

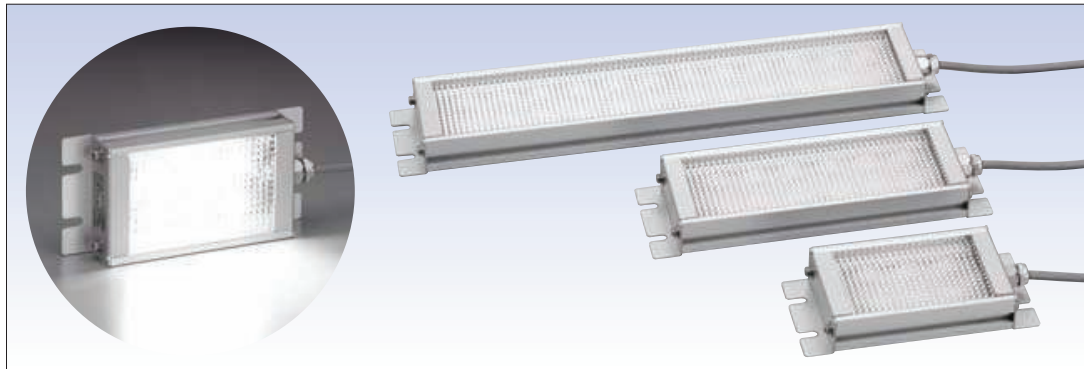
Think Automation and beyond...



# LF1A Series LED Illumination Units

## Standard Types

LED module and high heat-radiation technology allow for thin LED housing



### Features and Applications by Illumination Color

Illumination Color	White	Incandescent Light Color	Yellow	Red
Type No.	LF1A-*2THWW6	LF1A-*2TLWW6	LF1A-*2SHY8	LF1A-*2SHR8
Appearance				
Spectrum				
Features	Suppressing glare, the bright, clear white illumination color lights up a target object clearly.	Warm color similar to that of an incandescent light bulb. 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. It does not include 500 nm or shorter wavelengths.	Red illumination color gives off an emission spectrum with a long wavelength (dominant wavelength of 625 nm).
Application Examples	<ul style="list-style-type: none"> <li>• Machine Tools</li> <li>• Control Panel/Plant Equipment</li> <li>• Inspection/Test Equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Food Processing Machines</li> <li>• Cosmetic Plants</li> <li>• Chemical Plants</li> </ul>	<ul style="list-style-type: none"> <li>• Semiconductor Manufacturing Equipment</li> <li>• IC Plants</li> </ul>	<ul style="list-style-type: none"> <li>• Application Equipment for Photosensitive Materials</li> <li>• Semiconductor Manufacturing Equipment</li> <li>• Night-time Experiments</li> </ul>

### Types

Illumination Color LED Arrangement	White	Incandescent Light Color	Yellow	Red
	3 LEDs x 2 rows	LF1A-A1-2THWW6	LF1A-A1-2TLWW6	LF1A-A1-2SHY8
6 LEDs x 2 rows	LF1A-B1-2THWW6	LF1A-B1-2TLWW6	LF1A-B1-2SHY8	LF1A-B1-2SHR8
12 LEDs x 2 rows	LF1A-D1-2THWW6	LF1A-D1-2TLWW6	LF1A-D1-2SHY8	LF1A-D1-2SHR8

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## LF1A Series LED Illumination Units (Standard Types)

