



User Instruction & Installation Manual

FX380 Manual Control 2Kw Xenon Searchlight



Product Reference Number:

A6212 – 240v Deck	A6216 – 115v Deck
A6213 – 240v Deck Pedestal	A6217 – 115v Deck Pedestal
A6214 – 240v Cabin	A6218 – 115v Cabin
A6215 – 240v Cabin Pedestal	A6219 – 115v Cabin Pedestal

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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 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° (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° spot to 10° flood.
- Lamp life 2400 hours.
- Temperature range -50°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 ²)	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

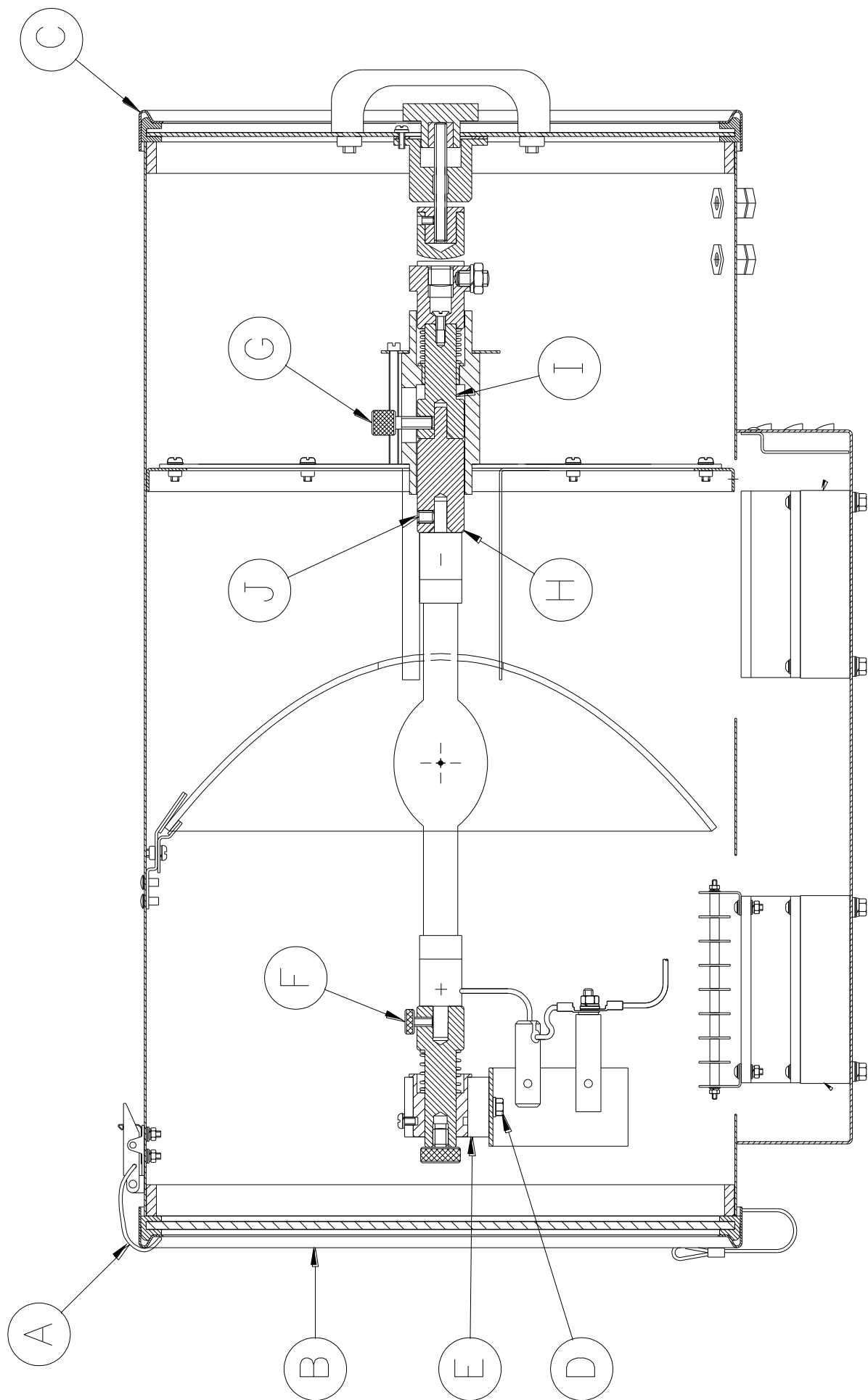
When the searchlight is switched on a 240v or 115v supply is fed to the PSU and linked to the ignitor. Also, from the PSU, a dc output is fed to the lamp.

