

Suspended edition 28/11/2018



ELEVATED LOW INTENSITY RUNWAY APPROACH, THRESHOLD and WING BAR, RUNWAY END, THRESHOLD/RUNWAY END, STOPWAY, TOUCHDOWN INDICATOR, FILLETS LIGHT AEOL

INSTRUCTION MANUAL FOR USE, INSTALLATION AND MAINTENANCE

Compiled by: EBER

Approved by: MMAZ

N° Attachments:

Copy n°:

Edition 07/12/2018

Supersedes edition 28/11/2018

ELEVATED RUNWAY EDGE LIGHT FAU
INSTRUCTION MANUAL FOR USE, INSTALLATION AND MAINTENANCE

LIMITED PRODUCT WARRANTY

THE FOLLOWING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT BY WAY OF LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

OCEM - ENERGY TECHNOLOGY warrants to each original Buyer of Products manufactured by the Company that such Products are at the time of delivery to the Buyer, free of material and workmanship defects, provided that no warranty is made with respect to:

- (a) any Product, which has been repaired or altered in such a way, in Company's judgement, as to affect the Product adversely;
 - (b) any Product which has, in Company's judgement, been subject to negligence, accident or improper storage;
 - (c) any Product which has not been operated and maintained in accordance with normal practice and in conformity with recommendations and published specification of Company;
 - (d) the breaking of the warranty seals, if present, determines the immediate termination of the warranty;
- and,

OCEM - ENERGY TECHNOLOGY's obligation under this warranty is limited to use reasonable efforts to repair or, at its option, replace, during normal working hours at the facility of the Company, any Product which in its judgement proved not to be as warranted within the applicable warranty period. All costs of transportation of Products claimed not to be warranted and of those repaired or replaced, to or from the facility of the Company shall be borne by Purchaser. Company may require the return of any Product claimed not to be as warranted to its facility, transportation prepaid by Purchaser, to establish a claim under this warranty. The cost of labour for the installation of a repaired or replaced Product shall be borne by Purchaser. Replacement parts provided under the terms of this warranty are warranted for the remainder of the warranty period of the Products upon which they are installed to the same extent as if such parts were original components thereof. Warranty services provided under the Agreement do not assure uninterrupted operations of Products; Company does not assume any liability for damages caused by any delays involving warranty service.

IMPORTANT: READ THIS DOCUMENT

Before proceeding to the operations of installation, commissioning, operation, maintenance or disposal, carefully read the entire document.

SAFETY INFORMATION

Extreme caution should be exercised when working with this equipment; it is normally used or connected to circuits that operate at dangerous voltages and can be fatal.

The following section contains important safety information that you must follow when installing and using the apparatus.

Misuse of the equipment or lack of care in applying safety procedures and prescriptions specified in this document, may result in a hazard.

Avoid contact with voltage or current sources.

For no reason the protections and the safety devices must be removed.

Edition 07/12/2018

Supersedes edition 28/11/2018

ELEVATED RUNWAY EDGE LIGHT FAU
INSTRUCTION MANUAL FOR USE, INSTALLATION AND MAINTENANCE

OPERATION ON THE EQUIPMENT - SKILLS

Operation on the equipment and access to its internal parts shall be done by experienced personnel, adequately trained and aware of the risks related to electricity and high voltages.

Safety rules shall be adopted when operating on the equipment, or on cables and other apparatus connected to the it

DO NOT OPERATE ON ENERGIZED CIRCUITS

Do not carry out any operation on the converter or on apparatus connected to it when the circuits are energized.

WHEN HANDLING AND SERVICING THIS EQUIPMENT, OBSERVE PRECAUTIONS FOR HIGH VOLTAGE EQUIPMENT.

Before any access, inspection or intervention, be sure to have switched-off the unit, opened the main circuit breaker and removed the supply to the unit (by opening the circuit breaker/switch on the distribution board at the beginning of the supply line).

