



User Instruction & Installation Manual

L300 234w LED Searchlight



Product Reference Number:

A6150 – 240v DECK

A6152 – 240v CABIN

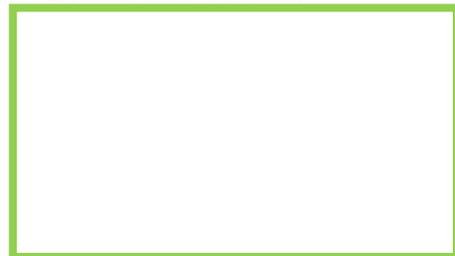
A6153 – 240v Deck Pedestal

A6154 – 240v Cabin Pedestal

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

Distributor details:



Manual Part Number: C27409

Issue: 1 16.11.16

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 Diagrams & General Assemblies
- 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 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 $\pm 40^\circ$ (Deck & Deck Pedestal);
- Vertical movement $+30^\circ$ 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;
- Searchlight & Control Gear protected to IP66;
- Searchlight weight 17 Kgs, PSU weight 4 Kgs;

The searchlight also performs to the following optical data:

- Supply voltage – 90 to 250v;
- Luminous flux 20,000;
- Colour temperature 6000K;
- Range – 2286 metres;
- Divergence – Options Available Spot 4° - Mid 6° - Flood 10° ;
- Temperature range: -50 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 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) 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 C27317, a supply is fed into the control gear enclosure, which then provides a common feed to the searchlight.

Cables required to be connected by the customer: -

5 cores 1.5mm cable from the Control Gear to the Searchlight,

(Customer may need to provide a suitable junction box to this cable, 3 metres supplied).

The Mains cable to the Control Gear is to be supplied by the customer.

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.

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:

- 1) 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

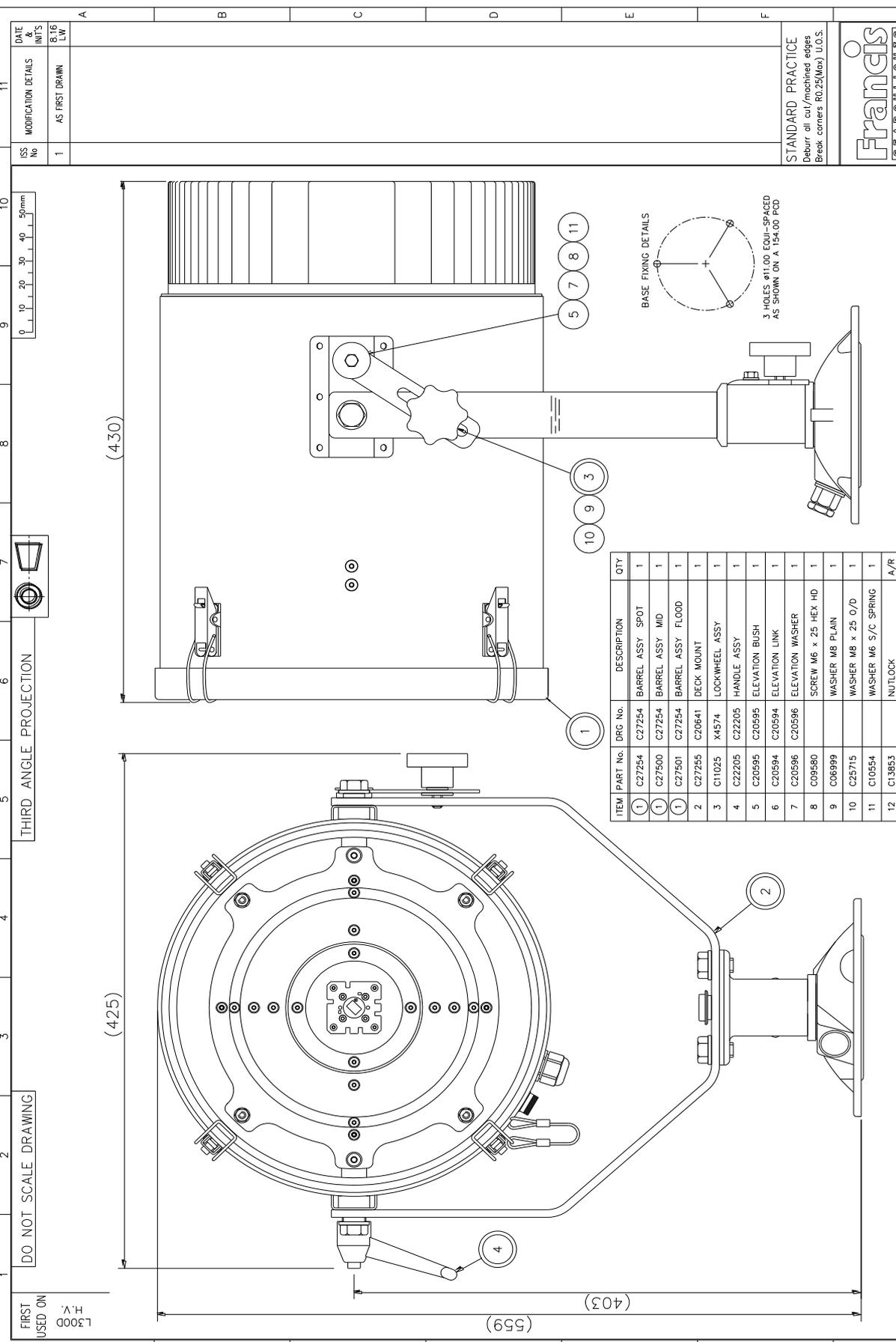
In order to prolong the service life and performance of your searchlight, the following maintenance guidelines are recommended:

- 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
A6150	LED300 Deck General Assembly
A6152	LED300 Cabin General Assembly
A6153	LED300 Deck Pedestal General Assembly
A6154	LED300 Cabin Pedestal General Assembly
C27317	Wiring Diagram
C27259	Junction Box Assembly
	Spot, Mid, Flood Instructions



11
10
9
8
7
6
5
4
3
2
1

DATE & HINTS
8.16 LW
MODIFICATION DETAILS
AS FIRST DRAWN
ISS No
1

DO NOT SCALE DRAWING
THIRD ANGLE PROJECTION

FIRST USED ON
L3000
H.V.
L.V.

A B C D E F G

(425)
(430)
(559)

1 2 3 4 5 6 7 8 9 10 11

0 10 20 30 40 50mm

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

Francis
SEARCHLIGHTS

© 2016 A2 CONT ON SHEET

PART No./DRG No.
A6150

SHT
1

LED300D G.A.

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

Send Costing: To ISO 8062 CT10 MATERIAL
Die Costing: To ISO 8062 CT8

General: ±
Angular: ±

Hole centres & posits: ±

ALL DIMENSIONS IN MILLIMETRES

FINISH DESCRIPTION

ITEM PART No. DRG No. DESCRIPTION QTY

1 C27254 C27254 BARREL ASSY SPOT 1