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
■ Wrong Polarity.	■ Lamp incorrectly fitted. ■ Faulty wiring.	■ Anode (large electrode) must always be on top in vertical burning position. ■ Check polarity, transpose connections if necessary.
■ Cap overheated. ■ Cap temperature above 230°C.	■ Faulty contacts. ■ Cooling equipment defective.	■ Check terminals, tighten or renew. ■ Check cooling equipment and replace if necessary.
■ Arc unsteady.	■ Lamp operated outside current control range. ■ Magnetic stabilisation for horizontal operation defective.	■ Correct current setting. ■ Check magnetic stabilisation.
■ Bulb draws in air.	■ Crack in graded seal caused by overheated cap. ■ Maximum cap temperature 230°C.	■ Check terminals - tighten or renew.
■ Glass erosion on fused quartz bulb.	■ Lamp operated outside current control range. ■ Lamp service life exceeded.	■ Correct current setting. ■ Check meter.
■ Electrodes damaged. ■ Premature blackening.	■ Current ripple too high. ■ Auxiliary mirror incorrectly adjusted.	■ Have power supply inspected. ■ Adjust auxiliary mirror.
■ Asymmetrical blackening of lamp (in horizontal burning position).	■ Lamp operated too long in same position.	■ Turn lamp through 180° after half service life.

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

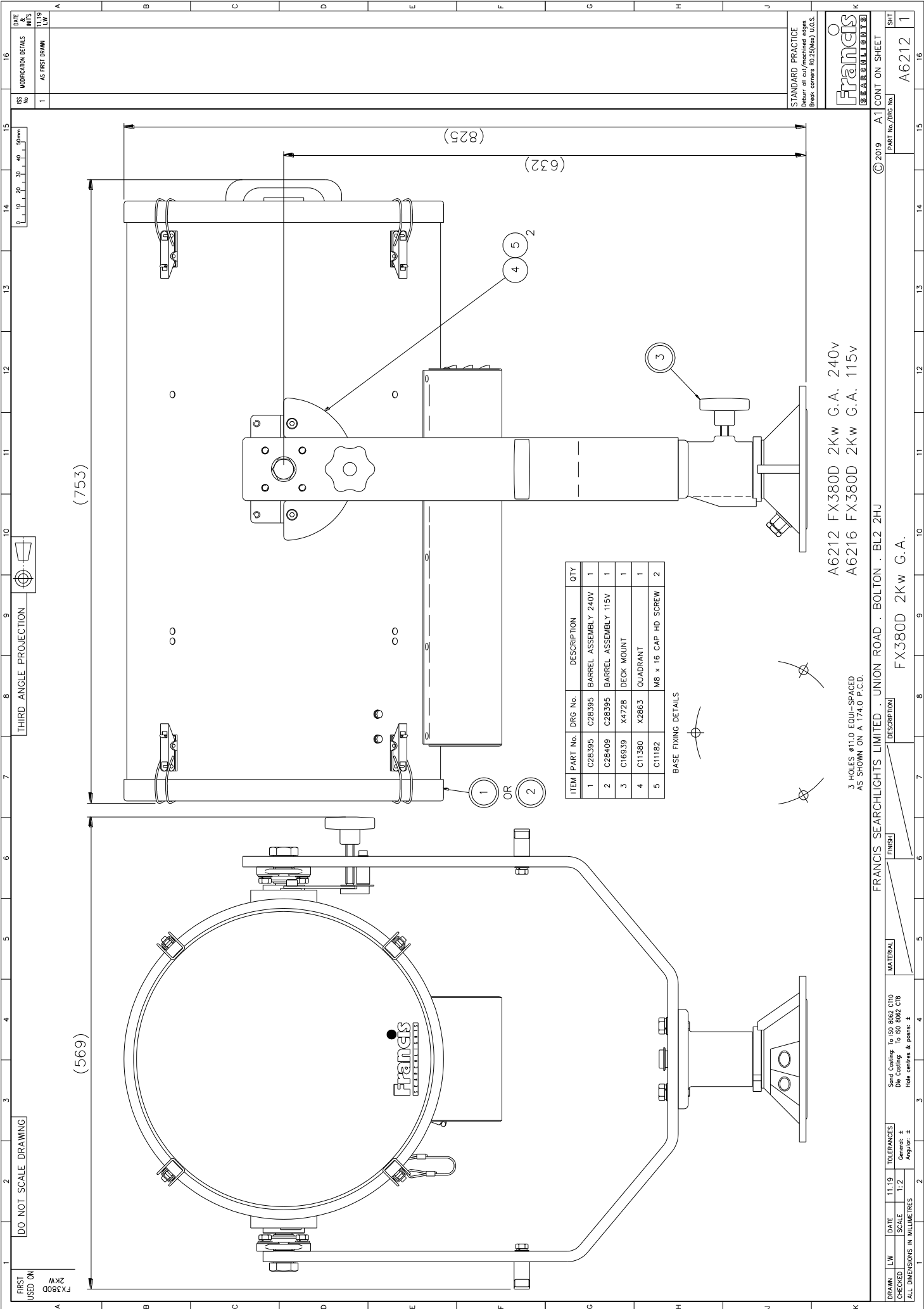
To prolong the service life and performance of your searchlight, the following maintenance guidelines are recommended:

- 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

Drawing Number	Description
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
C28406	PSU Enclosure Assembly



DO NOT SCALE DRAWING

FIRST
USED ON
FX380D
2Kw

THIRD ANGLE PROJECTION

DATE	MODIFICATION DETAILS	INIT'S	LW
11.19	1	AS FIRST DRAWN	

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

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FRANCIS SEARCHLIGHTS LIMITED

DRWN	LW	DATE	11.19	TOLERANCES	General: 1:2	Angular: 1	Scale Coating: To ISO 8002 CT10	Die Coating: To ISO 8002 C18	Material	Finish	Description	Part No./DRG No.	SHT
												A1	1
													A6212

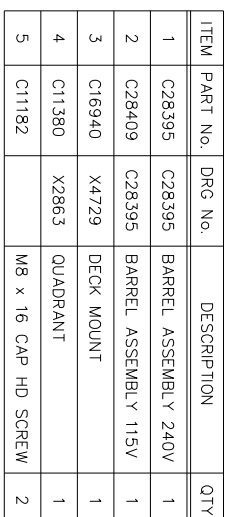
FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HU

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.

BASE FIXING DETAILS

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

$$\frac{(1706)}{(1513)}$$


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

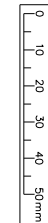
© 2019 A2 CONT ON SHEET

A6213	SHT
	1

11

FIRST USED ON

DO NOT SCALE DRAWING



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

FX380CP
2Kw

(1706)

(1513)

1 OR 2

3

(753)

BASE FIXING DETAILS

HOLE $\phi 52.0$

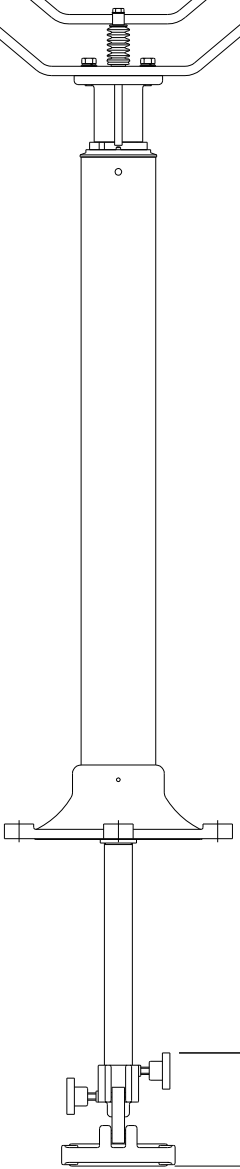
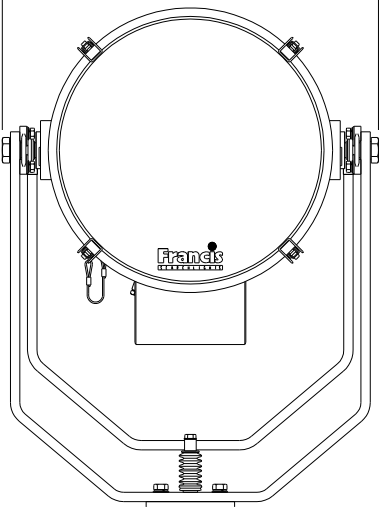
ITEM	PART No.	DRG No.	DESCRIPTION	QTY
1	C28395	C28395	BARREL ASSEMBLY 240V	1
2	C28409	C28395	BARREL ASSEMBLY 115V	1
3	C15555	X4727	TRAINER MOUNT	1

