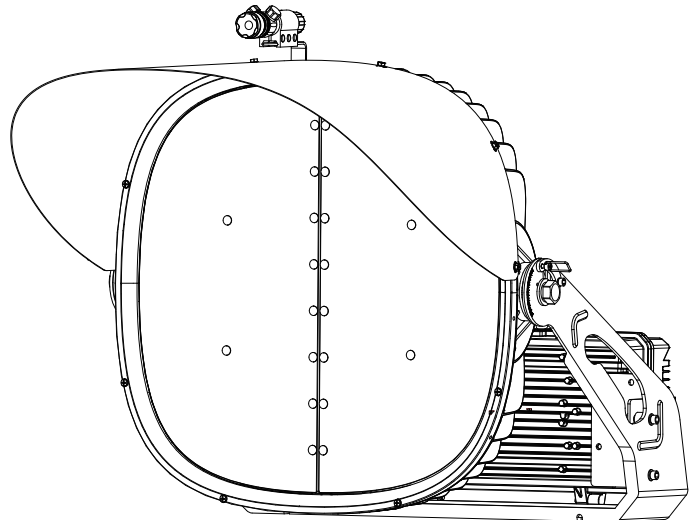


680W & 800W



1200W



Before

Read and understand this entire manual and any additional site-specific installation documents before attempting to assemble, install, or operate the luminaire. If you have any questions about the product or installation, please contact the supplier immediately.

Safety

Follow all safety items outlined here as well as any local safety procedures.

1. All electrical work must conform to National Electrical Code (NFPA 70), IEEE Emerald book, and all applicable local codes and ordinances.
2. Verify the capacity and integrity of existing power distribution system and correct branch circuit voltage before beginning installation.
3. Verify the structural capacity and safety of all facility/venue/pole supports and mounting apparatus before installation. See fixture specification sheet for weight and wind loading data.
4. In harsh settings where the system is subjected to factors such as extreme temperatures, high corrosion, hurricanes, or lightning, always follow local codes and additional protocols to ensure the cabling and other system components can withstand the environmental stress for the life of the system.
5. DO NOT make or alter any open holes in the luminaire. Do not modify the luminaire, internal wiring, or fixture mounting features. Opening or modifying the luminaire or bracket will void the warranty.
6. Use Personal Protective Equipment including hardhats, safety glasses, reflective vests, electrical safety gloves, fall protection equipment, and safety toe boots during installation, operation, and maintenance of luminaire.
7. Verify compliance with local standards to prevent access to the area below where installation activities are occurring to prevent injury from accidental drops of fixtures, tools or hardware.

Storage

Store luminaires in a clean, dry place, protected from dirt, water, and sunlight prior to installation. See Table 1 for required storage and operating conditions:

Storage Temperature	Operating Temperature	Humidity
-40°F to 158°F	-22°F to 122°F	10% to 98% non-condensing

Table 1. Storage and Operating Conditions



Risk of Fire, Electrical Shock, Cuts or other Casualty Hazards - Installation and maintenance of this product must be performed by a qualified electrician. This product must be installed in accordance with the applicable installation code by a person familiar with the construction and operation of the product and hazards involved.



Risk of Fire and Electric Shock - Make sure to TURN OFF THE POWER before starting installation or attempting any maintenance. Disconnect power at fuse or circuit breaker.



Risk of Fire - Refer to product label for specific minimum supply conductor requirements.



Risk of Burn - Disconnect power and allow fixture to cool before handling or servicing.



Risk of Personal Injury - Fixture may become damaged and/or unstable if not installed properly.servicing.

DISCLAIMER OF LIABILITY: RevolveLED shall not be liable for any damage or loss resulting from incorrect, careless or negligent installation, handling or use of this product.

NOTICE: Green ground wire provided in proper location. Do not relocate.

ATTENTION Receiving Department: Note actual fixture description of any shortage or noticeable damage on delivery receipt. File claim for common carrier (LTL) directly with carrier. Claims for concealed damage must be filed within 15 days of delivery. All damaged material; complete with original packing must be retained.

APPLICATIONS: This lighting fixture should not be used in area of limited ventilation or inside high ambient temperature enclosures. It must be stored in a dry location before installation. Do not expose lighting fixture to rain, dust or other environmental conditions prior to installation. Best results will be obtained if installed and maintained according to the following recommendations.



Required Tools and Materials

- 9/16" Socket w/ driver
- 3/4" Socket w/ driver
- 15/16" Socket w/ driver
- 1-1/18" Socket w/ driver
- Socket wrenches and/or crescent wrenches sized to fit mounting hardware
- Laser Aiming Kit (if applicable)



Power Supply

LED luminaires are not traditional metal halide lights; they are high-tech, new-generation solid-state devices. To protect your valuable investment, ensure the electrical power supply is clean and stable with no spikes or sags.

The power transformer feeding the site electrical distribution system must be a three-phase, four-wire wye configuration or a single-phase configuration. An ungrounded delta configuration is NOT an approved power supply.

All issues with supply power must be corrected before luminaires are installed. Failure to use an approved power supply configuration may result in equipment damage.



Power Quality

Follow proper grounding methods. The electrical system must be properly grounded for power electronics in accordance with IEEE Emerald Book, including using equipment grounding conductors. Power must also be phase balanced. If you are not sure if your power system is grounded or load balanced, DO NOT install the luminaire and contact a licensed electrician for information on proper grounding and balancing methods as required by the National Electrical Code and IEEE standards.



Surge Protection

Installation of surge protection is recommended in power distribution systems that feed LED sports lighting. Failure to protect electrical circuits from surges may result in damage to fixtures.



Branch Circuits

Branch power circuits feeding luminaires shall have a measured voltage of within 4% of nominal voltage with no sags, swells, or transients.



Voltage Configuration

Before installing luminaires, verify that the fixture model number has the correct voltage configuration for your application. See fixture specification sheet for acceptable branch circuit voltage. Failure to confirm proper configuration may result in injury damage to fixtures.



WARNING

Failure to confirm proper configuration may result in injury or fixture damage.

When circuiting power to luminaires, load balance all circuits. See fixture specification sheet for power characteristic data.

**Electrical Performance Specifications
Technical Data**

Product	Input Voltage Range (VAC)	Nominal Input Power (W)±5%	Input Current Max.(A)	Power Factor (>60% Load)
LYRA-500	200-480	500	2.6	> 0.9
LYRA-600	200-480	600	3.1	> 0.9
LYRA-680	200-480	680	3.5	> 0.9
LYRA-800	200-480	800	4.2	> 0.9
LYRA-1000	200-480	1000	5.1	> 0.9
LYRA-1200	200-480	1200	6.1	> 0.9
LYRA-1300	200-480	1300	6.6	> 0.9

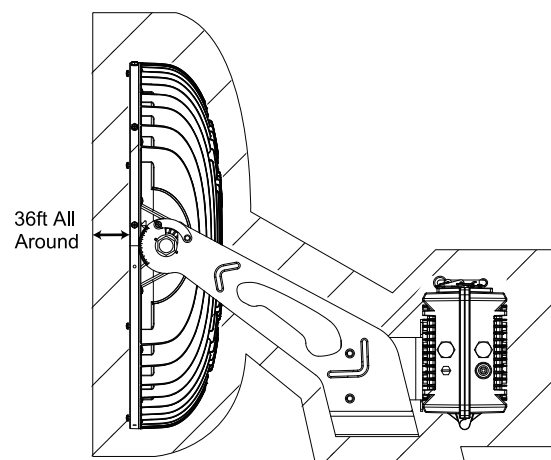
Note: Measured at 77°F Ambient Conditions, Operating Conditions, and Clearances

Operating Conditions and Clearances

Refer to the following sections for thermal, optical, and mechanical clearance requirements.

