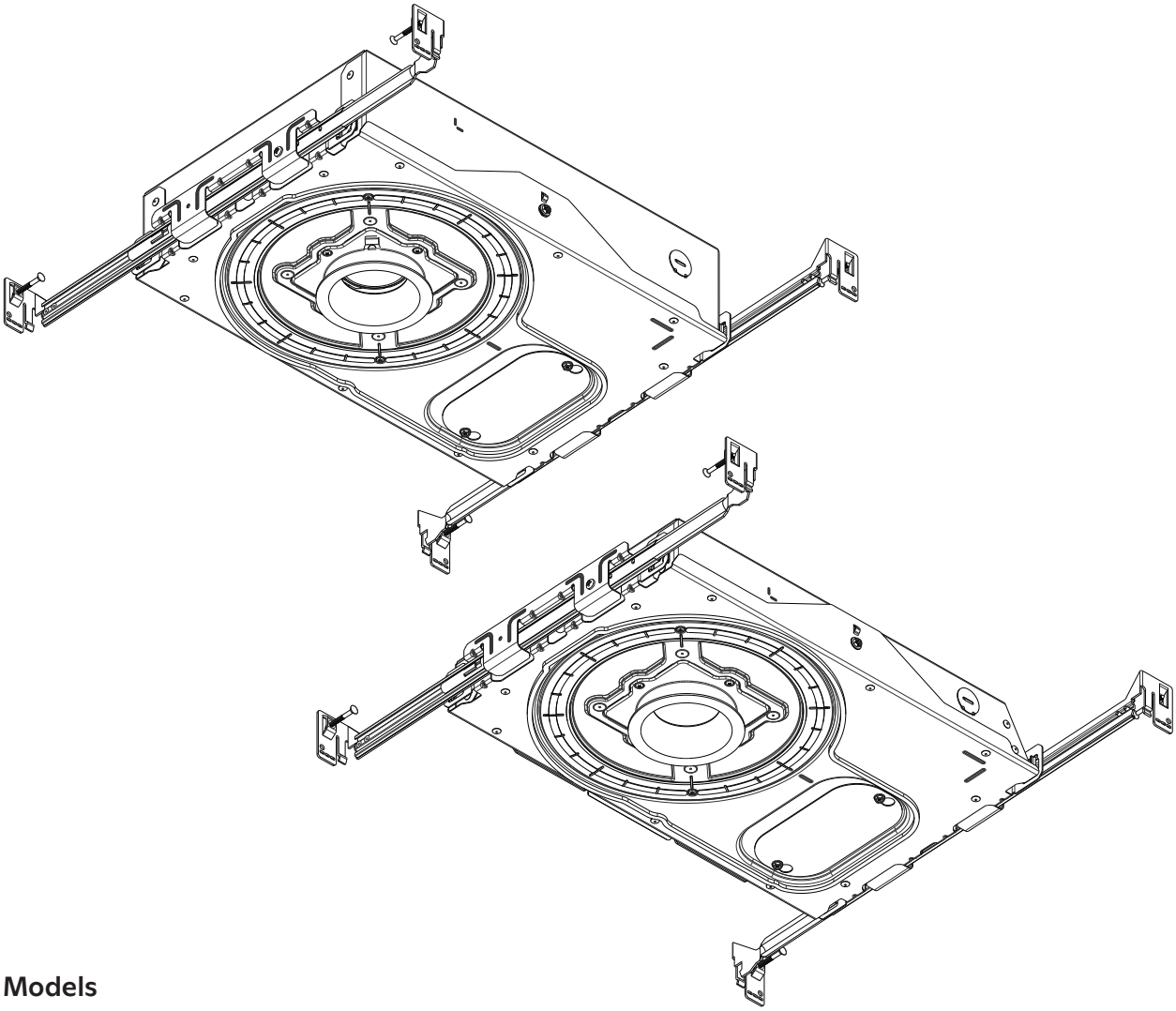
LUTRON

D2

Hardware Version 2

Installation Guide



Models

HW-D2-HOUSING-X	HW-D2-HOUSING-XN
CM-D2-HOUSING-X	CM-D2-HOUSING-XN
HW-D2TW-HSING-X	HW-D2TW-HSING-XN
CM-D2TW-HSING-X	HW-D2TW-HSING-XN

⚠ WARNING

Risk of electric shock. Use in dry locations only.

Turn power OFF at circuit breaker or remove fuse. Damage to this product caused by wiring with power on voids the warranty.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This equipment complies with FCC/ISED radiation exposure limits set for an uncontrolled environment. The user should avoid prolonged exposure within 7.9 in (20 cm) of the antenna, which may exceed the FCC/ISED radio frequency exposure limits.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This Class B digital apparatus complies with Canadian ICES-005.

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Contents

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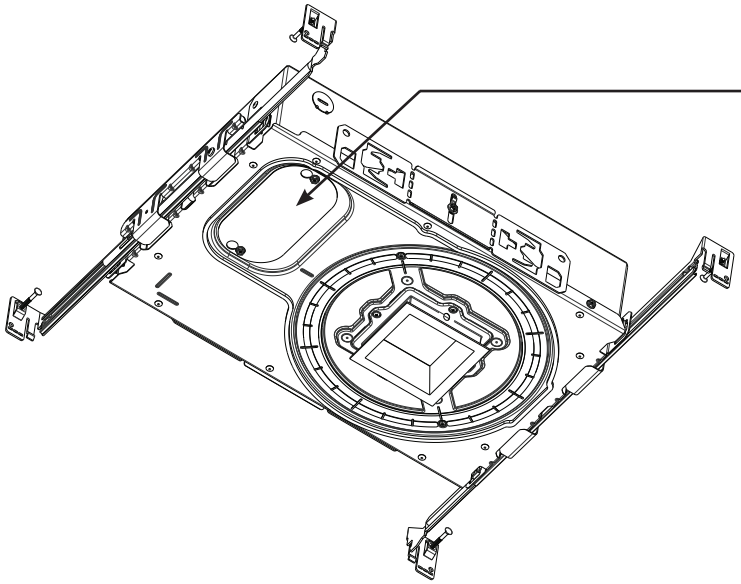
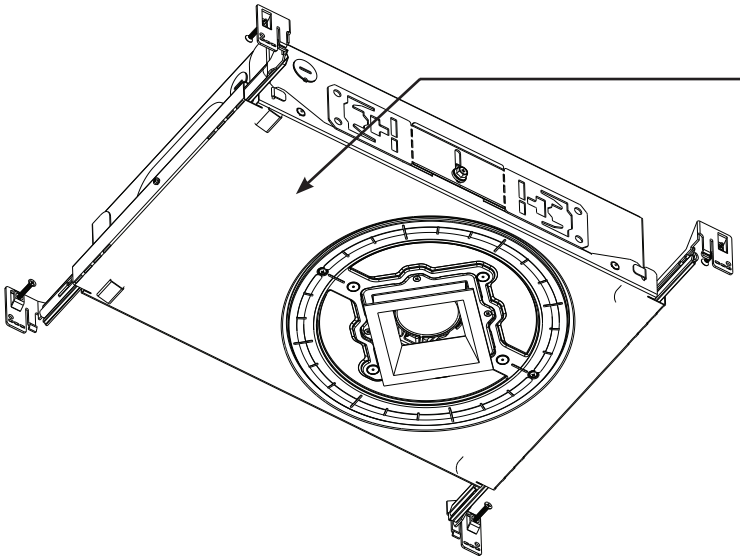
Install Guide Application

This install guide is applicable for the D2 hardware version 2. Please visit https://support.lutron.com/us/en/product/lighting/documents/installation-guide or contact Lighting Technical Support at lightingsupport@lutron.com or 1.844.LUTRON1 for the D2 hardware version 1 installation guide.



Hardware version 2 identification:
Service cover on surface shown



Hardware version 1 identification:
No service cover on surface shown

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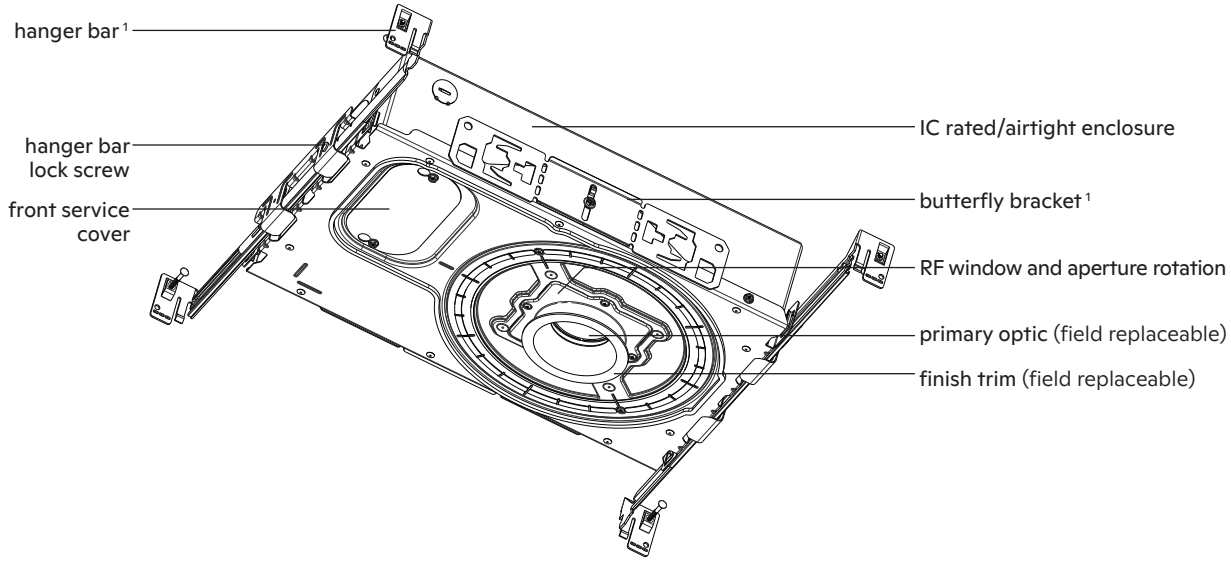
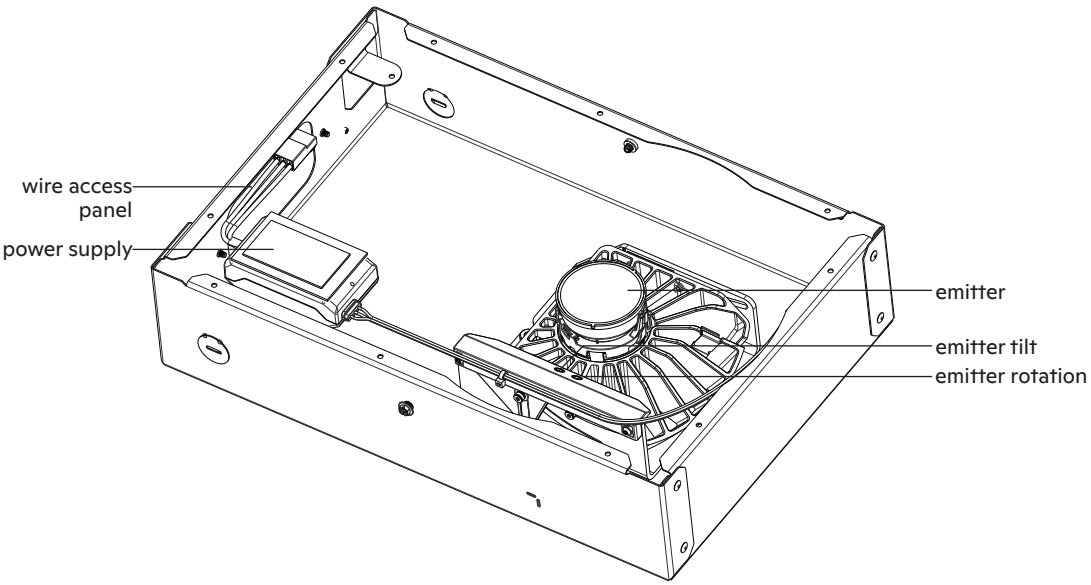
Product Overview

Lutron's D2 family includes fixed, adjustable, and wall wash downlights. The adjustable model features a 3.5 in (88.9 mm) low-profile housing, while the fixed and wall wash are in a 2 in (50.8 mm) slim-profile housing. All models include wireless communication, field changeable optics, and field replaceable electronics. With an abundance of trim and optic accessories, the D2 is ideal for a large variety of applications. The D2 family includes two different light sources:

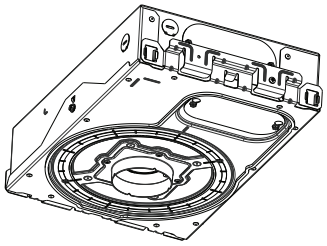
1. Ketra downlight, which features a fully-tunable spectrum capable of delivering high-quality white, saturated, and pastel light.
2. Rania downlight, which features a wide range of tunable white light.



