

# DARAY<sup>®</sup>

## Medical



## X350 LED

Mobile Examination Light

User Manual & Operating Guide



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# 1. Introduction

DARAY's X350 is a cost-effective mobile medical examination light utilising LED technology.

The mobile base contains a transformer to convert the mains electrical input to a safe, low voltage which is fed to the light-head. The base is very stable and manoeuvrable, and is fitted with 2 locking and 2 free castors; it will fit underneath most couches, tables and chairs.

The X350 light-head swivels through 320° on a flexible arm on top of a telescopic up-stand, allowing the light-patch to be directed wherever it is required for examination.

DARAY's BioProtect anti-microbial coating is applied to all painted finishes including the light-head and the handle. All other surfaces are smooth to aid cleaning and sterilisation.

This user & installation guide contains all the information you need for installation, operation and maintenance.

For further information on our product range and find out more about our company please visit [www.daray.co.uk](http://www.daray.co.uk) or call 0333 321 0971 or 0800 804 8384.

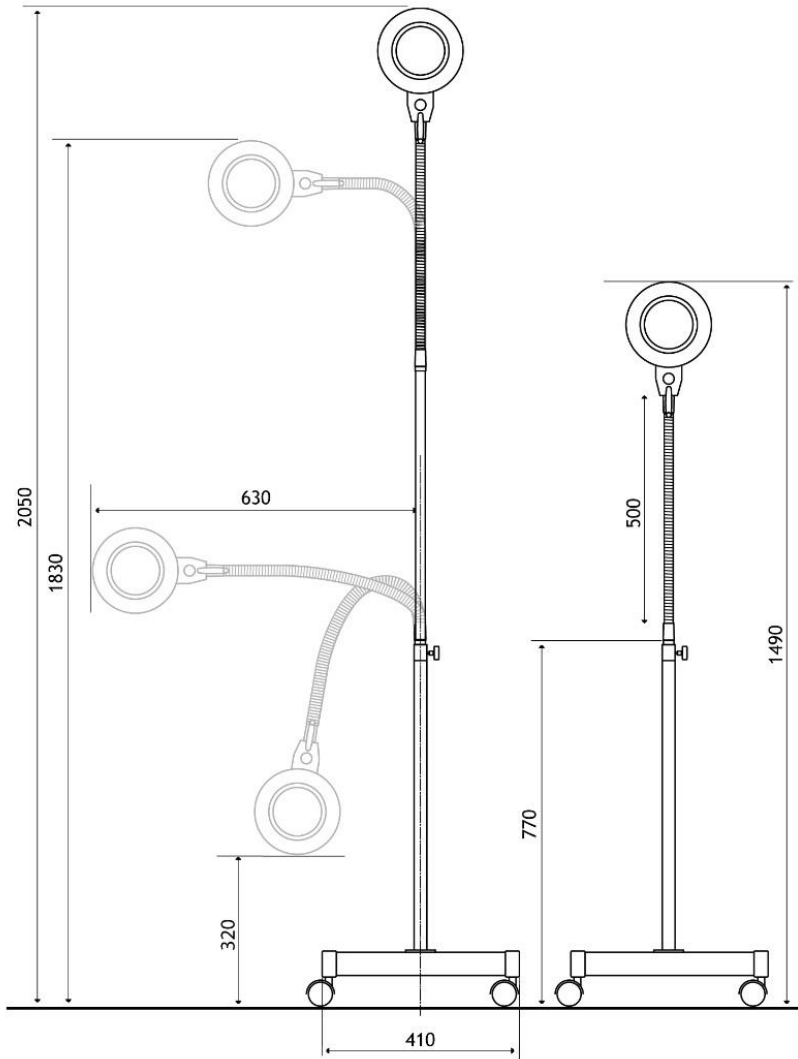
**This product was designed & manufactured in Great Britain by:**

**Daray Ltd.  
Marquis Drive, Moira  
Swadlincote  
Derbyshire  
DE12 6EJ**

## 1.1 Supported Lights

The Following Models are supported in this Manual	
X350LM	X350 LED Mobile Examination Light

