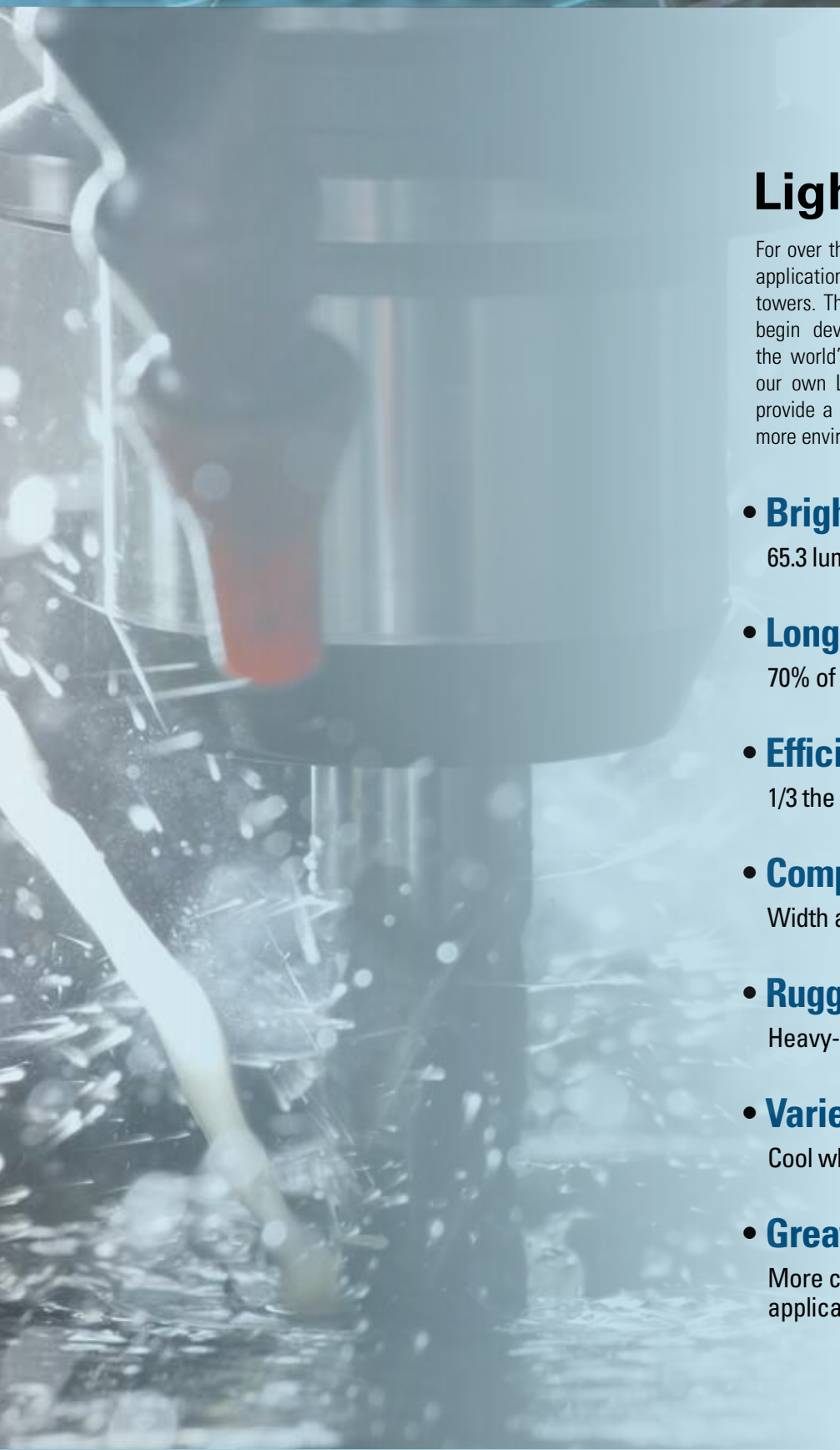
IDEC

Think Automation and beyond...

IDEC LUMIFA Family

LED Lighting Solutions

LUMIFA



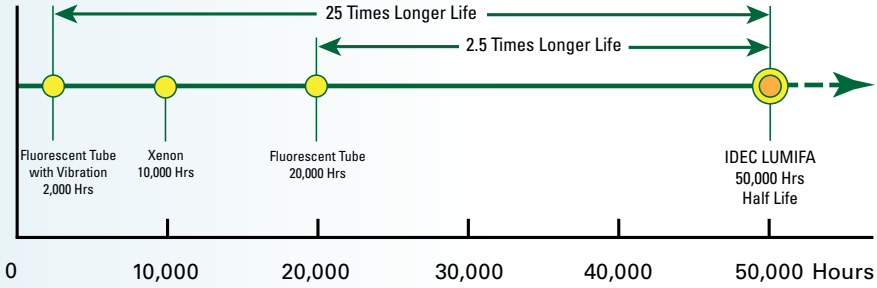
Lighting your way

For over three decades, IDEC has produced LEDs for applications requiring indicator lights and signaling towers. That is why it was a natural progression to begin developing lighting products and construct the world's first building illuminated with 100% of our own LED technology. New LUMIFA LED lights provide a brighter, longer-lasting, cost-effective and more environmentally-friendly lighting source.

- **Bright:**
  65.3 lumens/watt (LUMIFA series average)
- **Long Lasting:**
  70% of initial luminance at 50,000 hrs
- **Efficient:**
  1/3 the energy of Fluorescent Tubes
- **Compact:**
  Width as narrow as 25mm
- **Rugged:**
  Heavy-duty, durable, water/oil resistant
- **Variety of Colors:**
  Cool white, warm white, red, yellow, blue, green
- **Greatest Selection:**
  More choices in size, brightness, color, applications and ratings

Suitable for Harsh Environments

With their IP67/IP67f and IP69K ratings, the LF1D and 2D series can be used in wet and harsh environments. Resistant to water, oil and metal shavings, they are perfect for many industrial applications. In addition, the LF1E series can withstand temperatures down to -40ºC making them ideal for freezers and refrigerated environments. And, don't forget the EF1A series that has an IP67 rating and can be used in Class 1, Zone 1 and Zone 2 hazardous locations.

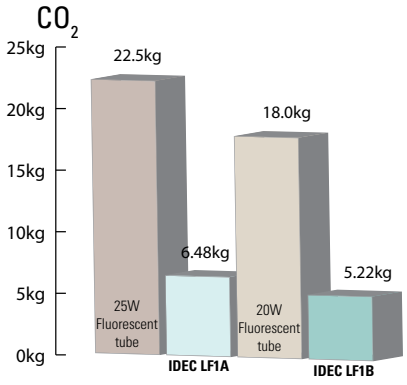


Heat Dissipation Technology

In an LED, only 20% of the energy converts into light, while 80% is lost in the form of heat. For that reason, proper heat management is critical. IDEC Heat Dissipation Technology (patent pending) uses dissipation pins to transfer heat generated in the LED chip to a heat dissipation plate. This minimizes the buildup of heat in the LED element and results in a longer-lasting LED.

Environmentally-friendly

LUMIFA LEDs are made from non-toxic materials and produce 71% less CO_2 emissions compared with a 20W/25W fluorescent tube. LUMIFA are also great for green applications such as solar panels, which have a low power requirement and can't supply the energy necessary for fluorescent bulbs.

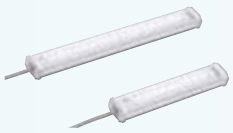


800.262.4332

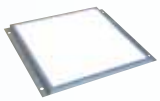
www.IDEC.com/usa/LED

LUMIFA

Selection Guide

					Application Examples	Illumination Color [1]	Reference Illumination [2]	Power Consumption	Operating Voltage	Page
LF1D/2D	Mini	LF1D-C (IP67f/IP67/IP69K)			· Machine tools · Food processing machines · Automatic manufacturing machines · Printing machines · Production system · Test equipment	White (5,700K)	180lx	4.6W	24V DC	6
	Slim & Wide	LF1D/2D Classic (IP67f/IP67)	Slim		· Machine tools · Food processing machines · Test equipment	White (5,700K)	Clear Surface: 1,100lx (4,400lx directly below at .5m) Diffused surface: 1,000lx (4,000lx directly below at .5m)	9W	24V DC	
			Wide					12.5W		
		LF1D/2D-*H Wide-angle & High Luminance (IP67f/IP67/IP69K)	Slim		· Machine tools · Food processing machines · Automatic manufacturing machines · Printing machines · Production system · Test equipment	White (5,700K)	1,450lx	11W	24V DC	
			Wide				1,200lx	12.5W		
	Long	LF1D-H (IP67f/IP67/IP69K)			· Machine tools · Food processing machines · Automatic manufacturing machines · Printing machines · Production system · Test equipment	Neutral White (4,700K) [3]	560lx	18.4W	24V DC	
		LF1D-J (IP67f/IP67/IP69K)					840lx	27.6W		
LF2B (IP65)			Clear Cover		· Various machines and systems · Control panel · Plant · Solar power equipment	White (5,500K)	·LF2B-B: 230lx ·LF2B-C: 425lx ·LF2B-D: 710lx ·LF2B-E: 930lx ·LF2B-F: 1,160lx	12/24V DC LF2B-B: 2.6W LF2B-C: 4.9W LF2B-D: 10.6W	12/24V DC	13
			White Cover				·LF2B-B: 215lx ·LF2B-C: 390lx ·LF2B-D: 645lx ·LF2B-E: 835lx ·LF2B-F: 1,040lx	100 to 240V AC LF2B-B: 3.8W LF2B-C: 7.5W LF2B-D: 9.2W LF2B-E: 14.3W LF2B-F: 21.8W	100 to 240V AC	

1. K: Color Temperature (typ.), mm: Dominant Wavelength (typ.).
2. Directly below at 1m unless otherwise noted.
3. To match traditional cool fluorescent lamps.

