



## User Instruction & Installation Manual

### FX380 Manual Control 2Kw Xenon Searchlight



#### Product Reference Number:

- |                                    |                                    |
|------------------------------------|------------------------------------|
| <b>A6212 – 240v Deck</b>           | <b>A6216 – 115v Deck</b>           |
| <b>A6213 – 240v Deck Pedestal</b>  | <b>A6217 – 115v Deck Pedestal</b>  |
| <b>A6214 – 240v Cabin</b>          | <b>A6218 – 115v Cabin</b>          |
| <b>A6215 – 240v Cabin Pedestal</b> | <b>A6219 – 115v Cabin Pedestal</b> |

#### Manufacturer's details:

Francis Searchlights Ltd  
Union Road, Bolton  
Lancashire, BL2 2HJ, UK  
Tel: +44 (0) 1204 558960  
Fax: +44 (0) 1204 558979  
<http://www.francis.co.uk>  
E-mail: [sales@francis.co.uk](mailto:sales@francis.co.uk)

#### Distributor details:

Manual Part Number: C28412

17.11.25

Issue: 3

# CONTENTS

- 1 - Introduction
- 2 - Safety Precautions
- 3 - Technical Information
- 4 - Unpacking and Installation Instructions
- 5 - Electrical Installation
- 6 - Operating Instructions
- 7 - Fault Finding
- 8 - Maintenance and Servicing
- 9 - Wiring Diagram & General Assembly Drawings
- 10 - Spare Parts List

# 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 to ensure optimum performance and service life.

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

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 always quote the Product Serial Number.

## 2 - Safety Precautions

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

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

- Because of the high internal pressure within the lamp, there is a risk of explosion in either a hot or cold state.
- During operation, this lamp emits intense UV radiation which is harmful to the eyes and skin. Suitable protection should be worn.
- The high luminance of the arc can cause severe damage to the eye if viewed directly. ALWAYS wear suitable protective goggles when viewing the lamp.
- Always use protective jackets supplied with the lamp.
- Should it be necessary to examine the lamp with the front bezel removed, always use a protective shield and wear goggles to ensure a safe working environment.
- 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 lamp has cooled sufficiently before removal.
- If undue force appears necessary to remove the lamp, the equipment should be inspected by a competent person or contact the manufacturer.
- When disposing of lamps there are several options available:
  - Return the lamp, via the supplier, to the lamp manufacturer in its complete packaging.
  - Because of the cold internal pressure of the lamp is approximately 8 bar, the lamp must first be depressurized before disposal. Place the lamp, in its protective jacket, in a plastic bag and drop from a height of 1 to 2 metres onto a hard surface.
- Xenon lamps do not contain materials which are harmful to the environment and thus are not subject to special waste disposal regulations.
- Due to the vast range of lamps available it may appear possible that more powerful lamps can be used in the equipment than for which it was designed. Even when the unit will physically accept a higher wattage lamp, this substitution is not recommended and is dangerous. This action will also void any warranties on the equipment.
- Always refer to the lamp manufacturer's technical data when dealing with lamps.

### 3 - Technical Information

This product has been designed to operate in accordance with the product specification. The FX380 2Kw watt searchlight has the following features:

- All marine grade materials and fixings.
- Electronic power supply unit.
- Instant re-strike no cooling down time
- Parabolic glass reflector.
- Powder coated & stove enamel painted.
- Pan rotation 450°.
- Vertical movement  $\pm 45^\circ$  (Deck & Deck Pedestal)  $+20^\circ$  to  $-40^\circ$  (Cabin & Cabin Pedestal).
- Toughened super clear Optiwhite front glass.
- Internal self-regulating heater.
- Sealing IP56 Searchlight & IP20 Power supply.
- Weight Deck 50Kgs, Deck Pedestal 61Kgs, Cabin 55.5Kgs & Cabin Pedestal 70Kgs.
- Weight PSU 24Kgs.

The searchlight also performs to the following optical data:

- Xenon light source.
- Lamp Wattage - 2000 Watts.
- Supply voltage - 220/240V or 110/115V.
- Peak Beam Candlepower - 56,031,160 Lux.
- Range - 7,485 metres.
- Divergence -  $1.5^\circ$  spot to  $10^\circ$  flood.
- Lamp life 2400 hours.
- Temperature range  $-50^\circ\text{C}$ .

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.

Technical information on the Ignitor is included overleaf. For more detailed information please contact the manufacturer.

Ignitor ref.      ZG 120 XE



DATA SHEET

Made in  
Germany

## ZG 120 XE

**Igniter for low voltage DC-Lamps with Lamp-Currents up to 120 A**

### Features

Revolutionary drive system: needs no external power source,  
self synchronisation with ballast

- Igniter for DC-Xenon and HQ discharge lamps operated by electronic ballasts
- Suitable for low voltage and high current DC lamps with lamp voltages up to 100 V DC
- Compliant to RoHS-directive 2002/95/EC
- Self stopping operation (2 sec.)
- DC-Impedance of about 1000  $\mu\Omega$
- DC-Power loss of about 10 W @ 100 Amps, 15,8 W @ 120 Amps
- DC-Power loss of 28 W @ 160 Amps

# ZG 120XE

## TECHNICAL DATA

Rated current	120 A, no add cooling
Temporary over current < 3 min. within a period of 6 min.	200 A
Ignition voltage	Min. 32 kVp
Input voltage range	DC 0-160 V / threshold for ignition > 70 V
Operation mode	Asymmetrical: cathode or anode grounding
Ignition mode control	Self stopping igniter nearly 2 sec./self sourcing by ballast, no external source necessary
Pulse rate	Approximately 30/sec. @ 70 V
Repetition rate	Depend on ballast, break of min. 10 sec. is required
Operating temperature	115°C max. @ Ignitioncoil TP 1 / 85°C @ TP 2
Cable length	HV to lamp 50 cm max., for hot re-ignition: short as possible
Dimensions (L x W x H)	115 x 103 x 30/45 mm
Weight	1020 g
Connectors	4 x M6 screw-terminals with nuts M6 for cable-shoes

## REGULATORY SPECIFICATIONS

Safety	According to IEC (UL) 60950-1
RoHS	According to 2002/95/EC

## 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, 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. Fit the 'O' ring in position and bolt the searchlight base securely. On an uneven surface it is necessary to use a suitable sealant, such as silicone, to ensure a weatherproofed joint. 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.

To obtain the maximum light output from the searchlight, it is essential that the full operating voltage of the lamp fitted be applied to the lampholder 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 to overcome the voltage drop. The following table should be used for indication purposes only:

The following table below indicates the maximum length of cable to be used for the AC supply cable, from the control panel to the searchlight:

Searchlight	115v 2Kw	240v 2Kw
Cable Size (mm <sup>2</sup> )	Distance Max	Distance Max
1.5	8 MTRS	37 MTRS
2.5	14 MTRS	60 MTRS
4	22 MTRS	96 MTRS
6	34 MTRS	150 MTRS
10	57 MTRS	250 MTRS

- 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

**Note: This equipment must be earthed.**

## **Installation Guidelines**

A typical installation and connection routine for the searchlights is as follows:

Referring to wiring diagram C28404, a supply is fed to the PSU enclosure, which then provides a common feed to all other functions and equipment.

Cables required to be connected by the customer: -

4 cores 6mm cable from the Searchlight into the PSU enclosure, doubling up the pairs (3 metres supplied).

3 cores 2.5mm cable from the Searchlight into the PSU enclosure (3 metres supplied).

3 cores 2.5mm supply cable. (Customer to supply)

The searchlight head is pre-wired.

When the light is in operation the output from the PSU should be approximately 24v dc at 80amps.

