**Common Specifications**

<table>
<thead>
<tr>
<th>LED color</th>
<th>Red (RD)</th>
<th>White (SW)</th>
<th>Blue (BL)</th>
<th>Green (GR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage</td>
<td>24 V max.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak wavelength (typ.)</td>
<td>635 nm</td>
<td>470 nm</td>
<td>525 nm</td>
<td></td>
</tr>
<tr>
<td>Relative color temperature (typ.)</td>
<td>6,600 K</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable length</td>
<td>0.3 m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input connector</td>
<td>SMR-03V-B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polarity, signal</td>
<td>1: Anode (+) brown, 2: NC, 3: Cathode (-) blue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case material</td>
<td>Aluminum alloy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature and humidity</td>
<td>Temperature: 0 to 40°C, Humidity: 20% to 85% (with no condensation)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage temperature and humidity</td>
<td>Temperature: -20 to 60°C, Humidity: 20% to 85% (with no condensation)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling method</td>
<td>Natural air cooling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spectral distribution</td>
<td><img src="image" alt="Spectral distribution graph" /></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The values for irradiation strength and service life given in this catalog are for reference purposes. These values are not ensured.

---

**Precautions**

- Carefully read the product's instruction manual before use to ensure correct operation.
- Product specifications and design are subject to change without notice.
- Examples of workpiece imaging in this catalog are a guide that may be informative for choosing Light Units. Please check the functions of the equipment and requirements before choosing a Light Unit.

---

**New Generation LED Bar Light**

**New Bar Light Units with Direct Illumination**

**The New LDL2 Series**
1. **New Mounting Method**

The new mounting method enables versatile mounting to match the installation environment.

- **Frame structure**
- **Mounting tap holes**
- **Cable side**

You can select from two methods for greater mounting versatility to match your installation environments: the new frame structure mounting method or the conventional mounting holes.

With the new mounting method, you have freedom in adjusting the lighting position and mounting location by sliding the securing nuts into the internal grooves in the frame structure. The size of the internal grooves complies with JIS standard M3 nuts, which are commonly used. (Use JIS standard M3 nuts for mounting.)

The cable is flat to the mounting surface, and so mounting can be made to any surface.

2. **High Output**

**Enhanced Output with Improved Light Emission Efficiency**

A brightness of approximately five times is achieved over previous products for red light with a camera. Brightness has also been enhanced for white, blue, and green light.

- **Red Light**
  - Brightness increased by approximately 5 times with a camera.
  - LDL2 (narrow model)

- **Blue Light**
  - Directional Characteristics of Narrow Model (White Light)
  - LWD = 100 mm

- **Green Light**
  - Directional Characteristics of Wide Model (White Light)
  - LWD = 100 mm

- **White Light**
  - Directional Characteristics of Wide Model (White Light)
  - LWD = 100 mm

- **LED Section Temperature Change Graph**
  - Decrease approx. 20%

- **Data**
  - Typical Examples. There are virtually no changes in the graph values for the narrow model or changes that depend on whether optional products are mounted.

3. **Enhanced Heat Dissipation**

Stable long-term performance with high-efficiency heat dissipation

- **LED Section Temperature Change Graph**
  - Change in Temperature over Time
  - Stabilized at approx. 40°C

- **Change in Irradiation Output over Time**

4. **Enhanced Customizability**

Maximum emission surface size of 500 mm.

- **LED Section Temperature Change Graph**
  - Change in Temperature over Time
  - Stabilized at approx. 34°C

5. **24-V Input For All Colors**

The power that is supplied is the same for all light colors.

Previously, 12 V was used only for red light, but the voltage is now 24 V for all colors.

- **Data**
  - Typical Examples. There are virtually no changes in the graph values for the narrow model or changes that depend on whether optional products are mounted.

---

**Note:** The values given above are only for reference purposes. Actual values may vary.
Options
The Diffusion Plate and Polarizing Plate have been redesigned to use insertion fixing rather than the previous screw fixing method. Upgraded materials for the Diffusion Plate improve the rate of diffusion. Protective Plate is available to protect the emission area of the Light Unit as well as brackets for securing the Light Unit to enable flexible adjustment of the emission direction.

