



**Medium Intensity Installation Manual**  
READ AND FOLLOW ALL SAFETY INSTRUCTIONS



- ***DO NOT let any supply cords touch hot surfaces higher than cord ratings.***
- ***DO NOT mount near gas or electric heaters***
- ***Equipment should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.***
- ***The use of accessory equipment not recommended by the manufacturer may cause unsafe conditions.***
- ***DO NOT use this equipment for other than intended use.***
- ***DO take pictures: Installation Photos Required for Warranty Coverage. (All electrical connections, bonding, system support and grounding)***
- ***DO NOT look into the Infrared (IR) LEDs. These five IR LEDs on top of the unit (if applicable) will not appear to be ON, but can be verified using most digital cameras.***

**SAVE THESE INSTRUCTIONS!!**

- ***The operation and maintenance must be carried out by authorized personnel.***
- ***Repairs and Installation must only be carried out by a qualified electrician.***
- ***Only genuine Dialight replacement parts must be used when unforeseen repairs are required.***
- ***Observe the national safety rules and regulations during installation!***
- ***Earth Grounding is required throughout the install process. Failure to do so could void all warranties!***
- ***No alterations should be done without agreement from Dialight Corp. Alterations other than written in this manual will void all warranties.***

### **Introduction:**

This manual is for installing the Dual Strobe system or Dual Strobe + IR (Infrared) system.

Covered in this manual is the following information.

- Notice and warnings
- Environmental Specifications
- Installing the Controller and the pre drilled holes
- Dimensions of the Controller
- Securing the cables to the structure
- Connection of either AC or DC input voltages
- Connection of the Side lights and calibration
- Photocell connections
- Flash Head connections
- Proper bonding of the Strobe cable
- Mounting the Flash Head

### **Not included in this manual:**

**Refer to the quick start manual for the below information**

- System overview
- Installation Tips and requirements
- System Descriptions
- RS485 Communication Connections
- Installing the RS485 to additional power supplies
- Controller layouts
- Navigating the LCD Display
  - LCD startup display screens
  - Setup Screens (Configuration)
  - Main Menu Screens
  - Manual Lighting inspection test
- Controller Status LED's
- Dry contact connections
- Controller electrical Parameters
- Resetting, ext. sync option, and serial numbers
- Replacement part numbers
- Display Events and Alarm Descriptions
- Alarm list and possible causes

**Notice and Warnings:**

This manual contains important information regarding the proper installation, operation, and maintenance of this product. Before using the product, read and understand all instructions, cautions, notes and warnings, as well as all of the labels affixed to the product. Failure to do so could result in personal injury or damage to equipment and/or void the product warranty.



**FAILURE TO LEAVE THE ENCLOSURES FREE FROM DEBRIS UPON COMPLETION OF INSTALLATION MAY CAUSE SHORT CIRCUITS AND VOID THE SYSTEM WARRANTY**



**FAILURE TO TIGHTEN DOWN CLAMP WASHERS WILL MAKE INTERNAL COMPONENTS VULNERABLE TO SURGE OR LIGHTNING DAMAGE AND VOID THE SYSTEM WARRANTY**



**FAILURE TO PROPERLY BOND THE EARTH GROUND WIRE TO THE JUNCTION BOX WILL RESULT IN EVENTUAL LIGHTNING DAMAGE OF THIS SYSTEM. TO AVOID WARRANTY NULLIFICATION, FOLLOW THE DIRECTIONS IN THEIR ENTIRETY.**



**CAUTION: ONLY APPROVED PHOTOCELLS CAN BE USED WITH THIS SYSTEM**



**WARNING: FAILURE TO PROPERLY BOND THE FLASH HEADS AND POWER SUPPLY ENCLOSURES TO THE TOWER STRUCTURE WILL RESULT IN EVENTUAL LIGHTNING DAMAGE OF THIS SYSTEM. THE SYSTEM'S WARRANTY SHALL BE VOID IF ALL FLASH HEADS AND POWER SUPPLY ENCLOSURES ARE NOT PROPERLY BONDED TO THE TOWER STRUCTURE. TO AVOID WARRANTY NULLIFICATION, FOLLOW THE DIRECTIONS IN THEIR ENTIRETY.**



**CAUTION: NEVER LOOK AT THE FRONT OF A FLASH HEAD WHILE THE SYSTEM IS ENERGIZED. THE FLASH HEAD COULD START FLASHING CAUSING TEMPORARY BLINDNESS WHICH WOULD BE DANGEROUS AT HIGH ELEVATIONS.**



**FAILURE TO SET UP SYSTEM CORRECTLY DURING START UP WILL RESULT IN THE TOWER HAVING TO BE CLIMBED AGAIN TO PERFORM TROUBLESHOOTING.**



**DO NOT LOOK AT THE INFRARED (IR) LEDs WHILE THE UNIT IS ON. THESE 5 IR LEDs ON THE TOP OF THE UNIT (IF APPLICABLE) WILL NOT APPEAR TO BE ON, BUT CAN BE VERIFIED USING MOST DIGITAL CAMERAS.**



**USE PROPER METHODS OF LIFTING AND CARRYING TO PROTECT AGAINST INJURY. FOLLOW THE RECOMMENDATIONS BELOW TO ENSURE ENCLOSURES ARE HANDLED IN A SAFE MANNER:**



- **BASED ON FACILITY SAFETY REQUIREMENTS DETERMINE IF THE ENCLOSURE REQUIRES TEAM LIFTING**
- **BEND AT THE KNEES AND MAKE SURE YOUR BACK IS STRAIGHT BEFORE LIFTING**
- **LIFT WITH YOUR LEGS AND NOT YOUR BACK**
- **KEEP THE ENCLOSURE CLOSE TO YOUR BODY WHILE CARRYING**
- **KEEP YOUR BACK STRAIGHT WHEN LOWERING**

## **Environmental Specifications**

Operating Temperature Range: -40°C to +55°C

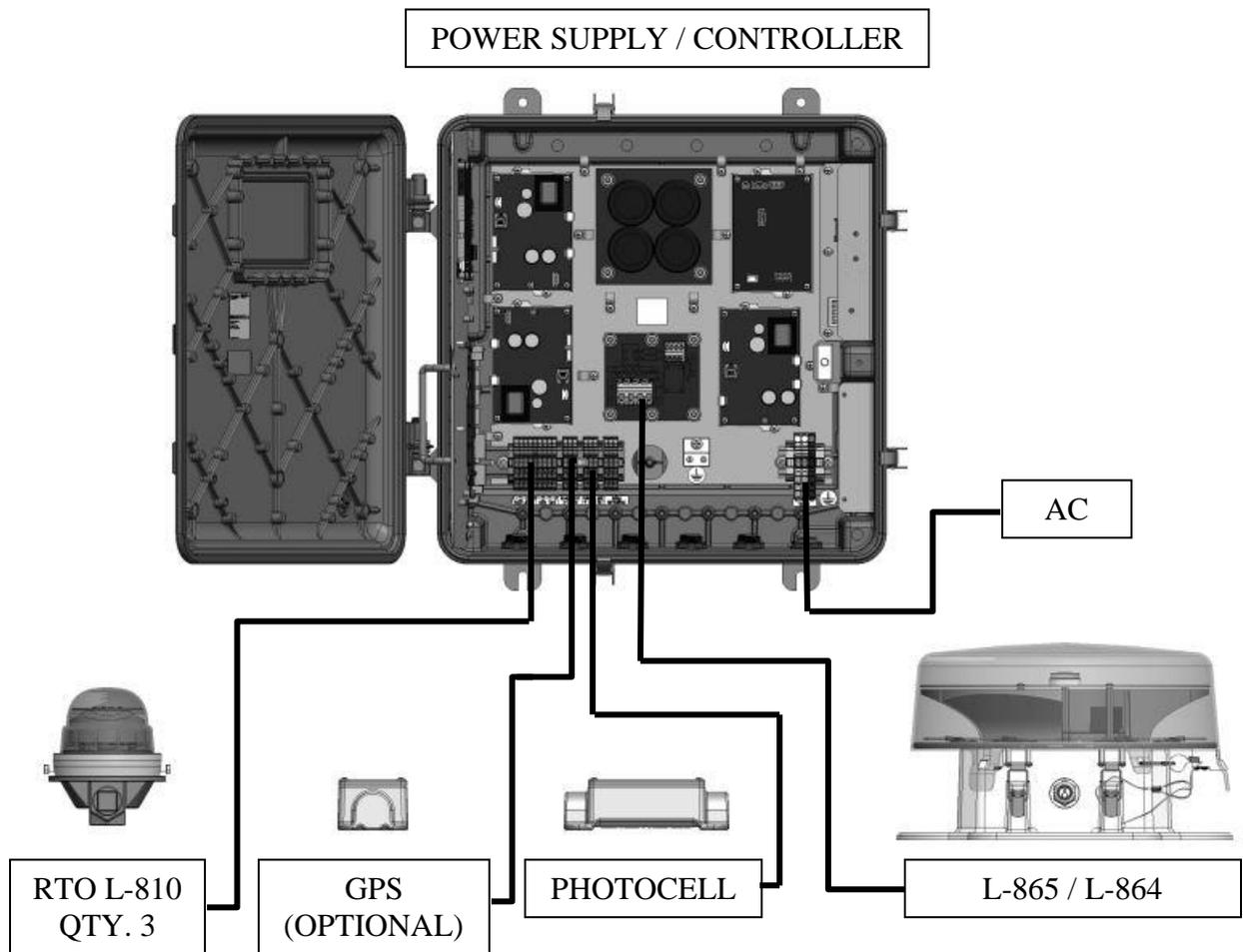
IP66, Suitable for outdoor use

Pollution degree: P1

Equipment is intended to be installed at an altitude of 2000m or less

System Overview

**TYPICAL TOWER CONFIGURATION  
E1**



## **Installation Tips and Requirements**

The D1xW-CTR-4x9 Power Supply / Controller are housed in a NEMA4X rated outdoor enclosure and can be installed either outside or in a shelter. If installed outside on or near the structure; the installer must consider water ingress and proper earth grounding to reduce the risk of premature failures.

