N° eight LIGHTING ®

400 SERIES
NEW CONSTRUCTION
TYPE IC RATED
INSTALLATION INSTRUCTIONS

WARNING: Read and understand these instructions completely before installation. Disconnect power at circuit breaker or fuse panel before installation. Always allow LED assembly to cool before servicing. To be installed by qualified electricians only. Products should be installed in accordance with these instructions, local electrical codes, and the National Electric Code (NEC). These products may represent a possible shock or fire hazard if improperly installed.

Do not install where insulation or ambient temperatures will exceed maximum values noted in product specifications. See www.8lighting.com for current product specifications.

NOTE: Number Eight Lighting fixtures are designed to meet the latest NEC requirements and are listed in full compliance with UL standards. Before attempting installation check and understand your local electrical code which sets the wiring standards and installation requirements for your locality.
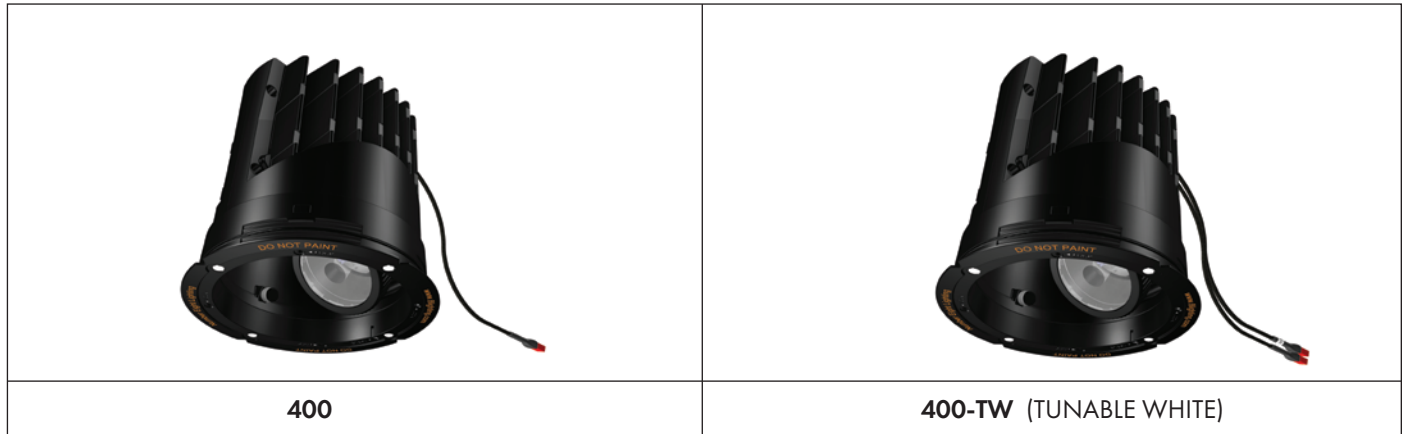
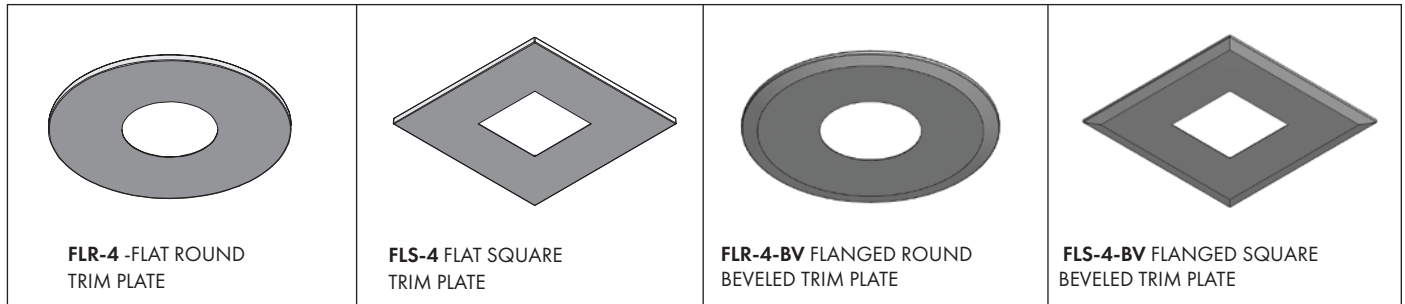**Save these instructions.**

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400 SERIES COMPONENTS

LED NEW CONSTRUCTION HOUSING + LIGHT ENGINE   AIR-TIGHT + I.C. RATED

400	**400-TW** (TUNABLE WHITE)

400 SERIES – TRIMS

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400 SERIES – FLANGELESS TRIMS for SHEETROCK CEILING APPLICATIONS

FR-4 TRIM PLATE	**FR-4** FLANGELESS TRIM	**FS-4** TRIM PLATE	**FS-4** FLANGELESS TRIM
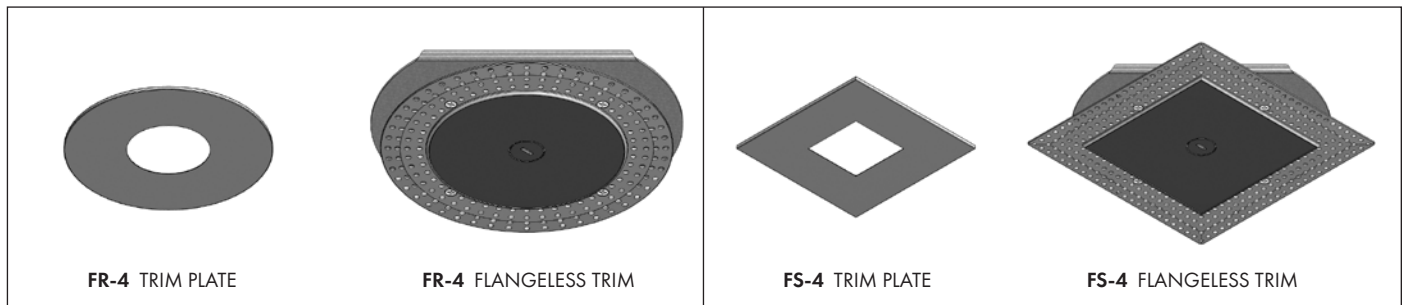
400 SERIES – OPTIC OPTIONS + ACCESSORIES

|		
TIR-10 10° Very narrow spot* **TIR-15** 15° Narrow spot **TIR-15T** 15° Narrow spot** **TIR-25** 25° Narrow flood **TIR-40** 40° Flood *For use with HI-2 LED option only ** For use with TW LED option only **TIR-10/15/25/40** **TIR-15T**	**NSP** Narrow softening lens **NFL** Medium softening lens **FL** Wide softening lens **WFL** Extra wide softening lens **LS** Linear spread lens	**CF-24** 2400K Color filter **CF-27** 2700K Color filter **CF-35** 3500K Color filter

