

LED Work Light

PATLED⁺s™

INSTRUCTION MANUAL

[Model : CLK-24SG/SA]

Thank you for purchasing the PATLEDs LED Light Bar for your application. Prior to installation, please read through this manual for proper installation and precautionary steps. In addition, please store this manual for future reference when performing maintenance, repairs or inspections. If you have any questions regarding this product, please contact our PATLITE Sales Representative.

Safety Precautions

In order to prevent any damage to the user and other personnel or to assets, note the following:
 ◆ The following symbols classifies the following precautions into two categories and explains the level of harm inflicted when caution is disregarded while using this product.

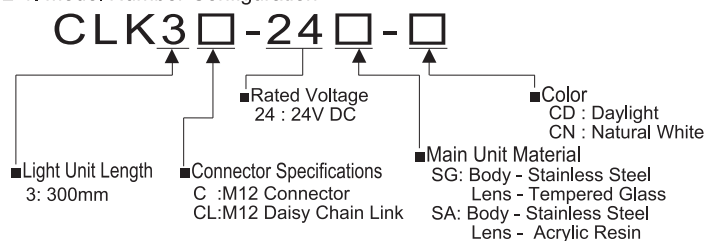
- WARNING** Displays the warning "Failure to follow warning may lead to death or severe injury".
- CAUTION** Displays the warning "Failure to follow caution may lead from light to medium injury or may lead to property loss or injury to others".
- ◆ The following symbols indicate and explains the nature of the information to be observed.
 - This symbol indicates "Prohibited", which should not be carried out by all means.
 - This symbol indicates "Enforced", which should be observed and carried out by all means.

1. For safe application, observe the following:

- WARNING**
 - Do not disassemble or modify this product. Failure to comply may result in electric shock or fire.
- CAUTION**
 - Request the installation and wiring to be accompanied by a professional contractor. Failure to comply may result in electric shock, fire, or falling from high places.
 - When this product is used for security purposes, it should be inspected daily, and to be used in conjunction with other security products, in case a malfunction should occur.
- CAUTION**
 - In order to avoid danger to the eyes, do not stare into the beam, do not view directly into the optical instrument, and don't turn the beam towards someone's eyes. The LED beam is hazardous to the eyes.
 - Do not loosen any body screws. It will have an adverse effect on the protection rating.
 - Avoid installation in the following locations:
 - Near space heaters or places where high temperatures are present.
 - In locations where chemical or explosive gases, etc., are present.

2. Model Number Configuration

2-1. Model Number Configuration



2-2. Model List

SGType	Cable	Bracket
CLK3C-24SG-CD	▲CLK3C-24SG-CN	0
▲CLK3CL-24SG-CD	▲CLK3CL-24SG-CN	- (Direct Mount)
SAType	Cable	Bracket
▲CLK3C-24SA-CD	CLK3C-24SA-CN	0
▲CLK3CL-24SA-CD	▲CLK3CL-24SA-CN	- (Direct Mount)

Models with ▲ in front requires an inquiry before ordering.

• The following is indicated below for the model prefixes

M12 Connector : □C	Body - Stainless Lens - Tempered Glass: SG
M12 Daisy Chain Link : □CL	Body - Stainless Lens - Acrylic Resin: SA

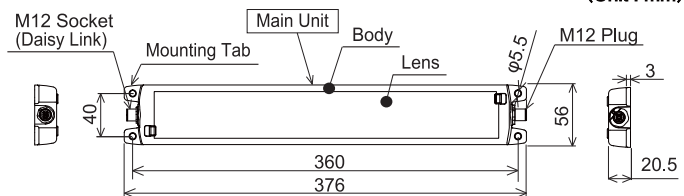
2-3. Enclosure

CLK3C-24S□-□	Body (with M12 Plug), User's Manual
▲CLK3CL-24S□-□	Body (with M12 Plug and Socket), User's Manual

※ A cable is not attached to models 3C · 3CL. Refer to [6. Option Parts] for their applications.

