

AA2-M CONTROLLER

TWR Lighting, Inc.

4300 WINDFERN RD., SUITE 100 HOUSTON, TX 77041-8943

VOICE (713) 973-6905 FAX (713) 973-9352

WEB: www.twrlighting.com

IMPORTANT!!!!

PLEASE TAKE THE TIME TO FILL OUT THE FORM COMPLETELY. FILE IN A SAFE PLACE. IN THE EVENT YOU EXPERIENCE PROBLEMS WITH OR HAVE QUESTIONS CONCERNING YOUR CONTROLLER, THE FOLLOWING INFORMATION IS NECESSARY TO OBTAIN PROPER SERVICE AND PARTS.

MODEL #	_____AA2-M_____
SERIAL #	_____
PURCHASE DATE	_____
PURCHASED FROM	_____

AA2-M CONTROLLER

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1.0 INTRODUCTION

A-2 lighting is for towers 350 to 700 feet tall. One beacon shall be placed on top of the tower, the other beacon at midpoint. One set of three (3) sidelights should be placed between lower beacon and ground level.

The beacons flash simultaneously at a rate of thirty (3) per minute. The sidelights burn steady.

A bypass switch allows the controller to be turned on during daylight hours without covering the photocell.

Each beacon requires two (2) 620W, 120V bulbs. TWR recommends that you use only these bulbs. The use of any other bulb will give a false beacon lamp burnout alarm. Each sidelight requires one (1) 116W, 120V bulb (620PS40P and 116A21TS).

If a load balance resistor is required, connect it to terminals R and N. The resistor will be on between beacon flashers to even the current draw of the system. This is necessary for locations using generator power.

The photocell socket is pre-wired with a twenty-foot pigtail. Install socket assembly into ½" conduit as shown on drawing number 270-I. Connect pigtail wires to controller as shown on Drawing # 209-R.

To utilize all of the alarms, the customer will need six (6) pairs of wires to interface with his alarm device. All relay commons have been jumpered together to provide one (1) common point. One (1) wire from each pair will terminate here. The remaining wire from each pair will connect to one of the alarm points (see Drawing #209-R). Also, both lamp burnout alarm commons have been connected back through the contacts of the "Lights On" relay preventing an alarm from being issued unless the "system is turned on (nighttime) and a problem has been detected.

To test alarms, operate the fuse/switch on the panel. Check contact closure with an ohm meter.

Flasher can be stalled by shorting across B and XT on the FS155-30T flasher. This is recommended when checking beacon current

Alarm wires are electrically isolated from 120 volts.

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2.0 THEORY OF OPERATION

120 VAC enters the controller from the circuit breaker panel. Line sits at the PRD7AYO waiting to be switched and also keeps the power failure relay energized. When the 102FAA photocell is activated, line energizes the coil of the PRD. At the same time line is sent through the TS14110 timer and then energizes its "Lights On" relay. This also can be accomplished by using the photocell by-pass.

Once the PRD is activated, line is distributed into two directions:

1. Line is sent to the two 9KE-3LAMP relays which are current sensing relays for the sidelights. Each 9KE-3LAMP monitors one level of sidelights and will hold the contact open when three lights are burning, but will give a contact closure if one or more lights fail.
2. The line is sent through each CS2620, which is a current sensing module for each beacon. Line is then sent to the FS155-30T, FA155-2 and FA155. The FS155-30T is a solid state flasher that operates Beacon #1 and the coil of the FA155-2 load contactor, which makes it flash Beacon #2 synchronized with Beacon #1.

If one or both bulbs within a beacon burn out, the CS2620 will send 120 volts to the beacon lamp burnout relay and energize the coil, which will cause an alarm. This condition will also exist if the flasher stalls. The FA155, an auxiliary flasher, send line to the load balance resistor. The load balance resistor will only be on between flashes of beacon even current draw on generator systems.

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3.0 MAINTENANCE GUIDE

WARNING DANGER!!!

THIS SYSTEM OPERATES AT HIGH VOLTAGE LEVELS THAT COULD BE LETHAL TO SERVICE PERSONNEL. ALL INSTALLATION AND MAINTENANCE WORK SHOULD BE DONE BY QUALIFIED SERVICE PERSONNEL ONLY. WHEN PERSONNEL IS INSTALLING SYSTEM OR PERFORMING MAINTENANCE ON THIS SYSTEM, MAKE SURE THE POWER IS TURNED OFF AT THE SERVICE BREAKER PANEL!!

READ AND UNDERSTAND THE THEORY OF OPERATION AND ITS SAFETY MESSAGES BEFORE ATTEMPTING INSTALLATION/MAINTENANCE OF THIS SYSTEM. DO NOT ATTEMPT TO DEFEAT THE INTERNAL SAFETY SWITCHES IN THE CONTROLLER AND BEACON!!

3.1 RED OBSTRUCTION LIGHTING

The only required maintenance needed to be performed is replacement of the lamps in the L-864 and L-810 fixtures. Lamps should be replaced after being operated for not more than 75 percent of the rated life or immediately upon failure as per advisory circular 70/7460-1K. By following these instructions, maximum safety and performance can be achieved.

TOOLS REQUIRED: NONE

3.2 L-864 LAMP REPLACEMENT

- 3.2.1 Loosen the one (1) wing nut on the latch pin so that it can recline.
- 3.2.2 Open the lens and tilt it back
- 3.2.3 To remove each lamp, depress down while rotating the lamp counter-clockwise 90 degrees.
- 3.2.4 Install the new lamps by depressing down while rotating the lamp clockwise 90 degrees.
- 3.2.5 Close the lens and let the latch pin drop in the recessed slot.
- 3.2.6 Tighten the wing nut snug the ¼ turn more.

3.3 L-810 LAMP REPLACEMENT

- 3.3.1 Unclasp the two latches and let the bail recline back.
- 3.3.2 Lift the lens up and over the lamp letting the lens hang from the safety cable.
- 3.3.3 Unscrew the lamp counter-clockwise and remove.

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- 3.3.4 Install the new lamp by screwing the lamp clockwise.
- 3.3.5 Re-install the lens making sure it is seated properly on the base.
- 3.3.6 Re-clasp the two latches.

3.4 L-864 CONTROLLER

No scheduled maintenance is required. Perform on an as needed basis only.

