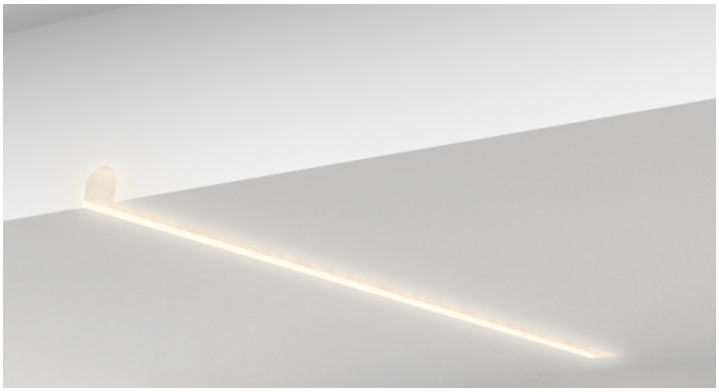
A2 Series | Recessed
ZELO Duet | Flange Ceiling Trim
(A2-ZELO-DUT-FG)

Overview



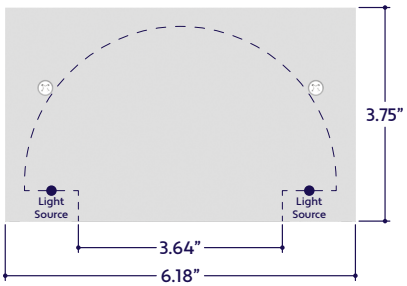
GENERAL FEATURES

Applications	Indirect Lighting
Lens	Clear
Length	Built to Order (+/- 0.25” Tolerance)
Construction	Aluminum Extrusion
Finish	White
Weight	4.80 lbs per foot
Mounting	Aircraft Cable
Listing	Dry or Damp Location UL1598, CSA C22.2#250.0 UL8750, CSA250 UL2108, CSA C22.2 #9
Driver	Driver on Board or Remote Driver
Temperature Ratings	Operating / Startup: -20° to 48°C (-4° to 120°F) Storage: -40° to 76°C (-40° to 170°F)

READ ENTIRE GUIDE BEFORE STARTING INSTALLATION

Important Notice: Verify correct luminaire was received with correct color temperature, voltage, and wattage before cutting or installing. ALUZ will not be responsible if incorrect luminaire is installed.

END VIEW / DIMENSIONS



Note: End view dimensions do not include ceiling trims or mounting options. Refer to trim-specific installation instructions for additional details.

PRODUCT INFORMATION

- Indirect lighting.
- 24 Volts DC for easy and safe installation .
- Long life, energy efficient LEDs.
- Available in 4 Watts up to 24 Watts Per Foot.
- Can be ordered to specific lengths for when exact dimensions are known.
  Example: 10 x 10’6”. Product is shipped in luminaire segments up to 8’ long.
- Available for indoor **(DRY)** and **(DAMP)** rated installations.

INSTALLATION TOOLS REQUIRED

- Electric Hammer Drill
- 14.4 to 28 Volt Cordless Drill
- Phillips Bits
- Utility Knife
- Electrical Cord
- Marker
- Wire Stripper
- Long Nose Pliers
- Drill Bits - Concrete or Wood
- Electrical Three Ways
- Safety Glasses
- Measuring Tape
- Laser Line or Chalk Line

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WARNING

When using luminaires for any application, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury. Luminaires must be installed in accordance with the NEC or CEC as applicable. ALUZ will not be responsible for damage or malfunction caused by the following:

- Ensure power is off before installation begins, during replacements, additions, or repairs.
- Do not use luminaires if damaged, such as broken boards, loose connections, or frayed wire insulation. Inspect before installing.
- Do not install luminaires in hazardous locations.
- Do not cover luminaires with any material. Covering may cause LEDs to overheat, melt, or ignite.
- Do not paint on or over fixture lens or LEDs.
  Paint or any other substance on lens or LEDs will cause a shift in color temperature.
- Soffit must be evenly painted with a neutral white to avoid color shift.
- Do not modify luminaires in the field.
- Do not overlap luminaires in any way. **(Fig. 1)**
- Luminaires have line voltage risk of shock. Consult factory for any malfunctions. Do not attempt to repair.
- Only use luminaire with specified rated voltages. Do not exceed the specified voltage for any luminaire.
- Do not use extrusion as a raceway for additional wire. Non-factory feed through wires inside luminaire will void warranty.
- Ground Fault Circuit Interrupter (GFCI) protections should be provided on circuits or outlets when luminaire is used for outdoor applications.
- Surge protector must be set up for electrical power system to avoid damaging lighting system.
- Do not connect wires together, follow provided wiring diagrams.
- Do not cut wire while energized. **(Fig. 2)**
- Do not exceed maximum run lengths.
- Do not secure luminaire with nails or like means that might damage the wiring inside. Only secure by using mounting clips.
- Do not mount luminaire inside tanks or enclosures of any kind.
- Do not install downward facing luminaires without set screws.
- Do not use improper screw head type on mounting clips. It will cause the mounting clip to open up and become dysfunctional.
- Do not modify mounting clips.
- Do not mount fixture with less than the minimum number of mounting clips required. See mounting clips section for details.
- Do not force luminaire into a space that is too small.
- Do not force luminaire with cord grip into soffit. **(Fig. 3)**
- Do not install luminaire at an angle within a cove. Only install fixtures straight within a cove. **(Fig. 4)**
- Do not bend extrusion around radius.
- Do not submerge dry or wet location luminaire in any liquid.
- Do not install wet location in outdoor coves without proper drainage. **(Fig. 5)**
- Do not install luminaire in any area that is continuously exposed to flowing or pooling water, such as underneath drain pipes, sprinklers, fountains, misters, etc.
- Do not cut, puncture, or penetrate aluminum housing, end caps, or lens covers.
- Do not drop, bang, or rest weight upon luminaire.
- Do not apply excessive pressure to any part of luminaire.
- Do not remove end caps from luminaire.
- Do not bend power cord or continuous connector past permitted bend radius. Bending past permitted bend radius will break the seal of the cordgrip or damage the insulation. **(Fig. 6)**
  Wet Location: 3.5" minimum bend radius
  Dry Location: 1.5" minimum bend radius
- Do not install in places where the power cord is subject to continuous flexing.
- Do not twist continuous connector or power cord.
- Do not hold, carry, or suspend luminaire by the power cord.
- Do not install on ceilings without mounting clips and set screws. **(Fig. 7)**