3. Part Names and Dimensions

3-1. Part Names and Dimensions - All Models



4. Installation

4-1. Installation Location

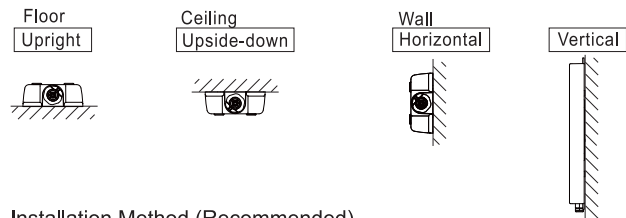
- Suitable for wet or damp location.

- WARNING**
 - After installing this product, be careful not to use this product to climb onto a machine, or to get anything snagged onto this product while it is mounted on equipment, etc. Failure to comply may result in falling off the machinery or product damage may occur.
- CAUTION**
 - To prevent from electrocution, disconnect power prior to mounting or performing maintenance.
 - Verify the installation location is a firm location which can handle the weight of the product and has no adverse vibrations. If installed in a place where vibration is frequent and/or exceeds the specifications, damage to the product may occur.
 - The designated screws should be used for installation. Any parts used that are not specified may result in product damage or personal injury.

- CAUTION**
 - Ensure this product is securely mounted, to prevent from falling, etc.
 - This product is for indoor use only. (Not for outdoor use)

4-2. Mounting Direction - All Models

- All Models; The attachment direction common to all the models is shown.



4-3. Installation Method (Recommended)

- After tapping the mounting holes to a flat and sturdy surface, use four M5 screws for mounting, as indicated in the following figure. The recommended torque for the M5 screw is 2.8 N·m. [Refer to Figure 2. Installation]

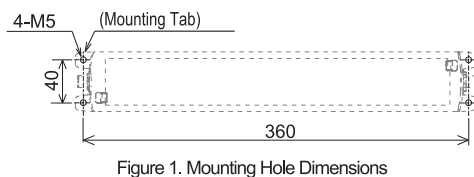


Figure 1. Mounting Hole Dimensions

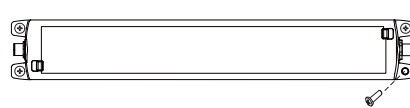


Figure 2. Installation

4-4. 3CL (M12 Daisy Chain Link) Series Cautionary Notes

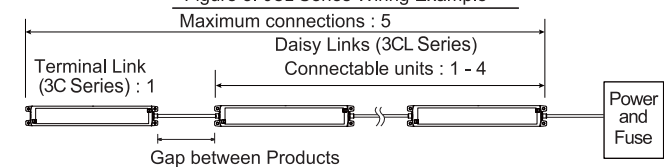
- CAUTION**
 - When linking together, there is a restriction on the maximum number of links. Be sure to use it within the maximum number of links. [Refer to ◆ Maximum Links]
 - Exceeding the number of maximum links can cause failure.
 - Linking this product requires 3C (M12 Connector) Series as the terminal link.

- When installing with option parts "M12 link-cable 4-wire 0.6m SUS" side-by-side, a gap between the ends of the Body requires a distance from 150mm to 600mm. [Refer to Figure 3. 3CL Series Wiring Example]
- To the customer, be sure the cable is installed with the distance between products set by the corresponding cable.
 - ※ Refer to [5-1. Wiring] for the Daisy Link connection wiring example for the 3CL Series.

◆ Maximum Links

- Maximum Connections : 5 units
- [Breakdown]
- Daisy Links (3CL Series) : 4 units + Terminal Link (3C Series) : 1 unit
- ※ Be sure to use maximum number of links as depicted in the figure below. Exceeding the number of maximum links can cause failure.

Figure 3. 3CL Series Wiring Example



- When installing with option parts "M12 link-cable 4-wire 0.6m SUS" side-by-side, a gap between the ends of the body requires a distance from 150mm to 600mm.

5. Wiring and Proper Use

- WARNING**
 - Be sure to disconnect the power when wiring, mounting, exchanging, or repairing the product. Failure to comply may result in damage of the internal circuitry and the danger of electric shock due to short-circuiting.
 - Verify that the specified operating voltage is not exceeded.

