

# **TWR Lighting, Inc.**

*Enlightened Technology<sup>SM</sup>*

4300 WINDFERN RD #100 - HOUSTON TX 77041-8943

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

web: [www.twrlighting.com](http://www.twrlighting.com)

## **IMPORTANT!!!**

PLEASE TAKE THE TIME TO FILL OUT THIS FORM COMPLETELY. FILE IT 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 # AA0MTSSw/IND

SERIAL # \_\_\_\_\_

PURCHASE DATE \_\_\_\_\_

PURCHASED FROM \_\_\_\_\_

# **TWR Lighting, Inc.**

*Enlightened Technology<sup>SM</sup>*

## **AA0MTSSw/IND CONTROLLER**

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**WARRANTY & RETURN POLICY**

**RETURN MERCHANDISE AUTHORIZATION (RMA) FORMS**

# **TWR Lighting, Inc.**

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# **TWR Lighting, Inc.**

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## **AA0MTSSw/IND CONTROLLER**

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### **1.0 GENERAL INFORMATION**

The TWR Lighting, Inc. (TWR), Model AA0MTSSw/IND, Controller is for applications of one (1) through nine (9) L-810 single obstruction light fixtures.

The obstruction lights burn steady. Each fixture requires one (1) 116 watt, 120V bulbs (116A21TS).

A by-pass switch (SW1) allows the controller to be turned on during daylight hours without covering the photocell. This is particularly helpful since the controller can be mounted indoors while the photocell is outdoors. SW1 can be operated by turning "on" the switch mounted in front of the door of the controller. The PL1 indicator will then illuminate.

The photocell is the three (3) blade, twist to lock, type.

Power supplied to the controller shall be 120V, 50/60 Hz.

Controller functions that are monitored by remote alarms in the form of dry contact closures (Form C) are as follows:

<b>POWER FAILURE</b>	Monitors 120V AC to the controller. Alarms in the event of power failure, or tripped circuit breaker.
<b>LIGHTS "ON"</b>	Gives an indication whenever the lights are activated.
<b>OBSTRUCTION LIGHTS</b>	Will give an alarm when one (1) of the group of sidelights fails, and pilot light PL2 will illuminate.

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### **2.0 INSTALLATION**

#### **2.1 MOUNTING THE CONTROL CABINET**

(Refer to Drawing 1270-R)

The power supply control cabinet can be located at the base of the structure or in an equipment building. Mounting footprints are shown on drawing 1270-R. Power wiring to the control cabinet should be in accordance with local methods and National Electrical Codes (NEC).

**2.1.1** If the control cabinet is mounted inside an equipment building, the photocell should be mounted vertically on ½” conduit outside the building above the eaves facing north. Wiring from the photocell socket to the control cabinet should consist of one (1) each, red, black, and white wires. The white wire is connected to the socket terminal marked “W,” the black wire is connected to the socket terminal marked “B,” and the red wire is connected to the socket terminal marked “R.” The photocell should be positioned so that it does not “see” ambient light, which would prevent it from switching to the nightmode.

**2.1.2** If the control cabinet is mounted outside an equipment building, the photocell should be mounted vertically on ½” conduit so the photocell is above the control cabinet. Care must be taken to assure that the photocell does not “see” any ambient light that would prevent it from switching into the nightmode. The photocell wiring is the same as in 2.1.1.

The wiring from the photocell, the service breaker, and the sidelights should enter the control cabinet through the watertight connectors in the bottom of the cabinet. Inside the cabinet, the connections will be made on the terminal strips and circuit breaker located at the bottom of the chassis. These connections are made as follows:

#### **2.2 EXTERNAL PHOTOCCELL WIRING**

(Refer to Drawing 1270-R)

**2.2.1** Connect the **BLACK** wire from the photocell to terminal block TB2 marked “L.”

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**2.2.2** Connect the **RED** wire from the photocell to terminal block TB2 marked "SSR."

**2.2.3** Connect the **WHITE** wire from the photocell to terminal block TB2 marked "N."

### **2.3 POWER WIRING**

(Refer to Drawing 1270-R)

**2.3.1** Power wiring to the control cabinet should be in accordance with local methods and National Electrical Codes (NEC).

**2.3.2** Circuit breaker needs to be rated at 20 amps.

**2.3.3** Connect incoming 120V AC line to terminal block TB1 marked "L."

**2.3.4** Connect the neutral wire(s) to one (1) of the terminal blocks on TB1 marked "N."

**2.3.5** Connect the AC ground to the ground lug located to the right of TB2.

### **2.4 SIDELIGHT WIRING**

(Refer to Drawing 1270-R)

**2.4.1** Connect the **RED** from the sidelight group to the circuit breaker marked "S."

**2.4.2** Connect the **WHITE** neutral wire(s) to the terminal block TB1 marked "N."

### **2.5 SIDELIGHT ALARM WIRING**

(Refer to Drawings 1270-R and 1270-S)

**2.5.1** Alarm relays K1, K2, and Module M1 are provided for independent contact closures for: Power Failure, Lights "ON," and Sidelight Lamp Burnout.

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**2.5.2** Alarm wiring: To utilize all of the red light alarms, the customer will need three (3) pairs of wires to interface with the alarm device. One (1) wire from each of the three (3) pairs will terminate at terminal block TB3, terminal 7. The remaining wire from each pair will terminate as follows:

**Sidelight Lamp Burnout:** Connect to terminal block TB3, terminal 6, for normally open (or) terminal 5, for normally closed monitoring.

**Power Failure Alarm:** Connect to terminal block TB3, terminal 2, for normally open (or) terminal 1, for normally closed monitoring.

**Lights "ON" Alarm:** Connect to terminal block TB3, terminal 3, for normally open (or) terminal 4, for normally closed monitoring.

**2.5.3** Testing: To test alarms, follow the procedures using the "ohm" meter between alarm common and alarm points.

**Power Failure** Pull circuit breaker at electrical panel.

**Lights "ON"** Operate photocell by-pass switch (SW1) or cover the photocell.

**Sidelights** Trip circuit breaker on the controller panel.

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### **3.0 THEORY OF OPERATION**

#### **3.1 POWER SUPPLY**

120V AC enters the controller from the circuit breaker panel. Line sits at the PRD waiting to be switched and also keeps the power failure relay K1 energized. When the 6390-FAA Photocell is activated, line SSR energizes the coil of the PRD and K2 "Lights On" relay. This can also be accomplished by using the photocell by-pass switch (SW1) mounted on the front of the door of the controller.

#### **3.2 SIDELIGHTS**

Line (LD) is sent through Module M1, which is the current sensing all of the sidelights. If one (1) sidelight within the group burns out, then Module M1 will send 120V to the on board relay coil, which will cause a contact closure for sidelight alarm, and pilot light PL2 will illuminate.



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### **4.0 MAINTENANCE GUIDE**

#### **4.1 RED OBSTRUCTION LIGHTING**

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

**TOOLS REQUIRED:**        NONE

#### **4.2 L-810 LAMP REPLACEMENT**

**4.2.1** Unclasp the two (2) latches and let the bail recline back.

**4.2.2** Lift the lens up and over the lamp, letting the lens hang from the safety cable.

**4.2.3** Unscrew the lamp counter-clockwise and remove.

**4.2.4** Install the new lamp by screwing the lamp clockwise.

**4.2.5** Reinstall the lens, making sure it is seated properly on the base.

**4.2.6** Reclasp the two (2) latches.

#### **4.3 CONTROLLER**

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

#### **4.4 PHOTOCELL**

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

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### **5.0 MAJOR COMPONENTS PARTS LIST**

<b>QUANTITY</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>
1	6390-FAA	120 – 240V AC Photocell
1	VJ1210HWPL2	Enclosure
3	PB27E122	Octal Sockets (K1, K2 & K3)
6	8WA1204	Terminal Blocks (TB1 & TB2)
1	S261D20	20 amp Circuit Breaker (S)
2	8WA1808	End Stop
3	KRPA5AG120V	SPDT Relay (K1, K2 & K3)
1	SSPIGTAIL	20' Photocell Pigtail
1	CM-250	Current Sensor (M1)
1	PRD7AGO	Load Contactor (PRD)
1	ZB2BD2	Switch (SWI)
1	Q8P1BXXG110E	Green LED Indicator (PL1)
1	Q8P1BXXR110E	Red LED Indicator (PL2)
2	TERMBLK141-7	Terminal block (TB3, TB4)

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### **6.0 SUGGESTED SPARE PARTS LIST**

<b>QUANTITY</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>
1	6390-FAA	120 – 240V AC Photocell
1	KRPA5AG120V	SPDT Relay (K1, K2 & K3)

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### **Warranty & Return Policy**

**TWR Lighting, Inc. (“TWR”) warrants its products (other than “LED Product”)** 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.