1
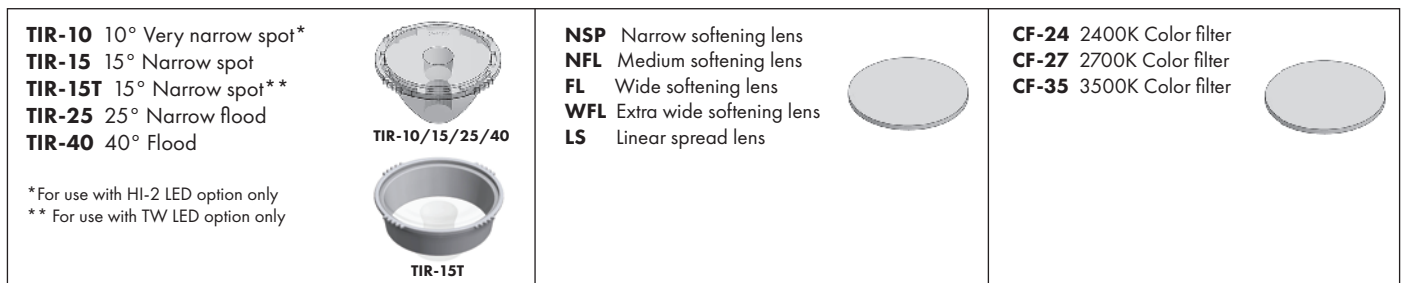
400 SERIES COMPONENTS

NEW CONSTRUCTION MOUNTING FRAMES for FLANGED TRIM INSTALLATION
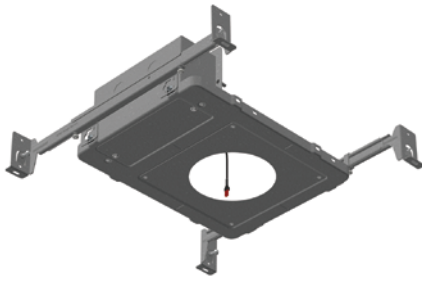
FRM2-4 MOUNTING FRAME for FLANGED INSTALLATION WITH **FLR-4/FLR-4-BV** ROUND or **FLS-4/FLS-4-BV** SQUARE trims in Sheetrock/Wood/Stone ceilings.
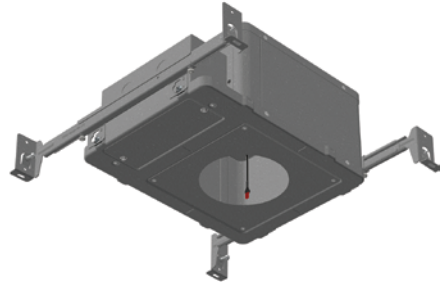
FRM2-4-CP MOUNTING FRAME for FLANGED INSTALLATION with **FLR-4/FLR-4-BV** Round or **FLS-4/FLS-4-BV** SQUARE trims in Sheetrock/Wood/Stone ceilings. CCEA plenum rated for City of Chicago environmental air spaces and rated for direct contact with spray-foam insulation.
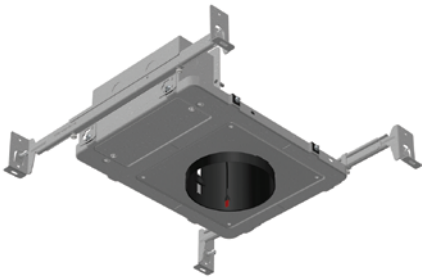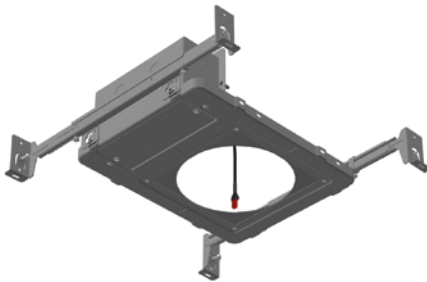

FRM2-4T MOUNTING FRAME for FLANGED INSTALLATION WITH **FLR-4/FLR-4-BV** ROUND or **FLS-4/FLS-4-BV** SQUARE trims in Acoustic Tile/Fabric ceilings.
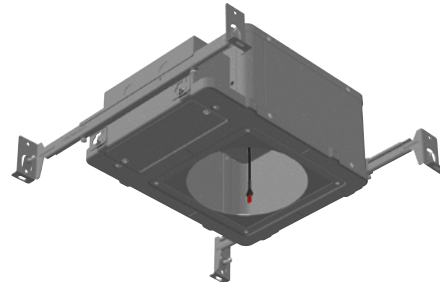

FRM2-4T-CP MOUNTING FRAME for FLANGED INSTALLATION with **FLR-4/FLR-4-BV** Round or **FLS-4/FLS-4-BV** SQUARE trims in Acoustic Tile/Fabric ceilings. CCEA plenum rated for City of Chicago environmental air spaces and rated for direct contact with spray-foam insulation.
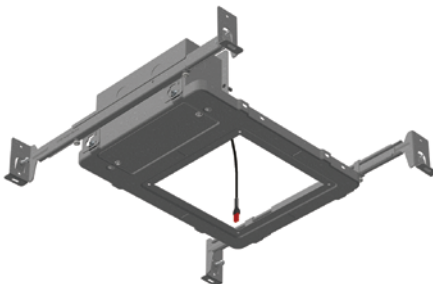
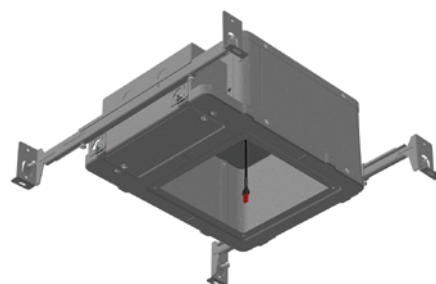NEW CONSTRUCTION MOUNTING FRAMES for FLANGELESS TRIMS with SHEETROCK CEILINGS

FRM2-R6 MOUNTING FRAME for FLANGELESS INSTALLATION with **FR-4** trim in Sheetrock ceilings.

FRM2-R6-CP MOUNTING FRAME for FLANGELESS INSTALLATION with **FR-4** ROUND trim in Sheetrock ceilings. CCEA plenum rated for City of Chicago environmental air spaces and rated for direct contact with spray-foam insulation.

FRM2-S6 MOUNTING FRAME for FLANGELESS INSTALLATION with **FS-4** SQUARE trim in sheetrock ceilings.

FRM2-S6-CP MOUNTING FRAME for FLANGELESS INSTALLATION with **FS-4** SQUARE trim in sheetrock ceilings. CCEA plenum rated for City of Chicago environmental air spaces and rated for direct contact with spray-foam insulation.

400 SERIES COMPONENTS

NEW CONSTRUCTION MOUNTING FRAMES for FLANGELESS TRIM INSTALLATION with WOOD/STONE CEILINGS

FRM2-4W-R MOUNTING FRAME for FLANGELESS INSTALLATION with **FLR-4** ROUND FLAT trim in Wood/Stone ceilings.

FRM2-4W-R-CP MOUNTING FRAME for FLANGELESS MOUNTING ROUND FLAT trim in Wood/Stone ceilings. CCEA plenum rated for City of Chicago environmental air spaces and rated for direct contact with spray-foam insulation.

FRM2-4W-S MOUNTING FRAME for FLANGELESS INSTALLATION with **FLS-4** SQUARE FLAT trim in Wood/Stone ceilings.

FRM2-4W-S-CP MOUNTING FRAME for FLANGELESS INSTALLATION with **FLS-4** SQUARE FLAT trim in Wood/Stone ceilings. CCEA plenum rated for City of Chicago environmental air spaces and rated for direct contact with spray-foam insulation.

Note: Mounting frames are Airtight and IC rated for direct contact with standard thermal insulation with a max R-value of R-42 (may also be installed in Non-IC applications). Not for use with spray-foam insulation. Frames include power supply, junction box and mounting accessories.
Caution: When installed in contact with thermal insulation, ambient temperatures in ceiling space should not exceed 25°C (77°F) during normal operation.
For installations where insulation is held back a minimum of 3" from sides and top, ambient temperatures in ceiling space should not exceed 40°C (104°F) during normal operation.

Note: CP Mounting frames are Airtight and IC rated for direct contact with standard or spray-foam thermal insulation with a max R-value of R-42 (may also be installed in Non-IC applications). Frames include power supply, junction box and mounting accessories.
Caution: When installed in contact with thermal insulation, ambient temperatures in ceiling space should not exceed 25°C (77°F) during normal operation.
For installations where insulation is held back a minimum of 3" from sides and top, ambient temperatures in ceiling space should not exceed 40°C (104°F) during normal operation.