1 C27500 C27254 BARREL ASSY MID 1

1 C27501 C27254 BARREL ASSY FLOOD 1

2 C27255 C20641 DECK MOUNT 1

3 C11025 X4574 LOCKWHEEL ASSY 1

4 C22205 C22205 HANDLE ASSY 1

5 C20595 C20595 ELEVATION BUSH 1

6 C20594 C20594 ELEVATION LINK 1

7 C20596 C20596 ELEVATION WASHER 1

8 C09580 SCREW M6 x 25 HEX HD 1

9 C06999 WASHER M6 PLAN 1

10 C25715 WASHER M6 x 25 O/D 1

11 C10554 WASHER M6 S/C SPRING 1

12 C13653 NUTLOCK A/R

BASE FIXING DETAILS

3 HOLES #1.00 EQUI-SPACED
AS SHOWN ON A.154.00 FCD

1 2 3 4 5 6 7 8 9 10 11

10 9 3

1

2

4

1

1

1

1

1

1

1

1

1

1

1

1

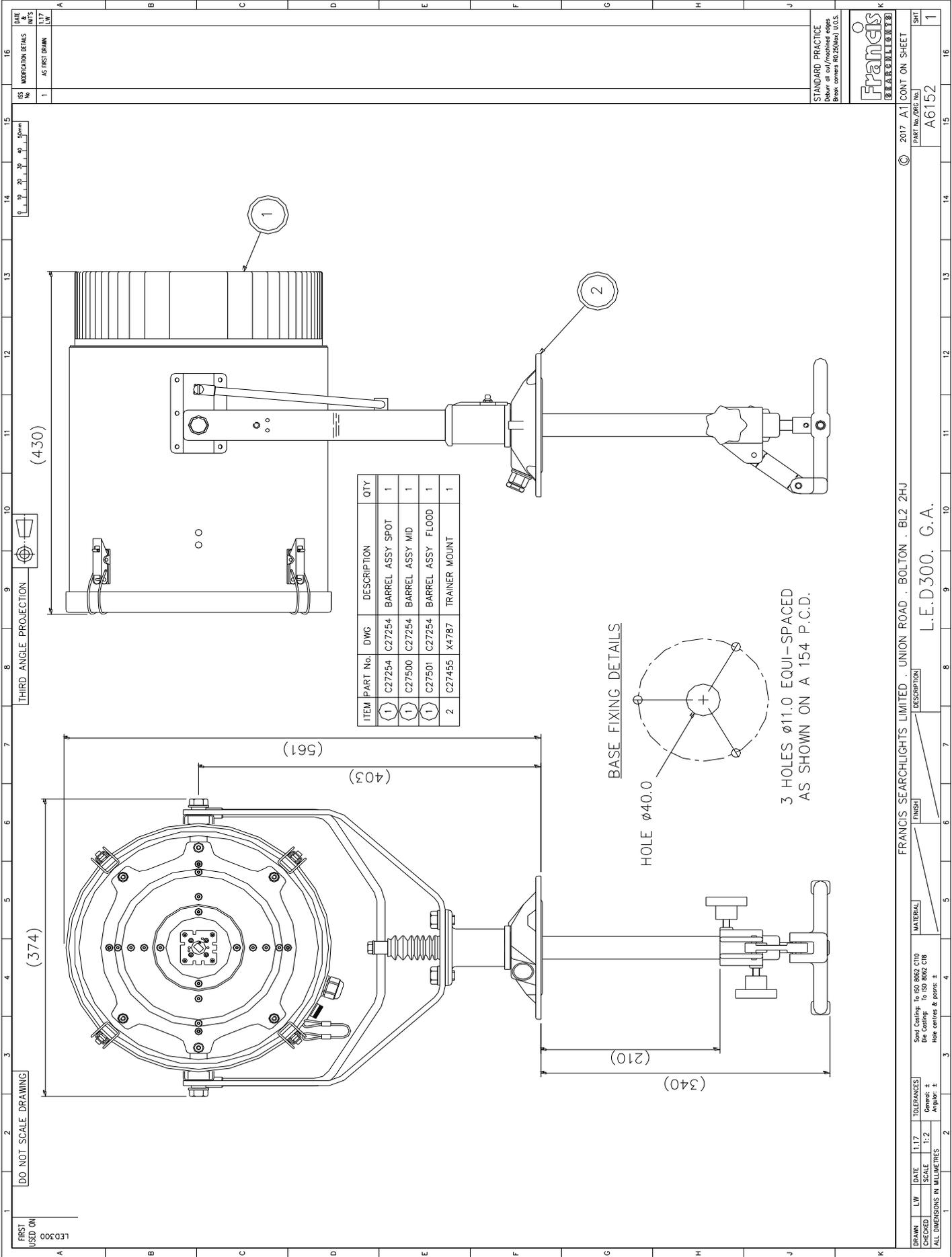
1

1

1

1

1



DATE
1.17

ISS MODIFICATION DETAILS
1 AS FIRST DRAWN

0 10 20 30 40 50mm

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

FIRST USED ON
LED300

STANDARD PRACTICE
Draw all cut/freehand edges
Break corners R0.25(Min) U.O.S.

Francis
SEARCHLIGHTS

© 2017 A1 CONT ON SHEET
PART No./DWG No.
A6152

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

FINISH

DESCRIPTION
L.E.D300. G.A.

