TIMES SQUARE LIGHTING INC.

Times Square Lighting, Inc. 5 Holt Drive, Stony Point, NY 10980
845-947-3034 FAX: 845-947-3047 www.tslight.com

LED21PM INSTALLATION INSTRUCTIONS - SAVE THESE INSTRUCTIONS

CAUTION: Read and understand these entire instructions before proceeding.

WARNING: All electrical installations must be done according to local codes or the National Electric Code (NEC), whichever applies.

WARNING: RISK OF FIRE! MOST DWELLINGS BUILT BEFORE 1985 HAVE SUPPLY WIRE RATED FOR 60°C! Some fixtures require supply wires rated for more than 60°C. Wiring must be rated for 90ºC for safe installation of this fixture.

WARNING: Installation must be performed by qualified personnel only!

WARNING: Do not install in wet locations.

WARNING: DO NOT connect this luminaire to an electrical system that does not provide a means for equipment grounding.

CAUTION: This fixture can be used with ceilings of any type, including hung ceilings providing fixture is supported independently of the ceiling grid.

CAUTION: This fixture is NOT Chicago Plenum rated unless Labeled as such.

CAUTION: This fixture is NOT IC (Insulation Contact) Rated. Do NOT install within 3" of any insulation material on the fixture sides or top.

CAUTION: When installing the luminaire on a circuit containing a dimmer, insure that the dimmer is of the correct type and properly rated for the LED driver.

Installing the Housing

1) Pull the trim ring down, away from the lamp housing as far as it will go. (See Diagram 1)

2) Remove the trim ring from the lamp housing by compressing one of its torsion springs and removing the spring from its slot. Repeat for the other torsion spring and set trim ring aside.

3) Assemble butterfly brackets with wing nuts. (See Diagram 2)

4) Attach butterfly brackets to the fixture support plate. (See Diagram 3)

5) Install mounting channels (by others) or 1/2" EMT (by others) horizontally through butterfly bracket slots and set mounting channels onto ceiling runners.

6) Set fixture to desired location and secure butterfly brackets to mounting channels, and mounting channels to ceiling runners using wire tie-downs (by others). For hung ceilings, cut out and install the ceiling tile prior to using the wire tie-downs. NOTE: The larger butterfly bracket is length adjustable.

7) With the wing nuts, adjust the height of the butterfly brackets such that the fixture aperture edge will be flush with the finished ceiling.
NOTE: The fixture aperture edge is height adjustable by loosening the 4 hex screws in the four corners of the aperture with the hex wrench provided. Tighten these screws after aperture edge is in the correct position.
NOTE: Removing these screws will also give you access to the junction box and upper box for servicing.

8) Remove the junction box cover and make all electrical connections:

BLACK (or BROWN) to HOT, WHITE (or BLUE) to NEUTRAL, GREEN to GROUND, and, if required for 0-10V dimming,
VIOLET to [+] (usually violet), GREY to [-] (usually grey).

DIAGRAM 1

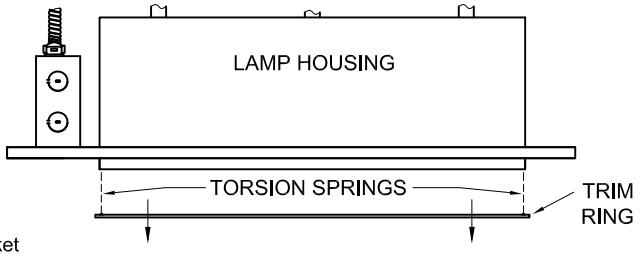


DIAGRAM 2

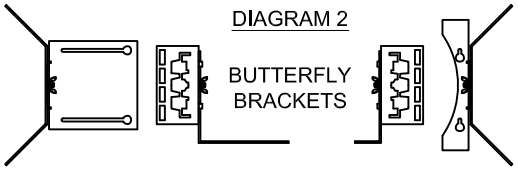
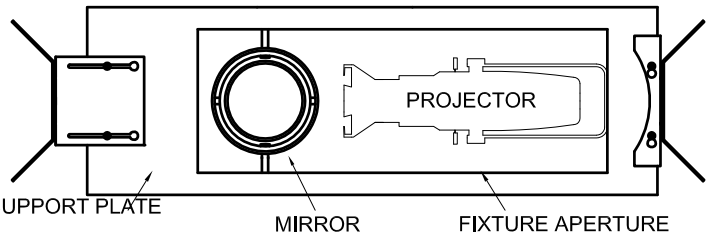


DIAGRAM 3



Preparing the Mirror and Projector for Operation

1) After the ceiling has been installed, rotate the mirror holder such that the grey side is facing downward and the blue side is facing up into the housing. (See Diagram 5).