**TWR Lighting, Inc. (“TWR”) warrants its “LED Product”** against defects in design, material and workmanship for a period of five (5) years from the date of shipment. TWR, at its sole option, will, itself, or through others, repair, replace or refund the purchase price paid for “LED Product” that TWR verifies as being inoperable due to original design, material or workmanship. All warranty replacement “LED Product” is warranted only for the remainder of the original warranty of the “LED Product” replaced. Replacement “LED Product” will be equivalent in function, but not necessarily identical, to the replaced “LED Product.”

**TWR Lighting, Inc. (“TWR”) warrants its “LED Product”** against light degradation for a period of five (5) years from the date of installation. TWR, at its sole option, will, itself, or through others, repair, replace or refund the purchase price paid for “LED Product” that TWR verifies as failing to meet 70% of the minimum intensity requirements as defined in the FAA Advisory Circular 150/5345-43E dated 10/19/95. All warranty replacement “LED Product” is warranted only for the remainder of the original warranty of the “LED Product” replaced. Replacement “LED Product” will be equivalent in function, but not necessarily identical, to the replaced “LED Product.”

**Replacement parts (other than “LED Product”) 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
- **Non-OEM Parts**

**The use of non-OEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of complying with FAA requirements as published in Advisory Circular 150/5345-43.**

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### **Return Policy**

**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 Service Representatives.

**Return Terms** – You must first contact our Customer Service Department at **713-973-6905** to acquire a Return Merchandise Authorization (RMA) number in order to return the product(s). Please have the following information available when requesting an RMA 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(s)
- The serial number(s) (if any)
- A description of the problem
- The billing information
- The Ship To address

**This RMA number must be clearly visible on the outside of the box.** If the RMA 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 RMAs must be received by TWR LIGHTING, INC., 4300 WINDFERN RD #100, HOUSTON TX 77041-8943, within 30 days of issuance.**

Upon full compliance with the Return Terms, TWR will replace, repair and return, or credit product(s) 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 Merchandise Authorization (RMA) 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 unrepairable and covered under warranty - a credit will be issued to the customer's account.
- Product(s) 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.

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## **AA0MTSSw/IND CONTROLLER**

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### **Warranty & Return Policy**

(continued)

- 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 Merchandise Authorization (RMA) 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 unrepairable, 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 PRODUCT(S) TO OPERATE FOR ANY TIME, AND ALL OTHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING ALL PERSONAL INJURY OR PROPERTY DAMAGE DUE TO ALLEGED NEGLIGENCE, OR ANY OTHER LEGAL THEORY WHATSOEVER. THIS WARRANTY IS MADE BY TWR EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED. WITHOUT LIMITING THE GENERALITY OF THE FORGOING, TWR MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS OF THE PRODUCT(S) FOR ANY PARTICULAR PURPOSE. TWR EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES.

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## **AA0MTSSw/IND CONTROLLER**

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### **RETURN MERCHANDISE AUTHORIZATION (RMA) FORM**

**RMA#:** \_\_\_\_\_ **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:** \_\_\_\_\_

# **TWR Lighting, Inc.**

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## **AA0MTSSw/IND CONTROLLER**

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### **RETURN MERCHANDISE AUTHORIZATION (RMA) FORM**

**RMA#:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**CUSTOMER:** \_\_\_\_\_

**CONTACT:** \_\_\_\_\_ **PHONE NO.:** \_\_\_\_\_

**ITEM DESCRIPTION (PART NO.):** \_\_\_\_\_

**MODEL NO.:** \_\_\_\_\_ **SERIAL NO.:** \_\_\_\_\_

**ORIGINAL TWR INVOICE NO.:** \_\_\_\_\_ **DATED:** \_\_\_\_\_

**DESCRIPTION OF PROBLEM:** \_\_\_\_\_

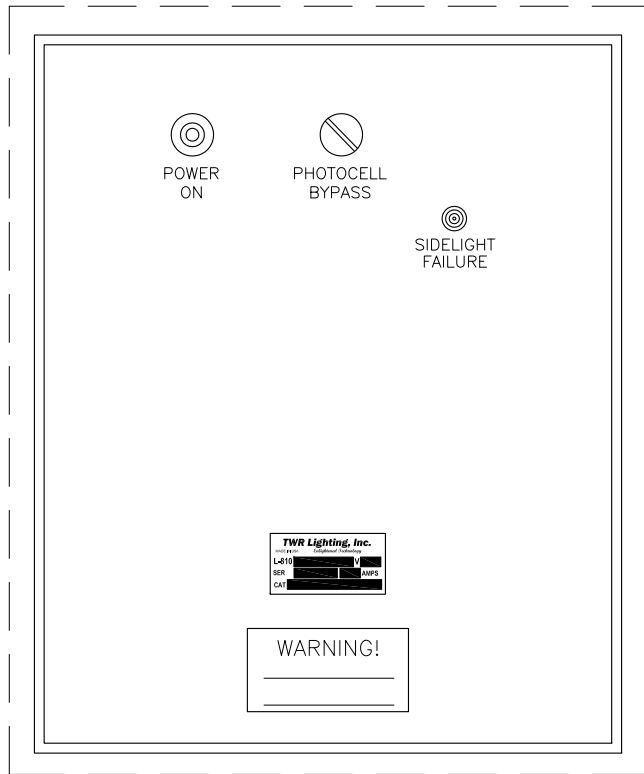
**SIGNED:** \_\_\_\_\_ **DATE NEEDED:** \_\_\_\_\_

