



User Instruction & Installation Manual

L230 LED 40 Watt Searchlight



Product Reference Number:

A6158 – 12/24v DECK
A6159 – 12/24v CABIN

Manufacturer's details:

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1 - Introduction

It is imperative that this manual is read carefully and understood before installing your equipment. For your future reference please keep this manual in a safe place.

Thank you for specifying a product from the Francis Searchlights range. All Francis products are designed to give complete customer satisfaction and are manufactured to the highest engineering standards in order to ensure optimum performance and service life.

The Francis LED range combines features proven over many years service in the most hazardous conditions in both marine and land installations.

In order to prolong the life and performance of your product, we recommend that you only specify Francis Searchlights spare parts. This will also ensure that any warranties on your equipment will not be invalidated. Information on spares ordering and parts is provided in this manual.

Should you ever need to contact Francis Searchlights Ltd. regarding your equipment, please quote the Product Serial Number at all times.

2 - Safety Precautions

The following instructions must be adhered to, in order to ensure a safe working environment and the safety of the user.

- The high luminance of the LED can cause severe damage to the eye if viewed directly. ALWAYS wear suitable protective goggles when viewing the LED;
- Searchlights get hot. Never touch the unit when lit and always allow 15 to 20 minutes for cooling down after turning the searchlight off;
- Never place anything on or cover the searchlight when in use;
- Ensure the LED has cooled sufficiently before removal;
- Due to the vast range of LED modules available it may appear possible that more powerful LED's can be used in the equipment than for which it was designed. Even when the unit will physically accept a higher wattage LED, this substitution is not recommended and is dangerous. This action will also void any warranties on the equipment.

3 – Technical Information

This product has been designed to operate in accordance with the product specification.

The L230 LED 40w searchlight has the following features:

- All marine grade materials and fixings;
- Powder coated finish;
- Horizontal rotation 360°;
- Vertical movement $\pm 35^\circ$;
- Instant re-strike. No cooling down time required;
- Economical 30,000 hour LED life;
- Toughened Opti White front glass;
- Luminous flux 4800;
- Colour temperature 6000K;
- Searchlight Weight 4Kg;

The searchlight also performs to the following optical data:

- Supply voltage – 12v or 24v;
- Range – 500 metres at 1 Lux;
- Divergence – 5°;
- Temperature range: -40 to +50

In order that the searchlight operates correctly it is imperative that competent personnel are responsible for the installation, operation and servicing of this equipment. Failure to adhere to this advice may cause premature failure or incorrect operation of the searchlight, which may damage the equipment or cause personal injury.

4 - Unpacking and Installation Instructions

The following instructions should be read and fully understood prior to installing the equipment to ensure that the correct procedures are followed, and all safety precautions are observed.

Note: If the equipment has been in storage for a considerable amount of time, it is advisable to conduct a routine maintenance check on all parts before installation.

Safety Precautions

This equipment should not be connected to an electrical supply before being installed. Installation procedures should be adhered to in order to ensure a safe working environment and reduce the risk of damage or personal injury.

Preparing the Mounting Position

Mark out and drill 3 off holes Ø6.4mm on a 108mm P.C.D.

A central hole Ø50mm will be required to accept the movement of the control handle. Make sure to fit the Base-sealing gasket, when in the desired position bolt the searchlight firmly down. On an uneven surface a suitable sealant maybe required to provide a weatherproof seal.

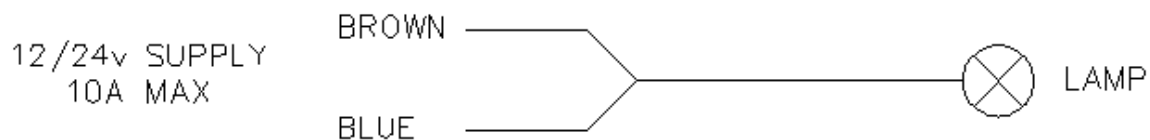
5 - Electrical Installation

For safety purposes, only competent personnel should perform the electrical installation. All equipment should be installed to current Electrical Regulations and Standards.