2) Remove the mirror holder ring by unscrewing it counter-clockwise and set it aside. Carefully remove the mirror within (one side is grey, the other side is a blue film).

3) Gently peel off and discard the blue film.

4) Carefully, without touching the reflective surface, reinstall the mirror back into the holder such that the grey side is facing downward and the mirrored side is facing up into the housing. Reinstall the mirror holder ring, this time rotating it clockwise until snug.

5) At this point remove and discard any packing material inside the housing.

DIAGRAM 4

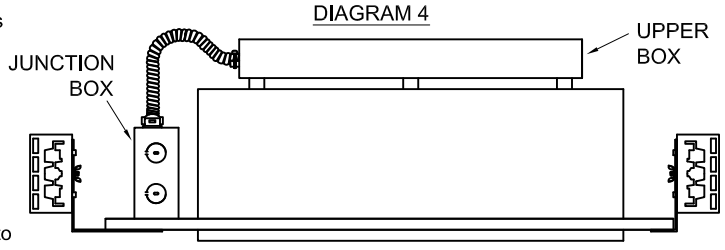
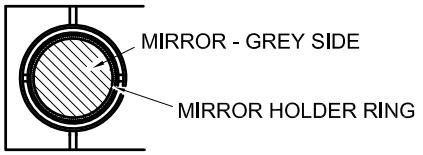


DIAGRAM 5



Operating the Mirror and Projector, and Reinstalling the Trim Ring

See separate MAINTENENCE AND OPERATION INSTRUCTIONS supplied with this fixture.
WARNING! Do not energize or operate fixture without fully reading and understanding those instructions!

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LED21PMINSTALLATION INSTRUCTIONS - SAVE THESE INSTRUCTIONS

CAUTION: Read and understand these entire instructions before using this fixture.

WARNING: All electrical maintenence must be performed by qualified personnel only, including but not limited to driver replacement!

WARNING: Always wear protective eyewear and gloves when servicing this fixture for any reason.

WARNING: Disconnect fixture from power supply before servicing fixture.

WARNING: Allow fixture to sufficiently cool before servicing fixture.

CAUTION: Do not allow materials to come in contact with the LED.

WARNING: Always insure that handles and knobs are locked and secured to prevent accessories, pattern holders, or the like from falling out, and never add more than 1/4 pound to the front accessory holder.

WARNING: Do not attempt to install anything other than Times Square Stage Lighting approved accessories to this fixture.

WARNING: Do not block any vent holes/slots in this fixture, or use this fixture in any way other than that for which it was intended. Do not use in wet locations.

SECTION 1 : MAINTENANCE

LED Module

The LED Module and Driver are designed to last years before needing replacement. It is best to consult the factory if the LED is not performing properly, or not working at all.
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Lens Care

NOTE: Lenses should be cleaned from time to time as dirt and other contaminants will accumulate and adhere to the lens surfaces, thereby adversely affecting performance. Never use soap, glass cleaner or window cleaner as they can leave trace amounts of residue that can bond to the lens surface. Never use abrasive materials to clean lenses as they can scratch the surface and thereby adversely affect performance.

1) Pull the trim ring down, away from the lamp housing as far as it will go. (See Diagram 1)

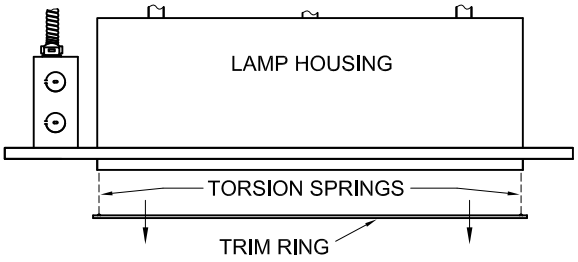
2) Remove the trim ring from the lamp housing by compressing one of its torsion springs and removing the spring from its slot. Repeat for the other torsion spring and set trim ring aside.

3) Remove the lens tube from the projector by removing the front focus knob, and set the knob aside. The lens tube is constructed of 2 halves held together by 4 screws. Remove these 4 screws and set them aside. This will give you access to the lenses. (See Diagram 2)

4) The lenses do not need to be removed for cleaning. Clean lenses with a soft, clean lint free cloth soaked in denatured alcohol (methylated spirits), then wipe dry with a soft, clean lint free cloth.

5) Reinstall the 4 screws, and reinstall the lens tube. Remember to secure the lens tube with the focus knob.