Then wait discharge time (at least 5 minutes), ground carefully the system, and check for voltage presence before accessing..

REANIMATION

The maintenance staff must be aware of the risks related to electricity, criteria to prevent the risk of electric shock and resuscitation techniques

CE MARK



This equipment complies with the requirements of European regulations for the CE mark. The user has to respect all prescriptions reported in this document.

OUT OF SERVICE

In case of dismantling, decommissioning, destruction, disposal, the user shall follow all the required precautions for component and material elimination, according to local rules and applicable law.

Edition 07/12/2018

Supersedes edition 28/11/2018

ELEVATED RUNWAY EDGE LIGHT FAU
INSTRUCTION MANUAL FOR USE, INSTALLATION AND MAINTENANCE

EDITIONS

Date

08/11/2018 First issue

REVISIONS

Index	Date	Description	Edited by	Approved by
01	28/11/2018	P/N update	EBER	MMAZ
02	07/12/2018	Corrections	EBER	MMAZ

Edition 07/12/2018

Supersedes edition 28/11/2018

ELEVATED RUNWAY EDGE LIGHT FAU
INSTRUCTION MANUAL FOR USE, INSTALLATION AND MAINTENANCE

INDEX

1	GENERAL.....	6
2	MAIN FEATURES	6
2.1	P/N Identification	7
2.2	PHOTOMETRIC PERFORMANCES	8
3	INSTALLATION	9
3.1	CIVIL WORKS.....	9
3.2	INSTALLATION	9
4	MAINTENANCE	10
4.1	MAINTENANCE PROGRAM	10
4.1.1	Periodical Checks	10
4.1.2	Snowplow Operations.....	11
4.2	CLEANING OF THE OUTER LENS	11
4.3	RELAMPING	11
4.4	REPLACEMENT OF THE OUTER LENS.....	11
4.5	REPLACEMENT OF THE CABLE LEAD.....	12
5	SPARE PARTS	12

INDEX OF FIGURES

Figure 1 – Exploded View	6
Figure 2 FAP-170 6.1.2.3 Low Intensity Approach	8
Figure 3 - FAP-170 6.1.5 Low Intensity Touchdown Indicator	8
Figure 4 - FAP-170 6.1.17 Low Intensity Fillets Lights.....	8
Figure 5 - FAP-170 6.1.6 Low Intensity Threshold and Wing Bar.....	8
Figure 6 - FAP-170 6.1.7 Low Intensity Runway End.....	8
Figure 7 - FAP-170 6.1.16 Low Intensity Stopway.....	8
Figure 8 - ICAO Low Intensity Runway Approach.....	8
Figure 9 – Civil Works	9
Figure 10 – Lamp	11
Figure 11 – Lens replacement	11
Figure 12 – Cable lead replacement.....	12

Edition 07/12/2018

Supersedes edition 28/11/2018

ELEVATED RUNWAY EDGE LIGHT FAU
INSTRUCTION MANUAL FOR USE, INSTALLATION AND MAINTENANCE

1 GENERAL

AEOL elevated light is an omnidirectional steady burning type, available also in unidirectional configuration with shield.

AEOL provide a candlepower distribution conforming to:

- ICAO - Annex 14 Vol. I;
- FAP-170 (Russia).

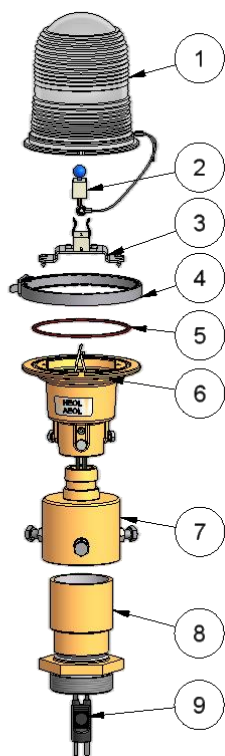
These fittings are used for:

- Medium and Low Intensity Runway approach;
- Low Intensity Threshold;
- Low Intensity Runway End;
- Low Intensity Threshold/Runway End;
- Low Intensity Stop Way light;
- Low Intensity Runway Fillets light;
- Low Intensity Touchdown Indicator light;

The light fixtures described in this manual are manufactured to be powered through isolating transformers by series circuits, fed by constant current regulators; the lamp rated life is 1500 hours at full intensity (500 h for 120W lamps), but over 3000 hours in field operating conditions.

