IDEC

Think Automation and beyond...

IDEC LUMIFA
LED Illumination for Industrial Automation

LUMIFA

Lighting your way

For over two decades, IDEC has been producing LEDs for applications requiring indicator lights and signaling towers. In 1999, IDEC received an award for Excellence in Energy Conservation Equipment for LED display development. Now, new LUMIFA LED light strips represent the future of brighter, longer-lasting and environmentally-friendly lighting sources. LUMIFA series offers:

- **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 27.5mm

- **Safe:** RoHS Compliant, IP67f degree of protection (dust, water and oil tight)

- **Variety of Colors:** Cool White, Warm White, Red, and Yellow

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Brightest in the Industry

Our innovative Heat Dissipation Technology integrated with our core LED design enables IDEC LUMIFA light strips to emit only the highest quality light. The LUMIFA series is brightest in the industry, producing an average of 65.3 Lumens/Watt.
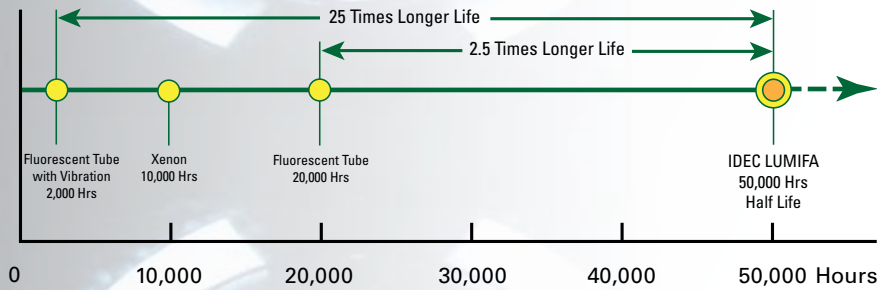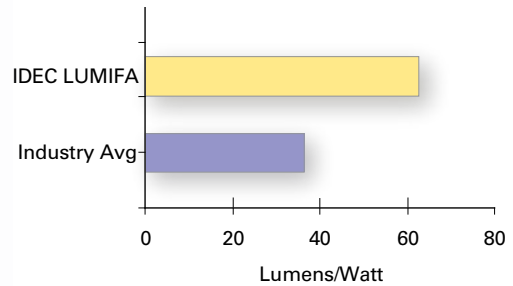
Heat Dissipation Technology

In a 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 ideal for green applications such as solar panels, which have a low power requirement and can't support the energy necessary for fluorescent bulbs.
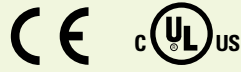
3
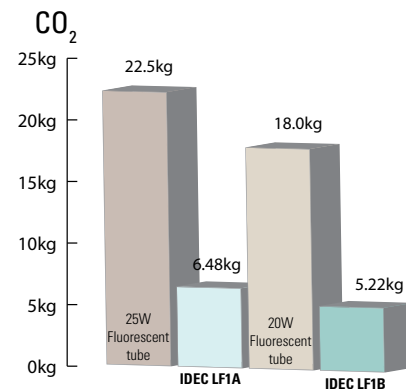
LUMIFA LF1A

LF1A Series (IP40)

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
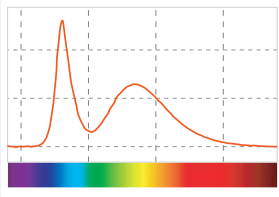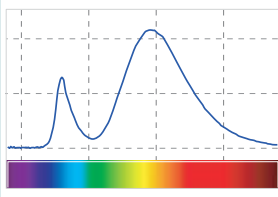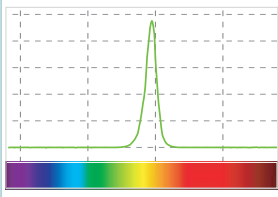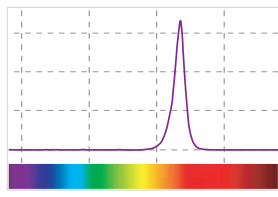- Energy saving: One-third of fluorescent lamps
- Long life: 40,000 Hrs (Half-life)
- UL Listed
- RoHS Compliant