Thermal Clearances - Safe Operation

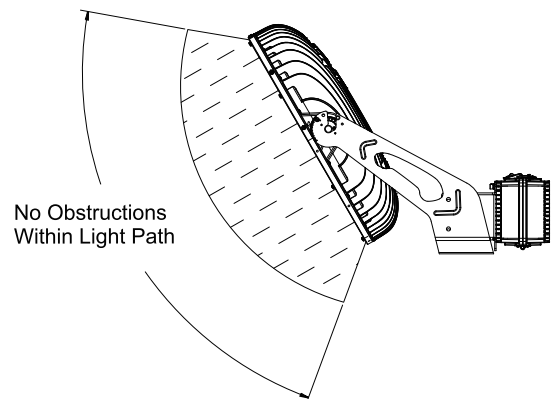
Installer should verify there are adequate clearances around the fixture to allow for proper heat dissipation and no potential fire hazards. The luminaire produces a significant amount of heat and should not be installed in any confined space. Any combustible materials or structures that could limit the airflow around the luminaire heatsink must be at least 3 ft away from the luminaire (for example: the light should be mounted at least 3 ft away from any ceiling). Mounting structures, adjacent fixtures or non-combustible materials can be within this limit.



Risk of Fire: Do not install fixture within 3 ft of any combustible material

Optical Clearances – Maximizing Light Levels

If you have a lighting layout for your space, install the fixtures according to the location and aiming data exported from photometric models to achieve your desired results. However, any objects in the light path between the luminaire and the playing surface will diminish the light levels. Some examples of obstructions are building structural members, electrical panels, HVAC ductwork, banners, and scoreboards. Before installing, make sure that there is a clear line of sight from every luminaire location to the target location you're illuminating. The illumination area for each fixture varies with mounting height and beam angle, but the purpose is to identify all obstructions and analyze how each will impact the light output on the playing surface, and then take corrective action as necessary to avoid the obstruction. For example, a structural beam directly in front of a luminaire will block the light from reaching the target, so in that case, the luminaire should be shifted to avoid the beam.



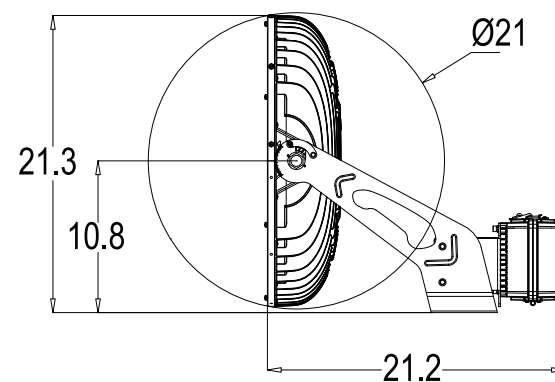
Mechanical Clearances - Avoiding Obstructions

In general, fixtures can be moved up to 5 ft from the designed location without affecting photometric results as long as they are aimed at the designed aiming coordinates. For significant obstructions, photometric models should be revised with accurate obstruction dimensions to provide new fixture location and aiming data that avoids the obstruction. If options are limited, consider swapping that fixture aiming with a nearby fixture of the same type that allows clear line of sight to the aiming points. Consult your photometric designer for assistance with finding solutions to major obstructions for your project.

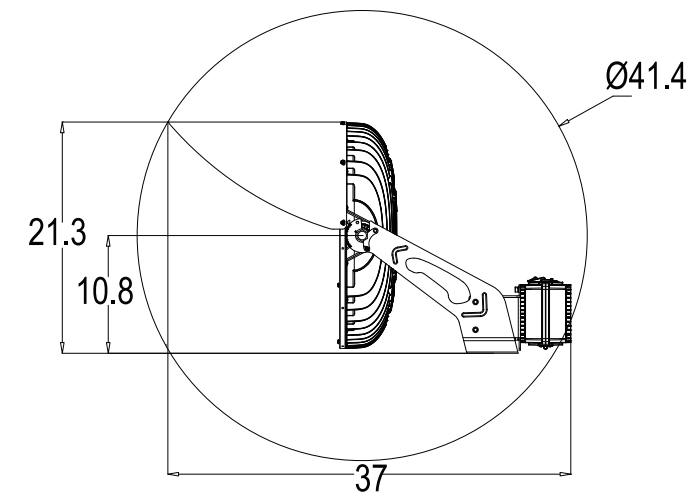
Proper planning will ensure the best results for your sports lighting project. Once these steps are completed, then proceed to the luminaire installation.

Operational Working Clearances

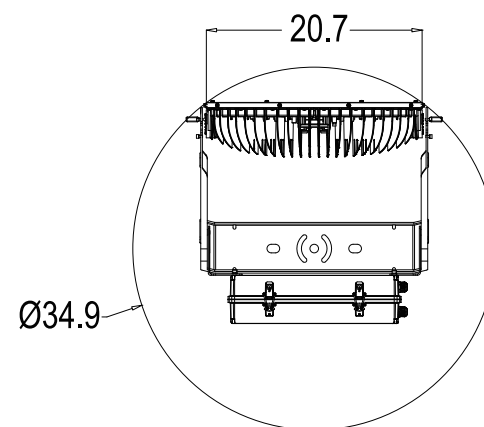
a Yoke Mount



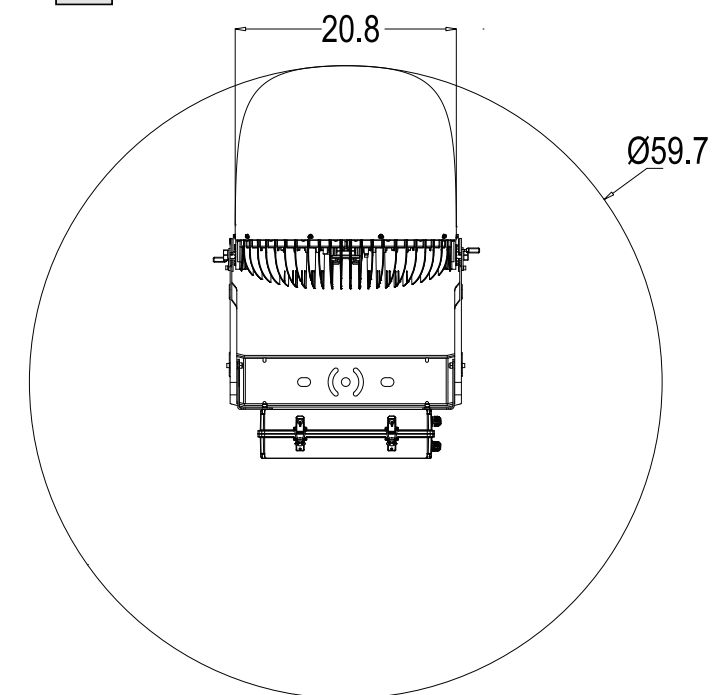
c Yoke Mount with Visor



b



d





Installation Instructions

Step 1 – Prepare the luminaire



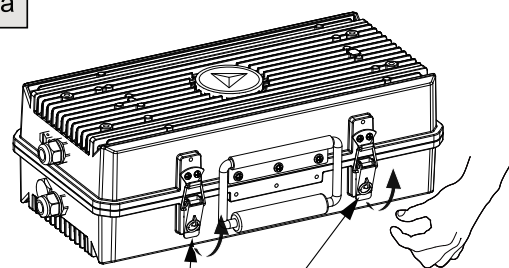
Driver Box and Light Head must have matching power ratings. Do NOT install Light Head on a Driver Box that has a different power rating. Failure to properly match Driver Box and Light Head can damage the fixture.

Note: All fixtures that have the exact same model number are functionally identical as built from the factory.