For the Mains cable, it is recommended that the electrician or installer calculate the wire requirements based on the system being installed. It is recommended that no install utilizes less than 14AWG 600V cable with at least a 90°C temperature rating. See electrical parameters in the quick start manual for further information.

It is recommended that the lighting system be on its own breaker adequately rated for the system's power consumption. The breaker **MUST** be rated for at least 20% higher than the systems total current draw.

**During installation proper grounding techniques must be utilized. The system has built in Lightning and RF immunity at each section, but for it to be effective proper ground connection techniques must be used.**

## **Cable specifications**

**NOTE:** Cables for monitoring and AC or DC Input cable are not supplied.

**Specification for Input cable:** Requires 3 conductors for both the AC input and the DC input version. Earth Ground is required in the controllers.

A minimum of 14AWG is to be used.

Bonding ground wire when required is to be 6AWG

Individual wires can be used but must be routed through conduit or seal tight.

**Specification for RS485 Cable:** Requires 3 conductors of 18AWG, drain wire plus a braid for adequate grounding.

**NOTE:** Only required for systems that have more than one D1xW such as an E2 structure.

**Specification for Photocell Cable:** 3 conductors of 18AWG.

Colors are Red, Black and Green

**Specification for 48Vdc L810 Side Marker Cable:** 3 conductors of 18AWG

For structures that require more than 2 levels of side lights larger diameter cable is required. Colors are Red, Black and Green

**Specification for AC L810 Side Marker Cable:** 3 conductors of 16AWG

For structures that require more than 2 levels of side lights larger diameter cable is required. Colors are Black, White and Green

**Specification for the 4 conductor Flash head cable**

4 Conductors of 14 AWG with foil and braid. 630feet maximum distance  
Colors are Red, Red with black stripe, White and White with black stripe

**NOTE:** Stripes are always for the negative connection

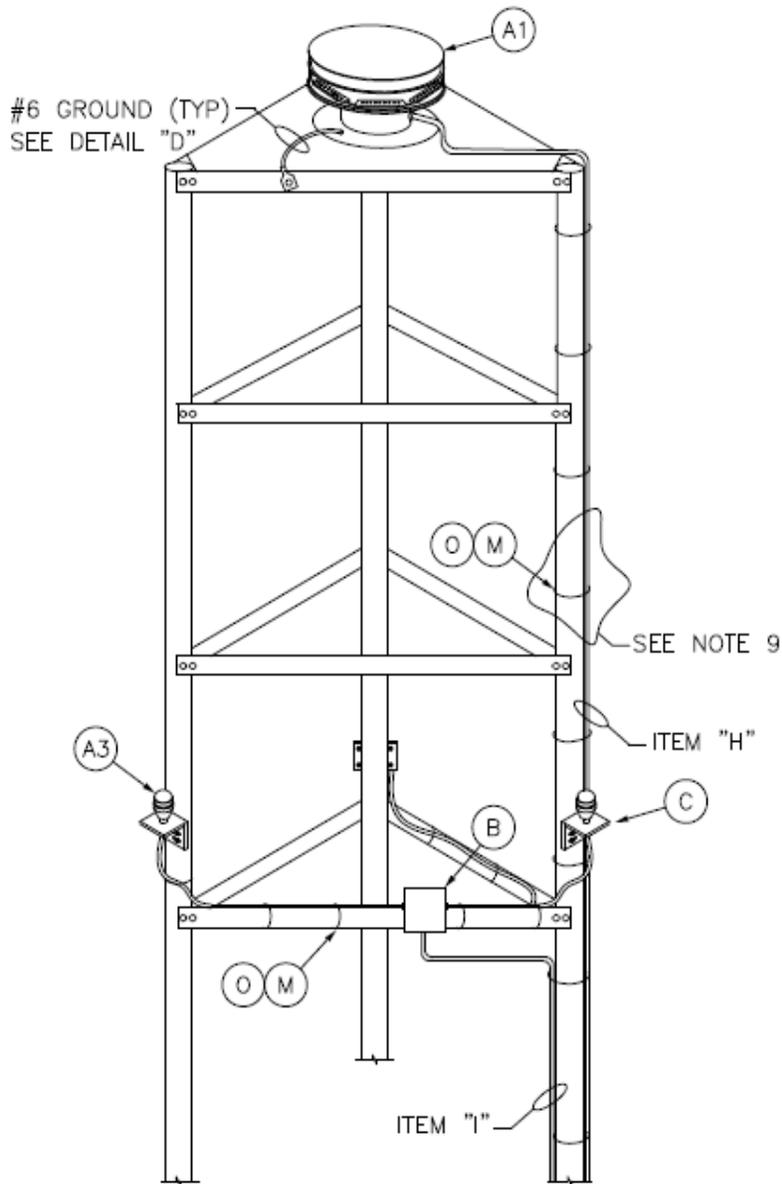
**NOTE:** Failure to meet any of the above cable requirements could void all factory warranties. If in doubt please contact your sales representative or [www.Dialight.com](http://www.Dialight.com).

All cables that extend up the structure must be adequately secured to the structure with the use of  $\frac{3}{4}$ " filament tape and 2" black all weather tape.

**NOTE:** The cable should be ran on the inside of the structure leg when possible.

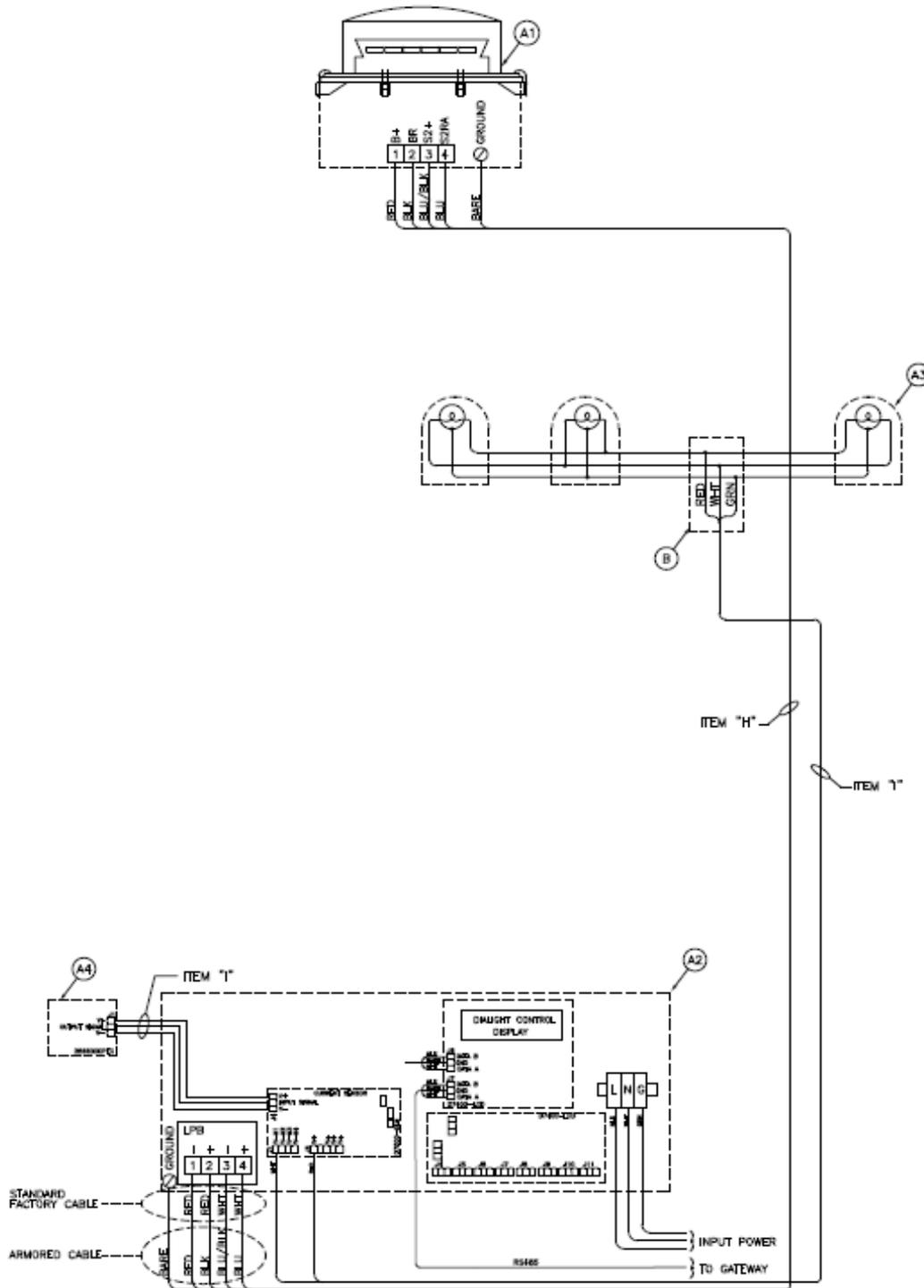
**NOTE:** Cables that run along the structure require taping/securing and must be done in 5' increments.