Location of these fittings shall be in compliance with ICAO - Annex 14 and FAP-170.

2 MAIN FEATURES



No.	Description	Qty
1	Outer lens.....	1
2	Lamp.....	1
3	Lamp holder.....	1
4	Clamp for lens.....	1
5	O-Ring for lens.....	1
6	Body.....	1
7	Coupling with hardware.....	1
8	Breakable coupling.....	1
9	FAA L-823 plug.....	1

Figure 1 – Exploded View

Edition 07/12/2018

Supersedes edition 28/11/2018

ELEVATED RUNWAY EDGE LIGHT FAU INSTRUCTION MANUAL FOR USE, INSTALLATION AND MAINTENANCE

2.1 P/N Identification

AEOL - I - A - CC - 120- P-001

Basic P/N: _____

Compliance: _____

I = ICAO
R = FAP-170 (Russia)

Use Code: _____

See Tab. A

Colour: _____

See Tab. A

Lamp: _____

045 = 1x45W 6.6A GZ 9.5
120 = 1x120W 6.6A GZ 9.5

Configuration: _____

P-001 = Fixture complete with breakable coupling
C-250 = Semi-assembled fixture with cable lead of L = 2.5m (*)
P-090 = Fixture complete with mounting pole, 90 cm long, and breakable coupling (only use code T and colour RR)
P-175 = Fixture complete with mounting pole, 175 cm long, and breakable coupling (only use code T and colour GG)

(*) Mounting pole and breakable coupling must be ordered separately

TABLE A

Use	Description	Colour [†]	Lamp	Compliance
A	Low Intensity Runway Approach	CC	45 W	I = ICAO
	Low Intensity Runway Approach		120 W	R = FAP-170 par.6.1.2.3
G	Low Intensity Threshold and Wing Bar	GX	45W	R = FAP-170 par.6.1.6
E	Low Intensity Runway End	RX	45W	R = FAP-170 par.6.1.7
R	Low Intensity Threshold/Runway End	GR	45W	R = FAP-170 par.6.1.6 and par.6.1.7
D	Low Intensity Runway Edge	CC CY YR	45W	R = FAP-170 par.6.1.4
S	Low Intensity Stopway	RX	45W	R = FAP-170 par.6.1.10
F	Low Intensity Fillets	YX	45W	R = FAP-170 par.6.1.17
U	Low Intensity Touchdown Indicator	CX	45W	R = FAP-170 par.6.1.5
T	In combination with B747 turning pad panels	RR GG	45W	ICAO

[†] Colour: C = Clear, R = Red, G = Green, Y = Yellow, X = Shield.