FIGURES

Figure 1

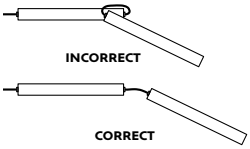


Figure 2

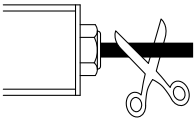


Figure 3

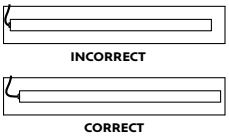


Figure 4

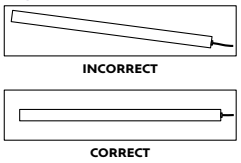


Figure 5

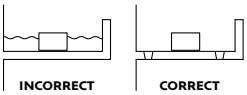


Figure 6

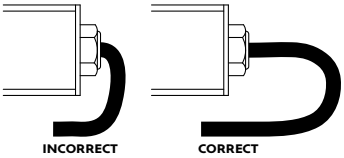
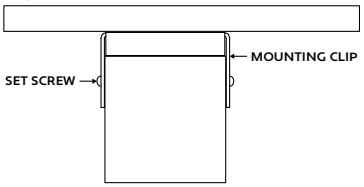


Figure 7



CLEANING MATERIALS

The use of solvents and/or cleaners which are not compatible with polycarbonate will result in the softening, crazing, and/or cracking of the plastic part. This is especially true of polycarbonate lamps and mounting bases which may be under stress in their normal applications.

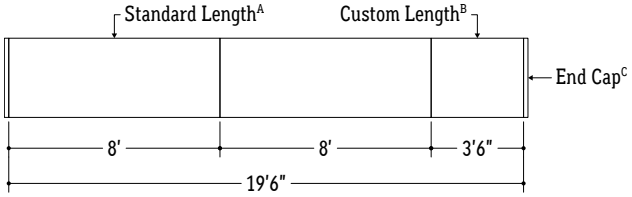
COMPATIBLE WITH POLYCARBONATE

- Mild soap and water
- Mineral Spirits
- Isobutyl alcohol
- VM and P Naphtha
- Varsol No.2
- Mexane
- Freone TF and TE-35
- Ethanol
- Dirtex
- 2% Sol. Reg. Joy
- 10% Sol Bon Ami
- White Kerosene
- Methyl Alcohol
- Heptane
- Petroleum Ether / 65°C
- Isopropyl Alcohol
- Lacryl PCL-2035 Polycarbonate Cleaner

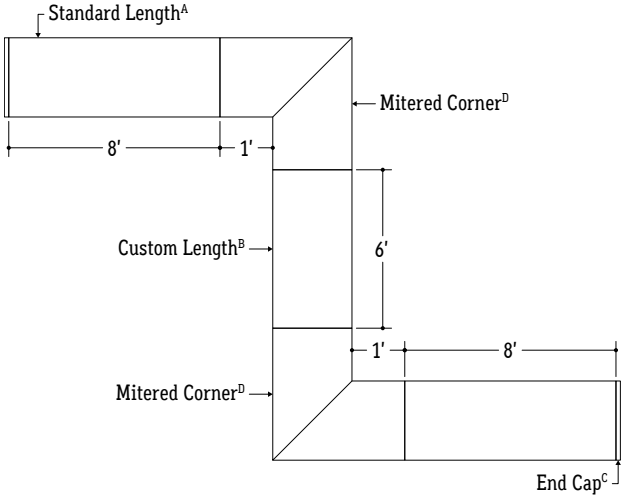
NOT COMPATIBLE WITH POLYCARBONATE

- Trichlor
- Gasoline
- Liquid Detergents
- Acetone
- Carbon Tetrachloride
- Pink Lux (Phosphate free)
- Triclene
- Chlorinated Hydrocarbons
- #1 & #3 denatured alcohol
- Methyl Ethyl Keytone (MEK)
- Texize-8006, 8129, 8758
- MIBK
- Liquid Cleaner – 8211
- Toluol
- Agitene
- Benzol
- Ajax
- Kleenol Plastics
- Lysol
- Stanisol Naphtha
- Oils
- Lemon Joy (phosphate free)
- Diversol
- Lestoil