			Application Examples	Illumination Color [1]	Reference Illumination [2]	Power Consumption	Operating Voltage	Page
LF1B-N (IP65)	Clear/ White Cover		· Machine tool · Plant equipment · Test equipment · Control panel	Cool white (5,500K)	LF1B-NA: 90lx LF1B-NF: 935lx	Cool white/Warm white/Blue LF1B-NA: 1.5W LF1B-NB: 2.9W LF1B-NC: 4.4W LF1B-ND: 8.7W LF1B-NE: 13.0W LF1B-NF: 17.3W Yellow/Red/Green LF1B-NA: 1.0W LF1B-NB: 2.0W LF1B-NC: 2.9W LF1B-ND: 5.8W LF1B-NE: 8.7W LF1B-NF: 11.6W	24V DC	15
			· Food processing machines · Cosmetic plant · Chemical plant · Show cases	Warm white (2,900K)	LF1B-NA: 60lx LF1B-NF: 620lx			
			· Semiconductor manufacturing equipment · IC foundry	Yellow (590nm)	LF1B-NA: 20lx LF1B-NF: 180lx			
			· Photosensitive material · Semiconductor manufacturing equipment · Darkroom experiment	Red (620nm)				
			· Advertising Display · Light ornaments	Blue (455nm)	LF1B-NA: 10lx LF1B-NF: 80lx			
				Green (525nm)	LF1B-NA: 30lx LF1B-NF: 300lx			
LF1A (IP40)	Clear Cover		· Control Panels · Manufacturing Equipment	Cool white (5,500K)	LED Array 3x2: 190lx LED Array 6x2: 380lx LED Array 12x2: 760lx	LED Array 3x2: 1.8W LED Array 6x2: 3.6W LED Array 12x2: 7.2W	24V DC	17
				Warm white (2,800K)	LED Array 3x2: 130lx LED Array 6x2: 260lx LED Array 12x2: 52lx			
				Yellow (590nm)	LED Array 3x2: 130lx LED Array 6x2: 260lx LED Array 12x2: 52lx	LED Array 3x2: 2.2W LED Array 6x2: 4.4W LED Array 12x2: 8.7W		
				Red (625nm)	LED Array 3x2: 85lx LED Array 6x2: 170lx LED Array 12x2: 340lx			
LF1E (IP54)	Condensing Lens		· Freezer and refrigerated display cases	Cool white (5,000K)	Cool white LF1E-A: 1,800lx LF1E-B: 1,950lx LF1E-C: 2,000lx LF1E-D: 2,000lx LF1E-E: 2,000lx (directly below at 30cm)	LF1E-A: 4.2W LF1E-B: 8.4W LF1E-C: 12.6W LF1E-D: 16.8W LF1E-E: 22.8W	24V DC	19
				Warm white (3,000K)				
EF1A (IP67)			For Hazardous Locations: · Oil, gas & mining industries · Printing factory · Gas station · Chemical complex control panel	White (5,700K)	Clear glass surface: 1,100lx (condensing light) 205lx (diffused light) Translucent glass: 450lx (condensing light) 175lx (diffused light)	19W	100 to 240V AC	21
						17W	24V DC	
LF1F			· Visual inspection · Elevator ceiling	8,500K	5,800lx	11W	21.6 ~ 26.4V DC	23

1. K: Color Temperature (typ.), mm: Dominant Wavelength (typ.).
2. Directly below at .5m unless otherwise noted.

LUMIFA LF1D & LF2D

Machine Tools • Food & Beverage Processing Equipment • Vision Systems

LF1D (IP69K) and LF2D (IP67, IP67f) Series

With their rugged construction, the LF1D/2D series of light units are ideal for machine tools, automated label and package inspection equipment, and food and beverage processing equipment. Their design provides equally brilliant light at the center or edges of the units. Plus with their ratings, the LF1D (IP67, IP67f, IP69K) and LF2D (IP67, IP67f) can be used where high-pressure and high-temperature washdowns are used.

Mini (LF1D-C)

- Compact unit only 100 x 50 x 25mm
- Single LED module design eliminates multiple shadows while distributing light over a wide area (120°)

Slim & Wide (LF1D/2D-E, EH, F, FH)

- Brightness: Standard Models: up to 1,100lx at 1m
  High-Luminance Models: up to 1,450lx at 1m
- Available with terminal block or spring clamp connections for easy installation
- Angle adjustable mounting brackets provide installation flexibility

Long (LF1D-H/J)

- Two lengths available: 365mm and 510mm
- The flat light design reduces glare and multiple shadows, improving visibility from a distance

LED Optical Specifications

Model	Mini	Standard				High-Luminance				Long	
	LF1D-C	Slim (LF1D/2D-E)		Wide (LF1D/2D-F)		Slim (LF1D/2D-EH		Wide (LF12D-FH)		LF1D-H	LF1D-J
Illumination Surface	Clear	Clear	Diffused	Clear	Diffused	Clear	Diffused	Clear	Diffused	Clear	
Illumination Color	Cool White									Neutral White	
Total Luminous Flux	560lm	600lm		840lm		1,000lm		1,260lm		2,000lm	3,000lm
Color Temperature	5700K									4700K	
Reference Illuminance at 1.0m	180lx	1,100lx	1,000lx	1,100lx	1,000lx	1,450lx	1,200lx	1,450lx	1,200lx	560lx	840lx

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

General Specifications

Model	Mini	Standard		High-Luminance		Long	
	LF1D-C	Slim (LF1D/2D-E)	Wide (LF1D/2D-F)	Slim (LF1D/2D-EH	Wide (LF1D/2D-FH)	LF1D-H	LF1D-J
Rated Voltage	24V DC						
Voltage Range	21.6 to 26.4V DC						
Rated Power (typ.)	4.6W	9W	12.5W	11W	12.5W	18.4W	27.6W
Insulation Resistance	100MΩ minimum (500V DC megger)						
Dielectric Strength	1,000V AC, 50/60Hz, 1 minute						
Vibration Resistance (damage limits)	Frequency 5 to 55Hz, amplitude 0.5mm						
Shock Resistance (damage limits)	1000m/s^2						
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 Environment	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 (LF2D: reinforced glass), IP67 (LF2D: polycarbonate), IP69K (LF1D)						
Material [3]	Housing: Diecast aluminum (LF1D/LF2D), Lens: Reinforced glass or polycarbonate (LF1D/LF2D) Cover: Stainless steel (LF1D), Flange cover: Diecast aluminum (LF2D)						
Weight (approx.)	420g	LF1D-E*-2W*: 750g LF1D-E*-2W-A*: 950g LF2D-E*-2W*: 850g LF2D-E*-2W-A*: 1,000g	LF1D-F*-2W*: 800g LF1D-F*-2W-*: 1,000g LF2D-F*-2W*: 900g LF2D-F*-2W-A*: 1,050g	LF1D-E*-2W*: 750g LF1D-E*-2W-A*: 950g LF2D-E*-2W*: 850g LF2D-E*-2W-A*: 1,000g	LF1D-F*-2W*: 800g LF1D-F*-2W-*: 1,000g LF2D-F*-2W*: 900g LF2D-F*-2W-A*: 1,050g	1200g	1600g

1. LED life depends on the operating environment.
2. Waterproof or oil-proof characteristics specified by IEC 60529 and JEM1030. 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 illumination surfaces have the same appearance, but have different degrees of protection (IP67f or IP67).

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

Slim and Wide Surface Mounting (LF1D/-E, EH, F, FH)

Model			Slim Model (10 LEDs × 1 row)		Wide Model (7 LEDs × 2 rows)	
Cable Gland LF9Z-A11	Cable LF9Z-C05	Mounting Bracket LF9Z-B11,B12	Clear Reinforced Glass	Clear Polycarbonate	Clear Reinforced Glass	Clear Polycarbonate
						
— (hole on the side)	—	— √	LF1D-E①2F-2W LF1D-E①2F-2W-101	LF1D-E①3G-2W LF1D-E①3G-2W-101	LF1D-F①2F-2W LF1D-F①2F-2W-101	LF1D-F①3G-2W LF1D-F①3G-2W-101
— (hole on the back)	—	— √	LF1D-E①2F-2W-200 LF1D-E①2F-2W-201	LF1D-E①3G-2W-200 LF1D-E①3G-2W-201	LF1D-F①2F-2W-200 LF1D-F①2F-2W-201	LF1D-F①3G-2W-200 LF1D-F①3G-2W-201
√ (Side)	—	— √	LF1D-E①2F-2W-300 LF1D-E①2F-2W-301	LF1D-E①3G-2W-300 LF1D-E①3G-2W-301	LF1D-F①2F-2W-300 LF1D-F①2F-2W-301	LF1D-F①3G-2W-300 LF1D-F①3G-2W-301
	√	— √	LF1D-E①2F-2W-350 LF1D-E①2F-2W-A	LF1D-E①3G-2W-350 LF1D-E①3G-2W-A	LF1D-F①2F-2W-350 LF1D-F①2F-2W-A	LF1D-F①3G-2W-350 LF1D-F①3G-2W-A
√ (Back)	—	— √	LF1D-E①2F-2W-400 LF1D-E①2F-2W-401	LF1D-E①3G-2W-400 LF1D-E①3G-2W-401	LF1D-F①2F-2W-400 LF1D-F①2F-2W-401	LF1D-F①3G-2W-400 LF1D-F①3G-2W-401
	√	— √	LF1D-E①2F-2W-450 LF1D-E①2F-2W-451	LF1D-E①3G-2W-450 LF1D-E①3G-2W-451	LF1D-F①2F-2W-450 LF1D-F①2F-2W-451	LF1D-F①3G-2W-450 LF1D-F①3G-2W-451

*In place of ① insert H for High-Lluminance or leave blank for Standard models.

Slim and Wide Recessed Mounting (LF2D/-E, EH, F, FH)

Model		Slim Model (10 LEDs × 1 row)		Wide Model (7 LEDs × 2 rows)	
Cable Gland LF9Z-A11	Cable LF9Z-C05	Clear Reinforced Glass	Clear Polycarbonate	Clear Reinforced Glass	Clear Polycarbonate
					
—	—	LF2D-E①2F-2W	LF2D-E①3G-2W	LF2D-F①2F-2W	LF2D-F①3G-2W
—	—	LF2D-E①2F-2W-200	LF2D-E①3G-2W-200	LF2D-F①2F-2W-200	LF2D-F①3G-2W-200
√ (Side)	—	LF2D-E①2F-2W-300	LF2D-E①3G-2W-300	LF2D-F①2F-2W-300	LF2D-F①3G-2W-300
	√	LF2D-E①2F-2W-A	LF2D-E①3G-2W-A	LF2D-F①2F-2W-A	LF2D-F①3G-2W-A
√ (Back)	—	LF2D-E①2F-2W-400	LF2D-E①3G-2W-400	LF2D-F①2F-2W-400	LF2D-F①3G-2W-400
	√	LF2D-E①2F-2W-450	LF2D-E①3G-2W-450	LF2D-F①2F-2W-450	LF2D-F①3G-2W-450

*In place of ① insert H for High-Lluminance or leave blank for Standard models.

Accessories

Item	Mounting Bracket				Cable Gland	Cable
	Fixed		Adjustable Angle			
Part Number	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 & Wide)	
Material	Stainless Steel				Brass	PVC
Notes	1 pair, Left and Right				M8*	Length: 5m

*Applicable wire size (10-12 AWG)

Part Number Structure (use for interpreting part numbers only)

L F 2 D – E H 2 F – 2 W – 3 0 0

- Shape
  - 1: Surface mount
  - 2: Recessed mount
- Size (LED arrangement)
  - C: Mini 100mm (3.94")
  - E: Slim Model (10 LEDs × 1 row)
  - F: Wide Model (7 LEDs × 2 rows)
  - H: Long 365mm (14.37")
  - J: Long 510mm (20.08")
- Illumination Models (Wide & Slim only)
  - blank: Standard
  - H: large area, High Luminance
- Degree of Protection
  - F: Clear reinforced glass IP67f (LF2D), IP67f/IP69K (LF1D)
  - G: Clear polycarbonate IP67 (LF2D), IP67/IP69K (LF1D)
- Illumination Color
  - W: white
  - N: neutral
- Illumination Surface
  - 2: Clear, Reinforced glass
  - 3: Clear, Polycarbonate
  - 5: Diffused, Polycarbonate (standard wide & slim)
  - 9: Diffused, Reinforced glass (standard wide & slim)

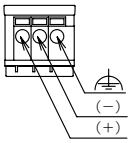
Cable Gland

Code	Cable Gland	Cable Gland Hole Location	Cable	Mounting Bracket
Blank	–	side	–	–
A	√	side	5m	√ [1]
101	–	side	–	√ [1]
200	–	back	–	–
201	–	back	–	√ [1]
300	√	side	–	–
3B0	√	side	1.5m [3]	–
301	-	side	–	√ [1]
330	√	side	3m	–
350 [2]	√	side	5m	–
400	-	back	–	–
401	-	back	–	√ [1]
430	√	back	3m	–
450	√	back	5m	–
451	√	back	5m	√ [1]
4B0	√	back	1.5m [3]	–

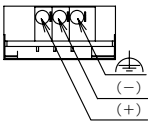
1. Mounting bracket available for LF1D (wide and slim) only.
2. Only available for LF1D (wide and slim) models.
3. 1.5m cable with M12 connector for Long only (LF1D-H, J).

