

SAFETY INSTRUCTIONS

1. All electrical work must conform to the National Electric Code (NEC) and all applicable local codes and ordinances.
2. Only qualified personnel shall install and maintain the luminaires. recommends that a licensed electrician install and maintain the luminaire. Verify the safety of existing power distribution system before beginning installation. Failure to follow Operating Instructions may lead to death, Severe Injury, or Property Damage.



WARNING

Turn off power before performing any electrical or control work. FAILURE TO FOLLOW THIS WARNING MAY LEAD TO DEATH, SEVERE INJURY, OR PROPERTY DAMAGE.



WARNING

Follow all applicable safety procedures and use Personal Protective Equipment such as hardhats, safety glasses, reflective vests, electrical safety gloves, fall protection equipment and safety toe boots during the installation, operation, and maintenance of the luminaire. FAILURE TO FOLLOW THIS WARNING MAY LEAD TO DEATH, SEVERE INJURY, OR PROPERTY DAMAGE.



WARNING

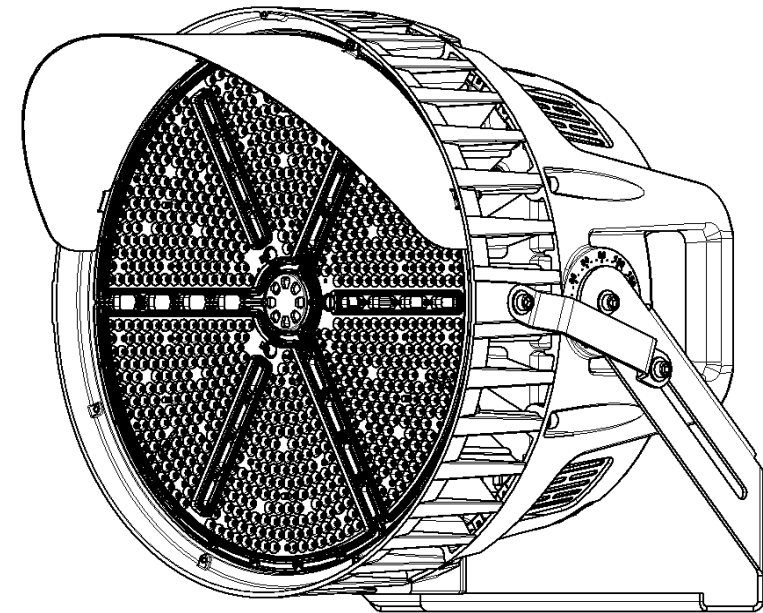
Risk of eye injury! Eye protection is required at all times during the installation, operation, and maintenance of the luminaire. The high intensity light produced by the luminaire can cause severe damage to the eye if viewed directly at close range. Avoid being in front of a luminaire that is on or wear suitable light blocking protective eyewear such as welding goggles. The luminaire should be positioned so that prolonged staring into the luminaire at a distance closer than 10m is not expected

Store luminaires in a clean, dry place, protected from dirt, water, and sunlight. See table for required storage and operating conditions:

Storage and Operating Conditions

Storage Temperature	Operating Temperature	Humidity
-40°C to +75°C (-40°F to 167°F)	-40°C to +45°C (-40°F to 113°F)	5% to 95% non-condensing

Zone Sports Flood (ZNF) Outdoor Sports Flood Light



Installation Instructions

Fusing

LED Sports light fixtures are not traditional incandescent lights, they are high-tech, new generation solid-state devices. To protect your valuable investment, the electrical power shall be clean and have stable voltage and current and undistorted waveforms.