In order to obtain the maximum light output from the searchlight, it is essential that the full operating voltage of the LED fitted be applied to the LED contacts.

Method of Electrical Connection

- 1) Disconnect the supply before working on the electrical system;
- 2) The searchlight must be connected to a fused electrical supply, using suitably sized cable;
- 3) If the searchlight is located a considerable distance from the supply, provision must be made in the cable size in order to overcome the voltage drop.
- 4) Whenever possible cable terminations should be made below deck and with approved terminal devices;
- 5) If a spare auxiliary fuse or circuit breaker is not available, one of the correct type and rating should be fitted and connected to a positive supply. It is advisable to locate a bus bar or main connection and avoid any direct connection to the supply:
- 6) When wiring the negative supply, the direct connection to a battery or supply, or metal hull/object, should be avoided. It is advisable to use a suitable commoning block or connection.
- 7) For ease of use a single pole switch, of the appropriate rating, should be fitted in a convenient location. All cable lengths should be kept to a minimum.



6 - Operating Instructions

This equipment is designed for use out of doors, in free air. Never place anything on or cover the searchlight when in use as this may present a hazard.

The beam of the searchlight cannot be adjusted.

This product should not be used for any purpose other than for which it was designed. Any modifications to the product should not be undertaken without consulting the manufacturer.

7- Fault Finding

All fault finding must be conducted by a competent person or qualified Electrical Engineer.

Failure of LED to light.

In the event of the LED failing to light the following steps should be taken:

- 1) Check that the supply is connected to the input of the LED and check all connections as per the wiring diagram C27603. On operation if the lamp does not light, switch off supply and check all fuses;

8 - Maintenance and Servicing

In order to prolong the service life and performance of your searchlight, the following maintenance guidelines are recommended:

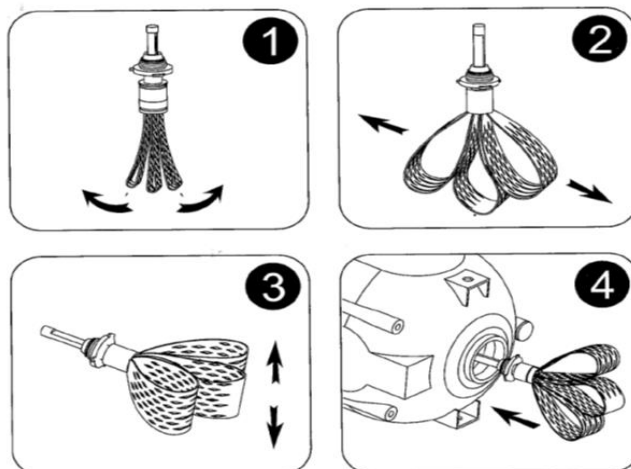
- Maintenance checks should be conducted before every voyage or at least every three months;
- Before checking, disconnect the equipment from the supply;
- Visually inspect the condition of the equipment;
- Any major or minor structural damage should be rectified immediately in order to reduce sympathetic wear;
- After inspection it may be necessary to clean the inside of the searchlight. The following procedure should be adhered to:
 - Remove the front bezel;
 - Clean the front glass inside and out using a proprietary glass cleaner;
 - Clean the reflector if required;
- It is advisable to check all seals and gaskets for signs of degradation. Renew if necessary;
- Upon completing all maintenance requirements, the searchlight should be tested for full working order (approximately 20 minutes).

If in any doubt as to the correct servicing procedures to adopt please contact your distributor/agent or the manufacturer who will be able to advise the best course of action for your product.