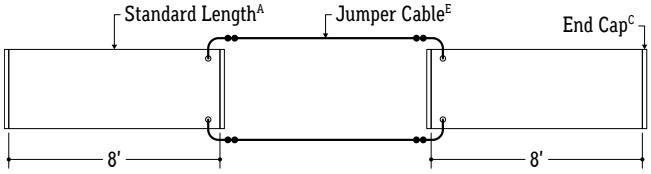
LINEAR CONFIGURATION



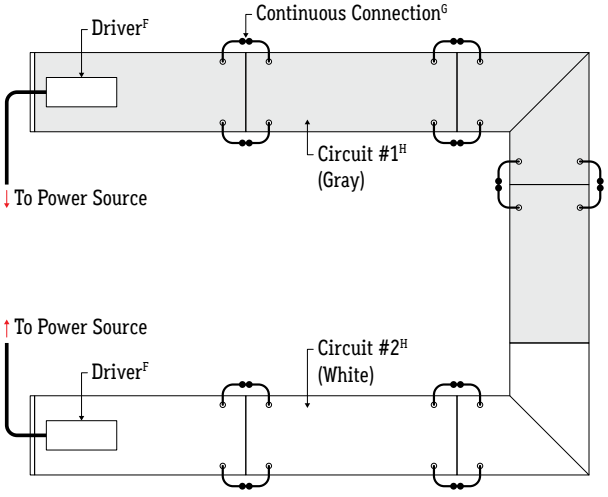
MITERED CONFIGURATION



JUMPER CONFIGURATION



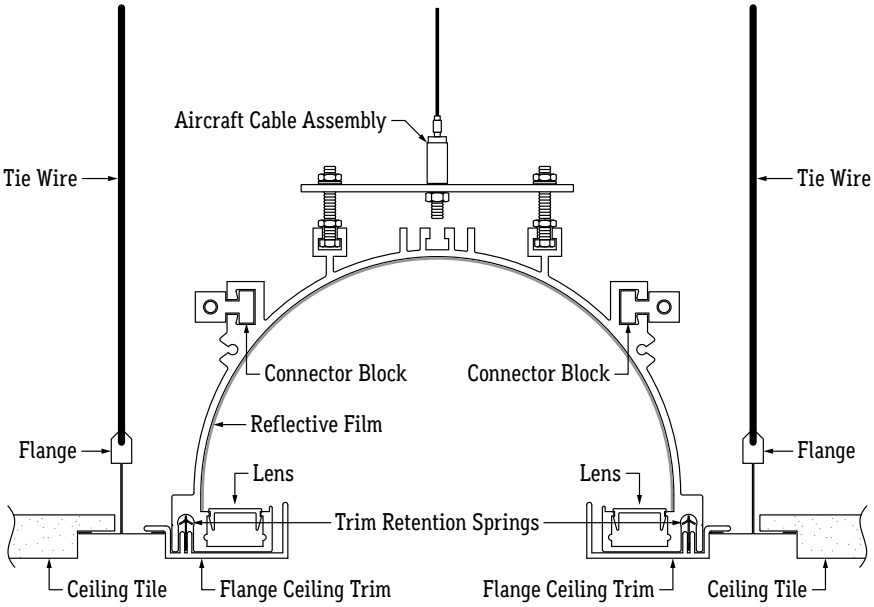
POWER DISTRIBUTION



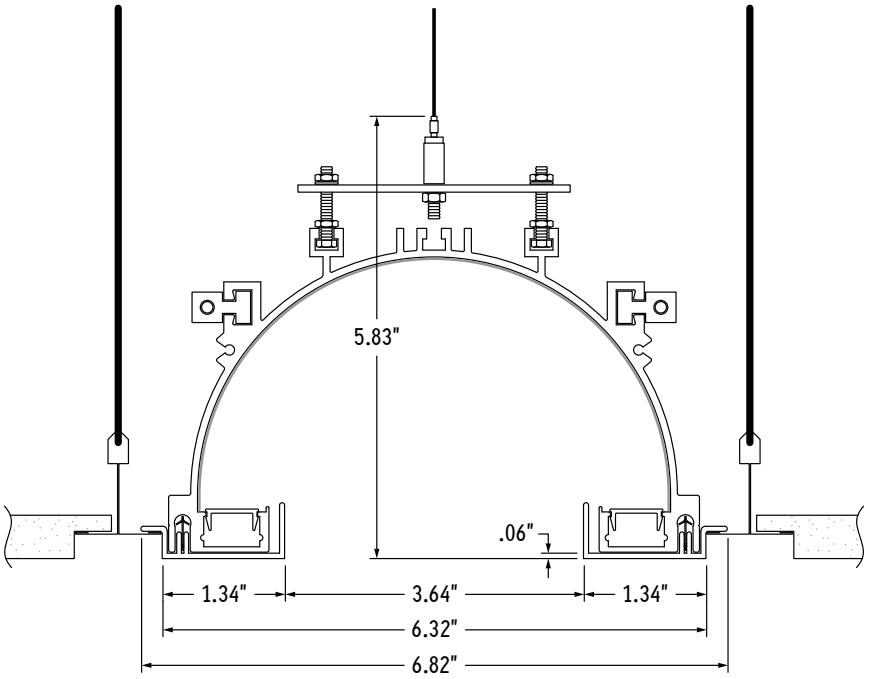
KEY

A	**Standard Length:** Luminaire runs are constructed in 8' segments.
B	**Custom Length:** Any required length that is not 8'. Typically the last segment of a run.
C	**End Cap:** Used to terminate a run.
D	**Mitered Corner:** Standard 90° Mitered Corner. Custom angles available upon request.
E	**Jumper Cable:** Used to connect two luminaires with a gap between.
F	**Driver:** The driver is typically mounted on top of the first luminaire segment of a run. The driver may also be mounted elsewhere. Each run typically has its own driver.
G	**Continuous Connection:** Each luminaire segment is built with quick disconnects to easily connect to the next segment in line.
H	**Circuits:** Example U-Shaped run exceeds Max Run lengths and is split into two circuits, each with their own driver. Max Run lengths vary by light source. See light source specifications for details.

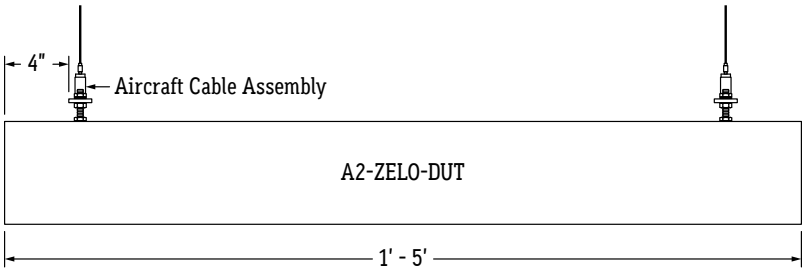
DIAGRAM OF ASSEMBLY



DIMENSIONS



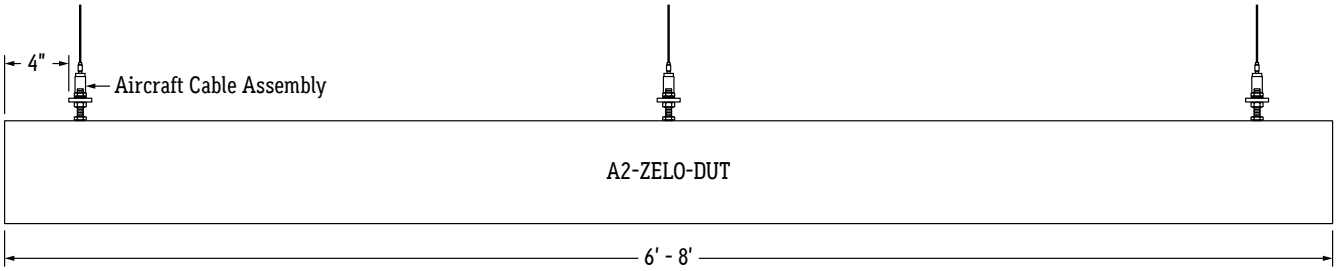
1' - 5' LUMINAIRE



- For luminaires 1' - 5' long, use 2 Aircraft Cable Assemblies per luminaire.
- Install each assembly about 4" from each end of luminaire.