FRAME MOUNTING ACCESSORIES
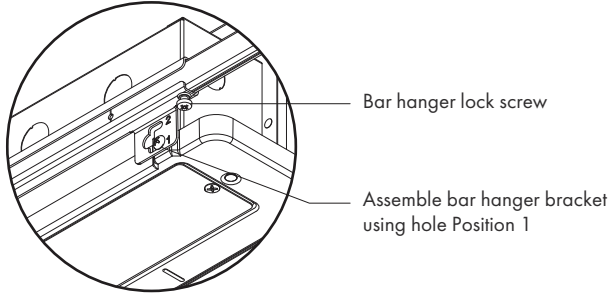
BB BUTTERFLY BRACKET
(Set of 2)
For commercial c-channel or bar mounting

BH BAR HANGER
(Set of 2)
For joist mounting)

PMB PANEL MOUNTING BRACKET
(Set of 2)
For direct mounting to wood panels

TBC T-BAR MOUNTING CLIPS
(Set of 4)
For use with BH Bar Hanger in T-GRID ceiling applications

NEW CONSTRUCTION INSTALLATION
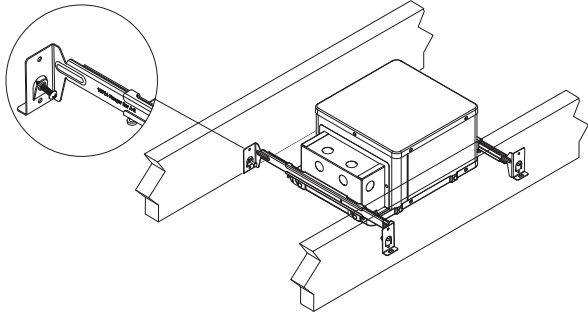
STEP 1 - MOUNTING FRAME ASSEMBLY AND INSTALLATION

BH - BAR HANGER MOUNTING OPTION

1a. Attach bar hangers to either ends or sides of mounting frame using hole position 1

Bar hanger lock screw

Assemble bar hanger bracket using hole Position 1
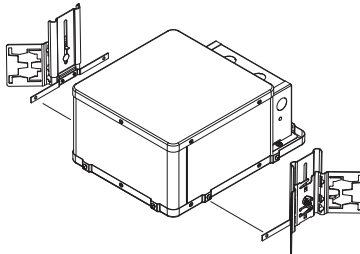
1b. Attach mounting frame to joists
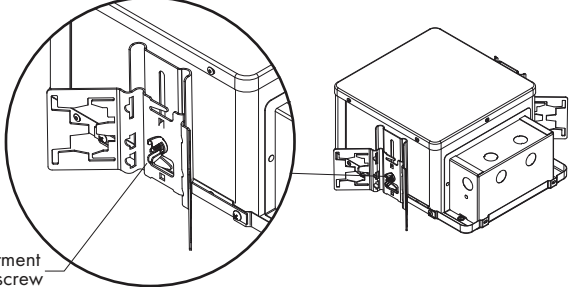
BB - BUTTERFLY BRACKET MOUNTING OPTION

1a. Attach butterfly brackets to either ends or sides of mounting frame
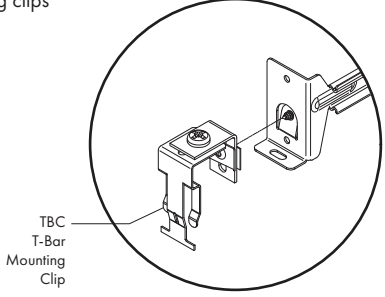
1b. Attach supports to bracket and adjust height with thumbscrew

Adjustment Thumbscrew

TBC-BH - T-BAR CLIP + BAR HANGER MOUNTING OPTION

1a. Assemble bar hangers as shown above and attach T-BAR mounting clips

TBC T-Bar Mounting Clip

1b. Attach T-BAR clips to T-BARS
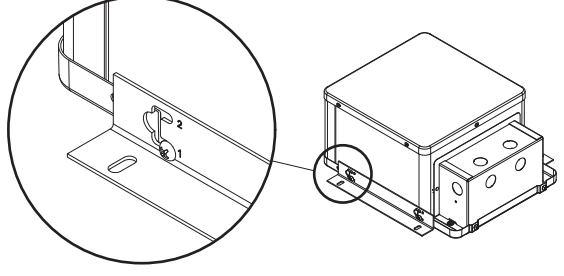
PMB - PANEL MOUNTING BRACKET OPTION

1a. Attach panel mount brackets to either ends or sides of mounting frame.

1b. Attach panel mount brackets to panel using hole position 1.

FRM2-4 & FRM2-4-CP - FLANGED TRIM INSTALLATION with SHEETROCK/WOOD/STONE CEILINGS

BH
Bar Hanger
Mounting Option

TBC
T-BAR Mounting
Clip Option

PMB
Panel Mount
Bracket Option

FRM2-4
Mounting Frame + Power Supply
12"L* x 9-1/4"W* x 4-1/4"H**
*Add 3" to the length or width to accommodate mounting accessories
**Add 5/8" to the height to accommodate housing + light engine

BB
Butterfly Bracket
Mounting Option

Ø 4-1/2" Cut Out

400 Housing + Light Engine

BH
Bar Hanger
Mounting Option

TBC
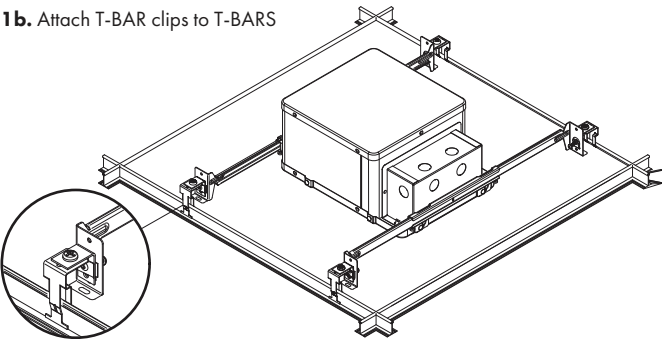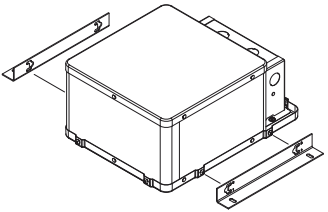T-BAR Mounting
Clip Option

PMB
Panel Mount
Bracket Option

FRM2-4-CP
Mounting Frame + Power Supply
12"L* x 9-1/4"W* x 5-3/8"H
*Add 3" to the length or width to accommodate mounting accessories

BB
Butterfly Bracket
Mounting Option

Ø 4-1/2" Cut Out

400 Housing + Light Engine

FLR-4
Trim Plate

FLS-4
Trim Plate

FLR-4-BV
Trim Plate

FLS-4-BV
Trim Plate

CEILING TYPES: Sheetrock, Wood or Stone | CEILING THICKNESS: 1/2" Min to 5-1/2" Max | CUT-OUT: Ø 4-1/2"

STEP 1 – **FRM2-4** AND **FRM2-4-CP** MOUNTING FRAME ASSEMBLY AND INSTALLATION (see page 4)

STEP 2 – FIXTURE WIRING

2a. Disconnect power at circuit breaker.

2b. Remove junction box cover and install appropriate conduit connector(s) using one or more of the provided junction box knock-outs.

2c. Review wiring diagrams on Pages 19-21, wire fixture accordingly. Place all wiring and connectors back in junction box and replace cover.

Note: 0-10v, DALI, or Lutron EcoSystem power supplies (if specified) require additional dimming control wiring.