**Typical Triangular Tower Configuration of an A1 or E1 System**



## Typical Wiring Diagram for a E1 or A1 Structure

**NOTE:** The flash head cable does NOT have any splices



WIRING DIAGRAM

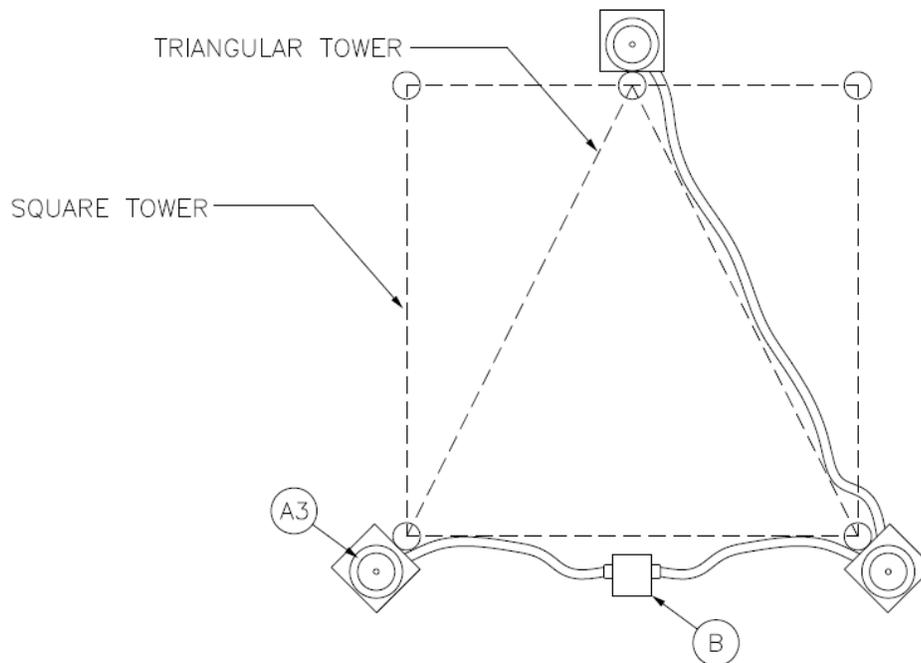
### Tower Configurations for installing side lights

Typically triangular towers require 3 side lights (A3)

Square towers typically require 4 side lights.

**NOTE:** For 4 side lights the junction may require an additional hole to be drilled.

Each level of the side lights requires 1 junction box at the light level (B)



### L810 Side light Junction Boxes in the Installation

As shown in Detail "B" above in *'Typical Triangular Tower Configuration of an E1 System'*.

Junction boxes are only used for connecting the side lights. There are no electronics located in the boxes.

All junction boxes must be grounded and secure to the structure and cannot be floating off the structure.

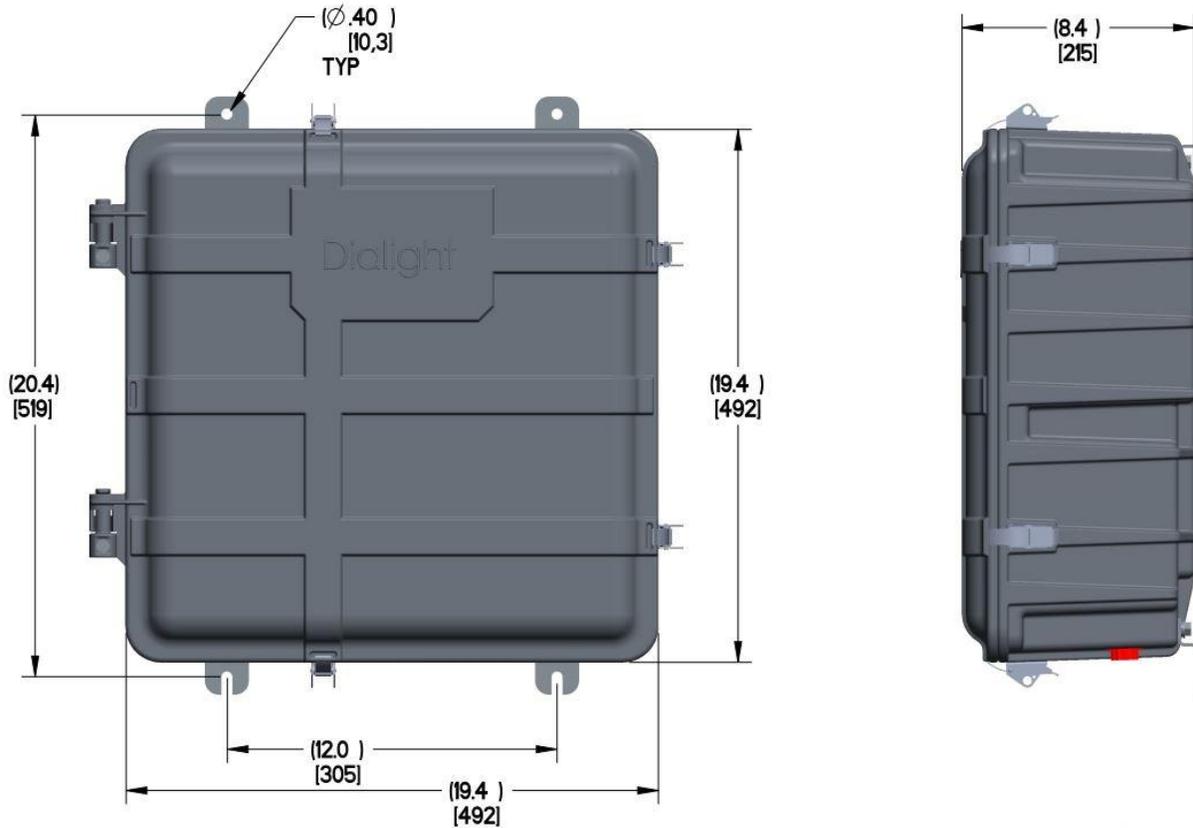
**WARNING:** When bonding to the structure, paint and or debris must be cleaned.

**WARNING:** When grounding to a painted structure the paint must be removed.

Additional ground cable using 6AWG solid can be added from the Junction box enclosure to the structure. Not supplied

## Dimensions for Mounting the D1xW-CTR-4x9xxx Power Supply / Controller

- Recommended mounting hardware diameter is 3/8" or 10mm
- The Weight of the complete enclosure is 49.5 lb.



**Recommended Locations for Cable Entry:**

The enclosures are supplied with factory drilled holes. All holes not used must be properly sealed.

To maintain water ingress protection all additional holes should be located at the bottom side of the enclosure.

**NOTE:** Dimensions are suited for 3/4 inch cord grips or seal tight. Proper installation must be conducted to prevent moisture entering the enclosure.

**NOTE:** Additional Ground cables can be added either from the mounting feet or inserted to the ground terminal block located in the power supply. Cables are not supplied.

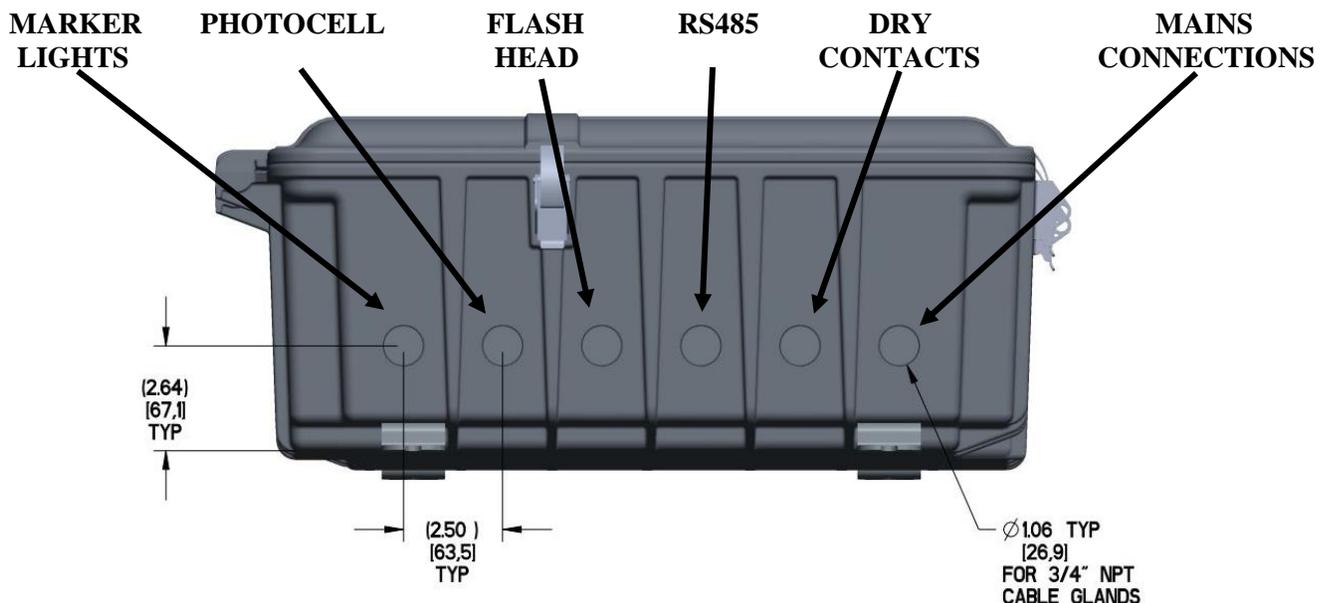
**NOTE:** If there is existing AC and RS485 communication in the vicinity of the Base Controller installation then these cables can be used if they meet the requirements in this guide.