Note: Location may vary depending on accessibility mounting surfaces. Ensure each luminaire is balanced.

6' - 8' LUMINAIRE

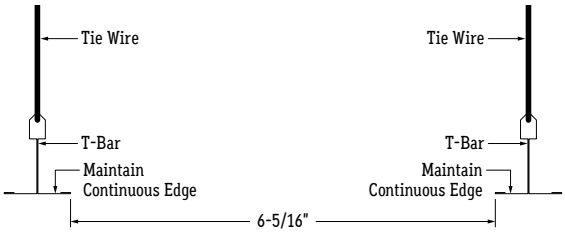


- For luminaires 6' - 8' long, use 3 Aircraft Cable Assemblies per luminaire.
- Install 1 assembly centered and 2 assemblies about 4" from each end of luminaire.

Note: Location may vary depending on accessibility mounting surfaces. Ensure each luminaire is balanced.

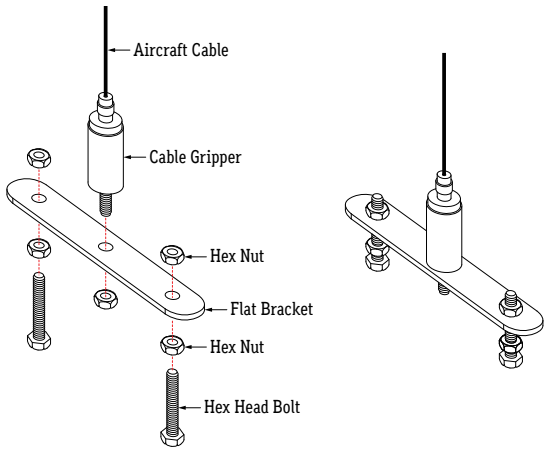
1 Do not install ceiling tiles until after installation of luminaires is complete. Installation area must have at least 10" of overhead space.

2 Install T-Bar Ceiling Grid. Create a 6-5/16" gap in the grid where the luminaires will be installed. Assemble the grid so there is a continuous edge around grid for the Ceiling Trim to rest on.
Note: 6-5/16" dimension to be measured from edge of T-Bar to edge of T-Bar.



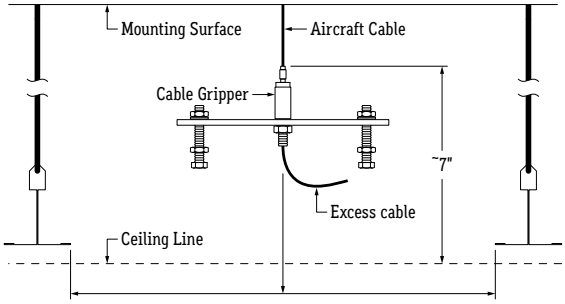
3 Determine number of Aircraft Cable Assemblies required.
Note: Refer to Spacing Diagrams (Aircraft Cable Assembly) for details.

4 If applicable, assemble Aircraft Cable Assemblies. Install hex nuts about halfway down each hex head bolt, then insert bolts through flat bracket and secure with hex nuts.

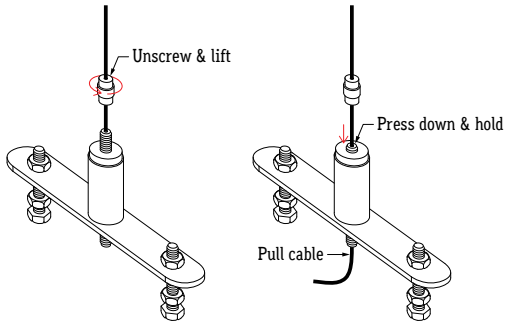


5 Determine locations where Aircraft Cables will be mounted overhead. Secure to a sturdy surface, such as studs, using hardware (by others) that is rated for the weight of the luminaire.
Note: Do not hang luminaire from weak material such as drywall or plywood.

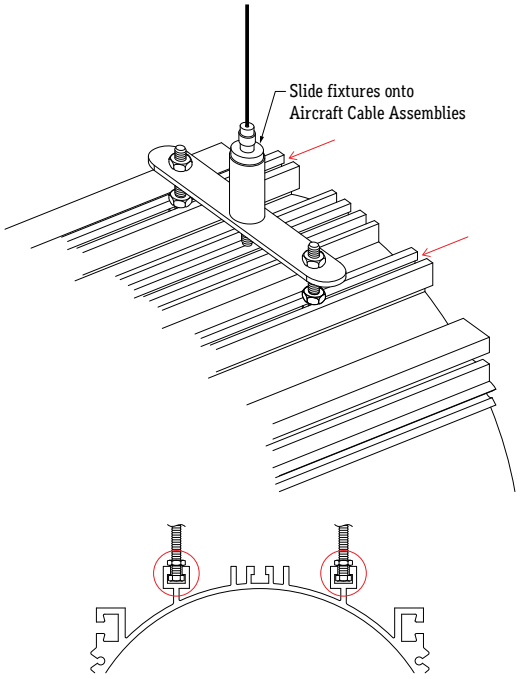
6 Secure Aircraft Cable Assemblies to mounting surface. The top of the assembly should rest approximately 7" above ceiling line. Ensure assembly is centered between the T-Bars. Adjust position of assembly along aircraft cable using cable gripper. Do not trim excess cable at this time.



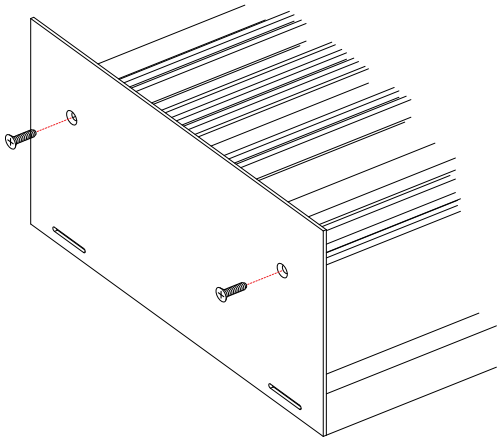
7 Adjust Cable Gripper by unscrewing locking mechanism. Press down and hold the threads where cable feeds through. Pull cable from the exit. Let go of threads to lock in place, then replace locking mechanism.