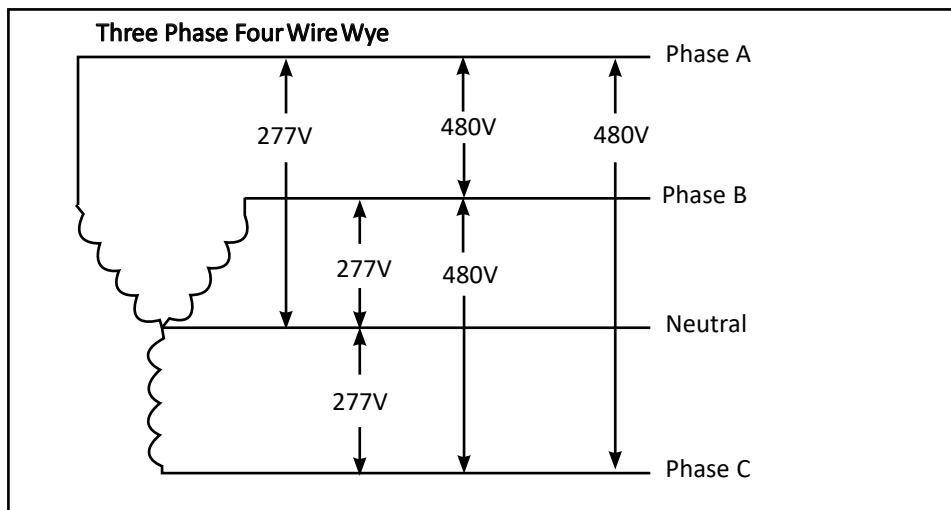


Figure 1. Acceptable Power Configurations

Power Quality

The lighting circuits shall have surge protection.

! WARNING

Follow proper grounding methods: Electrical system must be grounded. If you are not sure if your power system is grounded, DO NOT install the luminaire. Contact a licensed electrician for information on proper grounding methods as required by the electrical code. FAILURE TO FOLLOW THIS WARNING MAY LEAD TO DEATH, SEVERE INJURY, OR PROPERTY DAMAGE.

! WARNING

Do not attempt to connect All Field fixtures to any circuits with nominal voltage below 277V or above 480VAC. FAILURE TO FOLLOW THIS WARNING MAY LEAD TO LUMINAIRE INTERNAL DAMAGE AND FAILURE.

The voltage on the lighting circuits must stay within 3% of nominal at 50/60Hz. Voltage that is consistently too high or low shall be corrected before LED luminaires are installed.

Care and Maintenance

All luminaires are prepared 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. Remove any dirt, leaves and other foreign debris from the luminaire housing. Wipe the optical lenses with a clean, dry, cotton cloth to remove dust and other contaminants. A non-abrasive polycarbonate cleanser may be used periodically.

! WARNING

Do NOT use any abrasives such as car wax, brass cleaners or other polishes or chemicals. These may scratch, remove, or damage the protective coating, allowing moisture and pollutants to come into contact with the aluminum, possibly discoloring or pitting the finish.