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

LF1A Series LED Optical Specifications

Part No.		LF1A-*-2THWW6	LF1A-*-2TLWW6	LF1A-*-2SHY8	LF1A-*-2SHR8
Illumination Color		Cool White	Warm White	Yellow	Red
Luminous Intensity (Single LED module)		6000mcd	4000mcd	4000mcd	2500mcd
Color Temperature / Dominant Wavelength		5500K	2800K	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

LF1A Series General Specifications

Part No.		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

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

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

(lx)

750	
700	
500	
300	
100	
0	

-750   -500   -250   0   250   500   750   (mm)
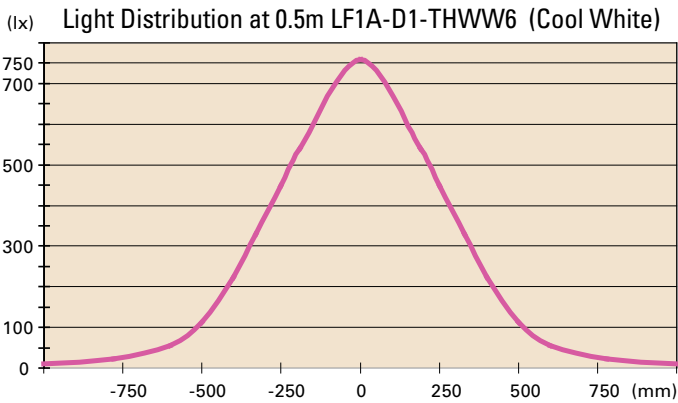
Illuminance Chart LF1A-D1-2THWW6

1000

5lx
5lx
10lx
20lx
50lx
100lx
200lx
300lx
400lx
500lx

10lx
5lx   5lx

500   0   500

1000   500   0   500   1000(mm)
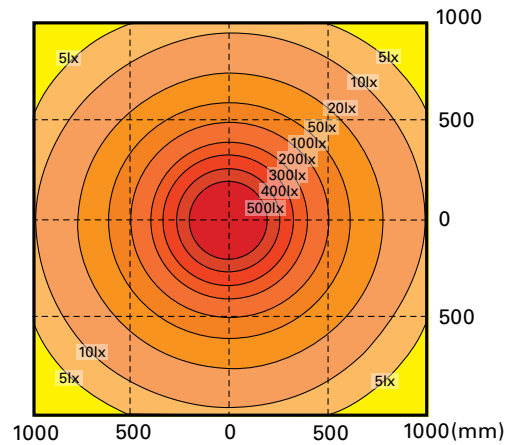
LF1A-D2F Series (IP67f)