Terminal Block Wiring

Slim Type



Wide Type

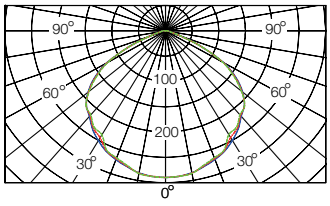


Applicable ferrules: 0.25 to 0.75 mm^2

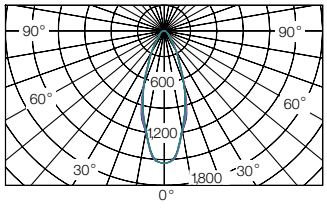
Recommended source - Phoenix Contact:
Al 0,25-12 BU, Al 0,34-12 TQ,
Al 0,5-12 WH, Al 0,75-12 GY

Illuminance Charts

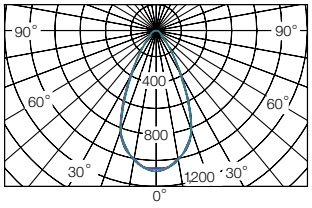
LF1D-C



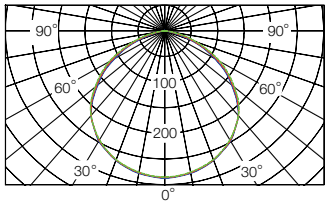
LF1D/2D-EH



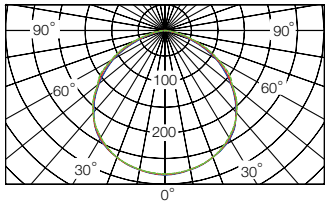
LF1D/2D-FH

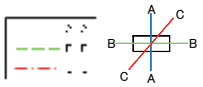


LF1D-H



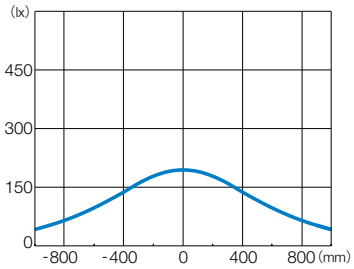
LF1D-J



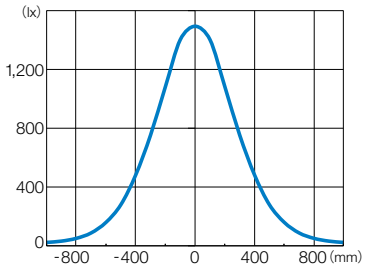


Distribution Characteristics

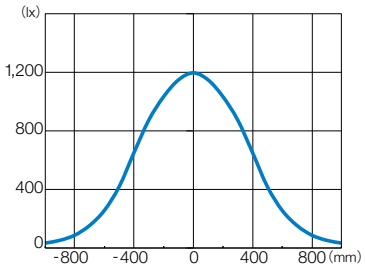
LF1D-C



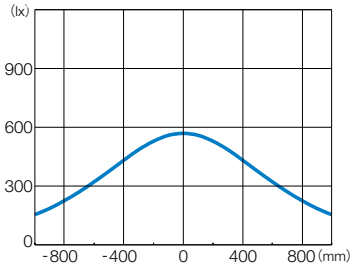
LF1D/2D-EH



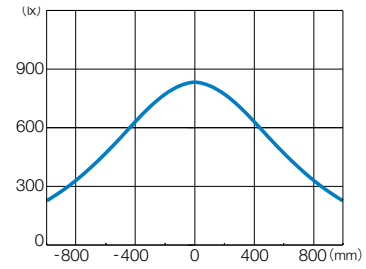
LF1D/2D-FH



LF1D-H

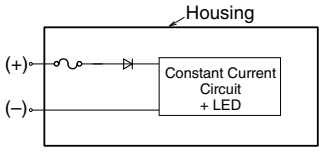


LF1D-J

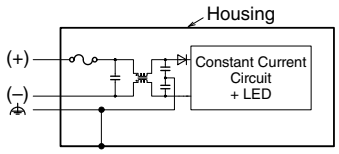


Internal Circuit

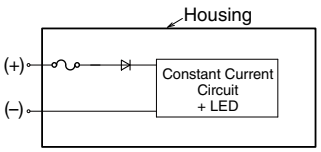
LF1D-C



LF1D/2D-E, EH, F, FH

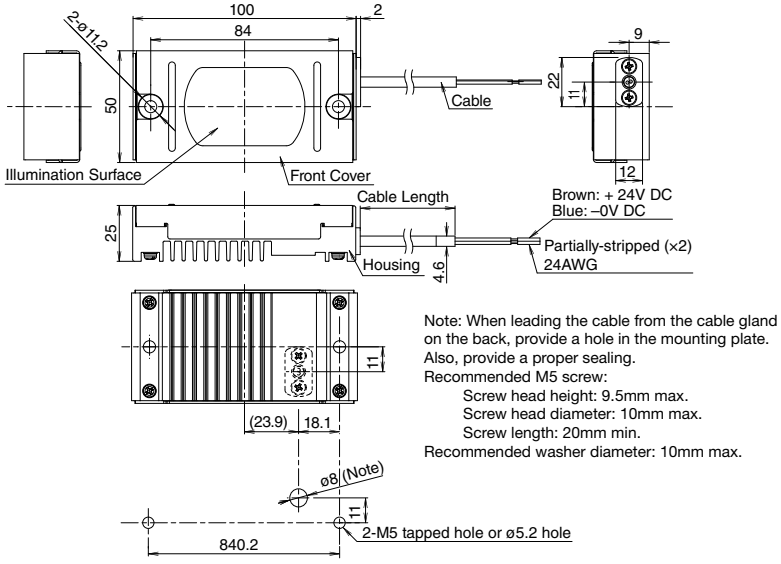


LF1D-H/J



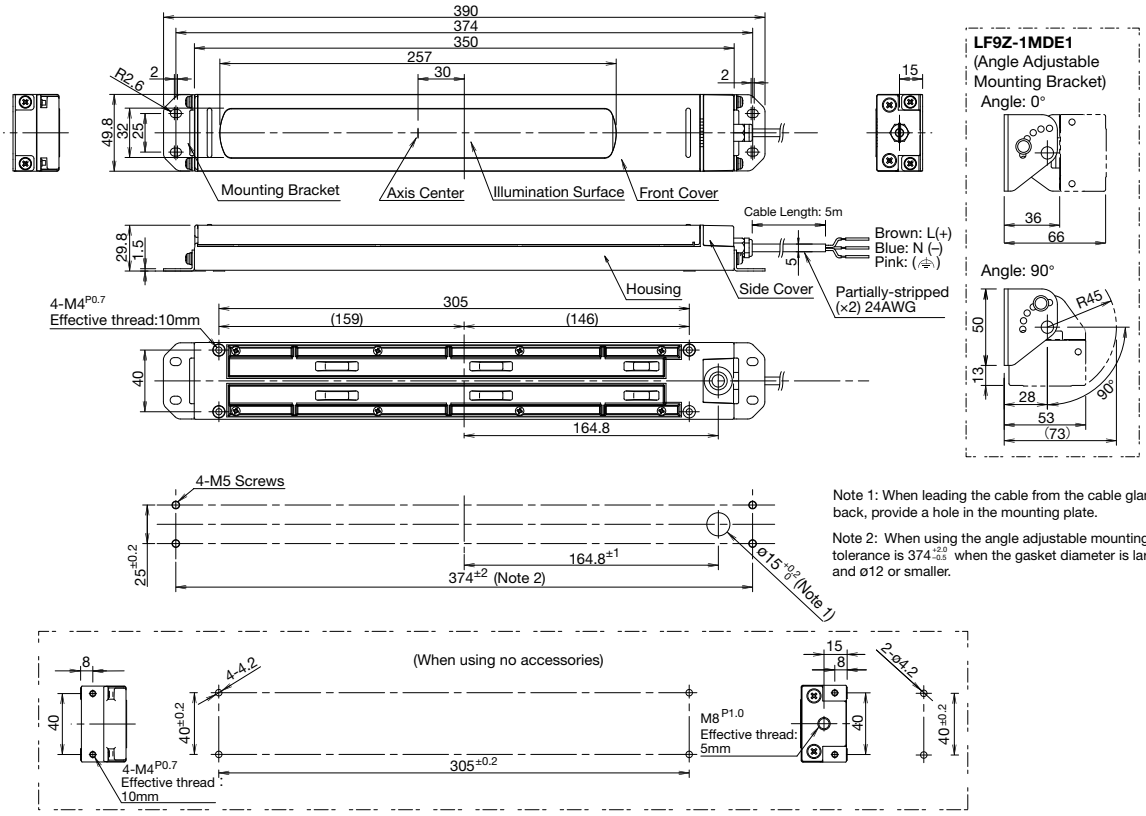
Dimensions (mm)

LF1D-C Mini



Note: When leading the cable from the cable gland on the back, provide a hole in the mounting plate. Also, provide a proper sealing.
Recommended M5 screw:
Screw head height: 9.5mm max.
Screw head diameter: 10mm max.
Screw length: 20mm min.
Recommended washer diameter: 10mm max.