Prepare the Driver Box

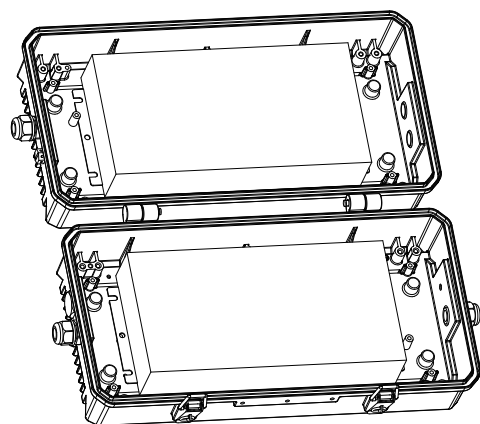
Open the driver box by unlatching the two spring buckles on the back.

5a



Unlatch the 2 Spring Buckles

5b



Install power cable

Always turn all fixture power sources OFF before performing any work on power or control wiring.



WARNING

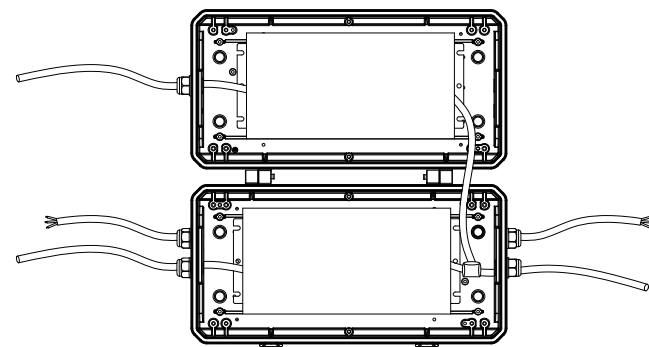
Failure to disconnect all power sources may lead to damage, injury, or death.



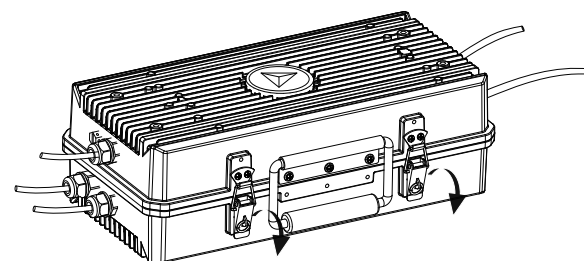
The input power cable should be a SOOW style 3C cable with a minimum of 16AWG annealed stranded bare copper per ASTM B-174 with a minimum temperature range of -40°F to 194°F. This cable must be water resistant, UV rated/sunlight resistant, UL listed, and CSA certified for indoor and outdoor use. The cable jacket diameter must be within .260" - .545"

Insert power cord through the top cord grip on the left side of the Driver Box as shown in the images (6a, 6b, 6c), below.

6a Top Down View of Open Driver Box



6b Closed Driver Box



Step 2 – Install the Driver Box

Driver Box Orientation

Driver Box must be installed on a flat and level surface.

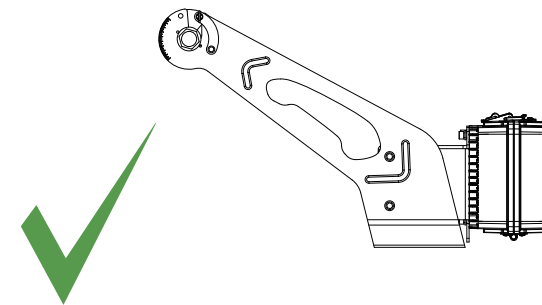


Driver Boxes may ONLY be installed in the following physical orientations.

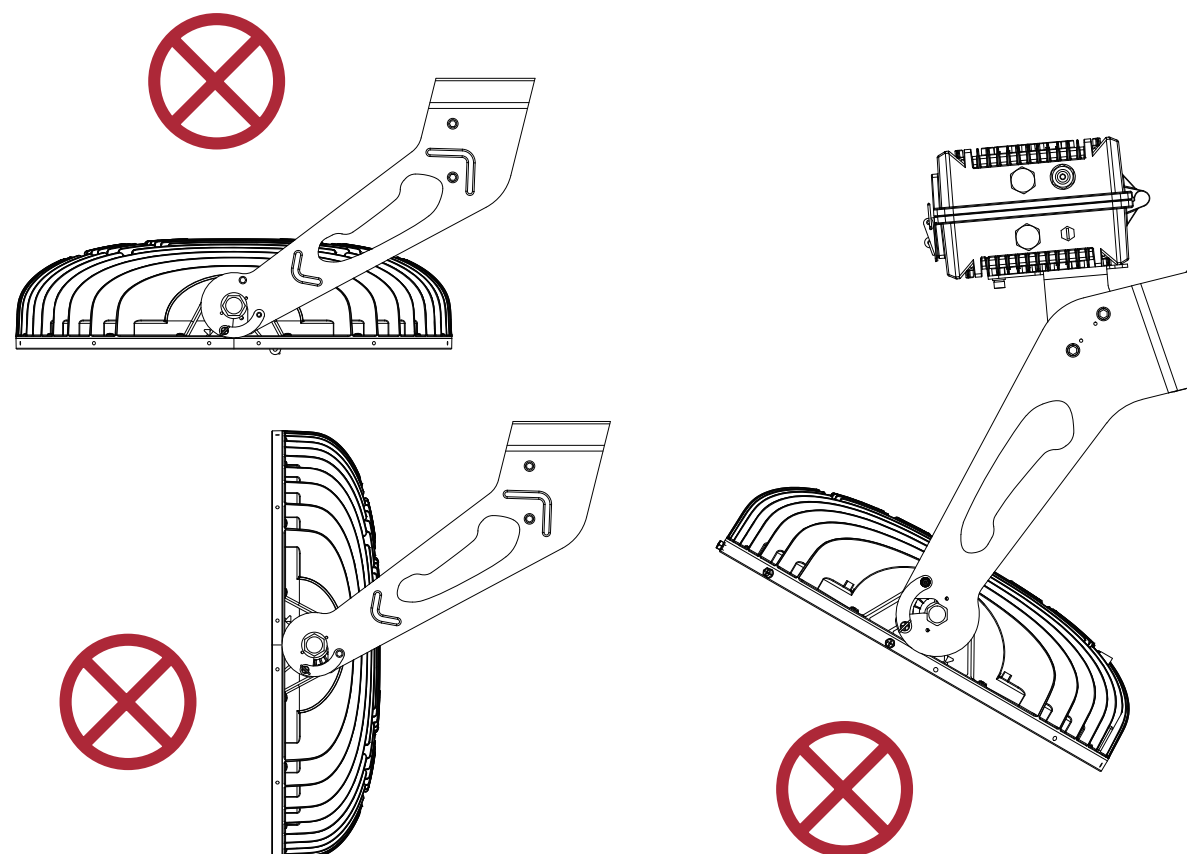


Yoke Mount – The Driver Box with Yoke mounting bracket must ALWAYS be with the quick mount slots and lid facing up. Do NOT install Driver Box in any other orientation. The yoke mount configuration is wet location rated.

