

User Instruction & Installation Manual

L300 234w RF LED Searchlight

Product Reference Number:



A6192/A6188 – 240v/24v Deck A6193/A6189 – 240v/24v Deck Pedestal A6194/A6190 – 240v/24v Cabin A6195/A6191 – 240v/24v Cabin Pedestal

Manufacturer's details:

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Manual Part Number: C27928 Issue: 2 14.8.19 EC1776

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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.

Note: When unpacking or manoeuvring the searchlight into its fixing position, suitable lifting points must be used in order to prevent damage to the equipment or personal injury.

- 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 LED 300 searchlight has the following features:

- All marine grade materials and fixings;
- Powder coated finish;
- Full 450° horizontal rotation;
- Vertical movement ±40° (Deck & Deck Pedestal;
- Vertical movement +30° to -25° (Cabin & Cabin Pedestal;
- Instant re-strike. No cooling down time required;
- Economical 20,000 hour LED life;
- Toughened super clear Opti white front glass;
- Precision made glass lenses;
- Remote focus facility;
- Sealing IP56 Searchlight & Control Gear protected to IP66;
- Searchlight weight Deck 17 Kgs, Deck Pedestal 21Kgs, Cabin 20Kgs, Cabin Pedestal 24Kgs & PSU weight 4 Kgs;

The searchlight also performs to the following optical data:

- Supply voltage 24 to 240v;
- Luminous flux 22,800;
- Colour temperature 6000K;
- Range 1876 metres;
- Divergence Spot 4° Flood 10°;
- Temperature range: -20 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 the fixing holes through the deck. If anti-vibration mounts are to be fitted, the fixing holes for the mounts should also be marked out and drilled. Prior to manoeuvring the searchlight into its' fixing position, the AV mounts should be fitted to the base. When in the desired position, bolt the searchlight firmly down.

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/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) For 110/220v AC products, the following colour coding system should be used for the customer supply cable:

Brown - Live
Blue - Negative
Green/Yellow - Earth

Installation Guideline

A typical installation and connection routine for the LED 300 searchlight is as follows:

Referring to wiring diagram C27877 HV or C27879 LV, a supply is fed into the on/off control box, which then provides a common feed to the driver box & searchlight.

The following cables have been fitted as standard.

3 metres of 5 core 1.5mm cable from the control box to the driver box. 3 metres of 7 core 1.5mm cable from the searchlight to the driver box.

Cables required to be supplied by the customer: -

The Mains cable to the on/off Control box.

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 searchlight can be positioned using the pan and tilt lock wheels. When in the desired position the lock wheels must be securely fastened to prevent damage.

The beam of the searchlight can be adjusted to give a variety of beam types. Using the yellow remote focus button on the Control Box, the desired beam can be achieved for any particular application. The beam will move continuously through 'spot' to 'flood'. In order to fix the beam type; simply release the button at the desired position.

Using the template provided mark out and drill the fixing holes through the deck or cabin roof. In case of cabin control models, a centre hole is also required to allow the mechanism to pass through.

On an uneven surface when bolting down the searchlight it is necessary to use a suitable sealant, such as silicone, in order to ensure weather proofed joint.

Please note that if a heater is fitted, it is advisable to leave the heater permanently in the 'ON' position in order to remove any condensation. The heater specified on this equipment is self-regulating and will shut off when the dew point temperature is reached.

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:

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

8 - Maintenance and Servicing

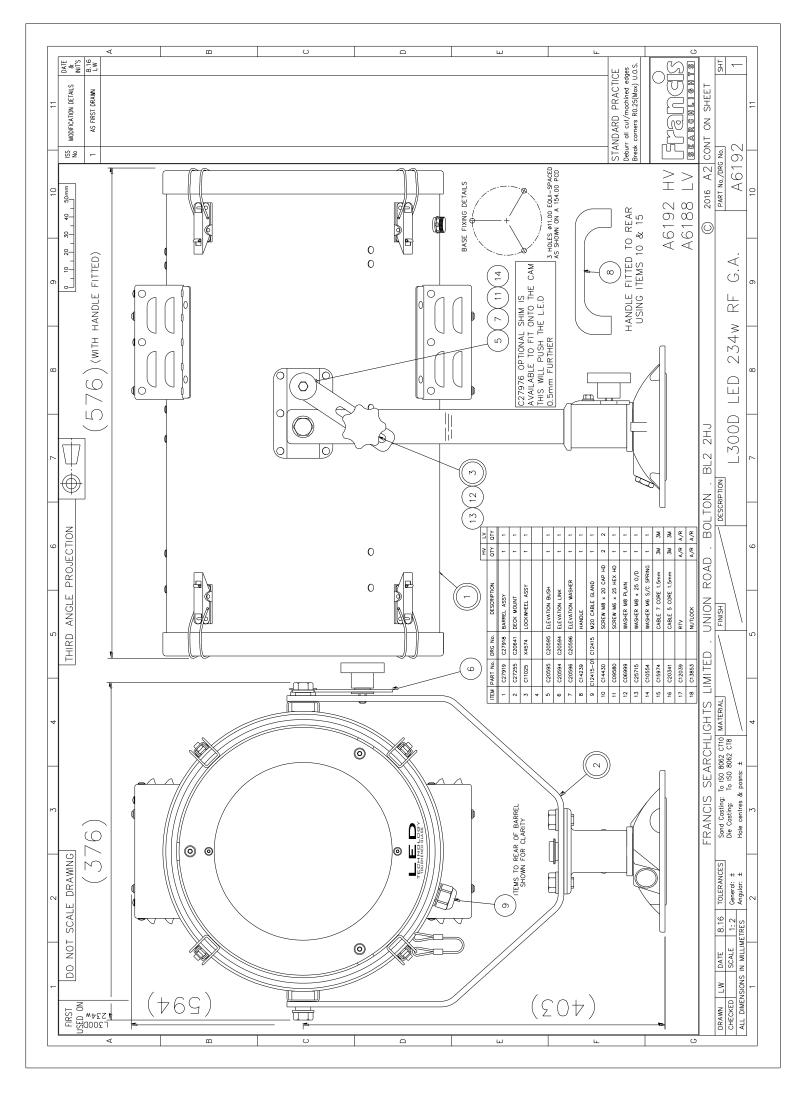
In order to prolong the service life and performance of your searchlight, the following maintenance guidelines are recommended:

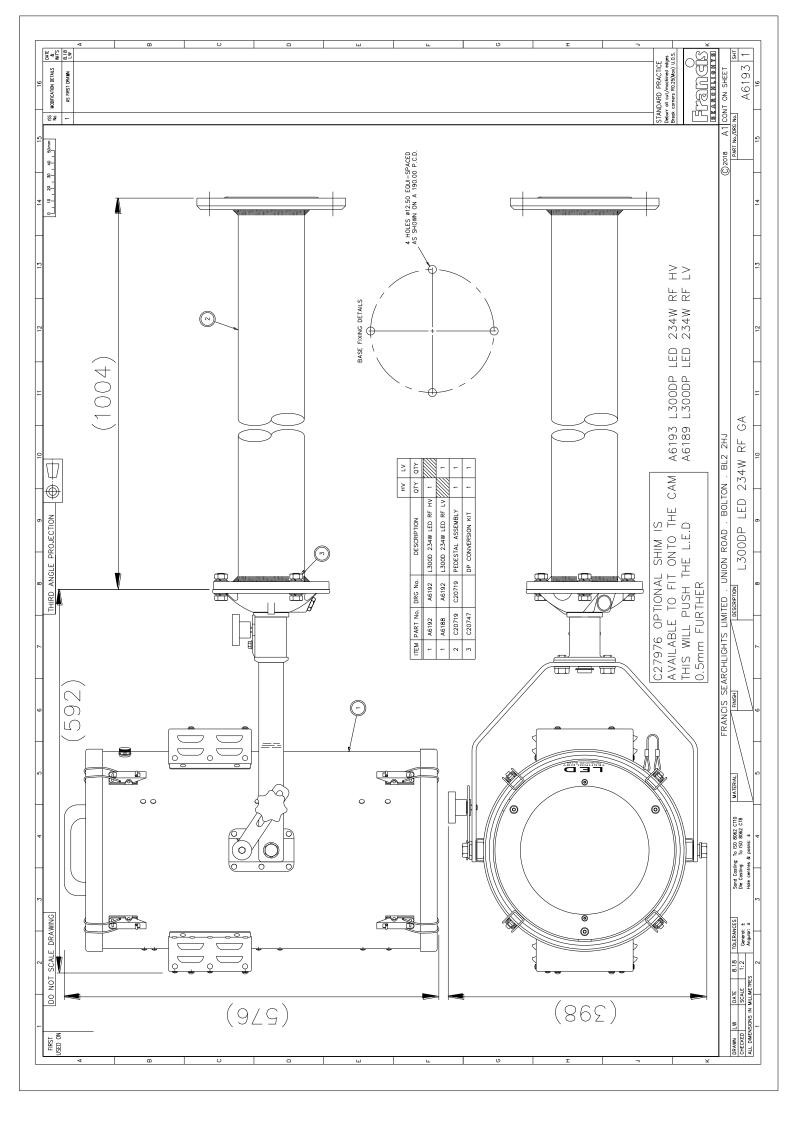
- Maintenance checks should be conducted before every voyage or at least every three months:
- Before checking, disconnect the equipment from the supply;
- Visually inspect the condition of the equipment;
- Any major or minor structural damage should be rectified immediately in order to reduce sympathetic 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 lenses 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).
- Every six months the external movement mechanisms i.e. lockwheels, elevation and pan mechanisms, should be lightly lubricated.