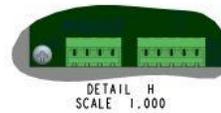
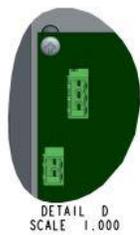
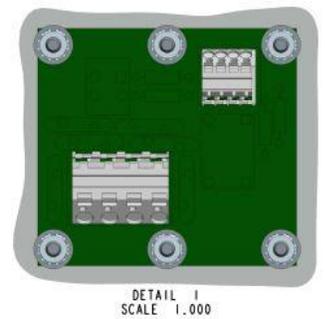
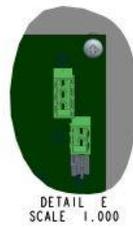
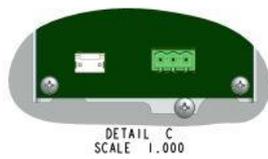
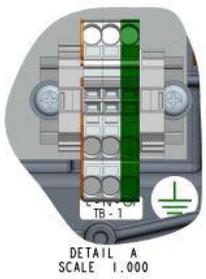
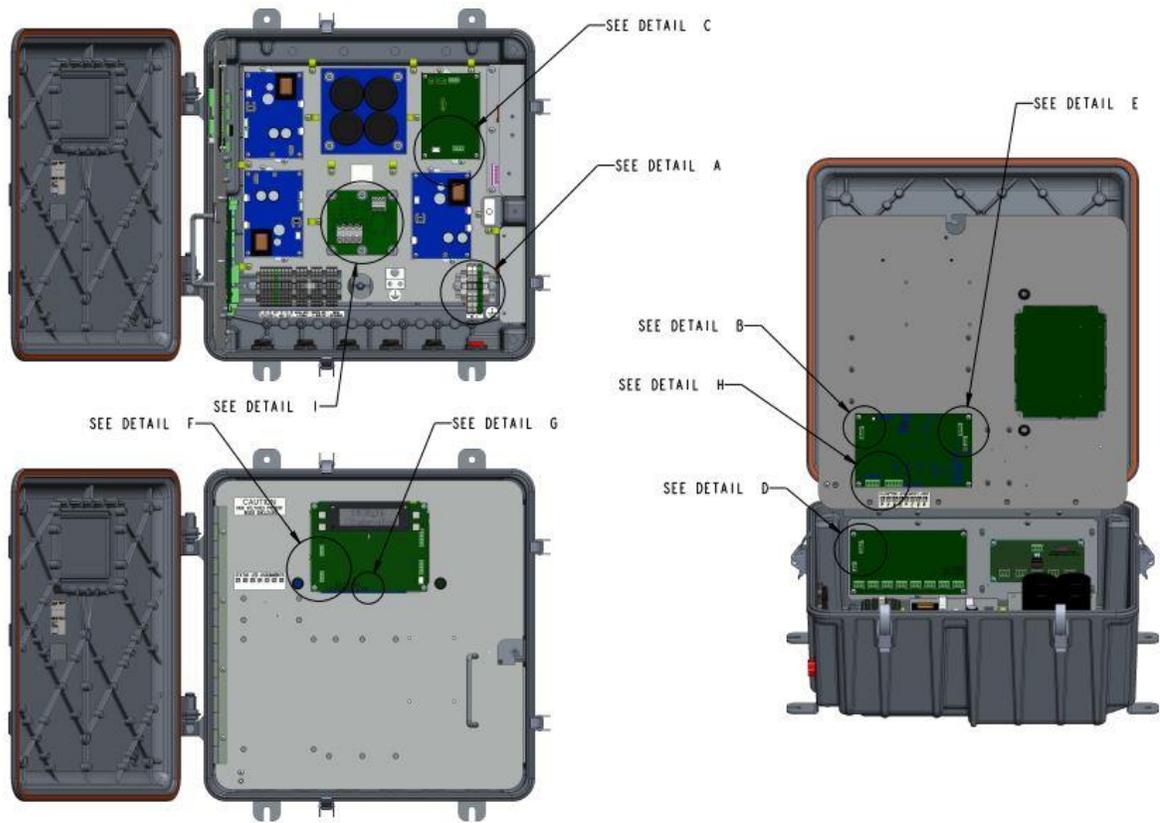
**NOTE:** Multiple grounding points are provided in the enclosure for protective and functional Earth/Ground connections.

**NOTE:** When installing systems E1+1 or larger than daisy chaining the AC or DC input is preferred.

**NOTE:** When installing systems E1+1 or larger than daisy chaining the RS485 is required.

**Detail View of D1xW-CTR-4x9xxx Power Supply / Controller:**





## Securing Cables to the Structure

It is vitally important for lightning protection that all cabling running up the structure be secured using the following steps. This is the absolute minimum required. Additional points of securing should be added as required.

Securing points must be done in 5' increments with the first point being the lowest cross member or lowest point on the structure. See items "O" and "M" above in 'Typical Triangular Tower Configuration of an E1 System'.

**NOTE:** All cables must be done the same way.

**NOTE:** If there is a build up of dirt in the securing area it should be cleaned before applying the tape.

**NOTE:** Tape should be applied in an overlapping method to provide maximum protection and support for the cable.

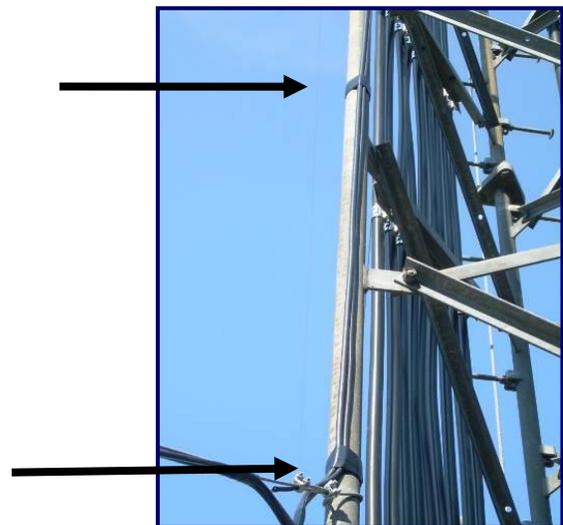
**NOTE:** For legs that are NOT circular, special care must be taken when securing the cabling.

**NOTE:** For Hot AM towers all cables must be installed in metal conduit or installed with TECK cable. Contact [www.dialight.com](http://www.dialight.com) for additional installation information.

**WARNING:** Splices are not allowed between the Power supply and the flash head. If junction boxes are required by the site manager pre-approval by Dialight authorized personnel is required.

## Securing the Flash head cable to the Tower

- 1: Wrap 2 or 3 bands of the Black weather tape around the leg**
- 2: Hold the cable in place while wrapping 2 or 3 wraps of filament tape. This provides the strength to secure the cable.**
- 3: Wrap 4 or 5 bands of the weather tape over the filament tape to make a weather tight bond**



### **Input Power connections requirements**

Refer to detail "A" in Detail View of D1XwCTR4x9xxx Power Supply / Controller

The terminal block can accommodate (16AWG minimum to 10AWG maximum).

**NOTE:** If installed outdoors water ingress must be considered.

**NOTE:** Cable supplied is wet location and UV resistant but should be confirmed by reading the outer jacket of the cable. If in doubt please contact [www.Dialight.com](http://www.Dialight.com).

**WARNING:** To ensure that moisture does not enter the enclosure, cable loops must be added to all the exposed cables. These are to be 2-3 complete circles of approx. 6" - 12" diameters. Additional can be added as required by the installer. When seal tight, liquid tight, conduit or Teck cable is being used cable loops are not required.

**WARNING:** If conduit is being used to run the cables into the enclosure than the conduit should be tilted slightly downwards and away from the enclosure to avoid condensation draining into the enclosure. A drain adapter could also be added to the conduit.

**WARNING:** A drain enclosure with a drain port must be added to any vertical runs of conduit. The drain box must be located at the lowest point of the install. Any right angle connections of conduit should flow towards this enclosure. The enclosure MUST be grounded to the structure.

**WARNING:** If TECK cable is being used then adequate draining MUST be added during the installation process.

**NOTE:** If there is existing AC in the vicinity of the installation location then these cables can be used if they meet the recommendations in this guide. The installer MUST thoroughly check the cable for damage that would shorten the life of the system. It is highly recommended that the bare wires be cut off until clean copper is exposed before connecting to the system.

**NOTE:** Multiple grounding points and clamps are provided in the enclosure for protective and functional Earth/Ground connections.

**NOTE:** When installing systems E1+1 or larger than daisy chaining the AC or DC input is preferred.

## Connection of AC Input Power

Input cable and is NOT supplied with the system

Related part numbers:  
D1Xw-CTR-409xxx

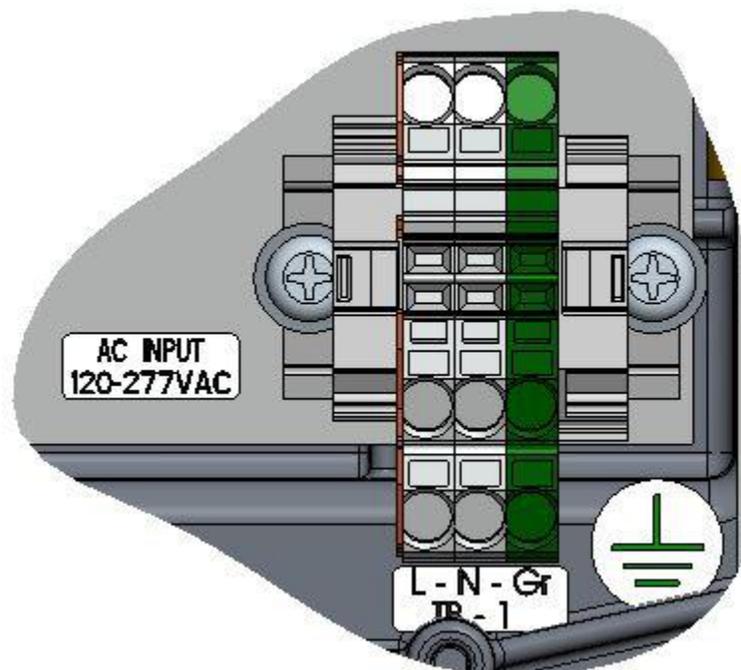
**1:** The AC connection requires 3 conductors. Live, Neutral and Earth Ground  
Individual wires can be used but must be fed through seal tight or conduit.

**WARNING:** Floating Neutrals are not permissible within the wiring of the system and the installer must verify the connections. This will “Void” all warranties and cause system failure during turn on.