3.5 PHOTOCCELL

The photocell is a sealed unit. No maintenance is needed or required other than replacement as needed.

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4.0 MAJOR COMPONENTS LIST

QUANTITY #	DESCRIPTION	PART NUMBER
1	PHOTOCELL	102FAA
1	FLASHER	FS155-30T
1	AUXILIARY FLASHER	FA155
1	SOLID STATE LOAD CONTACT SWITCH	FA155-2
1	LOAD CONTACT RELAY	PRD7AY0
2	BEACON LAMP BURNOUT DETECTOR	CS2620-115FAA
4	OCTAL PLUG RELAY	X9KE-115V
2	SIDELIGHT BURNOUT DETECTOR (NOT INTERCHANGEABLE WITH X9KE)	9KE-3LAMP
6	20 AMP FUSE	RFA20
1	TIMER	TS14110
1	RESISTOR	2.5K12W

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5.0 SUGGESTED PARTS LIST

QUANTITY#	PART NUMBER	DESCRIPTION
1	102FAA	PHOTOCELL
1	FS155-30T	FLASHER
1	FA155-2	SOLID STATE LOAD CONTACTOR SWITCH
1	CS2620-115FA	BACON LAMP BURNOUT DETECTOR
1	X9KE-115V	OCTAL PLUG RELAY
1	9KE-3LAMP	SIDELIGHT BURNOUT DETECTOR
2	RFA20	20 AMP FUSE

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Warranty & Return Policy

TWR Lighting, Inc. ("TWR") warrants its products (other than replacement parts) against defects in design, material (excluding incandescent bulbs) and workmanship for a period ending on the earlier of two (2) years from the date of shipment or one (1) year from the date of installation.

Replacement parts are warranted for 90-days from the date of shipment.

Conditions not covered by this Warranty or which might void this Warranty are as follows:

- Improper Installation or Operation
- Misuse
- Abuse
- Unauthorized or Improper Repair or Alteration
- Accident or Negligence in Use, Storage, Transportation, or Handling
- Any Acts of God or Nature

Field Service – Repairs are warranted for 90 days from the date of service, except where TWR has made recommendations that were not adhered to that may cause premature failure on previous repairs. Labor, Travel, and Tower Climb are not covered under warranty. Customer shall be obligated to pay for all incurred charges not related to warranty. All warranty repairs are performed by trained TWR personnel, or dispatched through an extensive network of certified and insured subcontractors.

Return Policy

Return Terms – You must first contact our Product Support Administrative Assistant at **(713-973-6905)** to acquire a Return Goods Authorization (RGA) number in order to return the product(s). Please have the following information available when requesting an RGA number:

- The contact name and phone number of the tower owner
- *The contact name and phone number of the contractor*
- The site name and number
- The part number
- The serial number (if any)
- A description of the problem
- The billing information
- The Ship To address

This RGA number must be clearly visible on the outside of the box. If the RGA number is not clearly labeled on the outside of the box, your shipment will be refused. Please ensure the material you are returning is packaged carefully. **The warranty is null and void if the product(s) are damaged in the return shipment.**

All RGA's must be received by TWR 4300 Windfern Rd., Suite 100, Houston TX 77041-8943,

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within 30 days of issuance.

Upon full compliance with the Return Terms, TWR will replace, repair and return, or credit products returned by the customer. It is TWR's sole discretion to determine the disposition of the returned item(s).

Replacements – Replacement part(s) will be shipped and billed to the customer for product(s) considered as Warranty, pending return of defective product(s). When available, a certified reconditioned part is shipped as warranty replacement with a Return Goods Authorization (RGA) number attached. Upon receipt of returned product(s), inspection, testing and evaluation will be performed to determine the cause of defect. The customer is then notified of the determination of the testing.

- Product(s) that is deemed defective and/or un-repairable and covered under warranty, a credit will be issued to the customer's account.
- Product(s) that are found to have no defect will be subject to a **\$60.00 per hour testing charge (1 hour minimum), which will be invoiced to the customer.** At this time the customer may decide to have the tested part(s) returned and is responsible for the return charges.
- Product(s) under warranty, which the customer does not wish returned, the customer will be issued a credit against the replacement invoice.

Repair & Return – A Return Goods Authorization (RGA) will be issued for all part(s) returned to TWR for repair. Upon receipt of returned product(s), inspection, testing and evaluation will be performed to determine the cause of defect. The customer is then notified of the determination of the testing. If the returned part(s) is deemed un-repairable or the returned part(s) is found to have no defect, the customer will be subject to a **\$60.00 per hour testing charge (1 hour minimum), which will be invoiced to the customer.** Should the returned parts be determined to be repairable, a written estimated cost of repair will be sent to the customer for their written approval prior to any work being performed. In order to have the tested part(s) repaired and/or returned, the customer must issue a purchase order and is responsible for the return shipping charges.

Return to Stock – Any order that is returned to TWR for part(s) ordered incorrectly by the customer or unneeded upon receipt, the customer is required to pay a **20% restocking fee.** A credit will be issued once it is determined that the Return Terms are met.

Credits – Credits are issued once it is determined that all of the Warranty and Return Terms are met. All credits are processed on Fridays. In the event a Friday falls on a Holiday, the credit will be issued on the following Friday.

Freight – All warranty replacement part(s) will be shipped via ground delivery and paid for by TWR. Delivery other than ground is the responsibility of the customer.

REMEDIES UNDER THIS WARRANTY ARE LIMITED TO PROVISIONS OF REPLACEMENT PARTS AND REPAIRS AS SPECIFICALLY PROVIDED. IN NO EVENT SHALL **TWR** BE LIABLE FOR ANY OTHER LOSSES, DAMAGES, COSTS OR EXPENSES INCURRED BY THE CUSTOMER, INCLUDING BUT NOT LIMITED TO, LOSS FROM FAILURE OF THE PRODUCTS TO OPERATE FOR ANY TIME, AND ALL OTHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING ALL PERSONAL INJURY PROPERTY DAMAGE DUE TO ALLEGED NEGLIGENCE, STRICTLY LIABLE, OR ANY OTHER LEGAL THEORY WHATSOEVER. THIS WARRANTY IS MADE BY **TWR** EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, **TWR** MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS OF THE PRODUCTS FOR ANY PARTICULAR PURPOSE. **TWR** EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES.

