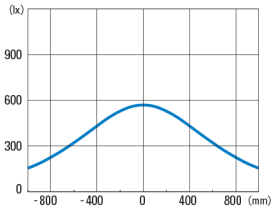
LF1D/2D-EN



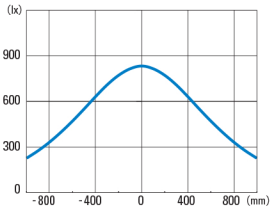
LF1D/2D-FH



LF1D-H

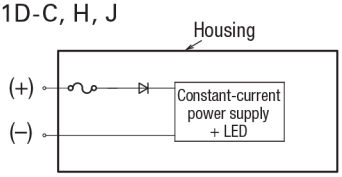


LF1D-J

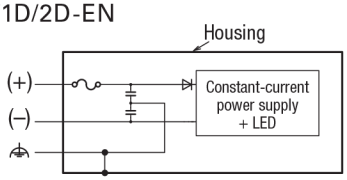


INTERNAL CIRCUIT

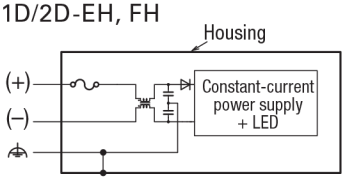
LF1D-C, H, J



LF1D/2D-EN



LF1D/2D-EH, FH



CABLE OPTIONS

Code	Cable Location	Cable Length	Applicable Model
A	Side	5m	LF1D/LF2D-EN, EH, FH
451	Back	5m	LF1D-EN, EH, FH
56S01	Side	M12 Quick Connect	LF1D-EN, FH
450	Back	5m	LF2D

ACCESSORIES

Item						
	Mounting Bracket				Cable Gland	Cable
	Fixed		Adjustable Angle			
Part No.	LF9Z-B11	LF9Z-B12	LF9Z-1MDE1	LF9Z-1MDF1	LF9Z-A11	LF9Z-C05
Applicable Unit	LF1D (Slim)	LF1D (Wide)	LF1D (Slim)	LF1D (Wide)	LF1D/2D (Slim and Wide)	
Material	Stainless Steel				Brass	PVC
Notes	1 Pair, Left and Right				MB*	Length: 5m

*Applicable wire size (10-12 AWG).