LF1D

LED Illumination Units (water, dust, and oil-proof)

- Brightness:
  - Slim: 66.6 Lumens/Watt
  - Wide: 67.2 Lumens/Watt
- Life: 70% of initial luminance at 50,000 Hrs
- IP69K (high pressure and high temperature washdown)
- Available in clear or diffused Lens
- Surface mounting
- RoHS Compliant
Excellent light distribution by combining different light-dispersing lenses

**Slim Model**
For small to medium-size machines

**Wide Model**
For larger machines

### Distribution Characteristics (long side direction)
(Reference value at 1.0m)

<table>
<thead>
<tr>
<th>Slim Model (for narrow areas)</th>
<th>Wide Model (for larger areas)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-400</td>
<td>400 (lx)</td>
</tr>
<tr>
<td>0</td>
<td>800</td>
</tr>
<tr>
<td>400 (mm)</td>
<td>1100</td>
</tr>
</tbody>
</table>

Contact IDEC for other LF1D distribution characteristics.

### Durable and resistant to harsh environments

**High durability**
Constructed of diecast aluminum (base), stainless steel (front), and reinforced glass. Unit is resistant to flying debris.

**Degree of protection IP69K**
High pressure and high temperature washdown. Can be used in environments with high-pressure water and that require steam cleaning.

- **Reinforced glass (Note)**
- **Stainless steel**
- **Diecast aluminum**

Note: Plastic (polycarbonate) lens is available for food processing machines.

### Easy maintenance

**Spring-clamp terminal blocks**
Removable direct plug-in terminal block and spring clamp connector ensures a high quality connection, making it easy to install or replace the LED illumination unit.

**Flexible mounting**
The LED illumination unit can be mounted using mounting holes on the back or ends of its housing.
LF1D LED Illumination Units

Part Numbers

<table>
<thead>
<tr>
<th>Model</th>
<th>Slim Model LF1D-E (10 LEDs x 1 row)</th>
<th>Wide Model LF1D-F (7 LEDs x 2 rows)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Gland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting Bracket</td>
<td>Clear Reinforced Glass</td>
<td>Clear Polycarbonate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clear Reinforced Glass</td>
</tr>
</tbody>
</table>

Appearance

Without (Cable gland hole on the side)  LF1D-E2F-2W  LF1D-E3G-2W  LF1D-F2F-2W  LF1D-F3G-2W
Without (Cable gland hole on the back)  LF1D-E2F-2W-200  LF1D-E3G-2W-200  LF1D-F2F-2W-200  LF1D-F3G-2W-200
With (Side)  LF1D-E2F-2W-300  LF1D-E3G-2W-300  LF1D-F2F-2W-300  LF1D-F3G-2W-300
With (Back)  LF1D-E2F-2W-400  LF1D-E3G-2W-400  LF1D-F2F-2W-400  LF1D-F3G-2W-400

Accessories

<table>
<thead>
<tr>
<th>Type</th>
<th>Material</th>
<th>Part No.</th>
<th>Remarks</th>
<th>Package Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Gland</td>
<td>Brass</td>
<td>LF9Z-A11</td>
<td>M8, applicable wire size: ø3.5 to 5.5 mm (10 to 12AWG)</td>
<td>1</td>
</tr>
<tr>
<td>Mounting Bracket</td>
<td>Stainless steel</td>
<td>LF9Z-B11</td>
<td>With mounting screws</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LF9Z-B12</td>
<td>With mounting screws</td>
<td>2</td>
</tr>
<tr>
<td>Cable</td>
<td>PVC</td>
<td>LF9Z-C05</td>
<td>Length: 5m</td>
<td>1</td>
</tr>
</tbody>
</table>