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TWR Lighting, Inc.

RETURN GOODS AUTHORIZATION FORM (RGA)

RGA#: _____ DATE: _____

CUSTOMER: _____

CONTACT: _____ PHONE NO.: _____

ITEM DESCRIPTION (PART NO.): _____

MODEL NO.: _____ SERIAL NO.: _____

ORIGINAL TWR INVOICE NO.: _____ DATED: _____

DESCRIPTION OF PROBLEM: _____

SIGNED _____ DATE NEEDED _____

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RETURN ADDRESS: _____

RETURN PRODUCT TO: 4300 WINDFERN RD #100 HOUSTON TX 77041-8943

AA2-M CONTROLLER

TWR Lighting, Inc.

RETURN GOODS AUTHORIZATION FORM (RGA)

RGA#: _____ DATE: _____

CUSTOMER: _____

CONTACT: _____ PHONE NO.: _____

ITEM DESCRIPTION (PART NO.): _____

MODEL NO.: _____ SERIAL NO.: _____

ORIGINAL TWR INVOICE NO.: _____ DATED: _____

DESCRIPTION OF PROBLEM: _____

SIGNED _____ DATE NEEDED _____

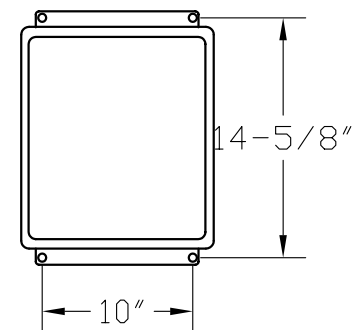
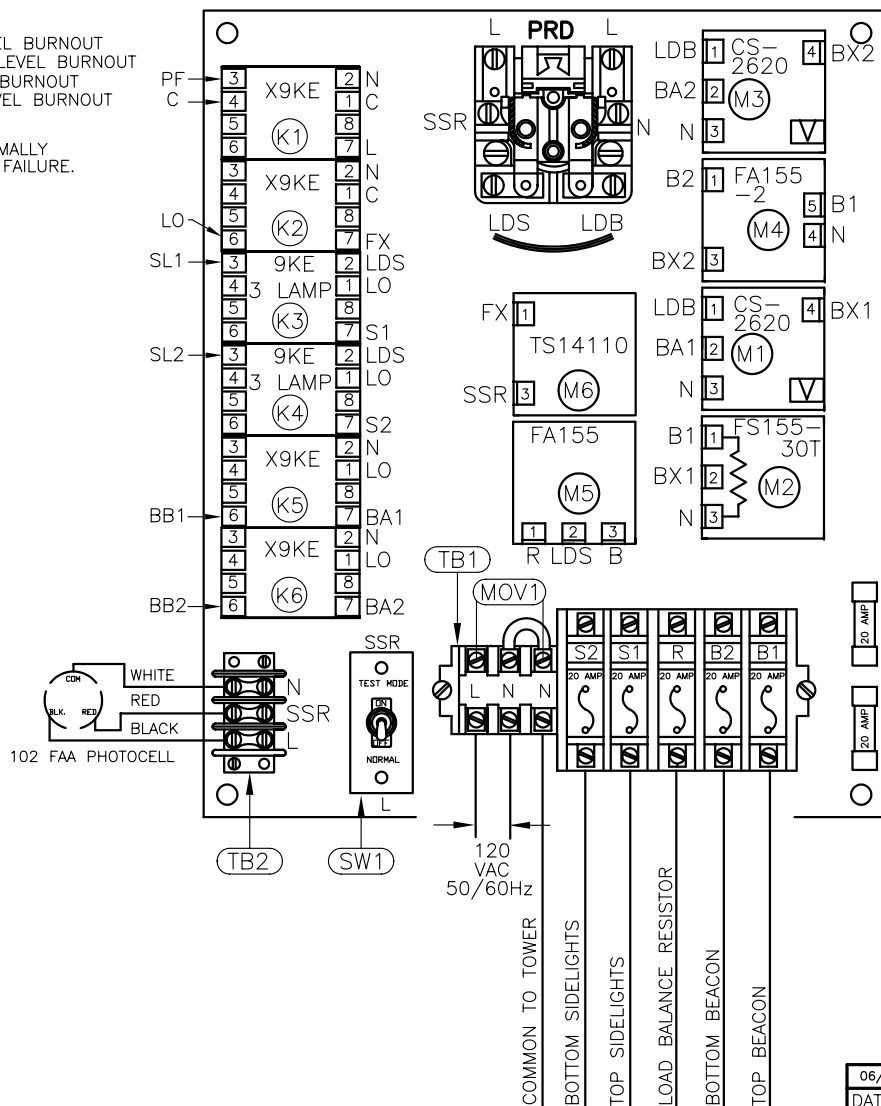
RETURN ADDRESS: _____

RETURN PRODUCT TO: 4300 WINDFERN RD #100 HOUSTON TX 77041-8943

CUSTOMER ALARM POINTS

C = ALARM COMMON
 PF = POWER FAILURE
 LO = LIGHTS "ON"
 SL1 = SIDELIGHTS TOP LEVEL BURNOUT
 SL2 = SIDELIGHTS BOTTOM LEVEL BURNOUT
 BB1 = BEACON TOP LEVEL BURNOUT
 BB2 = BEACON BOTTOM LEVEL BURNOUT

* ALARM OUTPUTS ARE NORMALLY OPEN AND CLOSED UPON FAILURE.