### Specifications

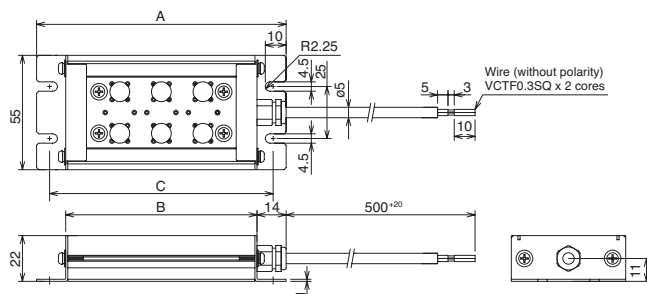
#### • General Specifications

Type No.	LF1A- <i>s</i> -2THWW6	LF1A- <i>s</i> -2TLWW6	LF1A- <i>s</i> -2SHY8	LF1A- <i>s</i> -2SHR8
Rated Voltage	24V DC (without polarity)			
Input Current (typ.) (at rated voltage)	3 LEDs x 2 rows	75 mA		90 mA
	6 LEDs x 2 rows	150 mA		180 mA
	12 LEDs x 2 rows	300 mA		360 mA
Rated Power (typ.) (at rated voltage)	3 LEDs x 2 rows	1.8W		2.2W
	6 LEDs x 2 rows	3.6W		4.4W
	12 LEDs x 2 rows	7.2W		8.7W
Dielectric Strength	Between live and dead parts: 1000V AC, 1 minute			
Insulation Resistance	Between live and dead parts: 100 MΩ (500V DC megger)			
Operating Temperature	-20 to +50°C			
Storage Temperature	-25 to +70°C			
Operating/Storage Humidity	45 to 85% RH (no condensation)			
Life (half luminance)	40,000 hours			
Weight (approx.)	LF1A-A1: 190g, LF1A-B1: 270g, LF1A-D1: 470g			
Degree of Protection	IP40			

#### • LED Optical Specifications

Type No.	LF1A- <i>s</i> -2THWW6	LF1A- <i>s</i> -2TLWW6	LF1A- <i>s</i> -2SHY8	LF1A- <i>s</i> -2SHR8
Illumination Color	White	Incandescent Light Color	Yellow	Red
Luminous Intensity (typ.) (Single LED module)	6000 mcd	4000 mcd	4000 mcd	2500 mcd
Color Temperature (typ.) / Dominant Wavelength (typ.)	5500K	2800K	590 nm	625 nm
Reference Illuminance (typ.) at 500 mm	3 LEDs x 2 rows	130 lx	130 lx	85 lx
	6 LEDs x 2 rows	380 lx	260 lx	170 lx
	12 LEDs x 2 rows	760 lx	520 lx	340 lx

### Dimensions

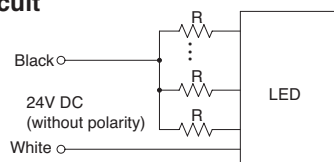


#### • Dimension List

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

All dimensions in mm.

### Internal Circuit



## Water-, Dust-, and Oil-Proof Types

Environmental-proof LED illumination units can be used in environments where water/oil spattering may occur.

**Degree of protection (IP67f)**  
Water-proof, dust-proof, oil-proof type that uses special rubber (fluorinated elastomer) for internal waterproof gasket.  
The LF1A series can be used on a food processing line to be washed as a whole, or in a machine tool where the unit may be splashed with oil.

**Easy installation**  
Equipped with a standard accessory 5-m cable (metal protection tube can be mounted)

**Compact body**  
Low-profile design unique to LED illumination  
Allows for installation in a machine where space is limited.

**Environmental-proof housing**  
The front housing panel is made of SUS304, ensuring high strength and corrosion resistance.

**Safe**  
The front transparent panel uses reinforced glass with a thickness of 4 mm, ensuring safety against any spray of shavings or filings.

**Other features**

- Energy-saving: Power consumption is approx. one third that of fluorescent lamps.
- Long life: Maintenance unneeded for approx. 40000 hours.
- Clean: Compliant with RoHS directive, mercury-free.
- Vibration/Impact resistance: Unlike fluorescent lamps, an LED unit with no electric contact is resistant to vibration.
- Low heat value: The LED unit gives off a lower heat value than that of a fluorescent lamp.
- Noiseless: The LED unit can be used in a location near electronic equipment.

**Bright**  
With the highly bright multi-chip LED modules, the LF1A series provides illumination equivalent to a 20W fluorescent lamp.