Mounting
- Insert the tabs into the side grooves.
- Use a flat-blade screwdriver or other tool with a narrow point to catch the tabs and remove the Plate.

Light Fixing Bracket
- Install the bracket on both ends of the Light Unit.
- Adjust the emission angle and then firmly secure the Light Unit.

Specifications of Special Options

### Dimensional diagrams (mm)

<table>
<thead>
<tr>
<th>Model name</th>
<th>Model number</th>
<th>Diffusion Plate</th>
<th>Polarizing Plate</th>
<th>Protective Plate</th>
<th>Light Fixing Brackets</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF-LDL2-119X16</td>
<td>1003702</td>
<td>CV-LDL2-119X16GR</td>
<td>PL-LDL2-119X16-VE</td>
<td>PL-LDL2-119X16BR</td>
<td>DF-LDL2-119X16-VE</td>
</tr>
<tr>
<td>DF-LDL2-146X10</td>
<td>1003703</td>
<td>CV-LDL2-146X10GR</td>
<td>PL-LDL2-146X10-VE</td>
<td>PL-LDL2-146X10BR</td>
<td>DF-LDL2-146X10-VE</td>
</tr>
<tr>
<td>DF-LDL2-74X30</td>
<td>1003704</td>
<td>CV-LDL2-74X30GR</td>
<td>PL-LDL2-74X30-VE</td>
<td>PL-LDL2-74X30BR</td>
<td>DF-LDL2-74X30-VE</td>
</tr>
<tr>
<td>DF-LDL2-218X30</td>
<td>1003705</td>
<td>CV-LDL2-218X30GR</td>
<td>PL-LDL2-218X30-VE</td>
<td>PL-LDL2-218X30BR</td>
<td>DF-LDL2-218X30-VE</td>
</tr>
</tbody>
</table>

Two types of Polarizing Plate are available. Use combinations for the following cases:

- Use a combination of two polarizing plates of the two types.
- Use a combination of light reflection by fixing a PL-series polarizing filter to the lens.

### Product Lineup
The standard lineup now includes models with a length of 200 mm or more as well as models with an emission surface of 30 mm. The lineup includes combinations of over 50 models with light colors in red, white, blue, and green, various sizes, and narrow models or wide models.

<table>
<thead>
<tr>
<th>Direct number</th>
<th>Model</th>
<th>LED Color</th>
<th>Emission surface size (mm)</th>
<th>Input voltage (V)</th>
<th>Power consumption (W)</th>
<th>Weight (g)</th>
<th>Supported options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1003702</td>
<td>LDL2-41X16RD</td>
<td>Red</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01018</td>
</tr>
<tr>
<td>1003703</td>
<td>LDL2-41X16BL</td>
<td>Blue</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01016</td>
</tr>
<tr>
<td>1003704</td>
<td>LDL2-41X16GR</td>
<td>Green</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01014</td>
</tr>
<tr>
<td>1003705</td>
<td>LDL2-41X16BR</td>
<td>Red</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01012</td>
</tr>
<tr>
<td>1003706</td>
<td>LDL2-41X16WD</td>
<td>Orange</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01010</td>
</tr>
<tr>
<td>1003707</td>
<td>LDL2-41X16GD</td>
<td>Gold</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01008</td>
</tr>
<tr>
<td>1003708</td>
<td>LDL2-41X16BD</td>
<td>Blue</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01006</td>
</tr>
<tr>
<td>1003709</td>
<td>LDL2-41X16RD</td>
<td>Red</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01004</td>
</tr>
<tr>
<td>1003710</td>
<td>LDL2-41X16BL</td>
<td>Blue</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01002</td>
</tr>
<tr>
<td>1003711</td>
<td>LDL2-41X16GR</td>
<td>Green</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01000</td>
</tr>
<tr>
<td>1003712</td>
<td>LDL2-41X16GD</td>
<td>Gold</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01002</td>
</tr>
<tr>
<td>1003713</td>
<td>LDL2-41X16BD</td>
<td>Blue</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01004</td>
</tr>
<tr>
<td>1003714</td>
<td>LDL2-41X16RD</td>
<td>Red</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01006</td>
</tr>
<tr>
<td>1003715</td>
<td>LDL2-41X16BL</td>
<td>Blue</td>
<td>41x16 mm</td>
<td>24 V</td>
<td>1.9</td>
<td>50</td>
<td>DL-LDL2-01008</td>
</tr>
</tbody>
</table>