MOUNTING DIMENSIONS
 (FOR CABINET)

10-7/8" X 12-7/8" PANEL

NOTES:

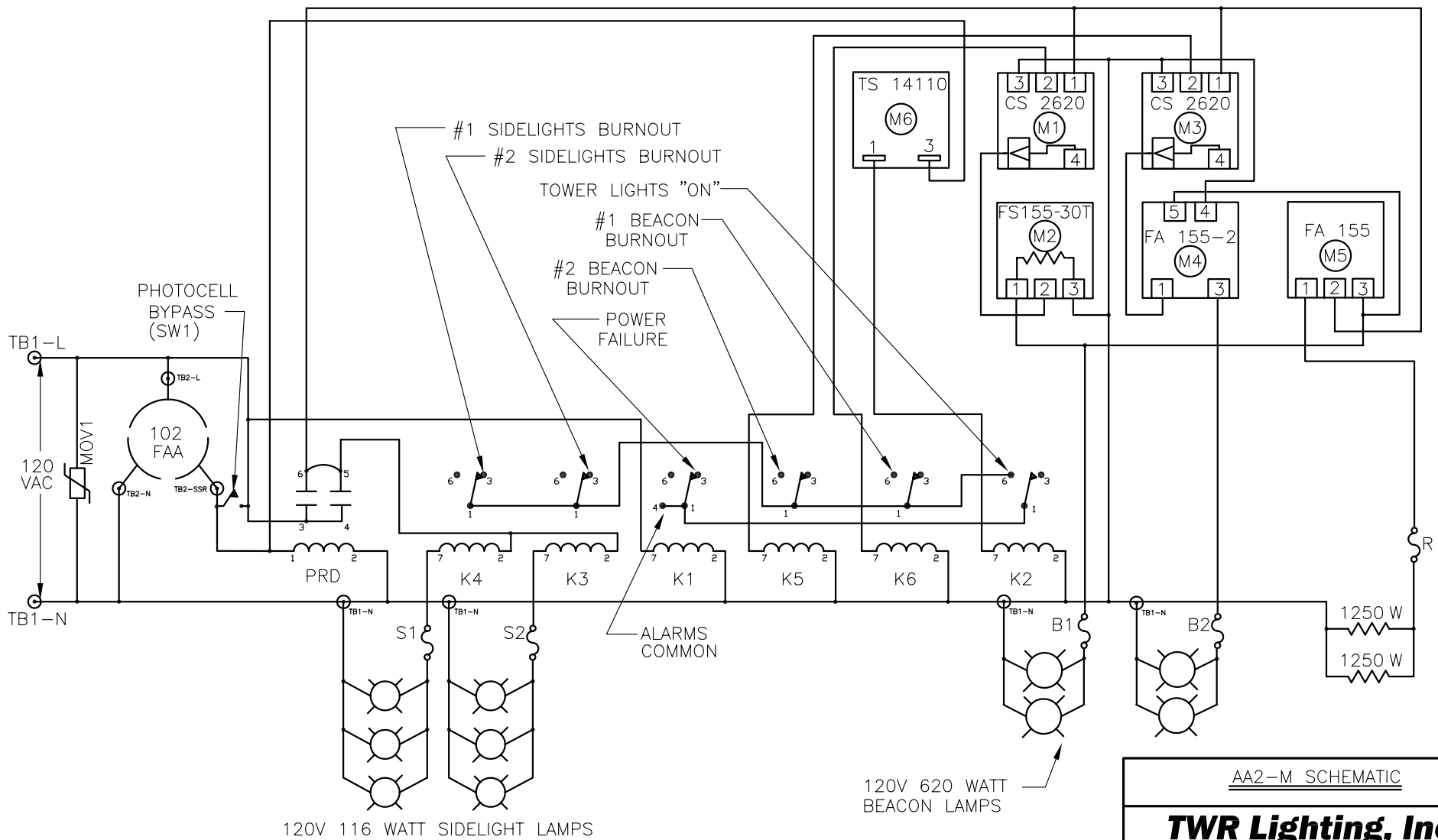
1. WHEN REPLACING MODULES M2, M4 & M5 USE HEAT SINK COMPOUND BETWEEN MODULE AND ALUMINUM PLATE.
2. USE BRUSH SF13X20 OR E13SF20 FUSE.
3. WIRES ARE CONNECTED LETTER TO LETTER. (EXAMPLE) L TO L TO L.

AA2-M CONTROLLER
 (CHASSIS LAYOUT)

TWR Lighting, Inc.

APP'D	ENGINEER	CHK'D BY
DRAWN BY	E.A.SALAZAR	SHEET SIZE SHEET QTY.
DATE	3/3/95	B 1 OF 1
SCALE	N.T.S.	DRAWING NO.
DATE	03/31/1999	1144-R

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AA2-M SCHEMATIC

TWR Lighting, Inc.

APP'D	ENGINEER	CHK'D BY
DRAWN BY	E.A.SALAZAR	SHEET SIZE SHEET QTY.
DATE	03/31/1999	B 1 OF 1
SCALE	N.T.S.	DRAWING NO.
		1144-S

