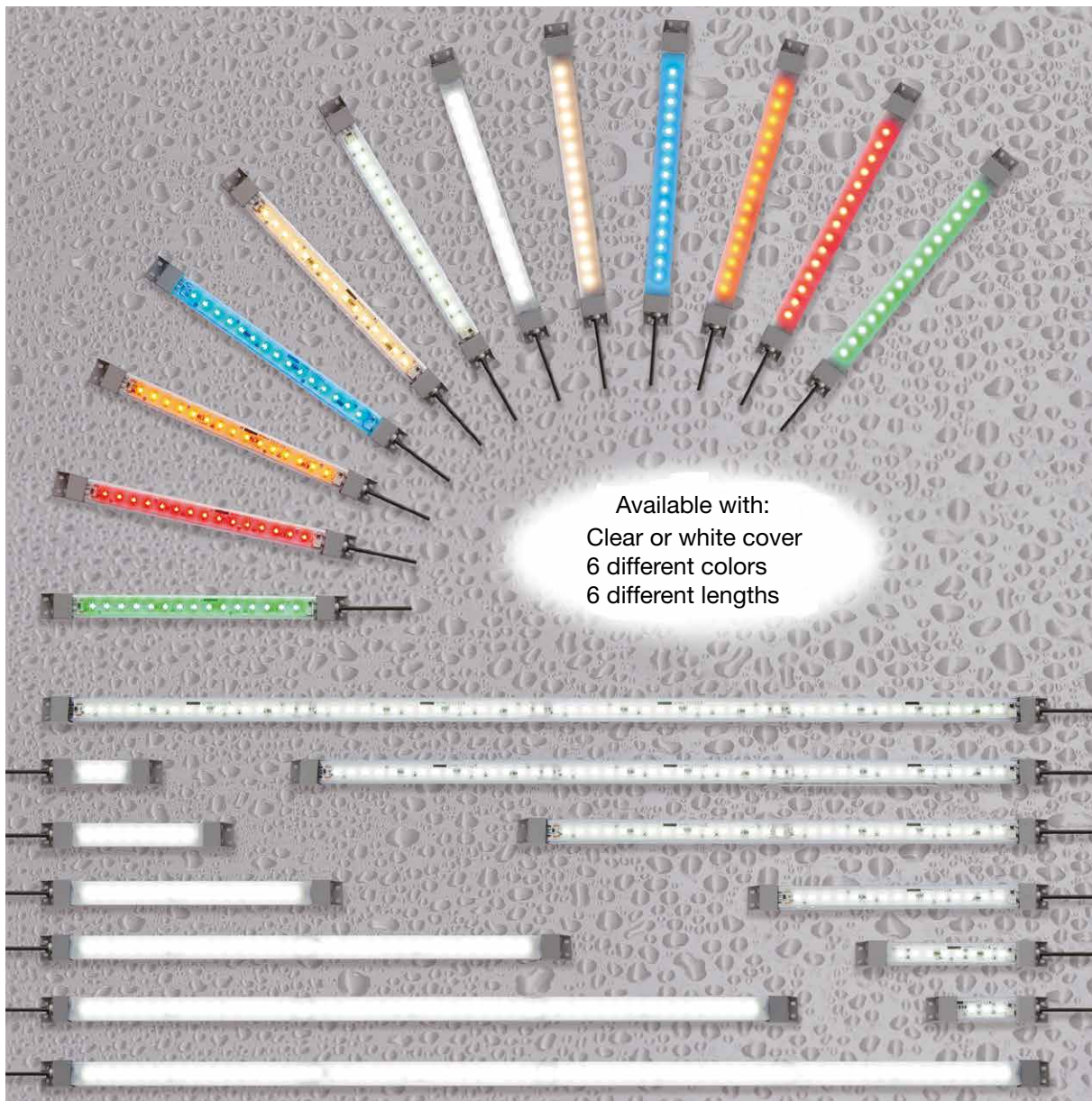


# LF1B-N

## LED Illumination Units

IP65 (waterproof, dustproof) slim style.