## 1.2 Technical Drawing

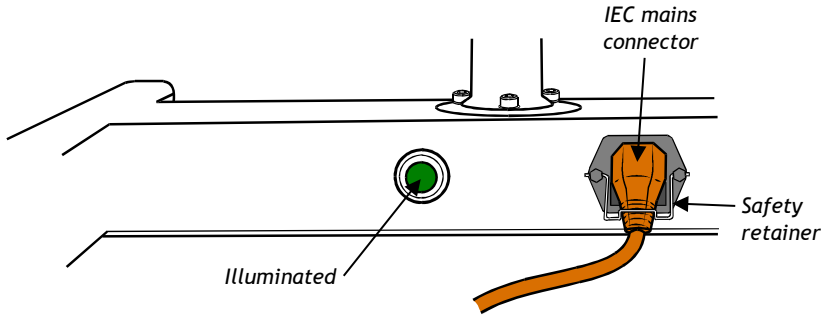


All measurements in millimetres

## 2. Technical Specifications

<b>Light Source</b>	LED
<b>Light Intensity (Lux) @ 0.5m</b>	120,000 Lux $\pm$ 5%
<b>Light Intensity (Lux) @ 0.75m</b>	64,000 Lux $\pm$ 5%
<b>Light Intensity (Lux) @ 1.0m</b>	40,000 Lux $\pm$ 5%
<b>Light Intensity Adjustment Range</b>	5% - 100%
<b>Colour Temperature (Kelvin)</b>	4,300K $\pm$ 500
<b>Colour Rendering Index (CRI)</b>	95
<b>Colour Rendering (R9)</b>	88
<b>Light Field Diameter (D50)</b>	@ 0.5m: 75mm
	@ 0.75m: 100mm
	@ 1.0m: 125mm
<b>Light Field Diameter (D10)</b>	@ 0.5m: 170mm
	@ 0.75m: 200mm
	@ 1.0m: 220mm
<b>Number of LED's</b>	7
<b>Power Consumption</b>	16W 0.19A
<b>Average Working Life</b>	>50,000 Hours
<b>Input Voltage</b>	100 - 240V AC 50/60 Hz
<b>Output Voltage</b>	30V DC 1A
<b>Temperature Rise on Patient/User</b>	$\leq$ 2 °C
<b>Warranty Period</b>	5 Years
<b>NHS E-Class Code</b>	FBU, FKR
<b>Commodity Code</b>	9018 908400
<b>GMDN Code</b>	12276

### 3. Operation



Position the light by moving it using the handle provided on the main stand.

**Note: The light must not be lifted using the light-head handle or gooseneck. To position the light, hold the upstand and move the light-head using the handle.**

The front castors on the base have brakes which can be used to help keep the base from moving whilst the light-head position is adjusted.

Unwrap the flex from the cable holders and plug the IEC connector into the base ensuring the metal safety retainer is fitted over the top of the IEC plug connector.

Once connected to the mains, switch the illuminated power switch ON and the green indicator will be illuminated. If the indicator does not illuminate, check the power supply and then check the fuses located in the IEC socket on the mobile base (see *section 5. FUSE REPLACEMENT*) and also in the mains plug. Further fault investigation should only be carried out by a qualified electrician.

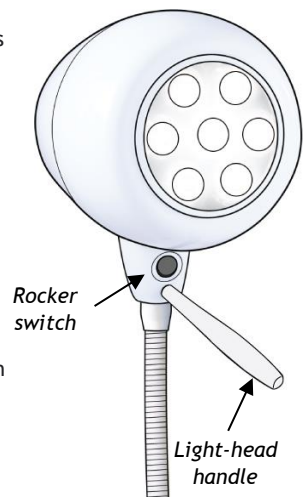
#### 3.1 Turning the light ON/OFF and adjusting the intensity

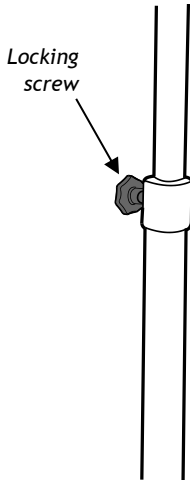
There is a rocker switch on the light-head near the handle. This is a momentary type switch and does not latch.