## **Basic Operation**

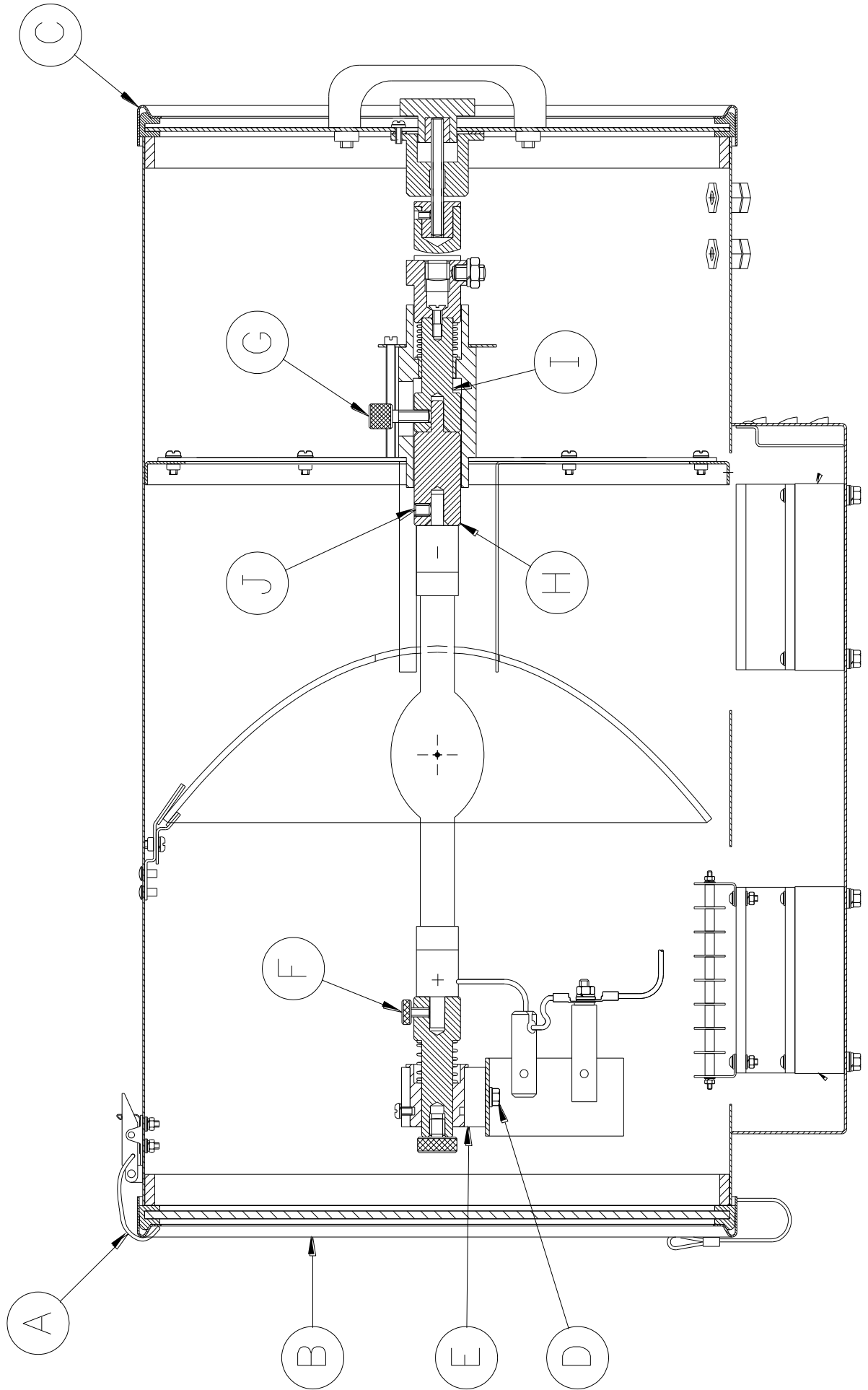
When the searchlight is switched on a 240v or 115v supply is fed to the PSU and linked to the ignitor. Also, from the PSU, a dc output is fed to the lamp.

The ignitor ionises the gas within the lamp and this strikes the light.

## Fitting instructions for the 2Kw xenon lamp

Referring to the diagram overleaf:

- 1) Unfasten the eight Latches (A) on the front and rear of the searchlight.
- 2) Remove the front bezel (B) and rear bezel (C) assemblies.
- 3) Unscrew the two M6 hexagon screws (D) from the front lampholder mounting block (E) and remove the front lampholder assembly from the mounting bracket.
- 4) Loosen the knurled screw on the front (F) and rear (G) lampholder assemblies.
- 5) Attach the **NEGATIVE (cathode)** end of the lamp to the lamp holder socket (H) which is supplied separately, using the M8 x 10 grub screw (J).
- 6) The lamp can now be inserted with the lamp holder socket into the lamp holder rear (I), The negative (cathode) end of the lamp is towards the rear of the searchlight.
- 7) On the rear lamp holder, tighten the knurled screw (G) onto the lamp holder socket (I) to hold the lamp in position.
- 8) Fasten the front lampholder mounting block back in position, it will be necessary to pull the front socket against its spring to fit over the lamp. When in place tighten the front knurled screw (F).
- 9) Fasten the front and rear lampholder leads as wiring diagram, ensuring the connections are secure.
- 10) The front bezel and rear bezel can now be replaced.
- 11) Removal is the reverse of the above.



## 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 PSU should be housed below deck/in doors. Never leave the PSU exposed to weather conditions.

The searchlight can be positioned using the elevation and baseplate lockwheels. When in the desired position the lockwheels must be securely fastened to prevent damage.

The beam of the searchlight can be adjusted to give a variety of beam types. By turning the focus lockwheel positioned on the Rear bezel assembly clockwise/anti-clockwise, the lamp holder mechanism moves through spot to flood positions. When the desired beam is achieved simply release the lock wheel.

**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.**

## Setting to Work

Safe service in use necessitates the strict observance of the following precautions.

- Any article fabricated from quartz or glass is inherently fragile and care should always therefore be taken when handling lamps.
- Eye protection must be worn when handling lamps that have been removed from their packaging materials. The protective jacket should not be removed from the lamp for safety reasons, as there is a remote possibility of the lamp shattering violently, especially if it is subjected to mechanical shock or vibration.
- Ensure that the power rating of the Xenon lamp to be fitted is suitable for the lamp house and power supply equipment (rectifier).
- Always isolate the equipment from the supply before inserting a lamp.
- Before inserting the lamp ensure that all contacts are clean. Contacts must be renewed at the slightest sign of corrosion. Sanding or filing down corroded areas is not recommended as this will only make the conducting surface between the pin and lampholder smaller, thus causing the lamp to overheat.
- The inert gas (Xenon) used in the lamps is under a pressure of several bar even when the bulb is cold. FOR SAFETY REASONS THE LAMP MAY ONLY BE INSERTED INTO THE LAMPHOUSE WITH THE PROTECTIVE JACKET FITTED.
- Do not twist or bend the fused quartz bulb when fitting the lamp as mechanical stresses MUST be avoided.
- Ensure that the spring contacts firmly surround the pins on the cap of the lamp. Do not apply unnecessary force when tightening the screws.
- After inserting the lamp, ensure that there is sufficient axial play in the lampholder. The lamp must be capable of unimpeded expansion when it warms up to operating temperature. Mechanical forces must not be applied to the fused quartz bulb.
- Electrical leads must be arranged in such a way that there is a sufficient air gap (approximately 40mm) between them and the lamphouse, to prevent flashovers from the ignition voltage. All flexible leads must have strain-relieving clamps.
- Before putting the lamp into service for the first time, check the polarity of the electrical connections. INCORRECT POLARITY WILL CAUSE IMMEDIATE DESTRUCTION OF THE LAMP.
- Before the protective jacket is removed, suitable protection must be worn i.e., face mask and gloves with wrist protection.
- Never touch the quartz bulb with bare hands, as fingerprints will make the glass cloudy and cause a severe loss of light. This may also cause recrystallisation and thus weaken the bulb material. Should the bulb be inadvertently touched, remove fingerprints with methylated spirit and a clean, soft paper towel. The bulb should then be wiped with distilled water. NOTE: ALWAYS WEAR MASK AND GLOVES DURING CLEANING).
- All packaging and the protective jacket must be retained for re-use. Whenever removing a lamp, the protective jacket must always be used for safety reasons.

**Notes:**

- 1) The lamps are designed for dc operation only. The dc current may only be varied within the limits of the current control range. The lamp operates best at rated current; over the life of the lamp, the current may be increased to its maximum value to compensate for loss of light. The output of the lamp can be reduced by operating the lamp at minimum current, but this does not prolong the life of the lamp.
- 2) For safety reasons, the lamps should be replaced once they reach the end of their average lamp life, and not later than 1.25 times their average lamp life. After this time there is an increased risk of the lamp exploding.
- 3) The anode (positive cap marked '+') must be on top when the lamp is inserted in the vertical position. If the anode is incorrectly inserted the arc will be unstable, the bulb will blacken more quickly, and the lamp will prematurely fail.
- 4) The HT lead from the high voltage terminal of the ignitor, must be connected to the cathode (negative cap marked '-'). If the lamp is connected with the wrong polarity it will be irreparably damaged after a very short time.
- 5) In all circumstances the lamp manufacturer's data should be referred to when dealing with lamps.

## 7- Fault Finding

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

Please refer to the following table for the troubleshooting of Xenon lamps.

