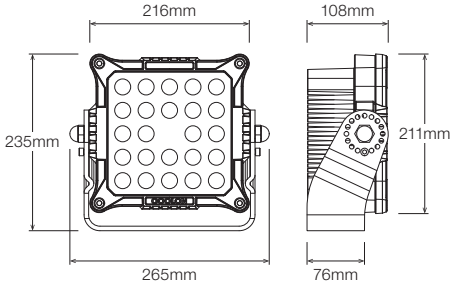
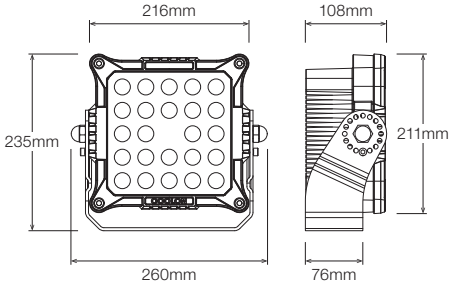
CP24 Luminaire with Mobile Plant Bracket



CP24 Luminaire with Fixed Plant Bracket



VOLTAGE IN
21 – 34VDC

POWER
85W @ 24VDC

IP/IK RATING
IP66 / IK08

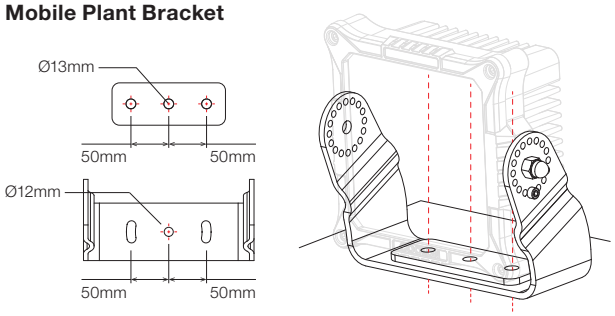
OPERATING TEMP.
-20°C ≤ T_{amb} ≤ +50°C

MOUNTING BRACKET INSTALLATION

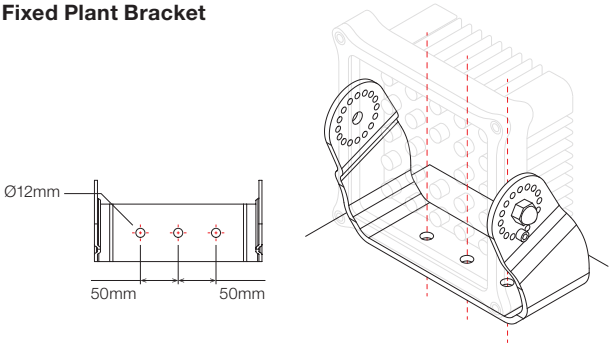
Step 1

Mount light fitting to appropriate location.

Mobile Plant Bracket

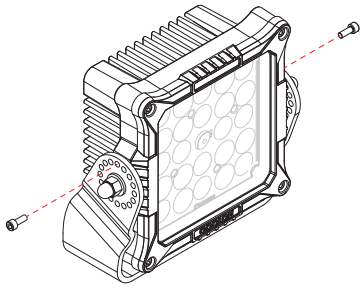


Fixed Plant Bracket



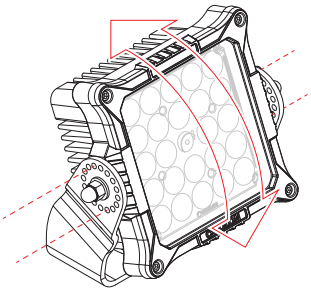
Step 2

To adjust the mounting angle, unscrew bolt and loosen dome nut.



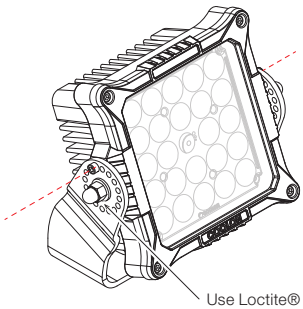
Step 3

Adjust the angle of the light fitting, and line up bracket holes to either the top or bottom mounting holes.



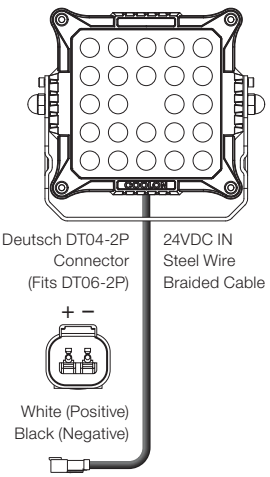
Step 4

Use Loctite® 222™ retaining compound (not included) to secure the dome nut. Screw in and tighten bolts on both sides.

