ACULUX 3 1/4″ RECESSED HOUSING INSTALLATION INSTRUCTIONS

WARNING: For your safety, read and understand instructions completely before starting installation. Before wiring to power supply, turn off electricity at fuse or circuit breaker box.

NOTE: Aculux recessed fixtures are designed to meet the latest NEC requirements and are listed in full compliance with UL1598. Before attempting installation of any recessed lighting fixture, check your local electrical building code. This code sets the wiring and installation requirements for your locality and should be understood before starting your work. Use of Non Aculux trims voids warranty.

TYPE TC for Non-Insulated Ceilings

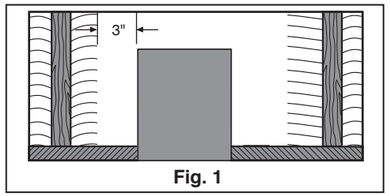

Fig. 1

Aculux "TC" fixtures (type non-IC) are designed for installations where the housing and J-Box will not come into contact with insulation*. Insulation and combustible materials must be spaced at least 3" away from the housing and J-Box. Blinking or powering off of the light during use indicates an overheating condition which may be caused by an improper lamp, improper trim, or insulating material too close or covering fixture.
Caution: failure to correct an overheating condition may result in fire and serious injury.
*In Canada, when insulation is present, Type IC fixtures must be used.

TYPE IC for Insulated Ceilings

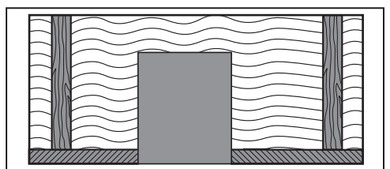
Fig. 2

Aculux type IC fixtures are designed for direct contact with insulating materials approved for the application. Blinking or powering off of the light during use indicates an overheating condition which may be caused by an improper lamp or trim.
Caution: failure to correct an overheating condition may result in fire and serious injury.

Air-Loc

Aculux IC and Non-IC recessed housings marked with Air-Loc meet the 2003 IECC Energy Code and allow less than 2CFM leakage @ 1.57 PSI per ASTM E283. This stops infiltration and exfiltration of air, which contributes to reduced heating and cooling costs.

Installation into Joist Construction

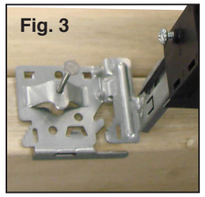
Fig. 3

Aculux residential fixtures equipped with the patented Pro-VI™ hanger bar system are designed to fit in common joist spacings from 16" to 24" on center, and are compatible with various construction materials such as dimensional lumber, engineered lumber, and steel studs. The Pro-VI™ hanger bar feet also include additional fastener holes for mounting in special applications where the pre-installed nail location is not compatible.

1. Position fixture between joists, and slide towards the first joist. (Note: Square and round housings include integral v-notch markings on plaster frame return to assist in locating fixtures.) (Fig. 3)
2. Align the flanges on hanger bar feet with the bottom of the joist, ensuring that the flanges are flat and parallel with the bottom of joist.
3. Drive nails securely into the first joist.
4. Slide the fixture along the telescoping bars towards the second joist, ensuring the bars remain perpendicular to the joists.
5. Repeat steps 2 and 3 to secure.
6. Slide fixture to the desired position on the hanger bars, and tighten the screws on the bar guides to lock in place.

Shortening Pro-VI™ bars

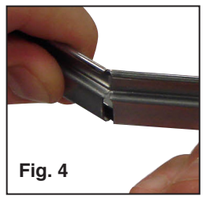
Fig. 4

In some applications, mounting the Aculux fixture in joist spans smaller than 16" on center is desired. The Pro-VI™ hanger bar system allows tool-less field shortening to fit within a 9-1/4" wide opening for type non-IC fixtures (TC) and a 10-3/4" wide opening on type IC fixtures.

To field shorten:

1. Remove telescoping bars from the fixture by extending to the maximum length and pulling apart (past the stop)
2. Locate the notch in the bar furthest from the foot
3. Grip bar on both sides of this notch, and bend the bar in the direction opposite the notch. As this notch spreads open, the bar will break along the score line. (Fig. 4)
4. Repeat step 3 on the other bar.
5. Reinstall bars into the guides on the fixture.