Notes for Lamp Fitting/Removal

Ensure all screws are retained carefully in a safe position;

- Remove front bezel from searchlight by releasing the three latches;
- Remove the three M4 hex head screws that fasten the reflector to the mirror pads.
- Remove reflector & unclip lamp leads.
- For aid see Diagram **C27612**. Remove lamp by undoing the 2 screw that hold the plates to lampholder & then undoing the 4 screws that secure the plates together.
- Replace the lamp by reversing the procedure.
- It is **IMPORTANT** the heat dissipation belts on the rear of the lamp are spread to their maximum (As shown below). Failure to do so will cause damage to the L.E.D



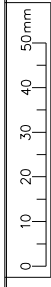
9 - Wiring Diagrams & General Assemblies

Drawing Number	Description
A6158/A6159	L230 LED 40w 12/24v Deck/Cabin GA
C27612	Reflector Assembly (Lamp fitting/removal guide)
C27603	Wiring Diagram 12/24v

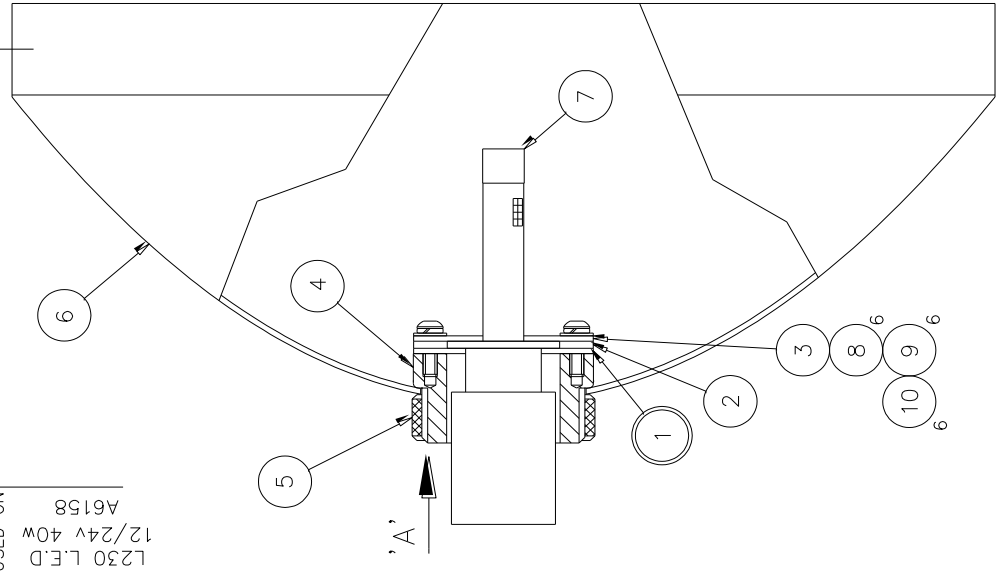
FIRST USED ON
L230 L.E.D
12/24V 40W
A6158

DO NOT SCALE DRAWING

THIRD ANGLE PROJ



ISS No	1	MODIFICATION DETAILS	AS FIRST DRAWN	DATE & INIT'S	8.17 LW
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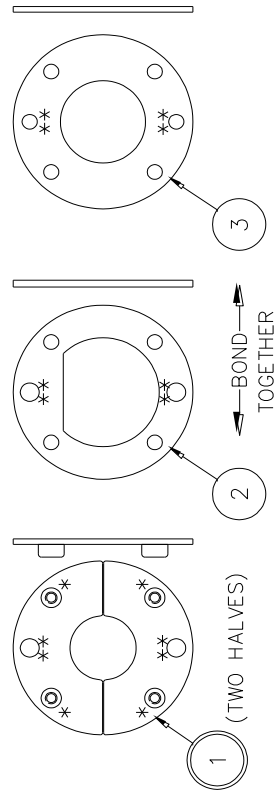
* NOTE *

