

# DARAY<sup>®</sup>

## Medical



# X230

LED Examination Light  
Operating & Installation Manual



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# 1. Introduction

DARAY's X230 is a state-of-the-art, low-cost examination light for use during medical or veterinary consultation and diagnosis. This light is specifically designed for panel mounting. The light uses the latest next-generation LED technology to give the best intensity at the correct colour temperature with no heat in the light beam.

The X230 LED head swivels on a 800mm flexible arm to allow accurate and stable positioning of the light-patch. The flexible arm projects from an angled neck which swivels in its mounting. The head, handles and mounting are coated with DARAY's BioProtect<sup>®</sup>, an antimicrobial protection against bacteria such as MRSA.

The light comprises 4 parts: light-head, flexible arm/angled neck, power-supply unit, and mounting. The flexible arm allows the light patch to be placed accurately and stably where it is needed. The arm is covered with a PVC sleeve to prevent contamination and to allow easy cleaning.

The power-supply module contains an electronic transformer to provide a low voltage to power the light from the electrical mains.

The mounting bracket provides a simple method of fixing the light, allowing the base of the arm to swivel in front of the wall; a screw prevents the arm from accidentally being pulled out of the bracket.

This product is delivered in special-to-type packaging which, on the ends of the box, identifies the type and serial number of the light within.

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.  
Edison House  
Robian Way  
Swadlincote  
Derbyshire  
DE11 9DH

## 1.1 Supported Lights

The Following Models are supported in this Manual	
X230LP	X230 LED examination light with flush fitting installation kit

## 2. Technical Specifications

<b>Light Source</b>	LED
<b>Light Intensity (Lux) @ 0.5m</b>	32,000 Lux $\pm$ 5%
<b>Light Intensity (Lux) @ 0.75m</b>	14,000 Lux $\pm$ 5%
<b>Light Intensity (Lux) @ 1.0m</b>	8,000 Lux $\pm$ 5%
<b>Light Intensity Adjustment Range</b>	10% - 100%
<b>Colour Temperature (Kelvin)</b>	4,300K $\pm$ 50
<b>Colour Rendering Index (CRI)</b>	95
<b>Colour Rendering (R9)</b>	88
<b>Light Field Diameter (D50)</b>	@ 0.5m: 120mm
	@ 0.75m: 135mm
	@ 1.0m: 180mm
<b>Light Field Diameter (D10)</b>	@ 0.5m: 230mm
	@ 0.75m: 325mm
	@ 1.0m: 460mm
<b>Number of LED's</b>	3
<b>Power Consumption</b>	12W 0.1A
<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. Installation / Assembly

Using the back-plate as a template, mark the four fixing holes (6.5mm), the central locking screw hole (6.5mm) and the cable access hole (9mm) on the mounting surface (temporarily inserting the spigot to assess whether it is vertical may help to achieve a level mounting).

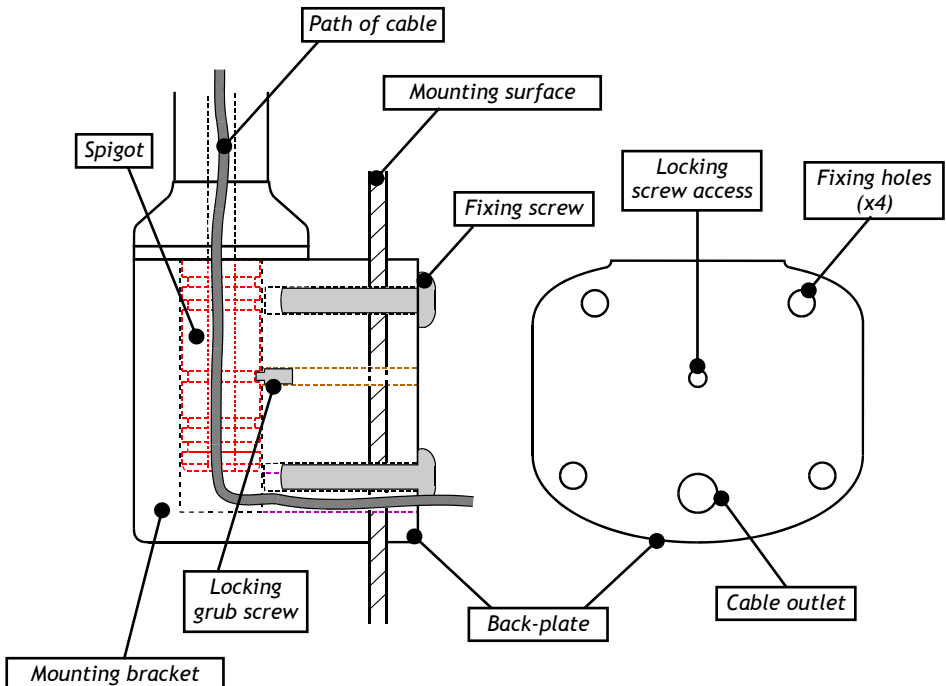
Drill the 6 holes.

Offer up the mounting bracket to the drilled holes and feed the cable through the mounting surface and mounting bracket.