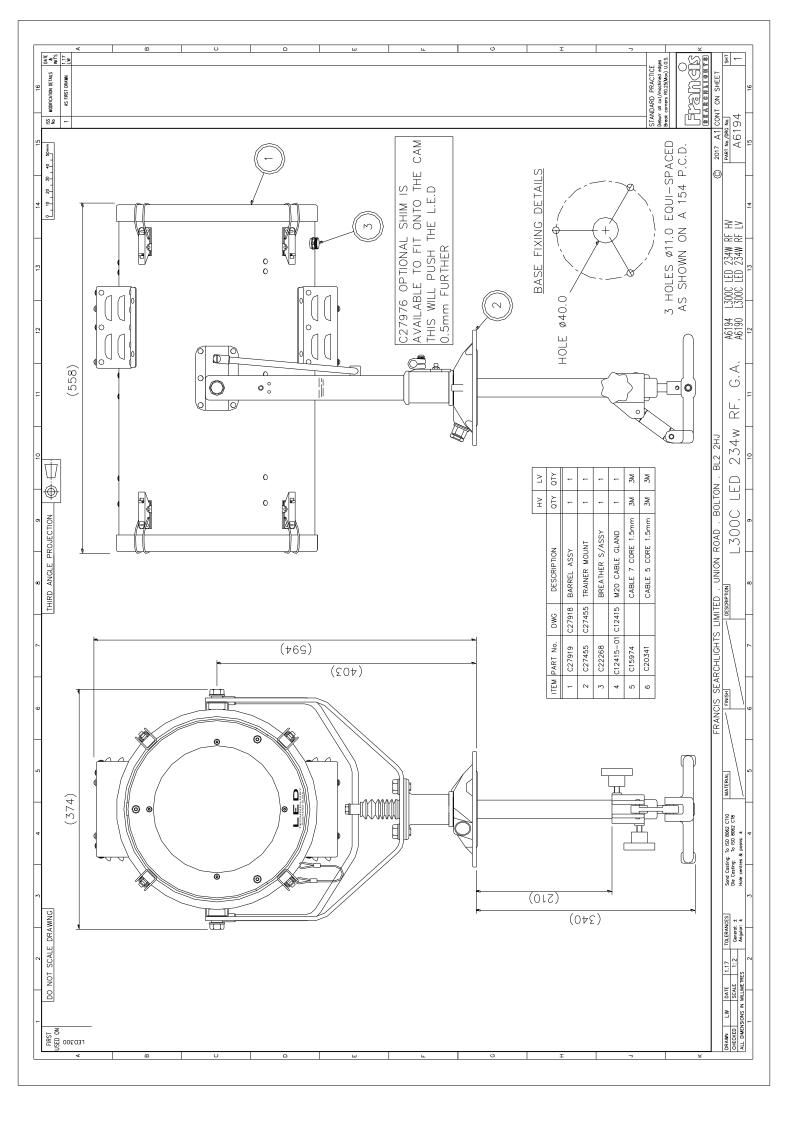
If in any doubt as to the correct servicing procedures to adopt please contact your distributor/agent or the manufacturer who will be able to advise the best course of action for your product.