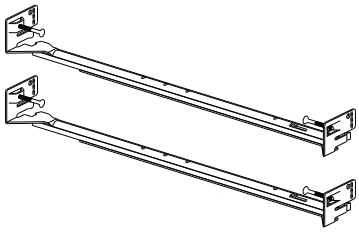


[1] The mounting method to be used is dependent on the application. Customer can use either a hanger bar or butterfly bracket for the installation. Please refer to **Part 1: Mount the D2** section on page 7.

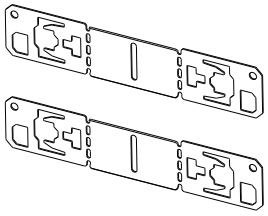
Included Components



Housing with Power Supply, Emitter, Optic (models as specified), and Trim (not shown, model as specified)



(2) Hanger Bars with (2) Pre-installed Lock Screws per Hanger Bar



(2) Butterfly Brackets

Recommended Tools

Mounting:
- #1 and #2 Phillips head screwdrivers
- Hammer
- Pliers
- Gloves

Wiring:
- 1/4 in (6 mm) socket driver

Adjustments:
- 4 mm ball-ended T-handle hex tool
- T10 Torx driver
- Suction tool (PU0950)

Millwork Applications:
- Plunge router with bearing-guided trim bit
- Routing template (available from Lutron)
- Chisel (for square trim applications)
- Drill bits: 7/64 in (2.78 mm) for softwood, 1/8 in (3.175 mm) for hardwood
- Drill bit stop collar (recommended to drill a shallow blind hole)
- Laser level

Electrical Specifications

Wattage	Specifications
18 W	120 V⁓ 60 Hz 18 W 150 mA

All products in the D2 family are Title 24 JA8 compliant with air leakage less than 2.0 cfm at 75 pascals when installed with a trim accessory lens on the trim. For instructions on how to comply with Title 24 JA8 without a trim accessory lens, please contact technical support at lightingsupport@lutron.com or call 1.844.LUTRON1.

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Installation

All customer-accessible screws are Phillips.

Part 1: Mount the D2

The D2 downlight, a Clear Connect - Type X device, communicates with the system in the 2.4 GHz frequency band. A Clear Connect - Type X system is comprised of a wireless processor/gateway and several other Clear Connect - Type X devices (e.g., D2 downlights, Ketra lamps, X96 Ketra controllers for Lightbar Slim, Sunnata wall controls) to form a robust mesh network.

For optimal wireless communication performance, the following guidelines must be followed:

- The wireless processor/gateway must be centrally located amongst the Clear Connect - Type X devices that are assigned to its subnet.
- The D2 downlight must be mounted within 75 ft (22.8 m) of its assigned wireless processor/gateway.
- The D2 downlight and its assigned wireless processor/gateway must be on the same floor.
- Each D2 downlight must have at least two other non-battery powered Clear Connect - Type X devices within 25 ft (7.6 m).
- The D2 downlight must be mounted a minimum of 3 ft (1.0 m) away from interference sources in the 2.4 GHz band, including but not limited to microwaves, wireless access points, hotspots, baby monitors, thermostats, and voice recognizing control devices.

Best practices for designing and implementing a system utilizing Clear Connect - Type X are detailed in App Note #745 (P/N 048745) at www.lutron.com

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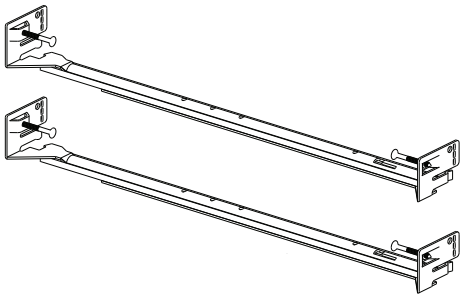
Mounting can be done with either hanger bars or butterfly brackets.

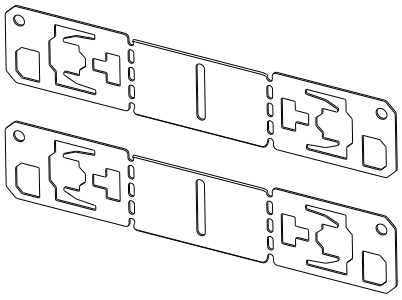
Note: The content in the following section refers specifically to hardware version 2 of the D2 downlight. If you are mounting hardware version 1, please refer to page 4.

Option 1
Hanger Bars



- Allows horizontal movement post-mounting
- Ideal with wooden studs or t-grid ceilings

Option 2
Butterfly Brackets



- Allows horizontal or vertical movement post-mounting
- Ideal for commercial applications

Option 1

MOUNTING WITH HANGER BARS

Note: For millwork-specific mounting instructions, refer to page 10.

1. Attach hanger bars
   a. Unscrew the hanger bar lock screw (#2 Phillips) until the hanger bar can be inserted into the D2 housing. The screw does not need to be completely removed to insert the hanger bar.
   b. Insert the inner hanger bar into the hanger bar slot as shown in **fig. 1** on the end of the D2 housing. Ensure the hanger bar is oriented as shown in **fig. 2**.
   c. Insert the outer hanger bar into the same housing slot as shown in **fig. 1**, locking the inner and outer halves together. Tighten the hanger bar lock screw.
   d. After mounting, the lock screw can be loosened to adjust the position of the housing. Tighten the lock screw after the housing is in its desired position.
   e. Repeat steps a-d for the hanger bar on the opposite end of the housing.

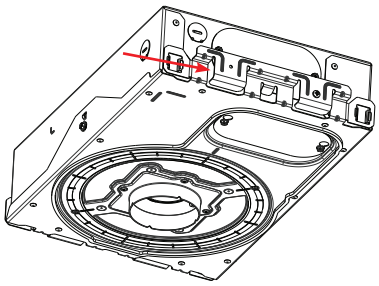


fig. 1

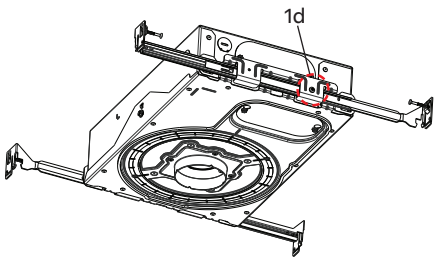


fig. 2

2. Mount the downlight in the ceiling

   Note: For radio communication, the D2 cannot be installed in metal ceilings. For ceilings with a metal liner, the liner must be cut and removed around the RF window. There must not be any metal between the RF window and the occupied space.
   a. Align the bottom of the hanger bar tab (see **fig. 3**) with the inside of the ceiling surface (bottom of the joist).

   Note: After mounting, ensure that the D2's collar is flush or sub-flush to the ceiling plane and does not protrude.
   b. Nail or screw the ends of both hanger bars into the wooden joists, fixing the housing in place* (see **fig. 2**).
   c. T-Grid ceiling only: Bend the tabs on the hanger bars to lock them to the t-grid.

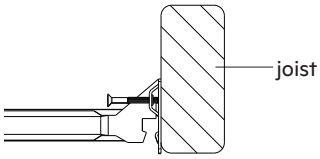


fig. 3

3. *Optional:* If using a square aperture with a flange, realign the collar to the desired orientation (see **fig. 4**).
   a. Loosen the RF window's two outer screws, freeing the collar for rotation.
   b. Realign the collar using its v-shaped notches and an alignment string or laser.
   c. Re-tighten the screws to lock the collar's new position.

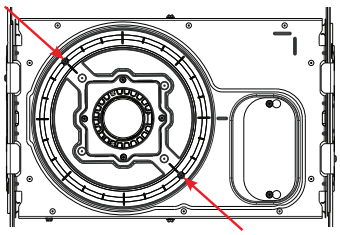


fig. 4

* Optional screws are not provided for mounting the hanger bar.

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Option 2

MOUNTING WITH BUTTERFLY BRACKETS

1. Attach butterfly brackets
   a. Use pliers to bend the flanges of the butterfly bracket along the perforated line to the desired angle for the mounting channel / bracket (note the direction of bends in **fig. 6** and **fig. 7**).
   b. Remove the pictured fastener with a 1/4 in (6 mm) socket driver from the side of the housing.
   c. Align the butterfly bracket to the mounting hole (note the orientation of the bracket cutouts).
   d. Use the provided fastener and washer to fasten the butterfly bracket with a 1/4 in (6 mm) socket driver (see **fig. 5**).
   e. Repeat steps a-c for the butterfly bracket on the opposite side of the housing.

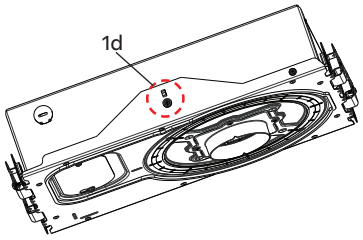

fig. 5

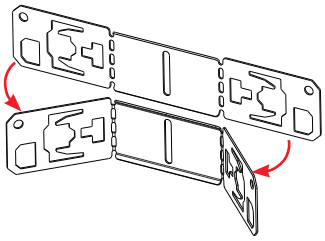

fig. 6

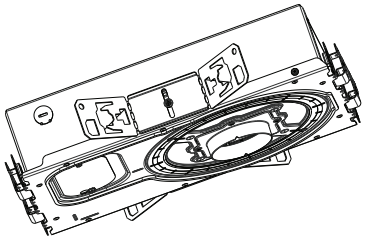

fig. 7

2. Mount downlight in the ceiling

   Note: For radio communication, the D2 cannot be installed in metal ceilings. For ceilings with a metal liner, the liner must be cut and removed around the RF window. There must not be any metal between the RF window and the occupied space.

   a. Use bar stock or C-channel (not provided) to mount the D2 in the ceiling. The supports should go through the holes in the butterfly brackets and can be used to suspend the D2 (see **fig. 8**).

   Note: After mounting, ensure that the D2 collar is flush or sub-flush to the ceiling plane and does not protrude.

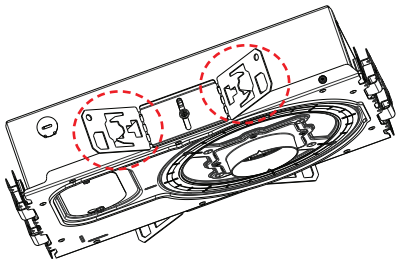

fig. 8

   b. Tie at least one butterfly bracket to the deck using one or more wire-ties.

3. *Optional:* If using a square aperture with a flange, realign the collar to the desired orientation.
   a. Loosen the RF window's two outer screws, freeing the collar for rotation (see **fig. 9**).
   b. Realign the collar using its v-shaped notches and an alignment string or laser.
   c. Re-tighten the screws to lock the collar's new position.