MATERIAL

Spot Coating to ISO 8602 C10
Die Coating to ISO 8602 C10
Hole centres & punch \pm

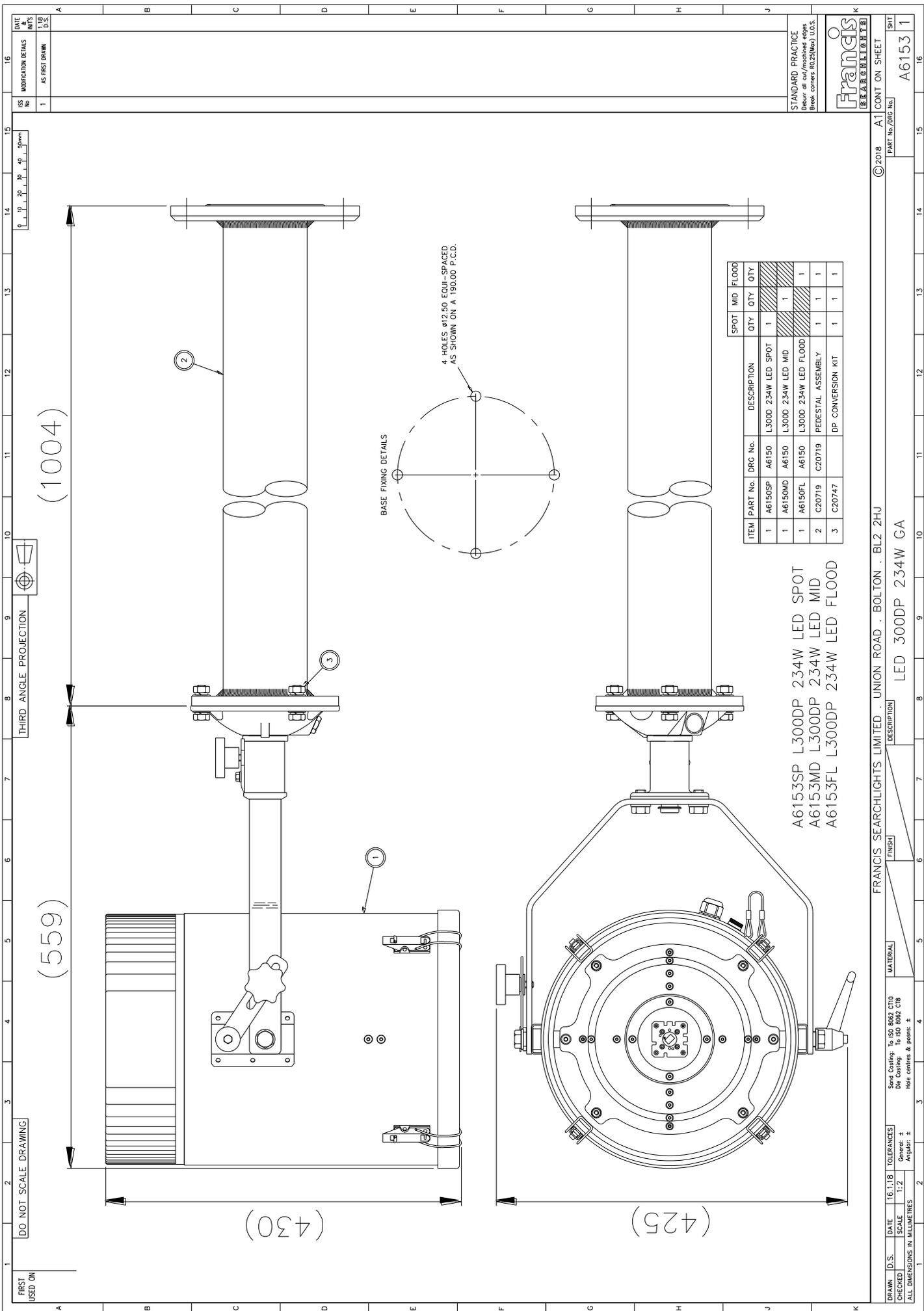
TOLERANCES
General: ± 0.12
Asympt: ± 0.12