DIAGRAM 1

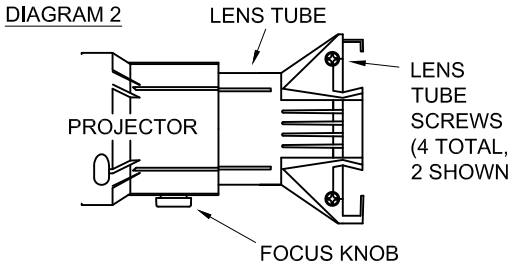


MIrror Care

NOTE: The mirror should be cleaned from time to time as dirt and other contaminants will accumulate and adhere to the surface, thereby adversely affecting performance. Never use abrasive materials to clean the mirror as they can scratch the surface and thereby adversely affect performance.

1) The mirror does not need to be removed for cleaning. Clean with a soft, clean lint free cloth soaked in a mild soap and water combination, then wipe dry with a soft, clean lint free cloth.

DIAGRAM 2



SECTION 2: OPERATION

Trim Ring Removal

1) Pull the trim ring down, away from the lamp housing as far as it will go. (See Diagram 1)

2) Remove the trim ring from the lamp housing by compressing one of its torsion springs and removing the spring from its slot. Repeat for the other torsion spring and set trim ring aside.

(continued on next page)

Lens Focusing

NOTE: It is recommended that any patterns be removed and the 4 shutters be pulled outward, extended away from the projector body before proceeding. When aiming an energized projector, always use caution as the projector can become very hot in a very short time.

1) Aim the projector at the center of the mirror, and aim the mirror at the target. NOTE: If the fixture will not stay in a particular position, you may need to tighten the 2 yoke attachment knobs. (See Diagram 3)

2) Loosen the focus knob until the lens tube moves freely. While observing the projected beam, adjust the lens tube until the desired look of the beam's edge, whether it be sharp and clean or soft and fuzzy, has been achieved. NOTE: Beam sizes are determined by the beam angle of the lens tube. Lens tubes are rated by and marked with beam angles (19° and 26°). The larger beam angle results in a wider beam. NOTE: The Spec Sheet for this fixture (available at tslight.com) will assist in determining which beam angle will be required for certain results.

3) Tighten the lens tube knob until snug (do not overtighten this knob).

LED Module Alignment

The LED Module is pre-aligned at the factory and needs no adjustment.

Adjusting the Shutters

1) Loosen the 2 rotation knobs about 3 full turns each. CAUTION: The shutter barrel can fall free from the fixture at this point and until Step 3 is completed! (See Diagram 3)

2) Rotate the shutter barrel +/- 45° until the shutters are in proper alignment with the target. CAUTION: The shutter barrel can fall free from the fixture at this point and until Step 3 is completed!

3) Tighten the 2 rotation knobs until snug (do not overtighten these knobs).

4) Simply push the four shutter handles inward and rotate them to a position that frames or cuts off the light beam as desired. Repeat Steps 1 through 3 if required.

5) Repeat the Lens Focusing procedure (above) to fine tune the look of the beam edge on the projected shutter edges, whether it be sharp and clean or soft and fuzzy.

Pattern Holder Installation and Adjustments

1) Loosen the 2 rotation knobs about 3 full turns each. (See Diagram 3) CAUTION: The shutter barrel can fall free from the fixture at this point and until Step 5 is completed!

2) Rotate the shutter barrel until the pattern slot is facing downward. CAUTION: The shutter barrel can fall free from the fixture at this point and until Step 5 is completed!

3) Install the pattern holder (with pattern installed) fully into the pattern slot. CAUTION: The shutter barrel can fall free from the fixture at this point and until Step 5 is completed!

4) Rotate the shutter barrel until pattern holder is back to its original position prior to commencing Step 1. CAUTION: The shutter barrel can fall free from the fixture at this point and until Step 5 is completed!

5) Tighten the 2 rotation knobs until snug (do not overtighten these knobs).

6) Repeat the Lens Focusing procedure (above) to fine tune the look of the beam edge on the projected pattern, whether it be sharp and clean or soft and fuzzy.

Installing Accessories into the Accessory Holder

NOTE: The accessory holder is located on the fixture front and will accept color frames, filters, etc.

1) Squeeze and flip the accessory retaining clip up 45°. (See Diagram 3)

2) Install accessories such that the left, right and lower tabs fully capture the accessories installed.

3) Squeeze and flip the accessory retaining clip down 45° such that the lip of the retainer is fully extended beyond the fixture front and completely overlaps the accessories, securely holding them in place.

CAUTION: Do not add more than 1/4 pound to the front of this fixture.

ReInstalling the Trim Ring

Reverse the steps for Trim Ring Removal at the bottom of the previous page.

DIAGRAM 3