06/13/00(A) CHANGED MODULES

DATE: LTR. REVISION

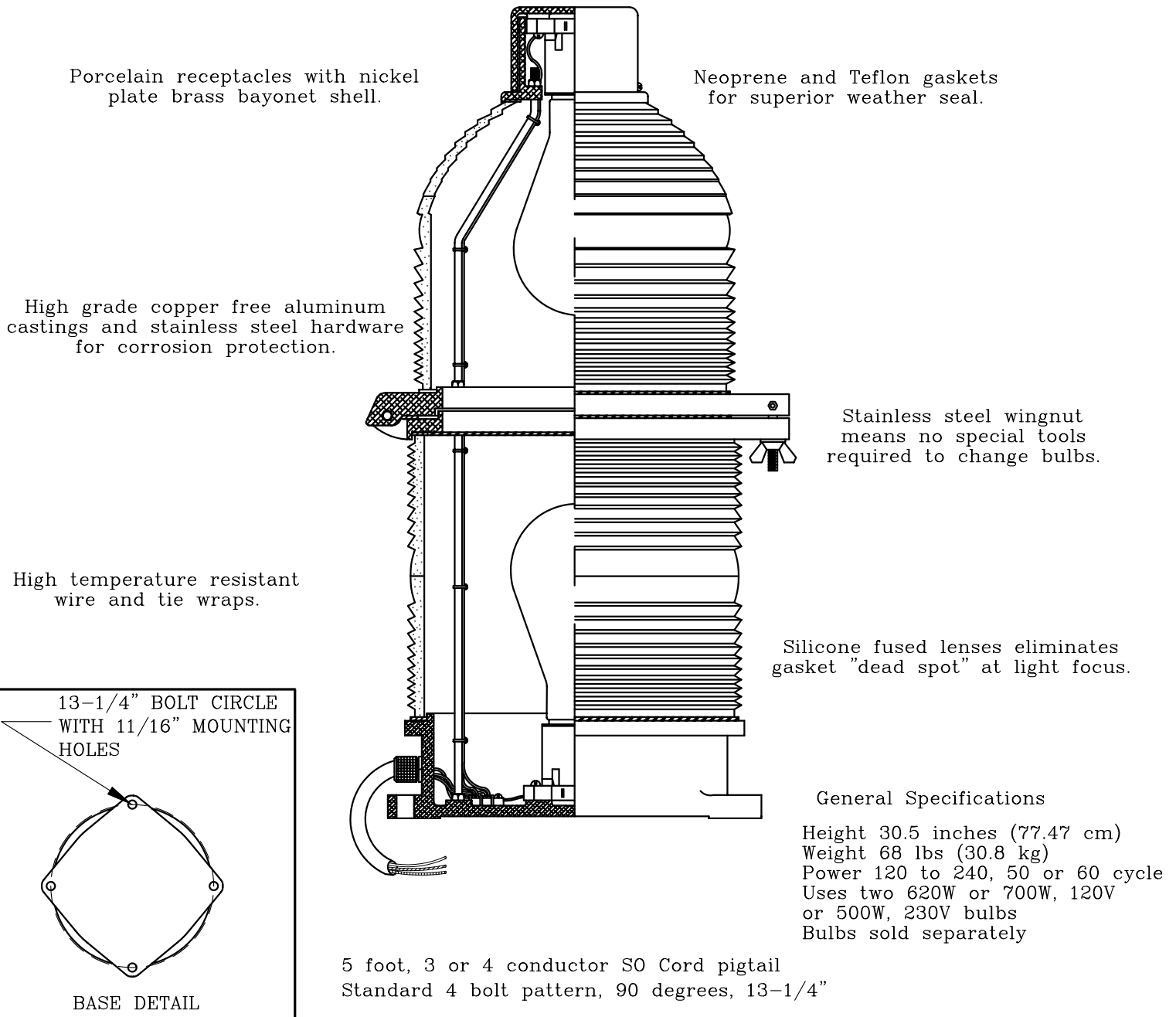
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TWR Lighting, Inc.

FAA Approved L-864 300 mm BEACON

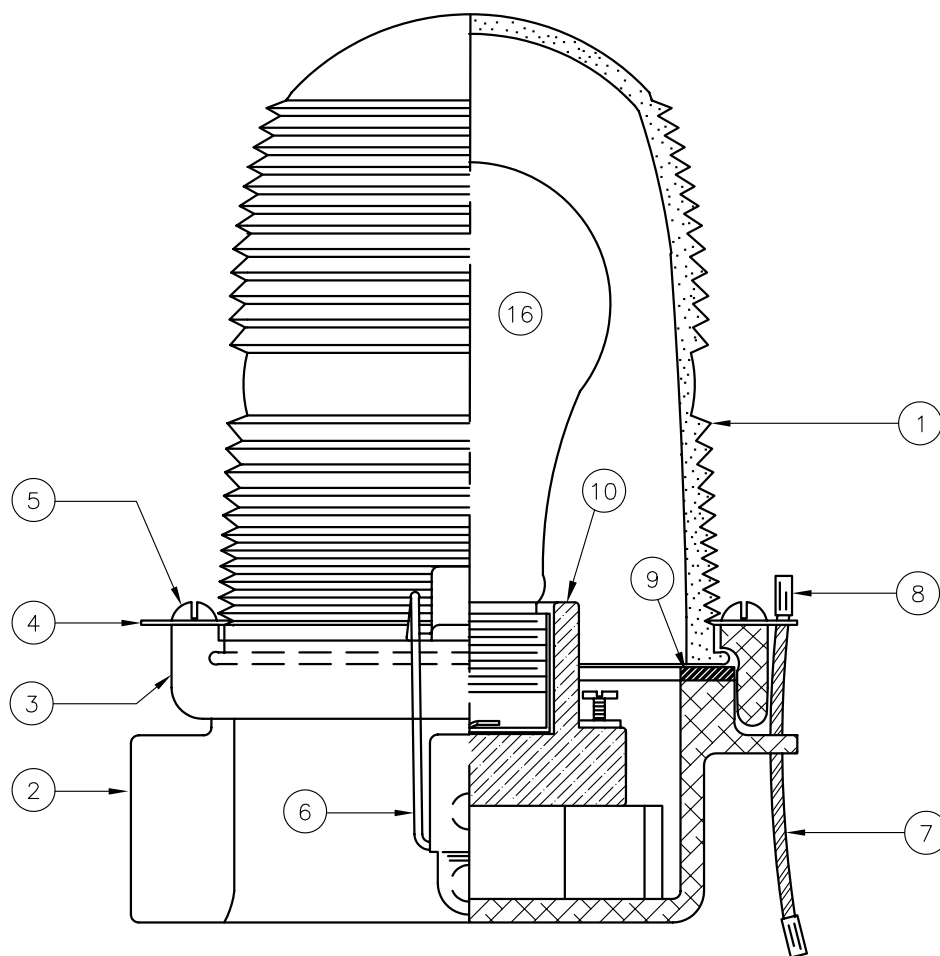
FM10017RB.DWG

Flashing 300 mm Code Red Beacon is used to light aviation obstructions taller than 150 feet AGL.
ETL approved to meet or exceed all FAA specifications as found in AC 150/5345-43 Type L-864.



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Houston, Tx., 77041-8943
Phone: (713)973-6905
Fax: (713)973-9352

WEB SITE: <http://www.twrlighting.com>
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ITEM NO	QTY.	TWR PART NUMBER	DESCRIPTION
1	1	AP35222	RED SIDELIGHT GLASS
2	1	105C	SINGLE SIDELIGHT BODY
3	1	106C	LENS HOLDER RING
4	2	12V245	OL LENS CLIP
5	2	832X14PH	8-32 X 1/4" PH S.S. SLOT
6	2	HC255SS	SIDELIGHT LATCHES
7	1	7X7SS	1/16 7 X 7 S.S. WIRE
8	2	A1A	STAKON CRIMP
9	1	OLG	OL GASKET
10	1	19062	SIDELIGHT RECEPTACLE
* 11	4	18PRSS	1/8 POP RIVETS
* 12	1	A314	3/4" CONDUIT LOCKNUT
* 13	2	104G	WHITE TEFLON WASHER
* 14	2	832X34PH	8-32 X 3/4" S.S. RH SLOT
* 15	1	100327	OL-1 SERIAL NUMBER LABEL
~ 16	1	116A21TS	116W-120V LAMP (TYP.)