8a Correct Installation



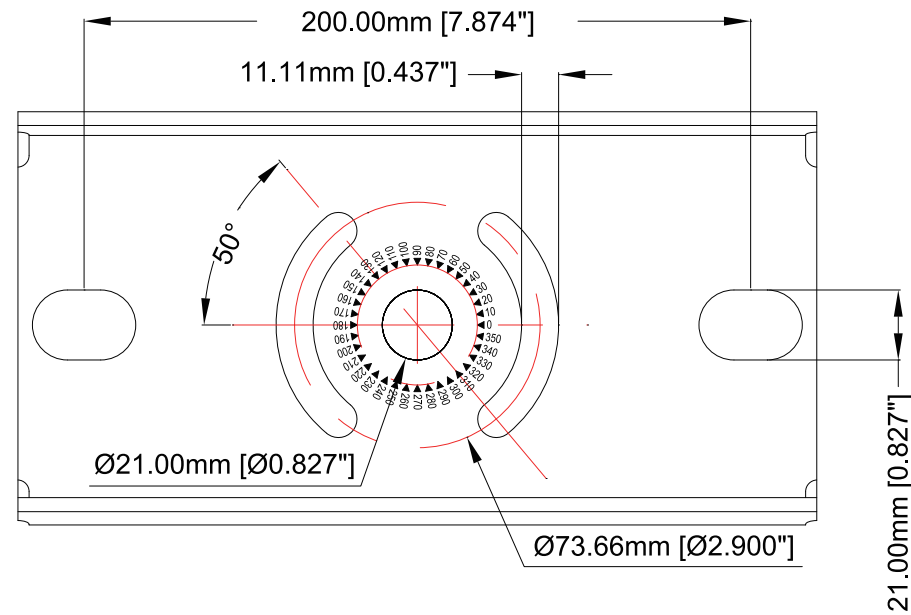
8b Incorrect Installation





Mounting Hole Dimensions

10



The central hole is sized for a 3/4" bolt and the crescent shaped features are sized for a 3/8" bolt.

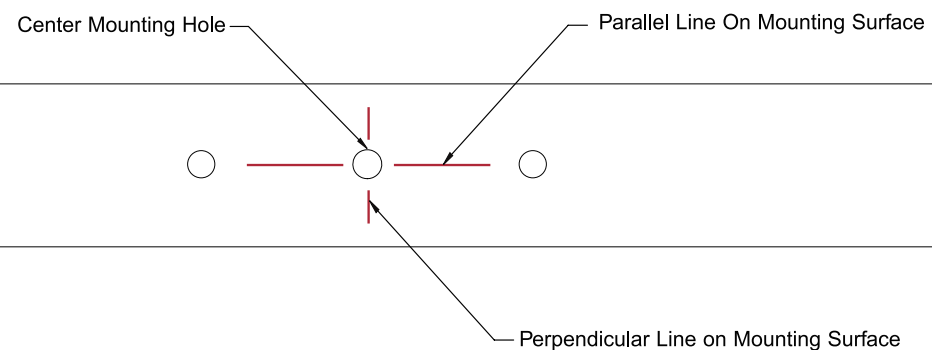
Mounting Hardware (Surface Mount)

Mounting center bolt shall be 3/4" diameter corrosion resistant steel (HDG, hot dipped galvanized high-strength steel is recommended) with nut, jam nut and locking washers. A secondary 3/8" diameter corrosion resistant steel bolt with nut, flat and locking washers shall be used to lock the orientation. The length of bolts is determined in the field depending upon thickness of mounting structure. Size bolts appropriately to allow secure fastening of the luminaire to the mounting structure. Tighten hardware so that fixture is secure but do not fully torque hardware until aiming is complete.

Mark the Mounting Surface (Pre-Aim Orientation)

To pre-aim the fixture orientation, draw a reference line on the mounting surface. Use a paint pen or other marker to draw a line across the center of the mounting hole, parallel and perpendicular with the crossarm or mounting structure. The crossarm should typically but not necessarily be perpendicular to the direction of the field of play. The line should extend at least 3" out from the center of the mounting hole.

11



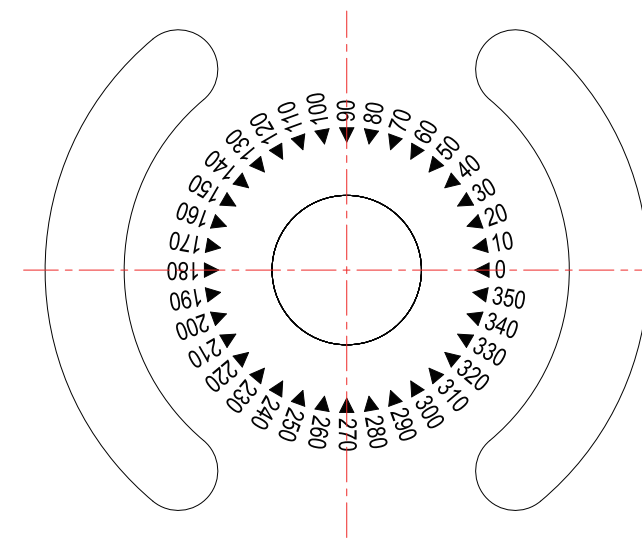
Install the yoke mount by aligning the center hole with the mounting hole.

The mounting arms should be facing the general aiming direction. Install bolt, washers, and nut to securely fasten yoke mount to the mounting structure.

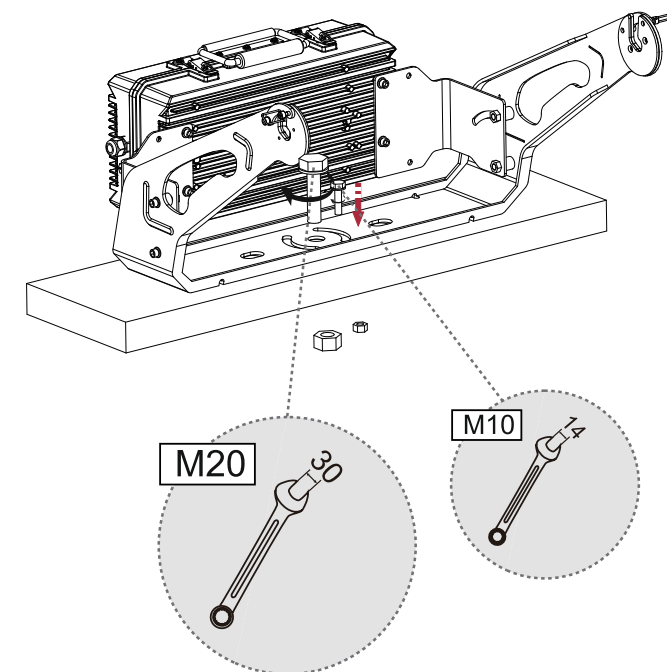


Prevent access to area under fixture until the final torquing is complete.

Install Support Orientation Label



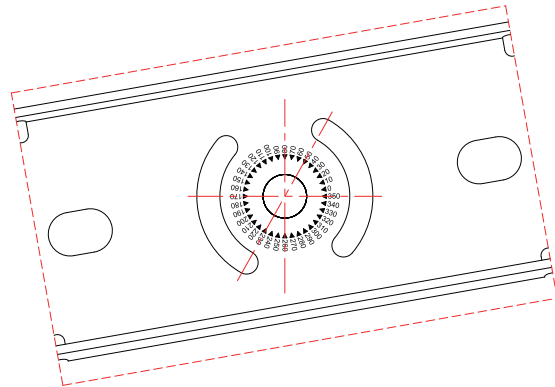
Local Yoke Mount



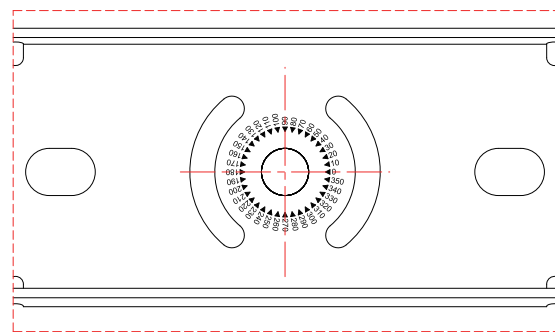
Orient the install support

To pre-aim the fixture orientation, rotate the install support about the mounting bolt until the parallel reference line that was marked on the mounting structure is aligned with the correct angle shown in white on the orient label in the bottom of the install support.