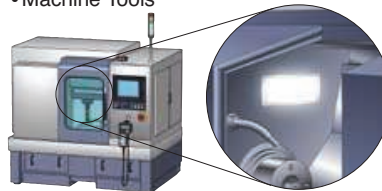
**Easy to see**  
The white LED has a clear color that gives off a color temperature of 5500K, allowing for clear lighting conditions in the workplace.

### Types

LED Arrangement	Illumination Color	White
8 LEDs x 3 rows		LF1A-D2F-2THWW6

### Application Examples

#### • Machine Tools



- Food Processing Lines
- Automotive/Outdoor Equipment, etc.

#### • Semiconductor Manufacturing Equipment



## LF1A Series LED Illumination Units (Water-, Dust-, and Oil-proof)

### Specifications

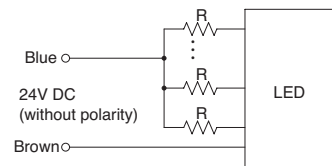
#### • General Specifications

Rated Voltage	24V DC (without polarity)
Input Current (typ.)	300 mA (at rated voltage)
Rated Power (typ.)	7.2W (at rated voltage)
Operating Temperature	-20 to +50°C
Storage Temperature	-25 to +70°C
Operating/Storage Humidity	45 to 85% RH (no condensation)
Life (half luminance)	40,000 hours
Insulation Resistance	100 MΩ minimum (500V DC megger)
Dielectric Strength	1000V AC, 1 minute (between live and dead parts)
Vibration Resistance (damage limits)	5 to 55 Hz, amplitude 0.5 mm, 20 m/s <sup>2</sup>
Shock Resistance (damage limits)	980 m/s <sup>2</sup>
Material	Housing: SUS
	Glass: Reinforced glass
	Rear panel: Aluminum
	Electric wire: US20276T 0.2 mm <sup>2</sup> x 2c
Weight (approx.)	850g
Degree of Protection	IP 67f

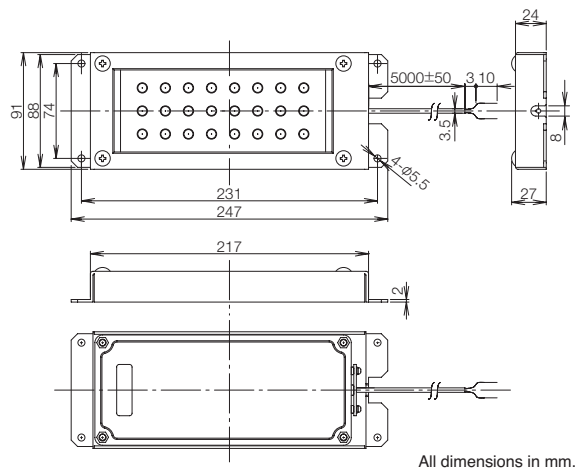
#### • LED Optical Specifications

Illumination Color	White
Chromaticity Coordinate Value (typ.)	X: 0.33, Y: 0.33
Luminous Intensity (typ.) (Single LED module)	6000 mcd
Color Temperature (typ.)	5500K
Reference Illuminance (typ.) at 500 mm	600 lx

#### Internal Circuit



### Dimensions



### PS5R-S Switching Power Supplies

#### Slim size DIN rail mount switching power supplies with finger-safe terminals

- Compact and light-weight
- Width: 22.5 mm (10W/15W), 36 mm (30W/60W), 46 mm (90W), 50 mm (120W), 80 mm (240W)
- DIN rail mounting. Optional mounting bracket is available for panel mounting.
- CE marked (LVD and EMC)
- UL508, UL1604, UL1310 Class 2\*, CSA C22.2 No. 14, No. 213, No.223\*, EN 60950-1, EN50178 compliant. \*(PS5R-SB/SC/SD only)
- EN61204-3 (DC power supply EMC Directive Class B) VCCI Class B compliant
- Meets SEMI F47 Sag Immunity (PS5R-SF/SG)
- RoHS compliant
- Three-year Warranty



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



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