Ideal for installing in small areas subject to splashing water.

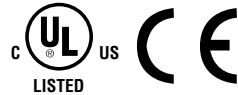


# LF1B-N LED Illumination Units

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.
- Daylight, warm white, yellow, red, blue, and green illumination colors.
- Two cover colors: clear and white.

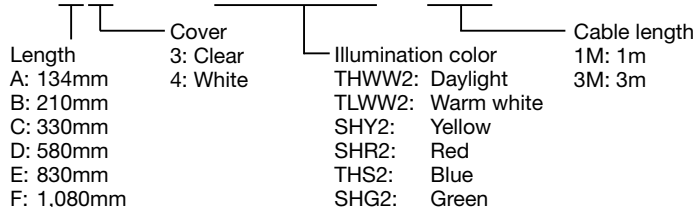


Illumination Color		Daylight	Warm White	Yellow	Red	Blue	Green
Appearance	Clear cover						
	White cover						
LF1B-NA (134mm)	Clear cover	LF1B-NA3P-2THWW2-*	LF1B-NA3P-2TLWW2-*	LF1B-NA3P-2SHY2-*	LF1B-NA3P-2SHR2-*	LF1B-NA3P-2THS2-*	LF1B-NA3P-2SHG2-*
	White cover	LF1B-NA4P-2THWW2-*	LF1B-NA4P-2TLWW2-*	LF1B-NA4P-2SHY2-*	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>• Sign</li> <li>• Light ornaments</li> </ul>	

• Specify cable length in place of \* in Part No. 1M: 1m, 3M: 3m

## Part No. Development

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



## 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)	daylight/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)	daylight/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.

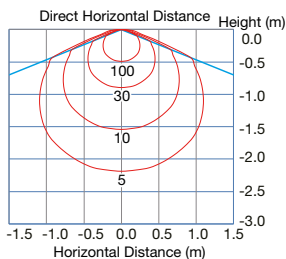
## LED Optical Specifications

Illumination Color	Daylight	Warm White	Yellow	Red	Green	Blue	
Color Temperature/ Dominant Wavelength (typ.)	6,500K	3,000K	590nm	620nm	525nm	455nm	
Reference Illuminance (typ.) at 0.5m directly below	LF1B-NA	Clear: 95 lx White: 85 lx	Clear: 90 lx White: 80 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: 240 lx White: 215 lx	Clear: 230 lx White: 210 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: 455 lx White: 410 lx	Clear: 440 lx White: 395 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: 840 lx White: 750 lx	Clear: 815 lx White: 725 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: 1,100 lx White: 995 lx	Clear: 1,065 lx White: 960 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: 1,350 lx White: 1,210 lx	Clear: 1,300 lx White: 1,170 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

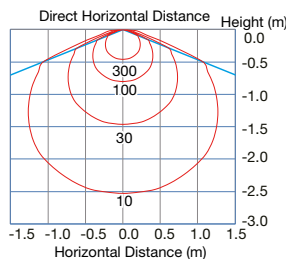
• LED modules and illumination units may vary in illumination colors and illuminance.