Fault	Cause	Remedy
<ul style="list-style-type: none"> <li>■ Wrong Polarity.</li> </ul>	<ul style="list-style-type: none"> <li>■ Lamp incorrectly fitted.</li> <li>■ Faulty wiring.</li> </ul>	<ul style="list-style-type: none"> <li>■ Anode (large electrode) must always be on top in vertical burning position.</li> <li>■ Check polarity, transpose connections if necessary.</li> </ul>
<ul style="list-style-type: none"> <li>■ Cap overheated.</li> <li>■ Cap temperature above 230°C.</li> </ul>	<ul style="list-style-type: none"> <li>■ Faulty contacts.</li> <li>■ Cooling equipment defective.</li> </ul>	<ul style="list-style-type: none"> <li>■ Check terminals, tighten or renew.</li> <li>■ Check cooling equipment and replace if necessary.</li> </ul>
<ul style="list-style-type: none"> <li>■ Arc unsteady.</li> </ul>	<ul style="list-style-type: none"> <li>■ Lamp operated outside current control range.</li> <li>■ Magnetic stabilisation for horizontal operation defective.</li> </ul>	<ul style="list-style-type: none"> <li>■ Correct current setting.</li> <li>■ Check magnetic stabilisation.</li> </ul>
<ul style="list-style-type: none"> <li>■ Bulb draws in air.</li> </ul>	<ul style="list-style-type: none"> <li>■ Crack in graded seal caused by overheated cap.</li> <li>■ Maximum cap temperature 230°C.</li> </ul>	<ul style="list-style-type: none"> <li>■ Check terminals - tighten or renew.</li> </ul>
<ul style="list-style-type: none"> <li>■ Glass erosion on fused quartz bulb.</li> </ul>	<ul style="list-style-type: none"> <li>■ Lamp operated outside current control range.</li> <li>■ Lamp service life exceeded.</li> </ul>	<ul style="list-style-type: none"> <li>■ Correct current setting.</li> <li>■ Check meter.</li> </ul>
<ul style="list-style-type: none"> <li>■ Electrodes damaged.</li> <li>■ Premature blackening.</li> </ul>	<ul style="list-style-type: none"> <li>■ Current ripple too high.</li> <li>■ Auxiliary mirror incorrectly adjusted.</li> </ul>	<ul style="list-style-type: none"> <li>■ Have power supply inspected.</li> <li>■ Adjust auxiliary mirror.</li> </ul>
<ul style="list-style-type: none"> <li>■ Asymmetrical blackening of lamp (in horizontal burning position).</li> </ul>	<ul style="list-style-type: none"> <li>■ Lamp operated too long in same position.</li> </ul>	<ul style="list-style-type: none"> <li>■ Turn lamp through 180° after half service life.</li> </ul>

## Failure of Lamp to Ignite

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

- 1) Check that the mains supply is connected to the input of the PSU. On operating the lamp switch, if the lamp does not light, switch off mains supply and check all fuses.
- 2) On pressing the lamp switch the lamp still does not ignite, check the searchlight head. On your command get an operator to activate the switch for approximately 10 seconds. During this time listen for any noise (cracking or hissing) coming from within the barrel. If this arcing is heard switch off the supply at the mains. Remove the rear bezel to expose the two supply leads to the xenon lamp. Using a dry cloth wipe these leads to remove any dust, moisture or condensation that may have formed around the inside of the barrel. Replace the rear bezel, ensuring the latches are located, and perform the check again, listening for the cracking. If the lamp still fails to ignite, switch off at the mains and replace the xenon lamp in accordance with the safety procedures within this manual and the manufacturer's information.

**Any further tests to be carried out with regards to lamp failure must be conducted by a competent electrical engineer and should not be carried out in an explosive atmosphere.**

- 3) Before a xenon lamp will ignite, the electrically insulated gas between the electrodes must be ionised. This is done by the ignitor which produces a high frequency voltage (up to 40,000 volts or higher). The ignitor is activated by switching the lamp on and a crackling or hissing noise should be heard. The ignitor is housed within the rear of the searchlight barrel. This is a totally encapsulated unit and repair is not advised. If found to be faulty a new ignitor must be fitted.

## 8 - Maintenance and Servicing

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

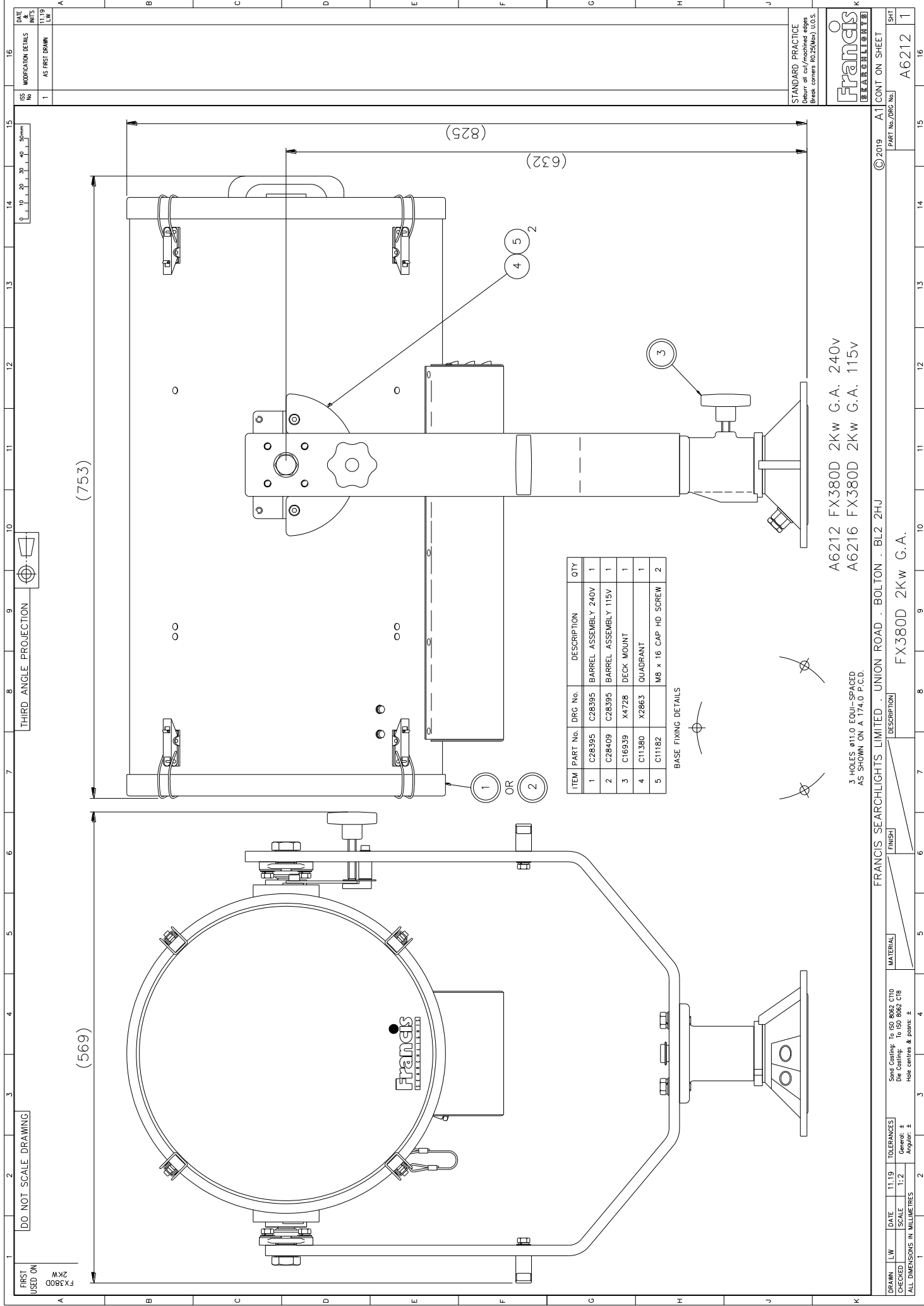
- Maintenance checks should be conducted before every voyage or at least every three months.
- Before checking, disconnect the equipment from the supply.
- Visually inspect the condition of the equipment.
- Any major or minor structural damage should be rectified immediately to reduce sympathetic wear.
- 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.
  - Check the reflector mounting gaskets. If signs of corrosion or damage are evident, replace, as necessary.
  - Ensure that the lampholder is free from corrosion or other damage.
  - Check earth point for conductivity.
- 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 Diagram & General Assembly Drawings

<b>Drawing Number</b>	<b>Description</b>
C28404	240v/115v Xenon Wiring Diagram
A6212	FX380 Deck General Assembly
A6213	FX380 Deck Pedestal General Assembly
A6214	FX380 Cabin General Assembly
A6215	FX380 Cabin Pedestal General Assembly
C28713	PSU Enclosure Assembly





FIRST USED ON  
FX380  
2KW

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

DATE	INIT'S	DATE	INIT'S
1.1.19	LW	1.1.19	LW
MODIFICATION DETAILS		AS FIRST DRAWN	
1			

(569)

(753)

(825)

(632)

ITEM	PART No.	DRG No.	DESCRIPTION	QTY
1	C28395	C28395	BARREL ASSEMBLY 240V	1
2	C28409	C28395	BARREL ASSEMBLY 115V	1
3	C16939	X4728	DECK MOUNT	1
4	C11380	X2863	QUADRANT	1
5	C11182		M8 x 16 CAP HD SCREW	2

BASE FIXING DETAILS

A6212 FX380D 2Kw G.A. 240v  
A6216 FX380D 2Kw G.A. 115v

3 HOLES ø11.0 EQUI-SPACED  
AS SHOWN ON A 174.0 P.C.D.

DRWN	LW	DATE	1.1.19	TOLERANCES	General: ± Angular: ±
CHECKED		SCALE	1:2		
ALL DIMENSIONS IN MILLIMETRES				Sand Coating: To ISO 8002 CT10 Die Coating: To ISO 8002 C18 Hole Centres & Pairs: ±	
FRANCIS SEARCHLIGHTS LIMITED · UNION ROAD · BOLTON · BL2 2JH				PART No./DRG No.	
© 2019 A1 CONT ON SHEET				SHT	
				A6212 1	

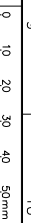


STANDARD PRACTICE  
Debur all cut/machined edges  
Break corners R0.2(Max) U.S.O.S.