DRAWN LW DATE 1.17 TOLERANCES
SCALE 1:2 General: ± 0.12
Asympt: ± 0.12

ALL DIMENSIONS IN MILLIMETRES

SHIT
1

16

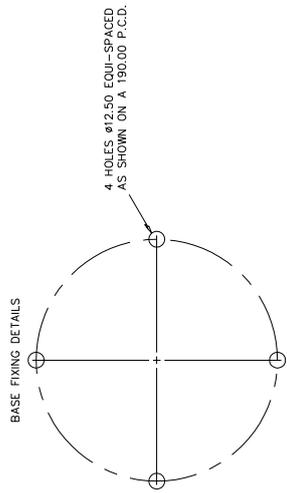


(1004)

(559)

(430)

(425)



ITEM	PART No.	DRG No.	DESCRIPTION	SPOT		MID		FLOOD	
				QTY	QTY	QTY	QTY	QTY	QTY
1	A6150SP	A6150	L300D 234W LED SPOT	1					
1	A6150MD	A6150	L300D 234W LED MID		1				
1	A6150FL	A6150	L300D 234W LED FLOOD			1			
2	C20719	C20719	PEDESTAL ASSEMBLY	1	1	1	1	1	1
3	C20747		DP CONVERSION KIT	1	1	1	1	1	1

A6153SP L300DP 234W LED SPOT
A6153MD L300DP 234W LED MID
A6153FL L300DP 234W LED FLOOD

DATE & UNITS: 16 U.S. MODIFICATION DETAILS: 1 AS FIRST DRAWN

STANDARD PRACTICE: Detail of cut / finish / break corners R0.25(Min) U.O.S.

© 2018 A1 CONT ON SHEET

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

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

LED 300DP 234W GA

FINISH: MATERIAL: TOLERANCES: DATE: 16.1.18 SCALE: 1:2

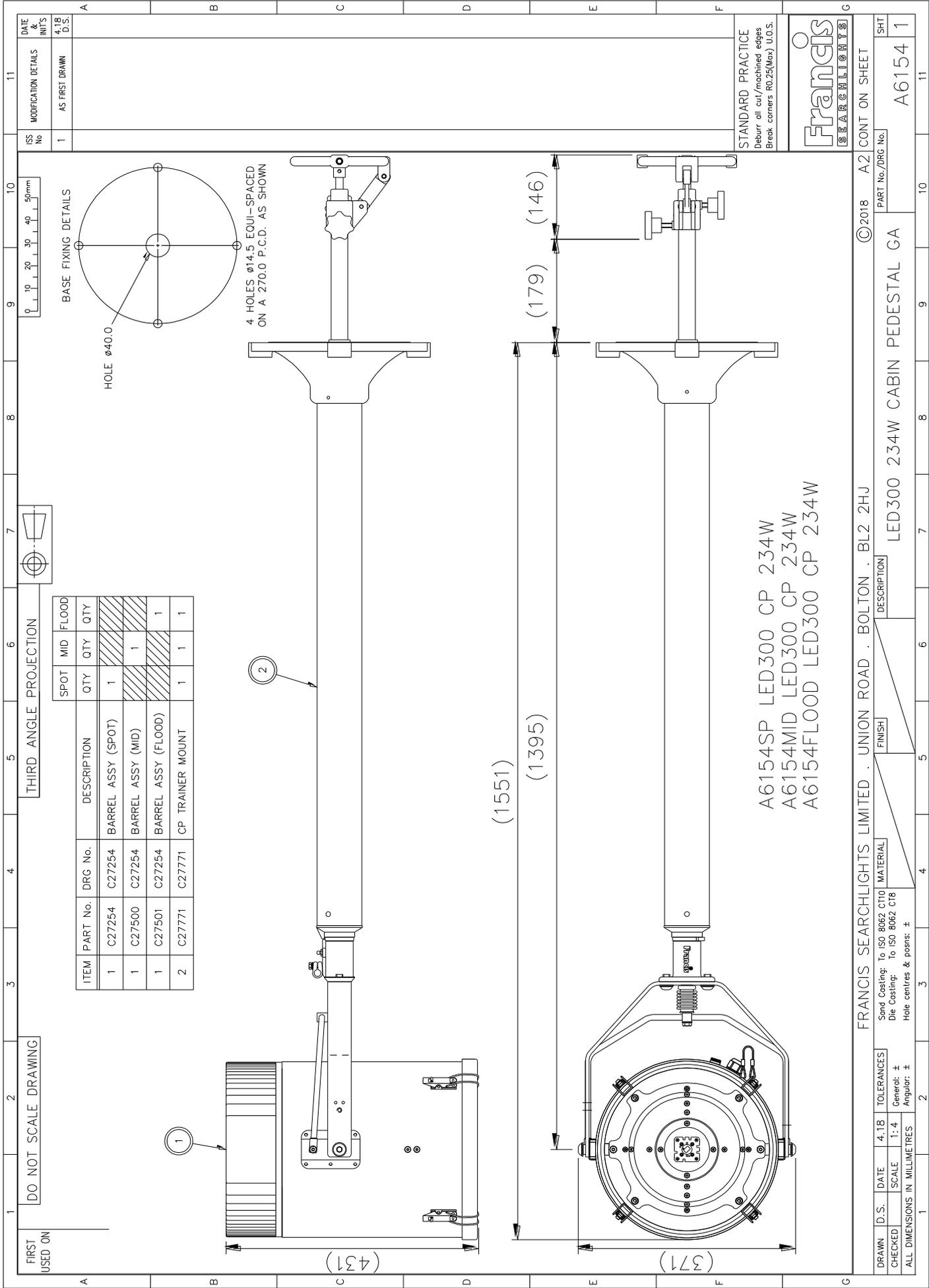
Send Copying: To ISO 9002 C10
To CEI 19:150 9002 C10
Note centres & points & Angles: #

