

LF1B Series

LED Illumination Units

LUMIFRATM

Low heat generation.
Four lengths & four illumination
colors available.

Slim, space-
saving design
(only 16mm
thick)

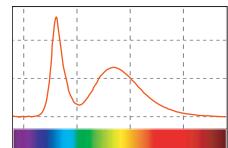
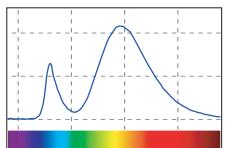
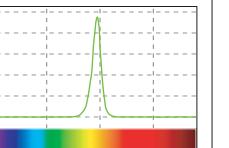
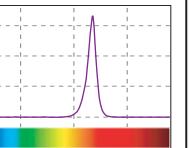
Heat generation
reduced by
70%*

Less power
consumption &
71% less CO₂
emission*

5 times
longer life*

*Compared to 20W
fluorescent lamps.

Illumination Colors & Application Examples

Illumination Color	Cool White	Warm White	Yellow	Red
Power Voltage	24V DC			
Appearance	Clear Cover			
	White Cover			
Spectrum				
Features	Suppressing glare, the bright, clear cool white illumination color lights up a target object clearly. This illumination color gives off a color temperature of 5500K.	Warm color similar to that of incandescent lamps. This illumination color gives off a color temperature of 2800K.	Yellow illumination color gives off an emission spectrum with a dominant wavelength of 590 nm.	Red illumination color gives off an emission spectrum with a dominant wavelength of 625 nm.
Applications	<ul style="list-style-type: none"> Control panel Plant equipment Refrigerator/freezer Inspection/test equipment Advertising display/board Machine tool  	<ul style="list-style-type: none"> Food processing machines Cosmetic plants Chemical plants Showcases Food display cases 	<ul style="list-style-type: none"> Manufacturing equipment IC foundries 	<ul style="list-style-type: none"> Photosensitive materials Semiconductor manufacturing equipment 

Features

- Brightness: 62.5 Lumens/Watt
- Low heat generation.
- Less energy usage, longer operation life, smaller mounting space, and no electrical noise.
- 71% reduction of power and CO₂ emission when compared to 20W fluorescent lamps (LF1B-C/D)
- Thin and slim style fits into compact spaces.
- Two cover colors: clear and white (diffused light)
- Cool white, warm white, yellow and red illumination colors available.
- UL Listed & IP54 protection against dust and water splash (IEC 60529)



Part No. Development

LF1B- C 3 S - 2 THWW4

LED Module Arrangement

- A: 3 LEDs x 1 row
- B: 6 LEDs x 1 row
- C: 12 LEDs x 1 row
- D: 24 LEDs x 1 row