Edition 07/12/2018

Supersedes edition 28/11/2018

ELEVATED RUNWAY EDGE LIGHT FAU INSTRUCTION MANUAL FOR USE, INSTALLATION AND MAINTENANCE

2.2 PHOTOMETRIC PERFORMANCES

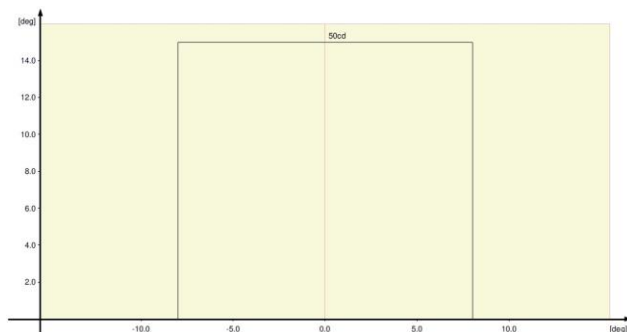


Figure 3 - FAP-170 6.1.5 Low Intensity Touchdown

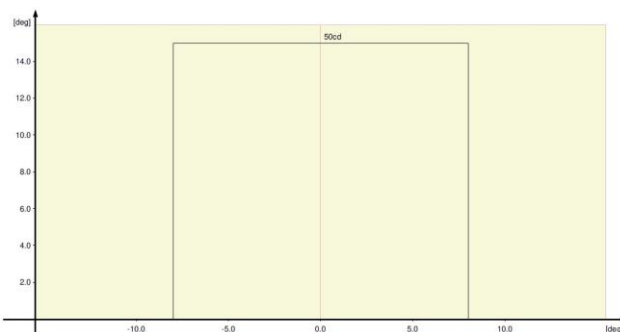


Figure 2 FAP-170 6.1.2.3 Low Intensity Approach

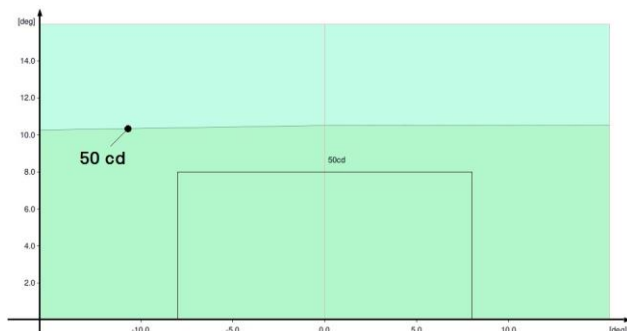


Figure 5 - FAP-170 6.1.6 Low Intensity Threshold and Wing

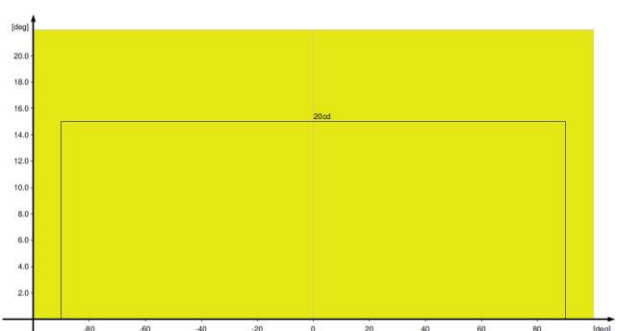


Figure 4 - FAP-170 6.1.17 Low Intensity Fillets Lights

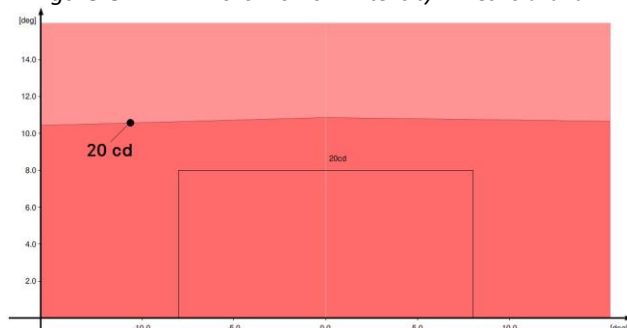


Figure 6 - FAP-170 6.1.7 Low Intensity Runway End

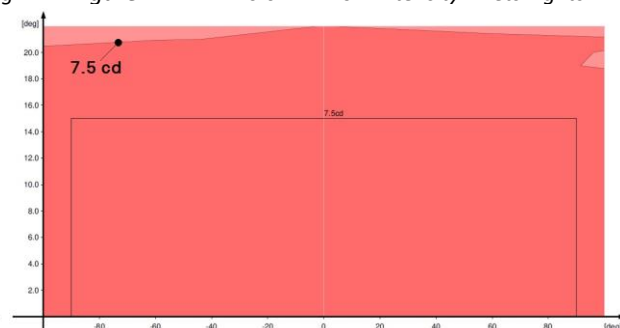


Figure 7 - FAP-170 6.1.16 Low Intensity Stopway

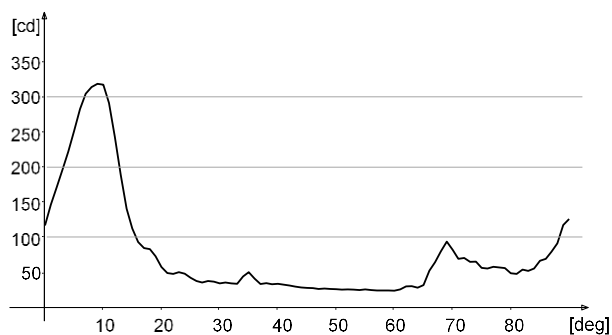


Figure 8 - ICAO Low Intensity Runway Approach