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

(291)

(154)

(512)



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



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A2 CONT ON SHEET

DRAWN	LW	DATE	11.19	TOLERANCES
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CHECKED	SCALE	1:5	General: \pm	Angular: \pm
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Send Casting: To ISO 8062 CT10
Die Casting: To ISO 8062 C18
Hole centres & posns: \pm

MATERIAL

FINISH

DESCRIPTION

FX380CP 2Kw G.A.

PART No./DRG No.

A6215

SHT

1

Technical drawing of a 2KW Xenon Power Supply Assembly, showing front and side views with dimensions (217, 400, 630) and a detailed parts list table.

FRANCIS SEARCHLIGHTS LIMITED

2KW XENON POWER SUPPLY ASSEMBLY

ENCLOSURE BASE FIXINGS
560 x 340 M8 FIXINGS
WEIGHT 20KGS

2KW XENON POWER SUPPLY ASSEMBLY

ENCLOSURE BASE FIXINGS
560 x 340 M8 FIXINGS
WEIGHT 20KGS

ITEM	PART No.	DRG No.	DESCRIPTION	115V 240V	QTY	QTY
1	C28261		CHASSIS PLATE SUB ASSY		1	1
2	C28405		ENCLOSURE DRILLING		1	1
3	C11351		DN RAIL		1	1
4	C28263		PSU PLATE		2	2
5	C28264		1KW XENON PSU		2	2
6						
7	C23277		HEATER		2	2
8	C24889		THERMAL SWITCH		1	1
9	C16931		FAN 115V		4	4
9	C16930		FAN 240V		4	4
10	C25013		FAN COVER		8	8
11	C14379		EARTH TERMINAL		1	1
12	C27209		TERMINAL FUSE END COVER		1	1
13	C24118		3A FUSE		2	2
14	C27208		TERMINAL FUSE		2	2
15	C14139		END COVER		1	1
16	C15099		TERMINAL		9	9
17	C15411		TERMINAL MARKERS		18	18
18	C11175		H/C SPACER		3	3
19	C10861		H/C TERMINAL		2	2
20	C10469		H/C COVER		1	1
21	C15450		M25 CABLE GLAND		1	1
22	C12415		M20 CABLE GLAND		2	2
23	C15828		RED SHROUDED CRIMP		2	2
24	C09299		M4 RED EYELET		2	2
25	C22701		M6 YELLOW EYELET		4	4
26	C02185		M5 YELLOW EYELET		4	4
27						
28	C27962		M4 x 10 PILLAR		4	4
29	C22078		115V WARNING LABEL		1	1
29	C21464		240V WARNING LABEL		1	1
30	C22036		ISOLATE SUPPLY LABEL		1	1
31	C04900		FRANCIS EXTERIOR LABEL		1	1
32	C14161		6mm S/C SILICONE CABLE RED	A/R	A/R	A/R
33	C14162		6mm S/C SILICONE CABLE BLACK	A/R	A/R	A/R
34	C26799		1.5mm S/C SILICONE CABLE BROWN	A/R	A/R	A/R
35	C15838		1.5mm S/C SILICONE CABLE BLUE	A/R	A/R	A/R
36	C15112		1.5mm S/C SILICONE CABLE G/Y	A/R	A/R	A/R
37	C13351		M5 x 10 HEX HD SCREW		6	6
38	C10120		M4 x 20 SKT CSK HD SCREW		16	16
39	C06981		M4 x 16 SKT CSK HD SCREW		20	20
40	C26855		M4 x 10 HEX HD SCREW		4	4
41	C23813		M4 x 8 BUTTON HD SCREW		6	6
42						
43	C14502		M3 x 6 BUTTON HD SCREW		2	2
44	C08392		M5 PLAIN WASHER		6	6
45	C09231		M5 S/C SPRING WASHER		6	6
46	C04376		M4 PLAIN WASHER		40	40
47	C08793		M4 S/C SPRING WASHER		46	46
48	C20637		M4 x 12 O/D WASHER		4	4
49						
50	C10747		M3 S/C SPRING WASHER		2	2
51	C06266		M4 FULL NUT		36	36

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.