Installation into Suspended T-bar grid Ceilings

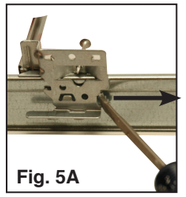
Fig. 5A

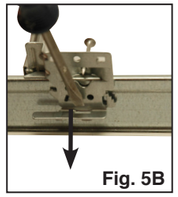
Fig. 5B

Aculux fixtures contain either patented Pro-VI™ hanger bar systems or standard butterfly-style mounting brackets, which both provide secure mounting in suspended T-bar ceilings. The patent pending Pro-VI™ hanger bar system mounts to T-Bars spaced on 24" centers and the butterfly-style mounting brackets can accommodate ½" EMT, ¾" & 1-1/2" C-channel, and linear bars.

To mount the Aculux patented Pro-VI™ hanger bar system to T-Bar ceilings:

1. Determine the desired position for the fixture and cut a hole in the ceiling tile according to the recommended cut-out dimensions.
2. Fully expand the bars of the patented Pro-VI™ hanger bar system until the stop is reached.
3. Position the fixture in the ceiling tile opening and clip the four hanger bar feet over the T-bar.
4. Lock each hanger bar foot to the T-bar using the two integral locks or a sheet metal screw (supplied by others). If tie-wire is desired for additional support, each bar hanger foot has holes suitable attachment of wire. (Fig. 5A)
5. Tighten the set screws on the hanger bar guides to lock the bar position.
6. If desired, bend the break-away flange on the hanger bar foot to snap off. This can prevent interference with adjacent ceiling tiles. (Fig. 5B)

To mount Aculux fixture using butterfly-style mounting brackets:

1. Determine the desired position for the fixture and cut a hole in the ceiling tile according to the recommended cut-out dimensions.
2. Pass the EMT, C-channel, or linear bars through the openings in the butterfly style bracket.
3. Position fixture in the ceiling tile opening. Loosen the thumb nut on rear of housing, and hinge open cover. Adjust butterfly brackets to the desired height using the wing nuts located inside the housing. When desired height is reached, close housing cover and tighten thumb screw to lock.
4. Secure mounting bars to corresponding structure.

Electrical Connection Instructions

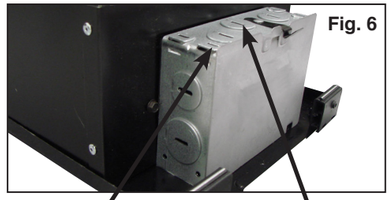

Fig. 6

All Aculux fixtures contain an integral junction box that allows both connection of power to the fixture and passing additional conductors through the junction box. Type IC fixtures are UL listed for (4) through branch circuit conductors rated at 90°C, and type Non-IC (TC) are UL listed for (8) through branch circuit conductors rated at 90°C.

All Aculux housings also come pre-wired with UL Listed push-in style wire connectors for connection of the branch circuit supply and ground to the fixture. These push-in wire connectors allow up to two 12AWG or 14AWG solid copper wires to be connected to each fixture lead and ground.

1. Provide electrical service according to your local electrical code to the Aculux junction box located on the plaster frame. Supply wire insulation must be rated for at least 90°C.
2. Remove the junction box cover and attach the electrical service as follows: (Fig. 6)
   a. Metal conduit: Remove appropriate round knock-out(s) and connect conduit to junction box with proper fittings (supplied by others).
   b. Non-metallic sheathed cable: Remove appropri ate knock-out(s) from top of junction box and insert cable, pushing it past the cable grip (Additional connectors are not required).
3. Strip 3/8" insulation from the branch-circuit supply and ground wires, and insert into the corresponding push-in wire connector as follows:
   a. Connect hot to black fixture wire.
   b. Connect neutral to white fixture wire.
   c. Connect ground to green fixture wire.
4. Place all wiring and connections in junction box and replace cover.

Dimmimg Compatibility

Aculux housings come deigned for various light sources. When using a dimmer, care must be taken to ensure the dimmer is compatible with the corresponding fixture type.

- For catalog numbers: IC43N, IC43SQ, TC43N, TC43SQ, TC943N, TC943N-V, TC943SQ, & TC943SQ-V only use dimmers compatible with magnetic low voltage transformers.
- For catalog numbers: IC43N-E1, IC43SQ-E1, TC43N-E1, TC43SQ-E1, TC943N-E1, TC943N-E2, TC943SQ-E1, & TC943SQ-E2 only use dimmers compatible with electronic low voltage transformers.
- For catalog numbers: IC13N, IC13SQ, TC13N, & TC13SQ only use dimmers compatible with incandescent loads.
- Note: Catalog numbers TC943M-MR16-20E1, TC943M-MR16-20E2, TC943M-MR16-39E1, TC943M-MR16-39E2, TC943MSQ-MR16-20E1, TC943MSQ-MR16-20E2, TC943MSQ-MR16-39E1 & TC943MSQ-MR16-39E2 are not dimmable.