**RETURN ADDRESS:** \_\_\_\_\_

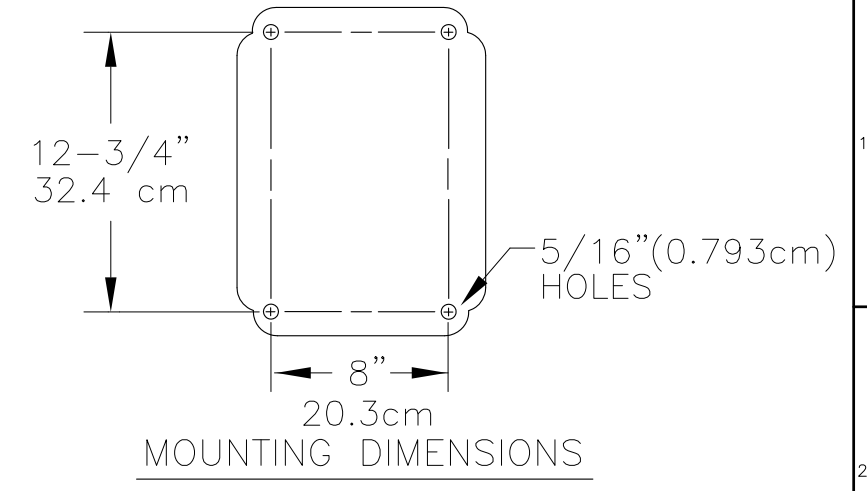
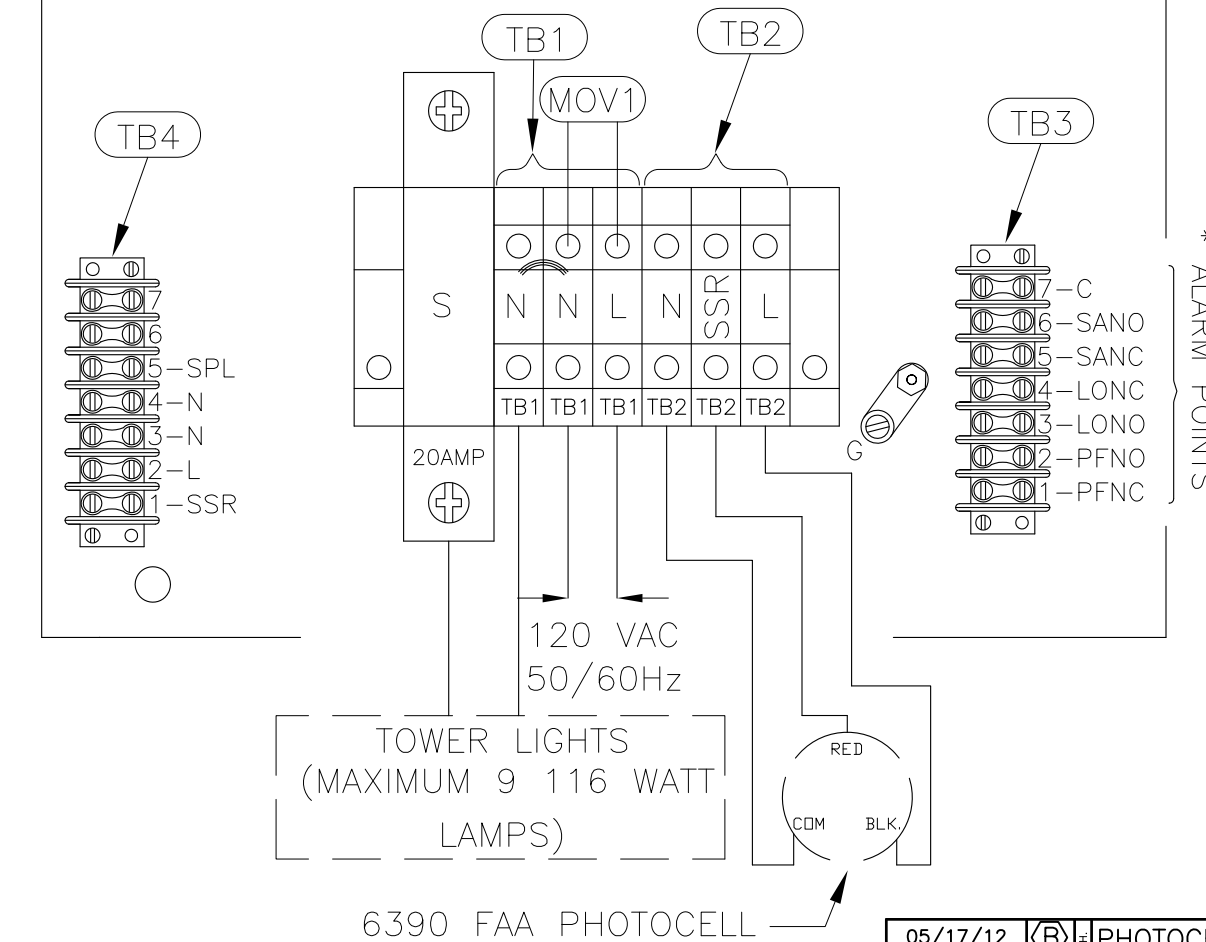
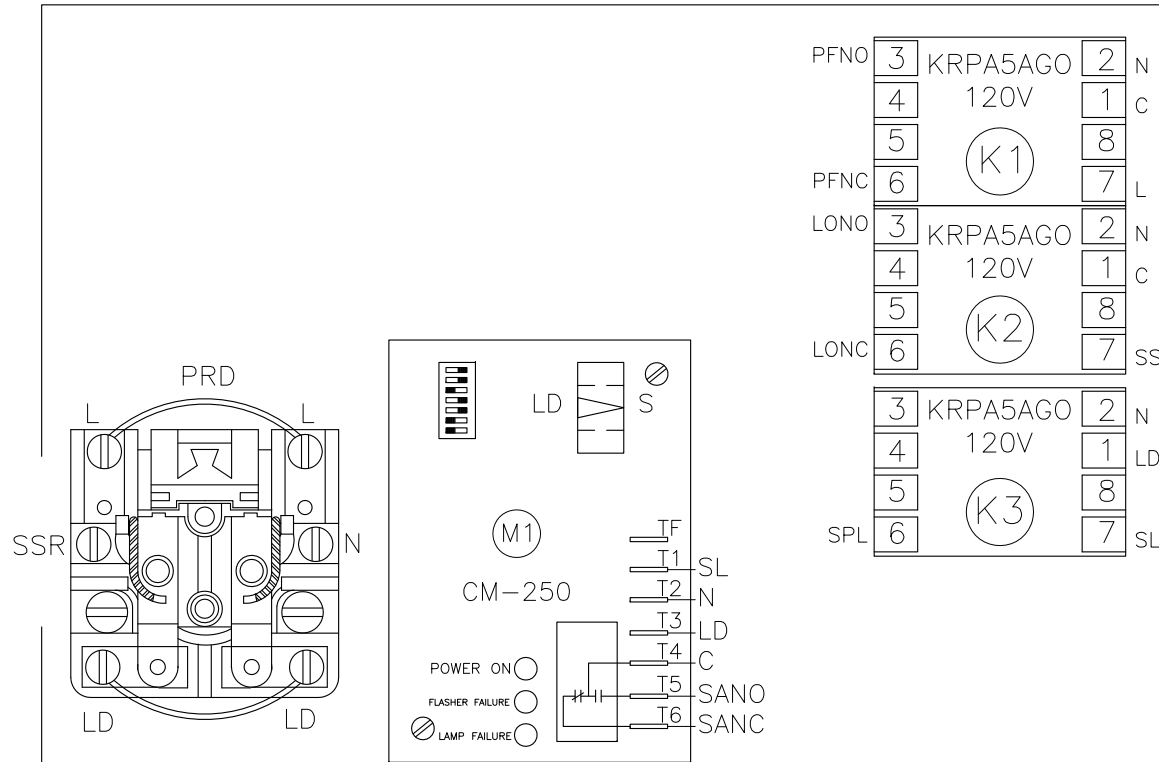
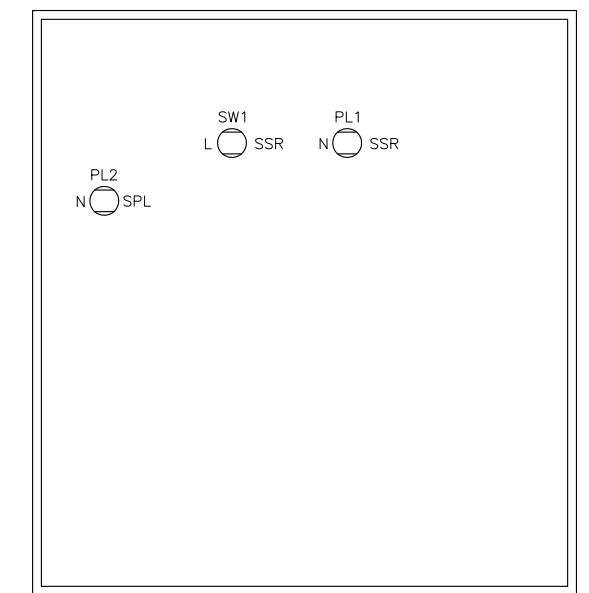


**\*CUSTOMER ALARM POINTS**

- SANC = SIDELIGHT ALARM (NORMALLY CLOSED)
- SANO = SIDELIGHT ALARM (NORMALLY OPENED)
- C = ALARM COMMON
- LONC = LIGHTS "ON" (NORMALLY CLOSED)
- LONO = LIGHTS "ON" (NORMALLY OPENED)
- PFNC = POWERFAIL (NORMALLY CLOSED)
- PFNO = POWERFAIL (NORMALLY OPENED)



SCHEMATIC TAG	DESCRIPTION
PL1	POWER LED INDICATOR
PL2	FAILURE INDICATOR LED
SW1	PHOTOCELL BYPASS SWITCH



**NOTES:**

1. PLUG 6390 FAA PHOTOCELL INTO 43109 RECEPTACLE AND TWIST TO LOCK.
2. WIRES ARE CONNECTED LETTER TO LETTER. (EXAMPLE) N TO N...
3. CURRENT SENSOR MODULE M1 CAN MONITOR ONE THROUGH NINE LAMPS. USE THE FOLLOWING GUIDE TO CALIBRATE TO YOUR PARTICULAR NEEDS.