Edition 07/12/2018

Supersedes edition 28/11/2018

ELEVATED RUNWAY EDGE LIGHT FAU INSTRUCTION MANUAL FOR USE, INSTALLATION AND MAINTENANCE

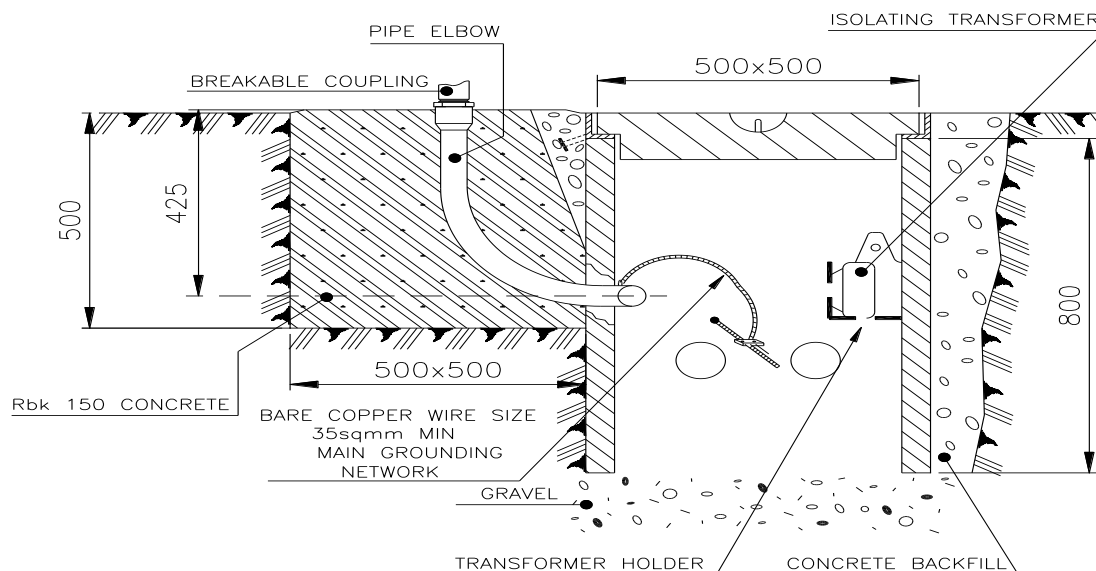
3 INSTALLATION

3.1 CIVIL WORKS

Each light is usually installed on a suitable concrete block, into which a pipe elbow is cemented. The isolating transformer is housed into a separate concrete pit which is normally placed close the above concrete block (Figure 9).

The pit can be placed far from the concrete block too, but in this case a suitable cable duct has to be provided between the pit and the pipe elbow for passing the secondary cable.

As alternative the assembly pit-pipe elbow can be replaced by a steel sheet base, which can be used to house the isolating transformer, complete with an upper steel plate with a threaded sleeve.



