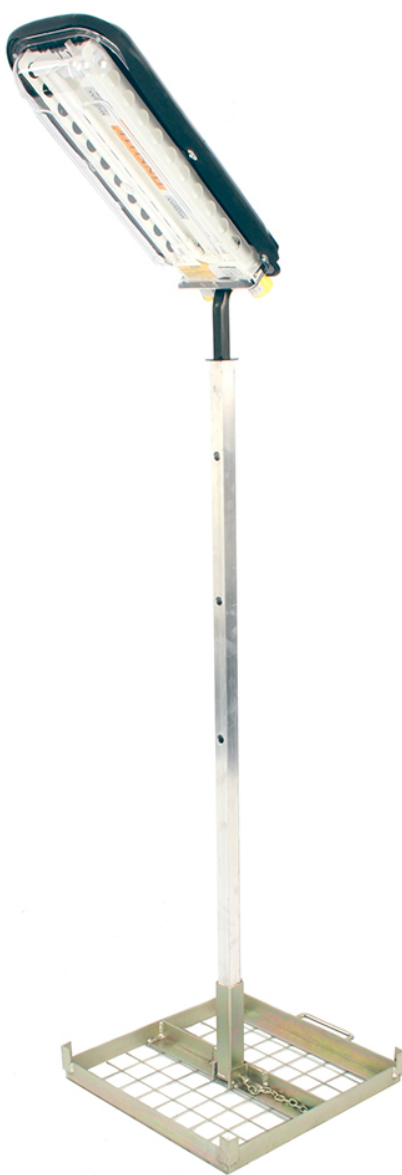


# PORTABLE LIGHTS

LINKLITE® MK III

LL2-2T-110-72W • LL2-2T-230-72W



# OPERATING MANUAL

## INTRODUCTION

Thank you for purchasing a Linklite portable lighting system from Maxmax Ltd.

This manual provides information and procedures to safely operate and maintain Linklite portable lighting equipment. For your own safety and protection from physical injury, carefully read, understand, and observe the safety instructions described in this manual.

*Every effort has been made to make sure that the information and instructions contained in this manual were accurate and current at the time of publication. Maxmax Ltd reserves the right to change, alter or otherwise improve the product or any portion of this information without prior notice.*

**DO NOT MODIFY** or use this equipment for any application other than which it was designed for.

Maxmax Ltd recommends that a trained and licensed professional perform all electrical wiring and testing functions. Any wiring procedures should be performed in compliance with applicable national, state or local regulations and guidelines.



Every Linklite is designed and manufactured with pride in the United Kingdom to the highest quality standards.

Additional copies of this manual are can be downloaded from **[www.linklite.co.uk](http://www.linklite.co.uk)**.

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For technical or parts QUESTIONS, please contact Maxmax Ltd at 01785 859 106.

To ORDER SERVICE PARTS, please contact the dealer from which you purchased the unit, or visit [www.linklite.co.uk](http://www.linklite.co.uk) to place an order.

## SAFETY NOTES



This is the safety alert symbol. It is used throughout this publication to alert you to special instructions about a particular service or operation that may be hazardous if performed incorrectly or carelessly.

Obey all safety messages that follow this symbol to avoid potential personal injury or property damage.

## OPERATING SAFETY

Before using the Linklite portable lighting system be sure to read this manual thoroughly. The operator is responsible for proper and safe use of the equipment. We strongly recommend that the operator read this manual and thoroughly understand all instructions before using this equipment.

This equipment was designed for specific applications; **DO NOT** modify or use this equipment for any application other than which it was designed for.

Equipment operated improperly or by untrained personnel can be dangerous. The following safety measures should be practiced at all times:

- **DO NOT** connect a Linklite in need of repair to a power source.
- **DO NOT** operate a Linklite if the protective lens casing is cracked or damaged.
- **DO NOT** exceed 26 Linklites per 2,000 watts of power supplied.
- **DO NOT** use a link cable or power cable if the insulation is cut or worn through.
- **DO NOT** permit unqualified personnel to carry out maintenance or repairs to this product.
- **DO** make sure the electrical rating of the link cable is suitable for use with this product.
- **DO** position and operate the portable light on a firm, level surface when using the telescopic mast and basket. Sandbags or similar should be used to weight the basket.
- **DO** make sure the area above the unit is open and clear of overhead wires and obstructions. The telescopic mast extends up to 2.4 m (94 inches).