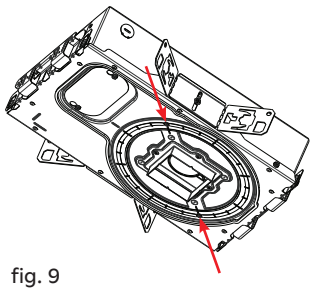

fig. 9

Option 3

MOUNTING MILLWORK APPLICATION

Note: The millwork mounting method provides clearance for the hanger bar to allow for 1/8 in (3.175 mm) of adjustment of the D2 housing when aligning the aperture to the trim retainer.

1. Install hanger bars
   a. Using pliers, bend the four millwork tabs to a 90˚ angle (see **fig. 10**).
   b. Insert the hanger bars through the tab openings (note orientation in **fig. 11**).
2. Mount the downlight in the ceiling
   Note: For radio communication, the D2 cannot be installed in metal ceilings. For ceilings with a metal liner, the liner must be cut and removed around the RF window. There must not be any metal between the RF window and the occupied space.
   a. Align the bottom of the nailer bar tab (**fig. 3** on page 8) with the inside of the ceiling surface (bottom of the joist).
   b. Nail or screw the end of both hanger bars into the wooden joists, fixing the housing in place.*
3. Hanger bar clearance
   a. If additional hanger bar clearance is needed, use pliers to bend the alignment tabs on each millwork tab to provide additional clearance for the hanger bar (see **fig. 12** and **fig. 13**).
4. *Optional:* If using a square aperture with a flange, realign the collar to the desired orientation. Refer to **fig. 4** on page 8.

* Optional screws are not provided for mounting the hanger bar.

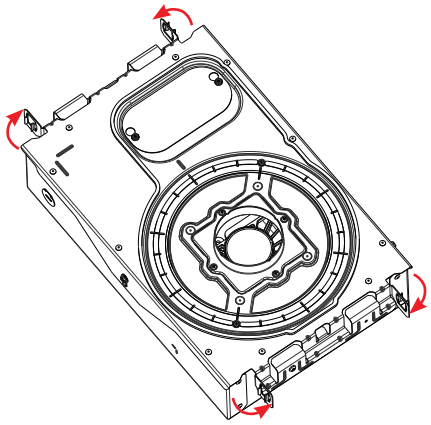

fig. 10

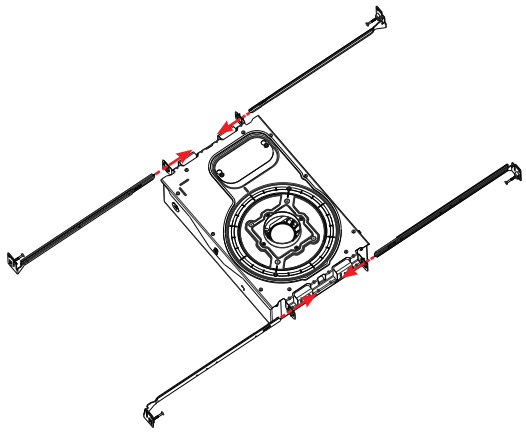

fig. 11

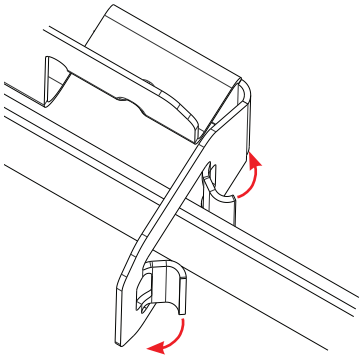

fig. 12

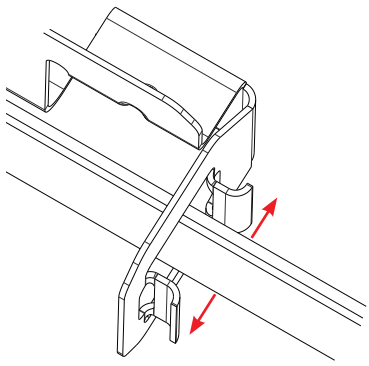

fig. 13

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Part 2a: Wire the Fixture (Non-Emergency Operation)

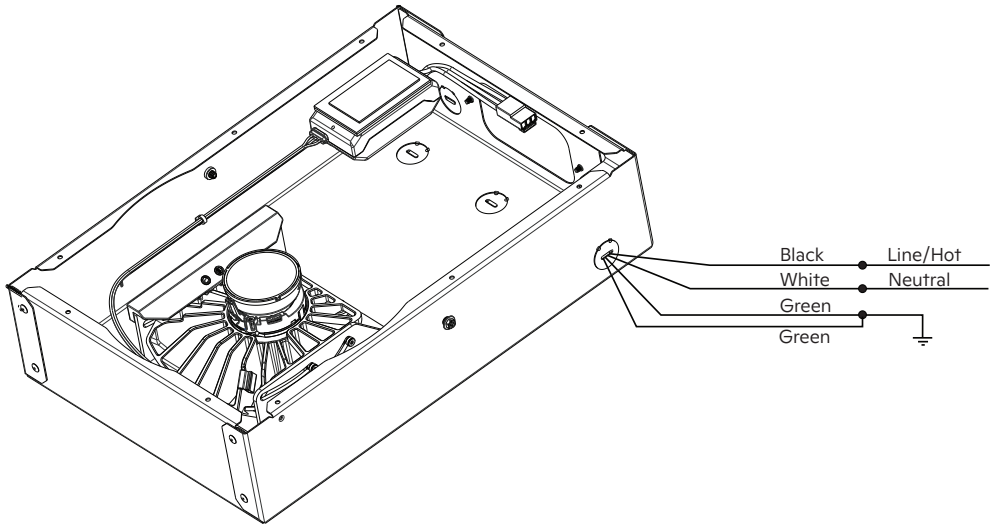
1. Run power to the housing
   a. Two access panel covers (one on the side and one on the front) provide internal access to the unit for wiring. Both covers can be removed by loosening the two bolts with a 1/4 in (6 mm) socket driver, holding the cover in place, and then sliding the cover so the bolt heads can pass through the keyhole openings in the access panel covers.

   Note: A licensed electrician should perform all wiring tasks. All electrical connections must be made within the housing. There is no separate housing for the D2 fixture — the internal area of the fixture is utilized as the housing.

   b. Run the conduit into the D2 (and out of the D2, if this is one downlight in a sequence). Make sure to leave 9 in (229 mm) of conduit internal to the fixture to allow for future servicing of connections.

   Note: A maximum of (8) 12 AWG (4.0 mm²) wires through branch circuit conductors that are suitable for 165 ˚F (75 ˚C) are permitted in the housing.

   c. Run the building's power line wires* into the housing.
2. Splice the wires
   a. Using the provided connectors, splice the flying leads of the D2 into the building's power. Make sure the housing is grounded in accordance with local codes.



lid is removed for illustrative purposes only

   b. Reinstall the wiring access panel cover on the housing.
3. Test the wiring
   a. Apply power to the D2. The emitter should immediately come on to 3000 K (warm white).
   b. After verifying a successful installation, remove power and continue to Part 3.

* Lutron lighting products should not be connected to, or directly controlled by, AC mains line voltage dimmers. These types of dimmers may also be referred to as phase cut, triac, forward-phase, reverse-phase, ELV, or MLV dimmers. Lutron's lighting products should only be controlled via our digital control architecture. Lutron does not recommend switching power on/off to Lutron lighting products via relays, contactors, or manual toggle switches. When the lighting products are disconnected from power they cannot respond to digital commands from control devices. This could confuse end users as the lighting may be in a state that is inconsistent with the control devices. Please refer to the product installation guides for more information.

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Part 2b: Wire the Fixture (Emergency Operation)

The commercial Clear Connect - Type X Ketra D2 and LVS LUT-SHUNT-A-TD, when installed together, form an approved emergency lighting system in accordance with NEC® Article 700 and NFPA101. Monthly and annual testing, in accordance with NFPA101, is required to maintain this compliance.

1. Run power to the housing
   a. Two access panel covers (one on the side and one on the front) provide internal access to the unit for wiring. Both covers can be removed by loosening the two bolts with a 1/4 in (6 mm) socket driver, holding the cover in place, and then sliding the cover so the bolt heads can pass through the keyhole openings in the access panel covers.

   Note: A licensed electrician should perform all wiring tasks. All electrical connections must be made within the housing.

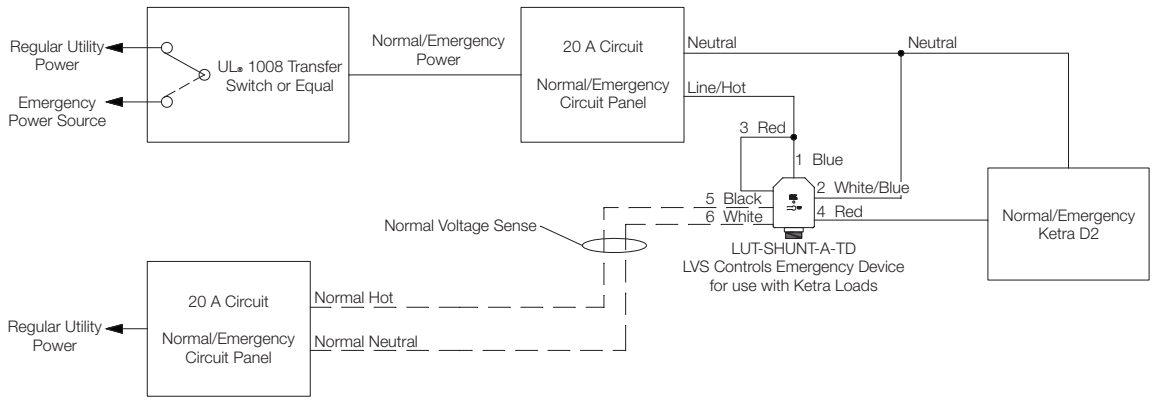
   b. Run the conduit into the D2 (and out, if this is one downlight in a sequence).

   Note: Maximum of (8) 12 AWG (4.0 mm²) through branch circuit conductors suitable for 165 ˚F (75 ˚C) are permitted in the housing.

   c. Run the building's power line wires* into the housing.
2. Install the LUT-SHUNT-A-TD in accordance to LVS installation instructions wired to the circuit feeding the Ketra D2
3. Splice the wires
   a. Using the provided connectors, wire the D2's flying leads according to the diagram below.

   Note: The Ketra D2's hot (black) will connect to the red #4 on the LUT-SHUNT-A-TD according to the diagram below.

   Note: The Ketra D2's neutral (white) will connnect to the emergency neutral and white/blue #2 on the LUT-SHUNT-A-TD according to the diagram below.



   b. Make sure the housing is installed and grounded in accordance with all national and local codes.
   c. Replace the service cover.
4. Test the wiring
   a. Apply power to the D2. The emitter should immediately come on to 3000 K (warm white).
   b. After verifying a successful installation, remove power and continue to Part 3.

* **Ketra lighting products should not be connected to, or directly controlled by, AC mains line voltage dimmers.** These types of dimmers may also be referred to as phase cut, triac, forward-phase, reverse-phase, ELV, or MLV dimmers. Ketra's lighting products should only be controlled via our digital control architecture. Ketra does not recommend switching power on/off to Ketra lighting products via relays, contactors, or manual toggle switches. When the lighting products are disconnected from power they cannot respond to digital commands from control devices. This could confuse end users as the lighting may be in a state that is inconsistent with the control devices. Please refer to the product installation guides for more information.

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Part 3: Installing into the Ceiling

1. Ensure that the aperture is plugged with the provided foam insert to protect the optic and downlight from dust ingress.
2. Cut a properly-sized hole in the ceiling before installing. Reference the table below for sizes.