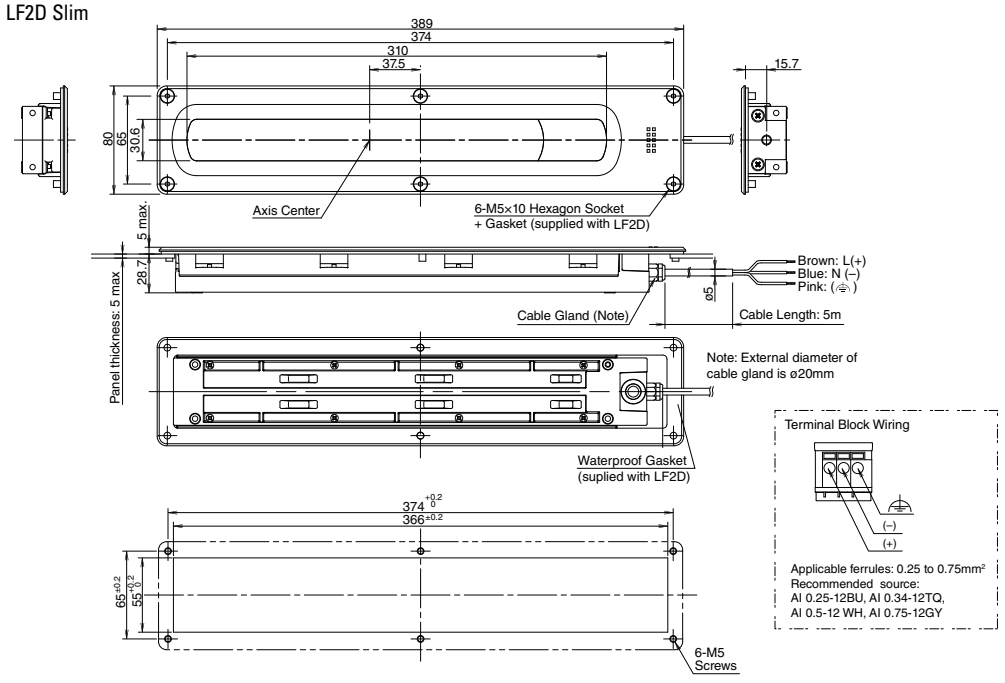
LF1D Slim



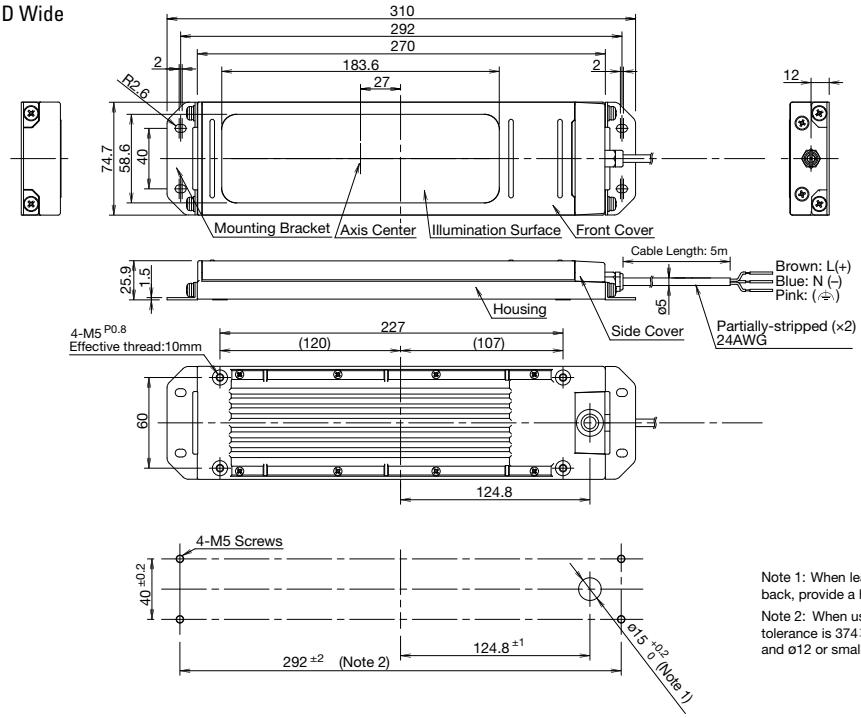
Note 1: When leading the cable from the cable gland on the back, provide a hole in the mounting plate.

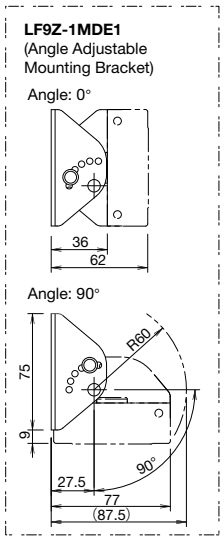
Note 2: When using the angle adjustable mounting bracket, the tolerance is $374^{+2.0}_{-0.5}$ when the gasket diameter is larger than ø10 and ø12 or smaller.

LF2D Slim



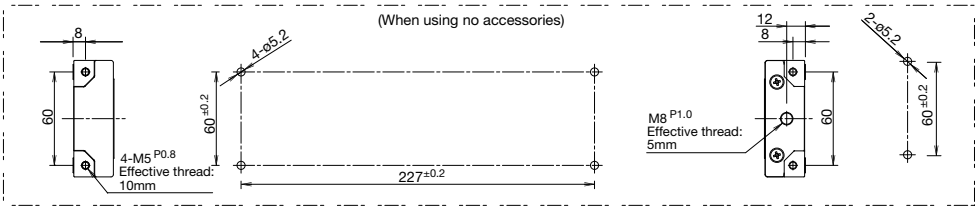
LF1D Wide



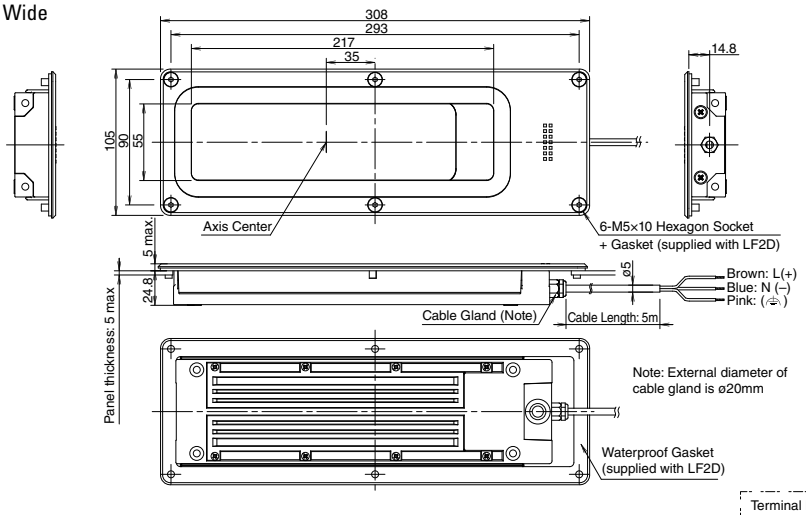


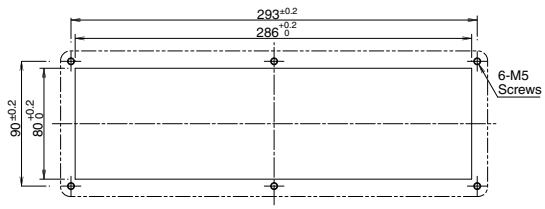
Note 1: When leading the cable from the cable gland on the back, provide a hole in the mounting plate.

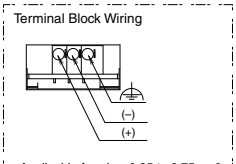
Note 2: When using the angle adjustable mounting bracket, the tolerance is $374^{+2.0}_{-0.5}$ when the gasket diameter is larger than ø10 and ø12 or smaller.



LF2D Wide

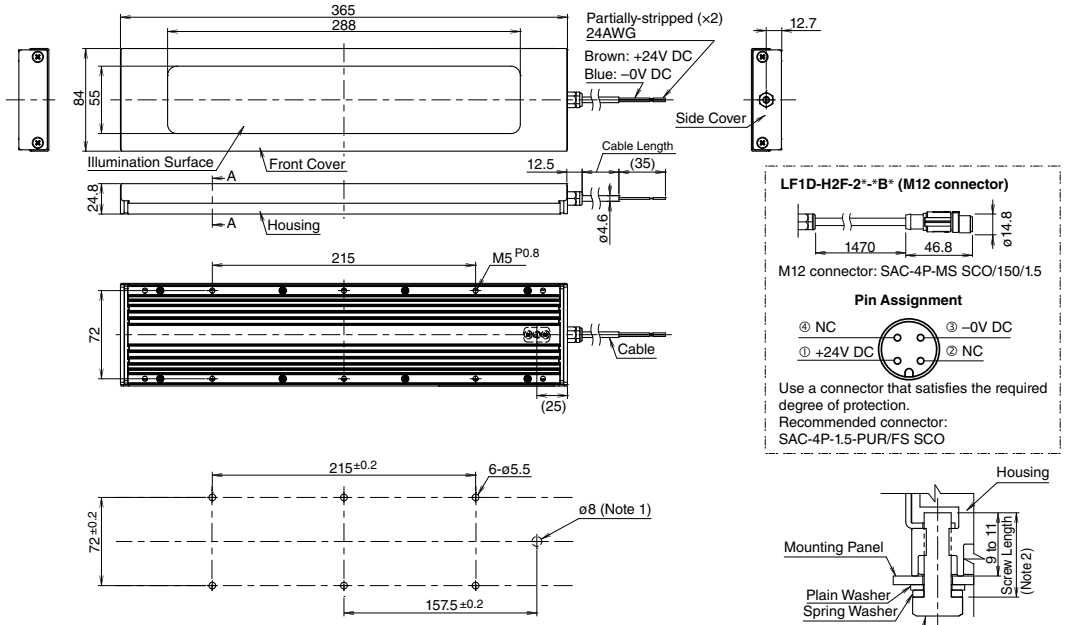






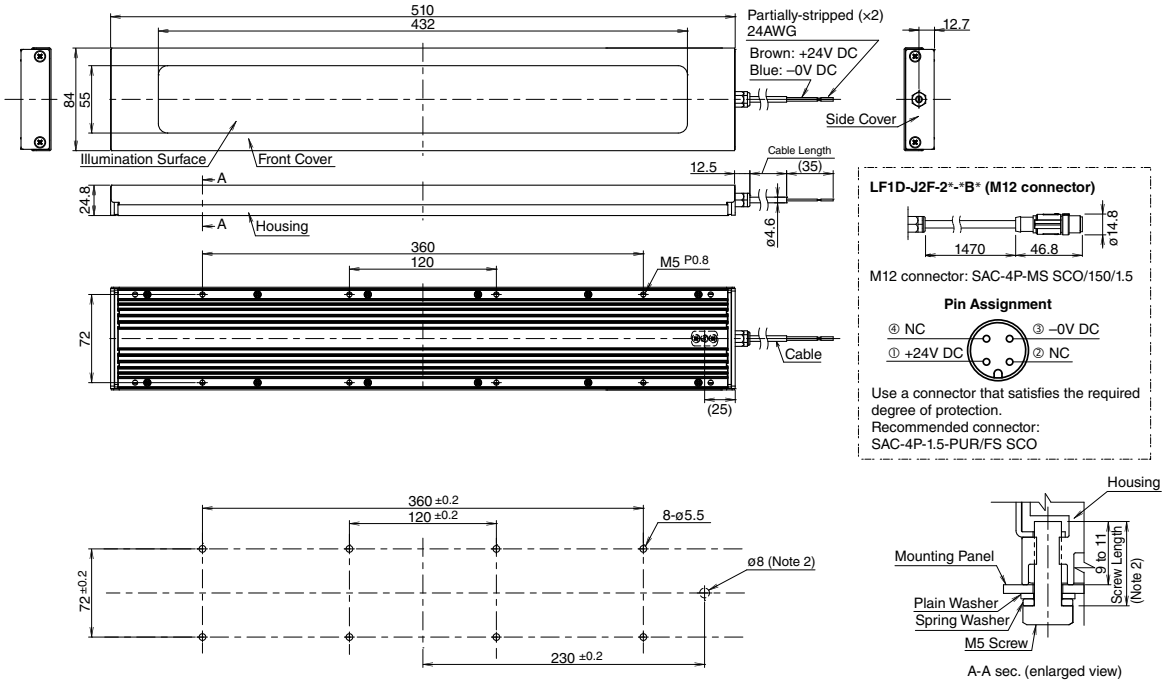
Applicable ferrules: 0.25 to 0.75mm²
Recommended source:
AI 0.25-12BU, AI 0.34-12TQ,
AI 0.5-12 WH, AI 0.75-12GY

LF1D-H Long



Note 1: When leading the cable from the cable gland on the back, provide a hole in the mounting plate. A ø16 hole is necessary when using the LF1D-*2F-2N-*B* (M12 connector type).
Note 2: Choose mounting screws in consideration of mounting plate thickness.