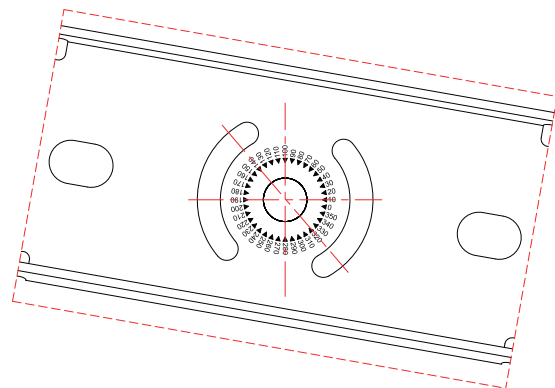
13a 0-50° Left



13b 0-90° Straight to Field



13c 0-50° Right



Orient the install support

To pre-aim the fixture orientation, rotate the install support about the mounting bolt until the reference line that was marked on the mounting structure is aligned with the correct angle on the orient label in the bottom of the install support.

Hardware Description	Use / Location	Tool	After Aiming Torque	Quantity
3/4" Mounting Bolt Assembly	Mounting Fixture To Mounting Structure	1 - 1/8" Socket	80 ft-lb	1X
3/8"-16 Locking Bolt Assembly	Orientation Lock	9/16" Socket	20 ft-lb	1X



If laser aiming, tighten the mounting hardware so that fixture is secure but do not fully torque hardware until final aiming is complete.

If using the orientation gauge, torque the mounting hardware at this step to the values in the table below. If you are laser aiming, torque the hardware to the specification once the fixture is aimed.

Install Control Cables (Wired DMX Configurations)

Note: For wireless applications, skip to Record MAC Address section.

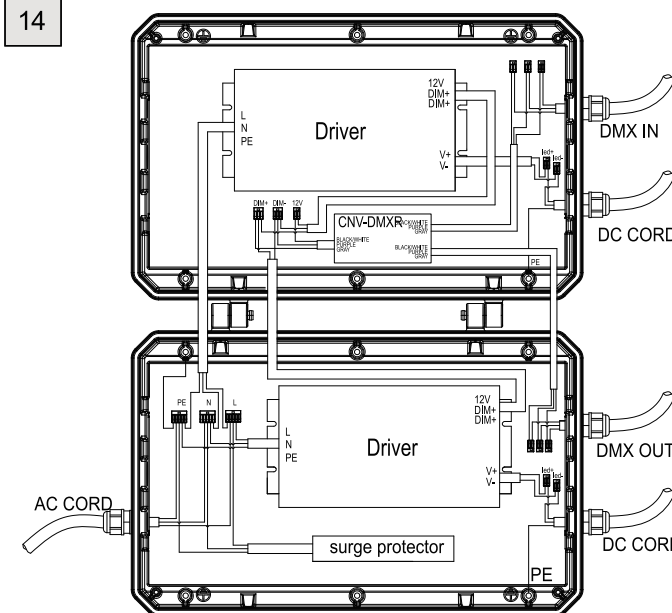
Control Standards: All control work shall conform to ANSI E1.11 – 2008 (r2013), USITT DMX512-A, Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories. At a minimum, DMX cable shall be 1-pair (24AWG, 7x32 Stranding) Twisted (minimum of 4.8 twists/foot), Shielded, minimum of 100 ohms impedance, and <25pF/ft. Capacitance.

Install control cables through the cord grips on the back right side of the Driver Box.

Follow the guidelines established for DMX connection and transmission as outlined in ANSI standard E1.11 – 2004 Entertainment Technology - USITT DMX512-A — Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories.

This includes placement of a resistor matching the nominal impedance of the DMX conductors after the last fixture in the DMX run.

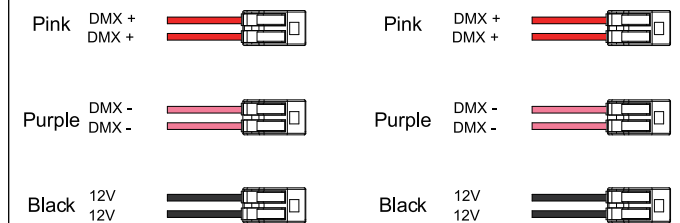
14



Fixture DMX Control Wire Color	Designation
Pink	DMX -
Purple	DMX +
Black	12V
Pink	DMX -
Purple	DMX +
Black	12V

DMX IN

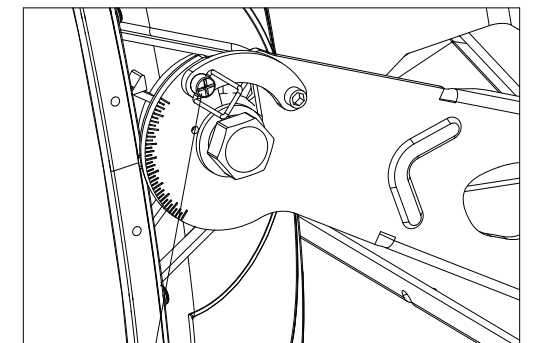
DMX OUT



Connect to fixture control wires as follows:

Tighten power cable cord grip hand tight plus one full revolution using the 24mm cord grip tool to secure the cord in place. The cord shall not slide when pulled. Do not overtighten the cord grip to prevent damage to the grip and cord.

15



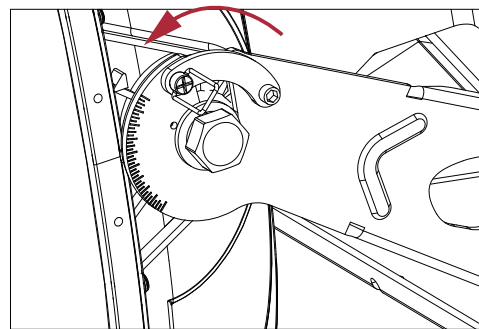
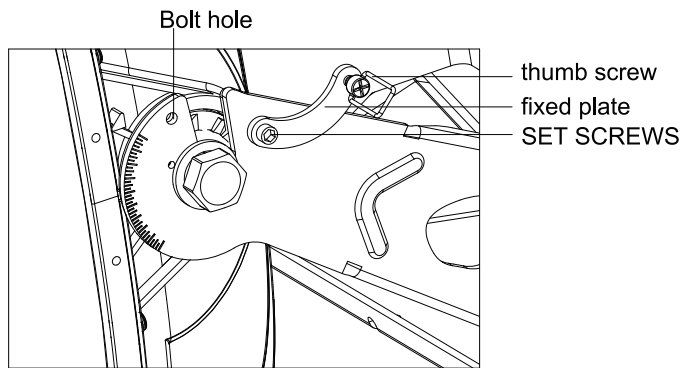
thumb screw