Type	Hole shape and size
Flangeless mud-in square aperture	Square with 4 in (101.6 mm) length/width or circle with 5.25 in (133.4 mm) diameter
Flangeless mud-in round aperture	Circle with 4.25 in (108 mm) diameter
Flanged with square aperture	Square with 3 in (76.2 mm) length/width min. 3.25 in (82.55 mm) with 1/8 in (3.2 mm) rotozip bit
Flanged with round aperture	Circle with 3 in (76.2 mm) diameter min, 3.25 in (82.55 mm) with 1/8 in (3.2 mm) rotozip bit
Flangeless millwork with square aperture	Material above wooden ceiling (if applicable): Square with 5 in (127 mm) length/width Wood dimensions: Counterbore: Square with 5 in (127 mm) length/width, rounded corners with a radius of 0.5 in (12.7 mm). Plunge router is set to leave 0.375 in (9.5 mm) of material Thru hole: Square with 2.830 in (71.9 mm) length/width
Flangeless millwork with round aperture	Material above wooden ceiling (if applicable): Circle with 5 in (127 mm) diameter Wood dimensions: Counterbore: Circle with 5 in (127 mm) diameter. Plunge router is set to leave 0.375 in (9.5 mm) of material. Thru hole: Circle with 2.830 in (71.9 mm) diameter

3. Align the hole with the D2's aperture and install the drywall.

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Part 4a: Apply Flangeless Mud-In Trim Retainer

Note: This section only applies to flangeless mud-in installations. Proceed to page 17 for flangeless millwork trim retainer installation.

1. Align the retainer assembly such that the holes in the retainer line up with the screw posts in the collar (see fig. 14).
2. Secure the retainer assembly using the provided fasteners. For a ceiling thickness range of 0.625 in (15.9 mm) to 1.6875 in (42.9 mm) use the provided 0.71 in (18 mm) screw and for ceiling thicknesses above 1.75 in (44.5 mm) use the provided 1.2 in (30 mm) screw.

   Note: The retainer assembly should be flat against the drywall surface.

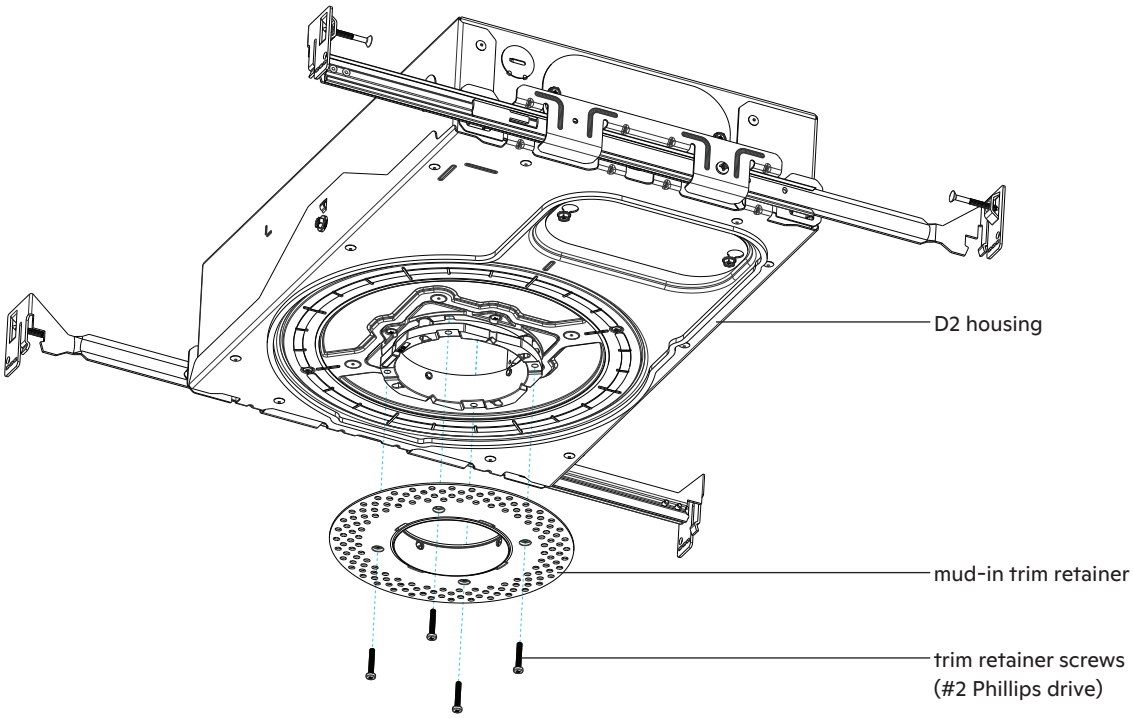

fig. 14

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Part 4b: Flanged, Mud-in, & Millwork Collars

The collar is an extension to the housing that sits between the ceiling surface and the downlight trim (see fig. 15). When choosing different trim types (flanged vs flangeless), the housings are the same but ship with different collars depending on the trim type specified. The collars can be changed if the design changes **before** the ceiling is installed.

Collar assemblies are available to purchase as separate accessories.

The table below shows which collar type should be selected based on the ceiling thickness and type.

Ceiling Type	Dimensions: in (mm)	Ceiling Thickness (collar type)
Flanged	0.625-1.25 (15.875-31.75)	Standard (S)
	1.3-2.0 (33.02-50.8)	Thick (T)
Flangeless Mud-In	0.625-1.0 (15.875-25.4)	Thin (N)
	1.0625-1.375 (27.0-34.9)	Standard (S)
	1.4375-2.0 (36.51-50.8)	Thick (T)
Flangeless Millwork	0.625-0.9375 (15.875-23.8125)	Thin (N)
	1.0-1.3125 (25.4-33.34)	Standard (S)
	1.375-1.6875 (34.9-42.8625)	Thick (T)
	1.75-2.0 (44.45-50.8)	Deep (D)

Mud-in and millwork collar assembly:

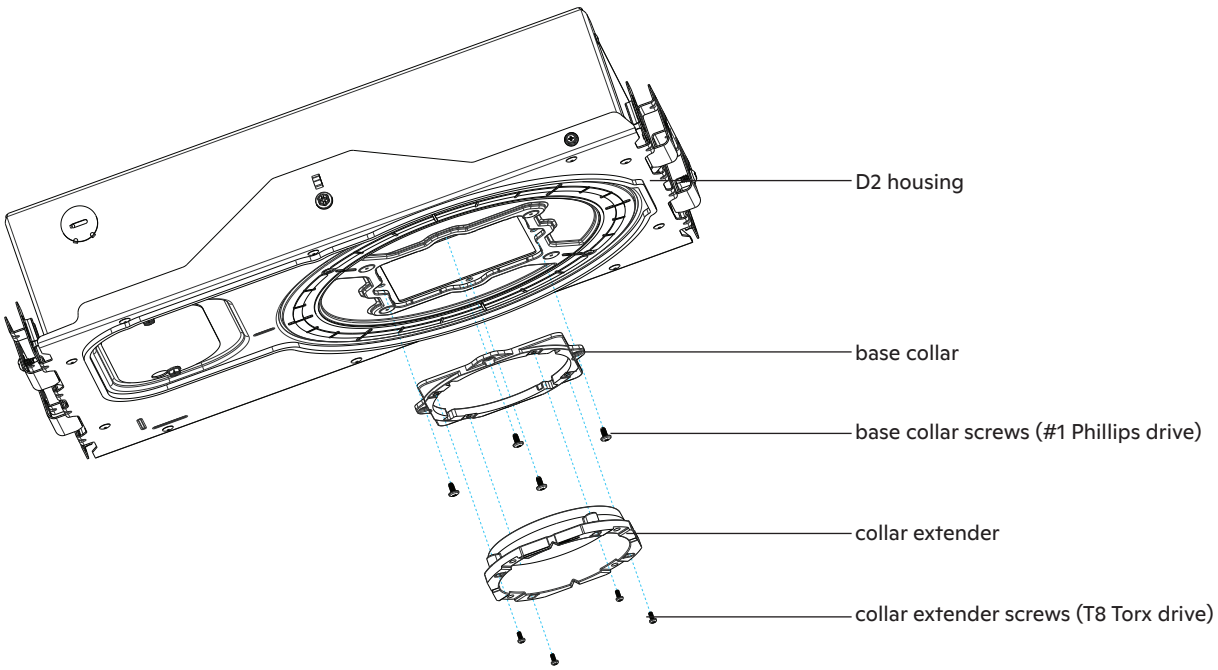

fig. 15

Part 4c: Changing a Flanged Collar or Collar Adapter Assembly (Flanged, Mud-In, or Millwork Applications)

1. Changing a collar adapter assembly
   a. Remove the four screws (#1 Phillips drive), holding the collar adapter to the D2 housing.
   b. Remove the collar adapter.
   c. Place the new collar adapter onto the RF window and fasten it with four screws (#1 Phillips drive).

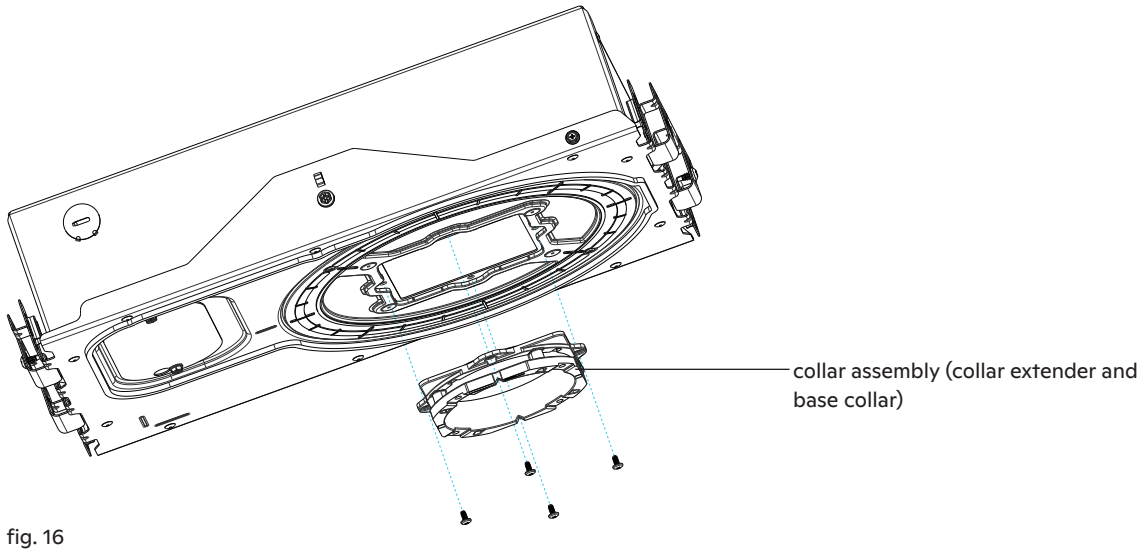

fig. 16

2. Changing a collar extender (mud-in and millwork applications only)
   a. Remove the four screws (T8 Torx drive) holding the collar extender to the collar base.
   b. Remove the collar extender.
   c. Place the new collar extender onto the collar base and fasten it with four screws (T8 Torx drive).