Rated Voltage
2: 24V DC

LED Illumination Color

- THWW4: Cool white
- TLWW4: Warm white
- SHY6: Yellow
- SHR6: Red

Degree of Protection

- S: IP54
- 3: Clear plastic
- 4: White plastic

LED Optics Specifications

Illumination Color	Cool White	Warm White	Yellow	Red																																
Luminous Intensity (typ.) (Single LED module)	5000 mcd	4500 mcd	2300 mcd	1800 mcd																																
Color Temperature (typ.)/Dominant Wavelength (typ.)	5500K	2800K	590 nm	625 nm																																
Reference Illuminance (typ.) at 500 mm (clear cover)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>3 LEDs x 1 row</td><td>90 lx</td></tr> <tr> <td>6 LEDs x 1 row</td><td>170 lx</td></tr> <tr> <td>12 LEDs x 1 row</td><td>330 lx</td></tr> <tr> <td>24 LEDs x 1 row</td><td>560 lx</td></tr> </table>	3 LEDs x 1 row	90 lx	6 LEDs x 1 row	170 lx	12 LEDs x 1 row	330 lx	24 LEDs x 1 row	560 lx	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>3 LEDs x 1 row</td><td>60 lx</td></tr> <tr> <td>6 LEDs x 1 row</td><td>110 lx</td></tr> <tr> <td>12 LEDs x 1 row</td><td>200 lx</td></tr> <tr> <td>24 LEDs x 1 row</td><td>350 lx</td></tr> </table>	3 LEDs x 1 row	60 lx	6 LEDs x 1 row	110 lx	12 LEDs x 1 row	200 lx	24 LEDs x 1 row	350 lx	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>3 LEDs x 1 row</td><td>20 lx</td></tr> <tr> <td>6 LEDs x 1 row</td><td>40 lx</td></tr> <tr> <td>12 LEDs x 1 row</td><td>75 lx</td></tr> <tr> <td>24 LEDs x 1 row</td><td>125 lx</td></tr> </table>	3 LEDs x 1 row	20 lx	6 LEDs x 1 row	40 lx	12 LEDs x 1 row	75 lx	24 LEDs x 1 row	125 lx	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>3 LEDs x 1 row</td><td>20 lx</td></tr> <tr> <td>6 LEDs x 1 row</td><td>40 lx</td></tr> <tr> <td>12 LEDs x 1 row</td><td>75 lx</td></tr> <tr> <td>24 LEDs x 1 row</td><td>125 lx</td></tr> </table>	3 LEDs x 1 row	20 lx	6 LEDs x 1 row	40 lx	12 LEDs x 1 row	75 lx	24 LEDs x 1 row	125 lx
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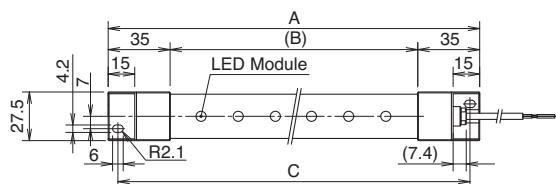
Note: Illumination colors and illuminance may vary. Specifications shown in the above table are typical values and may vary depending upon actual environment.

Performance Specifications

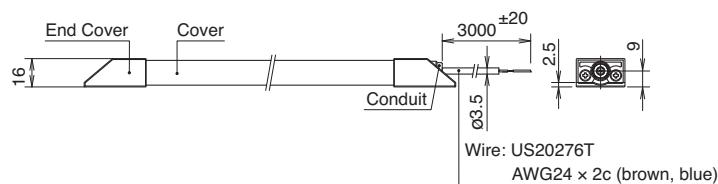
Rated Voltage	24V DC (non-polarized)
Input Current (typ.) (at the rated voltage)	LF1B-A 30mA
	LF1B-B 60mA
	LF1B-C 120mA
	LF1B-D 240mA
Power Consumption (typ.) (at the rated voltage)	LF1B-A 0.8W
	LF1B-B 1.5W
	LF1B-C 2.9W
	LF1B-D 5.8W
Insulation Resistance	100MΩ minimum (500V DC megger)
Dielectric Strength	1000V AC, 1 minute (between live and dead parts)
Vibration Resistance (damage limits)	Frequency: 5 to 55 Hz Amplitude: 0.5 mm
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 Atmosphere	No corrosive gas
Life	40000 hours (The total illumination duration in which the luminance maintains a minimum of 70% of the initial value.)
Degree of Protection	IP54
Material	End cover, conduit: polyamide Cover: polycarbonate Wire: US20276T AWG24 x 2C
Weight (approx.)	LF1B-A 95g
	LF1B-B 125g
	LF1B-C 165g
	LF1B-D 255g

- Do not use the LF1B illumination units in environments subject to corrosive gases, otherwise illuminance may deteriorate.

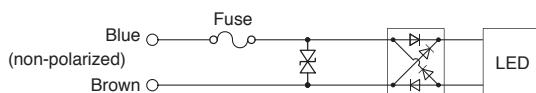
Dimensions



Type No.	A	B	C
LF1B-A	134	64	123
LF1B-B	210	140	199
LF1B-C	330	260	319
LF1B-D	580	510	569



Internal Circuit



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