High Efficiency, dual tap toroid transformer

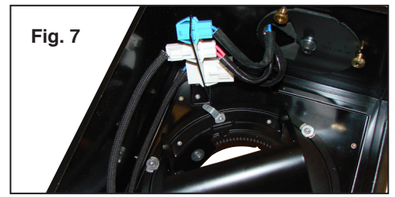
Fig. 7

All Aculux new construction housings with magnetic transformers contain high efficiency toroid transformers with dual tap secondary outputs. When controlling the Aculux housing with a magnetic low voltage compatible dimmer, switching to the boost tap provides maximum light output when the dimmer is at the maximum position.

Caution: If the boost transformer tap is used with a standard wall switch (non-dimmed), the lamp will be driven in excess of 12V, which will cause permanent damage to the lamp and socket. Only use the transformer boost tap with a suitable a dimmer.

To switch from standard output to boost output:

1. Locate the socket and transformer connectors inside the housing (Fig. 7). The blue transformer connector is the boost tap for dimming applications.
2. Rotate the aiming mechanism so the lampholder shield is inline with the connector bracket (Fig.7).
3. Loosen the screw that secures the lampholder shield in place, and hinge up to gain access to the connectors.
4. Unplug the socket from the white connector (standard tap) and plug into the blue connector (boost tap).
5. Hinge the lampholder shield back into place, and tighten screw.

Hg Mark means lamp contains mercury.
Follow disposal laws.
See www.lamprecycle.org

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ACULUX 3 1/4˝ RECESSED HOUSING INSTALLATION INSTRUCTIONS

Tru-Line™ Translation

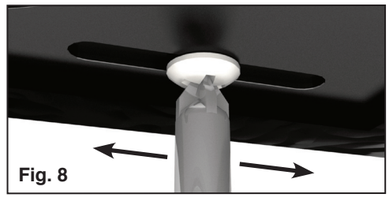
Fig. 8

Aculux fixtures contain a patented adjustment feature that allows shifting the plaster frame aperture parallel to the joists up to ½" in both directions without detaching the fixture, providing the installer with an easy way to achieve precise layouts.

1. Locate the screw on the plaster frame above and to the left of the Aculux logo (about 3" diagonally).
2. Loosen screw and slide the plaster frame aperture in the desired direction. (Fig. 8)
3. Tighten screw securely to lock plaster frame aperture in the new position.

Note: If adjustment more than ½" in either direction is needed, the Pro-VI™ hanger bar system contains bugle-head nails that can easily be pulled-out with a hammer claw for repositioning.

Rotating housing aperture (square housings only)

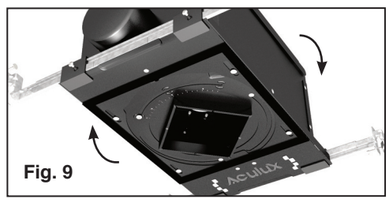

Fig. 9

Aculux Square housings allow rotation of the square aperture in multiple directions to accommodate an infinite number of layout possibilities. The housings ship with the square aperture locked in the 0˚ position. To rotate the aperture to a new position:

1. On the bottom of the housing, locate the screw in the curved slot of the plaster frame, directly above the angle markings.
2. Loosen screw and rotate the aperture in the desired direction. The indicator arrow and angle markings, which are marked every 5˚, help ensure accurate placement. (Fig. 9)
3. Tighten screw securely to lock into adjusted position.

Ceiling Cutout Dimensions

For best results, match ceiling cutout size to the specified dimensions. Using a properly sized hole saw or a rotary cutter with a 1/8" diameter bit will provide the best quality cutout.

For round aperture Aculux housings:

- When using standard (with separate trim frame) or self-flanged trims, cut a 4-1/4" diameter hole in the ceiling.
- When using flush mount trims and separate flush mount adapter accessory for drywall ceilings, make ceiling cutout 4-3/8" diameter.
- When using flush mount trims and separate flush mount adapter accessory for wood, stone, tile and other solid ceilings, make precise ceiling cutout 4.145" diameter (adapter can be used as a template).
  (Refer to separate flush mount adapter instruction sheet for detailed information.)

For square aperture Aculux housings:

- When using self-flanged trims, cut a 4-1/8" x 4-1/8" square opening.
- When using flush mount trims and separate flush mount adapter accessory for drywall ceilings, make ceiling cutout 4-1/4" x 4-1/4" square.
- When using flush mount trims and separate flush mount adapter accessory for wood, stone, tile and other solid ceilings, make precise ceiling cutout 4.020" x 4.020" square (adapter can be used as a template).
  (Refer to separate flush mount adapter instruction sheet for detailed information.)