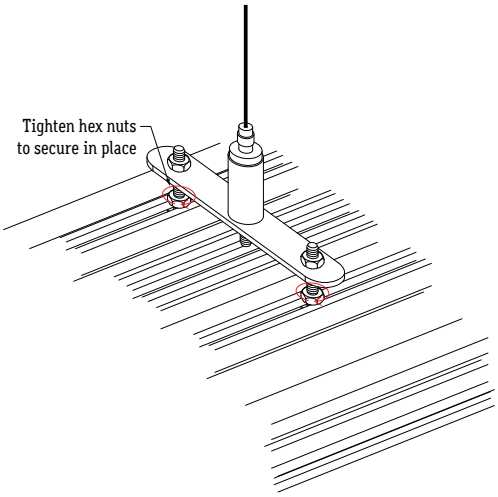
8 Slide luminaires onto Aircraft Cable Assemblies. Adjust positioning of lower hex nut if needed to allow assemblies to slide in easily. Always install corners first.



9 If applicable, install end cap to end of run.



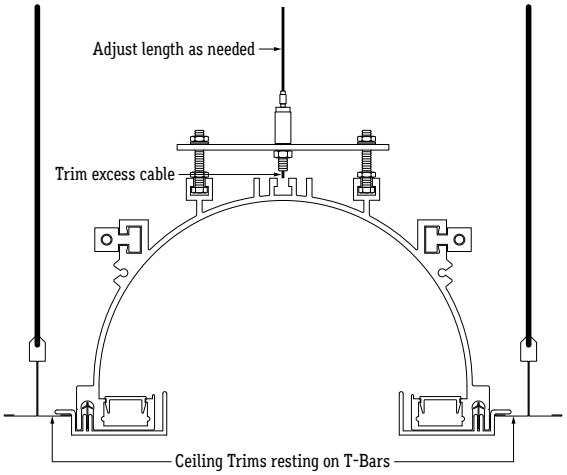
10 After all luminaires have been mounted, secure Aircraft Cable Assemblies to luminaire by tightening lower hex nuts. All aircraft cables must rest in a vertical position. Do not allow aircraft cables to rest at a slant or angle. Adjust as needed.
Note: The position of the Aircraft Cable Assemblies may deviate from the spacing diagrams due to variations within the installation area. Ensure all luminaires are appropriately balanced.



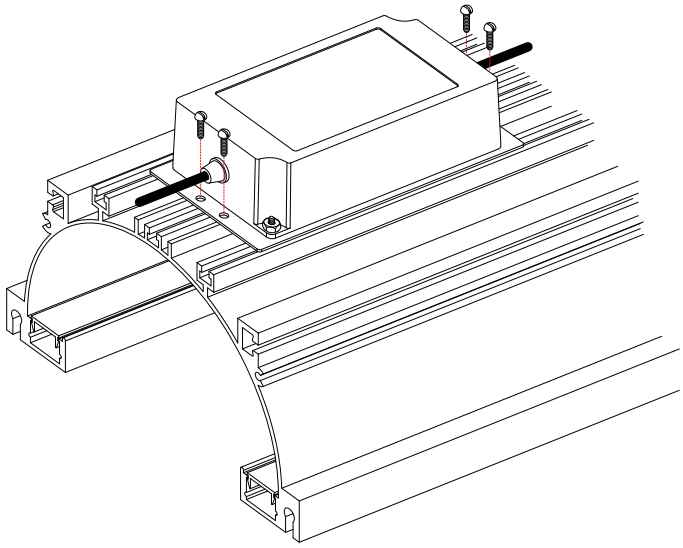
11 Secure connections between continuous runs using Connector Blocks after all luminaires have been mounted.
Note: Refer to Connecting Continuous Runs for details.

12 Install Ceiling Trim after all luminaires have been mounted and connected.
Note: Refer to Installing Ceiling Trim for details.

13 After all luminaires are mounted, adjust height and levelness of each luminaire by adjusting cable gripper. Allow the weight of the luminaire to be suspended by the aircraft cable while simultaneously resting on the flange of the T-Bar.
Note: One person holds the luminaire and another person adjusts cable gripper.

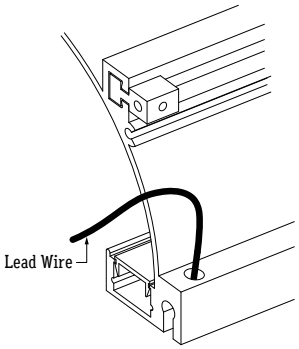


14 Drivers may be mounted on top of fixture if suitable for your application. Only mount drivers on top of fixture if it is readily accessible, such as a dropped tile ceiling. Position the driver in the center of fixture and secure using 1/4" #8 screws (by others). Do not mount drivers between segments.
Note: Driver size and location of mounting holes may differ from below example.



15 If applicable, install mud-in end cap at end of run. The mud-in end cap is used when the end of the luminaire terminates at drywall. Cut a hole in the drywall where luminaire opening will be present. Only the main extrusion should be exposed. Install mud-in end cap using countersink screws and ensure it is flush with drywall. Apply mud to create a smooth, even surface.

16 Make wiring connections from driver to 1st PCB. Pull lead wires from luminaire and make splice connections to lead wires from driver. Verify wiring diagram before connecting.