Junction Box

Connections for 0-10v, DALI, or Lutron EcoSystem control wiring (if specified)

Ground Wire

Line voltage input wiring

Junction box cover

FRM2-4 & FRM2-4-CP - FLANGED TRIM INSTALLATION with SHEETROCK/WOOD/STONE CEILINGS

3a. Install ceiling material over **FRM2-4** or **FRM2-4-CP** Mounting Frame. Make Ø4-½" cut-out in ceiling material using spiral saw with appropriate guide bit using aperture plate as guide.
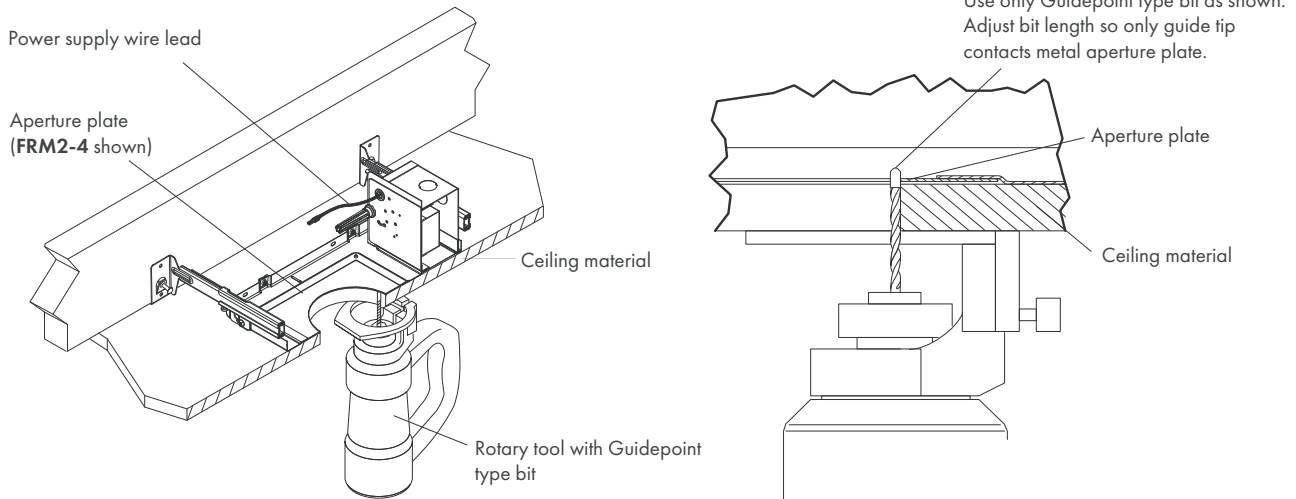
Power supply wire lead

Aperture plate (**FRM2-4** shown)

Ceiling material

Rotary tool with Guidepoint type bit

Use only Guidepoint type bit as shown. Adjust bit length so only guide tip contacts metal aperture plate.

Aperture plate

Ceiling material

4a. Support housing and connect fixture wire lead to power supply wire lead. For model 400-TW ensure connectors labeled "W" are attached together.

For 400 only

For 400-TW only

"W" labels

4b. Remove temporary dust cover and save. Install housing into mounting sleeve.

Housing Flange

Dust Shield

4c. Rotate housing flange so notches are aligned with adjacent walls or fixtures.

Wall Line
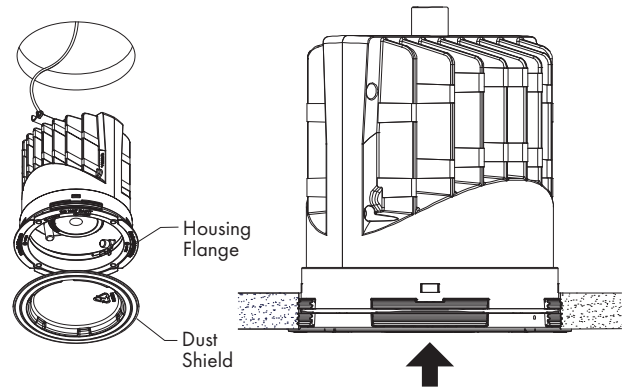
4d. Locate (4) four locking screws. While applying upward pressure on housing flange, hand tighten using supplied 3/32" hex-key. Ensure housing flange is tight against finished ceiling. **Caution:** Ceiling finish must not extend above backside of housing flange.

Finished Ceiling
Housing Flange

4e. Replace temporary dust cover before finishing ceiling.

FRM2-4T & FRM2-4T-CP - **FLANGED** TRIM INSTALLATION with ACOUSTIC TILE/FABRIC CEILINGS

FRM2-4T
Mounting Frame + Power Supply
12"L* x 9-1/4"W* x 4-1/4"H**
*Add 3" to the length or width to accommodate mounting accessories
**Add 5/8" to the height to accommodate housing + light engine

Ø 4-5/8" Cut Out

400 Housing + Light Engine

FRM2-4T-CP
Mounting Frame + Power Supply
12"L* x 9-1/4"W* x 5-3/8"H
*Add 3" to the length or width to accommodate mounting accessories

Ø 4-5/8" Cut Out

400 Housing + Light Engine

| **FLR-4** | **FLS-4** | **FLR-4-BV** | **FLS-4-BV** |
| Trim Plate | Trim Plate | Trim Plate | Trim Plate |

CEILING TYPES: Accoustic Tile & Fabric | CEILING THICKNESS: 1/2" Min to 2" Max | CUT-OUT: Ø 4-5/8"

STEP 1 – **FRM2-4T** AND **FRM2-4T-CP** MOUNTING FRAME ASSEMBLY AND INSTALLATION (see page 4)

STEP 2 – **FRM2-4T** AND **FRM2-4T-CP** MOUNTING FRAME SLEEVE ADJUSTMENT

2a. Adjust **FRM2-4T** or **FRM2-4T-CP** sleeve to be 1/16" less than finished ceiling thickness and secure using a 3/32" hex key.

Adjustable Sleeve

3/32" Hex Key

Adjustment Screw

7/16" for 1/2" Ceiling Thickness (min)

1-15/16" for 2" Ceiling Thickness (max)

FRM2-4T & FRM2-4T-CP - FLANGED TRIM INSTALLATION with ACOUSTIC TILE/FABRIC CEILINGS

STEP 3 – FIXTURE WIRING

3a. Disconnect power at circuit breaker.

3b. Remove junction box cover and install appropriate conduit connector(s) using one or more of the provided junction box knock-outs.

3c. Review wiring diagrams on pages 19-21, wire fixture accordingly. Place all wiring and connectors back in junction box and replace cover.

Note: 0-10v, DALI, or Lutron EcoSystem power supplies (if specified) require additional dimming control wiring.

Junction Box

Connections for 0-10v, DALI, or Lutron EcoSystem control wiring (if specified)

Ground Wire

Line voltage input wiring

Junction box cover
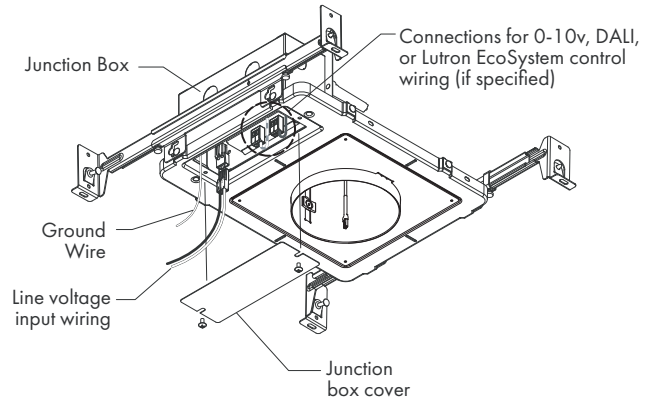
STEP 4 – CEILING CUT-OUT

4a. Make Ø4-5/8" cut-out in ceiling material.

4b. Install ceiling material over **FRM2-4T** or **FRM2-4T-CP** Mounting Frame ensuring sleeve is centered with Ø4-5/8" cut-out in ceiling.

4c. Adjust mounting sleeve (as shown in Steps 1a) to be 1/16" above finished ceiling.

STEP 5 – HOUSING + LIGHT ENGINE WIRING AND INSTALLATION

5a. Support housing and connect fixture wire lead to power supply wire lead. For model 400-TW ensure connectors labeled "W" are attached together.

For 400 only

For 400-TW only

"W" labels

5b. Remove temporary dust cover and save. Install housing into mounting sleeve.