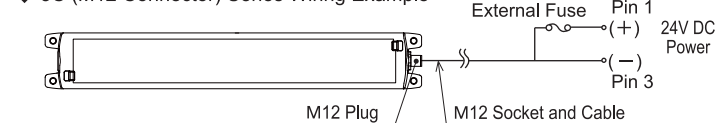
- CAUTION**
 - Check that the proper voltage is connected before applying power.
 - Do not pull on the cable, or try to push it inside the unit. Possible cause of failure may occur. In addition, allow a margin of slack for the wire and cable to prevent stress.
 - Use a constant-voltage regulated power supply. Possible cause of failure may occur with the use of a constant current power supply.
 - Install a fuse to protect it from the power supply. The product can be protected by short-circuiting due to mis-wiring and overcurrents or overvoltages which can damage it.

- The suitability of the luminaire supply connections shall be determined in the end use product. (3C and 3CL Series)

5-1. Wiring

- Use a UL authenticated Class 2 power supply unit to connect power to this product. The power supply unit is constant voltage type.
- This product contains a 2A (slow-blow) fuse inside. Use an external fuse rated for the machine, which is connected to the product, to protect the machine from damage.

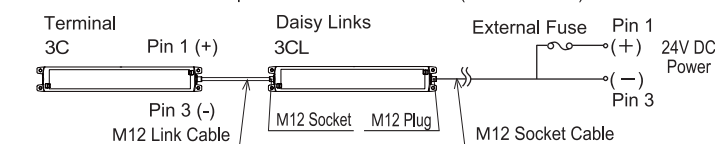
◆ 3C (M12 Connector) Series Wiring Example



※ When using the optional M12 socket cable "4-wire M12 socket cable 5m SUS", the power connections are: Brown (Positive) / Blue (Negative).

◆ 3CL (M12 Daisy Chain Link) Series Wiring Example

- The link terminal for the product should use the 3C (M12 Connector) Series.



※ When using the optional M12 socket cable "4-wire M12 socket cable 5m SUS", the power connections are: Brown (Positive) / Blue (Negative).

◇ Link Connection Current Rating

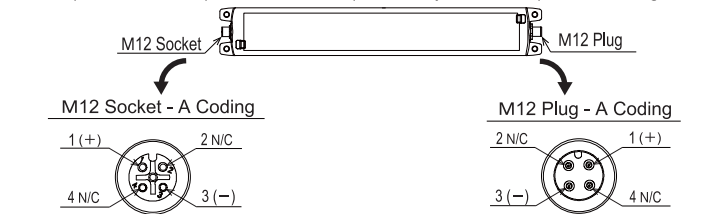
- Calculate the total current by adding the current rating for each link connected. [Refer to [8. Specification, Rated Current]]
- Be sure to use maximum number of links as depicted in the figure below. [Refer to [◆ Maximum Links for 4-4. 3CL (M12 Daisy Chain Link) Series Cautionary Notes]]
- <Example> Refer to [◆ Maximum Link] to look up the current ratings for the following models.

Terminal Link	Daisy Links	Daisy Link Current Consumption <Example>
3C×1 unit 522mA×1 unit	+ 3CL×4 units 522mA×4 units	2610 mA

※ When using the Optional Cable, Daisy Link Current Consumption decreases by a voltage descent.

◆ M12 Connector

3C (M12 Connector) Series and 3CL (M12 Daisy Chain Link) Series Wiring



※ The 3C (M12 Connector) Series does not include an M12 Socket part.

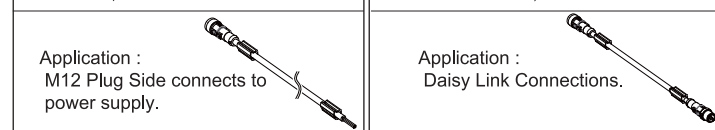
5-2. Operation

- Referring to section [5-1. Wiring] above, by applying 24V DC, the LED will turn on.
- ※ LED's will start to light-up when 0.1mA or more is applied.

6. Option Parts

- This product offers option parts. Visit our homepage for more details.