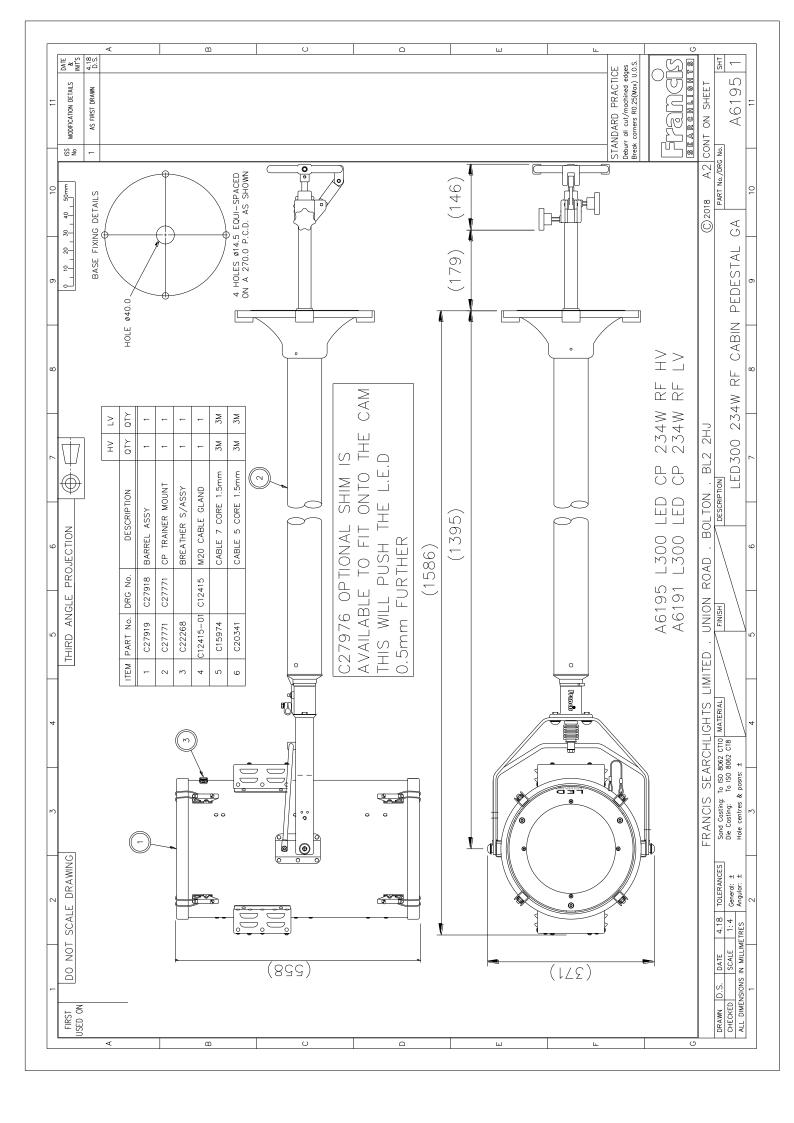
9 - Wiring Diagrams & General Assemblies