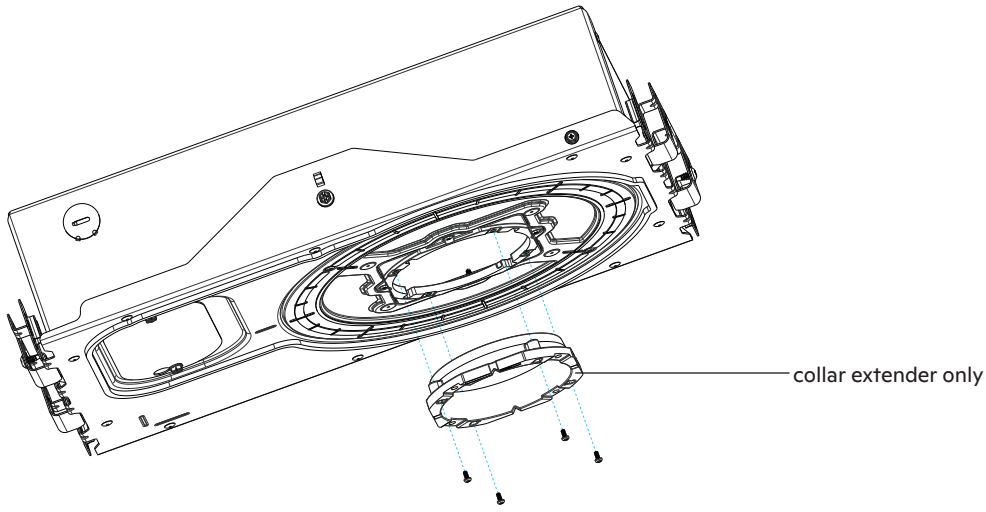

fig. 17

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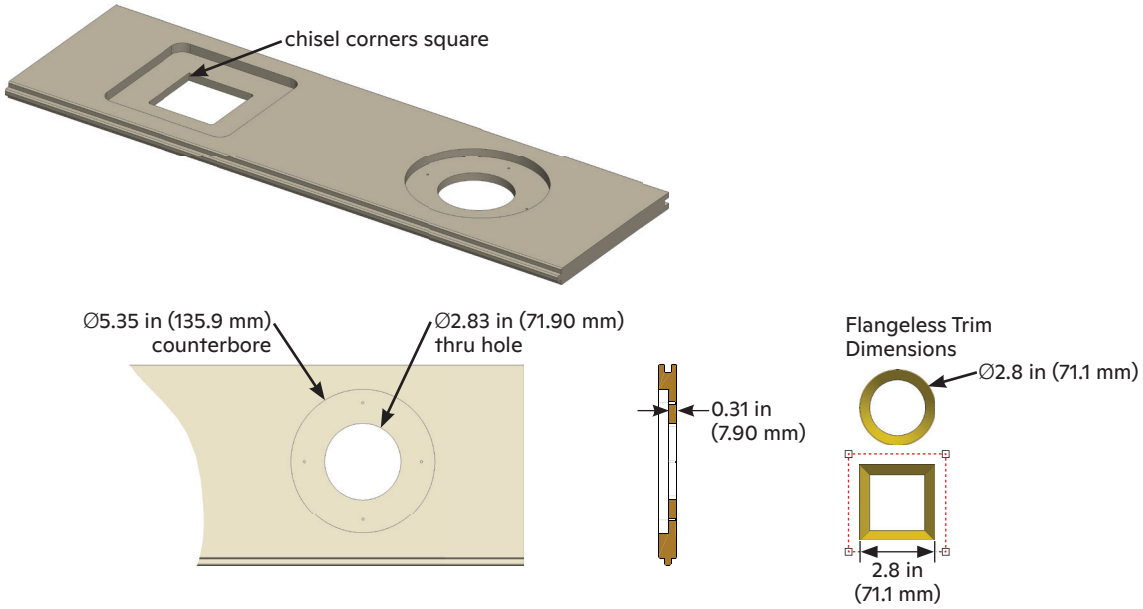
Part 4d: Flangeless Millwork Trim Retainer Installation (Wood Ceilings)

TOOLS

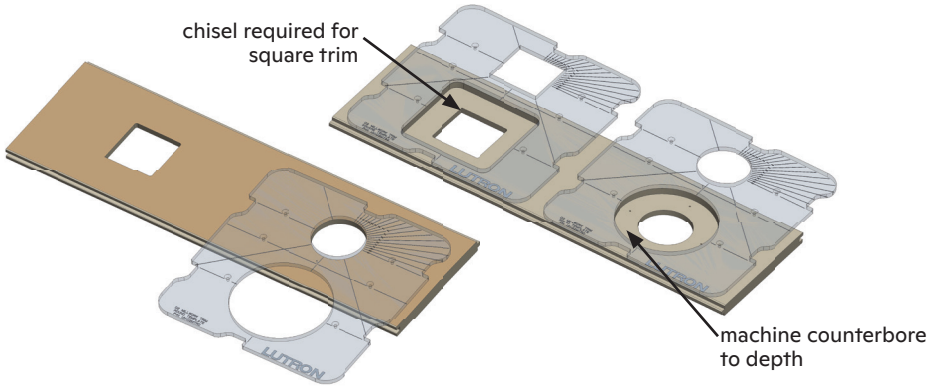
- Plunge router with bearing guided trim bit
- Routing template (available from Lutron)
- Chisel (for square trim)
- Drill bit (7/64 in [2.78 mm] for softwood, 1/8 in [3.175 mm] for hardwood)
- Drill bit stop (suggested due to shallow blind hole)
- Laser level

LOCATING TRIM LOCATION ON MILLWORK

1. Precision is required for milling the hole and counter bore for flangeless millwork installations.
2. Review drawing for important final dimensions. Flush trim requires a final wood thickness of 5/16 in (7.94 mm).

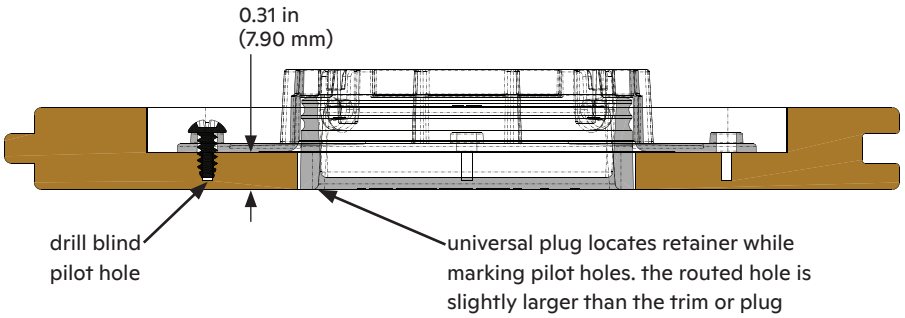


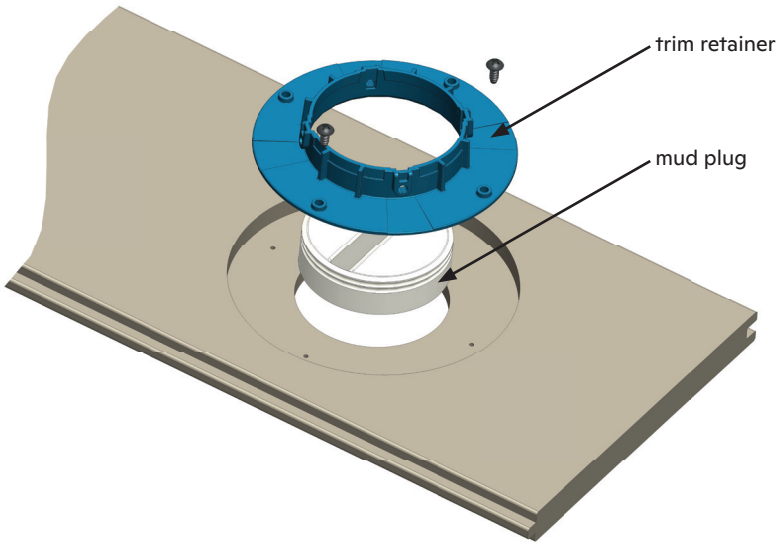
3. Trim location on millwork is based on the location of the recessed luminaire. Plan millwork butt joints to allow room for the mounting template and avoiding partial holes on end cuts. Fasten adjacent planks or narrow planks together to create a complete hole during routing. Luminaire mounting should allow small adjustments to align with millwork trim.
4. Fasten template (see **Part 4e: Millwork Templates** on page 19) to millwork with screws, double-sided tape or clamps. It is possible to use the template from the front face or back of the millwork depending on preference. The template includes reference edges and lines to help with location purposes. Drilling a small pilot hole at the center of the trim location can help transfer marks from the front to the back.



Part 4d: Flangeless Millwork Trim Retainer Installation (Wood Ceilings) *(continued)*

5. Follow the template to machine the millwork to the correct thickness and opening size (see table on page 15). Wood is a natural material that shrinks and swells with changes in moisture. Wood should be kiln-dried and acclimated to the environment before machining the final opening. Reference the installation guide for the millwork. Square trim will require a chisel to make a corner square.
6. Install the retainer into the counterbore. The retainer is centered on the routed opening. Confirm that the mud plug fits into the machined opening for the trim. The mud plug can be inserted into the retainer to help center the retainer on the opening. Note that there is some clearance between the opening and the mud plug to account for small changes in wood dimensions that can occur after the millwork is installed.
7. Pilot holes for the retainer fasteners are required. Use a depth stop on the drill to ensure the pilot hole is deep enough without drilling through the millwork. Test install a retainer and mud plug in a test piece of millwork before milling and installing on the ceiling. Install all four fasteners by hand or a light setting on a clutched driver. Most drill/drivers can over-torque the screws. The retainer should not move when installed properly. Confirm the mud plug is centered in the trim opening before installing the millwork.





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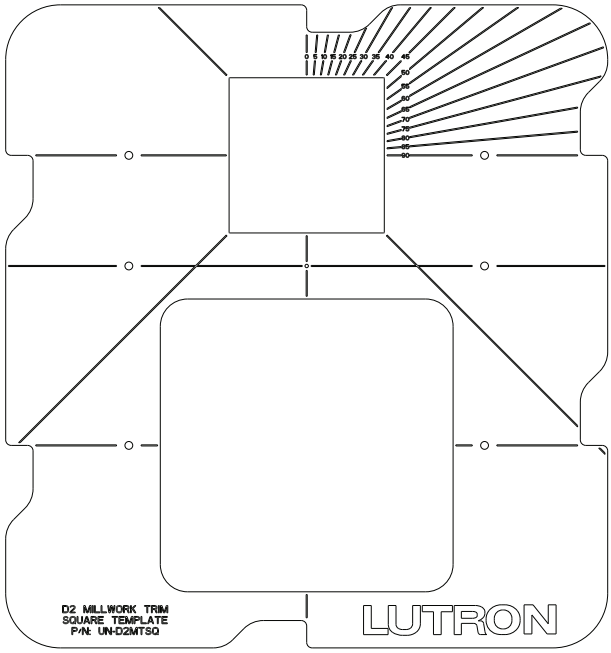
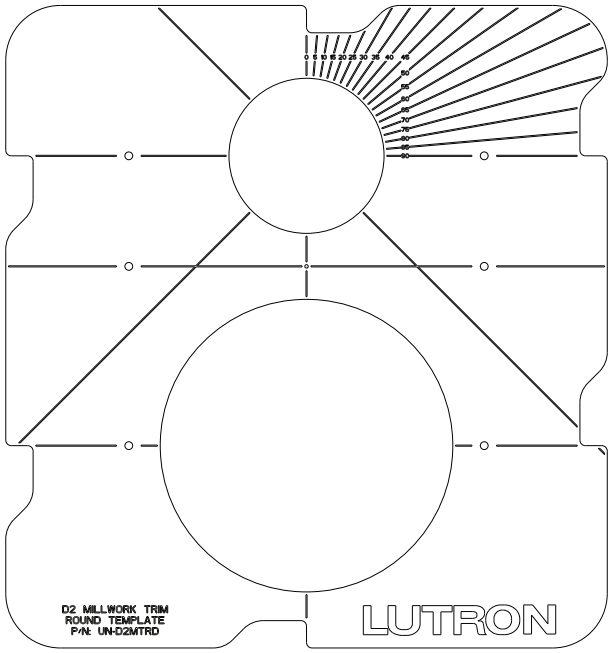
Part 4e: Millwork Templates

Acrylic square (UN-D2MTSQ) and round (UN-D2MTRD) routing templates are available to order through your myLutron account at www.mylutron.com. For more information, please contact Lighting Technical Support at lightingsupport@lutron.com or call 1.844.LUTRON1.



For the printable square D2 millwork template, download P/N 3663122 from www.lutron.com



For the printable round D2 millwork template, download P/N 3663121 from www.lutron.com

Part 5: Apply Joint Compound

Note: This section applies to flangeless mud-in installations only.

