

DARAY[®]

Medical



DX4100 Range

LED X-Ray Film Viewer

Operating & Installation Manual

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1. Introduction

DARAY's DX4100 family of X-Ray Film Viewers uses LED technology to produce uniform illumination with extended life and efficient power consumption.

All versions are delivered in special-to-type packaging which identifies on the ends of the box the model type and serial number of the light within.

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

Restrictions and Liabilities

Information in this document is subject to change and does not represent a commitment by DARAY. Changes made to the information in this document will be incorporated in new editions of the publication. No responsibility is assumed by DARAY for the use or reliability of software or equipment that is not supplied by DARAY.

For further information on our product range and find out more about our Company please visit www.daray.co.uk or call **0333 321 0971**.

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	
DX4101	DARAY DX4101 LED Single Panel X-Ray Viewer
DX4102	DARAY DX4102 LED Double Panel X-Ray Viewer
DX4103	DARAY DX4103 LED Triple Panel X-Ray Viewer
DX4104	DARAY DX4104 LED Quad Panel X-Ray Viewer

2. Technical Specifications

Supply Voltage	100 - 230 V AC 50Hz
Power consumption	DX4101: ≤25W
	DX4102: ≤50W
	DX4103: ≤75W
	DX4104: ≤100W
Lamp Type	LED
Lamp life (typical)	100,000 hours
External dimensions (mm)	DX4101: 500 X 530 X 45
	DX4102: 850 x 530 x 45
	DX4103: 1200 x 530 x 45
	DX4104: 1570 x 530 x 45
Viewing Area (mm)	DX4101: 355 x 428
	DX4102: 710 x 428
	DX4103: 1065 x 128
	DX4104: 1420 x 428
Light Intensity (Lux)	650 - 4,000K
Colour Temperature	9,600K

2.1 Pre-Installation Responsibilities and component packing list

This document is a guide to the steps that need to be performed to correctly install the DX4100 X-Ray Film Viewer. However, the work required to be performed is the responsibility of the owner or designated contractor/s.

All fixings between DARAY lights and the building super-structure must be approved by either the chief project engineer or an appropriate and competent structural assessor.

The components supplied by DARAY for fitting / installation should be the following items in the specified quantities.

DX4100 Range	Qty.
Viewing Panel	1
IEC Cable	1
Stand Brackets	2
User Manual	1

2.2 Pre-Start Checks



Please check that the power cable is without visible damage, harsh folds, knots or cuts in the rubberised coating.

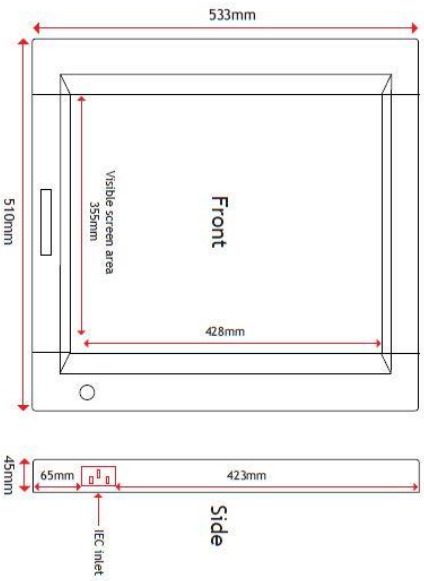


When applicable, please check that the cable is fully inserted into the power socket, before switching the power on.

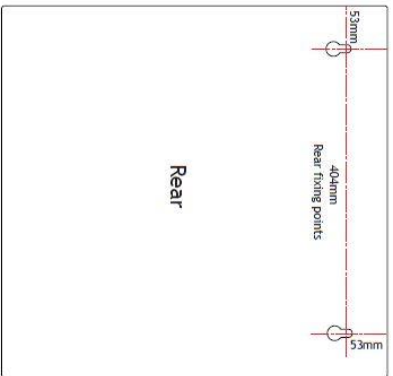


Please check that all parts of the viewer are without visible damage.

If you require any assistance determining the optimum fixing position for your light, please call our 'Service Delivery' Team on 0800 878 9864 for advice and support.