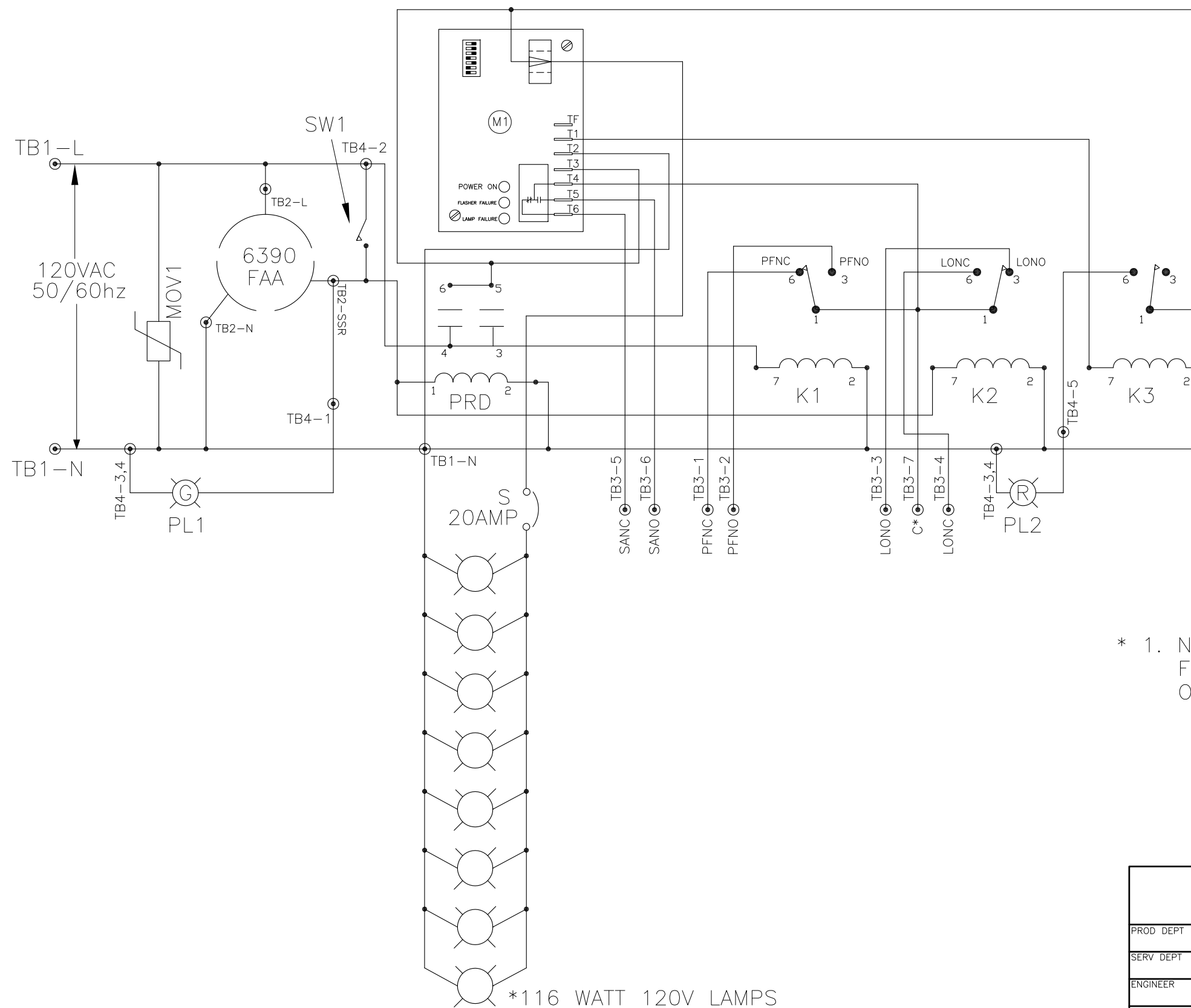
FLASH	NO FLASH	TOTAL NO. OF LAMPS	SWITCHES "ON"
700/620W	116W	1	NO SWITCHES
120V	230V	2	D
A	B	3	C
c	b	4	B
		5	B & C
		6	A
		7	A & C
		8	A & B
		9	A & B & C

AAOMTSSW/IND  
VPI PROJECT #17455

PROD DEPT	<b>TWR Lighting, Inc.</b> <i>Enlightened Technology®</i>	SHEET SIZE	SHEET QTY.
SERV DEPT		B	1 OF 1
ENGINEER			
DRAWN BY	E.A.SALAZAR	SCALE	N.T.S.
DATE	05/03/11	DWG. NO.	1270-R

The use of non-OEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of complying with FAA requirements as published in Advisory Circular 150/5345-43.  
NOTICE: The drawings and photographic images contained herein are the sole property of TWR Lighting, Inc. All information contained herein that is not generally known shall be considered confidential except to the extent the information has been previously established. The drawings and photographic images contained herein may not be reproduced, copied or used as the basis for manufacture or sale or promotion or any other purpose without the expressed written permission of TWR Lighting, Inc.

05/17/12	(B)	PHOTOCELL BYPASS
DATE:	LTR.	REVISION

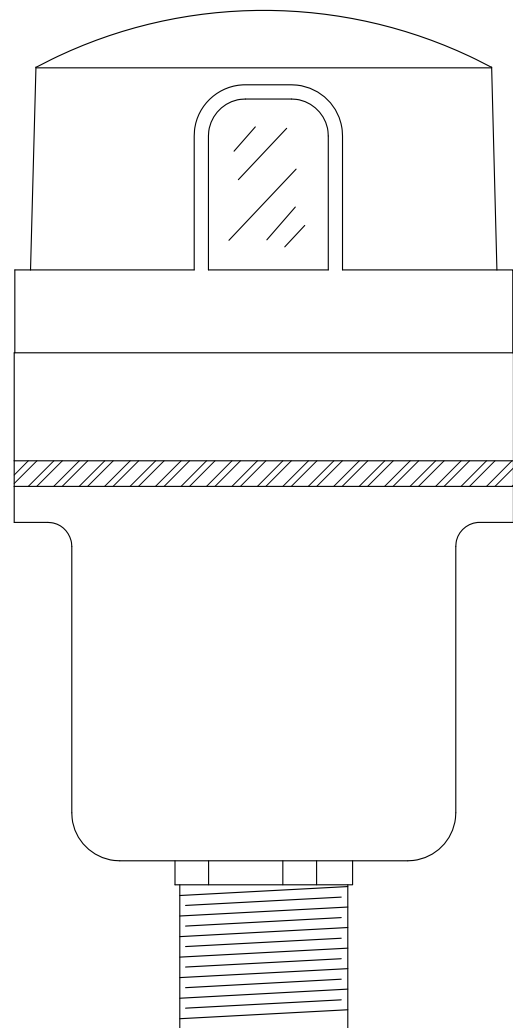


\*116 WATT 120V LAMPS

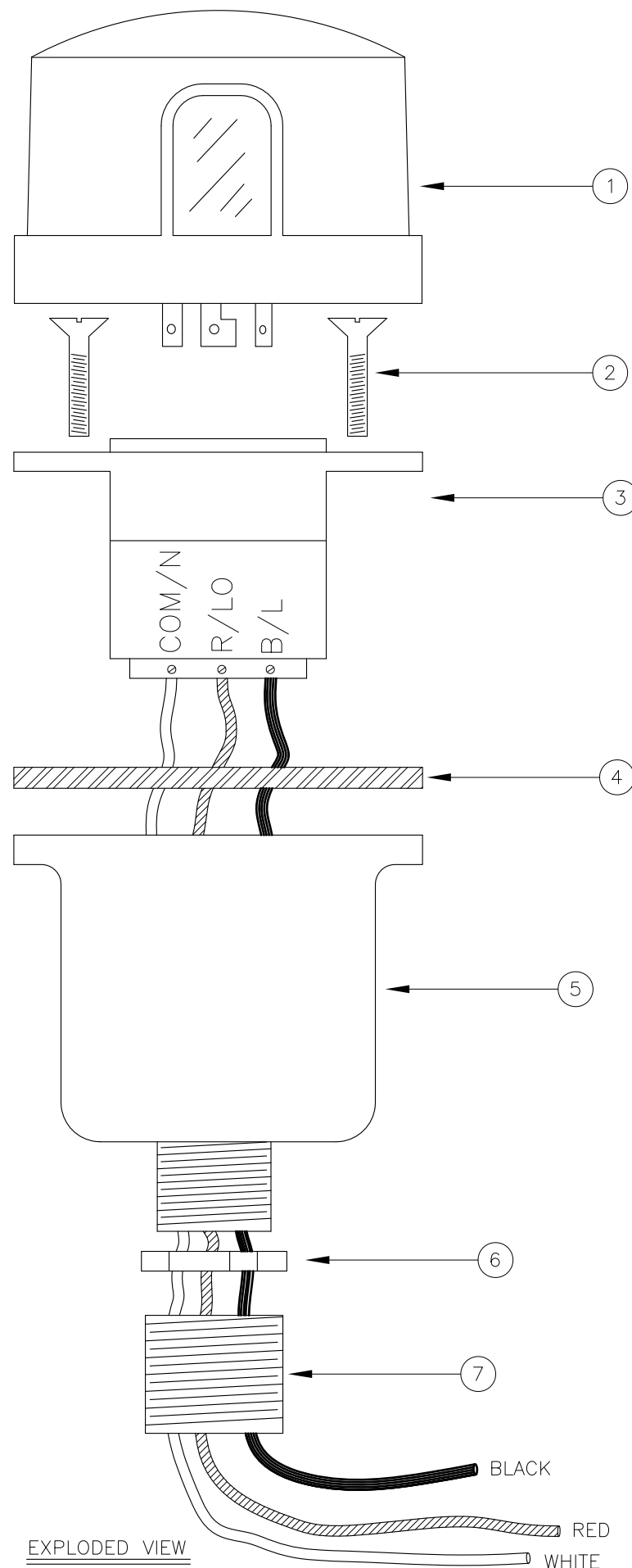
NOTES:  
 \* 1. NUMBER OF LAMPS MAY VARY FROM 1 TO 9. SEE NOTE 3 ON DWG. 1270-R.

