LF1D

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

- Brightness:
  - Slim: 66.6 Lumens/Watt
  - Wide: 67.2 Lumens/Watt
- Lifespan: 70% of initial luminance at 50,000 Hrs
- IP67 (polycarbonate lens) or IP67f (reinforced glass lens)
- Available in clear or diffused Lens
- Surface mounting
- RoHS Compliant

Also available with or without cable gland, mounting bracket & cable.

Shown with cable gland, mounting bracket, & cable.

SLIM MODEL

WIDE MODEL

IDECCORPORATION
Excellent light distribution by combining different light-dispersing lenses

For small to medium-size machines

For larger machines

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

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 IP67f
Waterproof, dust-proof, oil-proof. Can be used in environments subject to water, dust, and oil.

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.

Note: Plastic (polycarbonate) lens is available for food processing machines (IP67).
**LF1D LED Illumination Units**

### Part Numbers

<table>
<thead>
<tr>
<th>Appearance</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>Without (Cable gland hole on the side)</td>
<td>LF1D-E2F-2W</td>
<td>LF1D-F2F-2W</td>
</tr>
<tr>
<td>Without (Cable gland hole on the back)</td>
<td>LF1D-E2F-2W-200</td>
<td>LF1D-F2F-2W-200</td>
</tr>
<tr>
<td>With (Side)</td>
<td>LF1D-E2F-2W-300</td>
<td>LF1D-F2F-2W-300</td>
</tr>
<tr>
<td>With (Back)</td>
<td>LF1D-E2F-2W-400</td>
<td>LF1D-F2F-2W-400</td>
</tr>
</tbody>
</table>

### 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>For Wide Type</td>
<td>Stainless steel</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
- **Voltage Range**: 21.6 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 (damage limits)**: Frequency 5 to 55 Hz, amplitude 0.5 mm
- **Shock Resistance (damage limits)**: 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)**: Reinforced glass lens: IP67f Poly carbonate lens: IP67
- **Material**: Housing: Diecast aluminum Front cover: Stainless steel Lens: Reinforced glass or polycarbonate (Note 3)
- **Weight (approx.)**: LF1D-E**-2W: 750g LF1D-F**-2W: 800g LF1D-E**-2W-A: 950g LF1D-F**-2W-A: 1000g

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

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

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

**Note 1**: LED life depends on the operating environment.
**Note 2**: Waterproof and oil-proof characteristics guaranteed for conditions specified by IEC 60529 and JEM1030. For illumination units without accessories, use a cable gland and cable that satisfy IP67f or IP67f degrees of protection.
**Note 3**: The reinforced glass and polycarbonate lenses have the same appearance, but have different degrees of protection (IP67f or IP67).

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)**

- **Wide Type (7 LEDs × 2 rows)**

**Safety Precautions**
- Do not disassemble, repair, or modify the LF1D illumination unit. Otherwise accidents may result, such as electric shock, fire, or malfunction.

**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.

All dimensions in mm.

**Specifications and other descriptions in this brochure are subject to change without notice.**
LUMIFA LF2D

LF2D Series (IP67, IP67f)

LF2D LED units are the brightest in their class. With their rugged construction they are ideal for machine tools, and food and beverage processing equipment. Offered in a wide or slim package, the design of these LED lights provides equally brilliant light at the center or edges of the units.

- Brightness: Slim: 66.6 Lumens/Watt
  Wide: 67.2 Lumens/Watt
- Life: 70% of initial luminance at 50,000 Hrs
- Rugged & durable for harsh environments
- IP67 (Polycarbonate lens) or IP67f (Reinforced glass lens)
- Available in clear or diffused lens
- Stainless steel cover, diecast aluminum housing
- Recessed mounting provides lower profile
- UL Listed (wet locations)
- RoHS Compliant