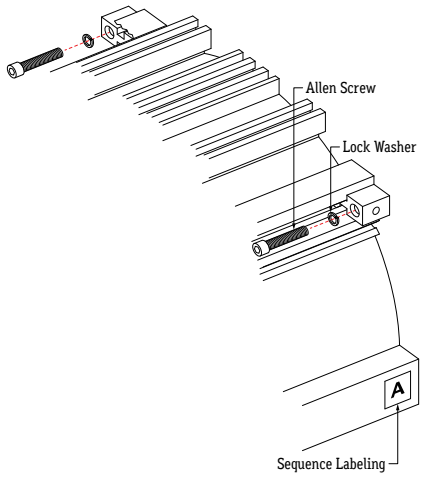


17 Perform a continuity test before connecting luminaire to power source.

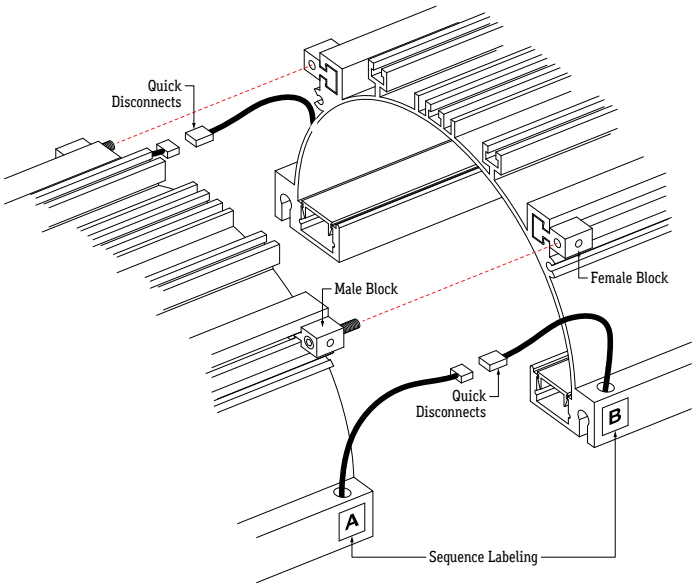
18 Verify driver wire colors from wiring diagram, then connect luminaires to power source. Drivers used for this product vary. Always confirm wiring diagram from driver installation instructions before connecting.

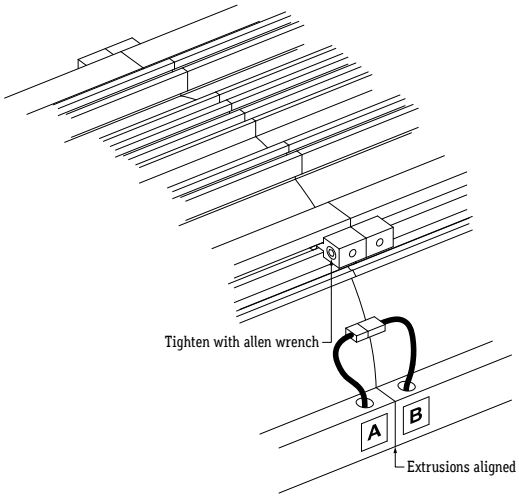
1 Make cuts to extrusion and lens if necessary. Do not cut PCB, wiring, or accessories. Only use a miter saw equipped with a blade for cutting metal.
Note: If applicable, remove Connector Blocks from extrusion before cutting.

2 If applicable, insert one Allen Screw with Lock Washer into each Male Block.
Note: Ensure sequence labeling is in the correct sequence (A, B, C, etc.)



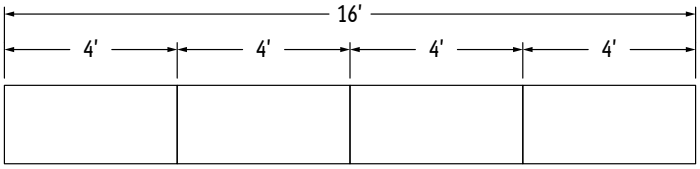
3 Position luminaires together and align the screw of the Male Block to meet the Female Block. Tighten Allen Screws using provided Allen Wrench to close the gap until luminaires meet. Only tighten screws until extrusion edges meet with no gaps. Over-tightening screws will create separation at the seam.
Tip: One person holds the luminaire together, ensuring there is no gap, while another person tightens screws.



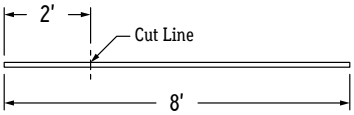


4 Connect disconnects between luminaires, if applicable. Ensure connected runs do not exceed load of power supply.
Note: Refer to driver installation instructions for details on calculating load.

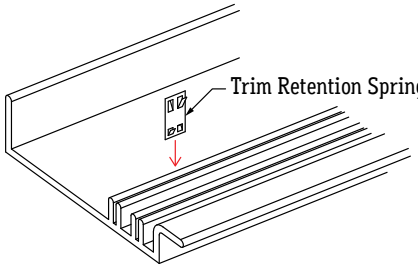
1 Measure installation area to determine required lengths of Ceiling Trim.
Example: 16' required two 8' sections of Ceiling Trim.

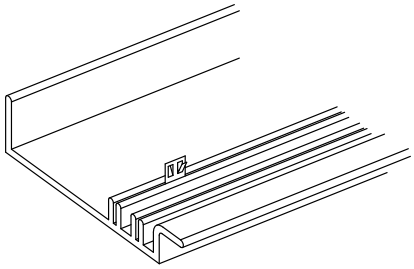


2 Measure and cut a 2' section from one of the Ceiling Trim segments.

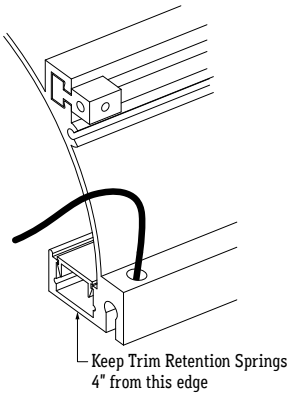


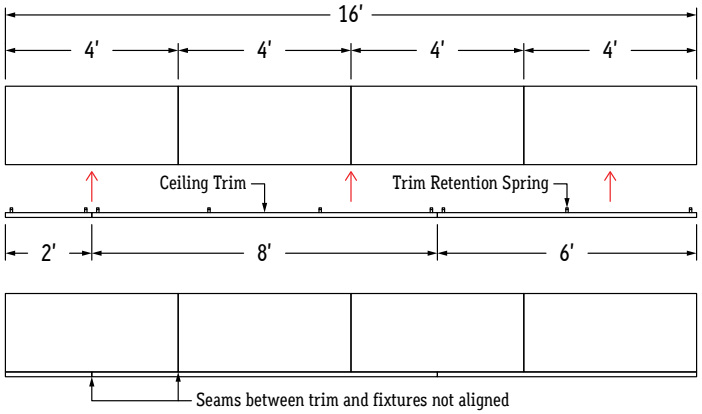
3 Install Trim Retention Springs to ceiling trim. Use one clip per 2', or two clips per segment under 4'. Install clips 4" from each edge, evenly spaced.