AAOMTSSW/IND VPI PROJECT #17455			
PROD DEPT	<b>TWR Lighting, Inc.</b> Enlightened Technology®		
SERV DEPT			
ENGINEER			
DRAWN BY E.A.SALAZAR	SHEET SIZE B	SHEET QTY. 1 OF 1	
DATE 05/04/2011	SCALE N.T.S.	DWG. NO. 1270-S	
<small>The use of non-OEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of complying with FAA requirements as published in Advisory Circular 150/5345-43.          NOTICE: The drawings and photographic images contained herein are the sole property of TWR Lighting, Inc. All information contained herein that is not generally known shall be considered confidential except to the extent the information has been previously established. The drawings and photographic images contained herein may not be reproduced, copied or used as the basis for manufacture or sale or promotion or any other purpose without the expressed written permission of TWR Lighting, Inc.</small>			

05/17/12 (A) V.H. K1 PFNO TO PFNC



ASSEMBLY



EXPLODED VIEW

ITEM	QTY.	DESCRIPTION
1	1	PHOTOCELL
2	2	6-32 x 1/2" SCREW
3	1	RECEPTACLE SOCKET
4	1	RECEPTACLE GASKET
5	1	RECEPTACLE HOUSING
6	1	1/2" CONDUIT LOCKNUT
7	1	3/4" TO 1/2" REDUCER

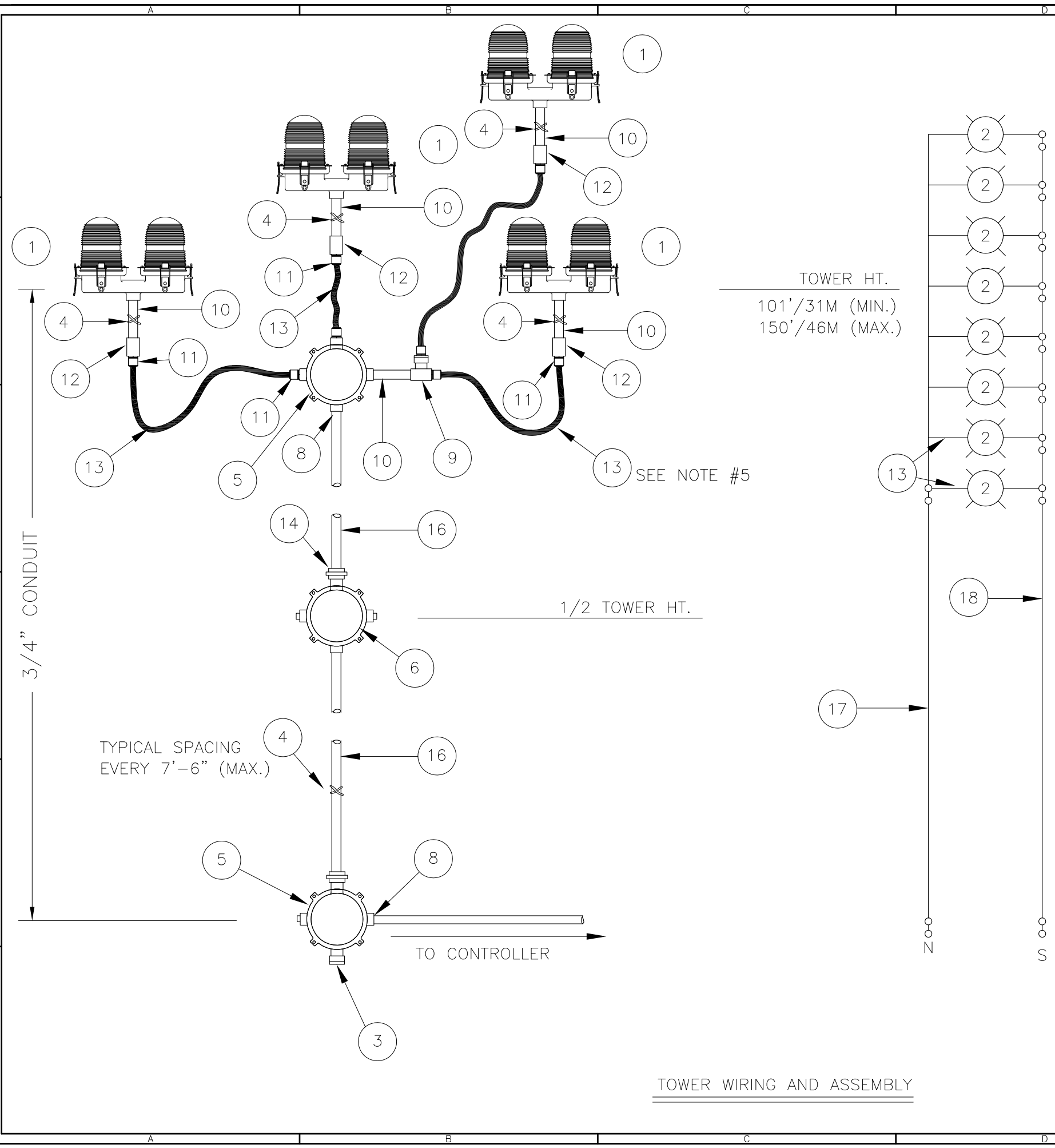
NOTES:

- ITEM #7 CAN BE USED TO REDUCE 3/4" CONDUIT TO 1/2" CONDUIT AT THE HOUSING OR AT THE CONTROLLER ITSELF.
- IF ADDITIONAL WIRE IS REQUIRED OVER THE FACTORY 20', USE THE FOLLOWING CHART.  
 21' TO 300' - 16 AWG TFFN  
 301' TO 500' - 14 AWG TFFN
- WIRE CONNECTIONS ARE TO BE TINNED AT ITEM 3.

PHOTOCELL HOUSING DETAIL

PROD DEPT	<b>TWR Lighting, Inc.</b> Enlightened Technology®				
SERV DEPT					
ENGINEER					
DRAWN BY	E.A.SALAZAR	SHEET SIZE	B	SHEET QTY.	1 OF 1
DATE	10/18/95	SCALE	N.T.S.	DWG. NO.	100239
<small>The use of non-OEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of complying with FAA requirements as published in Advisory Circular 150/5345-43.          NOTICE: The drawings and photographic images contained herein are the sole property of TWR Lighting, Inc. All information contained herein that is not generally known shall be considered confidential except to the extent the information has been previously established. The drawings and photographic images contained herein may not be reproduced, copied or used as the basis for manufacture or sale or promotion or any other purpose without the expressed written permission of TWR Lighting, Inc.</small>					

11/17/10		CHG. LABELS
DATE:	LTR.	REVISION



TOWER HT.  
 101' / 31M (MIN.)  
 150' / 46M (MAX.)

1/2 TOWER HT.

TYPICAL SPACING  
 EVERY 7'-6" (MAX.)