Specifications

- **General Specifications**
  - Type: Slim  Wide
  - Rated Voltage: 24V DC  26.4V DC
  - Voltage Range: 21.6 to 26.4V DC  21.8 to 26.4V DC
  - Rated Power (typ.): 9W  12.5W
  - Insulation Resistance: 1MΩ minimum (500V DC megger)
  - Dielectric Strength: 1000V AC, 50/60 Hz, 1 minute
  - Vibration Resistance: Frequency 5 to 55 Hz, amplitude 0.5 mm
  - Shock Resistance: 1000 m/s²
  - 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 (Note 1): 50,000 hours (The illumination duration in which the illuminance maintains a minimum of 70% of the initial value at 25°C.)
  - Degree of Protection (Note 2): IP69K High pressure and high temperature washdown
  - Material: Housing: Diecast aluminum  Front cover: Stainless steel  Lens: Reinforced glass or polycarbonate
  - Weight (approx.): LF1D-E**-2W: 750g  LF1D-F**-2W: 800g  LF1D-E**-2W-A: 950g  LF1D-F**-2W-A: 1000g

- **LED Optical Specifications**
  - Type: Slim  Wide
  - Illumination Color: White
  - Total Luminous Flux (typ.): 600 lm  840 lm
  - Color Temperature (typ.): 5700K
  - Reference Illuminance (typ.) at 1.0m: 1100 lx

Note 1: LED life depends on the operating environment.

- **Illuminance Distribution (at 1.0m)**
  - **Slim Type**
  - **Wide Type**

- **Terminal Block Wiring**
  - **Slim Type**
  - **Wide Type**

- **Internal Circuit**

Applicable ferrules: 0.25 to 0.75 mm²
Recommended source: Phoenix Contact: AI 0,25-12 BU, AI 0,34-12 TQ, AI 0,5-12 WH, AI 0,75-12 GY

Internal Circuit

- Housing
- Constant-current power supply
- + LED

LED modules and illumination units may vary in illumination colors and illuminance. Luminous flux, color temperature, and illuminance shown above are typical values.
**LF1D LED Illumination Units**

### Dimensions
(w/cable gland, mounting bracket, and cable)

- **Slim Type (10 LEDs × 1 row)**
  - Effective thread: 10 mm
  - 4-M4 P0.7

- **Wide Type (7 LEDs × 2 rows)**
  - Effective thread: 10 mm
  - 4-M5 P0.8

### Safety Precautions
- Do not disassemble, repair, or modify the LF1D illumination unit. Otherwise accidents may result, such as electric shock, fire, or malfunction.
- Turn off the power to the LF1D illumination unit before wiring. Make sure wiring is correct, otherwise electric shock or damage may result.
- Do not stare directly into the LF1D illumination unit while it is lit, and do not project the light to other people, otherwise eyes may be injured.
- The LF1D illumination unit is a general-purpose industrial electric device. Do not use the LF1D illumination unit for electronic equipment that may cause personal injury or death if a malfunction or failure should occur.

### Instructions
- Before designing the final equipment and powering up the LF1D illumination unit, confirm that the specifications described on the instruction sheet have been met. If there is any uncertainty, contact IDEC before powering up the LF1D illumination unit.
- Apply voltage within the rated range, otherwise the LED elements may be damaged.
- The illumination unit is vulnerable to static electricity. Take sufficient precautions for protection against static electricity and voltage surges.
- Make sure that the LF1D illumination unit is not dropped during transportation, installation, and operation, otherwise damage may result.
- Do not pull or push the cable of the LF1D illumination unit, otherwise damage may result. Allow sufficient slack to the cable while wiring.
- Do not apply excessive force to the LF1D illumination unit. Do not leave a damaged LF1D illumination unit unattended or use a damaged LF1D.
- Ensure the correct operating temperature around the LF1D illumination unit. Otherwise internal temperature rise may result in damage.
- Do not use or store the LF1D illumination unit in a place subject to vibration and shock.
- Do not use the LF1D illumination unit in the following situations:
  - exposure to direct sunlight, heaters, or high temperatures
  - subject to chemicals, or corrosive gases
  - basements, greenhouses, or other humid locations
  - cold storage warehouses or cooler exhaust outlets (make sure that no freezing occurs)
  - Do not loosen screws, otherwise the protection characteristics will be impaired.

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

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