FIRST USED ON  
FX380DP  
2Kw

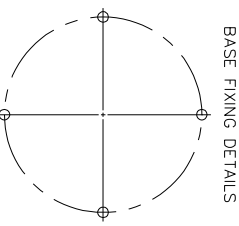
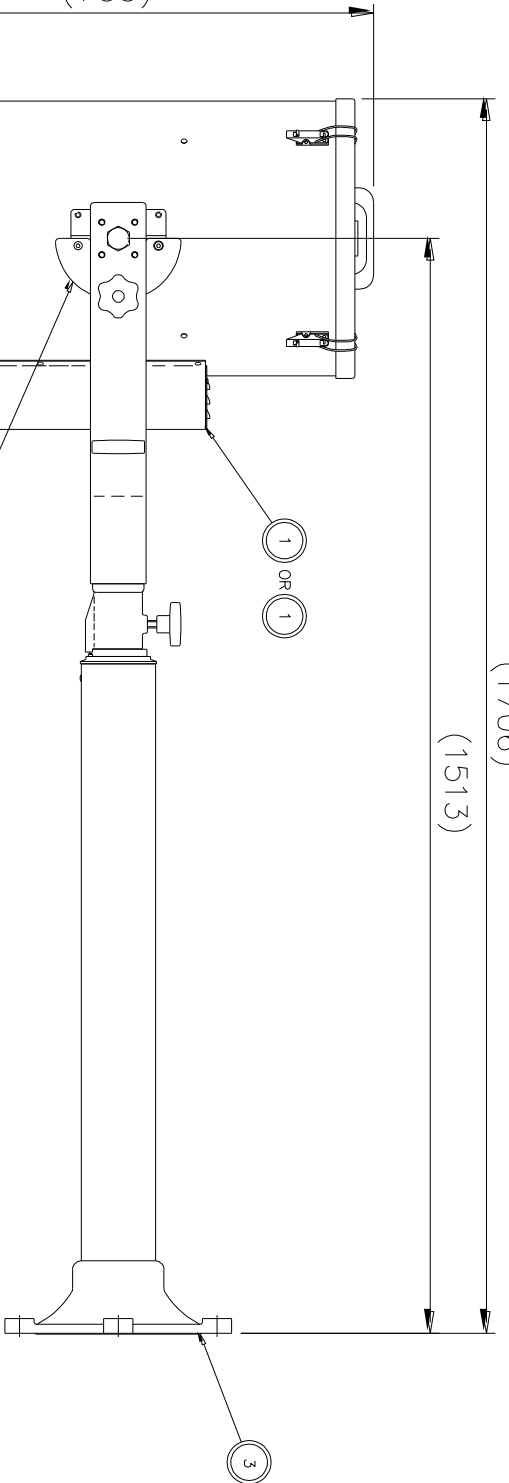
DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION



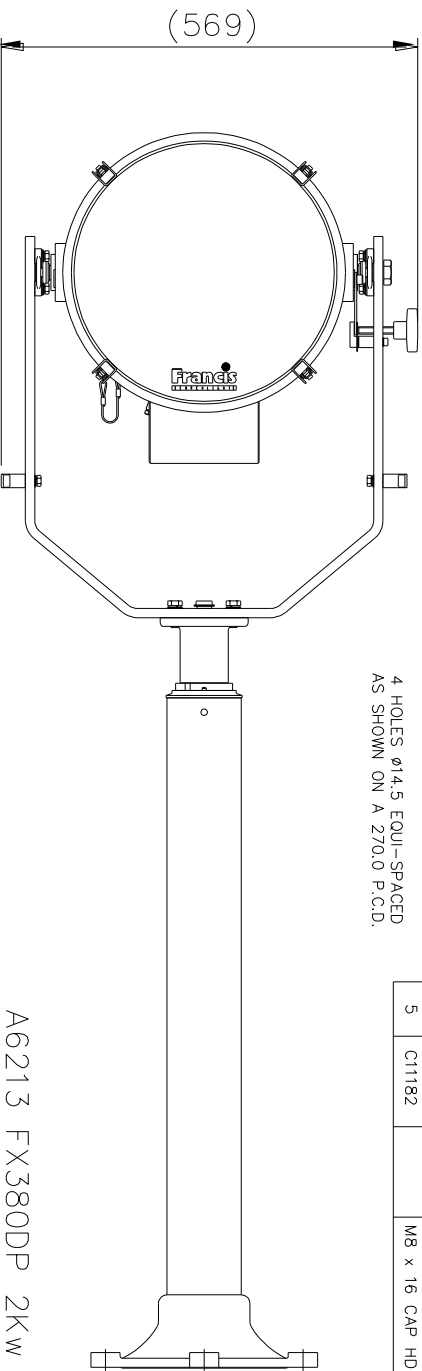
ISS No  
MODIFICATION DETAILS  
1 AS FIRST DRAWN  
DATE & INT'S  
11.19 L/W

(1706)  
(1513)



4 HOLES,  $\phi 14.5$  EQUI-SPACED  
AS SHOWN ON A 270.0 P.C.D.

ITEM	PART No.	DRG No.	DESCRIPTION	QTY
1	C28395	C28395	BARREL ASSEMBLY 240V	1
2	C28409	C28395	BARREL ASSEMBLY 115V	1
3	C16940	X4729	DECK MOUNT	1
4	C11380	X2863	QUADRANT	1
5	C11182		M8 x 16 CAP HD SCREW	2



A6213 FX380DP 2Kw G.A. 240V  
A6217 FX380DP 2Kw G.A. 115V

FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HU

© 2019 A2 CONT ON SHEET



STANDARD PRACTICE  
Debur all cut/machined edges  
Break corners R0.25(Max) U.O.S.

DRAWN	LW	DATE	TOLERANCES
CHECKED	SCALE	1:5	General: ± Angular: ±
ALL DIMENSIONS IN MILLIMETRES			

Sand Casting: To ISO 8062 CT10	MATERIAL	FINISH	DESCRIPTION
Die Casting: To ISO 8062 CT18			
Hole centres & bores ±			

FX380DP 2Kw G.A.