TO CONTROLLER

TOWER WIRING AND ASSEMBLY

BILL OF MATERIALS

ITEM NO.	QTY.	TWR PART NO.	DESCRIPTION
1	4	OL2	DOUBLE OBSTRUCTION LIGHT
2	8	116A21TS	116 WATT 120 VOLT LAMP
3	1	5012902	BREATHER
4	1	SS10012	WRAPLOCK
5	2	JB5	3/4" JUNCTION BOX
6	1	JBO	3/4" STRAIN RELIEF BOX
7	1	PIPDOP	4 oz. PIPE DOPE
8	8	A314	3/4" CONDUIT LOCKNUTS
9	1	T27CG	3/4" CONDULET W/ COVER AND GASKET
10	4	N34T12	3/4" X 12" CONDUIT NIPPLE
11	8	CGB295SA	3/4" CORD CONNECTOR 0.50 - 0.625
12	4	CPLG34	3/4" CONDUIT COUPLING
13	120'	STCABLEOB	OBSTRUCTION LIGHT CABLE
14	2	UNY205	3/4" UNION
15	1	AAOMTSSW/IND	AAOMTSSW/IND ALARMED CONTROLLER
16	160'	CONDUIT34	3/4" CONDUIT (TWR HT. + 30' / 9M)
17	160'	12THHNWHT	#12 THHN WHITE WIRE
18	160'	12THHNBK	#12 THHN BLACK WIRE

\* = ITEM NOT SHOWN

NOTES:

- 1) CONDUIT SIZE BASED ON USING TYPE THHN WIRE.
- 2) USE RIGID GALVANIZED STEEL CONDUIT.
- 3) BREATHERS ALLOW FOR CIRCULATION OF AIR TO PREVENT CONDENSATION.
- 4) LIGHTS SHOULD BE SPACED 90° APART.
- 5) GROUND GREEN WIRE TO THE JUNCTION BOX.

<u>AAO LIGHTING KIT ALARMED</u>			
<u>VPI PROJECT #17455</u>			
PROD DEPT	<b>TWR Lighting, Inc.</b> <i>Enlightened Technology®</i>		
SERV DEPT			
ENGINEER			
DRAWN BY E.A.SALAZAR	SHEET SIZE B	SHEET QTY. 1 OF 1	1
DATE 05/06/11	SCALE N.T.S.	DWG. NO. T1478	
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# **TWR Lighting, Inc.**

## FAA Approved L-810

### Single Obstruction Light Side Hub

#### OL1

FM10018\_RD.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.

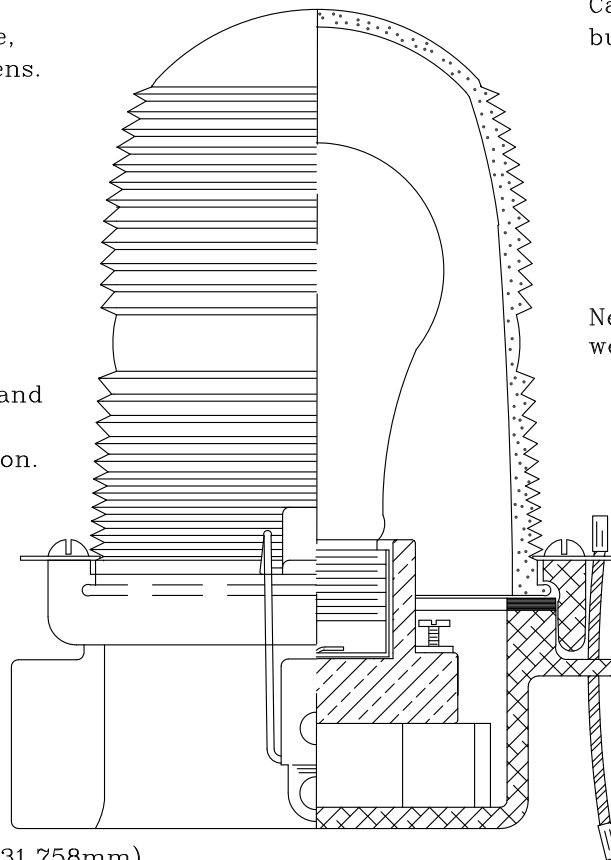
Our most popular light. The side hub allows for a straight run of conduit from the junction box for hook up.

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.



High quality porcelain  
receptacle.

Stainless steel  
safety cable.

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

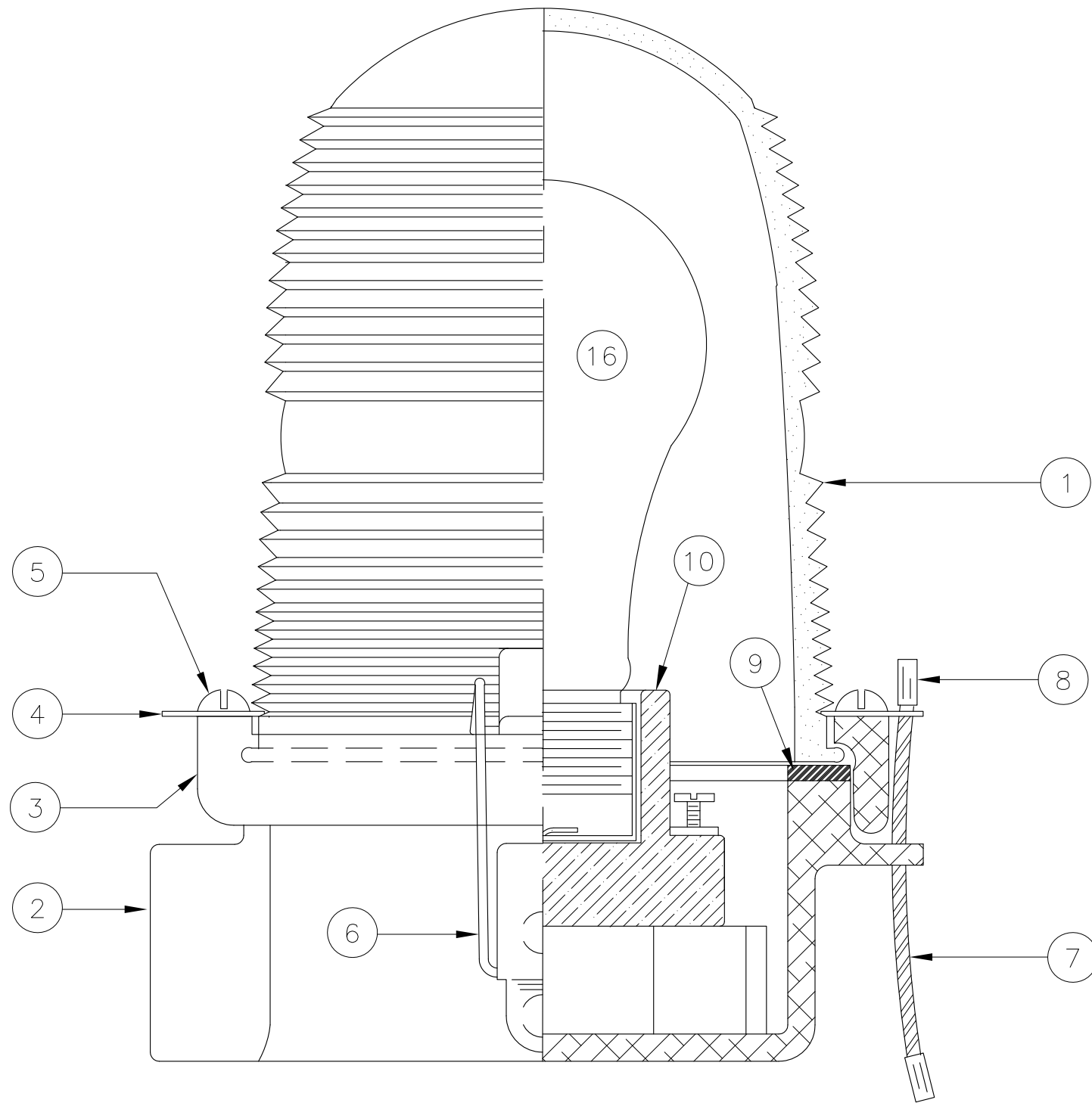
#### General Specifications

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

No special tools required for maintenance.