ALL DIMENSIONS IN MILLIMETRES

FRANCIS SEARCHLIGHTS LIMITED

PART No./DRG No. A6153 1

SHT 1



DO NOT SCALE DRAWING

FIRST USED ON

THIRD ANGLE PROJECTION

BASE FIXING DETAILS

HOLE $\phi 40.0$

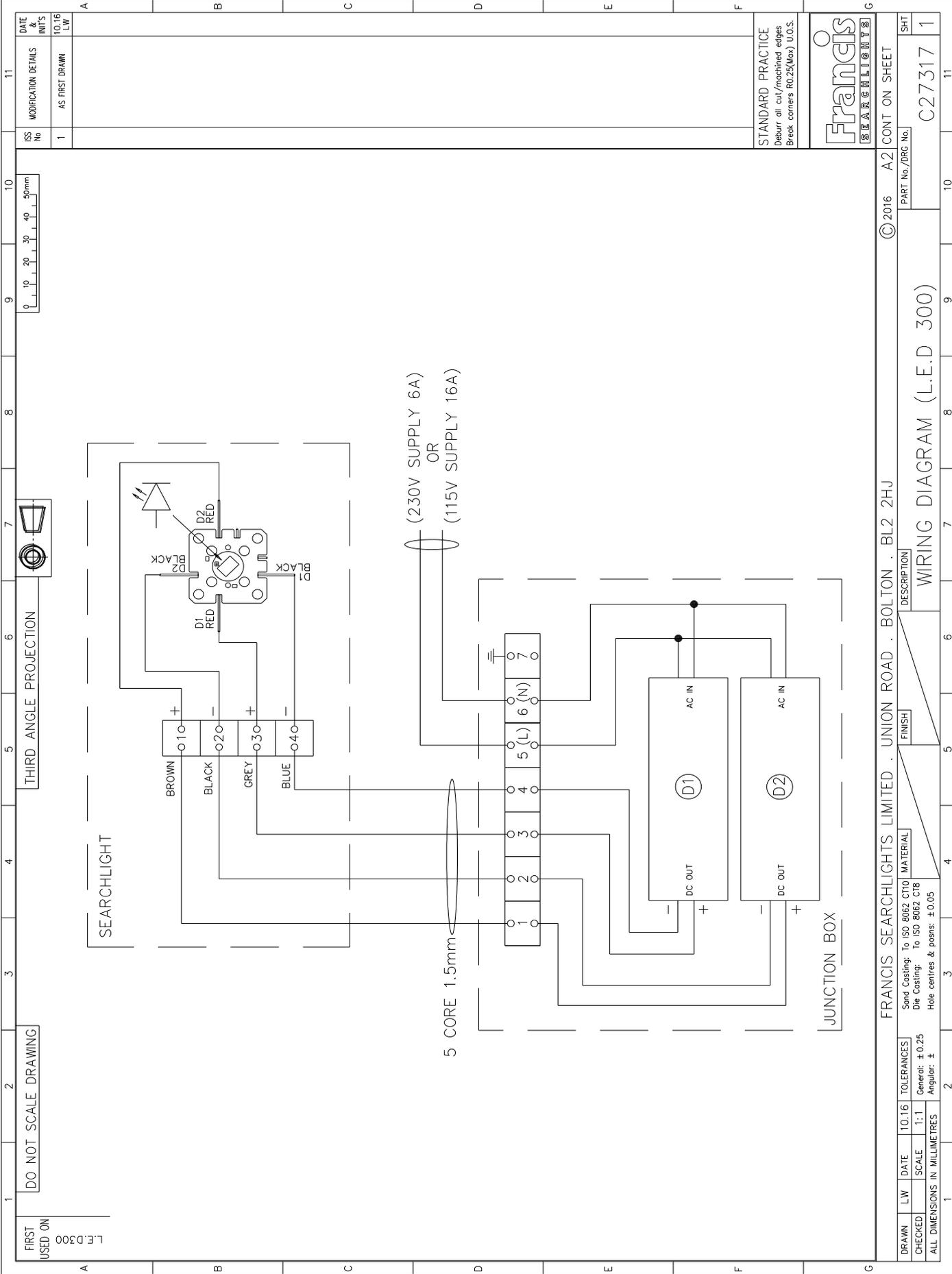
4 HOLES $\phi 14.5$ EQUI-SPACED ON A 270.0 P.C.D. AS SHOWN