PART No./DRG No.	SHT
A6213	1

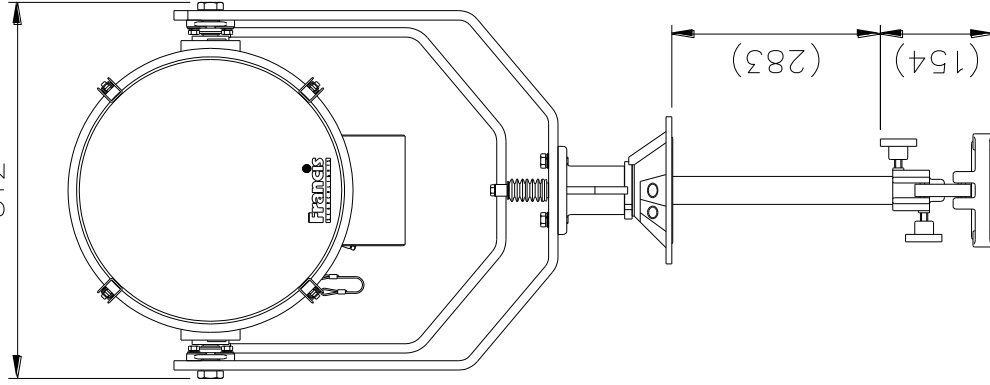
FIRST USED ON  
FX380C  
2kw

DO NOT SCALE DRAWING

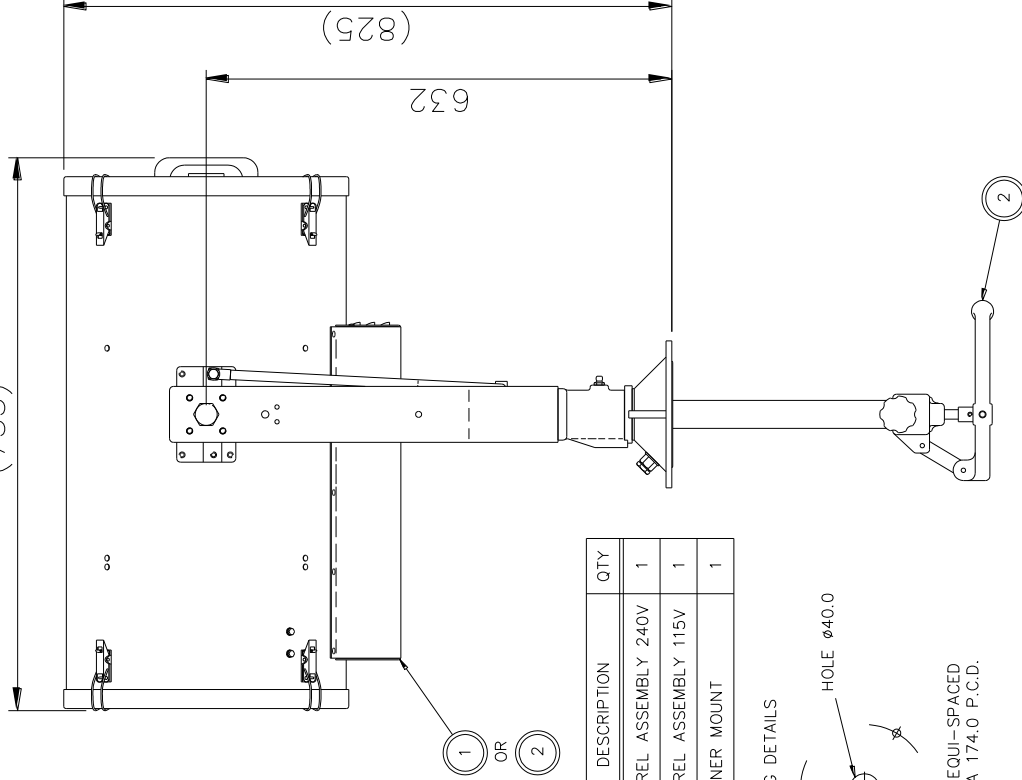
THIRD ANGLE PROJECTION

ISS No	1
DATE & INT'S	11.19 LW
MODIFICATION DETAILS	AS FIRST DRAWN

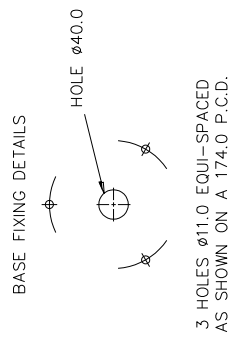
512



(753)



ITEM	PART No.	DRG No.	DESCRIPTION	QTY
1	C28395	C28395	BARREL ASSEMBLY 240V	1
2	C28409	C28395	BARREL ASSEMBLY 115V	1
3	C16938	X4726	TRAINER MOUNT	1



A6214 FX380C 2KW G.A. 240V  
A6218 FX380C 2KW G.A. 115V

FRANCIS SEARCHLIGHTS LIMITED · UNION ROAD · BOLTON · BL2 2HT

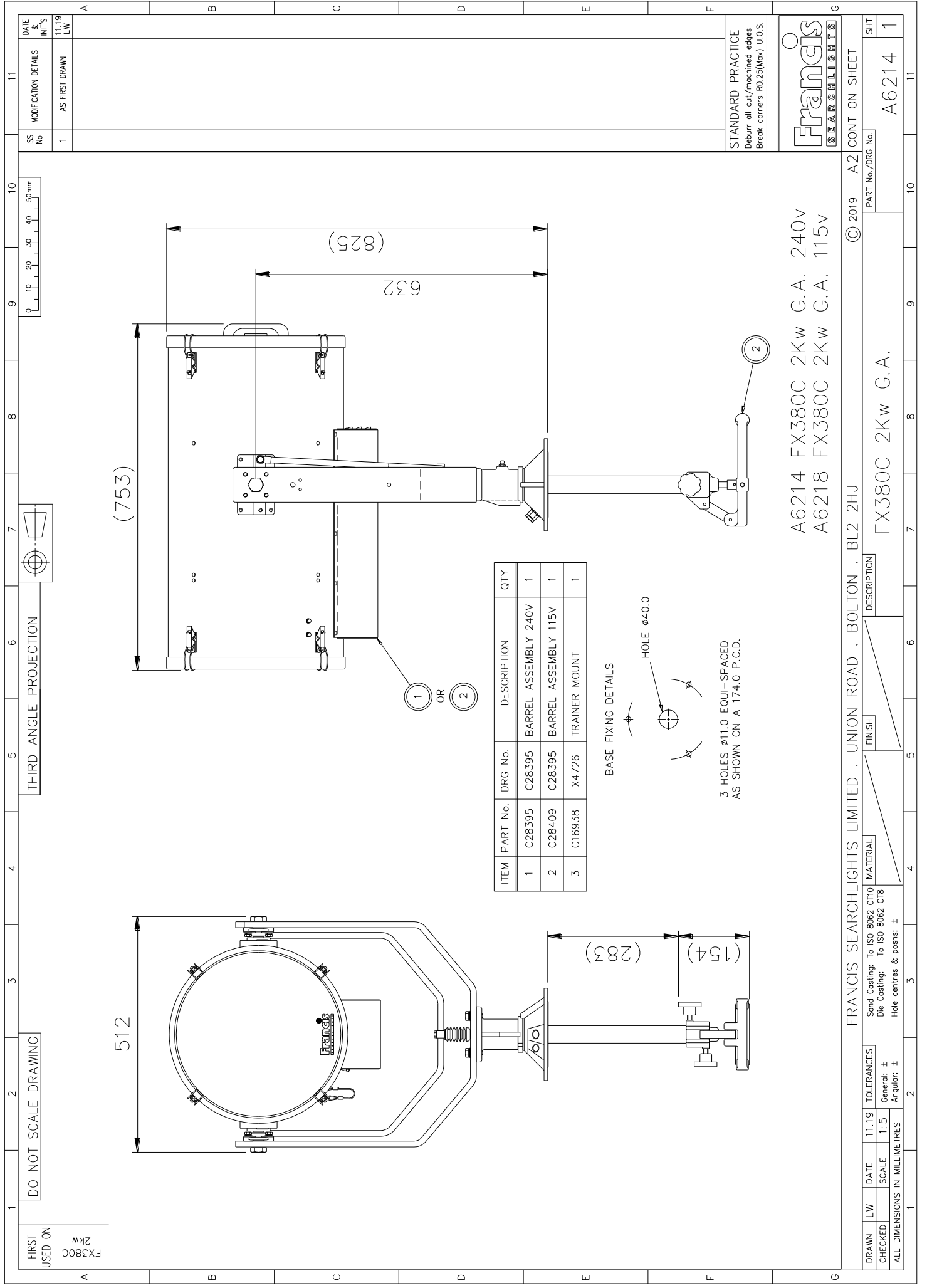
DRAWN	LW	DATE	11.19	TOLERANCES	Send Casting: To ISO 8062 CT10 Die Casting: To ISO 8062 CT8
CHECKED		SCALE	1:5	General: $\pm$ Angular: $\pm$	
ALL DIMENSIONS IN MILLIMETRES				Hole centres & posns: $\pm$	

FINISH	DESCRIPTION
	FX380C 2KW G.A.

© 2019 A2 CONT ON SHEET

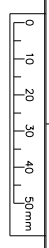
**Francis**  
SEARCHLIGHTS

PART No./DRG No.	A6214
SHT	1



FIRST USED ON DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

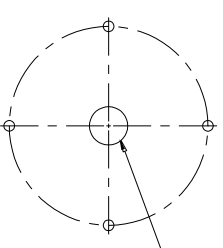
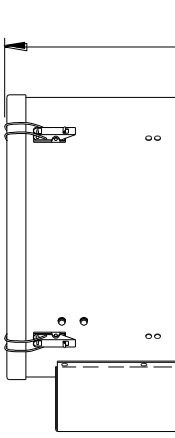
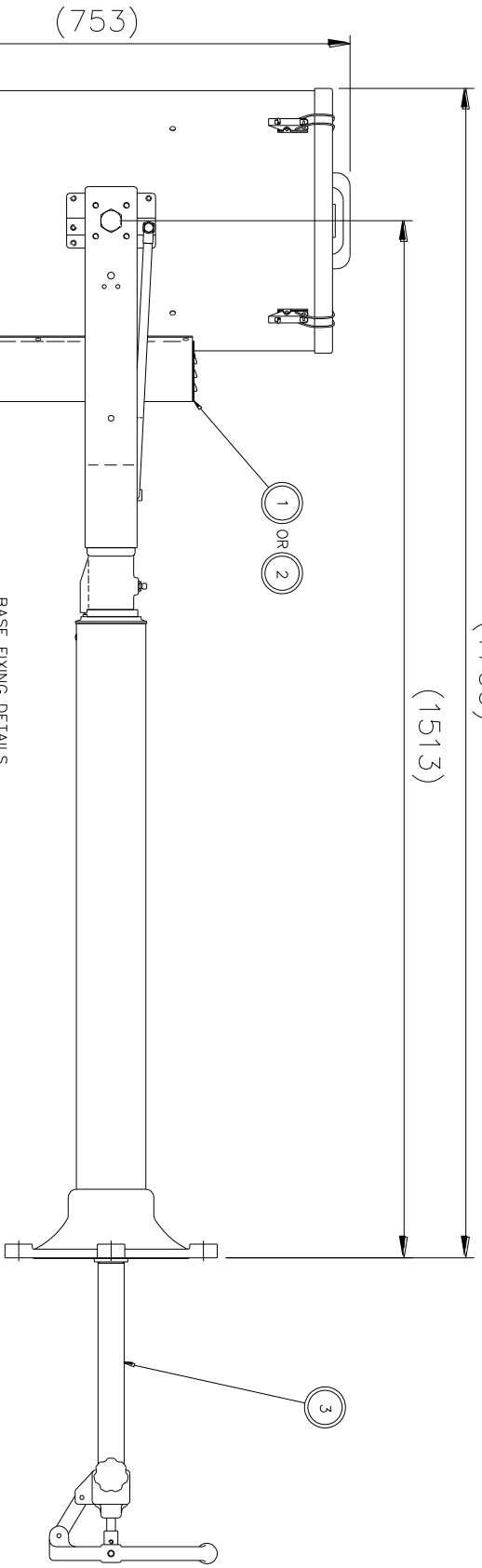


