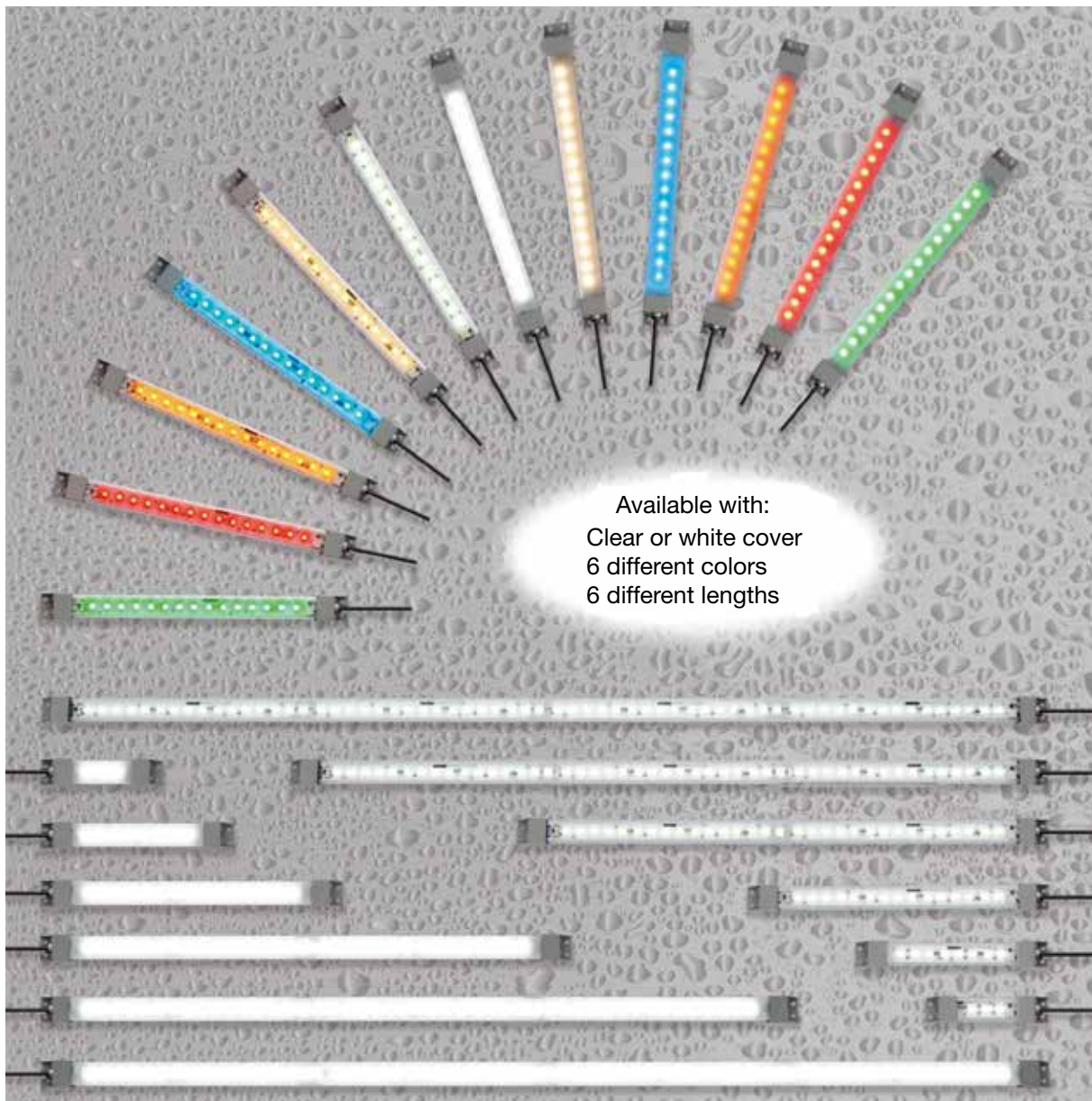


LF1B-N

LED Illumination Units

IP65 (waterproof, dustproof) slim style.

Ideal for installing in small areas subject to splashing water.