Housing Flange

Dust Shield
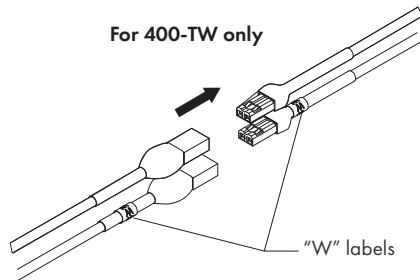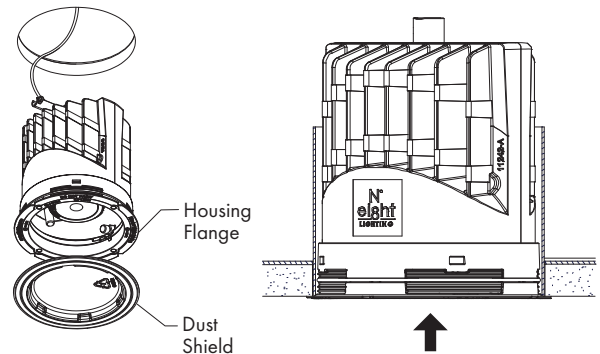
5C. Rotate housing flange so notches are aligned with adjacent walls or fixtures.

Notch

Wall Line

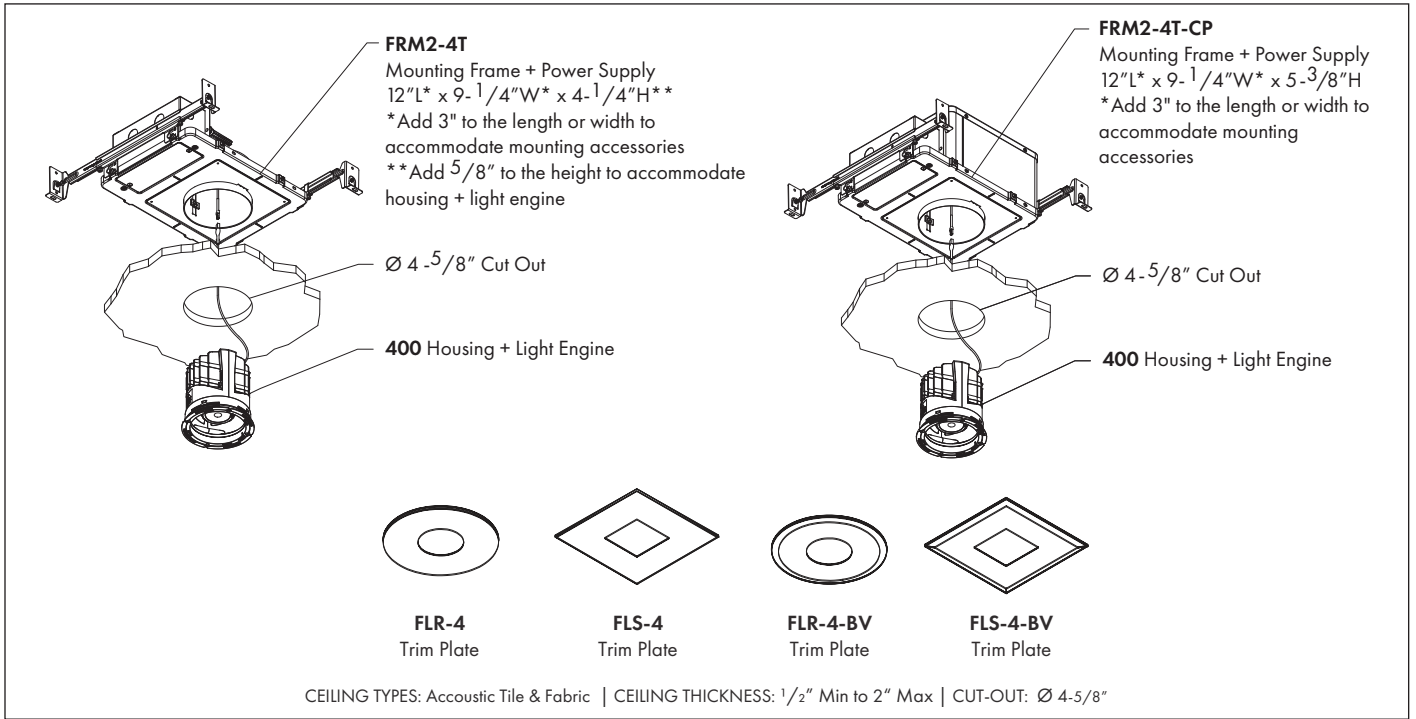**5d.** Locate (4) four locking screws. While applying upward pressure on housing flange, hand tighten using supplied 3/32" hex-key. Ensure fixture flange is tight against finished ceiling. **Caution:** Ceiling finish must not extend above backside of housing flange.
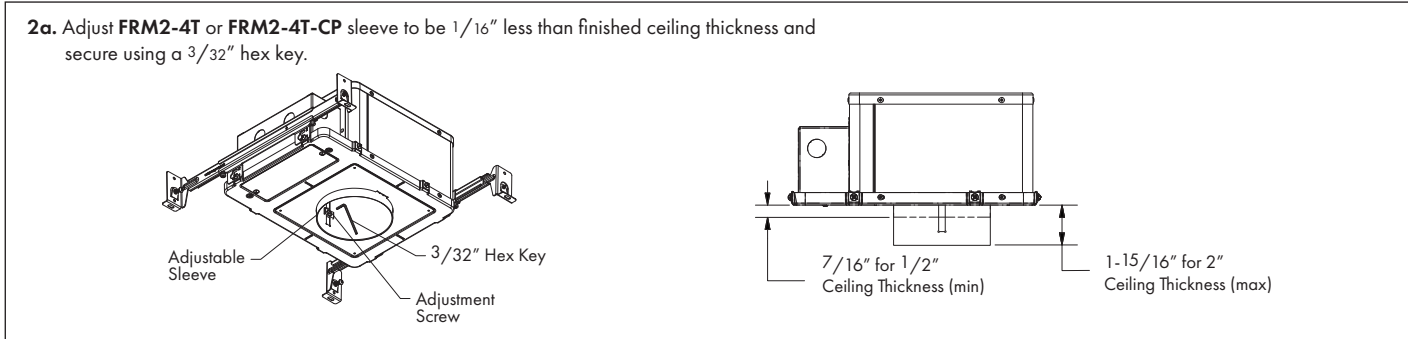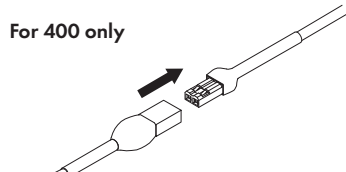
Ceiling Finish

Housing Flange
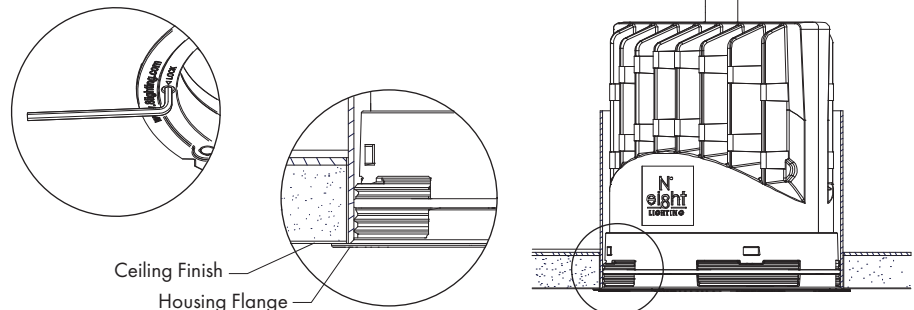
5e. Replace temporary dust cover before finishing ceiling.

