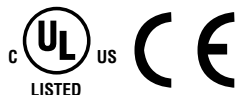


# LF1B-N LED Illumination Units

Thin and slim styles fit into compact spaces.

IP65 (waterproof, dustproof). 6 different lengths and 6 distinct colors.

- Compact design (27.5mm wide, 16mm high, and 134 to 1,080mm long) fits into narrow spaces.
- Improved brightness with white illumination color.
- White, warm white, yellow, red, blue, and green illumination colors.
- Two cover colors: clear and white.



Illumination Color		White	Warm White	Yellow	Red	Blue	Green
Shape	Clear cover						
	White cover						
LF1B-NA (134mm)	Clear cover	LF1B-NA3P-2THWW2*	LF1B-NA3P-2TLWW2*	LF1B-NA3P-2SHY2*	LF1B-NA3P-2SHR2*	LF1B-NA3P-2THS2*	LF1B-NA3P-2SHG2*
	White cover	LF1B-NA4P-2THWW2*	LF1B-NA4P-2TLWW2*	LF1B-NA4P-2SHY2*	LF1B-NA4P-2SHR2*	LF1B-NA4P-2THS2*	LF1B-NA4P-2SHG2*
LF1B-NB (210mm)	Clear cover	LF1B-NB3P-2THWW2*	LF1B-NB3P-2TLWW2*	LF1B-NB3P-2SHY2*	LF1B-NB3P-2SHR2*	LF1B-NB3P-2THS2*	LF1B-NB3P-2SHG2*
	White cover	LF1B-NB4P-2THWW2*	LF1B-NB4P-2TLWW2*	LF1B-NB4P-2SHY2*	LF1B-NB4P-2SHR2*	LF1B-NB4P-2THS2*	LF1B-NB4P-2SHG2*
LF1B-NC (330mm)	Clear cover	LF1B-NC3P-2THWW2*	LF1B-NC3P-2TLWW2*	LF1B-NC3P-2SHY2*	LF1B-NC3P-2SHR2*	LF1B-NC3P-2THS2*	LF1B-NC3P-2SHG2*
	White cover	LF1B-NC4P-2THWW2*	LF1B-NC4P-2TLWW2*	LF1B-NC4P-2SHY2*	LF1B-NC4P-2SHR2*	LF1B-NC4P-2THS2*	LF1B-NC4P-2SHG2*
LF1B-ND (580mm)	Clear cover	LF1B-ND3P-2THWW2*	LF1B-ND3P-2TLWW2*	LF1B-ND3P-2SHY2*	LF1B-ND3P-2SHR2*	LF1B-ND3P-2THS2*	LF1B-ND3P-2SHG2*
	White cover	LF1B-ND4P-2THWW2*	LF1B-ND4P-2TLWW2*	LF1B-ND4P-2SHY2*	LF1B-ND4P-2SHR2*	LF1B-ND4P-2THS2*	LF1B-ND4P-2SHG2*
LF1B-NE (830mm)	Clear cover	LF1B-NE3P-2THWW2*	LF1B-NE3P-2TLWW2*	LF1B-NE3P-2SHY2*	LF1B-NE3P-2SHR2*	LF1B-NE3P-2THS2*	LF1B-NE3P-2SHG2*
	White cover	LF1B-NE4P-2THWW2*	LF1B-NE4P-2TLWW2*	LF1B-NE4P-2SHY2*	LF1B-NE4P-2SHR2*	LF1B-NE4P-2THS2*	LF1B-NE4P-2SHG2*
LF1B-NF (1,080mm)	Clear cover	LF1B-NF3P-2THWW2*	LF1B-NF3P-2TLWW2*	LF1B-NF3P-2SHY2*	LF1B-NF3P-2SHR2*	LF1B-NF3P-2THS2*	LF1B-NF3P-2SHG2*
	White cover	LF1B-NF4P-2THWW2*	LF1B-NF4P-2TLWW2*	LF1B-NF4P-2SHY2*	LF1B-NF4P-2SHR2*	LF1B-NF4P-2THS2*	LF1B-NF4P-2SHG2*
Application		<ul style="list-style-type: none"> <li>• Machine tools</li> <li>• Plant equipment</li> <li>• Inspection/test equipment</li> <li>• Control panel</li> </ul>	<ul style="list-style-type: none"> <li>• Food processing machines</li> <li>• Cosmetic plants</li> <li>• Chemical plants</li> <li>• Showcases</li> </ul>	<ul style="list-style-type: none"> <li>• Semiconductor manufacturing equipment</li> <li>• IC foundries</li> </ul>	<ul style="list-style-type: none"> <li>• Photosensitive materials</li> <li>• Semiconductor manufacturing equipment</li> <li>• Darkroom experiment</li> </ul>	<ul style="list-style-type: none"> <li>• Advertising Display</li> <li>• Light ornaments</li> </ul>	

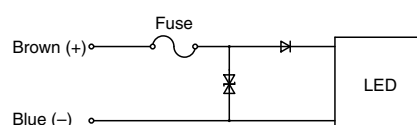
- Specify cable length in place of \* in Part No. 1M: 1m, 3M: 3m
- Use Class 2 power supply when using the LF1B-N as UL/c-UL listed LED illumination unit.