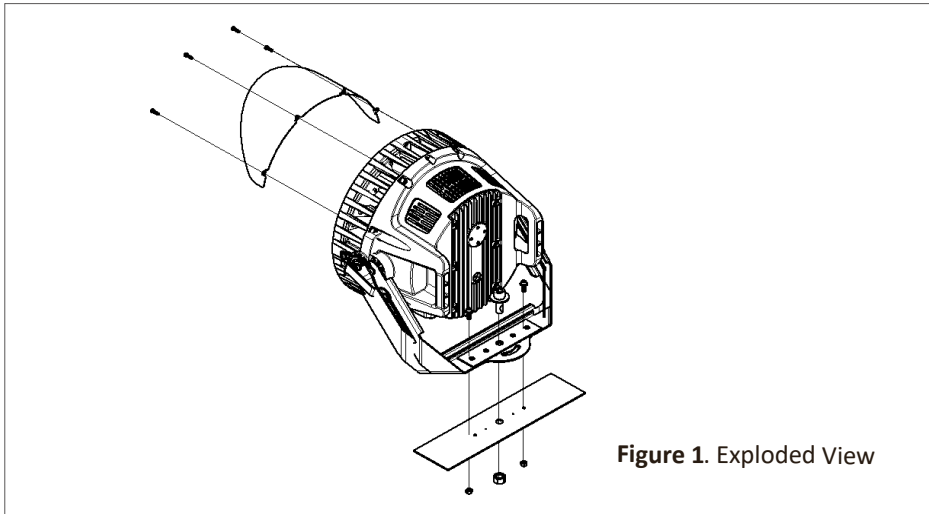
Troubleshooting

! WARNING

Before performing any work on the luminaire, shut off the power circuit, verify the power is off with a multimeter, and wait 2 minutes before handling luminaire to avoid electrical shock. FAILURE TO FOLLOW THIS WARNING MAY LEAD TO DEATH, SEVERE INJURY, OR PROPERTY DAMAGE.

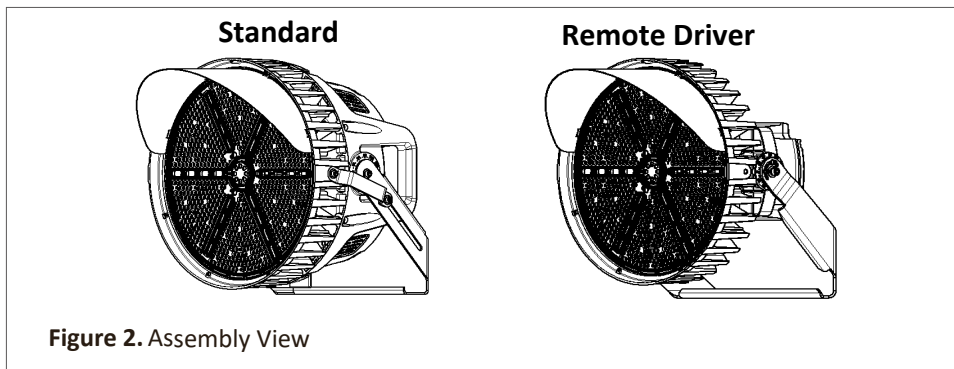
Symptom	Possible Cause	Corrective Action
No light output	Power is off.	Check if circuit power is on.
	Bad wire connection.	Check input wiring connections.
	Control signal set to 0	Verify control signal
Fuse blows or circuit breaker trips	Crossed wires or a supply wire is grounding out.	Check wiring connections.
	Improperly sized fuse or breaker	Improperly sized fuse or breaker

INSTALLATION INSTRUCTIONS



Step 1 – Handling the Luminaire

Remove the luminaire from the carton. Inspect the luminaire and mounting locations for any damages. If the fixture is damaged, do not use. Ensure the mounting location is suitable for the luminaire and rated to support the weight of the fixture.



Step 2 – Mount the Luminaire

The first step is to attach the luminaire to the mounting structure. The mounting structure may be a light pole cross arm, an indoor catwalk bracket, or other structural component that will hold the fixture in place. Refer to photometric drawings or project Installation Drawings for luminaire installation locations and any additional mounting instructions.

WARNING

It is the responsibility of the installer to verify that all proposed mounting structures including poles, cross arms, catwalk brackets, and other mounting structures are certified to support the weight of the luminaires, withstand wind loads, and meet all other applicable codes and regulations. FAILURE TO FOLLOW THIS WARNING MAY LEAD TO DEATH, SEVERE INJURY, OR PROPERTY DAMAGE.

WARNING

Do not suspend any luminaire by electrical or control wires, as these will not support the weight of the fixture, resulting in the potential for the fixture to fall and cause damage or injury. FAILURE TO FOLLOW THIS WARNING MAY LEAD TO DEATH, SEVERE INJURY, OR PROPERTY DAMAGE.

Equipment Required:

- Mounting Hardware*
- Socket wrenches and/or hex key sized to fit mounting hardware
- Cable ties or wire management – For outdoor installations use UV rated

*Mounting hardware shall be high-strength, corrosion-resistant material. Length of Hex bolt shall be determined in the field; size the bolt appropriately to allow secure fastening of the luminaire to the mounting structure.