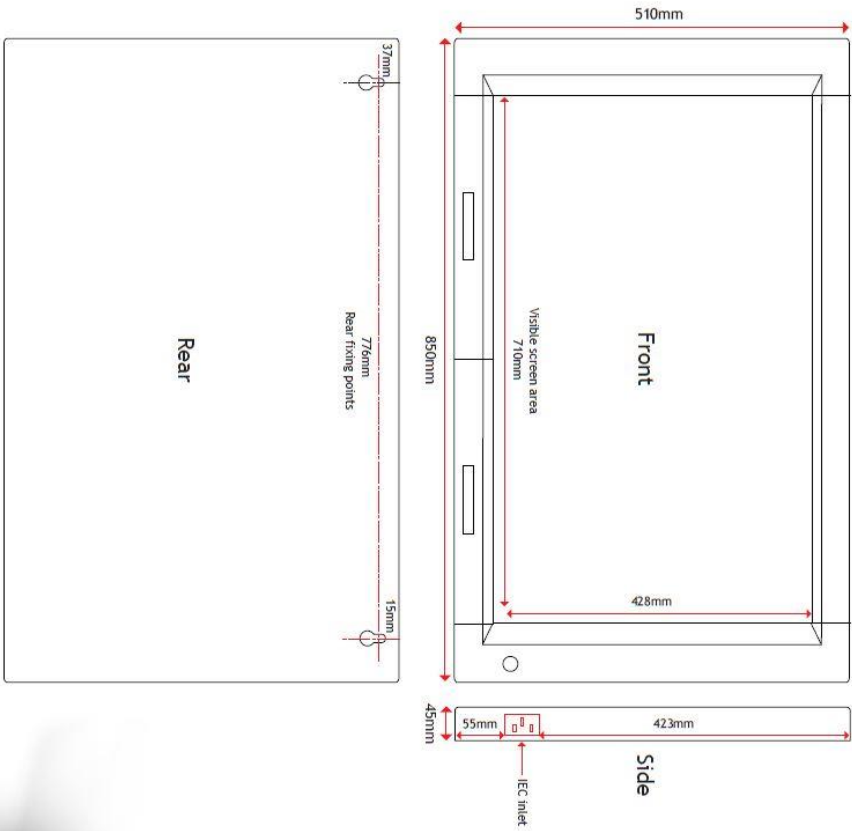
3. Technical Drawings



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Product Dimensions: DX4102 LED Dual-Panel X-Ray Viewer

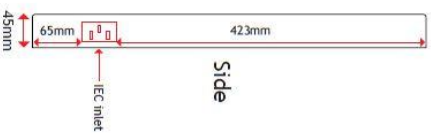
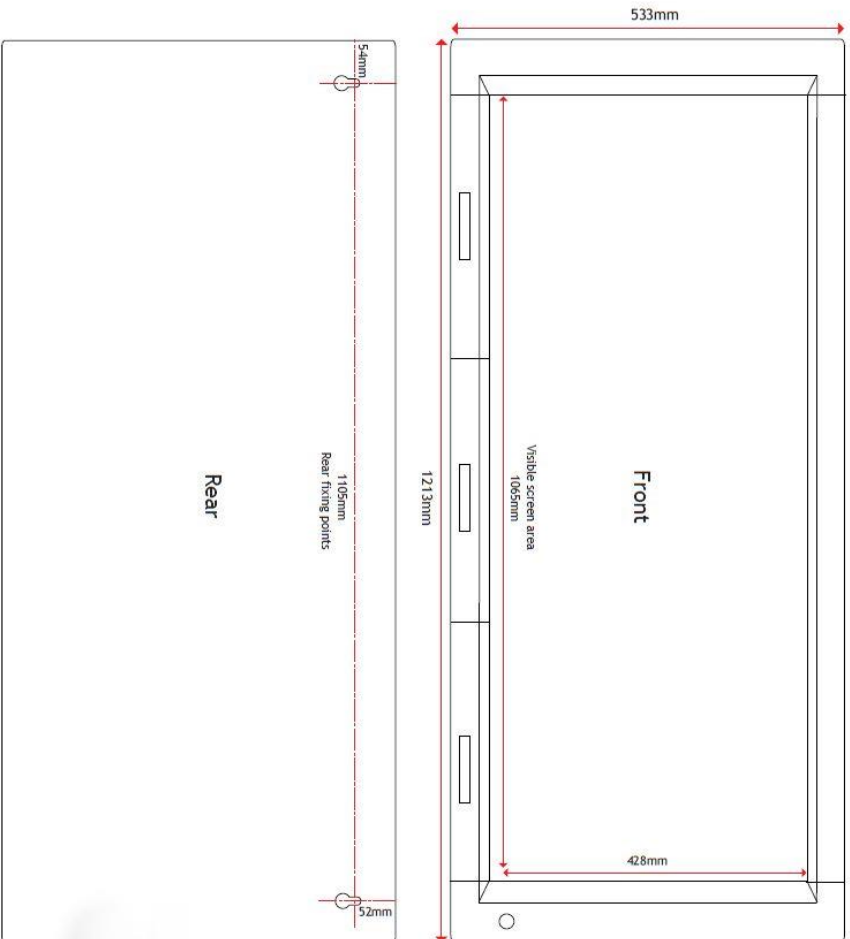
If you require any assistance determining the optimum frang position for your light, please call our Service Delivery Team on 0800 878 9864 for advice and support.