4 Install Ceiling Trim with Trim Retention Springs to mounted luminaires. Ensure all springs snap into channel and that trim is not loose or sagging.
Note: Place trim pieces carefully, they can not be removed after installing.
Note: Ensure placement Trim Retention Springs is at least 4" from edges of luminaire where wiring is present.





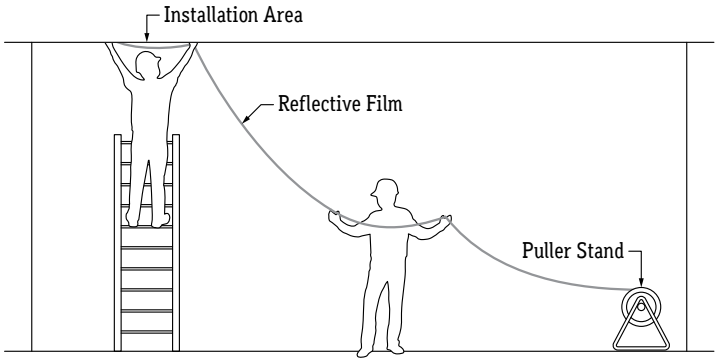
A2 Series | Recessed
ZELO Duet | Flange Ceiling Trim
(A2-ZELO-DUT-FG)

INSTALLATION GUIDELINES
- Follow the below diagrams and steps if applicable to your installation.
- Only install Reflective Film after all other installation requirements are complete. Lighting must be tested and in working order, and wall must be mudded, painted, and completely dry before beginning.
- Reflective Film requires a minimum of two installers to ensure a secure and correct installation.
- Use a puller stand to prevent damage to the film while installing.
- Installers must wear gloves while handling Reflective Film.
- The Reflective Film is two-sided. Place the textured side facing downward. The smooth side should only be facing upward.

FEATURES & MAINTENANCE
- Stable in humid environments
- Anti-static
- Abrasion resistant
- Continuous thermal stability up to 100°C
- Compatible with the following cleaning solutions: dilute ammonia, soap solutions, Clorox Wipes, Pine-Sol, and Formula 409

SPECIFICATIONS

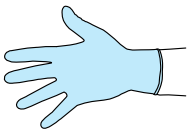
Reflectance @ 550nm	97.5 +/- 0.8% (ASTM E1164)
L* Value	> 98.9 (ASTM E308)
A Value	-0.35 +/- 0.25 (ASTM E308)
B Value	0.90 +/- 0.30 (ASTM E308)
Gloss (60°)	< 5.0% (ASTM D2456)
Thickness	205 um +/- 15 (Ono Sokki EG225)
Tensile Strength	165 MPa (ASTM D882)
Deformation Temperature	130°C (JIS K7196-1991)
Melt Temperature	255°C (ASTM D3418)
UL Relative Thermal Index	105°C (UL746)

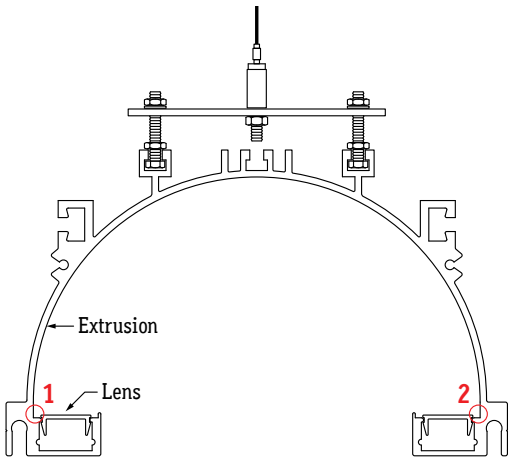


One person installs Reflective Film according to the instructions below.

Another person feeds film from puller stand to installer, ensuring that film is not disturbed in the process.

Installers must wear gloves



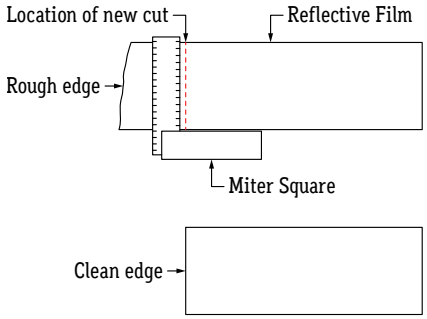


First, insert edge of film into the gap between the lens and extrusion. Do not allow film to cover lens.

Second, repeat process for other side of extrusion. Ensure the arc of the film is consistent throughout the entire run.

1 Cut a 1' section of Reflective Film and practice installing to get a feeling for how it bends and forms in the luminaire. The film cannot be corrected if it is bent, folded, wrinkled, or kinked during installation.

2 If applicable, cut the end of the sheet so it has a smooth and even edge.
Tip: Use a tool to ensure an accurate cut.



3 Place roll of Reflective Film onto wire puller stand. Gently pull film from roll and feed to installer as needed. Check that the textured side is facing downward when pulling.

4 Place beginning edge all the way to the end, so the edge of the film sits flush to the end cap.

5 At the end of the run, estimate how much more film will be needed. Make small cuts at the end of the film and test fit it. Repeat if necessary until the film meets the end cap flush.

6 Check along entire run that Reflective Film is installed correctly. Ensure lens is not covered by film and that it is securely tucked into each edge along the run.

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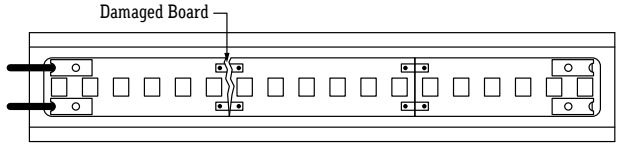
aluz.lighting info@aluz.lighting 866.ALUZ.LTG | 714.535.7900

TROUBLESHOOTING TIPS

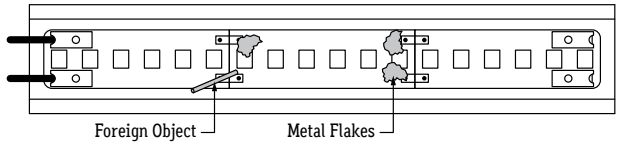
- Do not reset the breaker multiple times.
- If the unit is overloaded, the breaker will trip, shutting off the driver and lights.
- If the breaker reset button has been held down by hand or any type of pressure, such as duct tape, or if the breaker has been reset multiple times without troubleshooting, the unit will:
  - Burn the driver bobbin.
  - Burn the thermal or magnetic breaker.
  - Burn the driver lead wires due to high amperage caused by overload.
  - Short circuit in line which will not allow the breaker to reset.
  - Damage the lighting.