An internal waterproof gasket and transparent panel with thick reinforced glass make LF1A-D2F LED light strips perfect for use in a manufacturing line or outdoors where they might be immersed or sprayed with water or oil. These light strips are IP67f rated as water, dust and oil resistant.
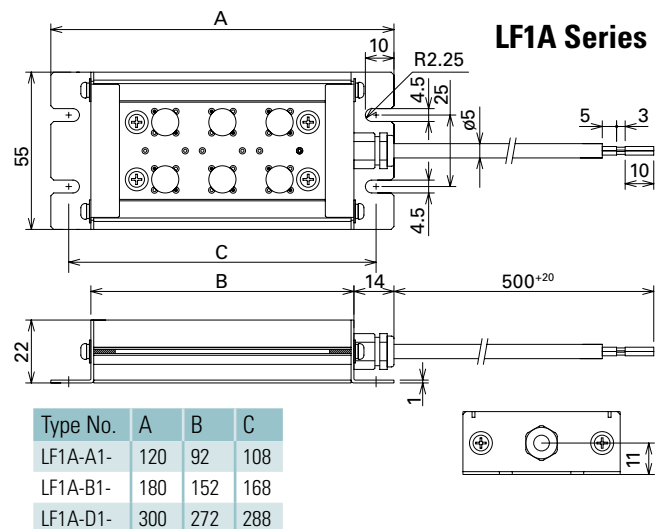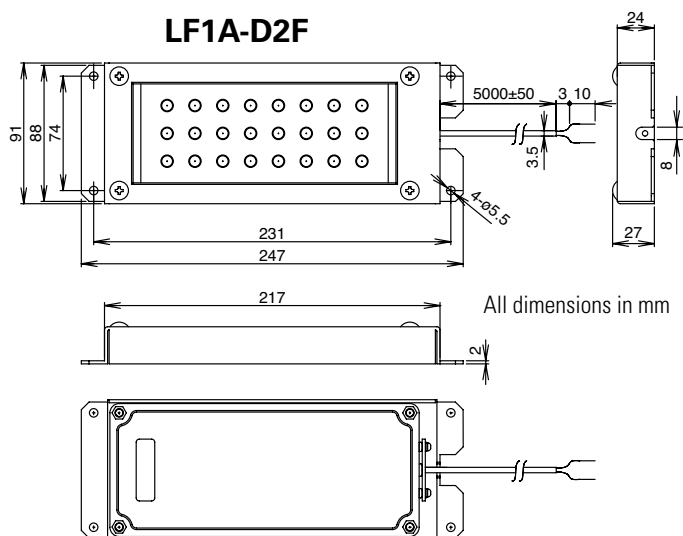
Note: LF1A-D2F is not UL Listed

LF1A-D2F LED Optical Specifications

Illumination Color	Cool White
Chromaticity Coordinate Value	X: 033,Y: 0.33
Luminous Intensity	6000mcd
Color Temperature	5500K
Reference Illuminance at 500mm	600lx

LF1A-D2F General Specifications

Rated Voltage	24V DC (non-polarized)
Input Current	300mA (at rated voltage)
Rated Power	7.2W (at rated voltage)
Half Life	40,000 Hours

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LF1A-D2F

5000±50   3 10

91 88 74

231
247

3.5

24

8

27

217

All dimensions in mm

2

LF1A Series

A

10

R2.25

4.5
25
ø5

55

5   3

10

C

B   14   500+20

22

4.5

1

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

All dimensions in mm

11
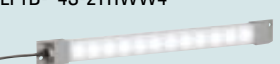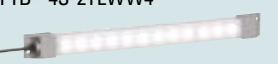
LF1B Series (IP54)

LF1B miniature LED light strips are enclosed in a thin light strip, and are available in four sizes with a choice of two covers (clear or white).

- Brightness: 62.5 Lumens/Watt
- Space saving: Width 27.5mm; Thickness 16mm
- Four lengths to choose from
- Long life: 70% of initial luminance at 40,000 Hrs
- UL Listed
- RoHS Compliant

CE c(UL)us

Color		Cool White	Warm White	Yellow	Red
Appearance	Clear Cover	LF1B-*3S-2THWW4	LF1B-*3S-2TLWW4	LF1B-*3S-SHY6	LF1B-*3S-SHR6
	White Cover	LF1B-*4S-2THWW4	LF1B-*4S-2TLWW4	LF1B-*4S-SHY6	LF1B-*4S-SHR6
Spectrum					

LF1B LED Optical Specifications

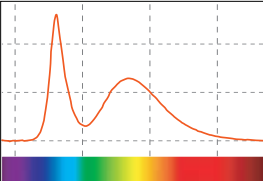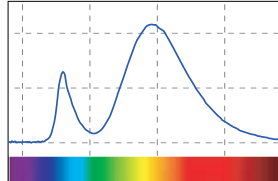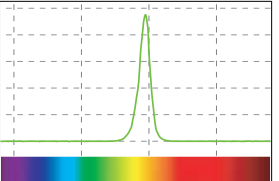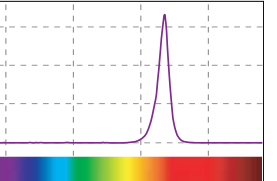| Color		Cool White	Warm White	Yellow	Red
Luminous Intensity (Single LED module)		5000mcd	4500mcd	2300mcd	1800mcd
Color Temperature /Dominant Wavelength		5500K	2800K	590nm	625nm
Reference Illuminance at 0.5m (clear cover)	LED Array 3 x 1	90lx	60lx	20lx	20lx
	LED Array 6 x 1	170lx	110lx	40lx	40lx
	LED Array 12 x 1	330lx	200lx	75lx	75lx
	LED Array 24 x 1	560lx	350lx	125lx	125lx