LF1D-J Long



Note 1: When leading the cable from the cable gland on the back, provide a hole in the mounting plate. A ø16 hole is necessary when using the LF1D-*2F-2N-*B* (M12 connector type).
Note 2: Choose mounting screws in consideration of mounting plate thickness.

LUMIFA LF2B

Control Panels • Industrial Equipment • Commercial Products

LF2B Series

Wide range of input voltages (100 - 240V AC) for commercial applications, and 12/24V DC are available for battery or industrial usage. Slim units can be used in many applications and installations where space is limited. Rated IP65 (protection from water and dust), LF2B is great for environments where there is water spray.

- Slim units: 40mm wide x 29mm high
- One-step installation in a narrow space is possible when using mounting brackets
- Five Lengths (210/330/580/830/1,080mm) are offered to meet space requirements and illumination coverages
- Bright and clear white LED illuminates the shapes and colors of target objects
- Two covers: clear or white

*UL applies for DC units only.

LED Optical Specifications

Model	LF2B-B (210mm)		LF2B-C (330mm)		LF2B-D (580mm)		LF2B-E (830mm)		LF2B-F (1,080mm)	
Illumination Color	White									
Color Temperature	5,500K									
Luminous Flux (typ.)	180lm		360lm		720lm		1,080lm		1,440lm	
Cover	Clear	White	Clear	White	Clear	White	Clear	White	Clear	White
Reference Illuminance (typ.) at 0.5m directly below	230lx	215lx	425lx	390lx	710lx	645lx	930lx	835lx	1,160lx	1,040lx

LED modules and illumination units may vary in illumination colors and illuminance.

General Specifications

Model		LF2B-B (210mm)	LF2B-C (330mm)	LF2B-D (580mm)	LF2B-E (830mm)	LF2B-F (1,080mm)
Rated Voltage		100-240V AC 50/60Hz (Voltage range: 90-264V AC)				
		12V/24V DC (Voltage range: 10.8-30V DC)				
Input Current (typical) (at the rated voltage) [1]	AC100~240V AC	33mA	67mA	96mA	149mA	226mA
	12V/24V DC	215mA	409mA	880mA	–	
Rated Power (at the rated voltage)	100~240V AC	3.8W	7.5W	9.2W	14.3W	21.8W
	12V/24V DC	2.6W	4.9W	10.6W	–	
Insulation Resistance		100MΩ minimum (500V DC megger)				
Dielectric Strength	100~240V AC	2,000V AC				
	12V/24V DC	1,000V AC			–	
Vibration Resistance		Frequency 5 - 55Hz, Amplitude 0.17mm, speed acceleration 20m/s^2, 3 directions, 2 hours each				
Shock Resistance		300m/s^2, 6 directions, 5 times each				
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 [2]		40,000 hours (Ta = 25°C) (The total illumination life in which the brightness maintains a minimum of 70% of the initial value.)				
Degree of Protection		IP65 (IEC 60529)				
Material		Front Cover: Polycarbonate Resin; End Cover/Cable Gland: Polyamide Resin; Cable: PVC sheathing (24AWG)				
Weight (approx.)	100~240V AC	200g	255g	400g	520g	645g
	12V/24V DC	175g	235g	370g	–	

1. 100V AC input for 100 - 240V AC; 12V DC input for 12V/24V DC.
2. LED life is dependent on the operating environment and conditions.

Part Numbers

Illumination Color	White			
Cover	Clear Cover		White Cover	
				
Rated Voltage	100 - 240V AC	12V/24V DC	100-240V AC	12V/24V DC
LF2B-B (210mm)	LF2B-B3P-ATHWW2-1M	LF2B-B3P-BTHWW2-1M	LF2B-B4P-ATHWW2-1M	LF2B-B4P-BTHWW2-1M
LF2B-C (330mm)	LF2B-C3P-ATHWW2-1M	LF2B-C3P-BTHWW2-1M	LF2B-C4P-ATHWW2-1M	LF2B-C4P-BTHWW2-1M
LF2B-D (580mm)	LF2B-D3P-ATHWW2-1M	LF2B-D3P-BTHWW2-1M	LF2B-D4P-ATHWW2-1M	LF2B-D4P-BTHWW2-1M
LF2B-E (830mm)	LF2B-E3P-ATHWW2-1M		LF2B-E4P-ATHWW2-1M	
LF2B-F (1,080mm)	LF2B-F3P-ATHWW2-1M		LF2B-F4P-ATHWW2-1M	

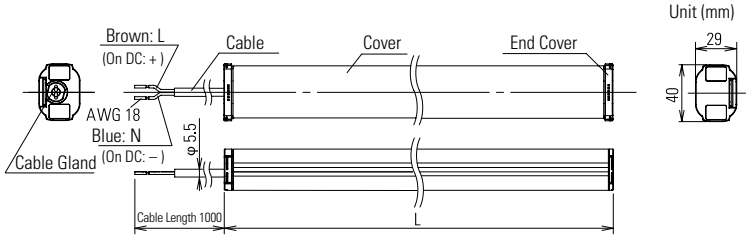
Part Number Structure (use for interpreting part numbers only)

LF2B - C 3 P - ATHWW2 - 1M

- Length
  - B: 210mm (8.27")
  - C: 330mm (12.99")
  - D: 580mm (22.83")
  - E: 830mm (32.68")
  - F: 1,080mm (42.52")
- Cover
  - 3: Clear
  - 4: White
- Rated Voltage
  - A: 100/240V AC
  - B: 12V/24V DC

DC12V/24V Length: B (210mm), C (330mm), D (580mm) only

Dimensions (mm)



Dimension Table

Part Number	L (mm)	Inch
LF2B-B□P-◇THWW2-1M	210	8.27
LF2B-C□P-◇THWW2-1M	330	12.99
LF2B-D□P-◇THWW2-1M	580	22.83
LF2B-E□P-◇THWW2-1M	830	32.68
LF2B-F□P-◇THWW2-1M	1,080	42.52

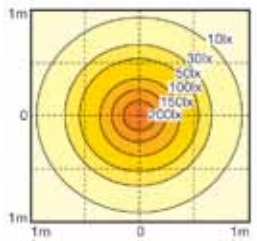
Accessories

Item	Part Number	Remarks
Mounting Bracket (U-shape)	LF9Z-1SB21	Comes with the product (see Note below)
Mounting Bracket (L-shape)	LF9Z-1SB22	Order separately

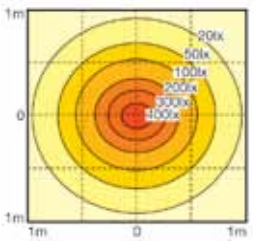
LF2B-B and -C includes 2 brackets each; LF2B-E 3 brackets, and LF2B-F 4 brackets.

Illuminance Charts (Clear light at 0.5m)

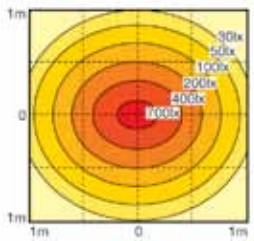
LF2B-B (210mm)



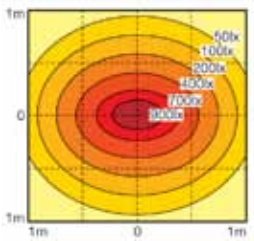
LF2B-C (330mm)



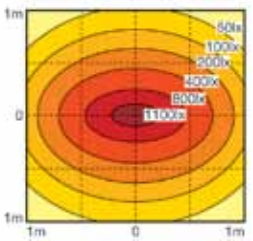
LF2B-D (580mm)



LF2B-E (830mm)



LF2B-F (1,080mm)



LUMIFA LF1B-N

Control Panels • Industrial Machines • Commercial Display Cases

LF1B-N Series

The LF1B-N series LED light strips are slim and perfect for applications where space is a concern. They come in six different lengths and six distinct colors, making them a very flexible lighting solution.

- Compact design: 27.5mm wide, 16mm high, and 134 to 1,080mm long
- 6 Colors: cool white, warm white, yellow, red, blue, green
- All units come standard with 3 meter connection cables
- 2 Cover options: clear, white
- IP65 degree of protection (waterproof, dustproof), suitable for use in wet locations

LED Optical Specifications

Illumination Color		Cool White		Warm White		Yellow		Red		Green		Blue	
Cover		Clear	White	Clear	White	Clear	White	Clear	White	Clear	White	Clear	White
Color Temperature/ Dominant Wavelength (typ.)		5,500K		2,900K		590nm		620nm		525nm		455nm	
Reference Brightness (typ.) at 0.5m	LF1B-NA	90lx	80lx	60lx	55lx	20lx	18lx	20lx	18lx	30lx	27lx	10lx	9lx
	LF1B-NB	220lx	200lx	145lx	130lx	40lx	36lx	40lx	36lx	60lx	55lx	20lx	18lx
	LF1B-NC	400lx	360lx	250lx	225lx	75lx	65lx	75lx	65lx	110lx	100lx	30lx	27lx
	LF1B-ND	660lx	600lx	455lx	410lx	125lx	110lx	125lx	110lx	190lx	170lx	50lx	45lx
	LF1B-NE	820lx	740lx	560lx	500lx	160lx	145lx	160lx	145lx	260lx	235lx	60lx	55lx
	LF1B-NF	935lx	850lx	620lx	555lx	180lx	160lx	180lx	160lx	300lx	270lx	80lx	70lx

LED modules and illumination units may vary in illumination colors and brightness.