WARNING

An impact driver may be used on mounting hardware while the power is off, but NEVER use any power tools on the fixture while the power is on. The vibration caused by power tools may damage the fixture. FAILURE TO FOLLOW THIS WARNING MAY LEAD TO LUMINAIRE INTERNAL DAMAGE AND FAILURE.

Mounting

1. Refer to the project Installation Drawings to determine luminaire installation locations and lens type.
2. For each fixture location, install a luminaire that has the correct lens type. Unless otherwise noted, fixtures that share the same lens type are identical.

Standard Mounting (Fixed Mounting)

- Tools Required: 14mm Hex Key Wrench, 10mm Hex Key Wrench
- If installing a visor, align the visor on the luminaire and insert (4) m5 screws through visor and tighten to 7ft/lbs.
 - Align the luminaire bracket with the holes on the mounting surface and insert (1) m16 bolt, lock washer, flat washer, and nut in the center hole and tighten to 50 ft/lbs.
 - Insert (2) m12 bolts in the alignment holes and tighten to 40 ft/lbs.

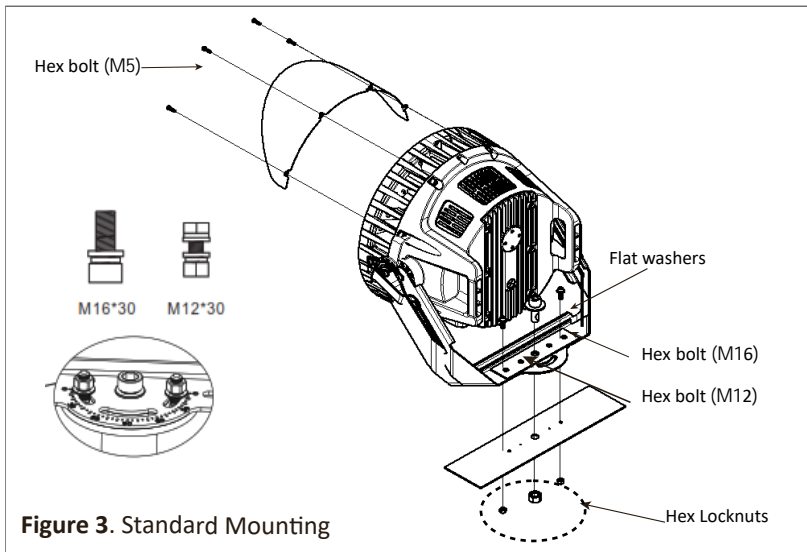
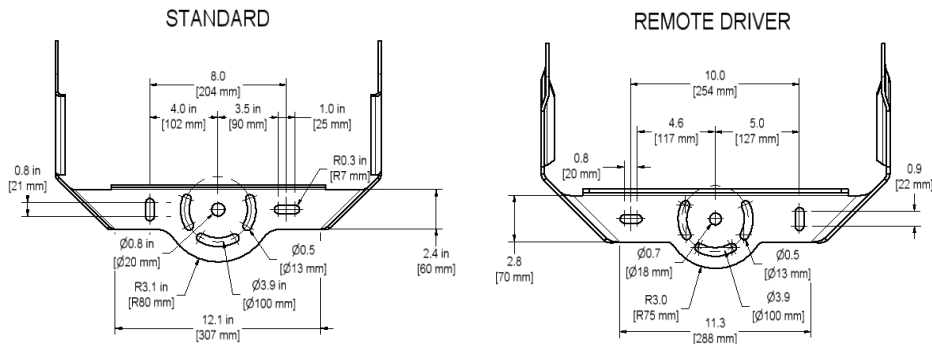


Figure 3. Standard Mounting

Note: Example mounting structure shown for illustration purposes only

Mounting Bracket Dimensions



Slip Fitter Mounting (Adjustable)

- Tools Required: 13mm Socket Wrench, 6mm Hex Key Wrench
- Align slip fitter as shown below, tighten (4) M8 bolts into the bottom of the fixture using 6mm hex. Torque to 25 ft/lbs.
 - Slide the fixture with slip fitter over the pole and tighten (4) M8 bolts with 13mm socket to 25 ft/lbs.