A6154SP LED300 CP 234W
A6154MID LED300 CP 234W
A6154FLOOD LED300 CP 234W

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



ISS No	1	MODIFICATION DETAILS	AS FIRST DRAWN	DATE INT'S	4.18	11
FRANCIS SEARCHLIGHTS LIMITED · UNION ROAD · BOLTON · BL2 2HU			CONT ON SHEET	A2		
Sand Coating: To ISO 8062 CT10			FINISH	DESCRIPTION		
Die Coating: To ISO 8062 CT8			MATERIAL	LED300 234W CABIN PEDESTAL GA		
Hole centres & poss: \pm			PART No./DRG No.			
TOLERANCES			SHT			
General: \pm			A6154 1			
Angular: \pm			11			
ALL DIMENSIONS IN MILLIMETRES			10			



FIRST USED ON L.E.D300

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION



ISS No	MODIFICATION DETAILS	DATE & INT'S
1	AS FIRST DRAWN	10.16 LW

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



© 2016	A2	CONT ON SHEET
PART No./DRC No.	C27317	
SHT	1	

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

DRAWN	LW	DATE	10.16	TOLERANCES	Sand Casting: To ISO 8062 C110
CHECKED		SCALE	1:1	General: ±0.25	Die Casting: To ISO 8062 C18
ALL DIMENSIONS IN MILLIMETRES		Angular: ±		Hole centres & posns: ±0.05	

FINISH	
MATERIAL	
DESCRIPTION	WIRING DIAGRAM (L.E.D 300)