FRM2-R/S6 & FRM2-R/S6-CP - FLANGELESS TRIM INSTALLATION with SHEETROCK CEILINGS

FR-4 FLANGELESS TRIM & FRM2-R6 MOUNTING FRAME

FRM2-R6
Mounting Frame + Power Supply
12"L* x 9-1/4"W* x 4-1/4"H**

*Add 3" to length or width to accommodate Mounting Accessories
**Add 5/8" to the height to accommodate Housing + Light engine

FR-4
Trim Mounting Bracket

Ø 6" Cut Out

FR-4 Trim

400
Housing + Light Engine

FR-4
Trim Plate

CEILING TYPES: Sheetrock
CEILING THICKNESS: 1/2" Min – 1 1/4" Max*
CUT-OUT: Ø 6"

FR-4 FLANGELESS TRIM & FRM2-R6-CP MOUNTING FRAME

FRM2-R6-CP
Mounting Frame + Power Supply
12"L* x 9-1/4"W* x 5-3/8"H
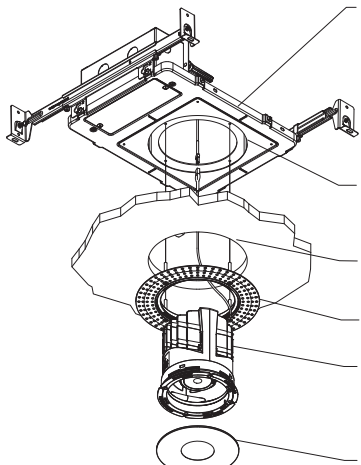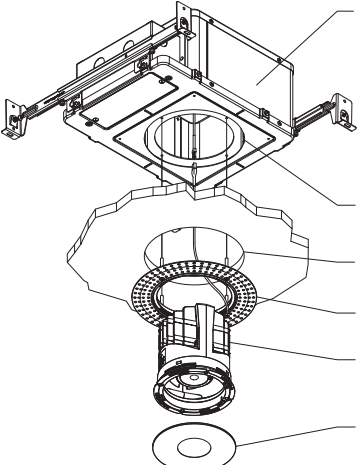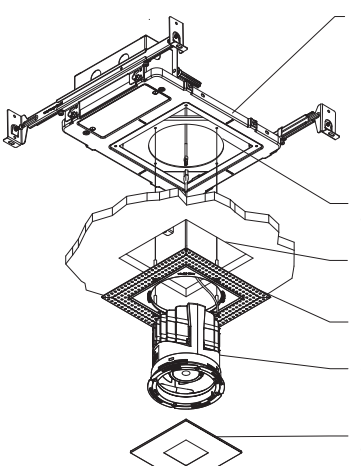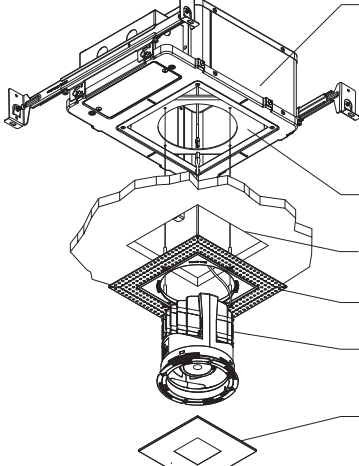CP Rated Mounting Frame + Power Supply
*Add 3" to length or width to accommodate mounting accessories

FR-4
Trim Mounting Bracket

Ø 6" Cut Out

FR-4 Trim

400
Housing + Light Engine

FR-4
Trim Plate

CEILING TYPES: Sheetrock
CEILING THICKNESS: 1/2" Min – 1 1/4" Max*
CUT-OUT: Ø 6"

FS-4 FLANGELESS TRIM & FRM2-S6 MOUNTING FRAME

FRM2-S6
Mounting Frame + Power Supply
12"L* x 9-1/4"W* x 4-1/4"H**

*Add 3" to the length or width to accommodate Mounting Accessories
**Add 5/8" to the height to accommodate Housing + Light Engine

FS-4
Trim Mounting Bracket

6" x 6" Cut Out

FS-4 Trim

400
Housing + Light Engne

FS-4
Trim Plate

CEILING TYPES: Sheetrock
CEILING THICKNESS: 1/2" Min – 1 1/4" Max*
CUT-OUT: 6" X 6"

FS-4 FLANGELESS TRIM & FRM2-S6-CP MOUNTING FRAME

FRM2-S6-CP
Mounting Frame + Power Supply
12"L* x 9-1/4"W* x 5-3/8"H
CP Rated Mounting Frame + Power Supply
*Add 3" to length or width to accommodate mounting accessories

FS-4
Trim Mounting Bracket

6" Square Cut Out

FS-4 Trim

400
Housing + Light Engine

FS-4
Trim Plate

CEILING TYPES: Sheetrock
CEILING THICKNESS: 1/2" Min – 1 1/4" Max*
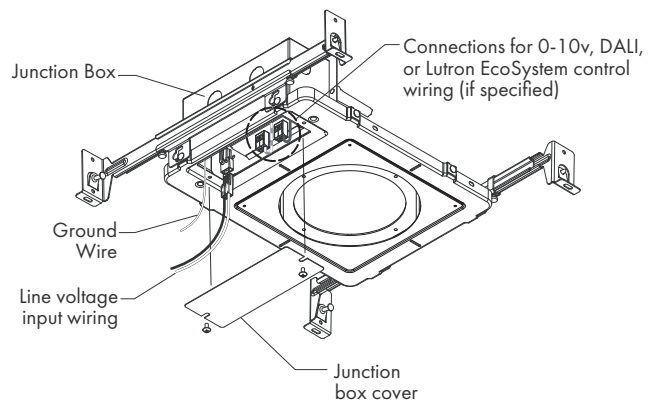**CUT-OUT:** 6" X 6"

*NOTE: For ceiling thicknesses over 1-1/4" use longer FHMS 8-32 screws (not supplied)

STEP 1 – **FRM2-R/S6** AND **FRM2-R/S6-CP** MOUNTING FRAME ASSEMBLY AND INSTALLATION (see page 4)

FRM2-R/S6 & FRM2-R-S6-CP - FLANGELESS TRIM INSTALLATION with SHEETROCK CEILINGS

STEP 2 – FIXTURE WIRING

2a. Disconnect power at circuit breaker.

2b. Remove junction box cover and install appropriate conduit connector(s).

2c. Review wiring diagrams on pages 19-21, wire fixture accordingly. Place all wiring and connectors back in junction box and replace cover.

Note: 0-10v, DALI or EcoSystem power supplies (if specified) require additional dimming control wiring.

Junction Box

Connections for 0-10v, DALI, or Lutron EcoSystem control wiring (if specified)

Ground Wire

Line voltage input wiring

Junction box cover

STEP 3 – CEILING CUT-OUT

3a. Install ceiling material over **FRM2-R/S6** or **FRM2-R/S6-CP** Mounting Frame. Make **Ø 6"** cut-out for **FR-4** trim with **FRM2-R6 (-CP)** or **6" x 6"** cut-out for **FS-4** trim with **FRM2-S6 (-CP)** using spiral saw with appropriate guide bit using aperture plate as guide.

Power supply wire lead

Aperture plate (FRM2-R6 shown)

Ceiling material

Rotary tool with Guidepoint type bit

Use only Guidepoint type bit as shown. Adjust bit lenght so only guide tip contacts metal aperture plate.