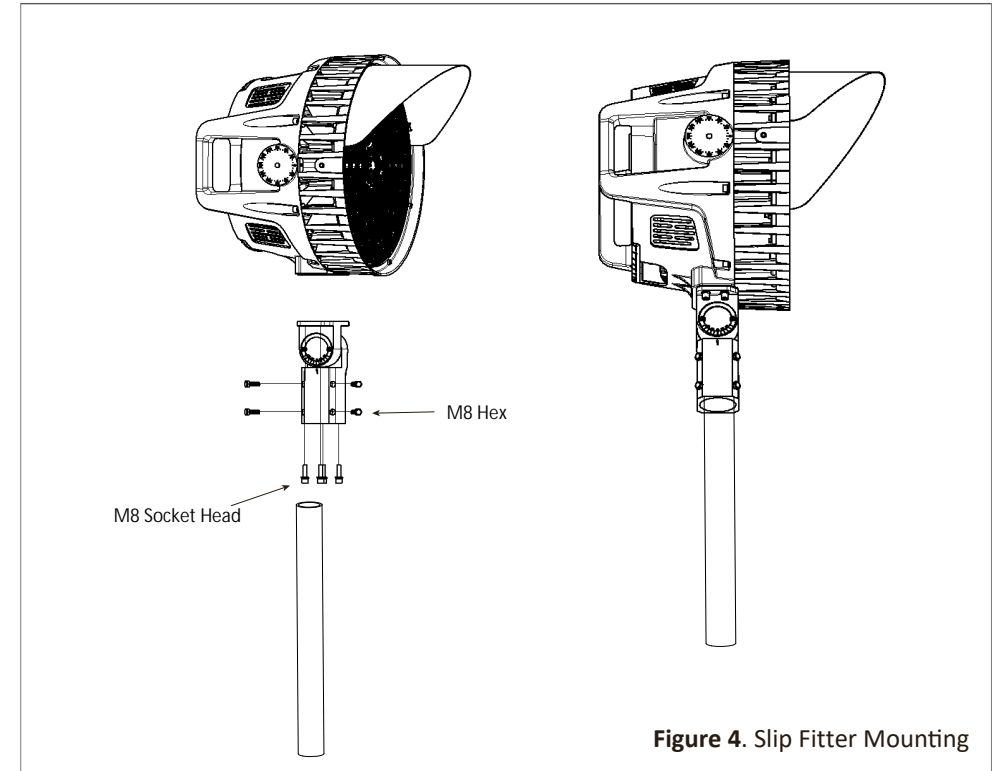


Figure 4. Slip Fitter Mounting

- Tools Required: 8mm Hex Wrench, Phillips Screw Driver
- Align Slip Fitter to desired angle. Fasten (1) M10 bolt using an 8mm hex wrench to 40 ft/lbs.
 - Align access cover to housing and fasten (2) screws using Phillips head screwdriver.