*LED Array A = 3 x 1 , B = 6 x 1, C = 12 x 1, D = 24 x 1

LF1B Series General Specifications

Part No.	LF1B-A (LED Array 3x1)	LF1B-B (LED Array 6x1)	LF1B-C (LED Array 12x1)	LF1B-D (LED Array 24x1)
Rated Voltage	24V DC (non-polarized)			
Input Current (at the rated voltage)	30mA	60mA	120mA	240mA
Rated Power (at the rated voltage)	0.8W	1.5W	2.9W	5.8W
Vibration Resistance	Frequency: 5 to 55 Hz, Amplitude: 0.5mm			

Illuminance Chart LF1B-D3S-2THWW4 (Cool White)
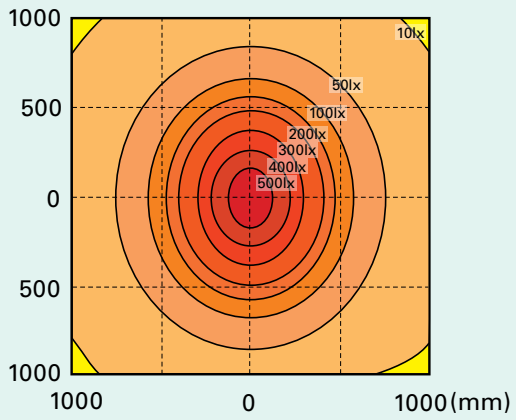
Light Distribution at 0.5m LF1B-D3S-2THWW4

End Cover   Cover   Conduit   Wire
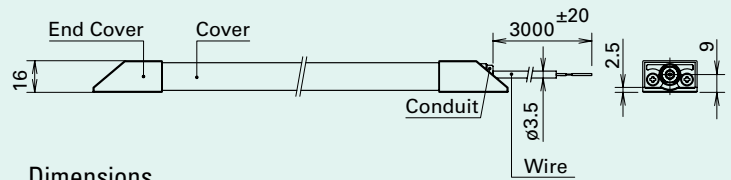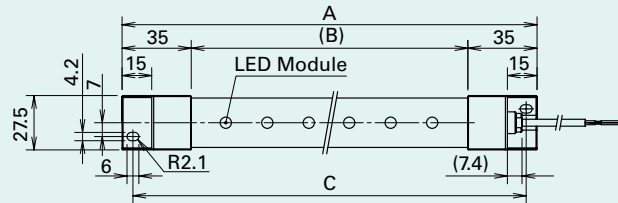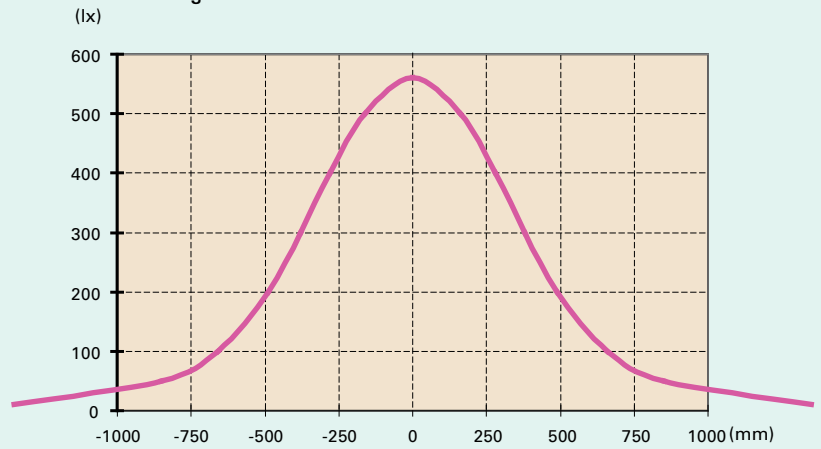
Dimensions