- Press the switch once to turn the light ON
- Press and hold to decrease intensity
- Press and hold to increase intensity
- Press the switch once again to turn the light OFF

**Note: If mains power is removed by either unplugging or turning off at the base, the intensity will be reset to its brightest setting when the light is powered on again.**

The light-head can be rotated on the flexible arm which itself can be bent almost double so the light patch may be directed at will.





The telescopic extension is released for raising and lowering, and locked by the locking screw at the rear of the up-stand.

Use the light-head handle to position the light-patch to where it is required. In the interests of cross-infection control, avoid touching any other part of the light.

The light-handle is coated with BioProtect®.

### 3.2 Correct usage of the light



Caution **MUST** to be taken to ensure correct usage of the light, to preserve all features - in particular the flexible neck ('gooseneck')

If you need to bend the neck to reposition the light head, keep one hand approximately one third up the neck, and then use your other hand to curve the gooseneck through its entire range, avoiding sharp kinks that will cause irreparable damage.

Try to avoid bending the neck by pushing and pulling the light head with one hand, as it will inevitably cause undue stress on the base of the neck, and will subsequently reduce the ability of the neck to hold itself in position.

If you are intending to use the light head low to the floor - for example, in a gynaecological examination, ensure that the telescopic slide assembly is set to its lowest position.

We strongly advise that all staff members reading this manual adequately train all other staff members who may be using this light.

**Common sense must prevail at all times.**





This is the correct way to bend the neck, ensure you curve it through its entire range.



This is the incorrect way to bend the neck. Notice the sharp kink in the neck - this will ultimately affect future flexibility.



## 4. Maintenance



**WARNING: Do not use strong chemical cleaning agents to sterilise the light.  
Do not use any abrasive materials to clean the light.  
The light is not waterproof, so do not use excessive cleaning fluid amounts.**

1. Suitably protect hands.
2. Clean the lens by careful use of a Microfibre cloth or other non-abrasive optical lens cleaning material.

**Warning: Scratching or marking the lens surface can dramatically affect the optical performance of the light and is not covered by the warranty.**

**Note: The following instructions refer to all surfaces of the light but excluding the lens surface.**

3. Wipe the light using lint-free cloth - pay special attention to the switch area.
4. Apply to all surfaces a 1% solution of sodium hypochlorite using a soft cloth.
5. Within 10 minutes, remove the chemical from all surfaces using a damp, soft cloth. The chemical will cause corrosion of metal parts, if it is not thoroughly removed.
6. Apply isopropanol to the surfaces - this is an alcohol-based fluid which evaporates without leaving any residue and can be obtained as an impregnated-cloth applicator.



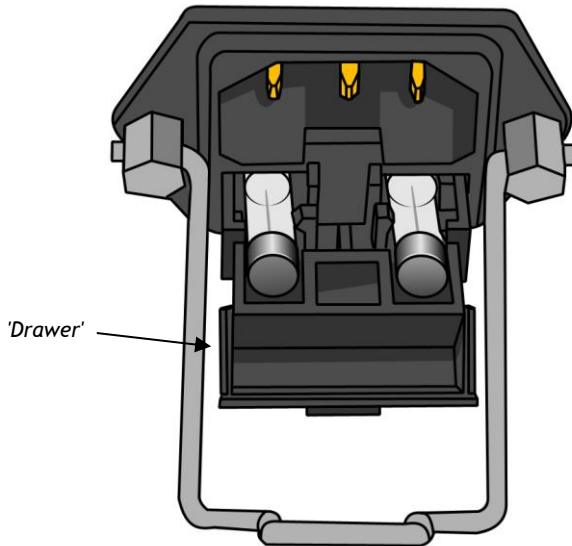
*Reorder: DRK4080 Microfibre cloth*

## 4.1 Fuse Replacement

**CAUTION: Fuses normally blow for a reason. Investigate likely faults before changing fuses.**

**CAUTION: Isolate the unit from the mains before accessing the fuses.**

Both the live and neutral mains inputs are fused. The fuses are contained in a holder which is part of the IEC inlet mounted on the rear panel of the mobile base.