11

10 9 8 7 6 5 4 3 2 1

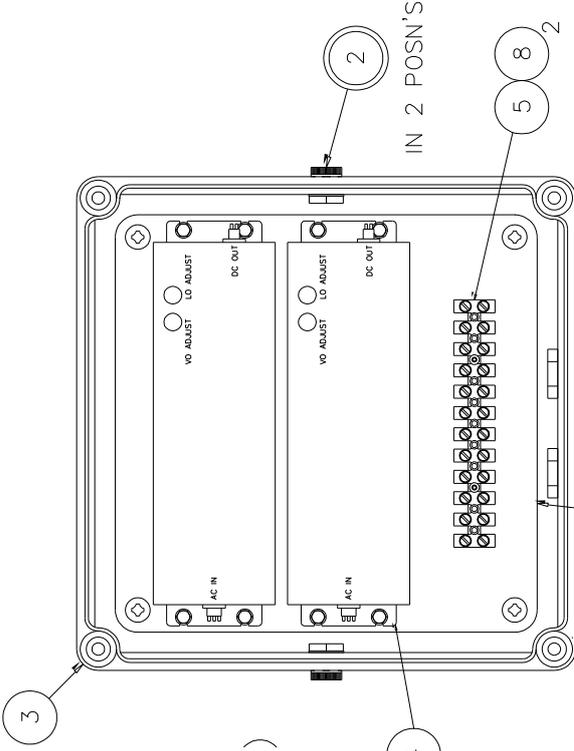
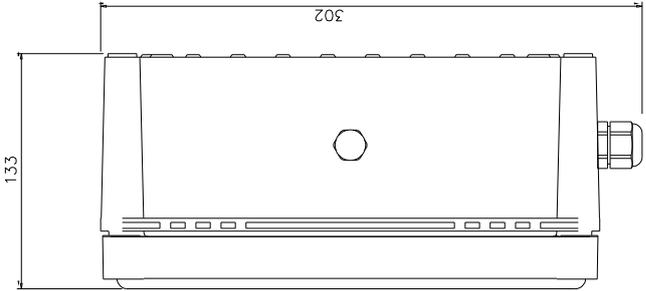
FIRST USED ON
LED300
A6150

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

ISS No 1
DATE & INITIS
10.16 D.S.
AS FIRST DRAWN

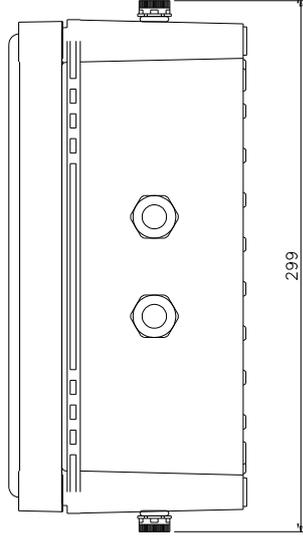
BASE FIXINGS
254mm X 254mm (6mm HOLES)
WEIGHT - 4KGS



IN 2 POSN'S

IN 2 POSN'S

IN 2 POSN'S



ITEM	PART No.	DRG No.	DESCRIPTION	QTY
1	C27257	C27257	CHASSIS PLATE SUB ASSY	1
2	C22268		BREATHER UNIT ASSY	2
3	C27258	C27258	JUNCTION BOX DRILLING	1
4	C27231		LED DRIVER	2
5	C15133		TERMINAL BLOCK (32A)	1
6	C10158		M20 CABLE GLAND	2
7	C26955		M4 x 10 HEX HD SCREW	8
8	C10203		M3 x 16 BUTTON HD SCREW	2
9	C04376		M4 PLAIN WASHER	8
10	C08793		M4 S/C SPRING WASHER	8

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

DRAWN	D.S.	DATE	10.16	TOLERANCES	Send Casting: To ISO 8062 CT10	MATERIAL		FINISH		DESCRIPTION	JUNCTION BOX ASSY (DECK)	PART No./DRG No.	C27259	SHT	1
CHECKED		SCALE	1:1	General: ±	Die Casting: To ISO 8062 C18										
ALL DIMENSIONS IN MILLIMETRES															



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

©2016 A2 CONT ON SHEET

11

10

9

8

7

6

5

4

3

2

1

10 – Spare Parts List

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

Part Number	Description
C27229-00	LED Module
C27230-00	LED Adapter
C27712-00	LED Adhesive Pad
C27224-00	Front Glass
C20567-00	Front Glass Gasket
C27231-00	LED Driver
C22268-01	Breather Assembly
C27247-01	Spot Bracket
C27238-01	Spot Pillar
C27450-01	Mid Bracket
C27452-01	Mid Pillar
C27451-01	Flood Bracket
C27453-01	Flood Pillar
C27231-00	LED Driver (2 Used)

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.