IMPORTANT: MAKE SURE THE UPPER
END OF THE PIPE ELBOW IS VERTICAL

Figure 9 – Civil Works

3.2 INSTALLATION

For the installation of the light fixture, follow these steps:

- pass the secondary cable lead with receptacle through the pipe elbow;
- place the receptacle into the upper threaded section of the pipe elbow, by holding it between the two plastic rings;
- pass the grounding wire through the pipe elbow and the breakable coupling (and support pole were provided), cut the excess and make the connection with the grounding cable of the light fixture;

Edition 07/12/2018

Supersedes edition 28/11/2018

ELEVATED RUNWAY EDGE LIGHT FAU
INSTRUCTION MANUAL FOR USE, INSTALLATION AND MAINTENANCE

- pass the light plug through the breakable coupling and connect it to the secondary receptacle inside the pipe elbow ;
If a supporting pole is provided, cut the adequate length of power supply cable following the instruction in Par.0.
- screw the breakable coupling to the pipe elbow;
- install the body of the fixture on the breakable coupling or on the supporting pole;
- find the correct orientation and fix the light fixture or the pole on the breakable coupling by screwing the appropriate hexagonal head screws.

4 MAINTENANCE

WARNING
BEFORE ANY MAINTENANCE INTERVENTION, MAKE
SURE THE POWER SUPPLY BE SWITCHED OFF.
DO NOT OPERATE ON LIVE PARTS!!!

The preferred method of maintaining these lights is replacing each fixture periodically and systematically and return it to the maintenance shop for renovation.

Field servicing shall be limited to cleaning the lens.

4.1 MAINTENANCE PROGRAM

In order to ensure maximum light fixture life, the installed units should be subject to a maintenance program in accordance with the following instructions and taking as reference the Airport Service Manual ICAO - Part 9 - Airport Maintenance Practices.

4.1.1 Periodical Checks

Daily	Burnt-out lamps
	Broken parts of lights
Monthly	Cleaning of the lenses
	Correct setting of the lights
Semi-Annual	Painting or replacement of rusted parts
Annual	Stability of the civil works
	Stability and assembly of lights
	Electrical connections and insulation degree
	Luminous efficiency of lamps
Unscheduled	Condition of all the gaskets
	After unusual atmospheric precipitation, check the light condition and remove any luminous beam obstructions

Edition 07/12/2018

Supersedes edition 28/11/2018

ELEVATED RUNWAY EDGE LIGHT FAU
INSTRUCTION MANUAL FOR USE, INSTALLATION AND MAINTENANCE

4.1.2 Snowplow Operations

Snowplow operators should exercise extra care not to strike the light fixtures with snowplow blades. After snow removal operations, inspect all light fixtures and any damaged light assemblies.

Recommended snow removal techniques are described in Airport Service Manual ICAO - Part 9 - Airport Maintenance Practices.

4.2 CLEANING OF THE OUTER LENS

Clean the external surface of the outer lens with a detergent solution.

4.3 RELAMPING

Replace the lamp as follow:

1. Release the clamp for lens;
 2. Remove the lens;
 3. Remove the lamp;
- Mount the new lamp and re-install the lens.

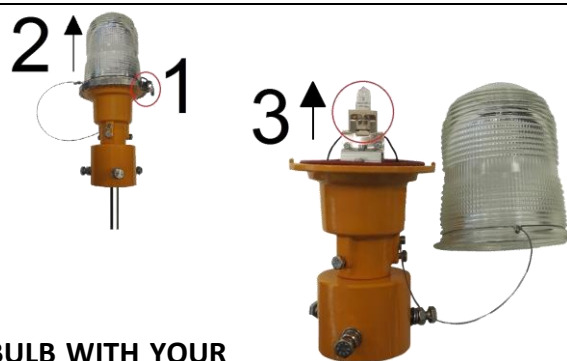


Figure 10 – Lamp replacement.