IT IS IMPORTANT TO SPREAD THE HEAT DISSIPATION BELTS ON THE REAR OF THE LAMP TO THEIR MAXIMUM

* NOTE *

FOR EASE OF ASSEMBLY ITEM 2 CAN BE BONDED TO ITEM 3 WHEN BONDING TOGETHER ENSURE HOLES ALIGN

1. FIT THE LAMPHOLDER (ITEM 4) & NUT (ITEM 5) TO THE REFLECTOR
2. PLACE THE LAMP THROUGH THE LAMPHOLDER, SEE ARROW 'A'
3. POSITION (ITEM 2) ONTO THE LAMP
4. POSITION (ITEM 1), THE TWO HALVES BEHIND (ITEM 2)
5. PLACE (ITEM 3) IN FRONT OF (ITEM 2) (THESE CAN BE BONDED TOGETHER)
6. SECURE ALL PLATES USING M3 FIXINGS INTO HANKSERTS MARKED*
7. SIT HANKSERTS INTO C/BORES ON LAMPHOLDER & FINALLY SECURE PLATES TO LAMPHOLDER INDICATED BY**

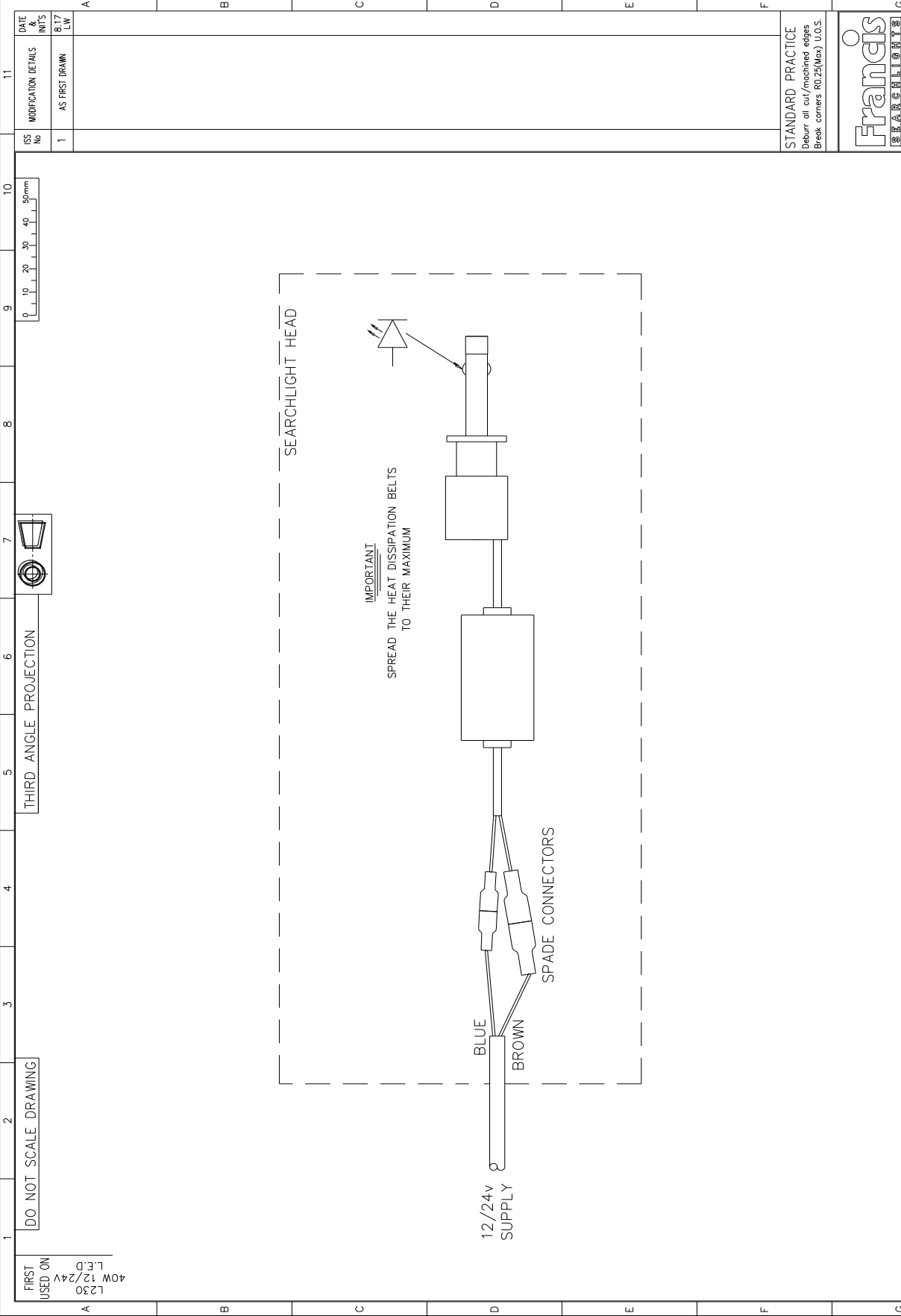


ITEM	PART No.	DRG No.	DESCRIPTION	QTY
1	C27610	C27608	LAMP PLATE 2 S/ASSY	2
2	C27608	C27608	LAMP PLATE 1	1
3	C27611	C27608	LAMP PLATE 3	1
4	C27589	C27589	LAMPHOLDER	1
5	C27590	C27590	LAMPHOLDER NUT	1
6	C21348	C21348	REFLECTOR	1
7	C27587		LED UNIT	1
8	C10131		M3 x 10 BTN HD SCREW	6
9	C08028		M3 PLAIN WASHER	6
10	C10747		M3 S/C SPRING WASHER	6

STANDARD PRACTICE
Deburr all cut/machined edges
Break corners R0.25(Max) U.O.S.
TOLERANCES U.O.S.:-
General: ± 0.25
Angular: ±
Hole centres & posns: ± 0.125
Sand Casting: To ISO 8062 CT10
Die Casting: To ISO 8062 CT8



DRAWN LW		DATE	8.17	MATERIAL	
CHECKED		SCALE	1:1	ALL DIMENSIONS IN MILLIMETRES	
FRANCIS SEARCHLIGHTS LIMITED. UNION ROAD. BOLTON. BL2 2HU			© 2017	A3	CONT ON SHEET