General Specifications

Model		LF1B-NA (134mm)	LF1B-NB (210mm)	LF1B-NC (330mm)	LF1B-ND (580mm)	LF1B-NE (830mm)	LF1B-NF (1,080mm)
Rated Voltage		24V DC (operating voltage range: 21.6 to 26.4V)					
Input Current (typ.) (at the rated current)	cool white/warm white/blue	60mA	120mA	180mA	360mA	540mA	720mA
	red/yellow/green	40mA	80mA	120mA	240mA	360mA	480mA
Power Consumption (typ.) (at the rated voltage)	cool white/warm white/blue	1.5W	2.9W	4.4W	8.7W	13.0W	17.3W
	red/yellow/green	1.0W	2.0W	2.9W	5.8W	8.7W	11.6W
Insulation Resistance		100MΩ minimum (500V DC megger)					
Dielectric Strength		1,000V AC, 1 minute (between live and dead parts)					
Vibration Resistance (damage limits)		Frequency: 5 to 55Hz, Amplitude 0.5mm Acceleration 60m/s^2 (6G), 2 hours each in 3 axes				Frequency: 5 to 55Hz, Amplitude 0.17mm Acceleration 20m/s^2 (2G), 2 hours each in 3 axes	
Shock Resistance (damage limits)		1,000m/s^2 (100G), 5 shocks each in 6 axes				300m/s^2 (30G), 5 shocks each in 6 axes	
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 (Note)		40,000 hours (Ta = 25°C) (The total illumination life in which the brightness maintains a minimum of 70% of the initial value.)					
Degree of Protection		IP65 (IEC 60529)					
Material		Cover: polycarbonate, End cover/cable gland: polyamide, Wire: PVC (24AWG)					
Weight (approx.)		95g	125g	165g	255g	430g	740g

1. LED life depends on the operating environment.

Part Numbers

Illumination Color	Cool White	Warm White	Yellow	Red	Blue	Green
Appearance						
						
LF1B-NA (134mm)	LF1B-NA①P-2THWW2-3M	LF1B-NA①P-2TLWW2-3M	LF1B-NA①P-2SHY2-3M	LF1B-NA①P-2SHR2-3M	LF1B-NA①P-2THS2-3M	LF1B-NA①P-2SHG2-3M
LF1B-NB (210mm)	LF1B-NB①P-2THWW2-3M	LF1B-NB①P-2TLWW2-3M	LF1B-NB①P-2SHY2-3M	LF1B-NB①P-2SHR2-3M	LF1B-NB①P-2THS2-3M	LF1B-NB①P-2SHG2-3M
LF1B-NC (330mm)	LF1B-NC①P-2THWW2-3M	LF1B-NC①P-2TLWW2-3M	LF1B-NC①P-2SHY2-3M	LF1B-NC①P-2SHR2-3M	LF1B-NC①P-2THS2-3M	LF1B-NC①P-2SHG2-3M
LF1B-ND (580mm)	LF1B-ND①P-2THWW2-3M	LF1B-ND①P-2TLWW2-3M	LF1B-ND①P-2SHY2-3M	LF1B-ND①P-2SHR2-3M	LF1B-ND①P-2THS2-3M	LF1B-ND①P-2SHG2-3M
LF1B-NE (830mm)	LF1B-NE①P-2THWW2-3M	LF1B-NE①P-2TLWW2-3M	LF1B-NE①P-2SHY2-3M	LF1B-NE①P-2SHR2-3M	LF1B-NE①P-2THS2-3M	LF1B-NE①P-2SHG2-3M
LF1B-NF (1,080mm)	LF1B-NF①P-2THWW2-3M	LF1B-NF①P-2TLWW2-3M	LF1B-NF①P-2SHY2-3M	LF1B-NF①P-2SHR2-3M	LF1B-NF①P-2THS2-3M	LF1B-NF①P-2SHG2-3M

In place of ① insert 3 for clear cover and 4 for white cover.

Part Number Structure (use for interpreting part numbers only)

LF1B - NC 3 P - 2 THWW2 - 3M

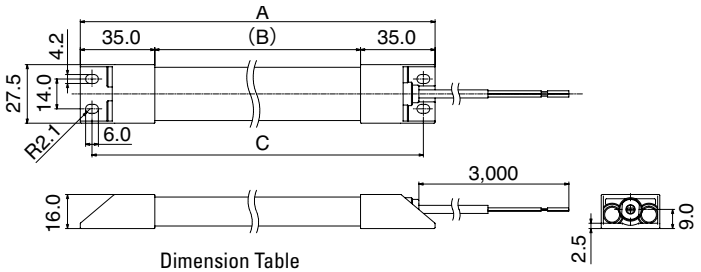
Length
- A: 134mm (5.28")
- B: 210mm (8.27")
- C: 330mm (12.99")
- D: 580mm (22.83")
- E: 830mm (32.68")
- F: 1,080mm (42.52")

Cover
- 3: Clear
- 4: White

Illumination Color
- THWW2: Cool white
- TLWW2: Warm white
- SHY2: Yellow
- SHR2: Red
- THS2: Blue
- SHG2: Green

Cable Length
- 3M: 3m

Dimensions (mm)

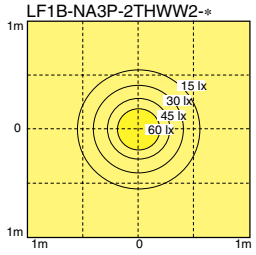


Dimension Table

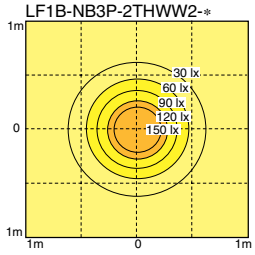
Model	A		B		C	
	mm	inch	mm	inch	mm	inch
LF1B-NA	134	5.28	64	2.52	123	4.84
LF1B-NB	210	8.27	140	5.51	199	7.83
LF1B-NC	330	12.99	260	10.24	319	12.56
LF1B-ND	580	22.83	510	20.08	569	22.40
LF1B-NE	830	32.68	760	29.92	819	32.24
LF1B-NF	1080	42.52	1010	39.76	1069	42.09

Brilliance Distribution at 0.5m (reference value)

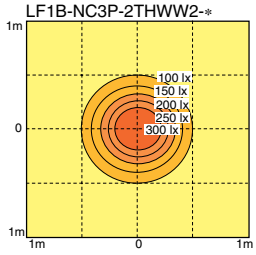
LF1B-NA3P-2THWW2-*



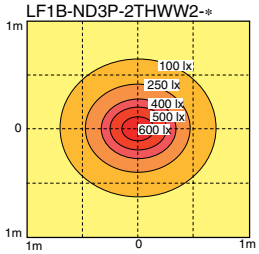
LF1B-NB3P-2THWW2-*



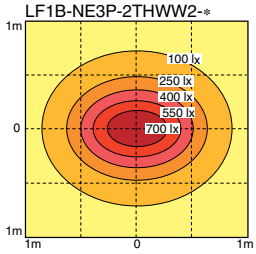
LF1B-NC3P-2THWW2-*



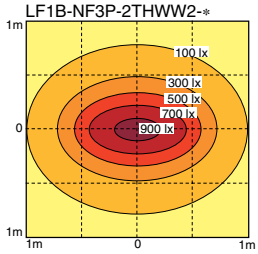
LF1B-ND3P-2THWW2-*



LF1B-NE3P-2THWW2-*



LF1B-NF3P-2THWW2-*



Accessory

Item	Mounting Bracket- Adjustable Angle
Part No.	LF9Z-1MB1
Material	Stainless Steel

1. 1 pair, Left and Right.
2. Not applicable to LF1B-ND.

LUMIFA LF1A

Control Panels • Manufacturing Equipment

LF1A Series

LF1A LED strips use super-bright multi-chip LEDs providing illumination equivalent to a 25W fluorescent lamp, while consuming only one-third the power. They come in a thin housing available in three sizes with four color configurations: cool white (5500K), warm white (2800K), yellow (590nm) and red (625nm).

- Brightness: 66.6 Lumens/Watt
- Energy savings: One-third of fluorescent lamps
- Long life: 40,000 hrs (Half-life)
- UL Listed
- RoHS Compliant
- IP40

LED Optical Specifications

Model		LF1A-*-2THWW6	LF1A-*-2TLWW6	LF1A-*-2SHY8	LF1A-*-2SHR8
Illumination Color		Cool White	Warm White	Yellow	Red
Luminous Intensity (Single LED module)		6,000mcd	4,000mcd	4,000mcd	2,500mcd
Color Temperature / Dominant Wavelength		5,500K	2,800K	590nm	625nm
Reference Illuminance at 0.5m	LED Array 3 x 2	190lx	130lx	130lx	85lx
	LED Array 6 x 2	380lx	260lx	260lx	170lx
	LED Array 12 x 2	760lx	520lx	520lx	340lx

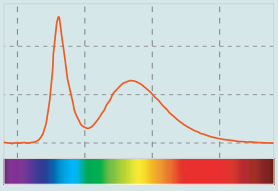
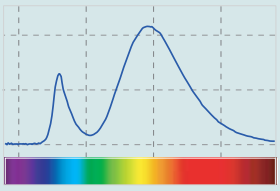
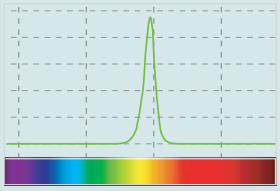
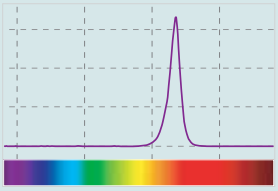
*LED Array A1 = 3x2 , B1 = 6x2, D1 = 12x2

General Specifications

Model		LF1A-*-2THWW6	LF1A-*-2TLWW6	LF1A-*-2SHY8	LF1A-*-2SHR8
Rated Voltage		24V DC (non-polarized)			
Input Current (at rated voltage)	LED Array 3 x 2	75mA		90mA	
	LED Array 6 x 2	150mA		180mA	
	LED Array 12 x 2	300mA		360mA	
Rated Power (at rated voltage)	LED Array 3 x 2	1.8W		2.2W	
	LED Array 6 x 2	3.6W		4.4W	
	LED Array 12 x 2	7.2W		8.7W	
Dielectric Strength		Between live and dead parts: 1000V AC, 1 minute			
Insulation Resistance		Between live and dead parts: 100 MΩ (500V DC megger)			
Operating Temperature		-20 to +50˚C			
Storage Temperature		-25 to +70˚C			
Operating/Storage Humidity		45 to 85% RH (no condensation)			
Life (half luminance) [2]		40,000 hours			
Weight (approx.)		LF1A-A1: 190g, LF1A-B1: 270g, LF1A-D1: 470g			
Degree of Protection		IP40			

1. *LED Array A1 = 3x2 , B1 = 6x2, D1 = 12x2
2. LED life depends upon operating environment.