Aperture plate

Ceiling material
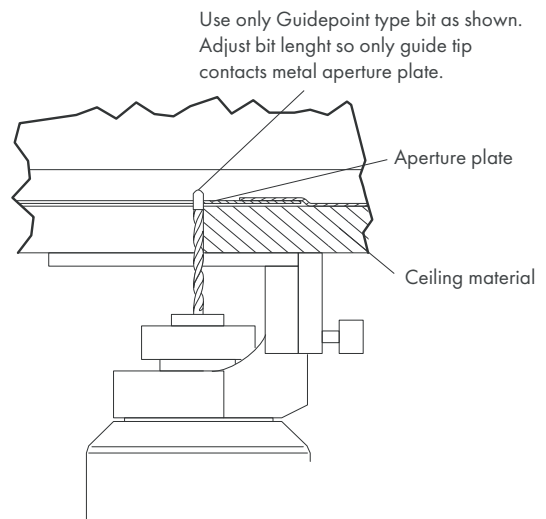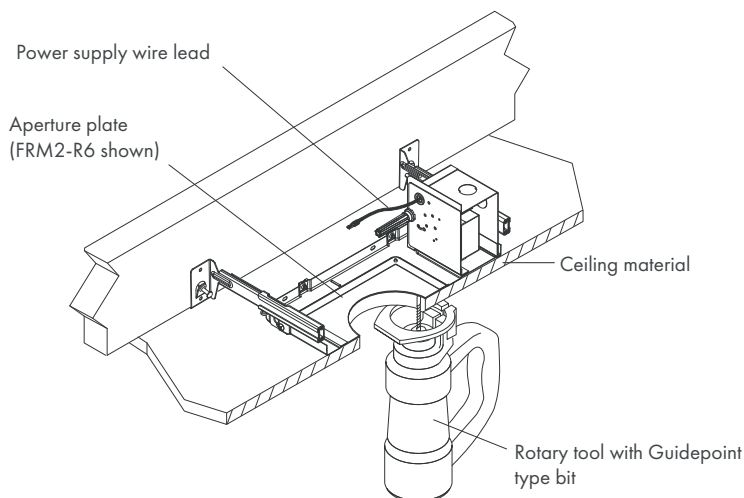
STEP 4 – FLANGELESS TRIM INSTALLATION

4a. Install ceiling bracket through cut-out. Remove mud shield and save. Install trim using four screws. Note: do not tighten screws until Step 4b.

FR-4 FLANGELESS TRIM
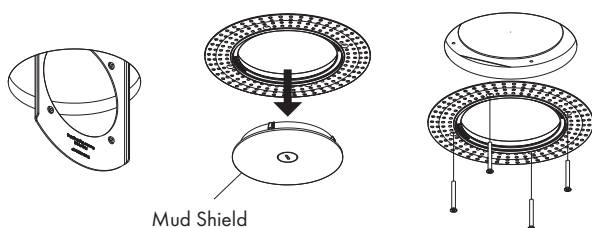
Mud Shield

FS-4 FLANGELESS TRIM

Mud Shield
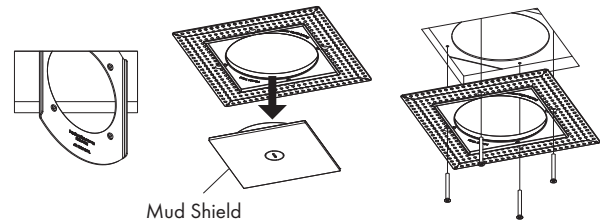
FRM2-R/S6 & FRM2-R/S6-CP - **FLANGELESS** TRIM INSTALLATION with SHEETROCK CEILINGS

STEP 4 – FLANGELESS TRIM INSTALLATION (CONTINUED)

4b. Rotate trim so screws are aligned with adjacent walls or fixtures. **Caution** - Hand tighten trim screws. Power driver is not recommended.

FR-4 FLANGELESS TRIM	**FS-4** FLANGELESS TRIM
Wall Line	Wall Line
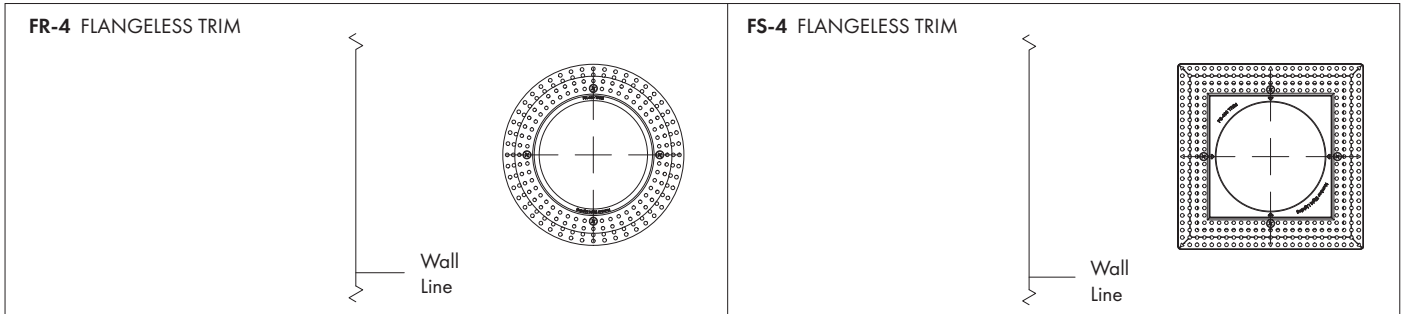
4c. Re-install mud shield.

4d. Apply 6" wide fiberglass mesh tape over perforated metal trim flange leaving 1/8" cut-out around the outside edge of the raised trim lip and extending over ceiling board.

FR-4 FLANGELESS TRIM	**FS-4** FLANGELESS TRIM	**FR-4 & FS-4** FLANGELESS TRIM
Mud Shield / Fiberglass Mesh Tape	Mud Shield / Fiberglass Mesh Tape	1/8" / Fiberglass Mesh Tape

4e. Apply ceiling finish **FR-4** & **FS-4** FLANGELESS TRIM.
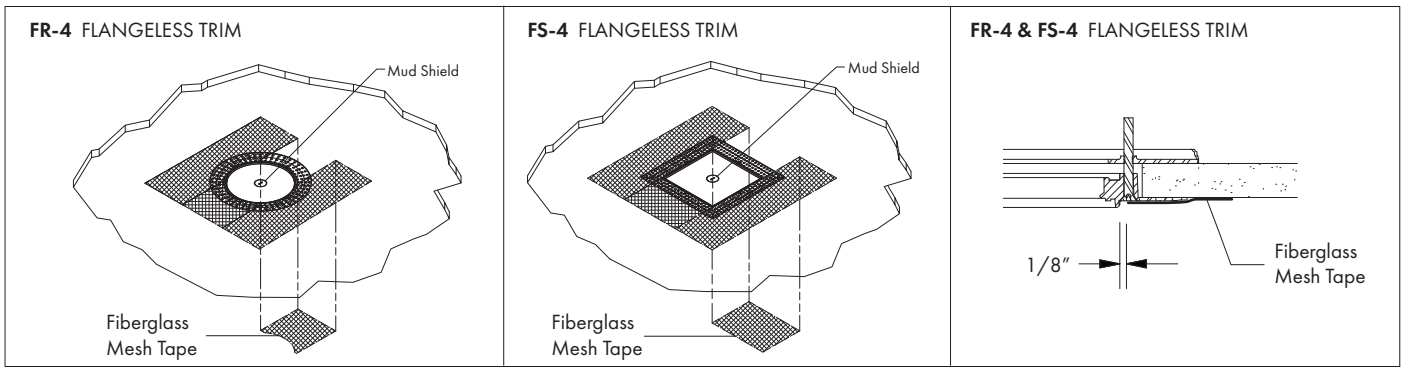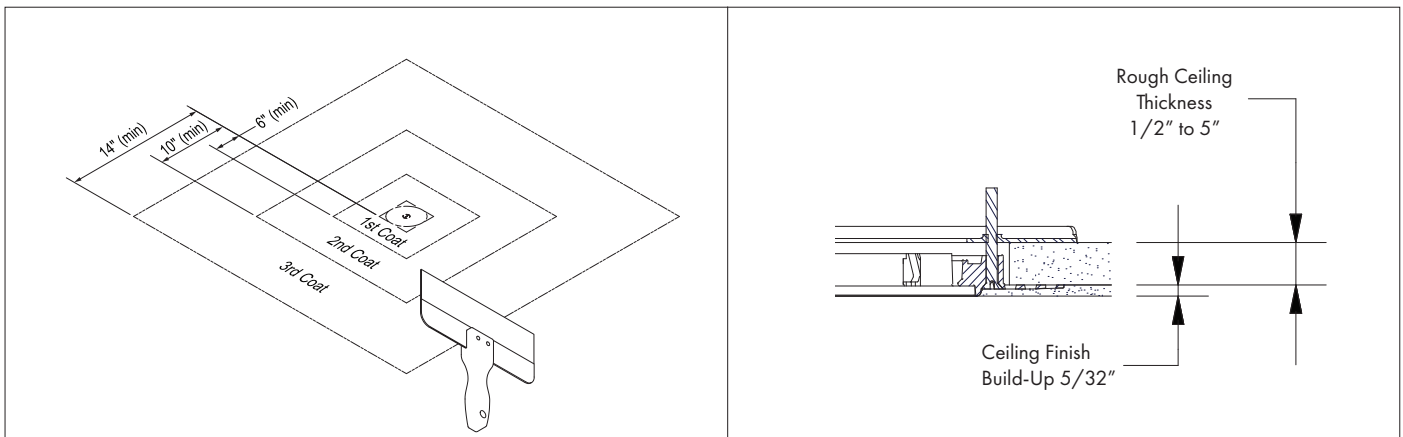   **Note:** Minimum Level 4 or 5 finishes are recommended for optimum appearance.