## Part No. Development

### LF1B - NC3P - 2THWW2 - 1M

<b>Length</b>	<b>Cover</b>	<b>Illumination color</b>	<b>Cable length</b>
A: 134mm B: 210mm C: 330mm D: 580mm E: 830mm F: 1,080mm	3: Clear 4: White	THWW2: White TLWW2: Warm white SHY2: Yellow SHR2: Red THS2: Blue SHG2: Green	1M: 1m 3M: 3m

## Internal Circuit



# LF1B-N LED Illumination Units

## 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)	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)	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 55 Hz, Amplitude 0.5mm Acceleration 60m/s <sup>2</sup> , 2 hours each in 3 axes			Frequency: 5 to 55 Hz, Amplitude 0.17mm Acceleration 20m/s <sup>2</sup> , 2 hours each in 3 axes		
Shock Resistance (damage limits)		1,000m/s <sup>2</sup> , 5 shocks each in 6 axes			300m/s <sup>2</sup> , 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 illuminance 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 × 2C)					
Weight (approx.)		95g	125g	165g	255g	430g	740g

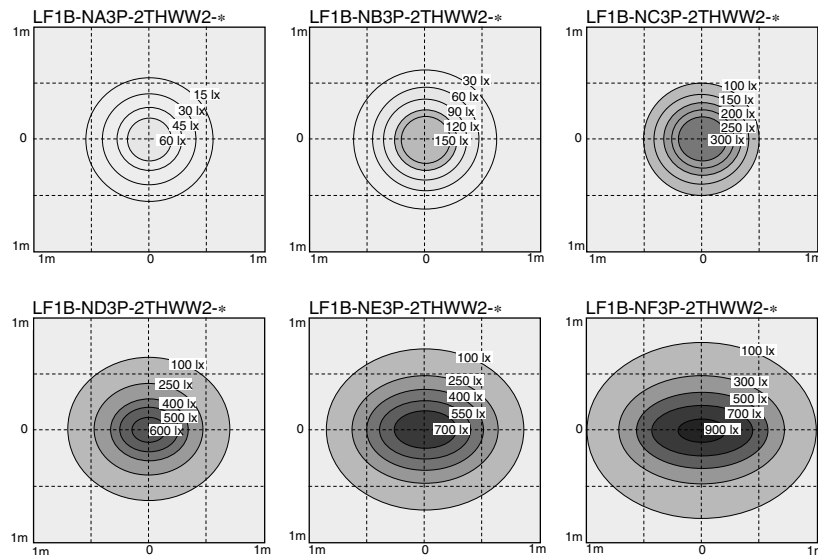
Note: LED life depends on the operating environment.

## LED Optical Specifications

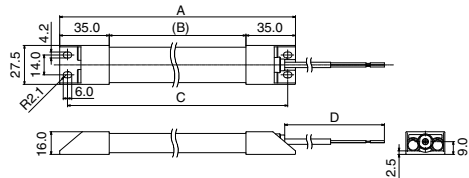
Color Temperature/ Dominant Wavelength (typ.)	White	Warm White	Yellow	Red	Green	Blue	
	5,500K	2,900K	590nm	620nm	525nm	455nm	
Reference Illuminance (typ.) at 0.5m directly below	LF1B-NA	Clear: 90 lx White: 80 lx	Clear: 60 lx White: 55 lx	Clear: 20 lx White: 18 lx	Clear: 20 lx White: 18 lx	Clear: 30 lx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

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

## Illuminance Distribution at 0.5m (reference value)



## Dimensions



Model	A	B	C
LF1B-NA	134	64	123
LF1B-NB	210	140	199
LF1B-NC	330	260	319
LF1B-ND	580	510	569
LF1B-NE	830	760	819
LF1B-NF	1,080	1,010	1,069

Model	D
LF1B-N*-2*-1M	1,000
LF1B-N*-2*-3M	3,000

All dimensions in mm.

- Flush Silhouette
- Switches & Pilot Lights
- Display Lights
- LED Illumination Units
- Display Units
- Safety Products
- Terminal Blocks
- Comm. Terminals
- AS-Interface
- Relays & Timers
- Sockets
- Circuit Protectors
- Power Supplies
- PLCs & SmartRelay
- Operator Interfaces
- Sensors
- Control Stations
- Explosion Protection
- References