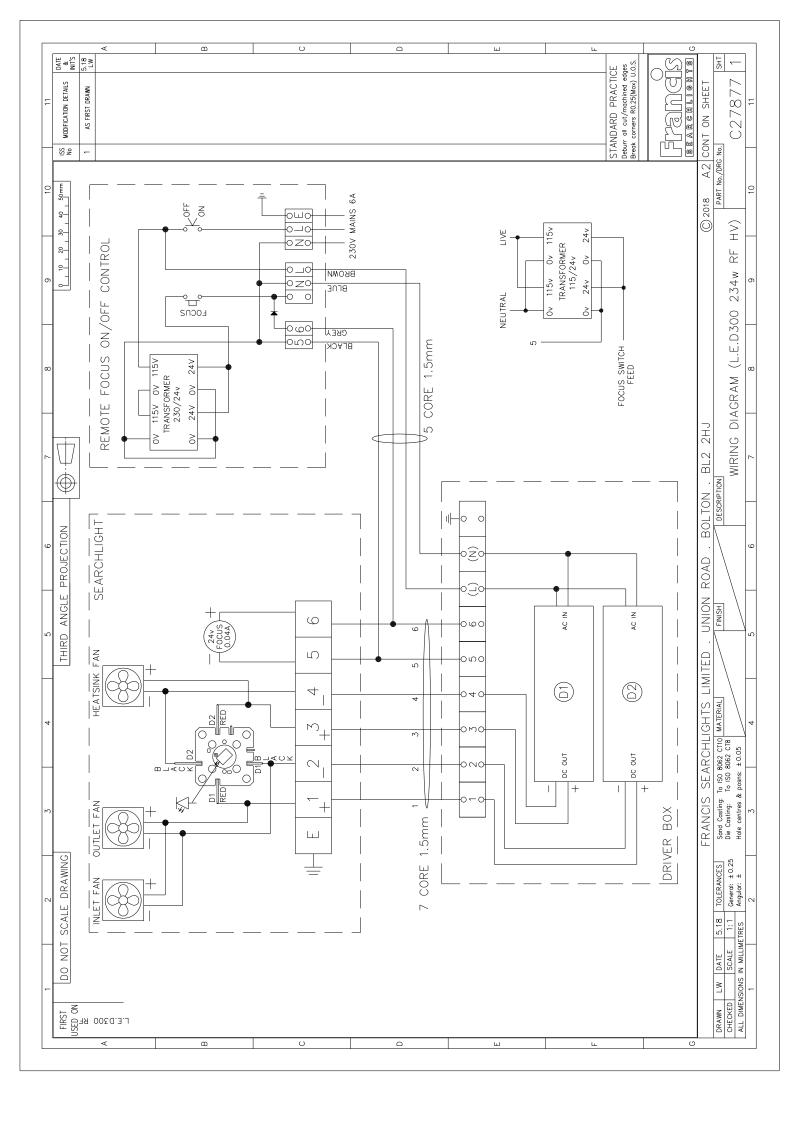
Drawing Number	Description
A6192	LED300 Deck General Assembly
A6193	LED300 Deck Pedestal General Assembly
A6194	LED300 Cabin General Assembly
A6195	LED300 Cabin Pedestal General Assembly
C27877	Wiring Diagram HV
C27879	Wiring Diagram LV
C27932	Driver Box Assembly HV
C27925	Driver Box Assembly LV
C21021 C21022	RF ON/OFF Control Unit HV RF ON/OFF Control Unit LV