## UNIT SERIAL NUMBER LOCATION



## SPECIFICATIONS

### LINKLITE MODEL NO

**LL2-2T-110-72W**
**LL2-2T-230-72W**

### Lighting

Lighting type	Fluorescent	Fluorescent
Ballast type	Rapid start electronic ballast	Rapid start electronic ballast
Lumens	>20,000 at the lens	>20,000 at the lens

### Electrical

Power supply	110v single phase	230v
Power cord specifications	3-pin earthed / grounded	3-pin earthed / grounded
Power cord connectors	IEC 60309 pin and sleeve 16A 110v (yellow) IP44	IEC 60309 pin and sleeve 16A 200-250V (blue) IP44
Max. power cord length	15 m / 50 ft	15 m / 50 ft
Operating frequency	50 Hz / 60 Hz	50 Hz / 60 Hz

### Dimensions

Lamp head	546 mm x 136 mm x 273 mm (21.5 in x 5.5 in x 11 in)	570 mm x 130 mm x 245 mm (21.5 in x 5.5 in x 11 in)
Min. mast height	1.8 m (71 in)	1.8 m (71 in)
Max. mast height	2.4 m (94 in)	2.4 m (94 in)
Base (basket) dimensions	460 mm x 510 mm (18 in x 20 in)	460 mm x 510 mm (18 in x 20 in)

### Weights

Lamp head	2.7 kg (6 lbs)	2.7 kg (6 lbs)
Telescopic mast	3.15 kg (7 lbs)	3.15 kg (7 lbs)
Steel base (mast basket)	5 kg (11 lbs)	5 kg (11 lbs)

## POWER SUPPLY

Linklites require a power supply either generated or transformed. Your Linklite is fitted with pin and sleeve connectors that conform to IEC 60309 standards. Your power requirements will be either a 110V or 230V supply, determined by the colour of the connectors.



<b>YELLOW</b> <b>110V</b>	<b>BLUE</b> <b>230V</b>
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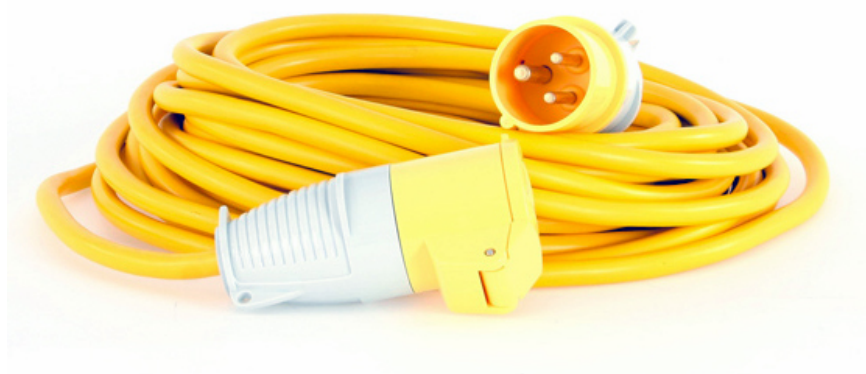


## ELECTRICAL SAFETY

The unit **MUST** be equipped with an appropriate 3-conductor link cable utilising outdoor rated (IP44) pin and sleeve quick release plugs and sockets.

### **WARNING**

*The 3-pin earthing type cord set **MUST** be IP rated for outdoor use to allow connection of the unit to an appropriate earthed supply system.*



Consult a suitably qualified person if the grounding instructions are not completely understood, or if in doubt as to whether proper grounding exists.

## LINKLITE MAINTENANCE

Linklites luminaires are fitted with two 36 watt fluorescent tubes and a 110V ballast. The ballast is used to create the voltage and current necessary to start and illuminate the fluorescent tubes.

Over time, one or both of the fluorescent tubes may need to be replaced. Fluorescent lamps usually burn out gradually, turning the tubes black at one or both ends. If both tubes stop working abruptly at the same time then it is possible that the ballast needs to be replaced.

It is good practice to attempt to replace the tubes first and if that does not correct the problem then it may be time to replace the ballast.

### REPLACING THE FLUORESCENT TUBES

The following step-by-step guide describes how to replace the fluorescent tubes.