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Product Dimensions: DX4103 LED Triple-Panel X-Ray Viewer

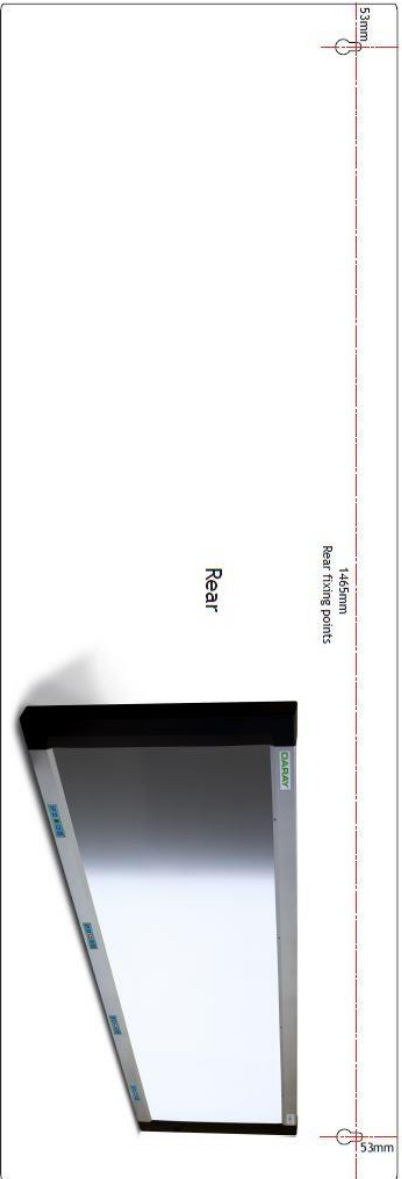
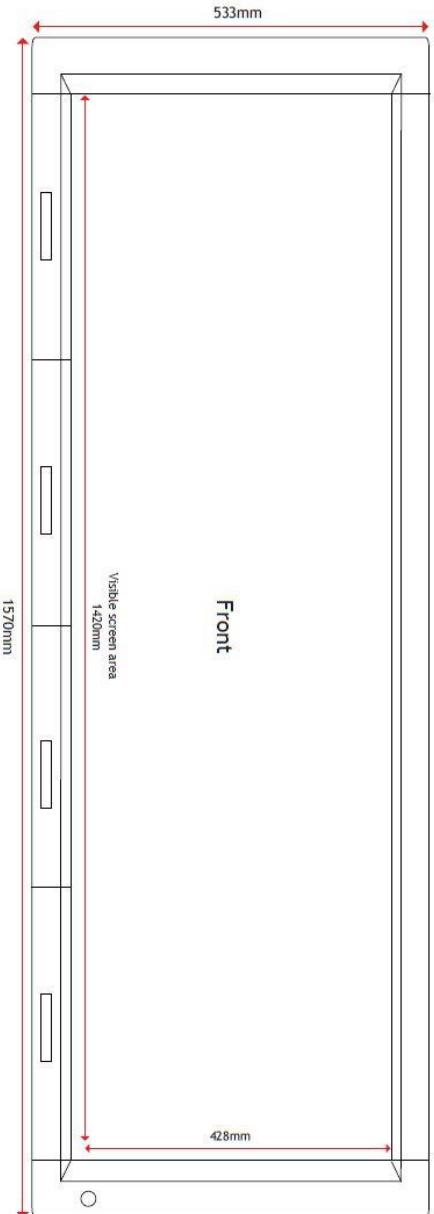
If you require any assistance determining the optimum fixing position for your light, please call our Service Delivery Team on 0800 878 9864 for advice and support.





Product Dimensions:
DX4104 LED Quadruple-Panel X-Ray Viewer

If you require any assistance determining the optimum fixing position for your light, please call our Service Delivery Team on 0800 878 9864 for advice and support.