FINISH			DESCRIPTION		
REFLECTOR ASSY			PART No./DRG No.	C27612	
SHT			1		



DATE	8.17	DATE	8.17	ISS No	1	DATE & INITS	AS FIRST DRAWN
LW		SCALE	1:1	MODIFICATION DETAILS			
CHECKED		SCALE	1:1				
ALL DIMENSIONS IN MILLIMETRES		Hole centres & posns: ±		STANDARD PRACTICE		Deburr all cut/machined edges Break corners R0.25(Max) U.O.S.	
DRAWN		TOLERANCES		© 2017		A2 CONT ON SHEET	
Sonic Casting: To ISO 8062 CT10		MATERIAL		PART No./DRG No.		C276031	
Die Casting: To ISO 8062 C18		FINISH		DESCRIPTION		SHEET	
Hole centres & posns: ±		L230 40w		12/24v L.E.D WIRING SCHEMATIC		1	
FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HJ		FRANCIS SEARCHLIGHTS		SHEET		1	

10 – Spare Parts List

The following spare parts can be ordered directly from the manufacturer:

Part Number	Description
C15790-00	Base Gasket
C26630-00	Front Glass
C21141-00	Front Glass Gasket
C22268-01	Breather Assembly
C27587-00	LED Unit

In order to prolong the life and performance of your product, we recommend that you only specify Francis Searchlights spare parts. This will ensure that any warranties on your equipment will not be invalidated.

When ordering spare parts please contact the Sales Department at Francis Searchlights Limited. Please quote searchlight model and serial number at all times. This will enable a fast response to your spares' requirements.