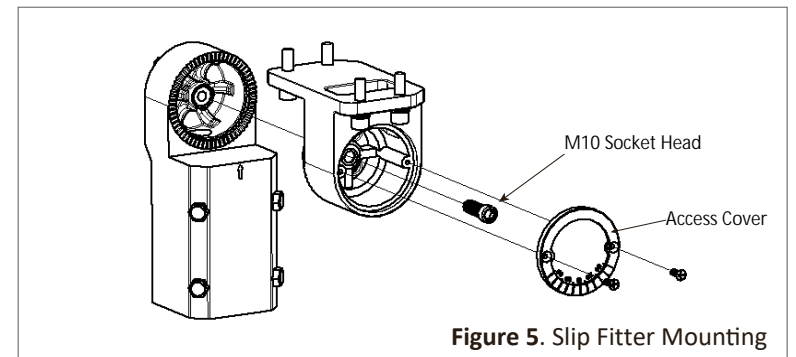


Figure 5. Slip Fitter Mounting

Tenon Mounting

Tools Required: 18mm Socket Wrench, 10mm Hex Key Wrench

- Attach (2) m12 bolts to the Tenon bracket. Make sure to put the gasket in between the Top mounting plate and the Yoke bracket. Tighten the bolts to 50 ft/lbs.
- Secure the Tenon bracket to the pole by tightening the (2) m12 socket head bolts.

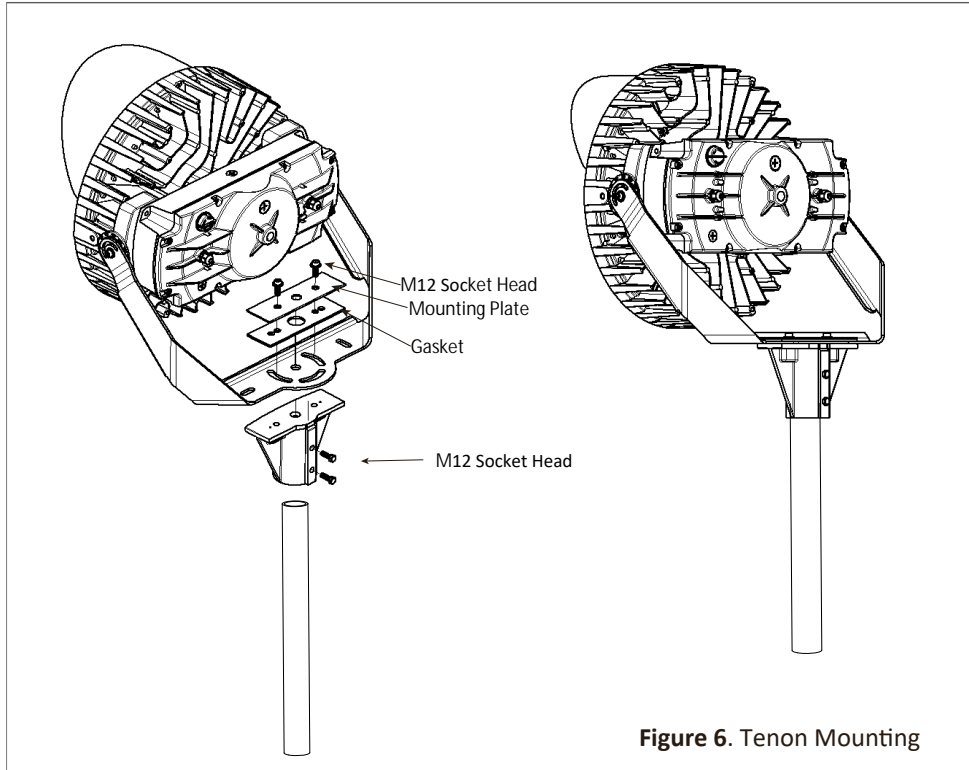


Figure 6. Tenon Mounting

Note: Example mounting structure shown for illustration purposes only.

Step 3 – Make Electrical Connections

WARNING

Never connect the luminaire to an electrical system that is not grounded. Installing a luminaire in an ungrounded electrical system could allow the metal housing to become energized in the event of an electrical short, resulting in the risk of electrical shock for anyone who comes into contact with the fixture. FAILURE TO FOLLOW THIS WARNING MAY LEAD TO DEATH, SEVERE INJURY, OR PROPERTY DAMAGE.