**WARNING:** Earth ground connection is required to provide safety and proper operation of the system.

**WARNING:** There can be no more than 305Vac measured from Live to Earth ground or Live to Neutral on TB1. This must be measured before powering up the system.

**NOTE:** The load and voltage loss of the cable must be quantified before selecting the cable size requirements. See electrical specifications for details.



### Connection of 48 Vdc input cable

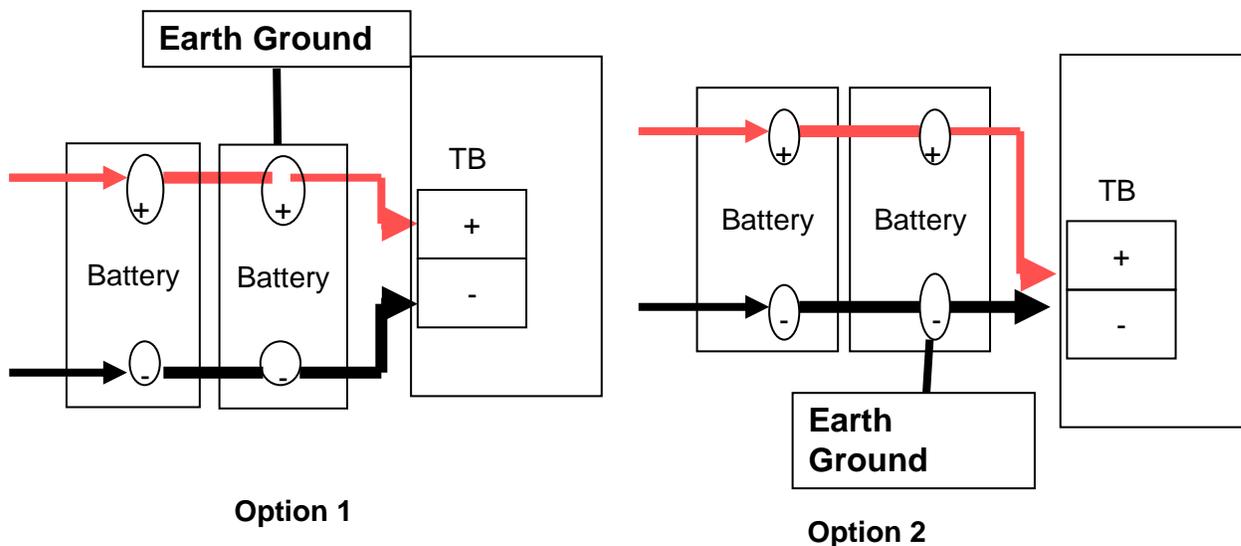
Input cable is NOT supplied with the system

Related part numbers:  
D1Xw-CTR-449xxx

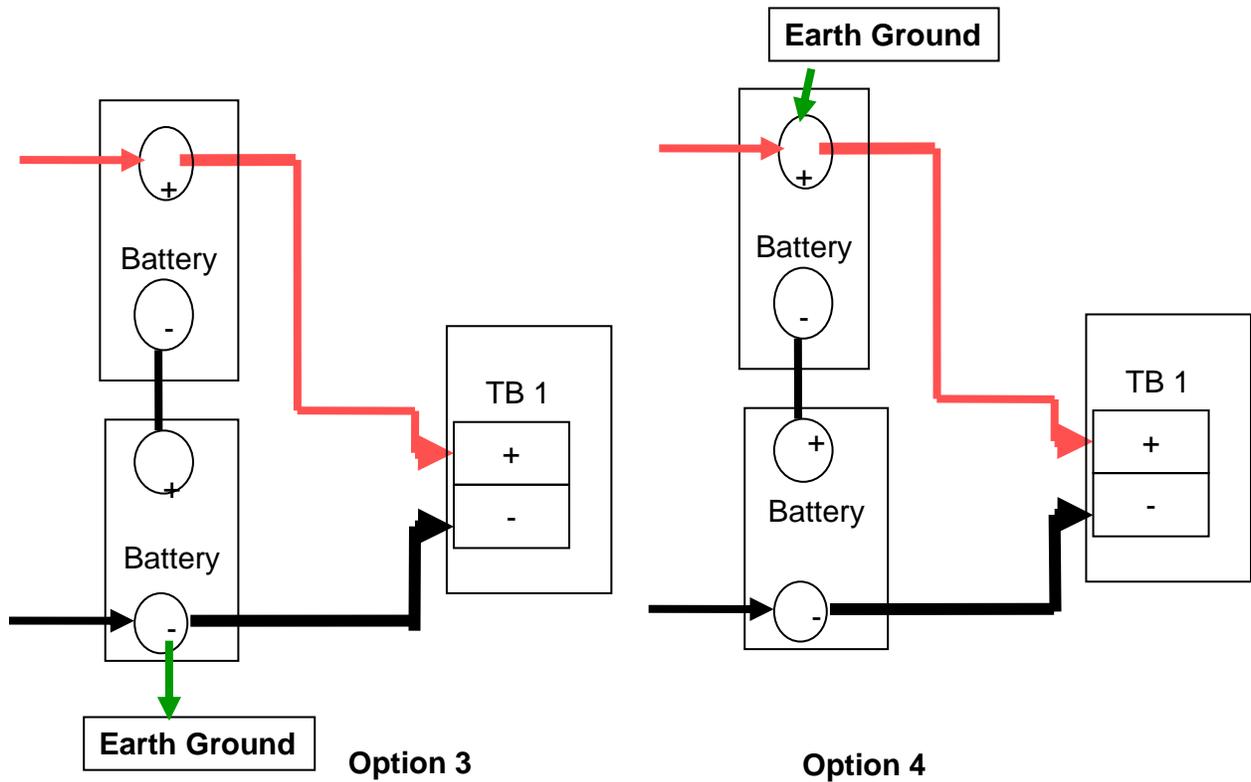
1: The 48 VDC connections require 3 conductors. +48, -48 and Earth Ground  
Individual wires can be used but must be fed through seal tight or conduit.

**WARNING:** Failure to use properly rated cable will VOID all warranties and could cause premature failures.

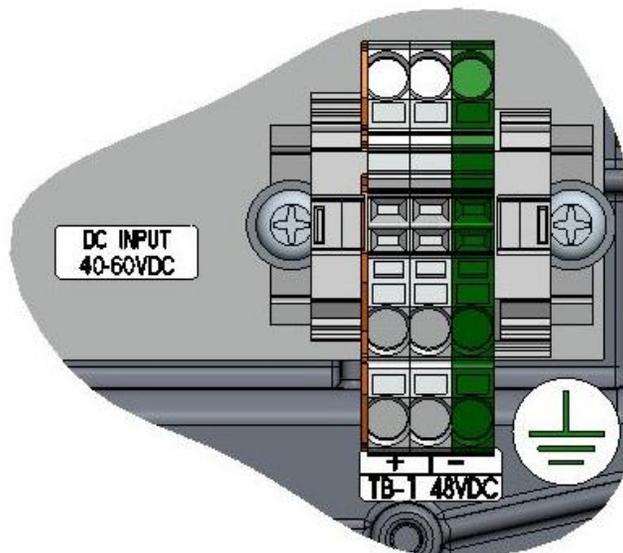
The D1Xw-CTR-449xxx has been designed to accept any of the following connection options. Individual wires can be used but must be fed through seal tight or conduit.



**NOTE:** Additional Earth ground may be included in the installation process and **MUST** be connected to the Aluminum plate located inside the enclosure.



**WARNING:** If any of the above options are not suited for the installation then contact your local sales representative or supplier of the system.  
Located at the bottom right hand side of the enclosure is the terminal block required for connecting the input voltage.



### RS485 Communication Connection Definitions

**NOTE:** The below is common between all the controllers covered in the manual.

The connection of the RS485 cable is vitally important to the operation of the system. This connection provides all the events and alarms to the Master controller that is being used with the installation.

Factory connected wiring color code:

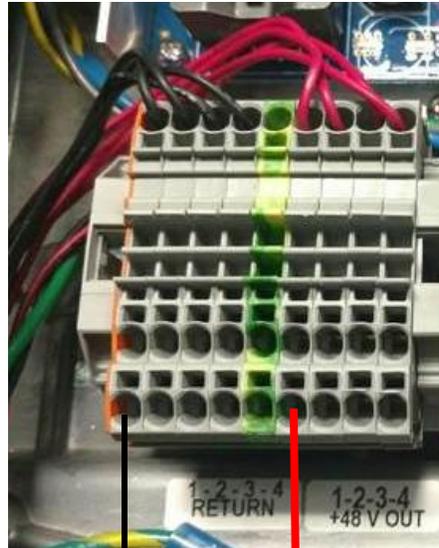
Boards are Labeled	Description	Color Code
Label "A"	Communications "A"	<b>Grey</b>
Common	Common for RS485	<b>Yellow</b>
Label "B"	Communications "B"	<b>Blue</b>

**RS485 cable supplied by Dialight consists of 3 conductors, a drain wire, foil shield and braid.**

Install Cable	Connected to	Description	Color Code
Conductor 1	Label "A"	Communications "A"	<b>Grey</b>
Conductor 2	Common	Common for RS485	<b>Yellow</b>
Conductor 3	Label "B"	Communications "B"	<b>Blue</b>
Drain wire	Ground stud	Ground	Bare wire
Foil Shield and Braid	Clamping terminal	Ground	Connected when cable enters the enclosure and must be secured to the plate

**NOTE:** Refer to quick start manual for connecting daisy chaining RS485 communications cable

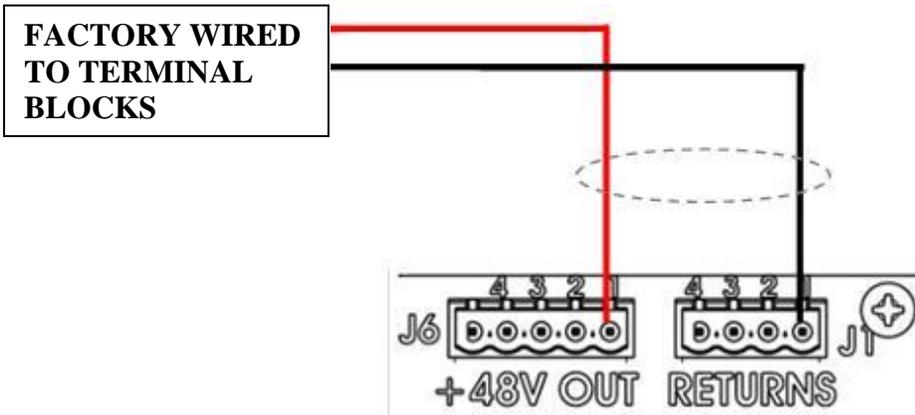
**Connection of the Side Marker Lights (L810's or RTO's) to the Marker Light Monitor Board**



**SIDE MARKER LIGHT CONNECTIONS**

**CONNECTION OF RTO's TO TERMINAL BLOCKS IN MAIN CONTROLLER**

Connect the side marker lights to the designated terminals blocks in the bottom left hand side of the enclosure as shown in the diagram above.