#### TOOLS REQUIRED

Hexagonal screwdriver / bits:

M5 hexagonal bit (5/32)



M6 hexagonal bit (3/16)

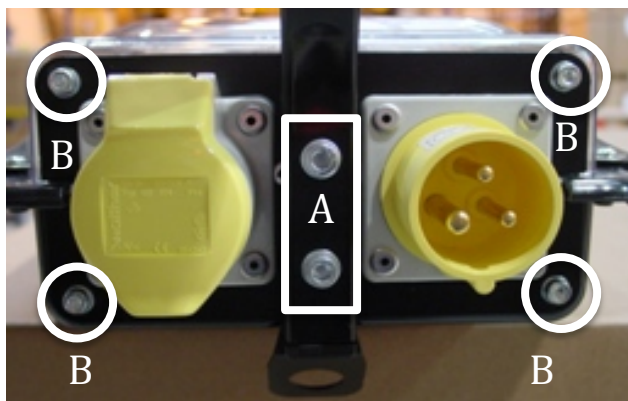


Phillips screwdriver bit



#### WARNING

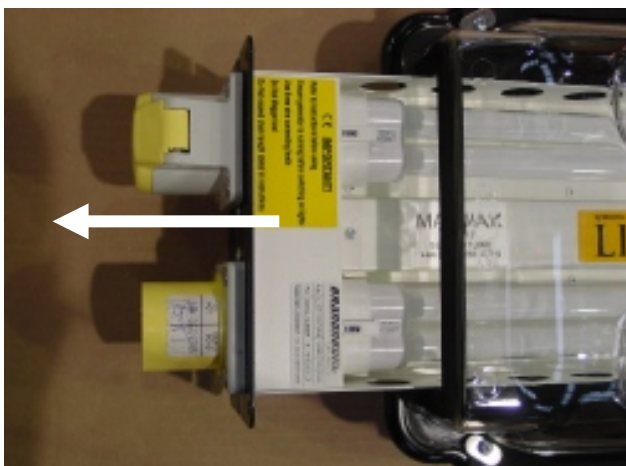
*Disconnect the unit from the power supply before commencing this procedure.*



#### Step 1

Remove the unit from the support arm by removing 2 x M6 cap screws and plain washers marked 'A'.

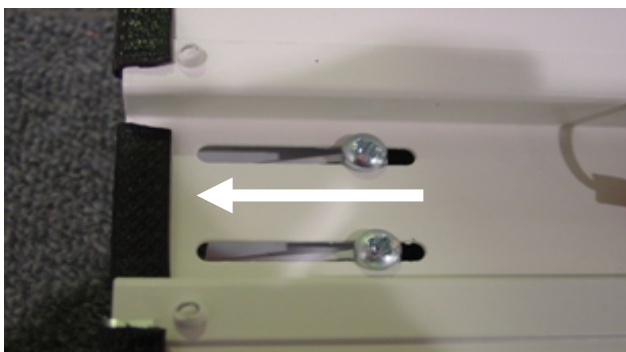
Next remove 6 x M5 cap screws and plain washers marked 'B' (2 are beneath the support arm) to release the cassette from the outer casing.



### Step 2

Separate the metal chassis from the plastic case assembly and withdraw the lighting cassette.

The retaining flange and inner gasket remain as part of the casing.



### Step 3

On the underside of the cassette, release the screw that secures the tube end cap by 1 turn.

Slide the plastic end cap to release the end of the fluorescent tube. Repeat as necessary for second tube.



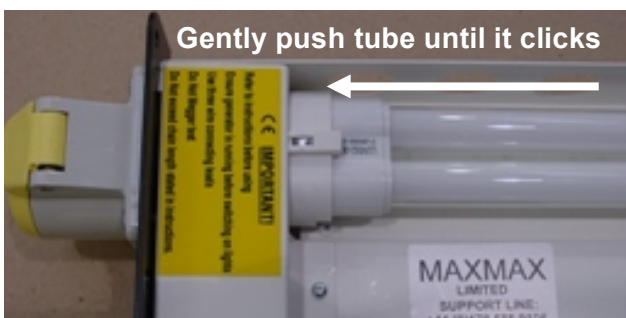
### Step 4

Turn the cassette over and lift the tube out from the end cap then gently pull to release the tube from the lamp holder. It may be necessary to move the tube from side to side to release the 4 connecting pins. Repeat for second tube if required.

## ! WARNING

*Check that your replacement fluorescent tube is compatible with this product.*

**Part Number: LUV052-000**



### Step 5

Carefully withdraw the replacement tube from the packaging. With the tube part number and model inscription facing upwards, offer the 4-pin connectors to the lamp holder. Push the tube into the holder until the spring clip clicks into position.



### Step 6

Slide the plastic end cap over the end of the fluorescent tube.