Model	A	B	C
LF1B-A	134	64	123
LF1B-B	210	140	199
LF1B-C	330	260	319
LF1B-D	580	510	569

All dimensions in mm

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LUMIFA LF1D

LF1D Series (IP67, IP67f)

LF1D LED units are the brightest in their class with the ability to target illumination with accuracy and making them ideal for machine tools. Offered as a wide or slim-type, these LED units provide high brilliance at the center and periphery.

- Brightness: Slim: 66.6 Lumens/Watt
  Wide: 67.2 Lumens/Watt
- Life: 70% of initial luminance at 50,000 Hrs
- IP67 (Polycarbonate lens) or IP67f (Reinforced glass lens)
- UL Pending
- RoHS Compliant

CE

LF1D LED Optical Specifications

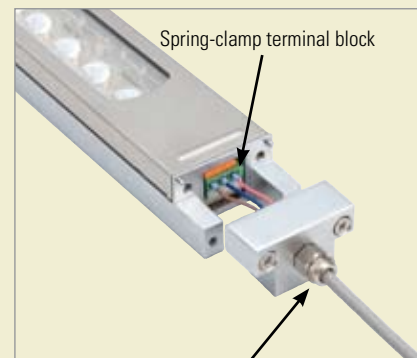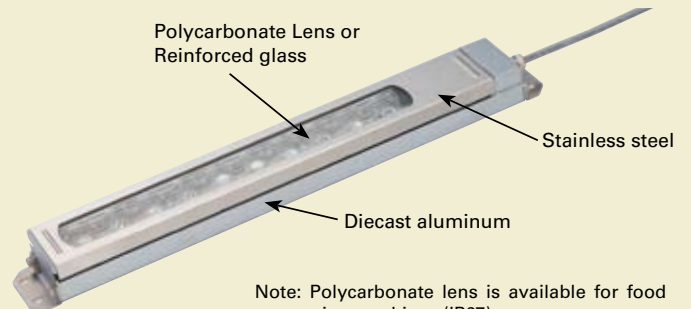| Type	Slim	Wide
Illumination Color	Cool White	
Total Luminous Flux	600lm	840lm
Color Temperature	5700K	
Reference Illuminance at 1.0m	1100lx	

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

LF1D General Specifications

Type	Slim	Wide
Rated Voltage	24V DC	
Voltage Range	21.6 to 26.4V DC	
Rated Power (typ.)	9W	12.5W
Dielectric Strength	1000V AC, 50/60Hz, 1 minute	
Vibration Resistance (damage limits)	Frequency 5 to 55Hz, amplitude 0.5mm	
Shock Resistance (damage limits)	1000m/s^2	
Life (Note 1)	50,000 hours (The illumination duration in which the illuminance maintains a minimum of 70% of the initial value at 25°C.)	
Material	Housing: Diecast aluminum Front cover: Stainless steel Lens: Reinforced glass or polycarbonate (Note 2)	

Note 1: LED life depends on the operating environment.
Note 2: The reinforced glass and polycarbonate lenses have the same appearance, but have different degrees of protection (IP67f or IP67).

Polycarbonate Lens or Reinforced glass

Stainless steel

Diecast aluminum

Note: Polycarbonate lens is available for food processing machines (IP67).