ISS No	MODIFICATION DETAILS	DATE & INT'S
1	AS FIRST DRAWN	11.19 LW

FX380CP  
2Kw

(1706)

(1513)



BASE FIXING DETAILS

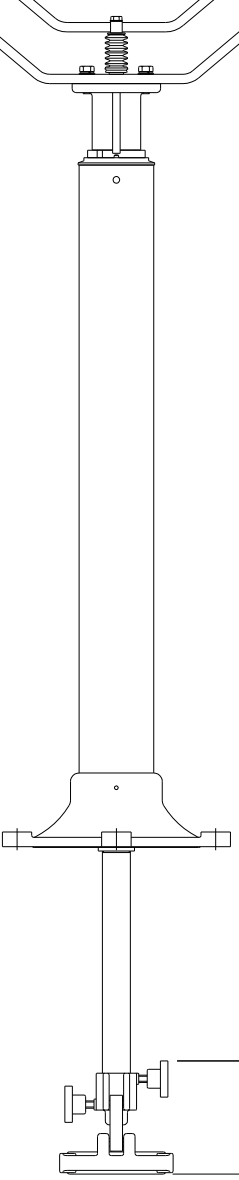
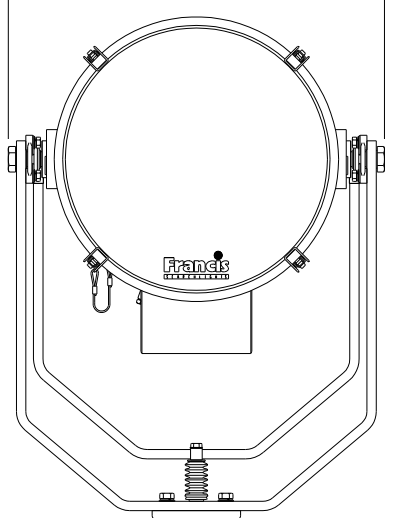
HOLE  $\phi 52.0$

4 HOLES,  $\phi 14.5$  EQUI-SPACED AS SHOWN ON A 270.0 P.C.D.

ITEM	PART No.	DRG No.	DESCRIPTION	QTY
1	C28395	C28395	BARREL ASSEMBLY 240V	1
2	C28409	C28395	BARREL ASSEMBLY 115V	1
3	C15555	X4727	TRAINER MOUNT	1

(291)

(154)



A6215 FX380CP 2Kw G.A. 240V  
A6219 FX380CP 2Kw G.A. 115V

STANDARD PRACTICE  
Debur all out/machined edges  
Break corners R0.25(Min) U.O.S.



FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2JU

© 2019

A2 CONT ON SHEET

DRAWN	LW	DATE	11.19	TOLERANCES
CHECKED	SCALE	1:5	General: $\pm$	Angular: $\pm$

Send Castings: To ISO 8062 CT10  
Die Castings: To ISO 8062 C18  
Hole centres & posns:  $\pm$

MATERIAL

FINISH

DESCRIPTION

FX380CP 2Kw G.A.

PART No./DRG No.