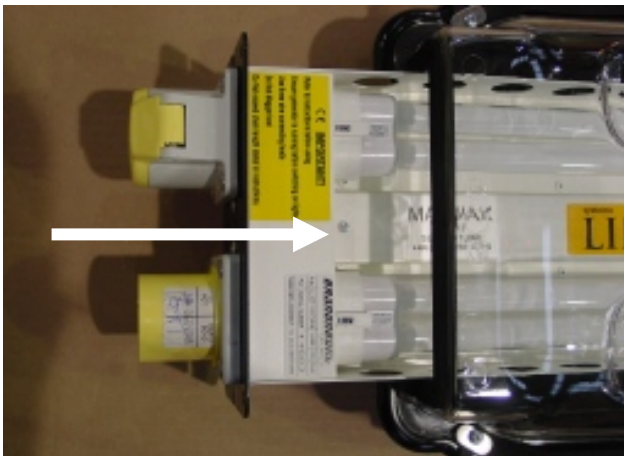
Turn the cassette over and tighten the release screw, ensuring it is tight enough to hold the tube in position.

Repeat as necessary for the second tube.



### WARNING

*Before re-inserting the lighting cassette to the outer lens casing, check the condition of both flange gaskets. Any damage to the gaskets could result in water leaking into the unit.*



### Step 7

Offer the lighting cassette to the outer casing so that the light tubes will be visible through the lens.

Slide the cassette fully into the casing until the chassis slots into position and the socket flange gasket is flush to the body of the unit.



### Step 8

Refit and tighten all parts removed in Step 1.

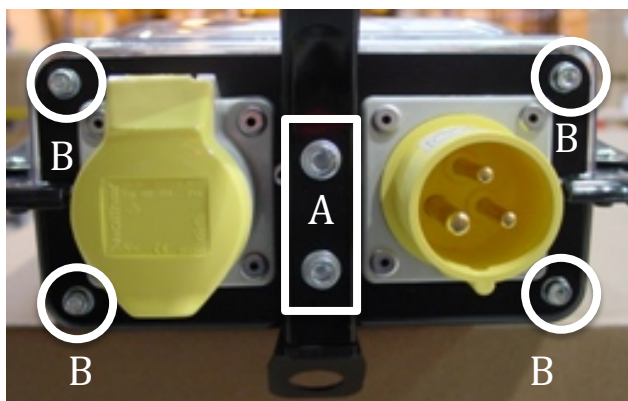
Reconnect the Linklite to a suitable power supply and test.

## REPLACING THE BALLAST

The following guide describes how to replace the electronic ballast. It is important to use the correct parts when replacing any component of this product.

### **WARNING**

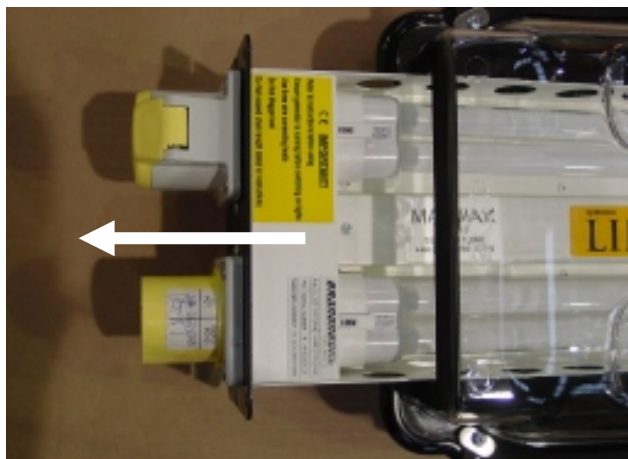
*Disconnect the unit from the power supply before commencing this procedure.*



#### **Step 1**

Remove the unit from the support arm by removing 2 x M6 cap screws and plain washers marked 'A'.

Next remove 6 x M5 cap screws and plain washers marked 'B' (2 are beneath the support arm) to release the cassette from the outer casing.



#### **Step 2**

Separate the metal chassis from the plastic case assembly and withdraw the lighting cassette.

The retaining flange and inner gasket remain as part of the casing.



#### **Step 3**

Turn the cassette over to access the electronic ballast. Take care not to damage the fluorescent tubes.



#### Step 4

Using a straight blade 2.5 mm (flathead 3/32") screwdriver, depress the grey wire retainers and withdraw the RED (live), white (neutral) and green/yellow (earth/ground) wires on the left side of the ballast. Next, remove the M4 nut and washers holding the ground wire in place, and set aside.