Using 4 x M6x25 screws with 4 x non-slip washers, fit the mounting bracket by sandwiching the mounting surface between the bracket and the back-plate.

Connect the PSU to the cable protruding from the back-plate.

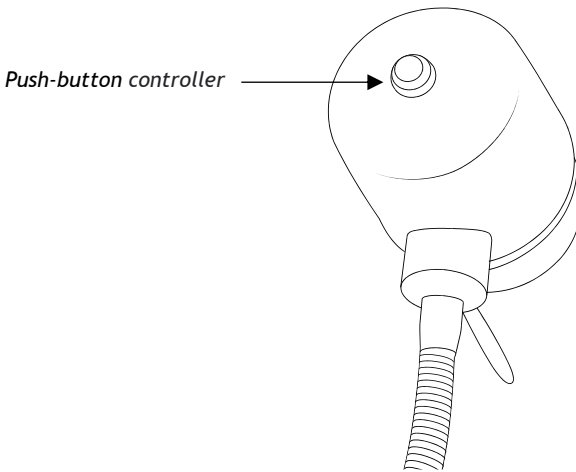
Connect the PSU to a fused 230V AC supply.



## 4. Operation

The light-head swivels on its mounting flexible arm, and the arm itself also swivels where it fits into its mounting, allowing the light patch to be placed where you want it.

Press the push-button on the rear of the lamp to turn the light on. Press and hold to adjust the intensity. Press the push-button again to turn the light off. Pressing the push-button again will turn the light at the last set intensity.



If the light is disconnected from the mains and reconnected the light's intensity is reset to its brightest setting.

**Note: Unplug the power supply if the light is not going to be used for extended periods.**

## 5. Maintenance

The light should be dusted with a soft flannel cloth, and the front cover gently cleaned with an alcohol-based liquid, and wiped dry.

**WARNING: NO ABRASIVE CLEANING MATERIALS SHOULD BE USED TO CLEAN ANY PART OF THE LIGHT.**

PLEASE REFER ANY PROBLEMS INITIALLY TO YOUR DISTRIBUTOR.

DARAY Customer Services on +44 (0) 800 878 9864

Or email [support@daray.co.uk](mailto:support@daray.co.uk) for help with any problems the distributor cannot solve.

## 5.1 Product cleaning & care guidelines

The X200 Range features BioProtect® antimicrobial coating on all painted surfaces and has a fully-enclosed head with an Ingress Protection (IP) rating of 54.

These guidelines are provided to help you maintain your equipment properly and prevent any damage. Use of incompatible cleaning chemicals can adversely affect the finish and physically damage the metal and plastic parts of the DARAY product, invalidating its warranty.

Please ensure these instructions are passed to the persons responsible for cleaning and they are followed before each use.

### Manufacturers recommended cleaning method:


1. Turn off the power to the light, and where possible, unplug the mains socket.
2. Remove noticeable contamination. Pay special attention to the light head and handle.
3. Ensure the equipment is surface-cleaned and disinfected using an appropriate, non-abrasive cleaning agent (see recommended list below).
4. Dry all surfaces thoroughly with a clean cloth and check for damaged surfaces, discolouration and/or contamination.

**NOTE:** Some DARAY products feature our BioProtect® antimicrobial coating on painted finishes. This is designed to assist with infection control and is not a replacement for cleaning.


**CAUTION:** Our products are NOT waterproof. The equipment and accessories (included chargers and battery packs) MUST NOT at any point be saturated, to prevent water ingress. Use a damp cloth or saturated wipe if necessary. All electrical safety guidelines should be followed.

Any damage caused as a result of not following these guidelines will void any product warranty.

### Below is a partial list of recommended surface agents:

- 
- Cavicide™ products
  - Isopropyl alcohol-based cleaners (<40% alcohol)
  - Ethyl alcohol-based cleaners (<40% alcohol)
  - Lysol® disinfectant
  - Other non-bleach and non-abrasive disinfectants or cleaners

### DO NOT USE agents containing the following:

- 
- Organic, mineral and oxidizing acids (min. pH value 8.5)
  - Bases (max. acceptable pH value 8.5)
  - Oxidation agents (e.g. Hydrogen Peroxide)
  - Halogens (chlorine, iodine, bromide)
  - Aromatic/halogenized hydrocarbons
  - Bleach-based cleaners (e.g. Clorox™, Sterilox™)
  - Abrasive cleaners (e.g. Comet Cleaner™)
  - Acetone-based cleaners (e.g. nail polish remover, Goo-off™)
  - MEK (Methyl Ethyl Ketone)

If you are unsure whether you are using the correct cleaning fluids on your DARAY equipment, please feel free to get in touch with us for advice.



## 5.2 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**

## 6. Spare Parts

**CAUTION:** Use only genuine 'DARAY' replacement parts as anything else may seriously impair the performance or compromise the safety of the product

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.



## 7. Warranty Information

### 7.1 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:	Warranty includes parts and labour (Return to Base)	*UK only
Years 2-5:	Parts only	

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.

## 7.2 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:










**DARAY**<sup>®</sup>  
Medical

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