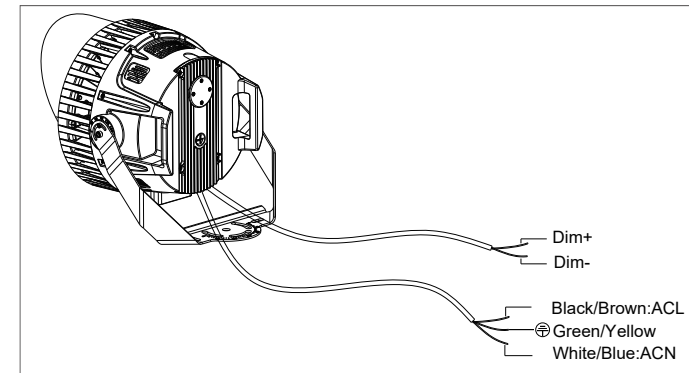
Wiring

Incoming power cable shall be SOW style 3C cable with a minimum of 14-18AWG annealed stranded bare copper per ASTM B-174 with a minimum temperature range of -40°C to +90°C. Cable must be water resistant, UV rated/sunlight resistant, UL listed and CSA certified for indoor and outdoor use. International applications shall be harmonized (HAR) or IEC equivalent.

1. Remove cover from junction box at the base of the luminaire.
2. Route incoming power cable through the cord grip in the junction box cover.
3. Strip outer jacket of incoming power cable back 3" (7cm). Connect the incoming power wires to the fixture power wires on right side of junction box.

Power wiring connections

Fixture power wire color	Designation
Black	Line
White	Line or Neutral
Green	Ground
Purple	Dim +
Pink	Dim -



WARNING

NEVER connect the fixture's green insulation (GROUND) wire to the black (LINE) current-carrying or white (NEUTRAL) supply wire, as this could energize the metal housing and create the risk of electrical shock. FAILURE TO FOLLOW THIS WARNING MAY LEAD TO DEATH, SEVERE INJURY, OR PROPERTY DAMAGE.

WARNING

Do not damage or cut the wire insulation (covering) during installation. Do not permit wires to contact any surface having a sharp edge, as this may damage the wire insulation and create the risk of electrical shock. FAILURE TO FOLLOW THIS WARNING MAY LEAD TO DEATH, SEVERE INJURY, OR PROPERTY DAMAGE.

Step 4 – Aim The Luminaires

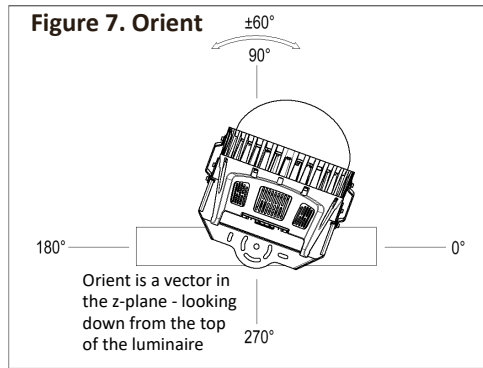
Aiming the luminaires is a critical part of the LED lighting solution to ensure that light is evenly distributed on the playing surface. There are two basic methods to properly aim a sports venue – Precision Laser Aiming by Coordinates, and Orient-Tilt.

Orient –tilt

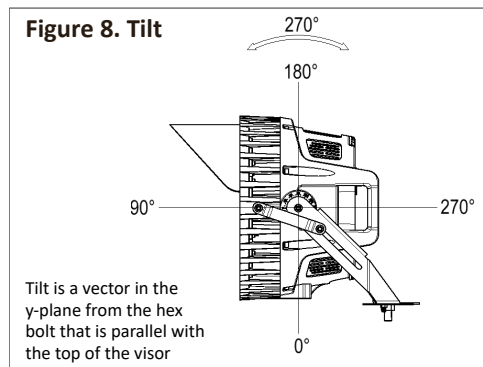
With the Orient-tilt method, the installer turns the luminaire according to predetermined angles. This technique is extremely helpful for pre-aiming fixtures mounted on a cross arm on the ground before the lighting pole is lifted up and set in place. However, this method is less accurate due to the variances in actual final pole and luminaire locations and orientations compared to the approximated parameters used in the photometric design.