TWR Lighting, Inc.  
4300 Windfern Rd. #100  
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
*	4	18PRSS	1/8 POP RIVETS
*	1	A314	3/4" CONDUIT LOCKNUT
*	2	104G	WHITE TEFLON WASHER
*	2	832X34PH	8-32 X 3/4" S.S. RH SLOT
*	1	100327	OL-1 SERIAL NUMBER LABEL
~	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)

PROD DEPT	<b>TWR Lighting, Inc.</b> Enlightened Technology®		
SERV DEPT			
ENGINEER			
DRAWN BY	E.A.SALAZAR	SHEET SIZE	SHEET QTY.
DATE	1/7/92	B	1 OF 1
SCALE	FULL	DWG. NO.	279-OL

05/13/02	(B)	UPDATED B.O.M.
DATE:	LTR.	REVISION

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# TWR Lighting, Inc.®

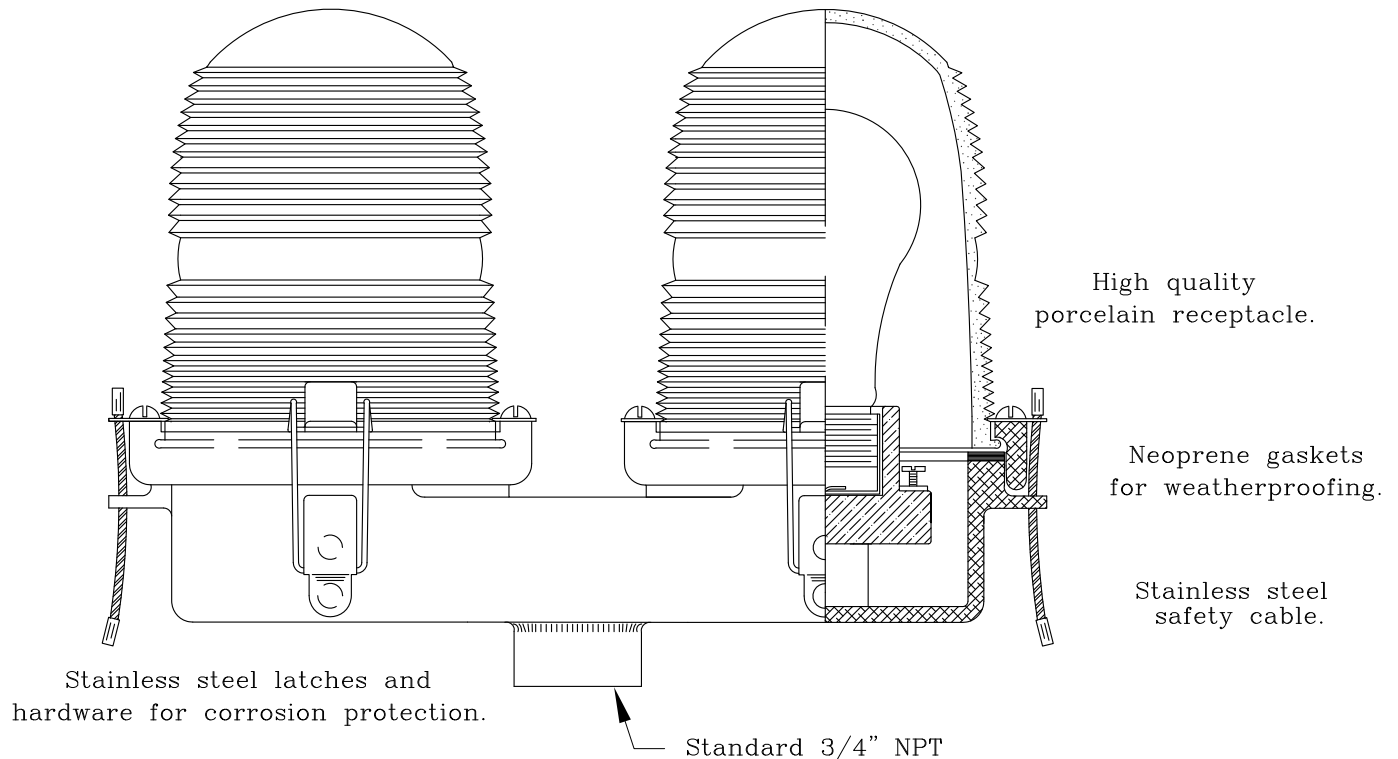
## FAA Approved L-810 Double Obstruction Light OL2

FM10020RD.DWG

For use as an obstruction light on towers, buildings, etc. ETL approved to meet or exceed all FAA specifications as found in AC 150/5345-43 Type L-810.

When used with our AOXFR controller, when one bulb burns out, the unit automatically switches to backup bulb.

High temperature ultra pure  
FAA approved aviation red, blue  
yellow and clear lenses.



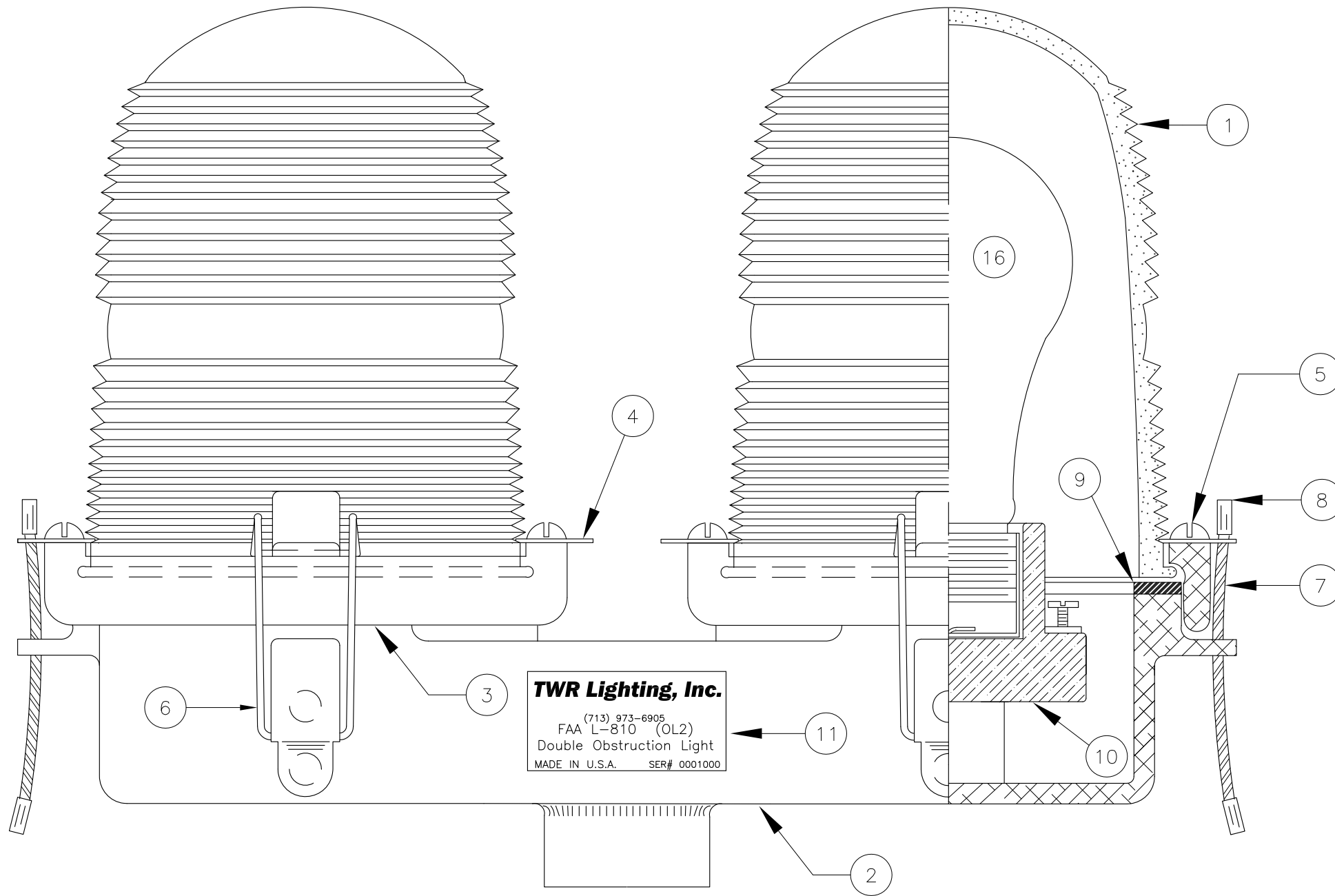
No special tools required for maintenance.

### General Specifications

Height 7 inches (38.1 cm)  
Weight 10 lbs. (4.5 kg)  
Power 120 to 240V AC, 50 or 60Hz  
Uses 116W, 120 or 240V bulbs  
Bulbs sold separately

TWR Lighting, Inc.  
4300 Windfern Rd. #100  
Houston, Tx., 77041-8943  
Phone: (713)973-6905  
Fax: (713)973-9352

WEB SITE: <http://www.twrlighting.com>  
©2003 TWR Lighting, Inc.