1. Make sure the mud-in plug is installed prior to applying the joint compound (see **fig. 18**).
2. Apply skim coat up to the aperture rim using a joint compound. For best results, use a full ceiling float coat.

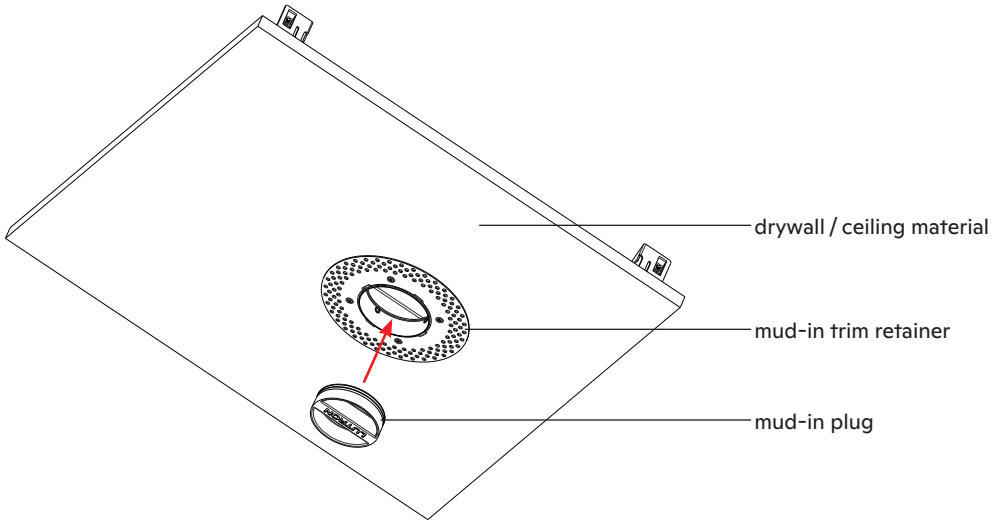


fig. 18

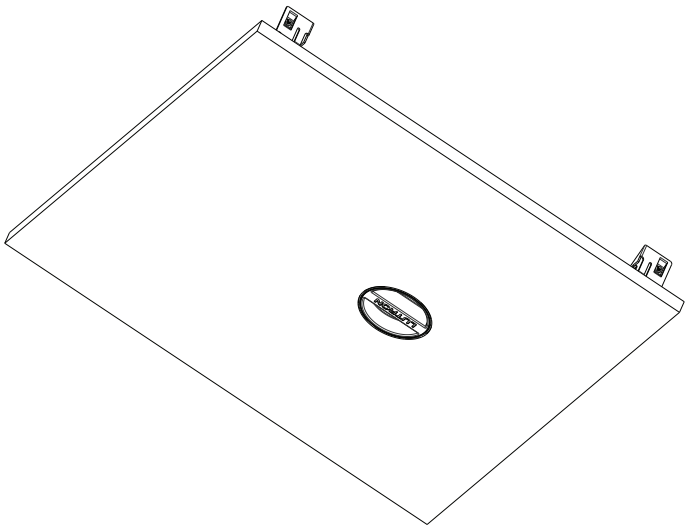


fig. 19

3. Sand and finish the final surface **before removing** the mud-in plug. Clean the internal surfaces of the trim retainer with a clean rag and isopropyl alcohol.

   Note: It is critical to make sure that the mud-in plug is installed prior to applying the joint compound and finishing the surface. After finishing, ensure the internal surface of the trim retainer is completely free of joint compound, paint, and debris.

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Part 6: Apply Trim

Flangeless mud-in and flanged downlights have different processes for applying their trims. Please follow the instructions of the appropriate section below.

1. Applying trim to **flangeless mud-in or millwork downlight**
   a. Press the flangeless trim into the trim retainer (see **fig. 20**).
   Note: After installation, the flangeless trim must be fully flush with the ceiling surface.

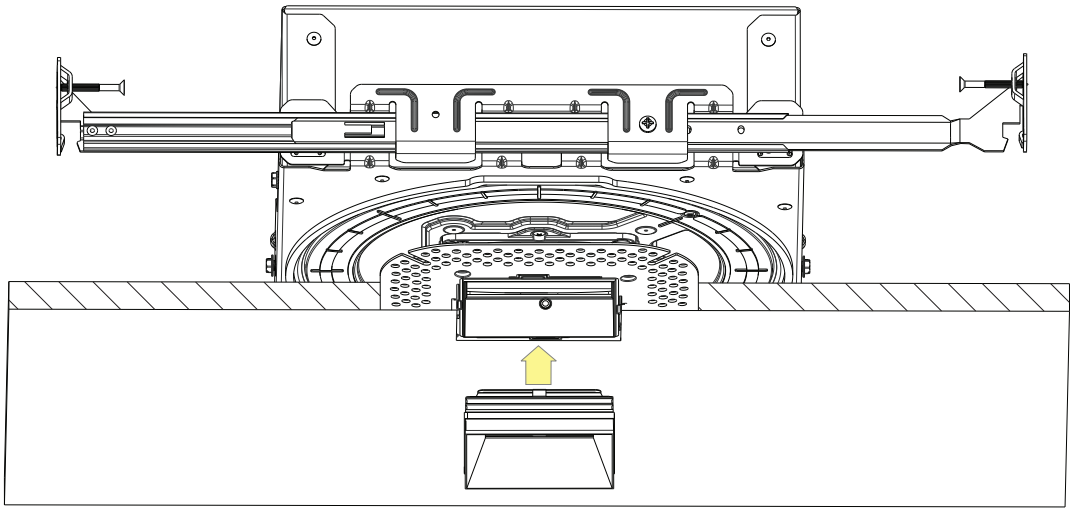

fig. 20

2. Applying trim to **flanged downlight**
   a. Ensure the trim springs are fully compressed and engaged with the inner surface of the flanged collar. Use caution to make sure the springs are in contact with the inner surface of the collar and do not engage between the outer surface of the collar and the ceiling material (see **fig. 21**).
   b. Snap the trim into the collar.

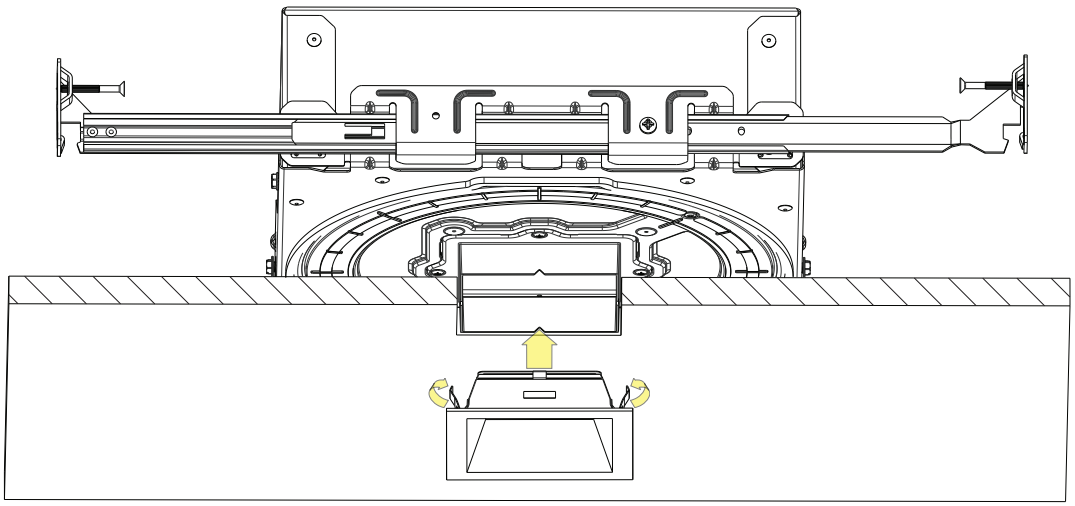

fig. 21

Additional Operations

RE-AIMING THE OPTIC

1. Unlock the emitter chassis by loosening the lock screw with the 4 mm hex tool (see fig 22).
   Note: A 4 mm T-handle ball-ended hex tool is recommended to ease the operation.
2. Using the same 4 mm hex tool, use the rotate control point to rotate the optic (see fig 23).
3. Re-lock the lock screw used in step 1a.
4. Using the 4 mm hex tool use the tilt control to aim the emitter (see fig 24).
5. Use the degree indicators that are opposite of the tilt controls to determine the tilt angle (see fig 25).

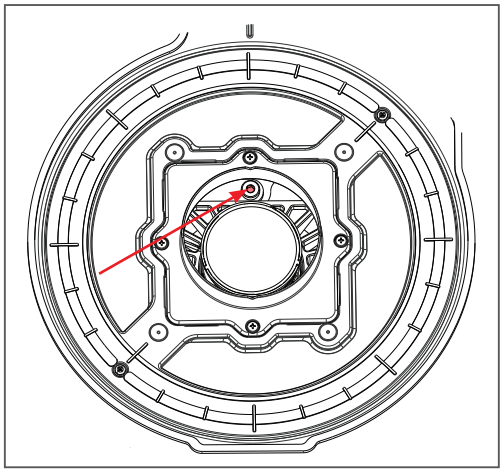

fig. 22 (rotation lock)

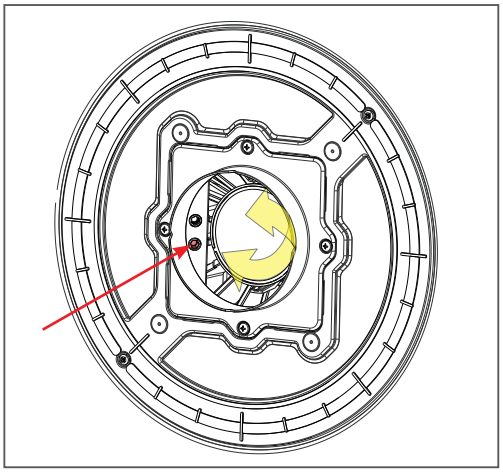

fig. 23 (rotate)

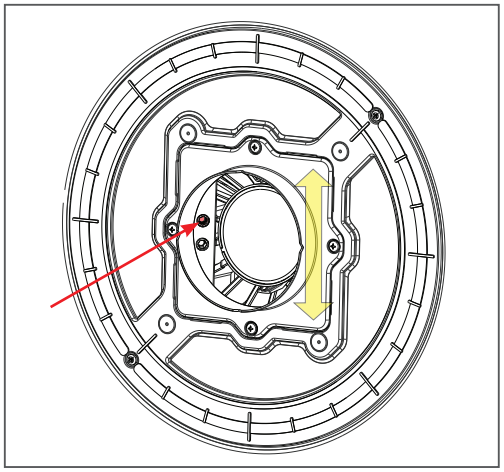

fig. 24 (tilt)

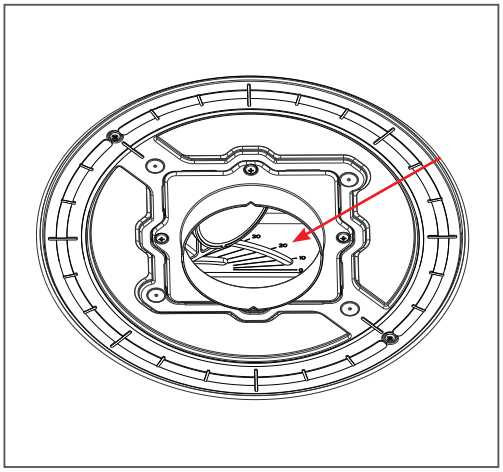

fig. 25 (degree indicators)

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REMOVING THE OPTIC

1. Remove any optic accessories present by pulling the accessory retainer directly down from the optic. Set the accessory lenses aside. Please refer to the **Trim & Optic Accessory Lenses** section starting on page 28 for more information.
2. By hand or with the suction tool (PU0950), gently twist counterclockwise to un-snap the optic and remove it from the D2 housing (see **fig 26**).