Step 3 – Install the Light Head



16a Open the thumb screw

16b Lock the thumb screw



Set pre-aiming tilt angle

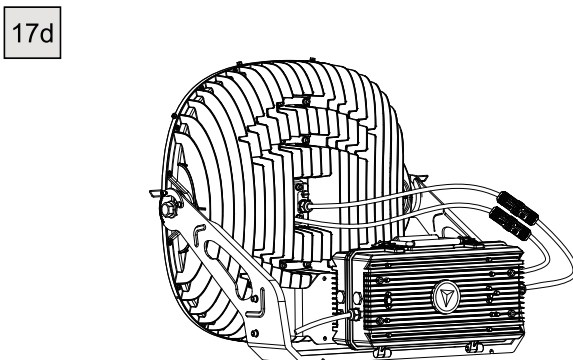
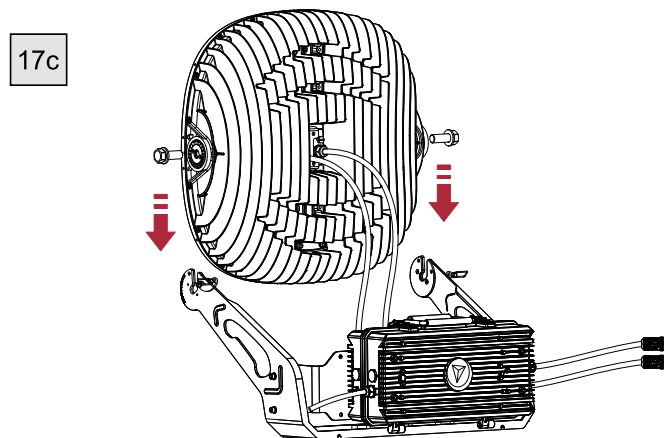
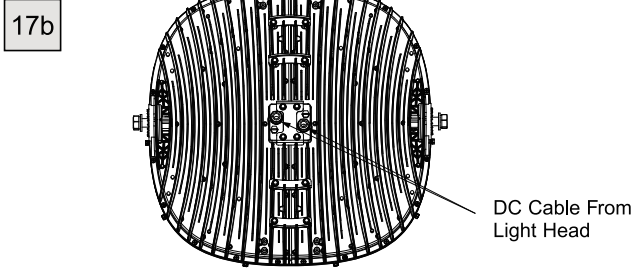
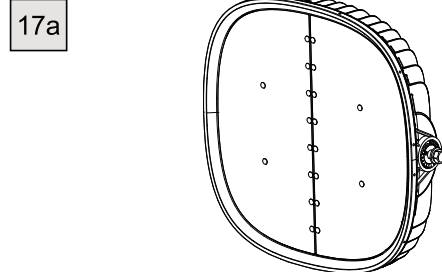
The Light head tilt angle can be rough-aimed using the guide on the left mounting arm. Retract rotate the thumb screw together with the fixed plate until its aligned to the bolt hole, lock the thumb screw.

Do NOT over-loosen or remove tilt lock screw. Prevent access to area under fixture until the final torquing is complete.

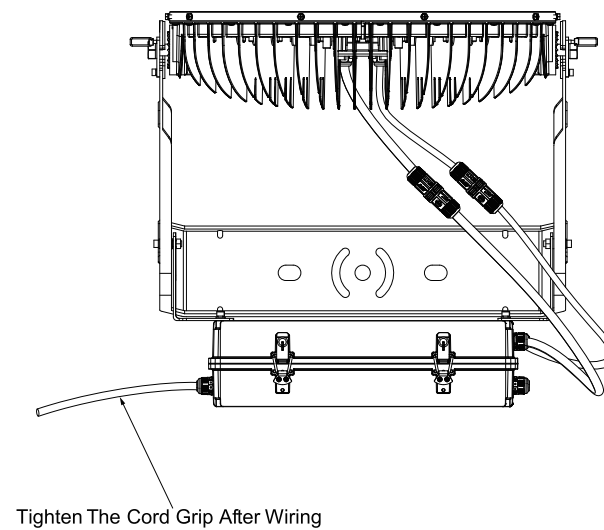
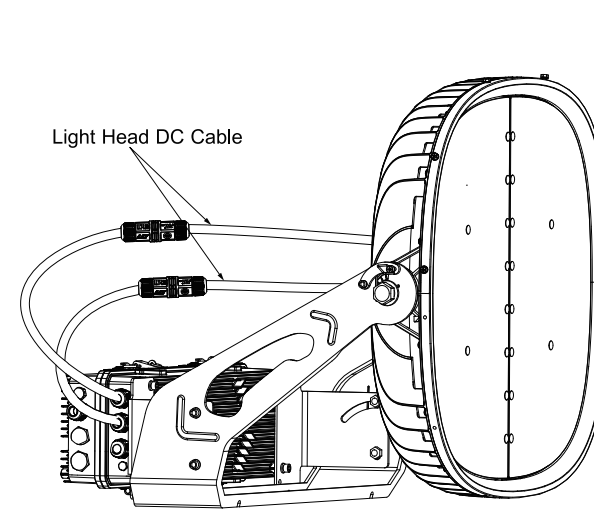
Hardware Description	Use / Location	Tool	After Aiming Torque	Quantity
20 Screw	Tilt Lock	3/16" Allen	75 in•lb	1X

Rotate light head aiming plate until the arrow is over the desired tilt angle. Hold the aiming plate in place and tighten the tilt lock screw.

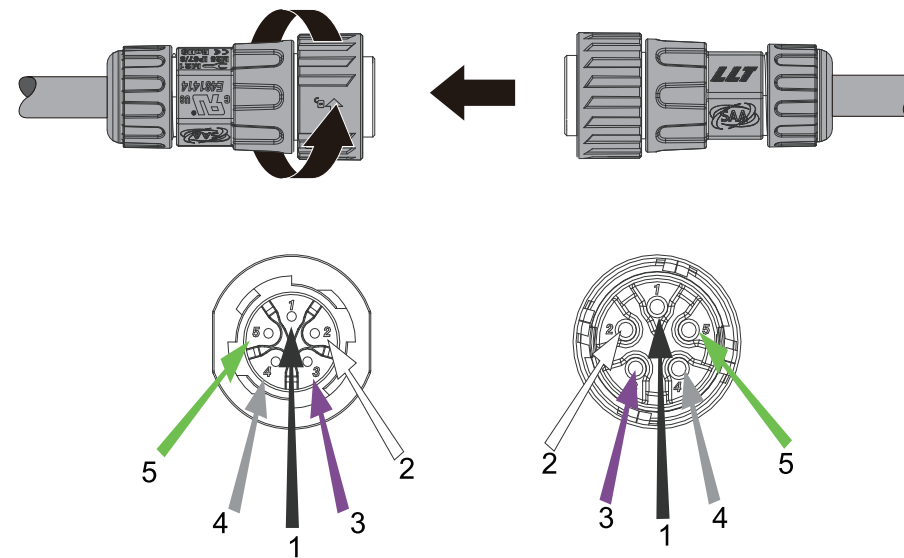
If laser aiming, tighten the tilt lock screw so that fixture is secure but do not fully torque hardware until final aiming is complete.



Yoke Mount



Rotate the Light head to the approximate tilt angle.



Connect the Light Head cable using the M25 Butt waterproof connector -5P connectors.

	Wire Color	Designation
1	Black	LED1+
2	White	LED1 -
3	Purple	LED2+
4	Gray	LED2 -
5	Green	Ground



WARNING

If laser aiming, tighten the light head nut so that fixture is secure but do not fully torque hardware until final aiming is complete. If using the tilt gauge, torque the light head nut to:

Hardware Description	Use / Location	Tool	Torque	Quantity
3/4" Mounting Bolt Assembly	Mounting Fixture To Mounting Structure	1 - 1/8" Socket	80 ft·lb	1X
3/8-16" Locking Bolt Assembly	Orient Lock	9/16" Socket	20 ft·lb	1X
1/4"-20 Screw	Tilt Lock	3/16" Allen	75 in lbs	1X
5/8"-11 Nylock Nut	Light Head Mounting Nut	15/16" Socket	40 ft·lb	2X

Wire the Light Head to the Driver Box

Insert the Light Head cable into the Driver Box through the cord grip on the front left side of the Driver Box. Leave some slack in the cable to allow for aiming adjustments. Tighten cord grip hand tight and then tighten one additional revolution. The cable should not slide if the cable is pulled.