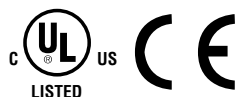


LF1B-N LED Illumination Units

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		• Machine tools • Plant equipment • Inspection/test equipment • Control panel	• Food processing machines • Cosmetic plants • Chemical plants • Showcases	• Semiconductor manufacturing equipment • IC foundries	• Photosensitive materials • Semiconductor manufacturing equipment • Darkroom experiment	• Sign • Light ornaments	

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

Part No. Development

LF1B - NC3P - 2THWW2 - 1M

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

Specifications

Model		LF1B-NA (134mm)	LF1B-NB (210mm)	LF1B-NC (330mmc	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/s², 2 hours each in 3 axes				Frequency: 5 to 55 Hz, Amplitude 0.17mm Acceleration 20m/s², 2 hours each in 3 axes	
Shock Resistance (damage limits)		1,000m/s², 5 shocks each in 6 axes				300m/s², 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.

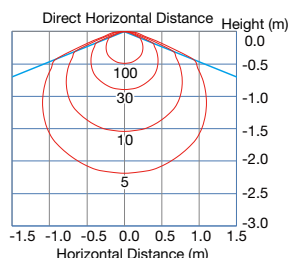
LED Optical Specifications

Illumination Color		Daylight	Warm White	Yellow	Red	Green	Blue
Color Temperature/ Dominant Wavelength (typ.)		6,500K	2,900K	590nm	620nm	525nm	455nm
Reference Illuminance (typ.) at 0.5m directly below	LF1B-NA	Clear: 95 lx White: 85 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: 240 lx White: 215 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: 455 lx White: 410 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: 840 lx White: 750 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: 1,100 lx White: 995 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: 1,350 lx White: 1,210 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

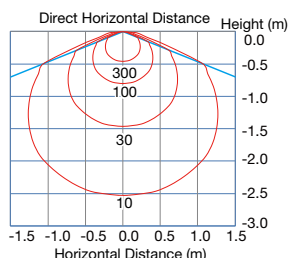
• LED modules and illumination units may vary in illumination colors and illuminance.

Illuminance Distribution (lx)

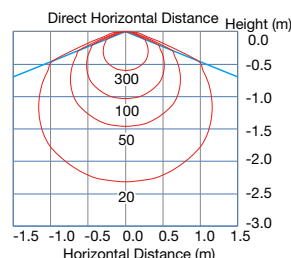
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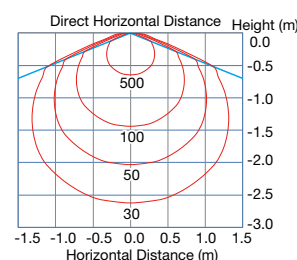
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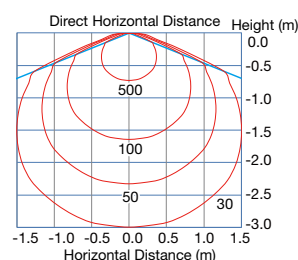
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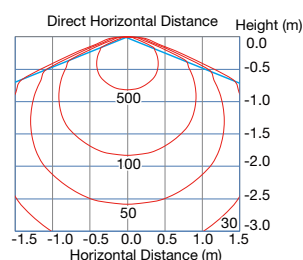
LF1B-ND3P-2THWW2-*



LF1B-NE3P-2THWW2-*

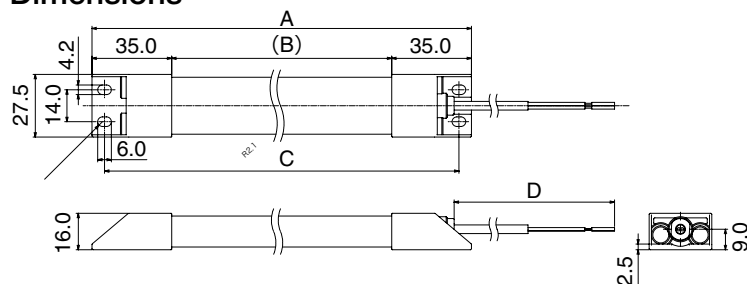


LF1B-NF3P-2THWW2-*



LF1B-N LED Illumination Units

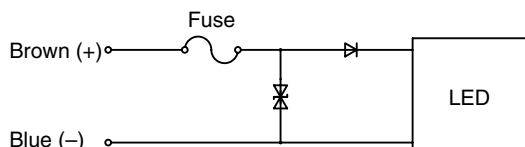
Dimensions



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

Internal Circuit



All dimensions in mm.



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.

Specifications and other descriptions in this catalog are subject to change without notice.



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