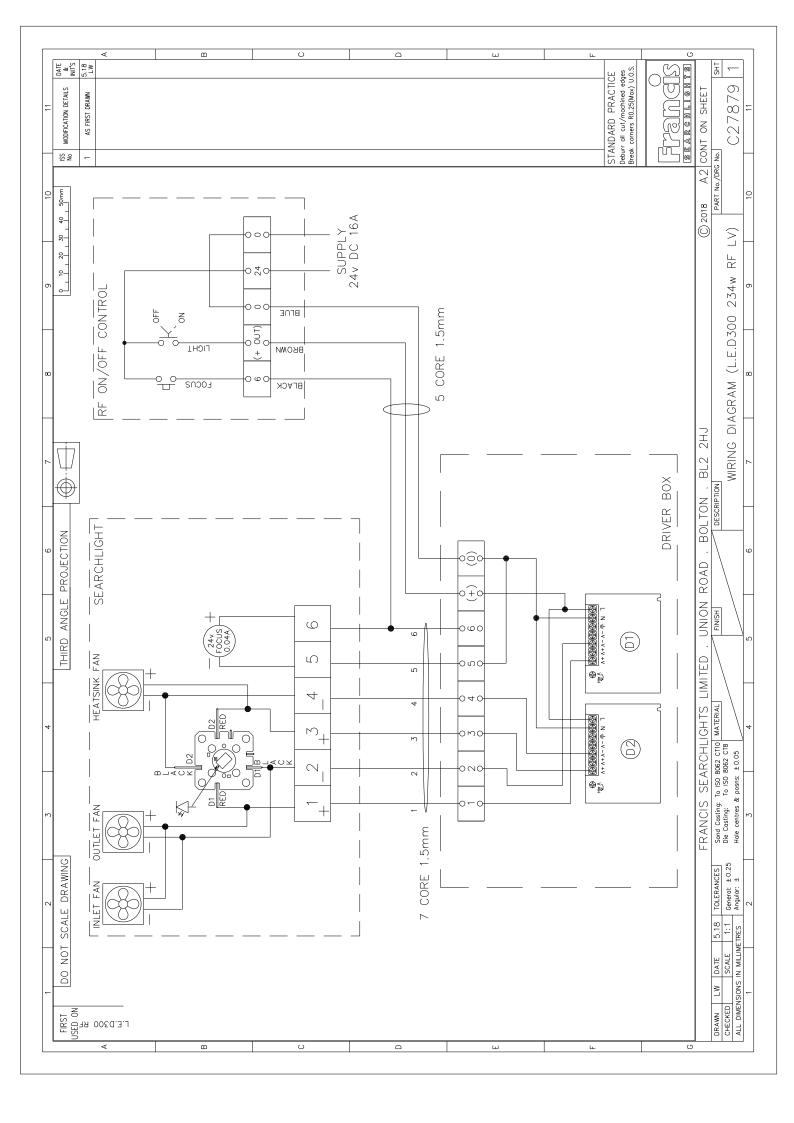


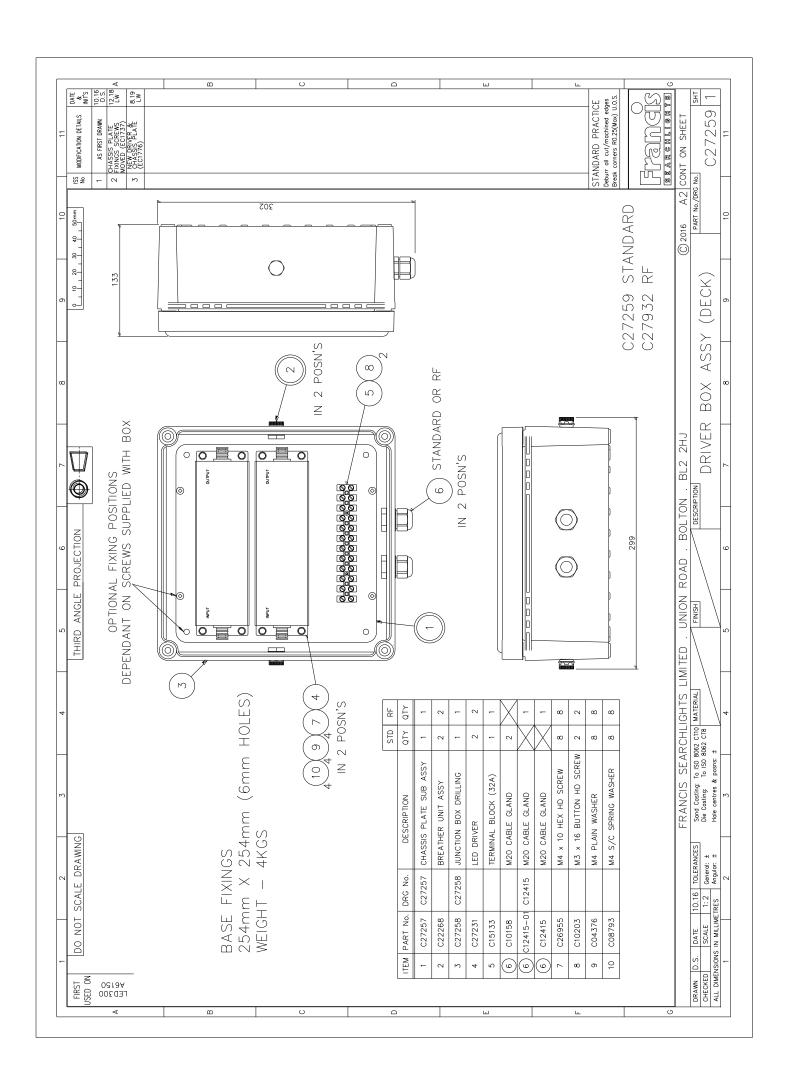


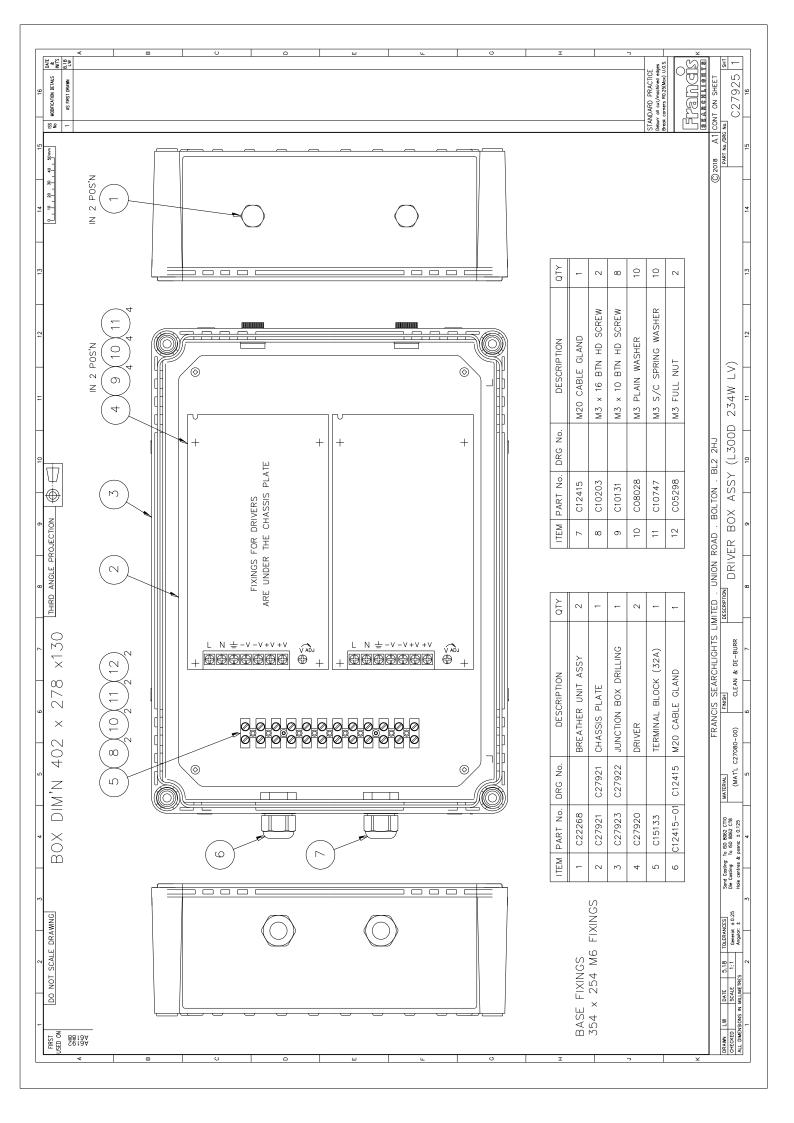


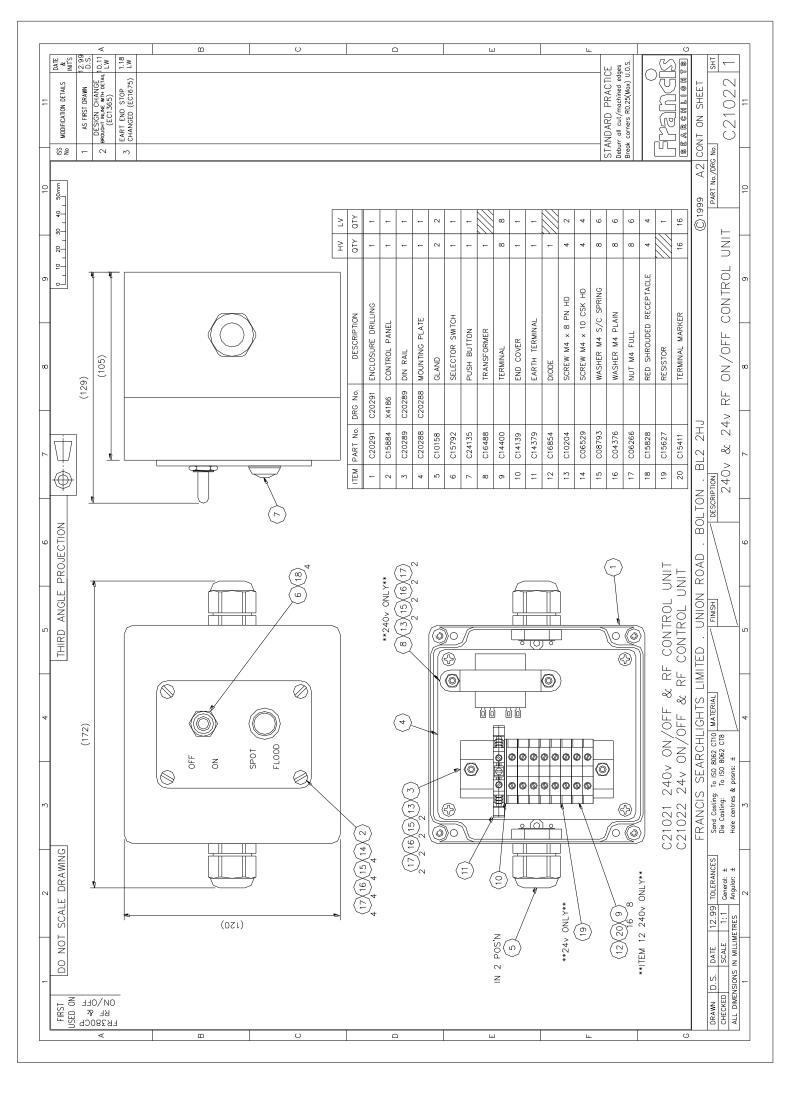












10 - Spare Parts List

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

Part Number	Description				
Searchlight					
C27229-01	LED Replacement Kit				
C27230-00	LED Adapter				
C27224-00	Front Glass				
C20567-00	Front Glass Gasket				
C22268-01	Breather Assembly				
C27820-00	Fan (Top & Bottom Vents)				