ITEM NO	QTY.	TWR PART NUMBER	DESCRIPTION
1	2	AP35222	RED SIDELIGHT GLASS
2	1	OL2C	DOUBLE SIDELIGHT BODY
3	2	106C	LENS HOLDER RING
4	4	12V245	OL LENS CLIP
5	4	832X14PH	8-32 X 1/4" PH S.S. SLOT
6	4	HC255SS	SIDELIGHT LATCHES
7	2	7X7SS	1/16 7 X 7 S.S. WIRE
8	4	A1A	STAKON CRIMP
9	2	OLG	OL GASKET
10	2	19062	SIDELIGHT RECEPTACLE
11	1	100324	OL2 SERIAL NUMBER LABEL
*	8	18PRSS	1/8 POP RIVETS
*	1	A314	3/4" CONDUIT LOCKNUT
*	4	104G	WHITE TEFLON WASHER
*	4	832X34PH	8-32 X 3/4" S.S. PH SLOT
~	2	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.

# OL2

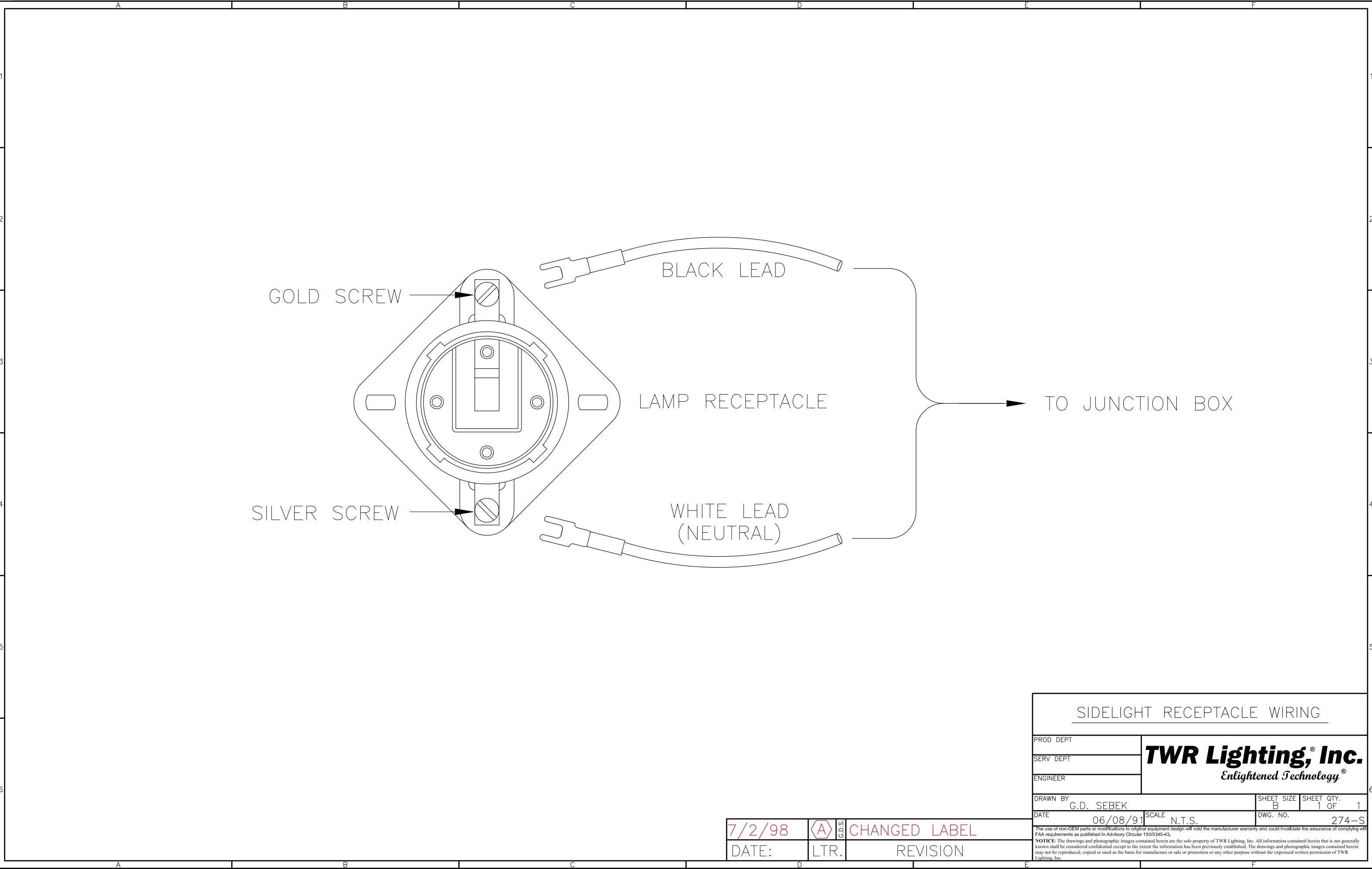
3/4" OL-2 SIDELIGHT  
 ASSEMBLY DETAIL (PART #OL2)

PROD DEPT	<b>TWR Lighting, Inc.</b> Enlightened Technology®	SHEET SIZE	SHEET QTY.
SERV DEPT		B	1 OF 1
ENGINEER		DWG. NO.	310
DRAWN BY	E.A.SALAZAR	SCALE	N.T.S.
DATE	10/30/96		

11/08/96	(A)	REVISED ITEM #15,#16
DATE:	LTR.	REVISION

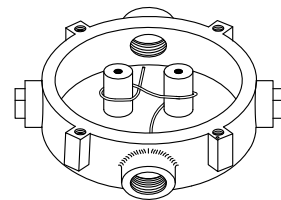
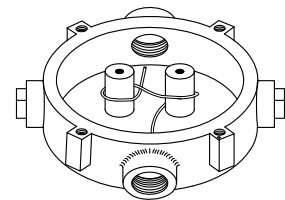
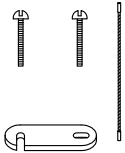
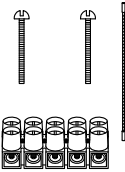
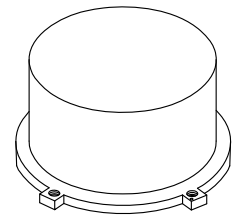
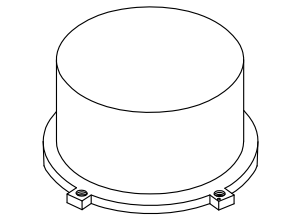
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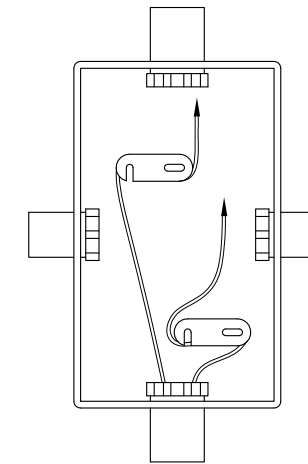
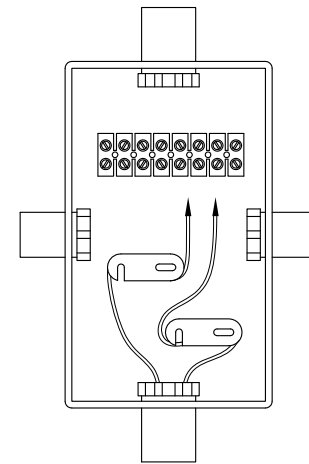


SIDELIGHT RECEPTACLE WIRING			
PROD DEPT	<b>TWR Lighting, Inc.</b> <i>Enlightened Technology®</i>		
SERV DEPT			
ENGINEER			
DRAWN BY	G.D. SEBEK	SHEET SIZE	SHEET QTY.
DATE	06/08/91	B	1 OF 1
		SCALE	DWG. NO.
		N.T.S.	274-S
<small>The use of non-OEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of complying with FAA requirements as published in Advisory Circular 150/5345-43.</small>			
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7/2/98	(A)	CHANGED LABEL
DATE:	LTR.	REVISION



JB-5 AND JB-0  
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

PROD DEPT	<b>TWR Lighting, Inc.</b> <i>Enlightened Technology®</i>	
SERV DEPT		
ENGINEER		
DRAWN BY G.D. SEBEK	SHEET SIZE B	SHEET QTY. 1 OF 1
DATE 07/26/93	SCALE N.T.S.	DWG. NO. 100089

9/29/00 (A) **UPDATED NOTES**

DATE: LTR. REVISION

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