Unplug and remove IEC cable. Using a flat-bladed screwdriver, or similar, pull forward the 'drawer' containing the fuses. Hinge down the front of the holder. Lift the fuses by pushing them through the holes below.

Refit new fuses (D10873) and reverse the removal sequence, ensuring the 'drawer' is pushed fully home.



**Warning: Ensure you isolate the unit from the mains power before any work related to the electrical supply.**

## 4.2 Safety Precautions

- For all cleaning work, power off the equipment and where possible unplug the mains socket, only minimal cleaning fluids should be used.
- Please do not look directly into the light source when illuminated.
- If the equipment is dented or scratched this should not impact the usability of our lights however we advise that if the BioProtect® coating is damaged and the metal casing underneath is visible, please do not attempt to 'paint' over it as this will impact upon the effectiveness of the coating, simply use an alcohol based cleaning spray when cleaning and pay special attention to the cut.



If there is damage to the power cable or if exposed wire is visible  
**DO NOT USE**

## 5. Spare Parts

**CAUTION:** Use only genuine 'DARAY' replacement lamps as other types may seriously impair the optical performance of the product.

ITEM NO	PART NAME	TYPE	PART NO
1	Fuse	1A 20mm	D10873
2	Microfibre cloth	5 pack	DRK4080
3	Rocker Switch	White	D15071
4	Replacement Handle	White	D15194
5	Replacement Power Cable	5m, Hi-Visibility	D14658
6	30V 1A LED Transformer Module	30V 1A	D15081

All of the above parts can be purchased via DARAY

For any SPARE PARTS or TECHNICAL ISSUES phone DARAY'S Service Delivery Team on:

**+44 (0) 800 878 9864**

Opening times 9am-5pm Monday to Thursday (excluding bank holidays)  
9am-2:30pm on Friday

Or email:

**support@daray.co.uk**

**IF THE LIGHT WAS ORIGINALLY PURCHASED THROUGH A DISTRIBUTOR CONTACT THEM IN THE FIRST INSTANCE FOR A RESOLUTION**

Please contact DARAY for help with any problems that the distributor cannot solve.



## 6. Warranty Information

### 6.1 Returns Policy

**IMPORTANT!**  
 Please fill out your warranty registration online at  
[www.daray.co.uk/warranty](http://www.daray.co.uk/warranty) or contact Daray by phone (0800 878 9864)  
 or email [support@daray.co.uk](mailto:support@daray.co.uk)

DARAY's standard warranty is 12 months. However, this period may be extended for this product to 5 years\* free of charge, simply by completing and submitting the warranty registration online.

Year 1: <b>Warranty includes parts and labour</b>	*UK only
(Return to Base)	
Years 2-5: <b>Parts only</b>	

We want you to be completely satisfied with your purchase. If you need to return goods purchased from DARAY Ltd, please read the following information carefully.

The DARAY Ltd returns policy provides guidance on when you can return goods we have supplied, and what you can expect from us once you do. To see our detailed returns policy and procedure visit

[www.daray.co.uk/returns](http://www.daray.co.uk/returns)

TYPE OF RETURN	REMEDY
<b>DAMAGED GOODS</b> Goods which are physically damaged on delivery	We must be notified within 24 hours of receipt.
<b>Dead On Arrival (DOA)</b> Goods which do not work	Goods which do not work on arrival or develop a fault within 28 days, we will advance replace the item.
<b>GOODS DEVELOPING A FAULT</b> Goods which have developed a fault within the warranty period.	If the fault develops after 28 days, but within the warranty period, we will initiate the returns procedure.
<b>NON WARRANTY</b> Goods which have developed a fault outside the warranty period.	If a fault develops outside the warranty period, we will initiate the returns procedure charges may be applicable.
<b>OTHER</b> Any situation which is not covered by any of the above.	We will always try to help, but we cannot normally offer a refund.