4. Installation

4.1 Wall Mounted

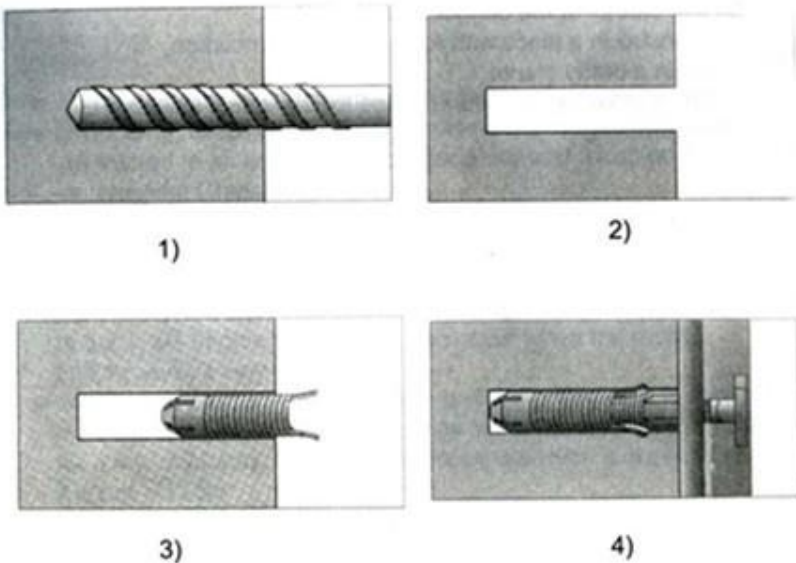
Mount the product on a concrete wall or a wooden wall. Ensure it is mounted onto a flat surface.

In all instances of brick, concrete or wood walls, a screw/wall-plug can be used.

If the thickness of the finished material is less than 10mm a hollow fixing can be used.

If you are installing the product on a plasterboard wall, ensure you are using adequate fixings.

1. Use the fixing point guides on pages 6-9 to work out the intended location. Mark the 2 screw points, ensuring they are level.
2. Drill a hole in the wall and insert a suitable wall plug.
3. Drive screws into the plugs ensuring you leave approximately 1cm of the screw head protruding from the wall.
4. Alternatively drive the screw directly into a wooden wall.



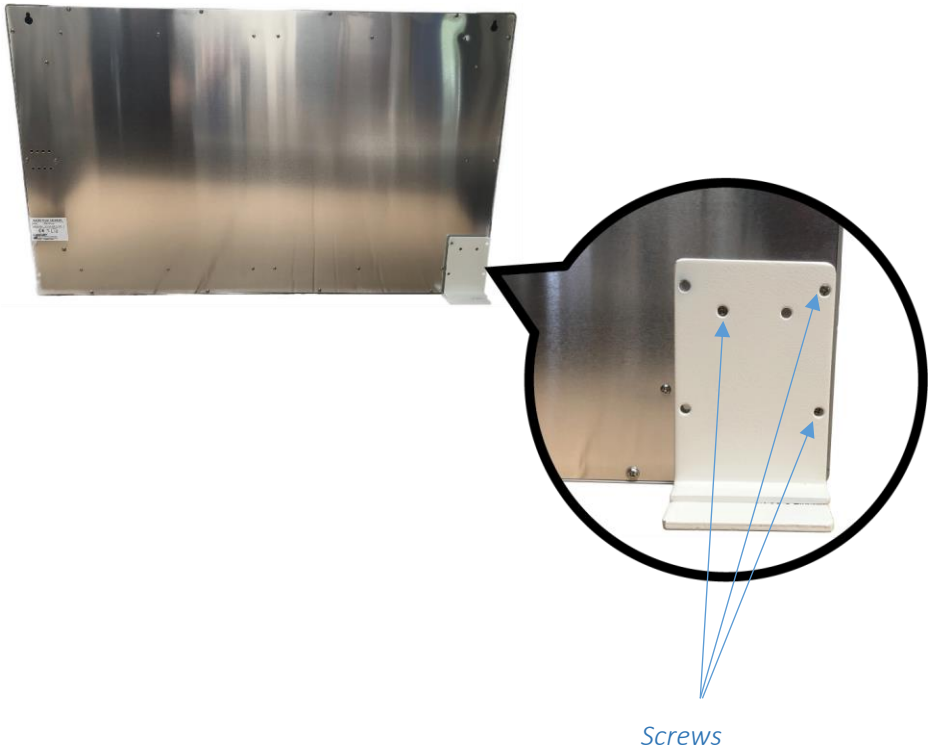
4.2 Desk Mounted

In the bottom left and right-hand corners, you will find 3 screws. These are for mounting the desk mount brackets.