#### Step 5

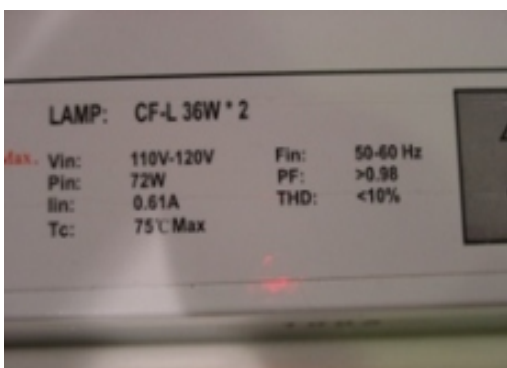
Cut the cable tie securing the lamp holder wires at the right side of the ballast, *taking care not to cut the wires*. Depress the grey retainers to remove the wires from the ballast.

With the wires clear, remove the M4 nut and washers that secure the ballast to the cassette. Lift the ballast off the cassette.

### WARNING

*Check the voltage rating on your replacement ballast is correct for the unit.*

***230V Linklites have blue connectors and 110V Linklites have yellow connectors.***



#### Step 6

Position the replacement ballast onto the 2 studs in the central channel of the cassette. The 7 wire connections should be facing the power connectors.

Secure the ballast to the cassette using a plain washer, star washer and M4 nut, placing the earth/ground ring between the plain washer and the star washer before fitting the nut.

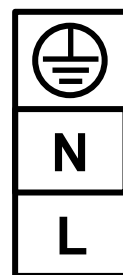


#### Step 7

Locate the red and white wires to the left side of the ballast.

Secure the ballast to the cassette using a plain washer, star washer and M4 nut, placing the earth/ground ring between the plain washer and the star washer before fitting the nut.

Insert the earth/ground wire into the top ballast wire retainer as shown by the label.





### Step 8

Replace the lamp holder wires in the correct sequence by depressing each retainer using a screwdriver and pushing each wire into place.

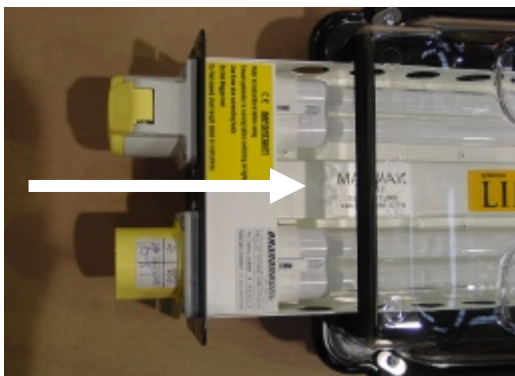
Top to bottom: white, red, blue, yellow, red, white.



**Note:** in some earlier models, two YELLOW wires are twisted together and fit into one position only, and two blue wires are twisted together and fit into one position only. Newer models make use of plastic terminal block connectors so that only a single blue wire and single yellow wire need connecting to the ballast.

### WARNING

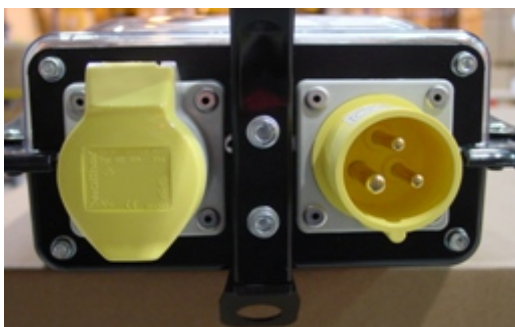
*Before re-inserting the lighting cassette to the outer lens casing, check the condition of both flange gaskets. Any damage to the gaskets could result in water leaking into the unit.*



### Step 9

Offer the lighting cassette to the outer casing so that the light tubes will be visible through the lens.

Slide the cassette fully into the casing until the chassis slots into position and the socket flange gasket is flush to the body of the unit.



### Step 10

Refit and tighten all parts removed in Step 1.

Reconnect the Linklite to a suitable power supply and test.

## RECOMMENDATIONS FOR PAT TESTING OF LINKLITE

The following recommendations conform to IEE Regulations and should be carried out on Linklite units after any disassembly or component change, for example replacing the electrical ballast.

The product is classed as **Class 1 Other Products** (not hand held).

### ELECTRICAL TESTS

Electrical testing of portable equipment will involve the following:

**a) Earth Bond Continuity Test (Class 1 Equipment Only)**

Readings should show less than  $0.1 + R$  Ohms (where R is the resistance of the lead) Tested at a current of 1.5 times the rating of the fuse and no greater than 25A for a period of between 5 and 20 seconds or with a short-circuit test current within the range 20mA to 200mA.

**b) Insulation Resistance Testing**

The applied voltage should be approximately 500 Vdc.  
Class 1 All Other Equipment 1M Ohms.

**c) Functional Checks**

Flash Test: No flashover or breakdown shall occur.

Earth Leakage Test: Other Class 1 Appliance 3.5mA.

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