*=PART NOT SHOWN

~=PART SOLD SEPARATELY

NOTE:

1. FAA APPROVED LIGHT USES THE 116A21TS LAMP. OTHER LAMPS ARE AVAILABLE TO MEET YOUR APPLICATION.

OL1

3/4" OL-1 SIDE HUB
ASSEMBLY DETAIL (PART #OL1)

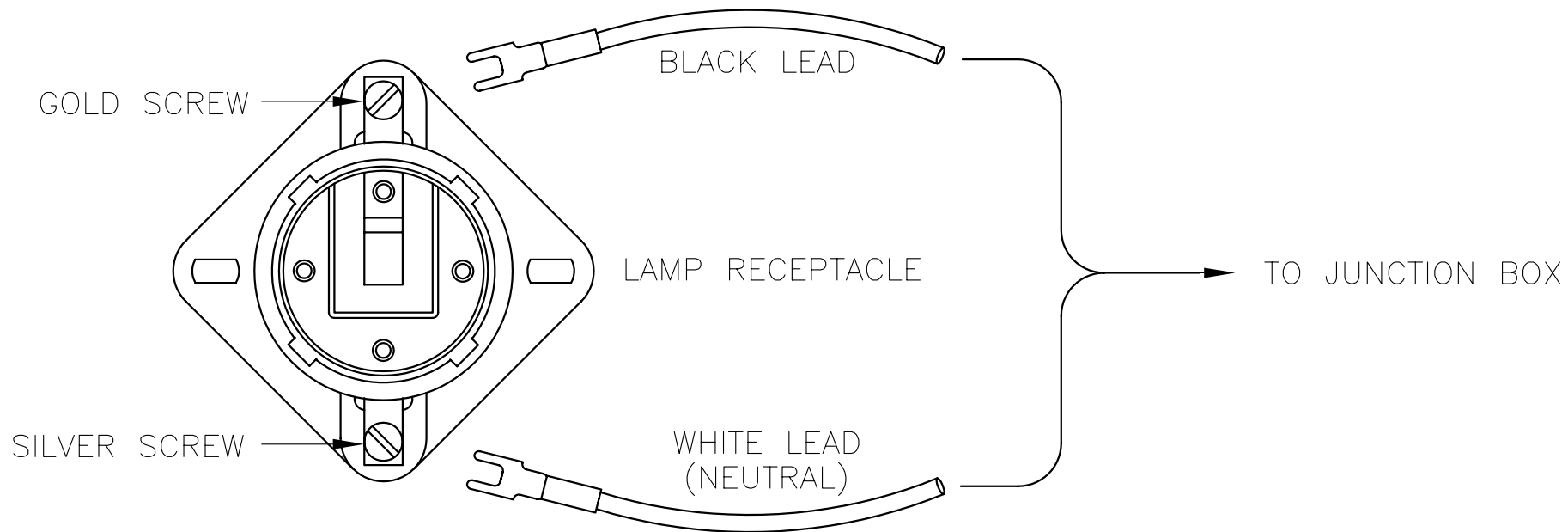
TWR Lighting, Inc.

APP'D	ENGINEER	CHK'D BY
DRAWN BY	E.A.SALAZAR	SHEET SIZE
DATE	1/7/92	SCALE
		DRAWING NO.

05/13/02 (B) UPDATED B.O.M.

DATE: LTR. REVISION

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SIDELIGHT RECEPTACLE WIRING

TWR Lighting, Inc.

APP'D	ENGINEER	CHK'D BY
DRAWN BY G.D.SEBEK	SHEET SIZE A	SHEET QTY. 1 OF 1
DATE 6/8/91	SCALE N.T.S.	DRAWING NO. 274-S

7/2/98	(A)	CD	CHANGED LABEL
DATE:	LTR.		REVISION

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TWR Lighting, Inc.

FAA Approved L-810

Single Obstruction Light Side Hub

OL1

FM10018_RC.DWG

For use as an obstruction light on towers, building, bridges, cooling towers.
Meets or exceeds all FAA specs as found in AC 150/5345-43 Type L-810.

Our most popular light. The side hub allows for a straight run of conduit from the junction box for hook up.

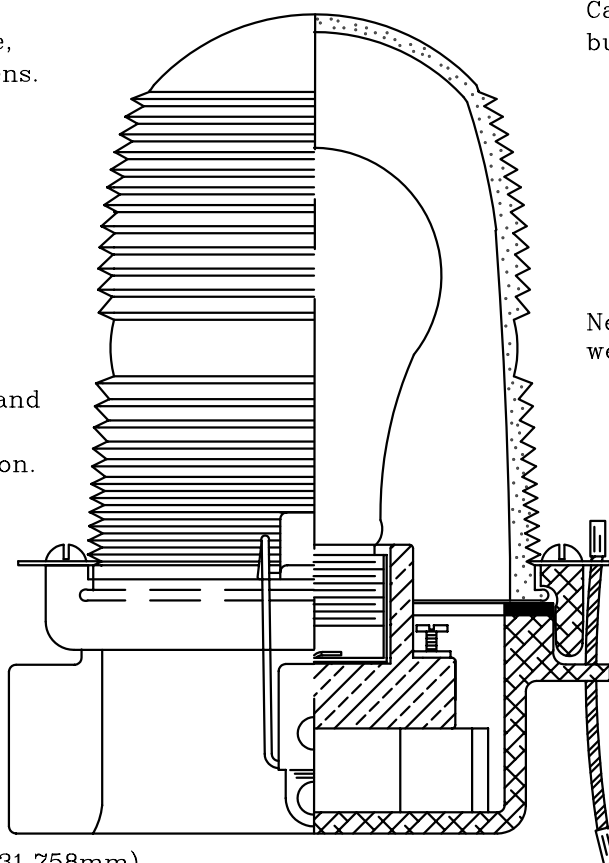
High temperature, ultra pure
FAA approved Aviation red, blue,
yellow, or clear glass fresnel lens.