## Illuminance Distribution (lx)

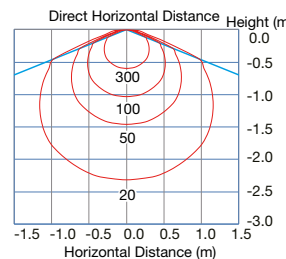
LF1B-NA3P-2THWW2-\*



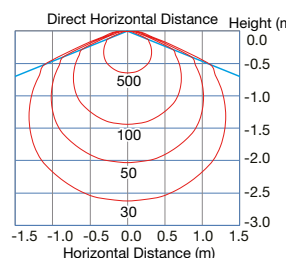
LF1B-NB3P-2THWW2-\*



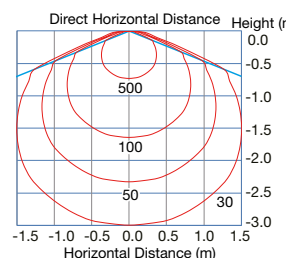
LF1B-NC3P-2THWW2-\*



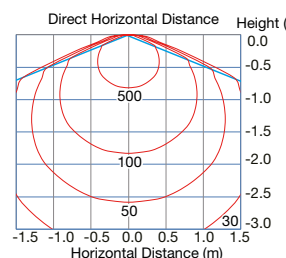
LF1B-ND3P-2THWW2-\*



LF1B-NE3P-2THWW2-\*

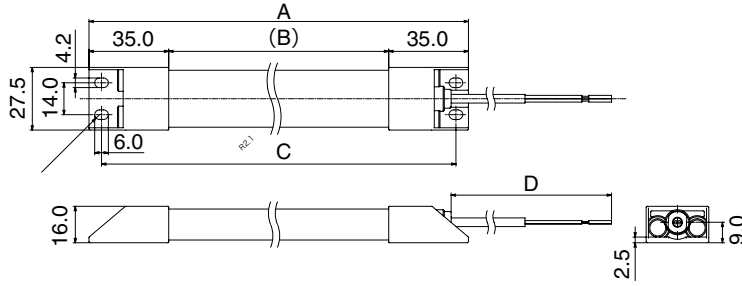


LF1B-NF3P-2THWW2-\*



# LF1B-N LED Illumination Units

## Dimensions

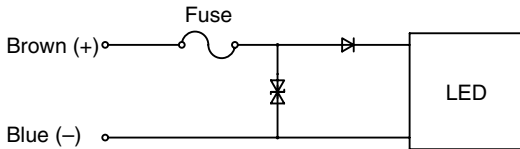


Model	A	B	C
LF1B-NA	134	64	123
LF1B-NB	210	140	199
LF1B-NC	330	260	319
LF1B-ND	580	510	569
LF1B-NE	830	760	819
LF1B-NF	1,080	1,010	1,069

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

All dimensions in mm.

## Internal Circuit



## Safety Precautions

- Do not disassemble, repair, or modify the LF1B-N. Otherwise electric shock, fire, or malfunction may occur.
- Turn off power before wiring. Make sure of correct wiring, otherwise electric shock or damage may result.
- Do not stare directly into the LF1B-N unit while it is lit, and do not project the light to other people, otherwise eyes may be injured.
- The LF1B-N is a general-purpose industrial electric device. Do not use for electronic equipment which may damage the human body or threaten life in case a malfunction or failure occurs.

## Instructions

- LED modules may vary in illumination colors and illuminance.
- Before designing equipment and powering up illumination units, confirm the specifications described in the instruction sheet.
- Apply voltage within the rated value, otherwise the LED elements may be damaged.
- The illumination unit is vulnerable to static electricity. Take sufficient measure for protection against static electricity and voltage surges.
- Make sure that the illumination unit does not fall during transportation, installation, and operation, otherwise damage may result.
- Do not pull or push the cable of the illumination unit, otherwise damage may result. Allow sufficient slack to the cable while wiring.
- Do not apply excessive force. Do not leave a damaged illumination unit unattended or use a damaged illumination unit.
- Ensure the correct operating temperature. Otherwise internal temperature rise may result in damage.
- Do not use or store in a place subjected to vibration and shock.
- Do not use in the following places:
  - \* Exposed to direct sunlight, near heaters, high temperatures
  - \* Subject to chemicals, and corrosive gases (Plastic illumination surface types: Iron powder and oil)
  - \* Basements, greenhouses, or other humid places
  - \* Cold storage warehouses (make sure that no freezing occurs)
- Do not loosen screws, otherwise the protection characteristics will be impaired.
- To clean the cover, use a soft cloth with water or neutral detergent. Do not use solvents such as thinners, benzene, or alkaline, otherwise discoloration, deterioration, or decrease in strength may occur.
- The edge of the cable sheath is not waterproof construction. Water may invade the LF1B-N in a capillary action when water splashes directly onto the cable sheath.



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