INSTALLING THE OPTIC

1. Carefully insert the optic into the D2 housing, using caution to not touch any exposed components on the light engine, **especially the silicone dome**.
2. Gently twist the optic clockwise until it snaps into place (see **fig 27**).

USING AN ACCESSORY LENS

1. Gently push the optic lens retainer onto the optic until the retainer snaps into place.
2. Rotate the optic lens retainer clockwise and counterclockwise until one of the four tabs snaps into position.

   Note: For Ketra full spectrum light engines, the spot beam angle (15°) optic must be used with a compatible spot light engine. Narrow flood (25°), flood (40°), and wide flood (60°) optics are interchangeable with the standard light engine.

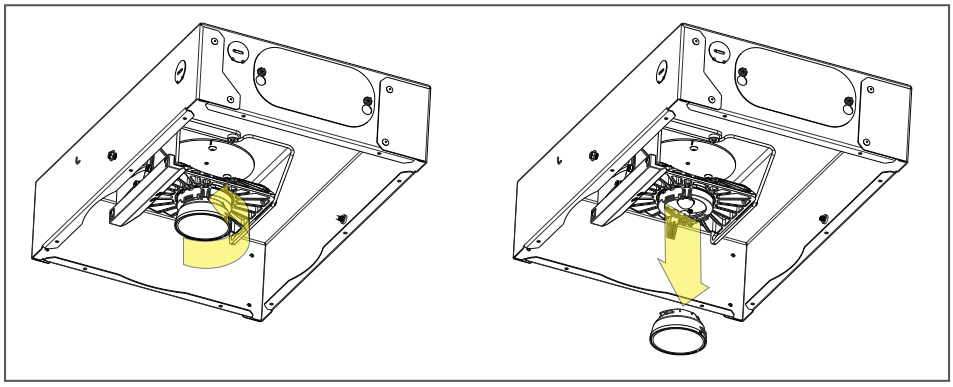

fig. 26

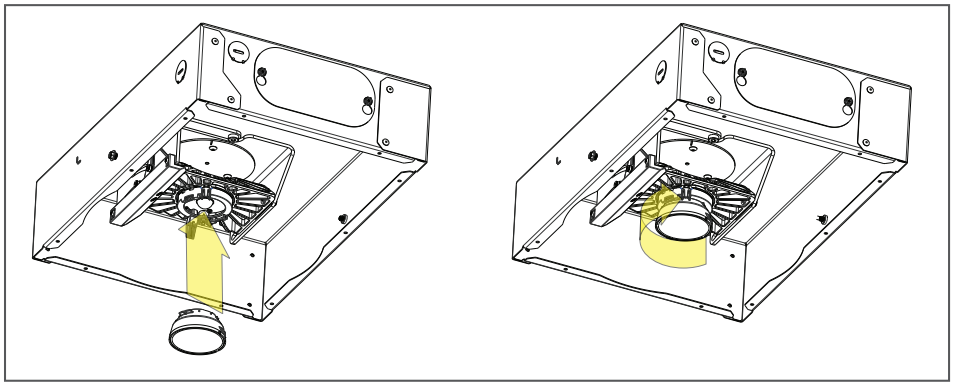

fig. 27

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Part 1: Wall Wash Configurations

RE-AIMING THE OPTIC

1. Remove the trim by pulling it directly down from the housing.
2. Insert the 4 mm hex tool into the hex-shaped pocket directly behind the arrow on the base plate (see **fig. 28**).
3. Rotate the light engine to the desired position.
4. Reinstall the trim.

   Note: For full performance, the trim must be aligned with the primary optic as shown (see **fig. 29**).

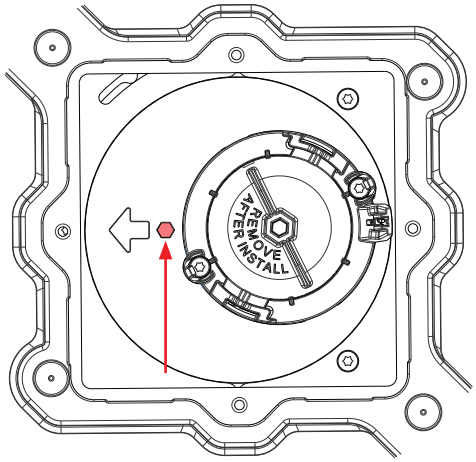


fig. 28

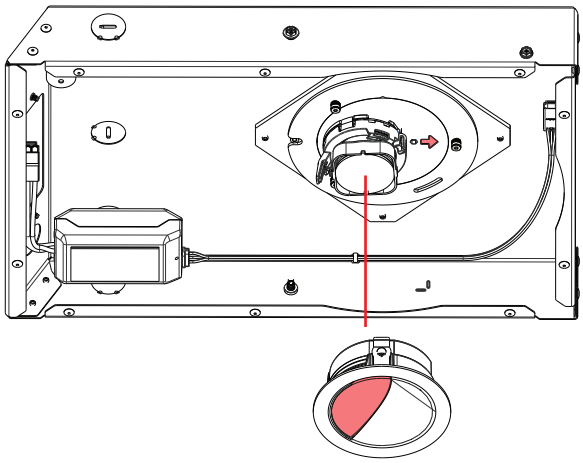


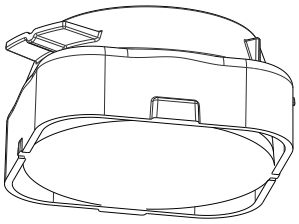
fig. 29

UNIQUE COMPONENTS OF WALL WASH CONFIGURATIONS

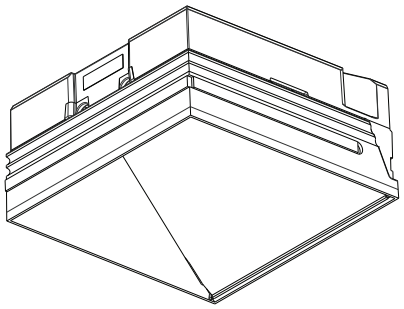
The optical components of wall wash configurations are unique and cannot be interchanged with other D2 optical components. This includes:

- Primary optic
- Trim
- Trim lens

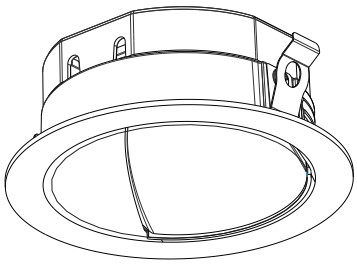
  Note: These parts can only be used for wall wash applications and cannot be interchanged with other beam angles, trims, or optic / trim accessories.



Primary optic



Flangeless square wall wash trim



Flanged round wall wash trim

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Part 2: Replacing the Light Engine

1. Remove the trim by pulling it directly down from the housing.
2. Remove the optic by hand or by using the suction tool (PU0950).
3. Use a T10 screwdriver to remove the 2 screws from the light engine (see **fig. 30**).
4. Carefully lower the light engine from the D2 housing.
   Note: For adjustable only, remove the wire from the clip on the heat sink (see **fig. 31**).
5. Disconnect the light engine wire connector.
6. Connect the new light engine wire connector.
7. Press the 4 mm hex tool into the light engine cover.
8. Insert the light engine into the D2 housing and align it as shown (see **fig. 33, 34, and 35**).
9. Fasten the screws with a T10 screwdriver until it is hand-tight. Use caution to not over tighten the screws.
   Note: For adjustable only, insert the wire into the clip on the heat sink.
10. Using the 4 mm hex tool, turn the light engine cover counterclockwise to remove it.
11. Reinstall the optic by hand or with the suction tool (PU0950).
12. Reinstall the trim.

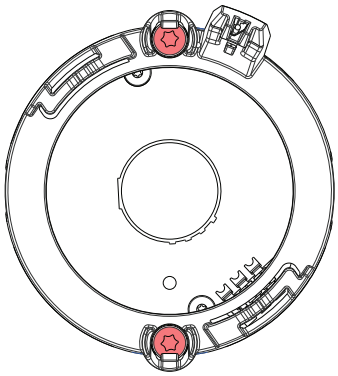

fig. 30

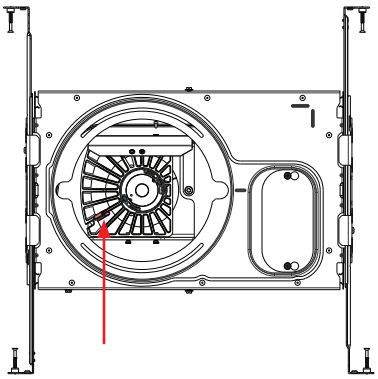

fig. 31

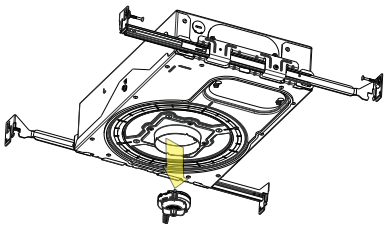

fig. 32

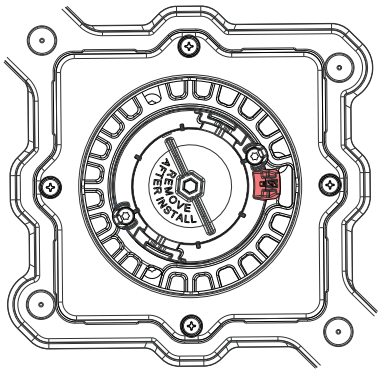

fig. 33

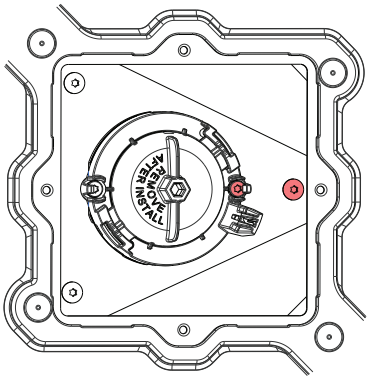

fig. 34

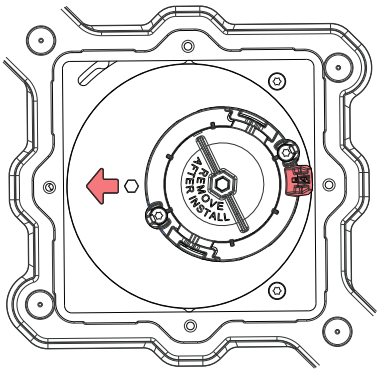

fig. 35

Part 3: Replacing the Power Supply

WARNING: ELECTRICAL SHOCK HAZARD. May result in serious injury or death. Turn off power at circuit breaker or fuse before installing.

1. Power supply removal
   a. Remove the trim by pulling it directly down from the housing.
   b. For adjustable configurations only, tilt the armature to 0° using the 4 mm hex tool.
   c. Using the suction tool (PU0950) or gloved hands, carefully remove the optic. See page 23 for more information on removing the optic.
   d. Remove the light engine by unscrewing the two captive fasteners with a T10 screwdriver on either side of the light engine.
   e. For adjustable configurations only:
      - Unclip the wire harness from the heatsink clip.
      - Tilt the armature to 40° using the 4 mm hex tool.
      - Release the set screw using the 4 mm hex tool and rotate the armature clockwise or counterclockwise until the armature cannot rotate further.
   f. Disconnect the light engine wiring connector.
   g. Grasp the cable at the aperture opening and pull the cable to detach the power supply from the hook and loop fastener inside the fixture (see fig. 36).
      - Twist from side to side to assist in the removal.
      - Note the power supply location within the housing for replacement installation.
   h. Remove the power supply from the D2 housing.
   i. Disconnect the power supply connector.