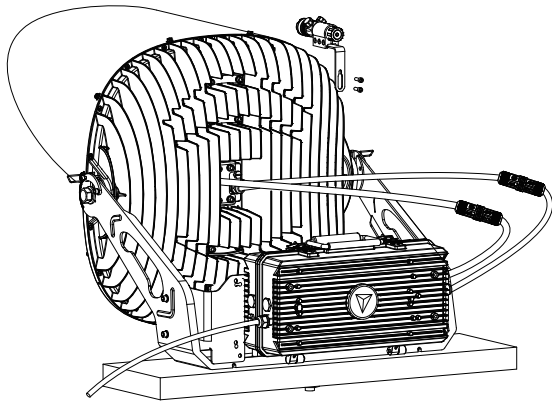


Note: Mounting infrastructure components removed for demonstrated clarity.

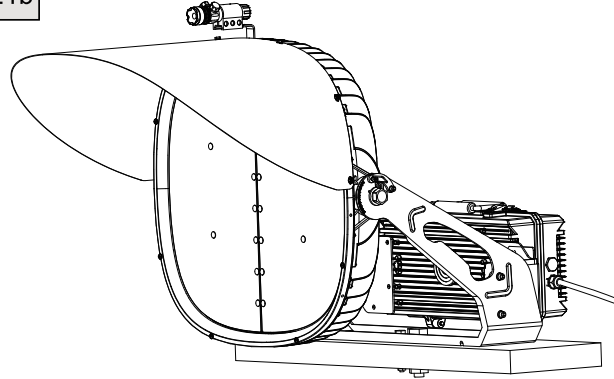


Yoke Mount

21a



21b



Connect the Light Head cable using the M25 Butt waterproof connector -5P connectors.



Prevent access to area under fixture until laser aiming is completed.



**Step 4 – Aiming
Laser Aiming**

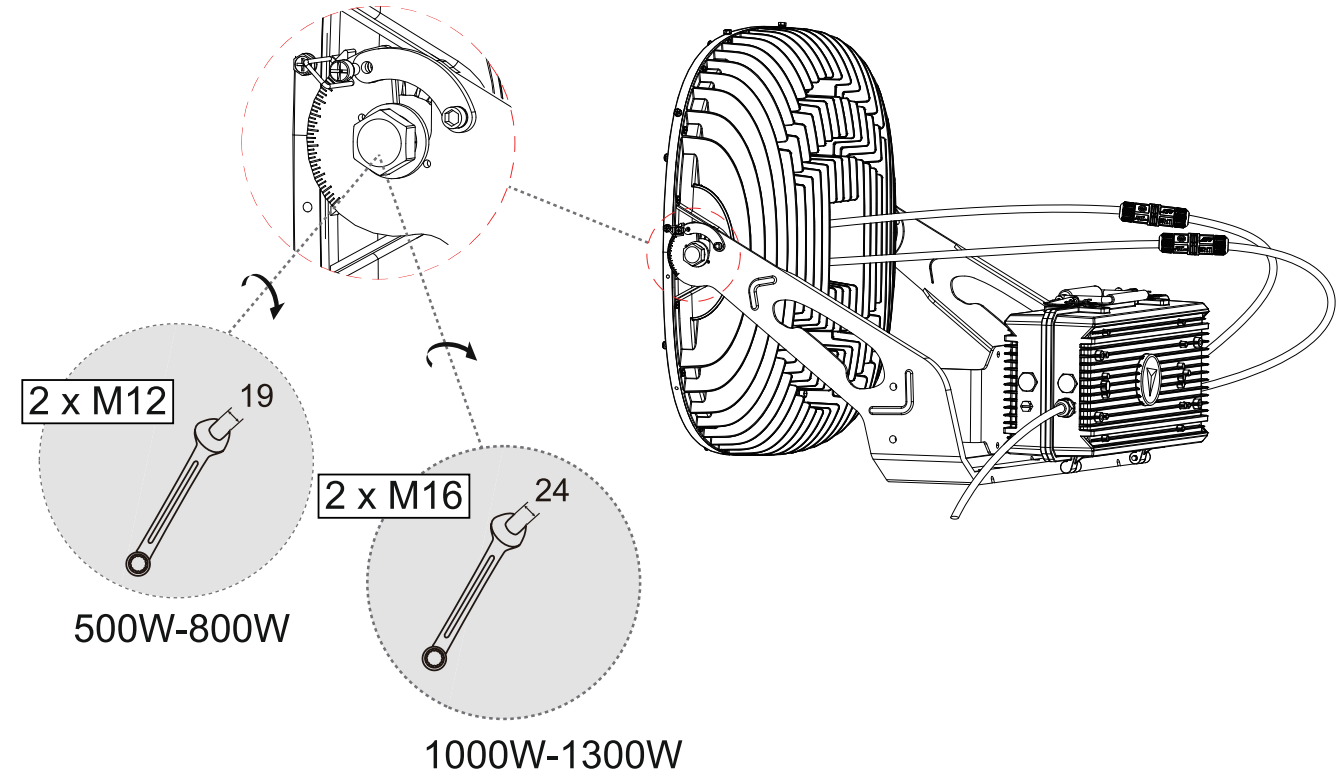
If pre-aiming using the tilt and orientation gauges is satisfactory and laser aiming is not required, you can skip this step. Refer to photometrics or project installation drawings for aiming point coordinates. Slightly loosen the fixture aiming screws just enough to allow the fixture to rotate and tilt. Insert the aiming mount onto the fixture aiming pin until it is fully seated tight against the fixture. Do NOT over-loosen or remove set screw. Turn on the laser and aim the fixture by targeting the laser dot at the aiming point.

Note: Turn off laser while not in use to conserve battery.



22 Tighten All Hardware

After the fixture is aimed. Tighten all mounting and aiming hardware on the light head and driver box to the torques specified in the table below.



If laser aiming, briefly turn the laser back on to verify that the luminaire aiming did not shift during tightening. Remove the aiming mount from the fixture.



23 Step 5 – Final Steps

Final Inspection:

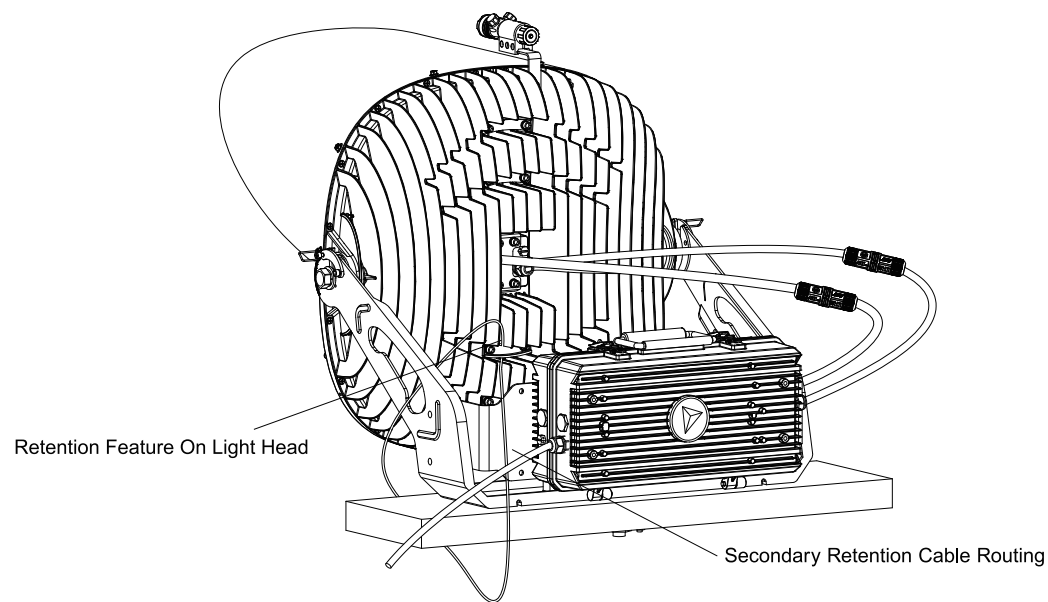
To complete the installation, verify that all mounting, connection, and aiming work is finished. Before securing the driver box lid, verify all electrical connections are tight and secured. The installer is responsible for the integrity of all connections. Verify all bolts and screws are tightened and properly torqued. Straighten up all cabling. Tie down all cables neatly. For all outdoor projects, use UV rated tie wraps and wire management.