Note: Aculux square and round housings are designed for ceiling thicknesses from ½" up to 7/8". For ceiling thicknesses 7/8" and greater, thick ceiling adapter accessories are required. Thick ceiling adapter accessories are not required when using flush mount adapters for wood, stone, tile and other solid ceilings.

Lamp & Lens Installation (MR16 style only)

Aculux MR16 style housings contain a combined lamp/lens holder that accepts up to (3) standard 2" light control or color control accessories.* Low voltage MR16 housings come standard with factory installed uniformity lenses.

To remove lamp/lens holder:

1. Grab outer diameter of lamp/lens holder.
2. Pull outwards to disengage retaining springs.

The 2" lenses are held in place by three springs. To add additional lenses simply stack them inside the lamp/lens holder, and slide the lamp under the retaining spring to secure.

To reinstall lamp/lens holder:

1. Align lamp/lens holder springs in the cylindrical opening in the fixture.
2. Push inward to engage the retaining springs.
3. (If applicable) Rotate lamp/lens holder to adjust position of directional light control lenses..

* Note: CMH MR16 housings accept maximum (2) accessories. The face of the CMH MR16 lamp is dome-shaped, therefore a circular spacer is used to allow the lamp to sit flush with optional accessories. The spacer should always be positioned closest to the lamp.

Top Relamping (TC MR16 style housings only)


Fig. 10

Aculux TC (type non-IC) MR16 style housings have been designed to allow replacing lamps from both above and below the finished ceiling, to simplify maintenance in select applications.

To replace lamps from behind the finished ceiling:

1. Loosen the thumb nut on rear of housing, and hinge open cover.
2. Pull off (12V MR16) or twist off (CMH) socket from lamp.
3. While holding lamp/lens holder in place (to prevent accidental disengagement), tilt and pull lamp towards the retaining spring to remove.
4. Attach socket to new lamp, and while holding lamp/lens holder in place (to prevent accidental disengagement) reinsert into lamp/lens holder.

Servicing and inspecting housing

All Aculux housings include features that improve accessibility to the interior of the housing for inspection of wiring and/or replacement of components such as transformers and sockets. To access the inside of housing:

1. Rotate the adjustment mechanism so the curved end of the lampholder shield points towards the area to access.
2. Tilt the adjustment mechanism to the 0° position to access the screw located next to the tilt drive gear.
3. Loosen screw and push up on lampholder shield to hinge out of the way. (note: removal of the lamp/lens holder from the lampholder shield may be required)
4. To reattach, pull lampholder shield down towards the retaining screw, and fully tighten screw.

Acu-Aim™ Precision Geared Hot-Aiming

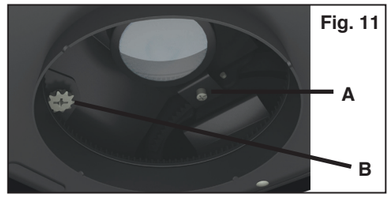

Fig. 11

Aculux housings contain a precision geared adjustment mechanism, optimized for center beam lamp optics and hot aiming. This allows the directional beam of the lamp to be easily fine-tuned using a standard Phillips screwdriver for exact aiming. The mechanism allows 45° tilt* and 370° rotation to eliminate aiming dead spots.

To adjust aiming angle:

1. Find the upper Phillips head drive gear, located near the face of the lamp.
2. Turn the drive gear counter-clockwise to increase tilt, and clockwise to decrease tilt. Fixtures include angle markings to ensure correct position. Fig.11(A)

To adjust rotation:

1. Find the lower Phillips head drive gear, located near the fixture aperture.
2. Turn the drive gear to achieve desired rotation. Fig.11(B)

*Note: PAR20 and PAR16 lamps are limited to 40° tilt.

Installing finishing trims

Aculux round and square trims contain high-grade constant tension wire-form springs that keep the trims flush to the finished ceiling, improving flatness and eliminating possible light leak. To install the finishing trims into the housings:

Round housings:

1. Compress the springs and insert into the corresponding oval slots, located about 1-1/2" deep in the housing.
2. Push trim upwards, until the springs pull trim tight to the ceiling.

Square Housings:

1. Grab the end of one spring, and rotate up (away from the finished face of the trim).
2. Engage the spring over the upper edge of the square housing opening.
3. While holding trim in position, rotate second spring up and insert into housing opening.
4. Push trim up until both springs engage.

Caution: The springs on the square trims snap closed upon removal from the housing. Remove slowly and observe the location of the springs. Keep fingers and hands clear of these springs to prevent injury when removing.

Hg Mark means lamp contains mercury.
Follow disposal laws.
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