Remove these screws and place the bracket into the correct location, **ensuring the long foot of the bracket is pointed towards the face of the viewer.**

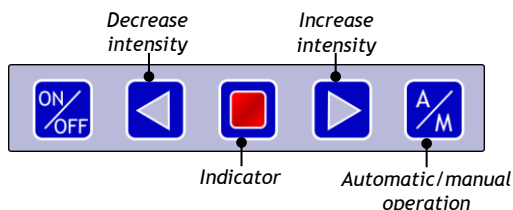
Insert all 3 screws and tighten.

Repeat for the other foot.



5. Operation

Connect the mains lead from a standard 13A socket to the IEC socket on the right hand side of the viewer. Switch on the rocker switch on the bottom right-hand side of the viewer. Switch the viewer off when it is not in use, and unplug the mains plug, if the viewer is not to be used for an extended period.



With the viewer's rocker switch on, press the ON/OFF button to illuminate the panel. The indicator flashes.

Use the decrease or increase intensity buttons to alter the panel illumination. Whilst these buttons are pressed, the illuminator flashes. The illuminator stops flashing to indicate the limit of intensity adjustment.

Press the A/M button to set to automatic or manual operation. In automatic operation the indicator illuminates and in manual operation the indicator is off.

Whilst in automatic mode, insert an X-ray film into the film holder at the top of the panel and the panel will illuminate. Remove the film and the panel goes off.

If the panel does not illuminate when the film is inserted, firstly remove the film, check that the viewer is in automatic operation mode and then try inserting the film again.

Note: automatic operation only works correctly when the viewer is upright - it does not work with the viewer placed flat (e.g. on a desk or workbench)

Press the ON/OFF button to turn the panel off.

Your new DARAY X-Ray Viewer is now ready for use.

To gain full support of our warranty please fill in our warranty web form or contact DARAY by phone or email.



We also provide service plans to help you maintain your light. Contact DARAY on **0800 878 9864** for more details.

6. Maintenance

The proposed maintenance is only a suggestion. Depending on the use of the product and the operating environment, this may need to be revised more often.

DO NOT ATTEMPT ANY FIXES BEFORE CONSULTING DARAY.

If you cannot resolve a problem then please contact our helpline on **0800 878 9864** or email support@daray.co.uk

6.1 Maintenance schedule

Weekly checks should include:-	Clean the exterior of the panel with a clean damp cloth, wipe and dry with a clean soft cloth.
	No visible signs of excessive wear.

6.2 Product cleaning & care guidelines

The DX4100 Range has 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.

7. Troubleshooting Guide & Spare Parts

Problem	Possible Cause	Corrective Actions
Screen not illuminating	Power Issue	Check if the IEC cable is correctly connected and that the mains switch is on.
	Dimmer Issue	Contact Daray on 0800 804 8384
Cannot adjust brightness	Broken Dimmer	Contact Daray on 0800 804 8384

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.



8. Warranty Information

8.1 Returns Policy

IMPORTANT!

Please fill out your warranty registration online at www.daray.co.uk/warranty or contact Daray by phone (0800 878 9864) or email support@daray.co.uk

DARAY's standard warranty is 12 months. However, this period may be extended to 2 years* free of charge by completing and submitting the warranty registration. For the specific warranty period for this product, please refer to the warranty symbol in the upper right of this page.

Year 1:	Warranty includes parts and labour (Return to Base)	*UK only
Year 2:	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

TYPE OF RETURN	REMEDY
DAMAGED GOODS Goods which are physically damaged on delivery	We must be notified within 24 hours of receipt.
Dead On Arrival (DOA) 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.
GOODS DEVELOPING A FAULT 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.
NON WARRANTY 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.
OTHER 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. 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.

8.2 Warranty Details

TERMS AND CONDITIONS OF WARRANTY

1. To qualify for this warranty you must register on 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
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

DARAY[®]
Medical

DARAY Ltd.
Edison House
Robian Way
Swadlincote
Derbyshire
United Kingdom
DE11 9DH



+44 (0)800 878 9864



+44 (0)333 321 0973

sales@daray.co.uk • www.daray.co.uk