For additional clarification, please refer to our terms and conditions at [www.daray.co.uk/terms](http://www.daray.co.uk/terms).

In a small number of cases, we may determine that a replacement would not work any better than the original product we supplied. In such cases we will only offer a refund rather than a replacement for qualifying returns.

Replacement bulbs and spare parts ordered on our website or from supplied part codes are not eligible for credit. We will accept returns and exchange for the correct item.

If your purchase an item incorrectly you can return it within 14 days and it can be exchanged for another product of equal or higher value, excluding transportation charges incurred. Goods and packaging must be returned in their original condition. Under no circumstances will goods be accepted for return if they are damaged, have been subjected to improper handling or abuse or have been used.

If you send us goods that do not qualify for return, you will invalidate your claim to any refund, and you will be obliged to compensate DARAY Ltd for the cost of return postage and any other reasonable costs incurred processing the goods.

Your statutory rights are not affected.

## 6.2 Warranty Details

### TERMS AND CONDITIONS OF WARRANTY

1. To qualify for this warranty you must register on [www.daray.co.uk](http://www.daray.co.uk) or return to Daray Ltd (Daray) the duly completed warranty-registration form accompanying the product.
2. Daray warrants this product (excluding lamp) against faulty material and workmanship during the period of the warranty. The period of warranty is the period stated on your warranty card and commences on the date of purchase of the product. In the event that the product is not in good working order Daray will provide, during the warranty period, a free repair service within the United Kingdom. The warranty is subject to proof of purchase being provided; therefore, you should retain your original receipt.
  - 2.1 The repair service consists of the provision of spare parts and/or replacement products (at Daray's discretion) which will be provided on an exchange basis and will either be new, equivalent to new or reconditioned. All replaced spare parts and products shall become the property of Daray.
  - 2.2 Daray's only obligation under this warranty is the provision of the service as set out above.
  - 2.3 All products are returned to Daray at the customer's cost and risk. Products to be returned should be adequately packed. For the address to send returns to please visit [www.daray.co.uk](http://www.daray.co.uk)
3. Daray's arrangements for providing service provided under this warranty may include the use of sub-contractors.
4. This warranty does not cover damage or defects in the Product caused by or resulting from:
  - Wilful neglect or negligence by anyone other than Daray;
  - Improper use, storage or handling of the product;
  - Use of non-Daray approved parts (such as replacement lamps) not compatible with the Product;
  - Fire, accident or disaster;
  - Use of non-Daray modifications other than in accordance with Daray's instructions;Attachment of fittings and accessories not approved by Daray;  
Repairs, modifications carried out by service personnel not approved by Daray;
  - Damage caused by chemical corrosion from cleaning agents not approved by Daray.
  - Failure to use or install the product in accordance with the manufacturer's instructions.
5. Nothing in this warranty shall have the effect of restricting or excluding the liability of Daray in respect of:
  - a) Death and personal injury caused by the negligence of Daray, or for fraud;
  - b) Under the *Consumer Protection Act 1987* to a person who has suffered damage caused by a defective product or to a dependant or relative of such a person;
  - c) Direct damage to your property caused by the proven negligence of Daray.
6. This agreement does not give any rights other than those expressly set out above and in particular, Daray will not be responsible for any loss of income, profits or contracts or any direct or indirect consequential loss, damage caused to or suffered by the purchaser as a direct result of this agreement.
7. This warranty is offered (subject to these terms and conditions) in addition to, and does not affect your statutory rights.
8. Daray may disclose your details and other personal information to companies within the Daray group including any subsidiary company or sub-contractor of Daray for the purposes of performing our obligations hereunder.
9. You must not resell outside the UK any products supplied by Daray and covered by the *Export of Goods (Control) Order 1992* (or any law that replaces it) without obtaining all necessary licences. You also agree not to sell the product in the UK if you know or think that the person buying the product intends to export it without getting the necessary licences. You agree to impose similar conditions to these on anyone you sell the product to.
10. These conditions shall in all respect be governed and construed in accordance with English law and the exclusive jurisdiction of the English courts.

Product:

Serial No:

Service Notes