Part Numbers

Color	Cool White	Warm White	Yellow	Red
Part No.	LF1A-*-2THWW6	LF1A-*-2TLWW6	LF1A-*-2SHY8	LF1A-*-2SHR8
Appearance				
Light Spectrum				

*LED Array A1 = 3x2 , B1 = 6x2, D1 = 12x2

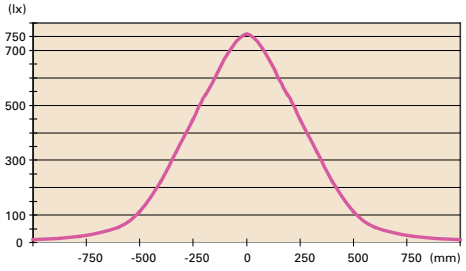
Part Number Structure (use for interpreting part numbers only)

L F 1 A – A1 – 2 THWW6

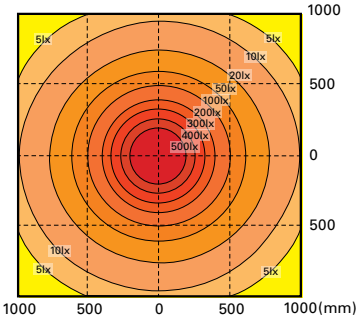
LED Module Arrangement
A1: 3 LEDs × 2 rows
B1: 6 LEDs × 2 rows
D1: 12 LEDs × 2 rows

LED Illumination Color
THWW6: Cool White
TLWW6: Warm white
SHY8: Yellow
SHR8: Red

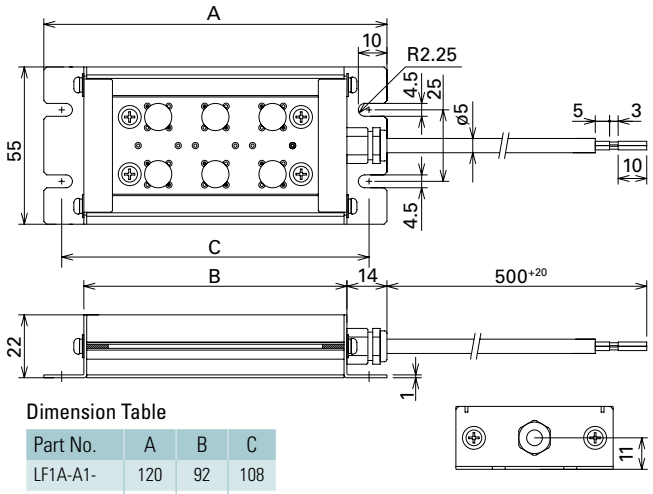
Light Distribution at 0.5m LF1A-D1-THWW6 (Cool White)



Illuminance Chart LF1A-D1-2THWW6



Dimensions (mm)



Dimension Table

Part No.	A	B	C
LF1A-A1-	120	92	108
LF1A-B1-	180	152	168
LF1A-D1-	300	272	288

Accessory

Item	Mounting Bracket- Adjustable Angle
Part No.	LF9Z-1MA1
Material	Stainless Steel

1 pair, Left and Right

LUMIFA LF1E

Freezers • Refrigerated Display Cases • Testing Chambers

LF1E Series

The LF1E illumination lights are designed to be used in freezers or refrigerated display cases where the ambient temperature is as low as -40°C. These energy saving units, with a long service life, compact size and low heat generation are perfect for illuminating areas with very low temperatures.

- Three types of light distribution: no-lens, condensing and dual
- Life: 70% of initial luminance at 40,000 hrs
- Available in 4 lengths
- Plastic lens suitable for food industry
- IP54 protection against dust and water
- CE marked, UL Listed (damp locations)

LED Optical Specifications

Illumination Color		Cool White	Warm White
Color Temperature		5000K	3000K
Lens Type	Unit Length	Reference Illumination	
No Lens [1]	550mm	950lx	750lx
	808mm	1,100lx	900lx
	1066mm	1,200lx	950lx
	1450mm	1,250lx	1,000lx
Condensing Lens [1]	550mm	1,950lx	1,500lx
	808mm	2,000lx	1,550lx
	1066mm	2,000lx	1,550lx
	1450mm	2,000lx	1,550lx
Dual Lens	See Illumination Distribution Chart next page		

1. Measured at 0.3m directly below unit.

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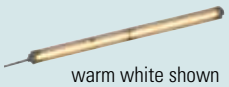
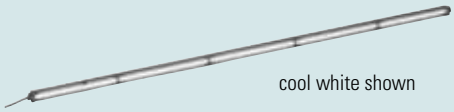
General Specifications

Model (length)		LF1E-B (550mm)	LF1E-C (808mm)	LF1E-D (1066mm)	LF1E-E (1450mm)
Rated Voltage		24V DC			
Input Current (at rated voltage)	24V DC	350mA (404mA max)	525mA (606mA max)	700mA (807mA max)	950mA (1004mA max)
Power Consumption (typ. at rated input)	24V DC	8.4W (9.7W max)	12.6W (14.6W max)	16.8W (19.4W max)	22.8W (26.3W max)
Insulation Resistance		100 MΩ minimum (500V DC megger) between input and housing			
Dielectric Strength		500V AC, 1 minute			
Vibration Resistance (damage limits)		Frequency 5 to 55Hz, amplitude 0.17mm			
Shock Resistance (damage limits)		300m/s^2			
Operating Temperature		–40 to +40°C			
Operating Humidity		45 to 85% RH (no condensation)			
Storage Temperature		–40 to +70°C			
Operating Environment		No corrosive gases			
Life [1]		40,000 hours (The illumination duration in which the illuminance maintains a minimum of 70% of the initial value at 25°C.)			
Weight (approx.) [2]		275g	390g	515g	690g
Degree of protection		IP54			
Material		End cover, conduit: polyamide, Cover: polycarbonate, Cable: PVC, Mounting bracket: stainless steel			

1. LED life depends on the operating environment.
2. Dual lens type.

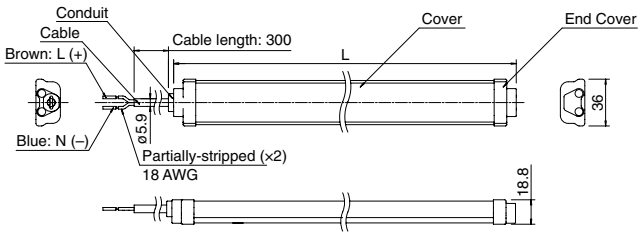
Part Numbers

LF1E-B3S-2*† (550mm)	LF1E-C3S-2*† (808mm)	LF1E-D3S-2*† (1066mm)	LF1E-E3S-2*† (1450mm)
 warm white shown	 cool white shown	 cool white shown	 cool white shown

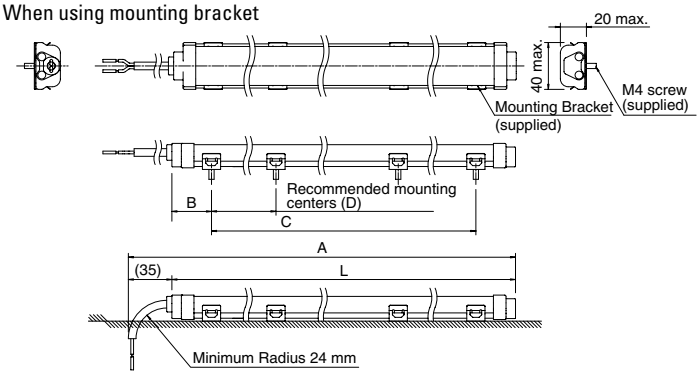
* N = Cool white, L: Warm white. † Blank = No lens, A = Condensing Lens, B = Dual Lens.

Dimensions (mm)

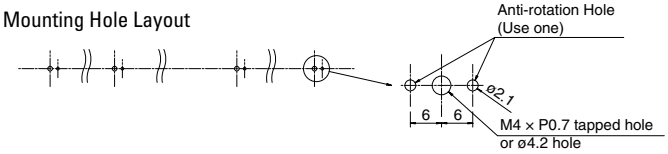
LF1E Illumination Unit



When using mounting bracket



Mounting Hole Layout

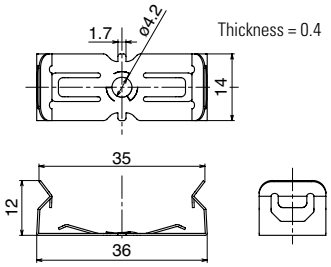


Part Number Structure (use for interpreting part numbers only)

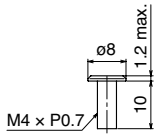
L F 1 E – B 3 S – 2 N A

- Length (mm): B: 550; C: 808; D: 1,066; E: 1,450
- LED Color: N: Cool white (5,000K equivalent); L: Warm white (3,000K equivalent)
- Light Distribution (Lens type): Blank: No Lens; A: Condensing Lens; B: Dual Lens

Mounting Bracket (supplied) (LF9Z-1SE1)



Mounting Screw (supplied)

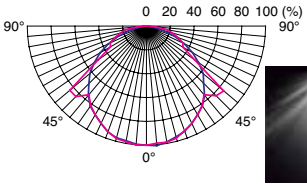


Dimension Table

Model	L	A	B	C	D	No. of Mounting Brackets
LF1E-A	292	327	36	220	220	2
LF1E-B	550	585	30	490	490	2
LF1E-C	808	843	29	750	375	3
LF1E-D	1066	1101	30.5	1005	335	4
LF1E-E	1450	1485	32	1386	462	4

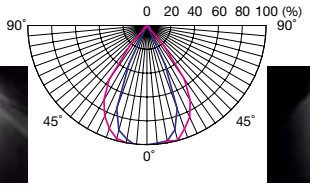
Illuminance Distribution Charts

No-lens



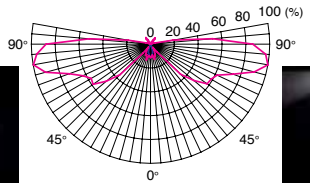
Y (short side) image

Condensing Lens



Y (short side) image

Dual Lens

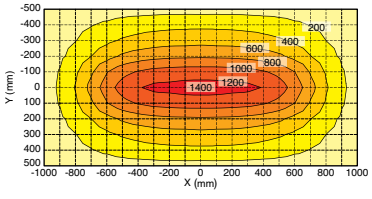


Y (short side) image

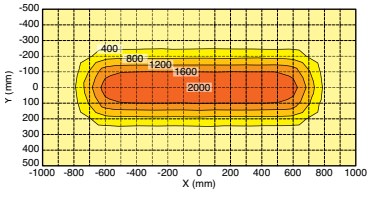
X: long side
Y: short side

Illuminance Charts

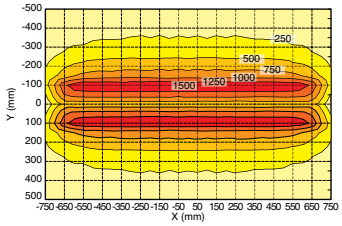
No-lens (LF1E-E3S-2N)



Condensing Lens (LF1E-E3S-2NA)



Dual Lens (LF1E-E3S-2NB)



Accessory

Item	Mounting Bracket Adjustable Angle
Part No.	LF9Z-1SE1
Material	Stainless Steel

LUMIFA EF1A

Hazardous & Wet Locations

EF1A Series

Hazardous locations LED illumination units, EF1A are ideal for locations that require additional protection. With an IP67 rating, they can be used in wet locations subject to high-pressure spray.

- Hazardous locations LED units (Class 1, Zone 1 and Zone 2)
- Slim or wide models available
- 2 cover colors: clear or white
- Available with adjustable, fixed angle or no mounting bracket
- IP67 (without switch)
- IP65 (with switch)

*UL, ATEX, and IECEx are pending approval.