Can be used steady
burning or flashing.

Copper free aluminum casting and
all stainless steel latches and
hardware for corrosion protection.

Neoprene gasket for
weatherproofing.

Specify conduit size
3/4", 1", 1-1/4" NPT
(19.055mm), (25.407mm), (31.758mm)



High quality porcelain
receptacle.

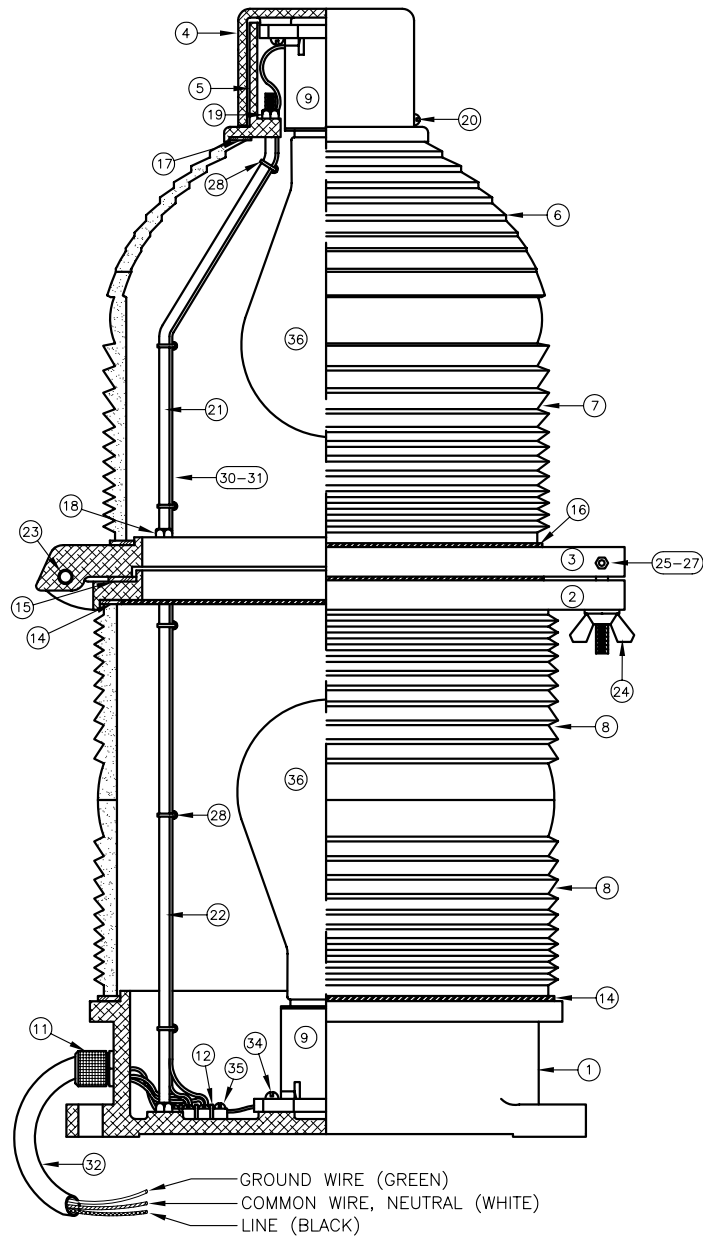
Stainless steel
safety cable.

No special tools required for maintenance.

General Specifications

Height 7.5 inches (19.055 cm)
Weight 3 lbs (13605.442g)
Power 120, 230, or 240 volts AC
Uses 116W, 120V or 240V bulbs
Bulbs sold separately

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ITEM NO.	QTY.	TWR PART NO.	DESCRIPTION
1	1	100C	BEACON BASE
2	1	101C	LOWER HINGE
3	1	102C	UPPER HINGE
4	1	103C	CANOPY CAP
5	1	104C	CANOPY FLANGE
6	1	AP3557	CAP LENS RED
7	1	AP3556	MIDDLE LENS RED
8	2	AP3555	BOTTOM LENS RED
9	2	23X546	BEACON LAMP RECEPTACLE
* 10	4	104G	WHITE TEFLON WASHER 5K MIN.
11	1	CGB295SA	CORD CONNECTOR 3/4 50 - 62
12	1	TERMBLK3	TERMINAL BLOCK 3-PART
13	1	832X38PH	8-32 X 3/8 SS PH SCREW
14	2	100G	GASKET, BEACON BASE
* 15	1	101G	GASKET, MIDDLE BEACON
16	1	102G	GASKET, TOP HINGE
17	1	103G	GASKET TEFLON, TOP
18	6	516NUT	5/16-18 HEX NUT
19	6	516NUTIN	5/16-18 NUT W/NYLON INSERT
20	3	1420X58RH	1/4-20 X 5/8" SS RH SCREW
21	3	BTRB	BEACON TIE RODS BENT
22	3	BTRS-1	BEACON TIE ROD STRAIGHT
23	1	BHP	BEACON HINGE PIN W/COTTER PIN
24	1	BLP	BEACON LATCH PIN
25	1	632X2RH	6-32 X 2 SS RH SCREW
26	1	632NUT	6-32 NUT HEX
27	1	632LW	6-32 LOCK WASHER
28	7	TY223M	HI-TEMP TY WRAPS
* 29	1	100328	BEACON SERIAL NUMBER LABEL
30	4	16HTWH	#16 HI-TEMP WHITE WIRE
31	4	16HTBL	#16 HI-TEMP BLACK WIRE
32	5	CS014/3	S.O. CORD 3 WIRE, #14
* 33	11	YAV14-H34F	(STAKON) BURNDY HEAVY DUTY
34	4	1032X1RH	10-32 X 1 SS RH SCREW
35	2	1032X38BH	10-32 x 3/8 BH
36	2	-	BEACON LAMP
37	1	1032X58PH	10-32 x 5/8 PH

* = ITEM NOT SHOWN
~ = PART SOLD SEPARATELY

300MM BEACON

300 MM BEACON
ASSEMBLY DETAIL (PART #BEACON)

TWR Lighting, Inc.