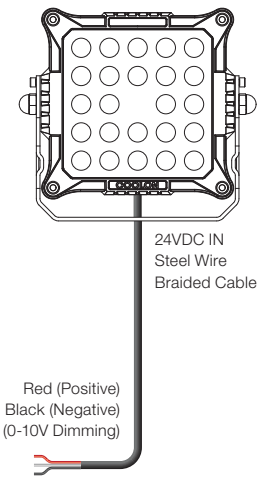


WIRING INSTRUCTIONS

CP24-ELV



CP24-DIM



CP24 APPLICATION NOTE

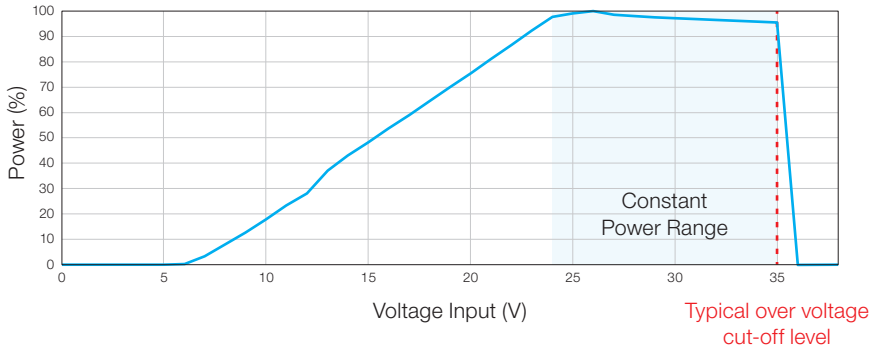
Under some unique circumstances, a connection of multiple CP24 luminaires may result in the luminaires pulsing on and off (or flashing). This application note addresses this phenomenon.

The CP24 Industrial LED Luminaire is built using on-board high efficiency switch mode drivers. It is designed to operate at a constant power, however it reduces its power as the voltage at the input drops below its nominal operating range.

When the CP24 is powered from batteries, this method prevents current increase by reducing voltage when it is below the nominal voltage which helps reduce battery damage and false tripping of circuit breakers.

The CP24 also has over voltage protection circuitry which ensures its reliable and safe operation on mobile plant equipment.

The Power vs Voltage graph below demonstrates the power consumption of the CP24 with respect to input voltage.



The CP24 is designed to be connected to a low impedance 24VDC source such as a battery or a suitable Power Supply directly using up to 2 metre cable.

Often an installation on mobile plant will use multiple CP24 units connected to a single point at the end of a single common cable between the battery and distribution panel.

For this type of application, this common cable could be 15m long with 35mm² cross section. Such a cable provides low voltage drop, however, it acts as an inductor with a high-quality factor (Q). The Q factor is defined as a ratio between Impedance at a particular frequency ωL and DC resistance R.

$$Q = \frac{\omega L}{R}$$

The operating frequency of the CP24 drivers are sufficiently high (~300KHz or more). As a result of using a common cable, independent drivers could start working in sync.

This creates peaks of high current going through the common part of the cable.

As a result of cable inductance voltage spikes are generated at a common point which can exceed the cut-off voltage level and cause a momentary shut-down of the CP24 on-board driver's protection circuitry.

Externally this could be observed as a light flicker.

In order to avoid voltage spikes from happening, there are 2 common solution;

1. Independent cables for each CP24 is to be directly connected to the battery (in this case a 2.5 or 4mm² cross section is sufficient for each luminaire), or
2. A capacitor bank (such as the CL-7DR-1000-24, Coolon 7 Channel DIN Rail Capacitor Bank 1000µF 24V) should be employed to reduce the voltage spikes when independent cable extensions for individual CP24 units are impractical.

Using a normal volt meter or a multimeter at this common point would not show increased voltage as a multimeter performs averaging of the input voltage. In order to observe the voltage peaks a Digital Storage Oscilloscope (DSO) is needed.

IMPORTANT

Primary use: commercial and industrial applications.

- Read through this manual before installation
- Handle the product with care
- Class I products must be grounded
- The product must be installed by a suitably qualified person
- Do not stare at operating lamp, may be harmful to the eyes
- Turn OFF the power before installation and maintenance
- Make sure the product is securely installed
- The housing might become hot after operation
- Keep optical face clean