LED Optical Specifications

Model	EF1A			
Illumination Surface	Clear		Diffused	
Collecting Lens (Light Distribution)	With	Without	With	Without
Illumination Color	White			
Color Temperature (typ.)	5700K			
Total Luminous Flux (typ.)	960lm			
Reference Illuminance (typ.) At 1.0m directory below	1100lx	205lx	450lx	175lx

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General Specifications

Model	EF1A -11	EF1A -12
Explosion protection	Ex d II C T4	
Zone	Zone 1, Zone 2	
Rated voltage	24V DC	100 to 240V AC
Voltage Range	18 to 26.4V DC	90 to 264V AC
Rated Power (Typ.)	17W (at rated voltage)	19W (at rated voltage)
Insulation Resistance	50MΩ minimum (500V DC megger) input - FG	100MΩ minimum (500V DC megger) input - FG
Dielectric Strength	500V AC 1 minute input - FG	2000V AC 1 minute input - FG
Vibration Resistance (damage limits)	Frequency 5 to 55Hz, amplitude 0.5mm	
Shock Resistance (damage limits)	1000m/s^2	
Operating Temperature	-20 to +50°C (no freezing)	
Operating Humidity	45 to 85% RH (no condensation)	
Storage Temperature	-35 to +70°C (no freezing)	
Life [1]	50,000 hours (The illumination duration in which the brightness maintains a minimum of 70% of initial value at 25°C)	
Degree of Protection	IP67 (IEC 60529), IP65 (with pushbutton switch)	
Material	Housing: aluminum, front panel: stainless steel, mounting bracket: stainless steel Illumination surface: reinforced glass, cable gland: nickel-plated brass	
Weight (approx.)	3.2Kg (without mounting bracket), 3.4Kg (with mounting bracket)	

1. LED life depends upon operating environment.

Part Numbers

Light Distribution	Mounting Bracket	Waterproof Cable Clamp	Illumination Surface ①	Terminal Block ②	Cable Gland Outer Diameter ③	Part No.
Narrow	Without (4-M6 screw on the back of EF1A)	With Without	Blank: Clear 1: Diffused	Blank: Spring Clamp Terminal S: Screw Terminal C: Lead Wire	10: ø8-ø10 12: ø10-ø12 14: ø12-ø14 16: ø14-ø16	EF1A-1⑥①W④②-③⑤ EF1A-1⑥①W④②-③W⑤
	With (Fixed angle)	With Without				EF1A-1⑥①W④②A-③⑤ EF1A-1⑥①W④②A-③W⑤
	With (Adjustable angle)	With Without				EF1A-1⑥①W④②B-③⑤ EF1A-1⑥①W④②B-③W⑤
Wide	Without (4-M6 screw on the back of EF1A)	With Without				EF1A-1⑥①W1④②-③⑤ EF1A-1⑥①W1④②-③W⑤
	With (Fixed angle)	With Without				EF1A-1⑥①W1④②A-③⑤ EF1A-1⑥①W1④②A-③W⑤
	With (Adjustable angle)	With Without				EF1A-1⑥①W1④②B-③⑤ EF1A-1⑥①W1④②B-③W⑤

In place of ① insert Illumination Surface code, in place of ② insert Cable Wiring code, in place of ③ insert Cable Outer Diameter code, in place of ④ insert Cable Gland/Switch code, in place of ⑤insert Pushbutton Switch code and in place of ⑥ insert the Voltage code.

Part Number Structure (use for interpreting part numbers only)

Voltage ⑥
1: 24V DC
2: 100 to 240V AC

Illumination Surface ①
Blank: Clear
1: Diffused

Light Distribution
Blank: Clear
1: Wide

Cable Outer Diameter ③
(Male connection thread)
10: ø8 to 10 (G1/2)
12: ø10 to 12 (G1/2)
14: ø12 to 14 (G3/4)
16: ø14 to 16 (G3/4)

EF1A – 1 1 1W 1 P S A – 12 W – A2

Cable gland / Switch ④

Legend	Cable gland	Switch
Blank	With cable gland on the one side	Without
T	With cable gland on both sides	Without
P	With cable gland on the one side	With

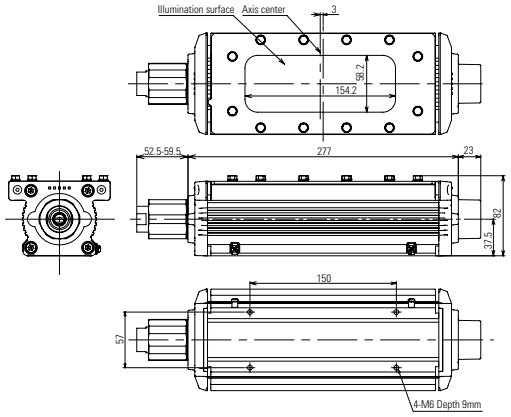
Cable Wiring ②
Blank: Spring clamp terminal
S: Screw terminal
C: Lead wiring

Illumination Surface
Blank: Without
A: With fixed angle mounting bracket
B: With adjustable angle mounting bracket

Cable Clamp
Blank: Watertight
W: Not Watertight

Pushbutton Switch ⑤
A2: Extended (Maintained)

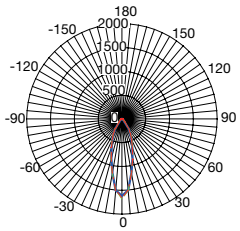
Dimensions (mm) without mounting bracket



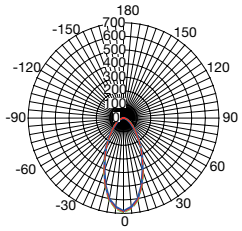
Light Distribution (cd/1000lm)

Narrow light distribution type

Illumination surface: clear glass

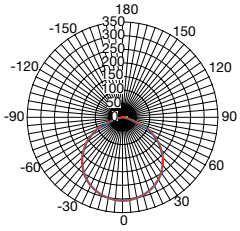


Illumination surface: diffused glass

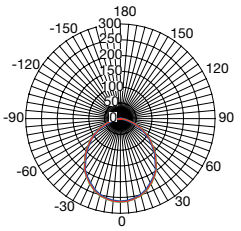


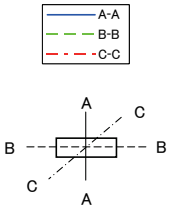
Wide light distribution type

Illumination surface: clear glass



Illumination surface: diffused glass

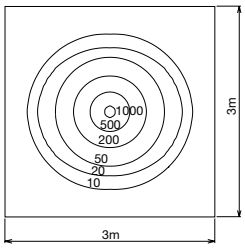




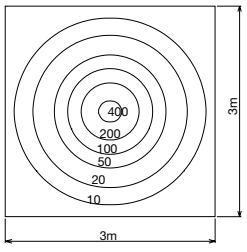
Illuminance Distribution (at 1.0m)

Narrow light distribution type (lx)

Illumination surface: clear glass

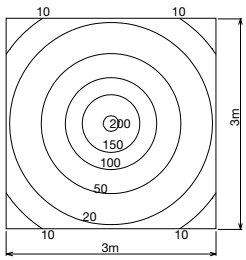


Illumination surface: diffused glass

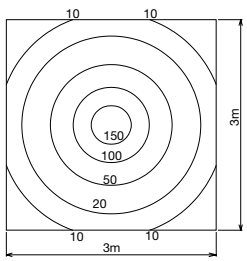


Wide light distribution type (lx)

Illumination surface: clear glass



Illumination surface: diffused glass



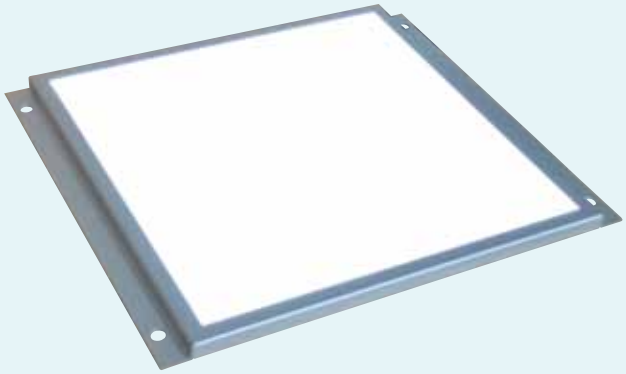
LUMIFA LF1F

Visual Inspection Lighting • Elevator Ceiling Lighting

LF1F Series

Unlike fluorescent lights, LED lights do not flicker and therefore illuminate objects evenly. Uneven surfaces, such as scratches and flaws, are more visible providing more accurate inspections. The LF1F provides steady light regardless of ambient temperature and the narrow profile saves space allowing mounting flexibility.

- Energy saving
- Long operating life
- Maintenance free
- 12mm-thin bezel saves space
- 300mm square illuminated surface
- Wider operating temperature range than fluorescent lighting



LED Optical Specifications

Model	LF1F
Color Temperature	8,500K
Reference Illuminance at 1.0m	5,800lx minimum (panel center)

Operating Specifications

Model	LF1F
Operating Voltage Range	21.6 ~ 26.4V DC
Wattage (typ.)	11W
Insulation Resistance	100MΩ minimum
Dielectric Strength	1,000V, 50/60Hz, 1 minute
Vibration Resistance	5 ~ 55Hz, amplitude 0.5mm, 60m/s^2 (3 directions, 2 hours each)
Shock Resistance	1,000m/s^2
Operating Temperature	-10° ~ 60 (no freezing)
Operating Humidity	45 ~ 85% RH (no condensation)
Storage Temperature	-20° ~ 70°C (no freezing)
Operating Environment	No corrosive gases, no harmful dust
Life [1]	40,000 hours
Degree of Protection	IP20 (IEC60529)
Materials	Housing: Aluminum Light emitting part: acrylic; Cover: acrylic
Weight (approx.)	1.1kg

1. LED life depends upon operating environment.

Part Numbers

Appearance	Model	Cable Length	Size	Color Temperature
	LF1F-B4-2D1	1m	300mm square	8,500K
	LF1F-B4-2D3	3m		

800.262.4332

www.IDEC.com/usa/LED

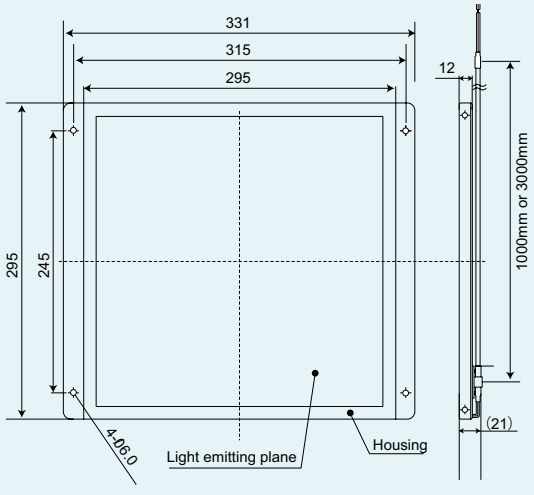
Applications

Ideal for visual inspection, as the LF1F makes it easy to see even the slightest surface flaws.

Application examples for product inspections

- Detect uneven plastic and rubber part surfaces
- Detect dust on glass or plastic plates
- Illuminate marks on metal surfaces during cutting and marking
- Detect flaws on painted or plated surfaces
- Detect scratches and unevenness on embossed materials
- Detect scratches and foreign materials on silicon wafers
- Elevator illumination

Dimensions (mm)



(Light emitting plane: 271 x 271)

LED Signalight Towers - LD6A

Unique Striped Design Improves Visibility

Looking for a safe and reliable way to instantly see the status of a machine or a process? The LD6A Signalight Tower's innovative striped design with non-illuminated area between the lenses, and the oval lens shape provide high-visibility from different directions. With five different mounting styles, flashing and audible alarm options and with a protection rating up to IP65, there is an LD6A that will fit your signaling needs.

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