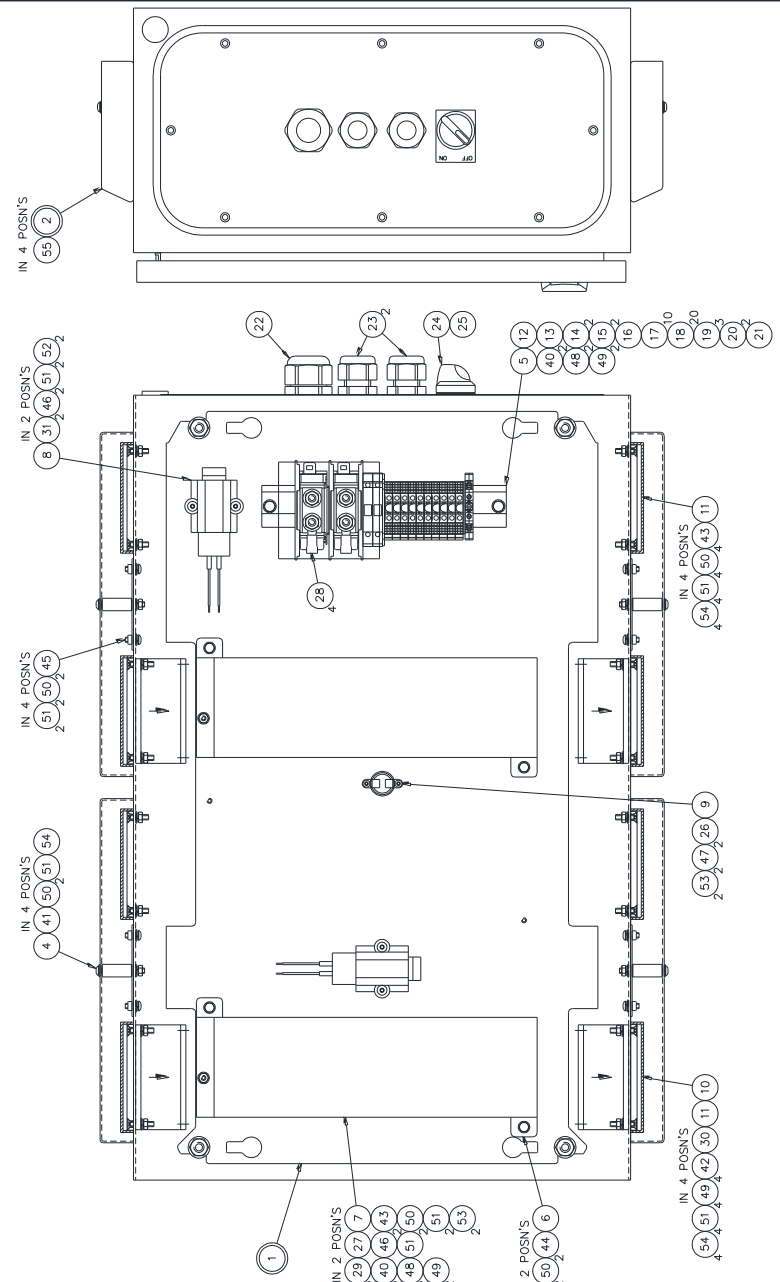
A6215

SHT 1

FIRST USED ON  
 18/02/2020  
 82/32  
 L

DO NOT SCALE DRAWING

ITEM	PART No.	DRG No.	DESCRIPTION	QTY	240V 115V
1	C28261	C28261	CHASSIS PLATE SUB ASSY	1	1
2	C25012	C28261	FAN SPLASH COVER SUB ASSY	4	4
3	C28712	C28712	ENCLOSURE DRILLING	1	1
4	C24687	C24687	SPLASH COVER PILLAR	4	4
5	C30116	C30116	PSU DIN RAIL	1	1
6	C28263	C28263	PSU PLATE	2	2
7	C28264	C28264	1K XENON PSU 240V	2	2
8	C28265	C28265	1K XENON PSU 115V	2	2
9	C24889	C24889	HEATER	2	2
10	C18330	C18330	THERMAL SWITCH	1	1
11	C16931	C16931	FAN 240V	4	4
12	C25013	C25013	FAN COVER	8	8
13	C14379	C14379	FAN 115V	4	4
14	C24118	C24118	FAN COVER	8	8
15	C27208	C27208	EARTH TERMINAL	1	1
16	C14139	C14139	TERMINAL FUSE END COVER	1	1
17	C15099	C15099	TERMINAL FUSE	2	2
18	C14111	C14111	TERMINAL END COVER	1	1
19	C1175	C1175	TERMINAL MARKER	20	20
20	C10861	C10861	H/C TERMINAL SPACER	3	3
21	C10469	C10469	H/C TERMINAL	2	2
22	C15450	C15450	H/C TERMINAL COVER	1	1
23	C12415	C12415	M25 CABLE GLAND	1	1
24	C23002	C23002	M20 CABLE GLAND	2	2
25	C14146	C14146	SELECTOR SWITCH	1	1
26	C18228	C18228	LEGEND PLATE	1	1
27	C09299	C09299	RED SHROUDED CRIMP	2	2
28	C22701	C22701	M4 RED EYELET	2	2
29	C02185	C02185	M6 YELLOW EYELET	4	4
30	C29149	C29149	M5 YELLOW EYELET	4	4
31	C27962	C27962	3 WAY LEVER CONNECTOR	4	4
32	C21464	C21464	M4 x 10 PILLAR	4	4
33	C22078	C22078	240V WARNING LABEL	1	1
34	C22036	C22036	115V WARNING LABEL	1	1
35	C04900	C04900	ISOLATE SUPPLY LABEL	1	1
36	C14162	C14162	FRANCIS EXTERIOR LABEL	1	1
37	C28799	C28799	6mm S/C SILICONE CABLE BLACK	A/R	A/R
38	C18338	C18338	6mm S/C SILICONE CABLE RED	A/R	A/R
39	C19112	C19112	1.5mm S/C SILICONE CABLE BROWN	A/R	A/R
40	C13351	C13351	1.5mm S/C SILICONE CABLE BLUE	A/R	A/R
41	C14468	C14468	1.5mm S/C SILICONE CABLE G/Y	A/R	A/R
42	C10120	C10120	M5 x 10 HEX HD SCREW	6	6
43	C08361	C08361	M4 x 16 SKT CSK HD SCREW	16	16
44	C26955	C26955	M4 x 10 HEX HD SCREW	20	20
45	C14533	C14533	M4 x 20 SKT CSK HD SCREW	4	4
46	C23813	C23813	M4 x 8 BUTON HD SCREW	8	8
47	C14502	C14502	M4 x 10 BUTON HD SCREW	6	6
48	C08392	C08392	M3 x 6 BUTON HD SCREW	6	6
49	C09231	C09231	M5 S/C SPRING WASHER	6	6
50	C04376	C04376	M4 PLAIN WASHER	56	56
51	C09793	C09793	M4 S/C SPRING WASHER	58	58
52	C20637	C20637	M4 x 12 O/D WASHER	4	4
53	C10747	C10747	M5 S/C SPRING WASHER	2	2
54	C06266	C06266	M4 FULL NUT	40	40
55	C12039	C12039	CLEAR RTV	A/R	A/R

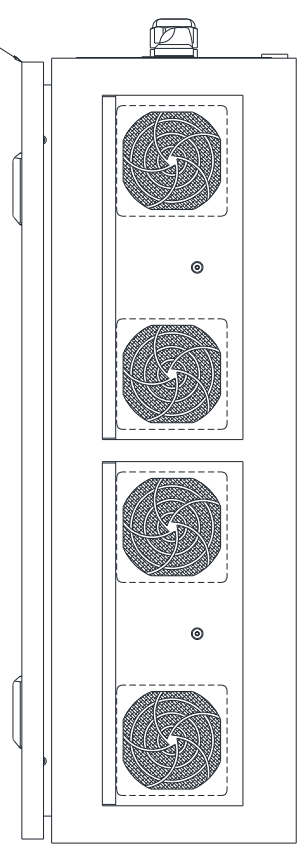


USE ITEMS BELOW FOR WIRING  
 SEE WIRING DIAGRAM FOR DETAILS

- 35
- 36
- 37
- 38
- 39

C28713 2KW DECK PSU ENCLOSURE ASSY 240V  
 C28714 2KW DECK PSU ENCLOSURE ASSY 115V

ENCLOSURE BASE FIXINGS  
 560 x 340 M8 FIXINGS  
 WEIGHT 20KGS



DATE: 18/02/2020  
 DWG No: 82/32 L

MODIFICATION DETAILS	DATE
1 AS FIRST DRAWN	18/02/2020
2 SWITCH ADDED	10/03/2020
3 C28714 115V DECK PSU ASSY ADDED	11/06/2020
3 C28149 OTY 4 ADDED TO MATCH H/E/C	11/06/2020
3 C28149 OTY 4 ADDED (C2094)	11/06/2020

STANDARD PRACTICE  
 1. All dimensions in millimetres  
 2. Break corners R0.25(Max) U.S.



© 2020 A1 CONT ON SHEET 2  
 PART No./DRG No. C28713/1  
 SHEET 16

FRANCIS SEARCHLIGHTS LIMITED · UNION ROAD · BOLTON · BL2 2JH  
 2KW XENON POWER SUPPLY ASSEMBLY  
 FINISH: MATERIAL: TOLERANCES: Send Casting: to ISO 8062 CT10  
 Die Casting: to ISO 8062 CT8  
 General: ±  
 Angular: ±  
 Hole centres & posits: ±

DATE	16
UNITS	7.50
MODIFICATION DETAILS	AS FIRST DRAWN
ISS No	1
2	SWITCH ADDED
3	PSU 115V AND OTHER PARTS ADDED TO SWITCH ASSEMBLY (C28149 QTY 4 ADDED (EC2094)
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

DATE	7.20
SCALE	1:2
TOLERANCES	See Callouts To ISO 8062 C10
CHECKED	Scale: To ISO 8062 C18
ALL DIMENSIONS IN MILLIMETRES	Angular: ±
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

ITEM	PART No.	DRG No.	DESCRIPTION	240V	115V
1	C28261		CHASSIS PLATE SUB ASSY	1	1
2	C25012		FAN SPLASH COVER SUB ASSY	4	4
3	C28712		ENCLOSURE DRILLING	1	1
4	C24687		SPLASH COVER PILLAR	4	4
5	C30116		PSU DIN RAIL	1	1
6	C28263		PSU PLATE	2	2
7	C28264		1K XENON PSU 240V	2	2
8	C23277		HEATER	2	2
9	C24889		THERMAL SWITCH	1	1
10	C16930		FAN 240V	4	4
11	C25013		FAN COVER	8	8
12	C14379		EARTH TERMINAL	1	1
13	C27209		TERMINAL FUSE END COVER	1	1
14	C24118		3A FUSE	2	2
15	C27208		TERMINAL FUSE	2	2
16	C14139		TERMINAL END COVER	1	1
17	C15099		TERMINAL	10	10
18	C15411		TERMINAL MARKER	20	20
19	C11175		H/C TERMINAL SPACER	3	3
20	C10861		H/C TERMINAL	2	2
21	C10469		H/C TERMINAL COVER	1	1
22	C15450		M25 CABLE GLAND	1	1
23	C12415		M20 CABLE GLAND	2	2
24	C23002		SELECTOR SWITCH	1	1
25	C14146		LEGEND PLATE	1	1
26	C19828		RED SHROUDED CRIMP	2	2
27	C09299		M4 RED EYELET	2	2
28	C22701		M6 YELLOW EYELET	4	4
29	C02185		M5 YELLOW EYELET	4	4
30	C28149		3 WAY LEVER CONNECTOR	4	4
31	C27962		M4 x 10 PILLAR	4	4
32	C27464		240V WARNING LABEL	1	1
33	C22078		115V WARNING LABEL	1	1
34	C22036		ISOLATE SUPPLY LABEL	1	1
35	C04900		FRANCIS EXTERIOR LABEL	1	1
36	C14161		6mm S/C SILICONE CABLE RED	A/R	A/R
37	C14162		6mm S/C SILICONE CABLE BLACK	A/R	A/R
38	C28799		1.5mm S/C SILICONE CABLE BROWN	A/R	A/R
39	C16838		1.5mm S/C SILICONE CABLE BLUE	A/R	A/R
40	C13351		M5 x 10 HEX HD SCREW	6	6
41	C14468		M4 x 35 BUTTON HD SCREW	4	4
42	C10120		M4 x 20 SKT CSK HD SCREW	16	16
43	C06981		M4 x 16 SKT CSK HD SCREW	20	20
44	C26955		M4 x 10 HEX HD SCREW	4	4
45	C14533		M4 x 10 BULTON HD SCREW	8	8
46	C23813		M4 x 8 BULTON HD SCREW	6	6
47	C14502		M3 x 6 BULTON HD SCREW	2	2
48	C08392		M5 PLAIN WASHER	6	6
49	C08231		M5 S/C SPRING WASHER	6	6
50	C04376		M4 PLAIN WASHER	56	56
51	C08793		M4 S/C SPRING WASHER	58	58
52	C26637		M4 x 12 O/D WASHER	4	4
53	C10747		M3 S/C SPRING WASHER	2	2
54	C06266		M4 FULL NUT	40	40
55	C12039		CLEAR RTV	A/R	A/R

FRANCIS SEARCHLIGHTS LIMITED	UNION ROAD	BOLTON	BL2 2HU
DESCRIPTION	2KW XENON POWER SUPPLY ASSEMBLY		
FINISH			
MATERIAL			
© 2020	A1	CONT. ON SHEET	
PART No./REV No.			C28713 2

DATE	7.20
SCALE	1:2
TOLERANCES	See Callouts To ISO 8062 C10
CHECKED	Scale: To ISO 8062 C18
ALL DIMENSIONS IN MILLIMETRES	Angular: ±
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