CAUTION: TOUCHING THE QUARTZ BULB WITH YOUR BARE FINGERS MAY SERIOUSLY SHORTEN THE LAMP LIFE. IF THE QUARTZ BULB HAS BEEN TOUCHED, Wipe it clean with a piece of lens cleaning tissue similar material moistened with ISOPROPYL ALCOHOL.

4.4 REPLACEMENT OF THE OUTER LENS

Remove and replace the outer lens as follow:

1. Unscrew the holding screw of the safety steel cable of the lens;
 2. Release the clamp for lens;
 3. Remove the lens and any possible splinter;
- Assembly the new lens with a new gasket by reversing the procedure.



Figure 11 – Lens replacement

NOTE: REPLACE THE LENS GASKET TO ENSURE THE WATERTIGHTNESS.

Edition 07/12/2018

Supersedes edition 28/11/2018

ELEVATED RUNWAY EDGE LIGHT FAU
INSTRUCTION MANUAL FOR USE, INSTALLATION AND MAINTENANCE

4.5 REPLACEMENT OF THE CABLE LEAD

Remove and replace the cable lead as follow:

1. Open the light fixture by releasing the clamp for lens;
2. Remove the lens
3. Unscrew the lamp holder;
4. Disconnect the two faston terminal of the cable lead and disconnect the grounding connection;
5. Release the cable-lock collar;
6. Unmount the light fixture and unthread the cable lead;

Insert the new cable lead and restore the electrical connection.

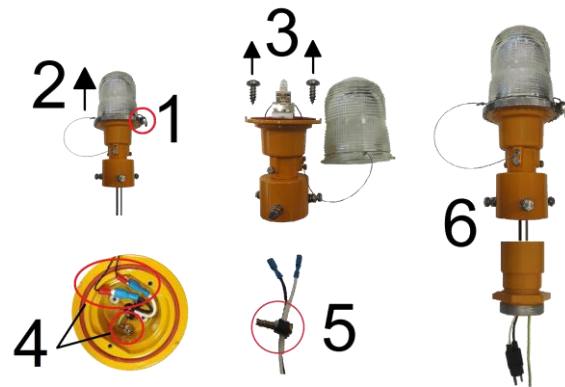


Figure 12 – Cable lead replacement

5 SPARE PARTS

CODE	DESCRIPTION
RISL70001	Clear Lens with gasket and clamp
RISL70002	Clear with shield Lens with gasket and clamp
RISL70003	Clear-Yellow Lens with gasket and clamp
RISL70004	Yellow-Red Lens with gasket and clamp
RISL70005	Yellow with Shield Lens with gasket and clamp
RISL70006	Red with Shield Lens with gasket and clamp
RISL70007	Green with Shield Lens with gasket and clamp
RISL70008	Green-Red Lens with gasket and clamp
RISL70009	Lamp GZ9.5 45W 6.6A
RISL70010	Lamp GZ9.5 120W 6.6A
RISL70011	Lamp GY9.5 150W 6.6A
RISLX0005	Power cable lead L = 0.6m, for direct mounting configuration P-001
RISL70012	Power cable lead L = 2.5m, for configurations P-090, P-175, C-250
RISL70013	Red Lens with gasket and clamp
RISL70014	Green Lens with gasket and clamp
RISL70015	Breakable coupling for direct mounting configuration P-001
RISL70016	Breakable coupling with 2" pole (H=0.9m) for configuration P-090
RISL70017	Breakable coupling with 2" pole (H=1.75m) for configuration P-175
RISL70018	Breakable coupling with pole (H=0.15m) for configuration C-250
RISL70019	Breakable coupling with pole (H=0.5m) for configuration C-250
RISL70020	Breakable coupling with pole (H=1m) for configuration C-250
RISL70021	Breakable coupling with pole (H=1.5m) for configuration C-250
RISL70022	Breakable coupling with pole (H=2m) for configuration C-250