1 Turn off power before beginning. Verify power is off by using a not contact circuit tester (by others).

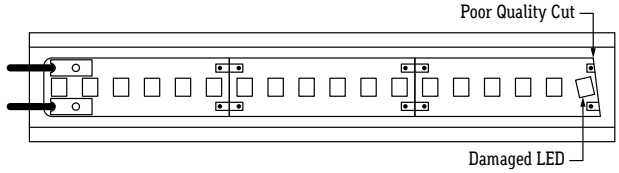
2 Check the board for damage, such as cuts, punctures, twisting, or crushing. If there is excessive damage to the board, it must be replaced.



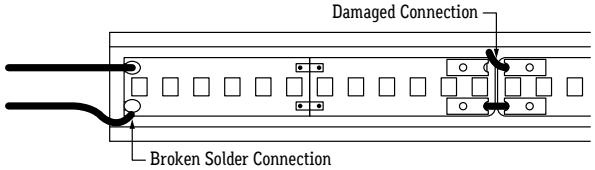
3 Check the run for any particles that may cause a short. Check the end cap, power connector, and board for any metal flakes or shavings. Clear the run of any shavings or particles if present, then perform a continuity test to confirm the short has been eliminated.



4 Check board cuts to ensure they are clean. Frayed, split, or sloppily cut boards can damage the circuit, resulting in flickering, dimness, or LED outages.



5 Check terminal connections between LED boards. If a terminal is loose, damaged, or absent, the board must be replaced. Check soldered connections to LED boards, if applicable.



6 Check connections in the line. Ensure all splice connections are secure and properly sealed with shrink tube and silicone for outdoor applications. Ensure that wiring is not bent past the permitted wiring bend radius (1.5").

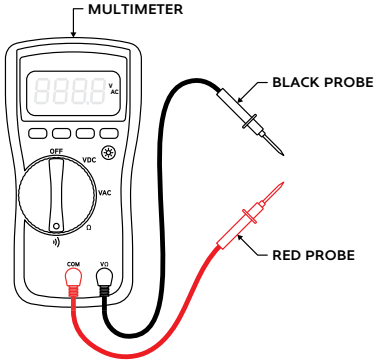
7 Check the run for any water inside end cap, power connector, or lightstrip. If water or condensation is present, the lightstrip must be replaced.

CONTINUITY TEST

A continuity test is performed to determine if electricity can pass through two points on an electrical circuit. This helps identify shorts or malfunctions in the line or luminaire. Use a multimeter or continuity tester to perform the steps below.

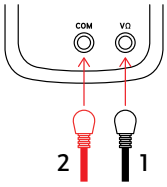
- Always perform a continuity test before connecting to power source.
- Malfunctions are not always as obvious as the lights not turning on.
- A short or malfunction in the line or luminaire will cause damage over time, irreparably damaging the lighting and voiding warranty.

EXAMPLE OF MULTIMETER (BY OTHERS)



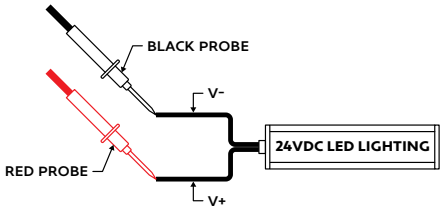
1 Turn off power before beginning. Verify power is off by using a non-contact circuit tester (by others). Touch the probe of the tester to the positive wire of the power source. The tester will light up if an electrical current is detected.

2 Setup your multimeter tester (by others). First, insert the black probe lead into the COM jack, then insert the red probe lead into the VΩ jack.

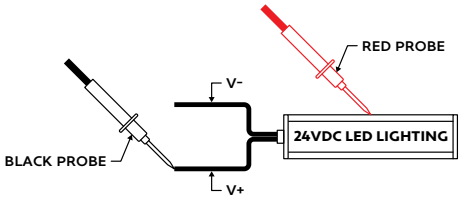


3 Verify multimeter is functional by touching probes together. The multimeter should beep, flash, or read 0Ω (ohms) of resistance.

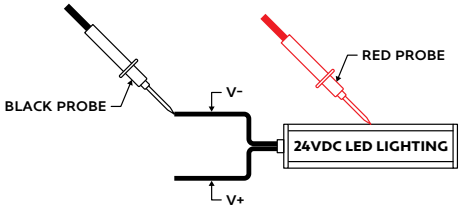
4 Touch the red probe to the positive (+) wire and the black probe to the negative (-) wire of the luminaire. If a conductive path is formed between the positive and negative wires, the multimeter will beep, flash, or read 0Ω (ohms) of resistance. Troubleshoot to identify the malfunction in the line. If there is no conductive path formed, the multimeter will not show any feedback.



5 Touch the red probe to the luminaire extrusion and the black probe to the positive (+) wire. If a conductive path is formed between the extrusion and the positive wire, the multimeter will beep, flash, or read 0Ω (ohms). Troubleshoot to identify the malfunction in the line. If there is no conductive path, the multimeter will not show any feedback.



6 Touch the red probe to the luminaire extrusion and the black probe to the negative (-) wire. If a conductive path is formed between the extrusion and the negative wire, the multimeter will beep, flash, or read 0Ω (ohms). Troubleshoot to identify the malfunction in the line. If there is no conductive path, the multimeter will not show any feedback.



7 Set multimeter to DC voltage and test power source. Confirm the correct voltage before connecting luminaire to power source. If the voltage reading is more than 1 volt greater than the marked output voltage, there is a problem with the power source or driver.

8 Connect luminaire to power source via power connector. If LEDs do not turn on, flip the polarity (+/-) or power source connection to power connector.