C27875-00	Fan (Heatsink)				
C16410-00	Focus Motor				
C16534-00	Focus Motor Cover				
C27143-00	Lens Ø200mm				
C27144-00	Lens Ø180mm				
C27145-00	Lens Ø114mm				
C27146-00	Lens Ø77mm				
C27147-00	Lens Ø74mm				
C11025-01	Pan & Tilt Lock Wheel Assembly (Deck & Deck Pedestal))				
C11026-01	Pan & Tilt Lock Wheel Assembly (Cabin & Cabin Pedestal)				
C10168-00	Base 'O' Ring (Deck & Cabin)				
C10169-00	Spigot 'O' Ring (Deck & Cabin)				
C21967-00	Bellows Bottom Bush 'O' Ring				
C22072-00	Push Rod Seal Washer				
C20634-00	Pedestal Base 'O' Ring (Deck Pedestal)				
C10170-00	Pedestal Base 'O' Ring (Cabin Pedestal)				
C20281-00	Bellows (Cabin & Cabin Pedestal)				
Driver Box	. == =				
C27231-00	LED Driver HV (2 Used)				
C27920-00	LED Driver LV (2 Used)				
Control Unit					
C25792-00	On/Off Selector Switch				
C24135-00	Focus Pushbutton				
C16488-00	Transformer (HV)				

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.