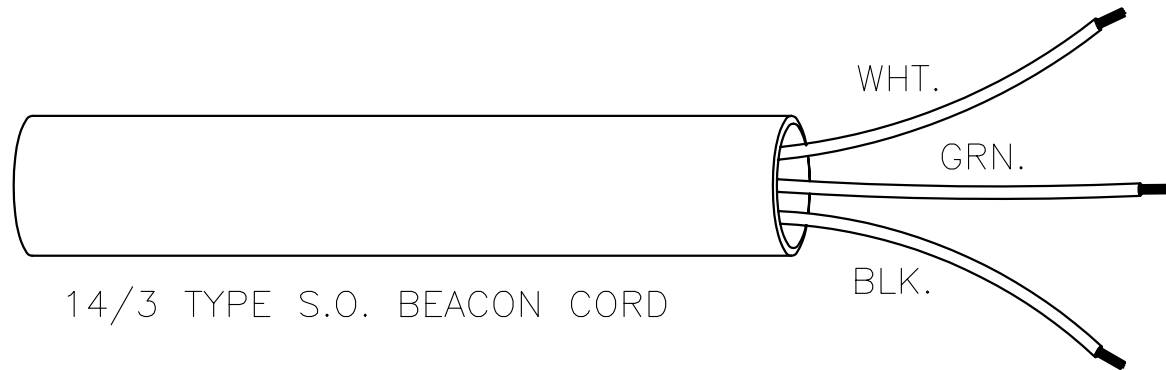
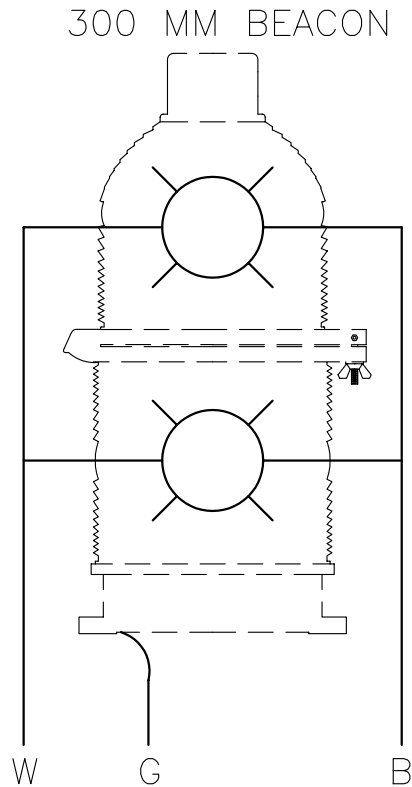
APP'D	ENGINEER	CHK'D BY
DRAWN BY	G.D.SFBEK	SHEET SIZE
DATE	6/3/91	SCALE
	N.T.S.	DRAWING NO.
		275-B

05/18/00(D) 4 UPDATED B.O.M.

DATE: LTR. REVISION

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- 1) WHITE WIRE IS NEUTRAL TO BOTH LAMPS.
- 2) BLACK WIRE IS LINE TO BOTH LAMPS.
- 3) GREEN WIRE IS EARTH GROUND.

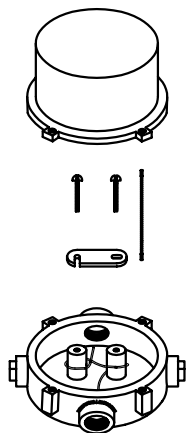
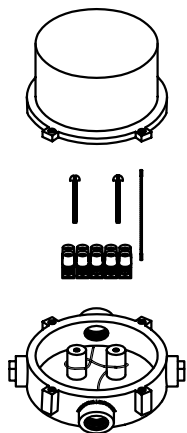


300 MM BEACON WIRE

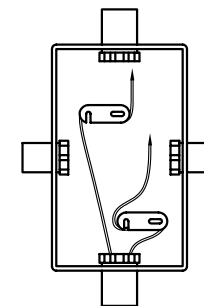
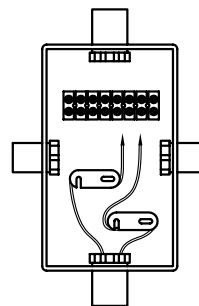
TWR Lighting, Inc.

APP'D	ENGINEER	CHK'D BY	
DRAWN BY	G.D.SEBEK		SHEET SIZE
DATE	6/10/91	SCALE	N.T.S.
		DRAWING NO.	273-B

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JB-5 AND JB-O
3/4" JUNCTION BOX



JB-8 AND JB-8SR
1" JUNCTION BOX

NOTES:

- 1) DRAWING ILLUSTRATES METHOD OF STRAIN RELIEVING WIRE. USE THIS METHOD ON ALL JUNCTION BOXES.
- 2) THE NATIONAL ELECTRICAL CODE-ARTICLE 300-19-B3 REQUIRES CONDUCTORS IN A VERTICAL CONDUIT BE SUPPORTED TO RELIEVE STRAIN ON TERMINAL BLOCK CONNECTIONS.
- 3) SKETCH ILLUSTRATES METHOD OF STRAIN RELIEVING A SINGLE CONDUCTOR. SEVERAL CONDUCTORS MAY BE GROUPED TOGETHER.
- 4) CONDUCTORS MAY BE MIXED BUT SHOULD NOT TAKE UP MORE THAN 40% OF CONDUIT'S INSIDE AREA.

USING THIS JUNCTION BOX METHOD SPACING IS 100 FEET MAXIMUM.

AWG WIRE SIZE	MAX. NUMBER WIRES IN 3/4" CONDUIT	MAX. NUMBER WIRES IN 1" CONDUIT	WIRE AREA SQ. INCHES	WEIGHT PER 100 FEET
12 THHN	16	26	0.0117	2.50
10 THHN	10	17	0.0184	4.10
8 THHN	6	9	0.0373	6.70
6 THHN	4	7	0.0519	10.30
4 THHN	2	4	0.0845	16.20

JUNCTION AND STRAIN RELIEF BOXES

TWR Lighting, Inc.

APP'D	ENGINEER	CHK'D BY
DRAWN BY G.D.SEBEK		SHEET SIZE B
DATE 7/26/93	SCALE N.T.S.	SHEET QTY. 1 OF 1
		DRAWING NO. 100089

9/29/00	(A) 8	UPDATED NOTES
DATE:	LTR.	REVISION

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