The Orient angle refers to the direction the luminaire faces in the Z-plane. In other words, mount the luminaire to the structure but leave the mounting nut slightly loosened to allow the entire fixture to spin about the mounting bolt. Set the luminaire Orient by rotating the luminaire mounting bracket relative to the mounting structure.

Unless otherwise noted, Orient values shown in photometrics or project Installation Drawings are based on 0° being Plan East. Plan East means 0° is heading to the right side of the sheet as you hold it in front of you, which is not necessarily geodetic or True East.



The Tilt angle refers to the direction the luminaire faces in the Y-plane. When the luminaire is securely mounted to the structure so that the mounting bracket does not move but the side Hex and Set screws are loosened, the fixture may rotate up inside the mounting bracket. Set the luminaire Tilt angle by rotating the fixture housing relative to the luminaire mounting bracket.



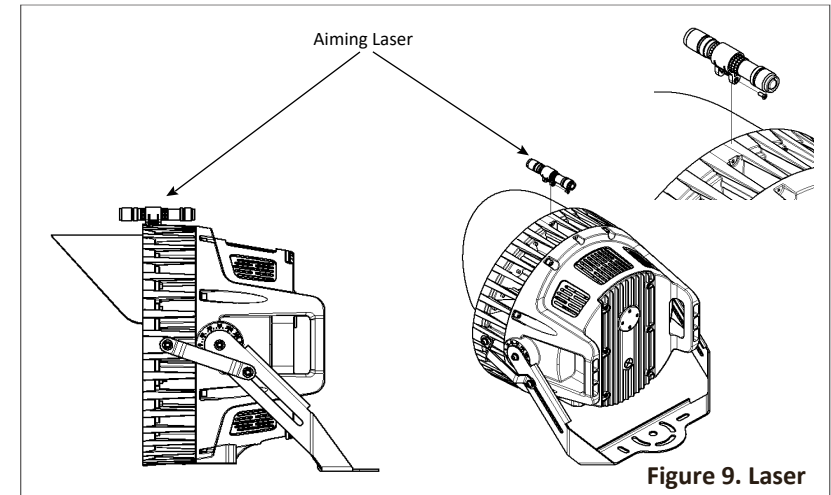
Precision Laser Aiming by Coordinates

Laser aiming is the most effective and preferred technique for aiming LED sports lighting. This method uses a laser mounted to the luminaire to point the fixture at a predetermined point on the playing surface using (X,Y) coordinates. Unless otherwise noted, aiming coordinates on photometrics or project Installation drawings are based on the origin (0,0,0) placed at center field, court, or ice. All dimensions from that point are in feet along the playing surface unless otherwise noted.



NEVER point the aiming laser at any person or animal as it can cause permanent damage to eyes. Use laser only for aiming fixtures as directed. FAILURE TO FOLLOW THIS WARNING MAY LEAD TO SEVERE INJURY.

Note: Turn off laser while not in use to conserve battery. Have spare battery charged to facilitate the aiming process.



1. Insert the laser into the aiming mount and tighten the holding screw.
2. Insert the aiming mount onto the fixture aiming pin until it is fully seated. Aiming mount must be tight against the fixture because any movement in the mount will cause aiming to be inaccurate.
3. Slightly loosen the fixture aiming screws just enough to allow the fixture to rotate and tilt.
4. Turn on the laser and aim the fixture by targeting the red laser dot at the aiming point. If aiming tube is used, look through tube and adjust fixture until aiming point is centered in view through tube. Refer to photometrics or project installation drawings for aiming point coordinates.
5. After aiming is complete, tighten all bolts and screws including hex and set screws on side of fixture and mounting hardware.
6. Briefly turn the laser back on or re-check view through tube to verify that the luminaire aim did not shift during tightening.
7. Remove the aiming mount from the fixture and proceed to the next luminaire.