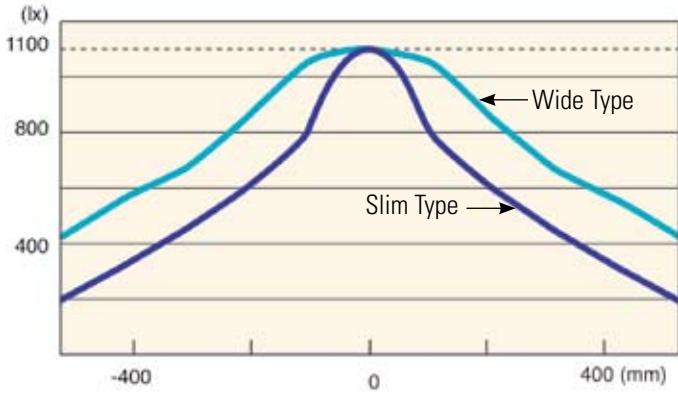Spring-clamp terminal block

Two Cable Options
1. Side connection (as shown).
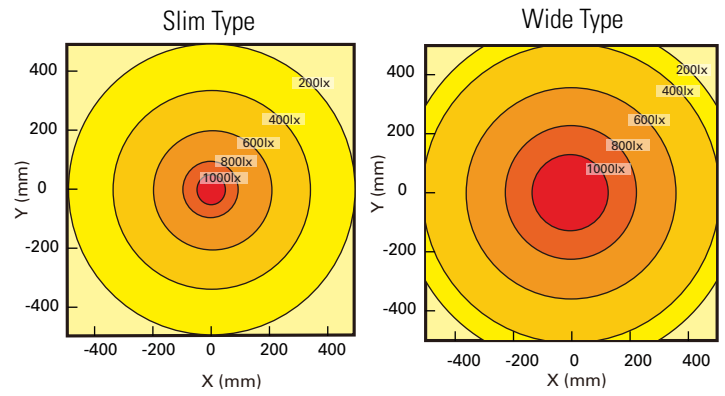2. Back connection (cable connection at back of unit).

Spring-Clamp Terminal Blocks
Removable direct plug-in terminal block and spring clamp connections ensure a high-quality connection, making it easy to install or replace the LED illumination unit.
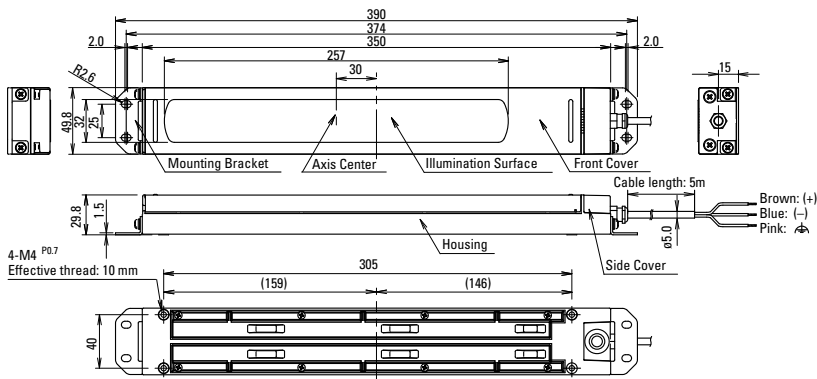
Light Distribution at 1.0m LF1D

Wide Type

Slim Type

Illuminance Chart

Slim Type

200lx
400lx
600lx
800lx
1000lx

X (mm)
Y (mm)

Wide Type

200lx
400lx
600lx
800lx
1000lx

X (mm)
Y (mm)