**CONNECTION OF RTO TERMINAL BLOCKS TO MARKER LIGHT MONITOR BOARD IN MAIN CONTROLLER**

These terminal blocks were factory wired to the Marker Light Monitor Board in the Controller as shown in the diagram above. Connections were made to J6 (+48V OUT)



and J1 (RETURNS, negative -) of the Marker Light Monitor Board from the terminal blocks.

**WARNING:** Low Voltage L810's are to be used for connecting to these ports.

**WARNING:** Green earth ground wires **MUST** be connected and typically all connected together.

**+48V OUT Connections:**

Pin 1	+48Vdc	Voltage to L810 or Tier
Pin 2	+48Vdc	Voltage to L810 or Tier
Pin 3	+48Vdc	Voltage to L810 or Tier
Pin 4	+48Vdc	Voltage to L810 or Tier

**NOTE:** A single Pin connection can power all L810's.

**Return Connections:**

Pin 1	-48Vdc	For Monitoring	Tier 1 or individual 810
Pin 2	-48Vdc	For Monitoring	Tier 2 or individual 810
Pin 3	-48Vdc	For Monitoring	Tier 3 or individual 810
Pin 4	-48Vdc	For Monitoring	Tier 4 or individual 810

**NOTE:** A maximum of 1.2 amps can be monitored through each pin connection.

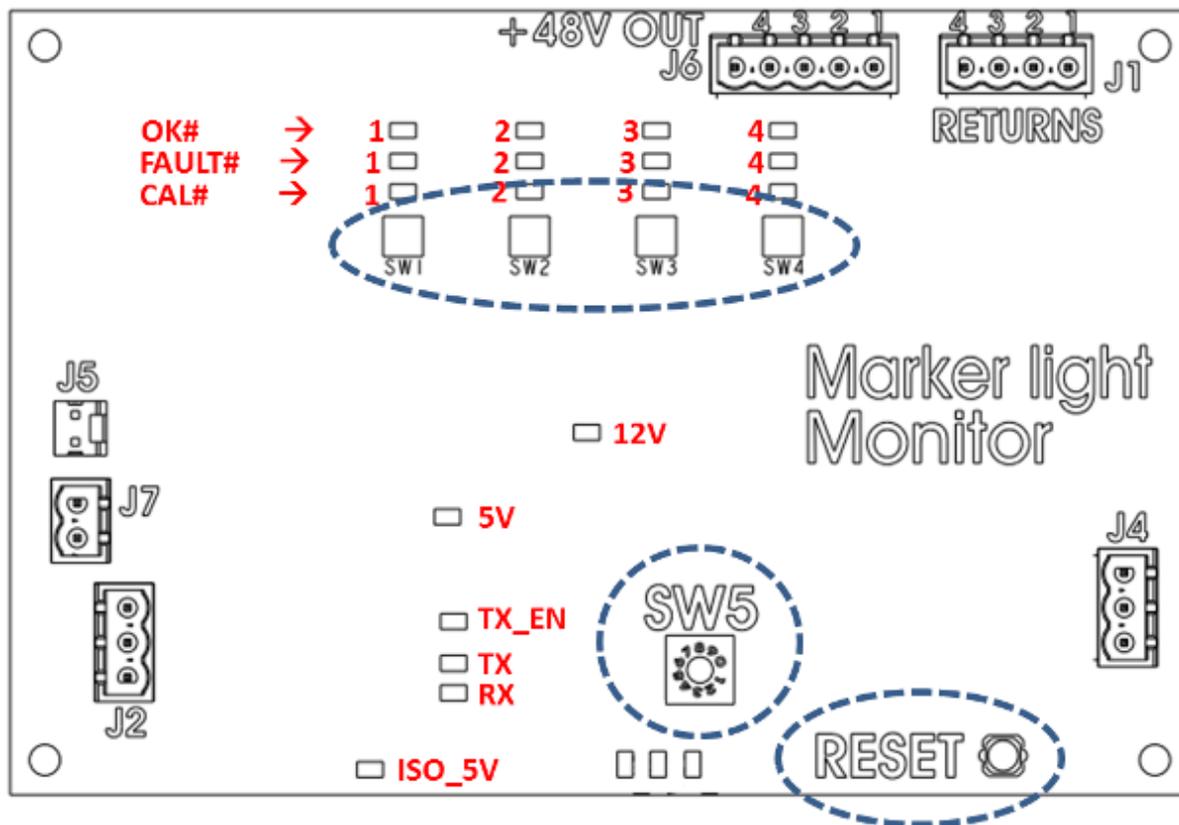
**Manual Calibration of Side Lights**

***See the quick start manual auto calibration option***

Follow these steps to calibrate the Marker Light Monitor Board located in the Controller. These steps will allow the system to properly identify, power, and monitor the RTO side markers.

- STEP 1 – CLEAR the Marker Light Monitor Board by holding down buttons SW1-4 at same time.
- STEP 2 – FAULT LED's #1-4 will light up red.
- STEP 3 – Press "RESET" button (SW7).
- STEP 4 – Each output will auto configure within 15 seconds.
- STEP 5 – Verify Each output is correct:
  - Green "OK" LED will illuminate green if RTO output is present.
  - "OK", "FAULT", and "CAL" LED's will be off if RTO output is NOT present





**MARKER LIGHT MONITOR BOARD SHOWING BUTTONS AND SWITCH FOR CONFIGURATION AND CALIBRATION**

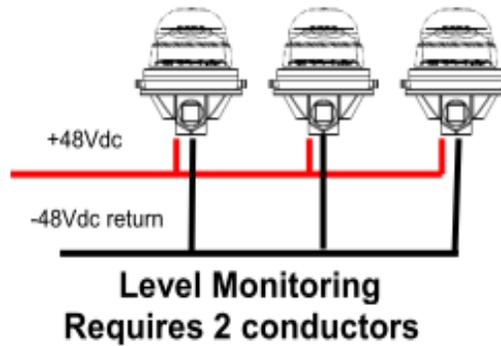
**NOTE:** Each calibration port has been designed to accurately handle up to four L810's simultaneously; thus have a maximum of sixteen L810's. If additional L810's are required, contact [www.Dialight.com](http://www.Dialight.com)

### Wiring for the +48Vdc L810 Side Markers:

**WARNING:** Ground connection left out for clarity but must be connected during the installation.

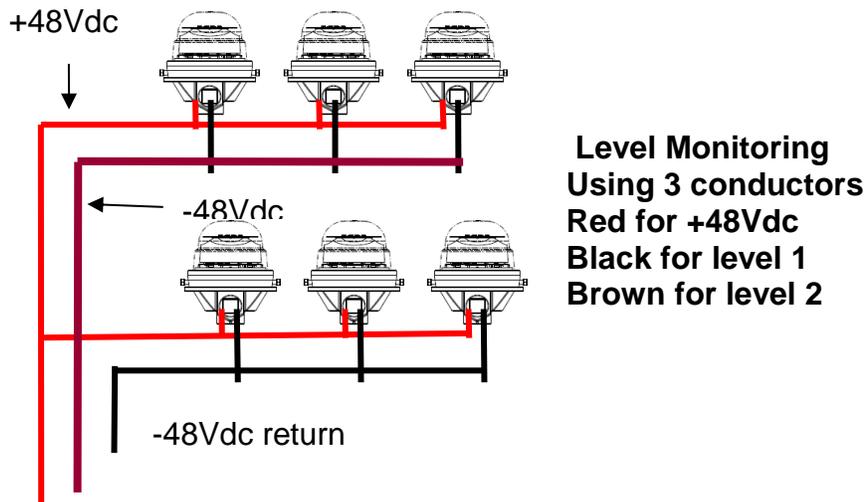
**NOTE:** Dialight's 48VDC versions of the L810 have factory installed wires that are Red, Black and Green.

**NOTE:** Dialight's AC versions of the L810 have Black, White and Green; and cannot be used.



Level monitoring **does** require visual inspection for a single faulty light. The controller will indicate an event plus a LED AL7 will illuminate for a faulty light.

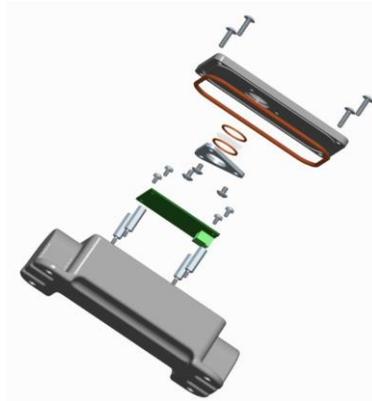
Connections 1, 2, 3 are to be used for each level of side lights installed. Typically 1 should be the north leg.  
A maximum of four L810's can be individually monitored.