Note: The Protective Plate is not intended to provide protection against dust or water droplets.
Dimensional diagrams (mm)

Model with 16-mm-wide emission surface

LDL2-41X16RD/SW/BL/GR (compatible with -WD models)

LDL2-80X16RD/SW/BL/GR (compatible with -WD models)

LDL2-119X16RD/SW/BL/GR (compatible with -WD models)

Model with 30-mm-wide emission surface

LDL2-74X30RD/SW/BL/GR (compatible with -WD models)

LDL2-146X30RD/SW/BL/GR (compatible with -WD models)

LDL2-218X30RD/SW/BL/GR (compatible with -WD models)

LDL2-266X30RD/SW/BL/GR (compatible with -WD models)
4. Installation

4.1 Installation on a Frame

To ensure proper use of the product, please read the instruction guide before use and keep it for future reference.

1. Introduction

This product is an LED light used for machine vision and industrial inspection. Do not use the product for other applications, and follow the instructions below:

1. Do not use the product in the following situations:
   - Under conditions or in an environment not described in this instruction guide.
   - In nuclear energy control systems, railroad systems, aviation systems, vehicles, construction equipment, medical equipment, or systems related to safety or public safety, except as specifically described in this instruction guide.
   - In applications requiring high reliability and safety, such as nuclear power plants, airplanes, vehicles, construction equipment, medical equipment, or systems related to safety or public safety, unless specifically described in this instruction guide.
   - In applications requiring high reliability and safety, such as nuclear power plants, airplanes, vehicles, construction equipment, medical equipment, or systems related to safety or public safety, unless specifically described in this instruction guide.
   - In applications requiring high reliability and safety, such as nuclear power plants, airplanes, vehicles, construction equipment, medical equipment, or systems related to safety or public safety, unless specifically described in this instruction guide.

2. Important Information for Equipment Safety

Incorrect usage of the product may result in fire, electric shock, or other dangerous situations. Please ensure to follow the conditions below.

1. Indicates that incorrect usage may result in serious injury or death.
2. Indicates that incorrect usage may result in injury or property damage.

Symbol Descriptions

- Symbol indicates caution when installing and using the product. The example shown here indicates a firearm.
- Symbol indicates prohibited uses. The example shown here indicates prohibited use of aerosol sprays.

Symbol Examples

- Symbol indicates instructions for using the product properly. The example shown here indicates instructions for using the product properly.
- Symbol indicates prohibited uses. The example shown here indicates prohibited use of aerosol sprays.

3. Product Information

The product is provided with a tag specifying the class of risk, maximum output, and wavelength of LED light. The surface of the tag is colored according to the luminance color. The back of the tag specifies the model name, power consumption, and serial number.

The right illustration shows the attachment position of the tag. Always check the contents before using the product and inside the tag with care. If the tag is damaged or missing, and the contents cannot be checked, please contact CCS Inc.

4. Installation

4.1 Installation on a Frame

4.2 Installation Using a Tap Hole


5. Operating Instructions

5.1 Wire Connection

- Make sure that the power is turned OFF.
- Connect light cable to power supply output connector.

Reference: Use the instruction guide for the power supply for the LED light connection.

6. Specifications

<table>
<thead>
<tr>
<th>Color</th>
<th>Red (RD)</th>
<th>White (SW)</th>
<th>Blue (BL)</th>
<th>Green (GR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak wavelength (µm)</td>
<td>635 ± 10</td>
<td>470 ± 10</td>
<td>470 ± 10</td>
<td>525 ± 10</td>
</tr>
<tr>
<td>Relative power (µm)</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Cable</td>
<td>0.9m</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Dimensional Drawings (mm)

LDDL-2x16 Series

LDDL-2x30 Series

LDDL-2x3x Series

8. Environmental Information


10. Laser Safety Standards (EC/60825-1 Amd.2)