LF1D Slim Type

390
374
350
257
30
2.0
2.0
15
R2.6
49.8
32
25

Mounting Bracket
Axis Center
Illumination Surface
Front Cover

Cable length: 5m
Brown: (+)
Blue: (−)
Pink: ⏚

29.8
1.5
ø5.0

4-M4 P0.7
Effective thread: 10 mm

305
(159)
(146)
40

Housing
Side Cover

LF1D Wide Type

310
292
270
183.6
27
2.0
2.0
12.0
R2.6
74.7
58.6
40

Mounting Bracket
Axis Center
Illumination Surface
Front Cover

Cable length: 5m
Brown: (+)
Blue: (−)
Pink: ⏚

25.9
1.5
ø5.0

4-M5 P0.8
Effective thread: 10 mm

227
(120)
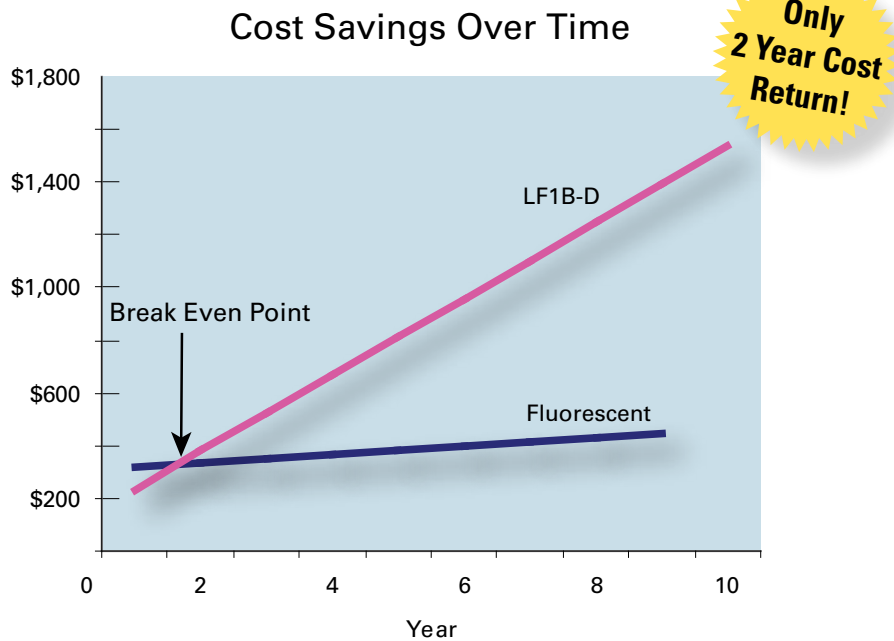(107)
60

Housing
Side Cover

All dimensions in mm

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Cost Savings Over Time

LUMIFA versus Fluorescent

The following chart shows a comparison of cost savings year-by-year. As you can see, the break even point for LUMIFA light strips compared with fluorescent bulbs is approximately 2 years. That means in just two years time, you will be saving money by using a Lumifa light strip instead of a fluorescent bulb.

Cost Savings Over Time

Only 2 Year Cost Return!

LF1B-D

Break Even Point

Fluorescent

$1,800
$1,400
$1,000
$600
$200

0   2   4   6   8   10

Year

Note: This data assumes a single light source used 8 hours/day, 5 days/week, annually with electricity costs of $0.10 per KWh (based on average California cost). Other variables, such as machine vibration, can cause the fluorescent tube to need to be changed twice a year. This adds the cost of an electrician's labor; time and cost to shutdown the machine; and cost of the replacement tube. However, as LUMIFA lasts for 40,000 Hrs (half-life) and is resistant to machine vibration; no replacement is needed.

Applications:

- Machine Tool Manufacturing
- Control Panel Lighting
- Printing Machines
- Food Processing Equipment
- Semiconductor Manufacturing
- Commercial Laundry Equipment Manufacturing
- Food Display Lighting
- Retail Store Displays