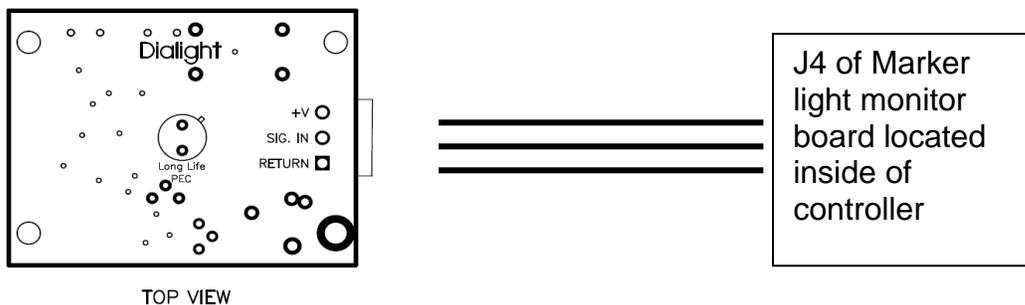
Level monitoring using 3 conductors allows for the system to know what level the fault is on but visual inspection is required to verify which light is faulty.

**Photocell Connection: Dialight P/N D256-6000PEC**

**NOTE:** The photocell contains its own manual and should be read in its entirety.



Open supplied photocell enclosure. The Photocell requires 3 connections to be made to the inside of the photocell enclosure itself and 3 inside the controller.



+V = 12Vdc (supplied from controller)  
SIG. IN = Sense voltage relayed to controller  
Return = Ground

***Cable Requirements:***

3 conductor, 18AWG minimum

Maximum allowable distance is 500 feet from the controller

**NOTE:** When mounting the Photocell it must face north and be placed in a location without obstructions.

The photocell comes supplied with one end threaded for 3/4" NPT conduit, which is recommended for installing the photocell.

**NOTE:** If a cable is to be used than the cable **MUST** have either a shield or braid that is properly connected to body of the photocell and to the enclosure of the controller it is being installed to. Failure to properly ground, or use a cable without the shield or braid will void all warranties and the product could be subject to premature failures.

## Flash Head and Power Supply Cable Connections

### 4 Conductor Connections

The Power Supply and the Flash Head have the same surge/terminal connections so the information below will be used for connecting in the Flash Head and in the Power Supply.

**NOTE:** This is the only connection in the Flash Head pedestal that is required.

**NOTE:**

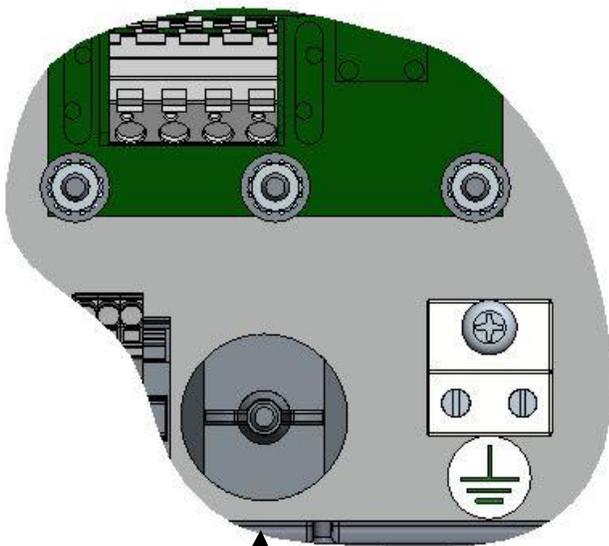
**WARNING:** If the cable is not color coded or numbered the instructions state the installer must take notes of wiring to ensure that both the Flash Head and Power supply get wired the same. If for example wire 1 is inserted in to location 4 by mistake severe damage could result to the LED's in the flash head. This will **VOID** all warranties.

**Pin 1 or RED in the flash head must go to Pin1 RED in the power supply and so on.**

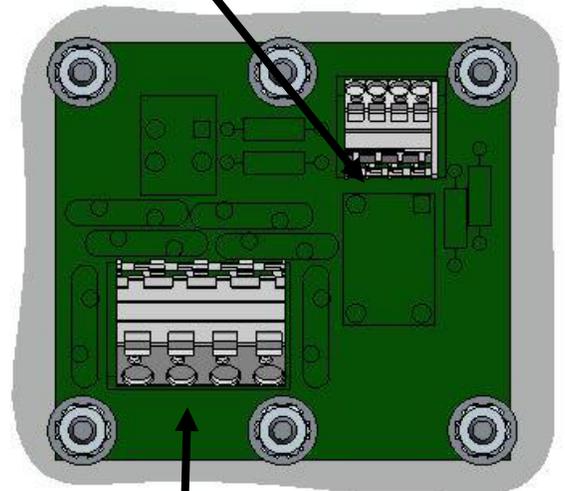
**NOTE:** The installer must provide this information to the site manager upon completion for future reference when required

**Terminal block J1 is factory wired.**

**NOTE:** These should be checked to make sure they have not come out during installation or shipping



Washer/wing nut used to secure the braid of the cable to ground



**Terminal block J2 for 4 conductor cable**  
The board is marked for the colors

**J2 4 Conductor Terminal block definitions:**

**NOTE:** The Flash head and Power supply have the same protection board.

Two conductors are required for the Red Beacon and two for the White Strobe.

Red L864 Connections: Terminal block J2 pins 1 and 2

White L865 Connections: Terminal Block J2 pins 3 and 4

**J2 pin designators**

**Description**

<b>RED Connections (RED)</b>	
- pin 1 (Red/Black wire)	RED LED's negative (Cathode connection)
+ pin 2 (Red wire)	RED LED's positive (Anode connection)
<b>White Connections (WHT)</b>	
- pin 3 (White/Black wire)	WHITE LED's negative (Cathode connection)
+ pin 4 (White wire)	WHITE LED's positive (Anode connection)

**WARNING:** Take care to connect correctly, as incorrect operation can cause damage to the driver modules or surge protection boards.

**Connecting the Braid and Foil to the Clamping Ground Washers:**

**WARNING:** It is vitally important that the braid and foil are properly connected under the clamping washers for lightning protection. Failure to do will result in premature failures during lightning strikes.

**NOTE:** For commissioning the system, pictures must be taken of all the clamping washers and the cables secured under them.

1: Run the cable through the provided strain reliefs before stripping the outer jacket in order not to fray the braiding.

2: Remove approx. 10" of the outer jacket.

**WARNING:** If internal braid is cut than it is required that the cable gets re-stripped to ensure proper bonding.

3: Remove approx. 7" of the braiding for the wires to be connected to the terminal block J2.

**NOTE:** If the installer requires longer wires than what is proposed it will still require the 3" of braiding to be properly secured under the clamping washer.

4: A ½" piece of electrical tape can be added to the end of the braid to preventing fraying.

5: Unscrew the wing nut, place **JUST** the braided portion under the clamping washer, and secure tightly.

**WARNING:** The added electrical tape and outer insulation of the cable cannot be under the clamp.

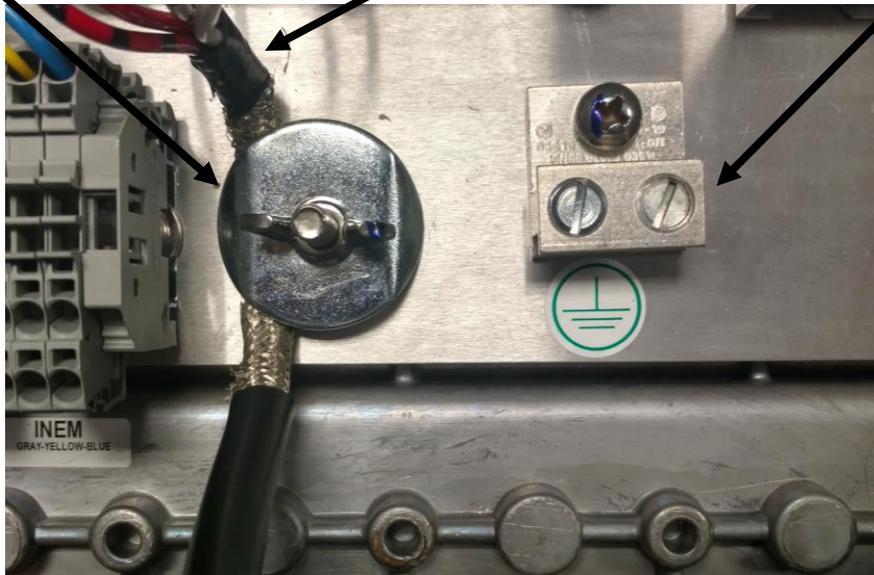


6: Connect the 4 conductors to J2 as detailed above.

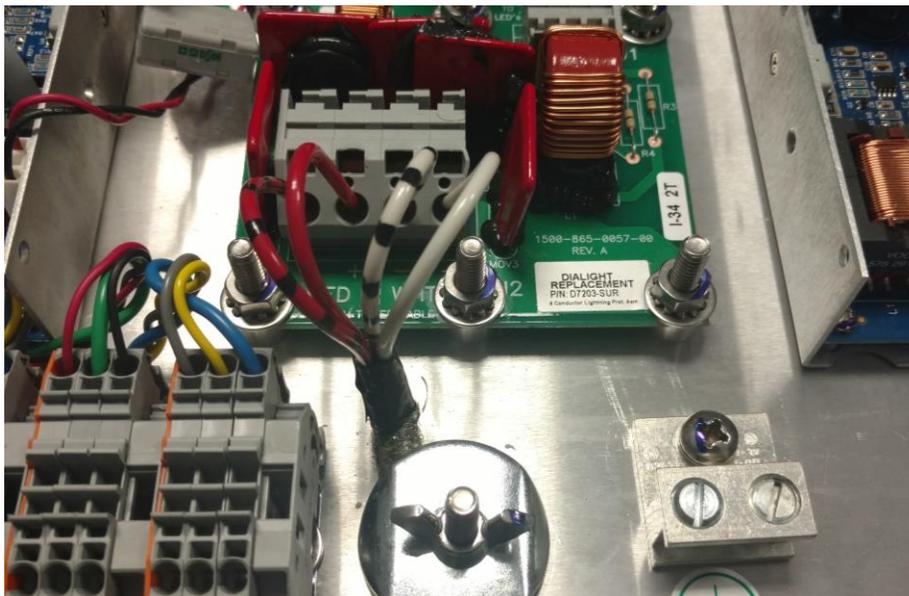
**Clamping Washer**  
Can hold 2 cables;  
1 cable on each  
side

A small piece of approx .5 inch  
of electrical tape can be added  
to end of braid to prevent to  
the braids from separating.