Close the Driver Box

Carefully push all wiring connections and lid straps (if applicable) inside the Driver Box and close the lid. Make sure no wires are pinched in the cover. Re-lock the bail latches.



24a Yoke Mount



Secondary retention cable (not supplied with the luminaire) is necessary under work conditions with strong vibrations.



WARNING

Install Secondary Retention

If required, install a secondary retention cable between the fixture and the supporting structure that is designed to support the weight of the fixture, such as the crossarm, catwalk railing, or beam. Route the cable through the cable port located on the bottom edge of the fixture, through the mounting bracket arm, and around the support structure.

Note: Never secure the secondary retention cable to electrical conduits, power or HVAC equipment, other light fixtures, fragile material, or any other object not designed to support heavy loads.

Failure to properly install fixture and secondary retention cable may result in damage, injury or death.

Secure secondary retention cable to a structural component at a point above and directly behind the fixture if possible. Leave enough slack to allow fixture aiming if not completed, then pull extra slack through the locking clip after its aimed.

Recommended secondary retention cable is Grippple model #HF4-LT-10ft for indoor applications and equivalent sized vinyl coated cable with cable clamp for outdoor rated applications.

Failure to properly install fixture and secondary retention cable may result in damage, injury or death.



Luminaire Operation

Default Response

Fixtures will turn on to 100% full on when the AC power is applied.

Control Details

For luminaires equipped with wired DMX or wireless AirMesh Hub control, the luminaire can be turned on, off or dimmed using a front-end control system.

For DMX control, takes a single DMX channel. The start address can be set by using an RDM (Remote Device Management) tool such as DMXCat or front-end controls. DMX start addresses can be set as desired per project.

Basic Functionality

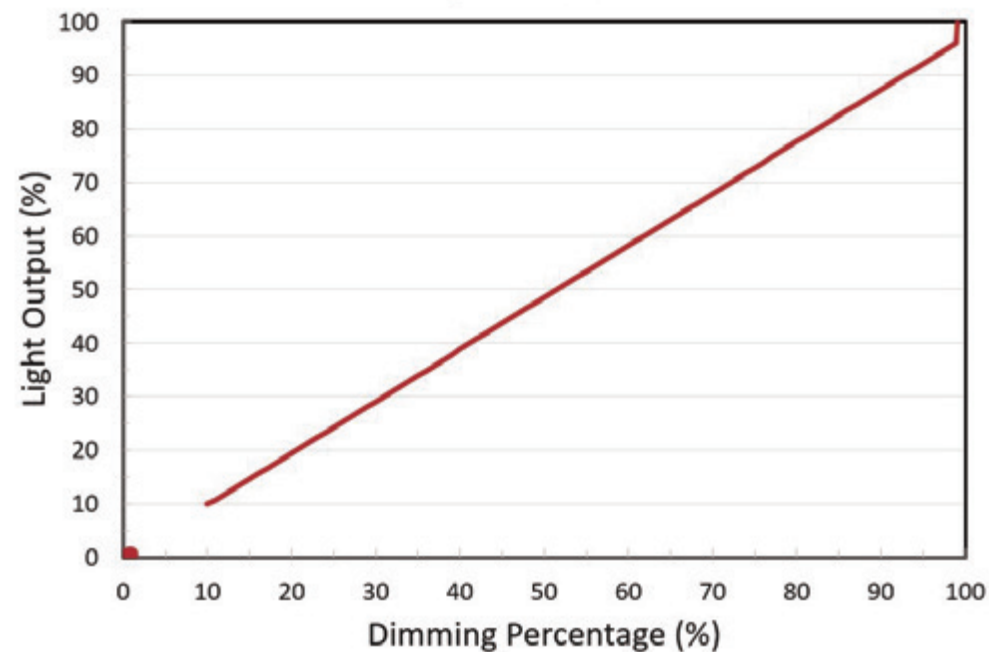
When initial AC power is applied, the luminaries may have a fraction of a second delay and appear staggered for banks of lights.

The minimum light output on the fixtures is 10%. Therefore, the dimming range is 0, 10%-100%. A slight jump in light output may be perceived when dimmed up from blackout.

Advanced Functionality

It is recommended that advanced or fast dynamic scenes are controlled up from blackout to a value greater than 40% and have a delay longer than 100ms between transitions. Strobe, chase or other synchronized dynamic scenes may appear staggered when the luminaire is controlled up from blackout to a value less than 40% or transition faster than 100ms.

Dimming Performance





Maintenance & Preventative Maintenance

Fixture Care and Maintenance

All luminaires are treated with a powder-coated finish. The finish on exterior luminaires may weather over time, depending on the environmental conditions at the installation site. Proper care of the luminaires will maintain their performance and appearance.

Follow a regular maintenance schedule to retain optimal light output and thermal performance. Lack of preventative maintenance may disqualify owner from warranty. Not adhering to this minimum system cleaning requirement is considered negligence as outlined in your product warranty documents. Refer to your product and/or labor warranty documentation for further details.

Problem	Remedy
Luminaire does not power on	<ul style="list-style-type: none"> •Verify the power supply is on, at the proper voltage, and stable. •Check connections at the source and at the fixture. •Verify control signal is above 50%.
Luminaire does not respond to controls	<ul style="list-style-type: none"> •Reset the fixture by turning all power sources off for at least 10 seconds. •Inspect all system control wiring to make sure there are no poor connections or breaks in the control wiring.

Cleaning

1. Clean all luminaires at a minimum of once every 12 months from receipt of your product.
2. Remove physical elements such as dirt, leaves and other foreign debris from the luminaire housing that can block and modify the air cooling (heatsink fins)
3. Wipe the optical lenses with a clean, dry, cotton cloth to remove dust and other contaminants. A non-abrasive optical cleanser or water may be used periodically.
4. Do not apply cleaners in direct sunlight or at elevated temperatures



WARNING

Inspection of Hardware

Inspect mounting system and products at least once every 12 months. Replace all rusted hardware elements.



Troubleshooting

If the system appears to not operating correctly, perform the following steps:

Troubleshooting Process

The first step is always to find out as much about the issue as possible. Ask the following questions:

1. How many fixtures are not operating correctly? If only one fixture is not responding, continue investigating at that fixture itself. If a group of fixtures are not responding correctly, start at the source of the power or controls for that group.
2. Have any obvious external forces been in the area? For instance, were any riggers, electricians, or other workers near the fixtures or controls? Have there been any power disturbances in the facility such as lightning storms?
3. Are your fixtures responding to the input controls, such as 0-10V dimming, DMX? Check the fixtures thorough different control scenes, including all on and then all off. Take note of any fixtures not responding correctly. Always disconnect power from the luminaire before opening the driver box.

Fixture Replacement

Contacting Warranty Technical Support

1. Before you call, make sure you have completed the troubleshooting steps.
2. Gather as much detailed information as possible about the situation.
3. Have your fixture and project information handy, including the model number of the fixture in question. Refer to your fixture warranty document for more information.

If you have attic stock fixtures available and need to replace a fixture, simply follow the installation instructions in this manual to replace the fixture in question. Be sure to address the replacement fixture with the correct luminaire number.

All Luminaires, materials, and accessory equipment being returned through the warranty process need to be placed back in their original packaging in the same orientation that they were originally shipped from the factory. If the packaging is damaged or if there are questions on the orientation in returning equipment and materials, you need to contact the Warranty Department for replacement packaging materials.