Choose Your LUMIFA

Color		IP Rating	Lens/Cover	Lumifa Unit Length LED Array (Column x Row)	Part Number
Cool white (Color Temp Range: 5500K - 5700K)		IP40	Clear	120mm (3 x 2)	LF1A-A1-2THWW6
				180mm (6 x 2)	LF1A-B1-2THWW6
				300mm (12 x 2)	LF1A-D1-2THWW6
		IP54	Clear	134mm (3 x 1)	LF1B-A3S-2THWW4
				210mm (6 x 1)	LF1B-B3S-2THWW4
				330mm (12 x 1)	LF1B-C3S-2THWW4
				580mm (24 x 1)	LF1B-D3S-2THWW4
			White	134mm (3 x 1)	LF1B-A4S-2THWW4
				210mm (6 x 1)	LF1B-B4S-2THWW4
				330mm (12 x 1)	LF1B-C4S-2THWW4
				580mm (24 x 1)	LF1B-D4S-2THWW4
		IP67	Polycarbonate	390mm (10 x 1)	LF1D-E3G-2W*
				310mm (7 x 2)	LF1D-F3G-2W*
		IP67f	Reinforced Glass	390mm (10 x 1)	LF1D-E2F-2W*
				310mm (7 x 2)	LF1D-F2F-2W*
				247mm (8 x 3)	LF1A-D2F-2THWW6
Warm white (Color Temp: 2800K)		IP40	Clear	120mm (3 x 2)	LF1A-A1-2TLWW6
				180mm (6 x 2)	LF1A-B1-2TLWW6
				300mm (12 x 2)	LF1A-D1-2TLWW6
		IP54	Clear	134mm (3 x 1)	LF1B-A3S-2TLWW4
				210mm (6 x 1)	LF1B-B3S-2TLWW4
				330mm (12 x 1)	LF1B-C3S-2TLWW4
				580mm (24 x 1)	LF1B-D3S-2TLWW4
			White	134mm (3 x 1)	LF1B-A4S-2TLWW4
				210mm (6 x 1)	LF1B-B4S-2TLWW4
				330mm (12 x 1)	LF1B-C4S-2TLWW4
				580mm (24 x 1)	LF1B-D4S-2TLWW4
Yellow (Dominant Wavelength: 590nm)		IP40	Clear	120mm (3 x 2)	LF1A-A1-2SHY8
				180mm (6 x 2)	LF1A-B1-2SHY8
				300mm (12 x 2)	LF1A-D1-2SHY8
		IP54	Clear	134mm (3 x 1)	LF1B-A3S-2SHY6
				210mm (6 x 1)	LF1B-B3S-2SHY6
				330mm (12 x 1)	LF1B-C3S-2SHY6
				580mm (24 x 1)	LF1B-D3S-2SHY6
			White	134mm (3 x 1)	LF1B-A4S-2SHY6
				210mm (6 x 1)	LF1B-B4S-2SHY6
				330mm (12 x 1)	LF1B-C4S-2SHY6
				580mm (24 x 1)	LF1B-D4S-2SHY6
Red (Dominant Wavelength: 625nm)		IP40	Clear	120mm (3 x 2)	LF1A-A1-2SHR8
				180mm (6 x 2)	LF1A-B1-2SHR8
				300mm (12 x 2)	LF1A-D1-2SHR8
		IP54	Clear	134mm (3 x 1)	LF1B-A3S-2SHR6
				210mm (6 x 1)	LF1B-B3S-2SHR6
				330mm (12 x 1)	LF1B-C3S-2SHR6
				580mm (24 x 1)	LF1B-D3S-2SHR6
			White	134mm (3 x 1)	LF1B-A4S-2SHR6
				210mm (6 x 1)	LF1B-B4S-2SHR6
				330mm (12 x 1)	LF1B-C4S-2SHR6
				580mm (24 x 1)	LF1B-D4S-2SHR6

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*To order LF1D installed with:
- Cable gland, mounting bracket and cable (side connection), add "-A" to the part number. Eg: LF1D-F2F-2W becomes LF1D-F2F-2W-A.
- Back cable connection option, add "-200" to the part number. Eg: LF1D-F2F-2W becomes LF1D-F2F-2W-200.
- Cable gland, mounting bracket and cable (back connection) add "-451" to the part number. Eg: LF1D-F2F-2W-451.

Accessories

	Part No.	Compatible Unit	Material	Note
	Mounting Bracket LF9Z-1MB1	LF1B-A, -B and -C (-D not applicable)	Stainless Steel	1 pair Left and Right
	Mounting Bracket LF9Z-1MA1	LF1A-A, -B and -D		
	Mounting Bracket LF9Z-1MAD1	LF1A-D2F		
	Mounting Bracket LF9Z-B12	LF1D (Wide Type)		
	Mounting Bracket LF9Z-B11	LF1D (Slim Type)		
	Cable Gland LF9Z-A11	LF1D	Brass	M8, applicable wire size (10-12 AWG)
	Cable LF9Z-C05	LF1D	PVC	Length: 5m

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FSC registration