**Ground Lug**  
Fully tighten screws  
down and do pull test on  
wire(s) inserted.



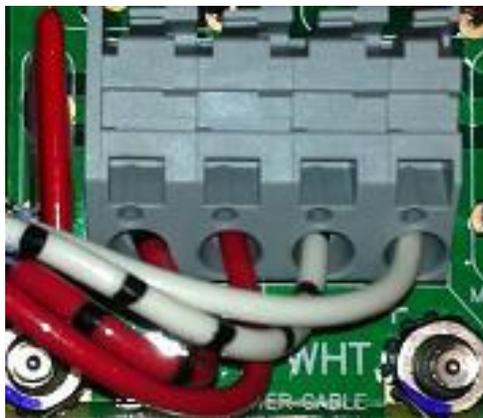
**WARNING:**  
Fully tighten  
wing nut down,  
DO NOT leave  
loose. Double  
check



## Connection of the 4 conductor cable to the Flash Head

**NOTE:** Properly connecting the braid of the cable is vitally important to prevent damage during lightning strikes.

The Surge protection board in the Flash Head is the same that is located in the controller and in the case of multiple Flash Heads such as an E2 or D2 system the power supplies will have the same surge board. Thus all wiring must be the same.



**NOTE:** For commissioning of the system pictures must be taken of the Flash Heads. Below is the list of the minimum required.

- 1: Internal wiring of the pedestal
- 2: Mounting to the structure
- 3: Bonding the pedestal to the structure
- 4: Any service loops
- 5: if there are lightning rods installed.

### Parts required (supplied as a Kit): E1 system

QTY	Description	Where used
1	Photocell	Connected to controller
1	14 AWG 4 conductor cable	Cable required from Controller to Flash Head
1	18 AWG 3 conductor cable	Cable required for wiring side lights and Photocell
3	Side lights (L-810's)	Mounted at mid-level of structure
3	Mounting kits	For mounting Side Lights and junction box
Rolls	Filament tape and electrical	For securing wires to the structure

### Parts required (supplied as a Kit): E2 system

QTY	Description	Where used
2	D1xW-C1x-x09-CVT	Power supply (D1xW-PS9xx9) and Flash Head (D1xW-FHx09)
1	Photocell	Connected to controller
2	RS485 comm cable	For daisy chaining RS485

3	14 AWG 4 conductor cable	Cable required from Controller to Flash Head
1	18 AWG 4 conductor cable	Cable required for wiring side lights and Photocell
3	Side lights (L-810's)	Mounted at mid level of structure
3	Mounting kits	For mounting Side Lights and junction box
Rolls	Filament tape and electrical	For securing wires to the structure

**Parts required (supplied as a Kit): D1 system**

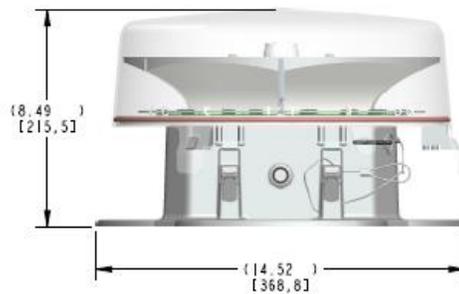
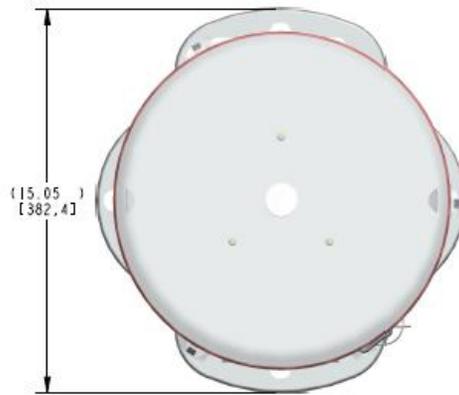
QTY	Description	Where used
1	Photocell	Connected to Controller
1	14 AWG 4 conductor cable	Cable required from Base to Flash Head
1	18 AWG 3 conductor cable	Cable required for wiring Photocell
Rolls	Filament tape and electrical	For securing wires to the structure

**Parts required (supplied as a Kit): D2 system**

QTY	Description	Where used
2	D1xW-PS-94x9	Power supply
1	Photocell	Connected to controller
2	RS485 comm cable	For daisy chaining RS485
3	14 AWG 4 conductor cable	Cable required from Controller to Flash Head
1	18 AWG 3 conductor cable	Cable required for wiring Photocell
Rolls	Filament tape and electrical	For securing wires to the structure



## Mechanical Dimensions of D1RW L864/865 Flash Head



### Mounting Pattern

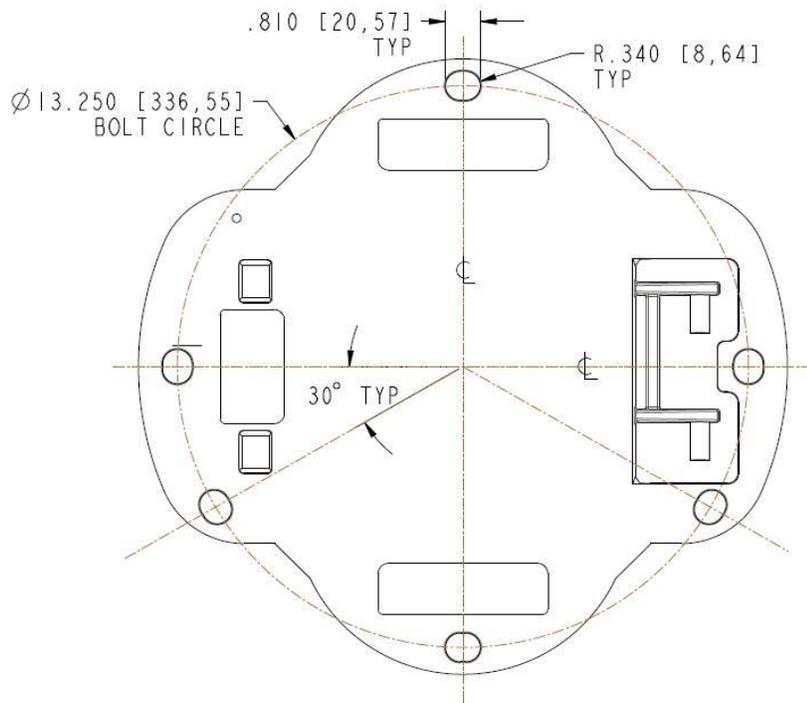
Six mounting holes are provided on the Flash Head pedestal. These mounting holes will align with most tower pedestals. The Flash Head must be installed level according to the bulls-eye level on the light engine to maintain light output in accordance with FAA requirements.

**NOTE:** The mounting location bracket should also be level. It should be checked before installing the light.

**NOTE:** If this is not installed correctly it could cause excessive ground scatter of light.

**NOTE:** Models with additional Infrared (IR) LEDs will differ slightly in appearance.

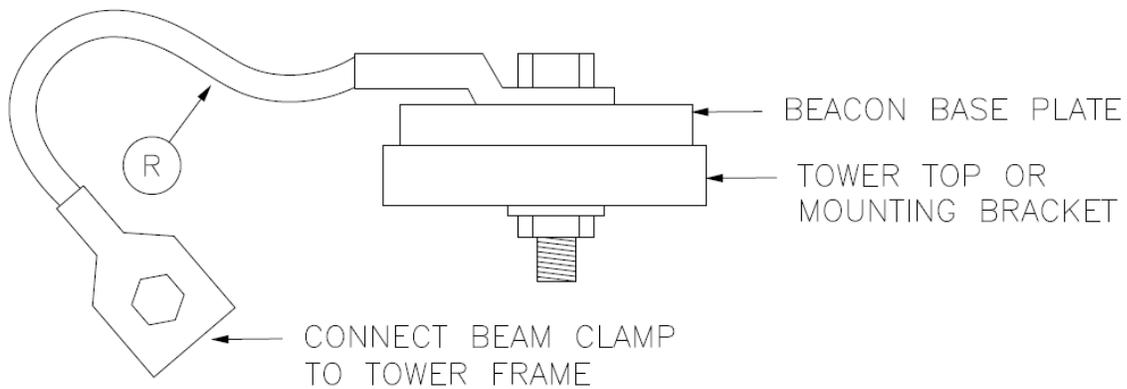
Dimensions are the same as shown.



**PEDESTAL/ BASE – BOTTOM VIEW**

**Bonding the Flash head**

Required if poor connection is measured between the Flash Head and the structure



<b>REVISION HISTORY</b>
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<b>REV</b>	<b>ECO No.</b>	<b>DRN</b>	<b>CKD</b>	<b>APP</b>	<b>QA</b>	<b>CM</b>	<b>DATE</b>
A	41331	CAG	SA	CV	YS	JN	1/30/17
B	47880	CAG	BAM	SA	YS	JN	11/20/17