ITEM	PART No.	DRG No.	DESCRIPTION	240V	115V
1	C28261		CHASSIS PLATE SUB ASSY	1	1
2	C25012		FAN SPLASH COVER SUB ASSY	4	4
3	C28712		ENCLOSURE DRILLING	1	1
4	C24687		SPLASH COVER PILLAR	4	4
5	C30116		PSU DIN RAIL	1	1
6	C28263		PSU PLATE	2	2
7	C28264		1K XENON PSU 240V	2	2
8	C23277		HEATER	2	2
9	C24889		THERMAL SWITCH	1	1
10	C16930		FAN 240V	4	4
11	C25013		FAN COVER	8	8
12	C14379		EARTH TERMINAL	1	1
13	C27209		TERMINAL FUSE END COVER	1	1
14	C24118		3A FUSE	2	2
15	C27208		TERMINAL FUSE	2	2
16	C14139		TERMINAL END COVER	1	1
17	C15099		TERMINAL	10	10
18	C15411		TERMINAL MARKER	20	20
19	C11175		H/C TERMINAL SPACER	3	3
20	C10861		H/C TERMINAL	2	2
21	C10469		H/C TERMINAL COVER	1	1
22	C15450		M25 CABLE GLAND	1	1
23	C12415		M20 CABLE GLAND	2	2
24	C23002		SELECTOR SWITCH	1	1
25	C14146		LEGEND PLATE	1	1
26	C19828		RED SHROUDED CRIMP	2	2
27	C09299		M4 RED EYELET	2	2
28	C22701		M6 YELLOW EYELET	4	4
29	C02185		M5 YELLOW EYELET	4	4
30	C28149		3 WAY LEVER CONNECTOR	4	4
31	C27962		M4 x 10 PILLAR	4	4
32	C27464		240V WARNING LABEL	1	1
33	C22078		115V WARNING LABEL	1	1
34	C22036		ISOLATE SUPPLY LABEL	1	1
35	C04900		FRANCIS EXTERIOR LABEL	1	1
36	C14161		6mm S/C SILICONE CABLE RED	A/R	A/R
37	C14162		6mm S/C SILICONE CABLE BLACK	A/R	A/R
38	C28799		1.5mm S/C SILICONE CABLE BROWN	A/R	A/R
39	C16838		1.5mm S/C SILICONE CABLE BLUE	A/R	A/R
40	C13351		M5 x 10 HEX HD SCREW	6	6
41	C14468		M4 x 35 BUTTON HD SCREW	4	4
42	C10120		M4 x 20 SKT CSK HD SCREW	16	16
43	C06981		M4 x 16 SKT CSK HD SCREW	20	20
44	C26955		M4 x 10 HEX HD SCREW	4	4
45	C14533		M4 x 10 BULTON HD SCREW	8	8
46	C23813		M4 x 8 BULTON HD SCREW	6	6
47	C14502		M3 x 6 BULTON HD SCREW	2	2
48	C08392		M5 PLAIN WASHER	6	6
49	C08231		M5 S/C SPRING WASHER	6	6
50	C04376		M4 PLAIN WASHER	56	56
51	C08793		M4 S/C SPRING WASHER	58	58
52	C26637		M4 x 12 O/D WASHER	4	4
53	C10747		M3 S/C SPRING WASHER	2	2
54	C06266		M4 FULL NUT	40	40
55	C12039		CLEAR RTV	A/R	A/R

FRANCIS SEARCHLIGHTS LIMITED	UNION ROAD	BOLTON	BL2 2HU
DESCRIPTION	2KW XENON POWER SUPPLY ASSEMBLY		
FINISH			
MATERIAL			
© 2020	A1	CONT. ON SHEET	
PART No./REV No.			C28713 2

DATE	7.20
SCALE	1:2
TOLERANCES	See Callouts To ISO 8062 C10
CHECKED	Scale: To ISO 8062 C18
ALL DIMENSIONS IN MILLIMETRES	Angular: ±
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

ITEM	PART No.	DRG No.	DESCRIPTION	240V	115V
1	C28261		CHASSIS PLATE SUB ASSY	1	1
2	C25012		FAN SPLASH COVER SUB ASSY	4	4
3	C28712		ENCLOSURE DRILLING	1	1
4	C24687		SPLASH COVER PILLAR	4	4
5	C30116		PSU DIN RAIL	1	1
6	C28263		PSU PLATE	2	2
7	C28264		1K XENON PSU 240V	2	2
8	C23277		HEATER	2	2
9	C24889		THERMAL SWITCH	1	1
10	C16930		FAN 240V	4	4
11	C25013		FAN COVER	8	8
12	C14379		EARTH TERMINAL	1	1
13	C27209		TERMINAL FUSE END COVER	1	1
14	C24118		3A FUSE	2	2
15	C27208		TERMINAL FUSE	2	2
16	C14139		TERMINAL END COVER	1	1
17	C15099		TERMINAL	10	10
18	C15411		TERMINAL MARKER	20	20
19	C11175		H/C TERMINAL SPACER	3	3
20	C10861		H/C TERMINAL	2	2
21	C10469		H/C TERMINAL COVER	1	1
22	C15450		M25 CABLE GLAND	1	1
23	C12415		M20 CABLE GLAND	2	2
24	C23002		SELECTOR SWITCH	1	1
25	C14146		LEGEND PLATE	1	1
26	C19828		RED SHROUDED CRIMP	2	2
27	C09299		M4 RED EYELET	2	2
28	C22701		M6 YELLOW EYELET	4	4
29	C02185		M5 YELLOW EYELET	4	4
30	C28149		3 WAY LEVER CONNECTOR	4	4
31	C27962		M4 x 10 PILLAR	4	4
32	C27464		240V WARNING LABEL	1	1
33	C22078		115V WARNING LABEL	1	1
34	C22036		ISOLATE SUPPLY LABEL	1	1
35	C04900		FRANCIS EXTERIOR LABEL	1	1
36	C14161		6mm S/C SILICONE CABLE RED	A/R	A/R
37	C14162		6mm S/C SILICONE CABLE BLACK	A/R	A/R
38	C28799		1.5mm S/C SILICONE CABLE BROWN	A/R	A/R
39	C16838		1.5mm S/C SILICONE CABLE BLUE	A/R	A/R
40	C13351		M5 x 10 HEX HD SCREW	6	6
41	C14468		M4 x 35 BUTTON HD SCREW	4	4
42	C10120		M4 x 20 SKT CSK HD SCREW	16	16
43	C06981		M4 x 16 SKT CSK HD SCREW	20	20
44	C26955		M4 x 10 HEX HD SCREW	4	4
45	C14533		M4 x 10 BULTON HD SCREW	8	8
46	C23813		M4 x 8 BULTON HD SCREW	6	6
47	C14502		M3 x 6 BULTON HD SCREW	2	2
48	C08392		M5 PLAIN WASHER	6	6
49	C08231		M5 S/C SPRING WASHER	6	6
50	C04376		M4 PLAIN WASHER	56	56
51	C08793		M4 S/C SPRING WASHER	58	58
52	C26637		M4 x 12 O/D WASHER	4	4
53	C10747		M3 S/C SPRING WASHER	2	2
54	C06266		M4 FULL NUT	40	40
55	C12039		CLEAR RTV	A/R	A/R

FRANCIS SEARCHLIGHTS LIMITED	UNION ROAD	BOLTON	BL2 2HU
DESCRIPTION	2KW XENON POWER SUPPLY ASSEMBLY		
FINISH			

## 10 - Spare Parts List

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

### Searchlight

Part Number	Description
C28009-00	Ignitor
C22790-00	Fan (240V)
C22818-00	Fan (115v)
D20195	Lamp
C08919-00	Front glass
C22011-00	Front & rear bezel gasket
C23277-00	Heater
C24118-00	Fuse 3 Amp
C24889-00	Thermal switch
C06020-00	Reflector
C16926-01	Focus lock wheel assembly
C21502-01	Base lock wheel assembly (Deck & Deck Pedestal)
C21503-01	Side lock wheel assembly (Deck & Deck Pedestal)
C16958-01	Tilt Lock wheel assembly (Cabin & Cabin Pedestal)
C11026-01	Pan Lock wheel assembly (Cabin & Cabin Pedestal)
C11148-00	'O' ring seal (Deck & Cabin)
C10170-00	'O' ring seal (Deck Pedestal & Cabin Pedestal)
C20281-00	Bellows (Cabin & Cabin Pedestal)
C08926-00	Push Rod Seal (Cabin & Cabin Pedestal)
C21967-00	Bellows bottom bush 'O' ring (Cabin & Cabin Pedestal)

### PSU Enclosure

C28264-00	1 Kw PSU (2 Used)
C16930-00	Fan (240v)
C16931-00	Fan (115V)
C25013-00	Fan Cover
C23277-00	Heater
C24118-00	Fuse 3 Amp
C24889-00	Thermal Switch

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 always quote searchlight model and serial number. This will enable a fast response to your spare's requirements.