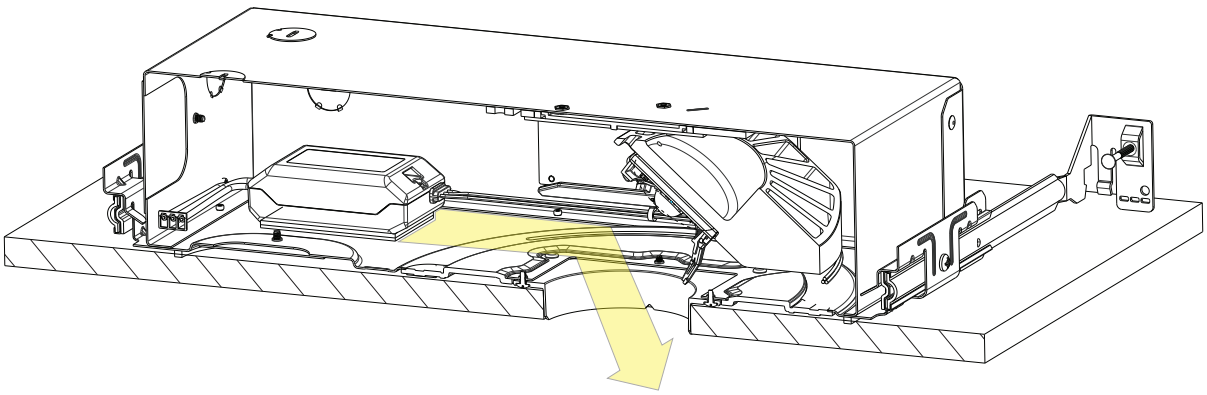

fig. 36

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Part 3: Replacing the Power Supply *(continued)*

2. Power supply installation
   a. Connect the power supply using the power supply connector (see **fig. 37**).
   b. Insert and then push the power supply into the housing until it engages with the hook and loop fastener (see **fig. 38**).
   c. Connect the light engine using the power supply connector.
   d. For adjustable configurations only, tilt the armature to 0° using the 4 mm hex tool.
   e. Install the light engine using the two captive fasteners on either side of the light engine using a T10 screwdriver.
   f. For adjustable configurations only, clip the wire harness into the heatsink clip.
   g. Using the suction tool (PU0950) or gloved hands, carefully install the optic. See page 23 for more information on installing the optic.
   h. For adjustable configurations only, tilt the armature as desired using the 4 mm hex tool.
   i. Reinstall the trim.

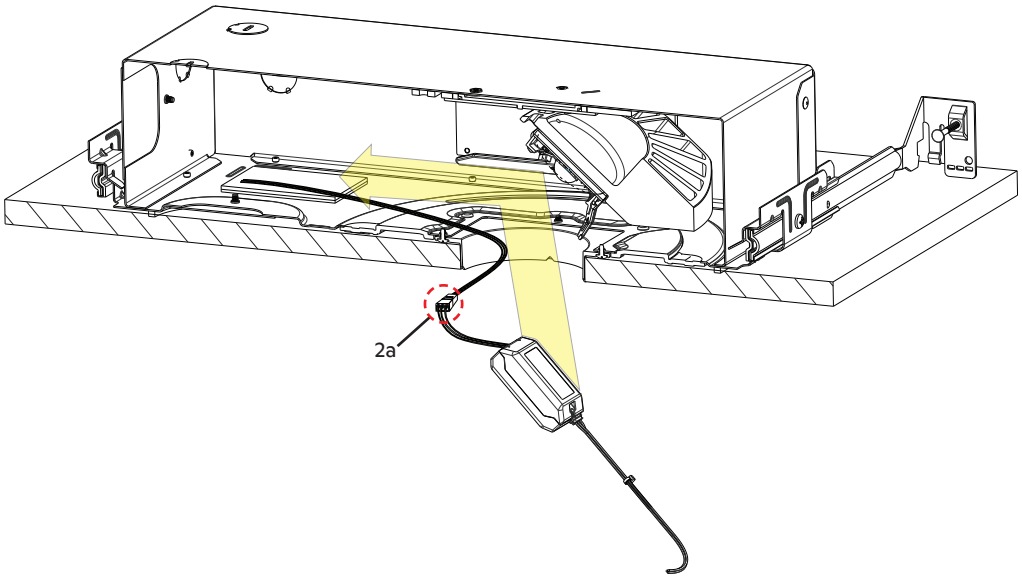

fig. 37

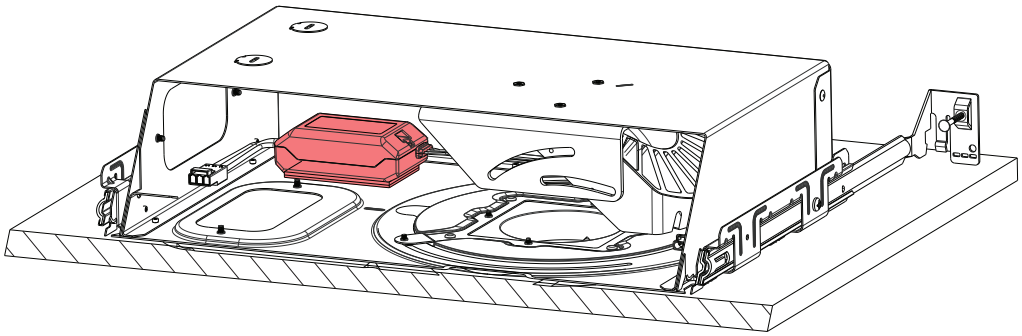

fig. 38

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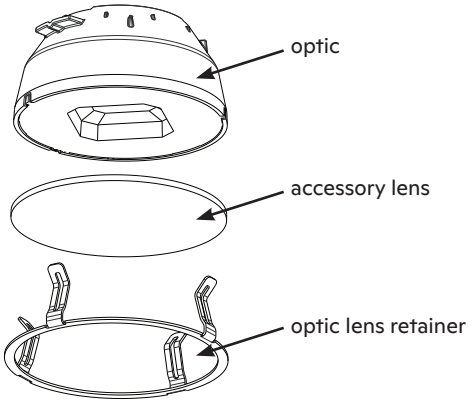
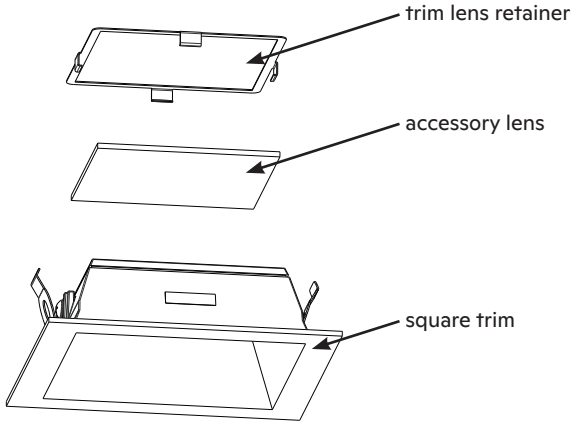
Trim & Optic Accessory Lenses

1. Preparing a replacement accessory lens
   a. If the lens was purchased separately, a protective film and identifying label will be present on the lens.
   b. Gently peel back the protective film adhered to the lens. This film is on the same side as the identifying label.
   c. If the lens needs to be cleaned, use a lint free microfiber cloth and water. Do not use chemicals to clean the lenses.





2. Replacing an accessory lens on the primary optic
   a. Using the suction tool (PU0950), gently remove any existing lenses on the optic. If none are present, skip this step.

   Note: This is also necessary for replacing the optic. See page 23 for more information on removing and installing the optic.

   b. Place the new accessory into the optic lens retainer.

   Note: For soft focus accessory lenses, it is recommended to orient the lens with the textured side facing towards the room for best optical results.

   c. Gently push the optic lens retainer onto the optic until the retainer snaps into place.
   d. Rotate the optic lens retainer clockwise then counterclockwise to ensure one of the four tabs snaps into position as shown in fig. 39 below.

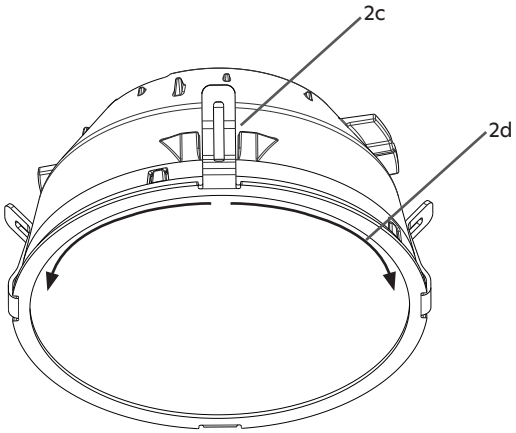


fig. 39

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3. Installing or replacing an accessory lens on the trim
   a. Using the suction tool (PU0950), remove the trim. If no trim lens is present, remove the trim by hand.
   b. Remove the trim lens retainer (if present) from the trim by pressing on the side of the clip and pulling away from the trim (see fig. 40).
   c. Place the new lens onto the trim, ensuring it is fully seated in the trim.

   Note: For soft focus accessory lenses, it is recommended to orient the lens with the textured side facing towards the room for best optical results.

   d. Clip the trim lens retainer onto the trim and then reinstall the trim.

   Note: Ensure that all four tabs on the lens retainer are fully seated in the trim retainer groove on the trim.

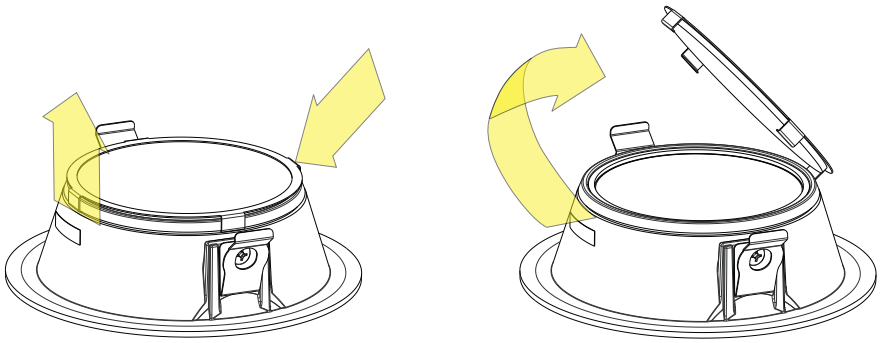
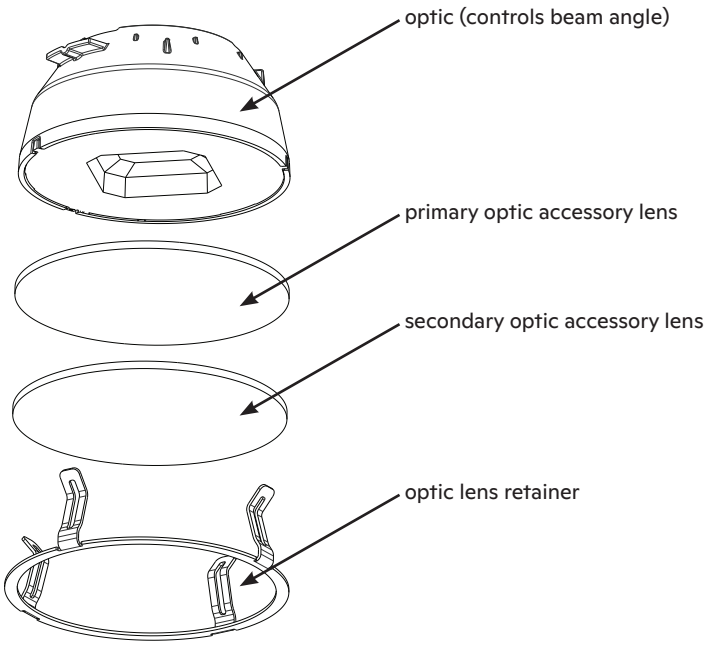


fig. 40

Note: The optic lens retainer can accommodate up to two accessory lenses on the primary optic.



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