### General Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Slim</th>
<th>Wide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage</td>
<td>24V DC</td>
<td></td>
</tr>
<tr>
<td>Voltage Range</td>
<td>21.6 to 26.4V DC</td>
<td>12.5W</td>
</tr>
<tr>
<td>Rated Power (typ.)</td>
<td>9W</td>
<td>12.5W</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>1MΩ minimum (500V DC megger)</td>
<td></td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>1000V AC, 50/60Hz, 1 minute</td>
<td></td>
</tr>
<tr>
<td>Vibration Resistance (damage limits)</td>
<td>Frequency 5 to 55Hz, amplitude 0.5mm</td>
<td></td>
</tr>
<tr>
<td>Shock Resistance (damage limits)</td>
<td>1000m/s² (100G)</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>−30 to +55°C (no freezing)</td>
<td></td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>45 to 85% RH (no condensation)</td>
<td></td>
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<td></td>
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<tr>
<td>Operating Atmosphere</td>
<td>No corrosive gas</td>
<td></td>
</tr>
<tr>
<td>Life Note 1</td>
<td>50,000 hours (The illumination duration in which the luminance maintains a minimum of 70% of the initial value at 25°C)</td>
<td></td>
</tr>
<tr>
<td>Degree of Protection Note 2</td>
<td>IP67f (reinforced glass), IP67 (polycarbonate)</td>
<td></td>
</tr>
<tr>
<td>Material Note 3</td>
<td>Housing: Diecast aluminum Front cover: Stainless steel Lens: Reinforced glass or polycarbonate</td>
<td></td>
</tr>
<tr>
<td>Weight (approx)</td>
<td>LF2D-E**-2W*: 850g LF2D-E**-2W-A*: 1000g</td>
<td>LF2D-F**-2W*: 900g LF2D-F**-2W-A*: 1050g</td>
</tr>
</tbody>
</table>

Note 1: LED life depends on the operating environment.
Note 2: Waterproof or oil-proof characteristics specified by IEC 60529 and JEM1030. For illumination units without accessories, use a cable gland and cable that satisfy IP67f or IP67 degree of protection.
Note 3: The reinforced glass and polycarbonate lenses have the same appearance, but have the different degrees of protection (IP67f or IP67).

### LED Optical Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Slim</th>
<th>Wide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illumination Surface</td>
<td>Clear</td>
<td>Diffused</td>
</tr>
<tr>
<td>Illumination Color</td>
<td>Cool White</td>
<td></td>
</tr>
<tr>
<td>Total Luminous Flux</td>
<td>600lm</td>
<td>840lm</td>
</tr>
<tr>
<td>Color Temperature</td>
<td>5700K</td>
<td></td>
</tr>
<tr>
<td>Reference Illuminance at 1.0m</td>
<td>1100lx 1000lx</td>
<td>1100lx 1000lx</td>
</tr>
</tbody>
</table>

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

#### Cover
Stainless steel. The cover is extremely durable, perfect for harsh environments.

#### Efficient power circuit
Highly efficient, low-heat power circuit.

#### Housing
Aluminum.

#### Heat dissipation
Heat is dissipated by the aluminum housing.

#### Glare prevention
Diffused model available to prevent glaring light and reflection. (EN1837: 1999, 4.3.)

#### Brightest in its class
The optical design ensures extreme brightness. Achieves illuminance specified by EN1837: 1999, 4.2.
Part Numbers

<table>
<thead>
<tr>
<th>Model</th>
<th>Slim Model LF2D-E (10 LEDs × 1 row)</th>
<th>Wide Model LF2D-F (7 LEDs × 2 rows)</th>
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<tbody>
<tr>
<td>Cable Gland</td>
<td>Clear Reinforced Glass</td>
<td>Clear Polycarbonate</td>
</tr>
<tr>
<td>Cable</td>
<td>Clear Reinforced Glass</td>
<td>Clear Polycarbonate</td>
</tr>
</tbody>
</table>

Appearance

| Without Cable Gland (hole on the side) | LF2D-E2F-2W | LF2D-E3G-2W | LF2D-F2F-2W | LF2D-F3G-2W |
| With (Side) | LF2D-E2F-2W-300 | LF2D-E3G-2W-300 | LF2D-F2F-2W-300 | LF2D-F3G-2W-300 |
| With (Back) | LF2D-E2F-2W-400 | LF2D-E2F-2W-450 | LF2D-E3G-2W-400 | LF2D-E3G-2W-450 |

Distribution Characteristics (reference value at 1.0m)

**Slim and Wide Models (Clear Surface)**

**Clear and Diffused Surface (Slim)**

**Clear and Diffused Surface (Wide)**

Illuminance Charts

Slim Type

- **Clear surface**
- **Diffused surface**

Wide Type

- **Clear surface**
- **Diffused surface**

Easy Maintenance

Spring-clamp Terminal Blocks

Removable direct plug-in terminal block and spring clamp connections ensure a high quality connection, making it easy to install or replace the LED illumination unit.