<ul style="list-style-type: none"> ◆ All Models "4-wire M12 SUS Socket Cable, 5m length" Number: 1552447 Manufacturer: Phoenix Contact Corp. SAC-4P-5,0-511/M12FS FB 	<ul style="list-style-type: none"> ◆ All Models "4-wire M12 SUS Link Cable, 0.6m length" Number: 1552638 Manufacturer: Phoenix Contact Corp. SAC-4P-M12MS/0,6-511/M12FS FB
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※ All Models requires an inquiry before ordering "4-wire M12 SUS Link Cable, 0.6m length" option.

7. Maintenance and Inspection

- CAUTION**
 - Tempered glass is used as a lens for the SA type. Be sure to routinely check for lens cracks and confirm safe conditions. If a crack is discovered, please stop use immediately and exchange the product.

If the product does not work after referring to the table below, please request for repair. In addition, if there are any questions concerning this product, feel free to contact your PATLITE Sales Representative.

Problem	Where to Check	What to Do
Does not light up properly supplied?	Is the power properly supplied?	Verify the voltage has been connected.
		Verify the proper polarity.
		Verify the proper voltage is supplied. (24V DC)
		Verify the external fuse has not been burned-out.

8. Specifications

Model	CLK3□-24SG	CLK3□-24SA
Color Code	CD CN	CD CN
Luminous Color	Daylight Natural White	Daylight Natural White
Color Temperature (typ.)	6500 K 5000 K	6500 K 5000K
Illuminance (typ.)	1.0m 1200 lx	1050 lx
(Center at DC24V)	2.0m 300 lx	260 lx
Total Luminous Flux	1300 lm	
Rated Voltage	24V DC (Polarized)	
Operating Voltage Range	24V DC ±10%	
Rated Current Consumption	522mA ±10%	
Rated Power Consumption	12.5W	
Operating Ambient Temperature	-40°C - +60°C	
Operating Ambient Humidity	90% RH or less, no condensation	
Main Unit Material	Body : Stainless Steel Lens : empered Glass	Body : Stainless Steel Lens : Acrylic Resin + PET Film + Tempered Glass
Mounting Location	Indoor	
Mounting Direction	All Directions	
Protection Rating *1	IP66G/ 67G (JIS C0920)/ 69K (DIN 40050 part 9)	
Insulation Resistance	500V DC 5MΩ or more	
Withstand Voltage	500VAC for 1 minute (between terminals and chassis)	
Vibration Resistance	30Hz 19.6m/s	
Mass (Tolerance ±10%)	1490g	1450g

- ※1. Using the Optional Cables.
- When using the Optional Cable, total current of Link Connection decreases by a voltage descent.
- This product conforms to EN standard and shows the CE Marking. This product has been tested and found to comply with the limits for a Class A device, pursuant to EMC DIRECTIVE. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This product must not be used in residential areas.

Note

It has passed the oil resistant test from the following common cutting oils. The following oil was diluted by 20 times and the adhesive used for the product was immersed at 55 °C for 240 hours (10 days).

Company Name (Manufacturer)	Oli Name
Hangsterfer's Laboratories Inc.	Hangsterfer's S-500
Yushiro Chemical Industry Co., Ltd.	Yushiroken Synthetic #663
Castrol	Syntilo 9954
Blaser Swisslube Inc.	Blasocut BC35LFSW

Confirmation in result of swelling, contraction, dissolution, exfoliation, separation, cracks, and discoloration by the accelerated impregnation examination with the above-mentioned oil type for diluted oil at 55°C for 240 hours (ten days) was made. Due to the additive agents in oil, the application of oils other than the ones mentioned above may influence physical properties, therefore, please investigate before purchasing. * The mentioned company names, product names, trademarks, etc. are the registered trademarks or trademarks in Japan for each company, and/or other countries.

CAUTION

- Specifications and dimensions may change without prior notice for improvements, etc.
- Due to the characteristics of the LED, color temperature, brightness and hue will differ for every LED and every product.
- Since all IP examinations are done according to specified conditions and regulated time, the protection rating is not guaranteed for an extended period of time.

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