14" (min) / 10" (min) / 6" (min) / 1st Coat / 2nd Coat / 3rd Coat

Rough Ceiling Thickness 1/2" to 5"

Ceiling Finish Build-Up 5/32"

4f. First Coat - Apply USG "Durabond" setting-type joint compound for embedding the perforated flange and fiberglass mesh tape following the manufacturer's instructions and warnings for outside corners and trim. The compound should extend a minimum of 6" from the trim edge. Allow first coat to dry completely and remove any high spots by lightly sanding before applying the second coat.

4g. Second Coat - Apply USG general purpose ready-mixed joint compound flush to finished edge of trim, floating outward following the manufacturer's instructions and warnings. The compound should extend a minimum of 10" from the trim edge. Allow second coat to dry completely and remove any high spots by lighting sanding before applying the third coat.

4h. Third Coat - Apply USG ready-mixed finishing joint compound flush to finished edge of trim, floating outward following the manufacturer's instructions and warnings. The compound should extend a minimum of 14" from the trim edge. Allow third coat to dry completely before sanding.

4i. Sand third coat with fine grit sandpaper until mud shield and finished metal edge of trim lip are barely exposed.

4j. Remove mud shield knock-out and remove mud-shield by pulling outward.

4k. Remove excess material from inside edges of trim.

4l. Apply primer (USG Sheetrock or equivalent) and paint following the paint manufacturer's instructions and warnings.
Caution: Do not paint inside of **FR-4** or **FS-4** trim surface.

FRM2-R/S6 & FRM2-R/S6-CP - FLANGELESS TRIM INSTALLATION with SHEETROCK CEILINGS

STEP 5 – HOUSING + LIGHT ENGINE WIRING AND INSTALLATION

5a. Support housing and connect fixture wire lead to power supply wire lead. For model 400-TW ensure connectors labeled "W" are attached together.

For 400 only

For 400-TW only

"W" label
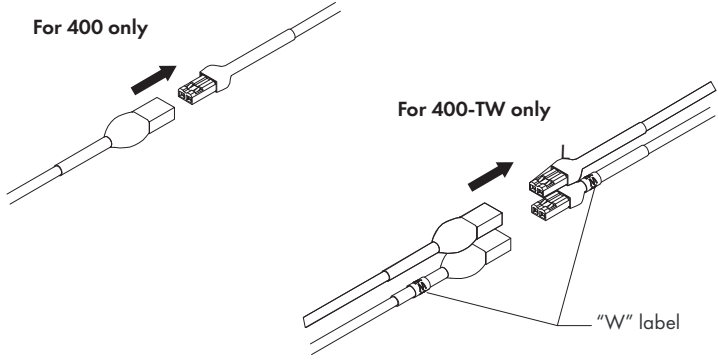
5b. Remove temporary dust cover and save. Install housing into mounting sleeve.

Dust Cover
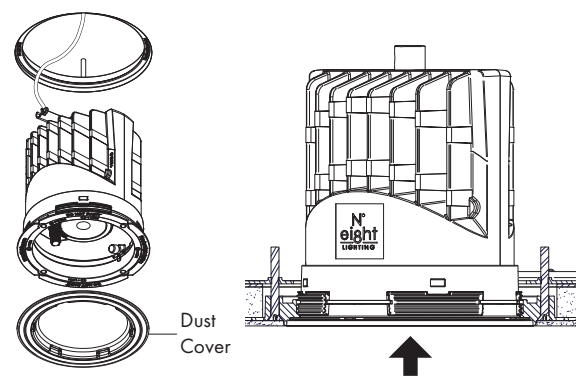
5c. For **FR-4** trim, rotate housing flange so notches are aligned with adjacent walls or fixtures. For **FS-4** trim, rotate housing flange until notches in flange mate with notches in trim.
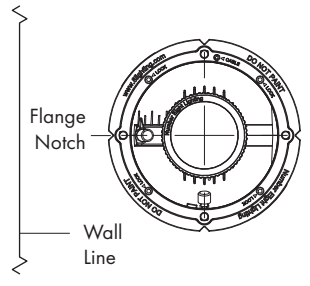
Flange Notch

Wall Line

5d. Locate (4) four locking screws. While applying upward pressure on housing flange, hand tighten using supplied $3/32$" hex-key. Ensure Light Engine flange is tight against trim. **Caution:** Ceiling finish must not extend above backside of Light Engine flange.
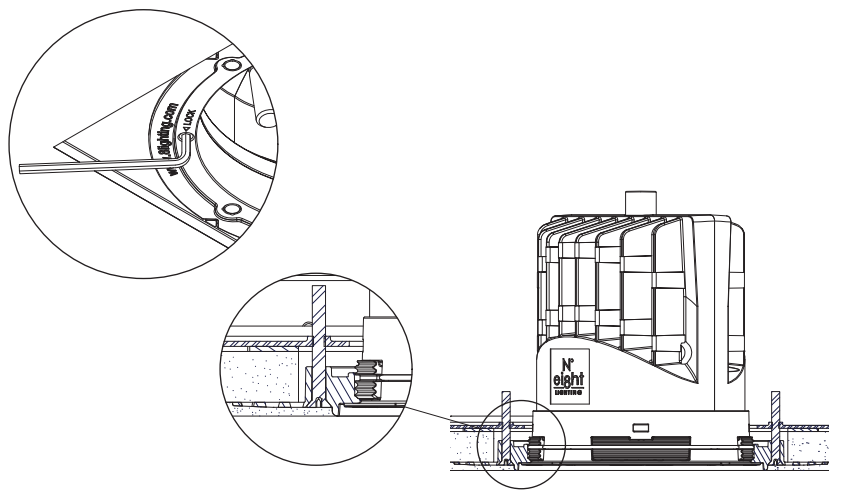
5e. Replace temporary dust cover before finishing ceiling.

FRM2-4W-S/R & FRM2-4W-S/R-CP - FLANGELESS TRIM INSTALLATION with WOOD/STONE CEILINGS

FRM2-4W-R & FRM2-4W-R-CP MOUNTING FRAMES

FRM2-4W-R
Mounting Frame + Power Supply
12"L x 9-1/4"W x 4-1/4"H
*Add 3" to length or width to accommodate mounting accessories

BH
Bar Hanger
Mounting Option

BB
Butterfly Bracket
Mounting Option

Mounting Sleeve Flange

Ø 5-1/8" Cut-out

TBC
T-BAR
Mounting Clip
Option

PMB
Panel Mount
Bracket Option

400 Housing + Light Engine

FRM2-4W-R-CP
CP Rated Mounting Frame +
Power Supply
12"L x 9-1/4"W x 5-3/8 "H
*Add 3" to length or width to accommodate mounting accessories

BH
Bar Hanger
Mounting Option

BB
Butterfly Bracket
Mounting Option

Mounting Sleeve Flange

Ø 5-1/8" Cut-out

TBC
T-BAR
Mounting Clip
Option

PMB
Panel Mount
Bracket Option

400 Housing + Light Engine

FLR-4
Trim Plate

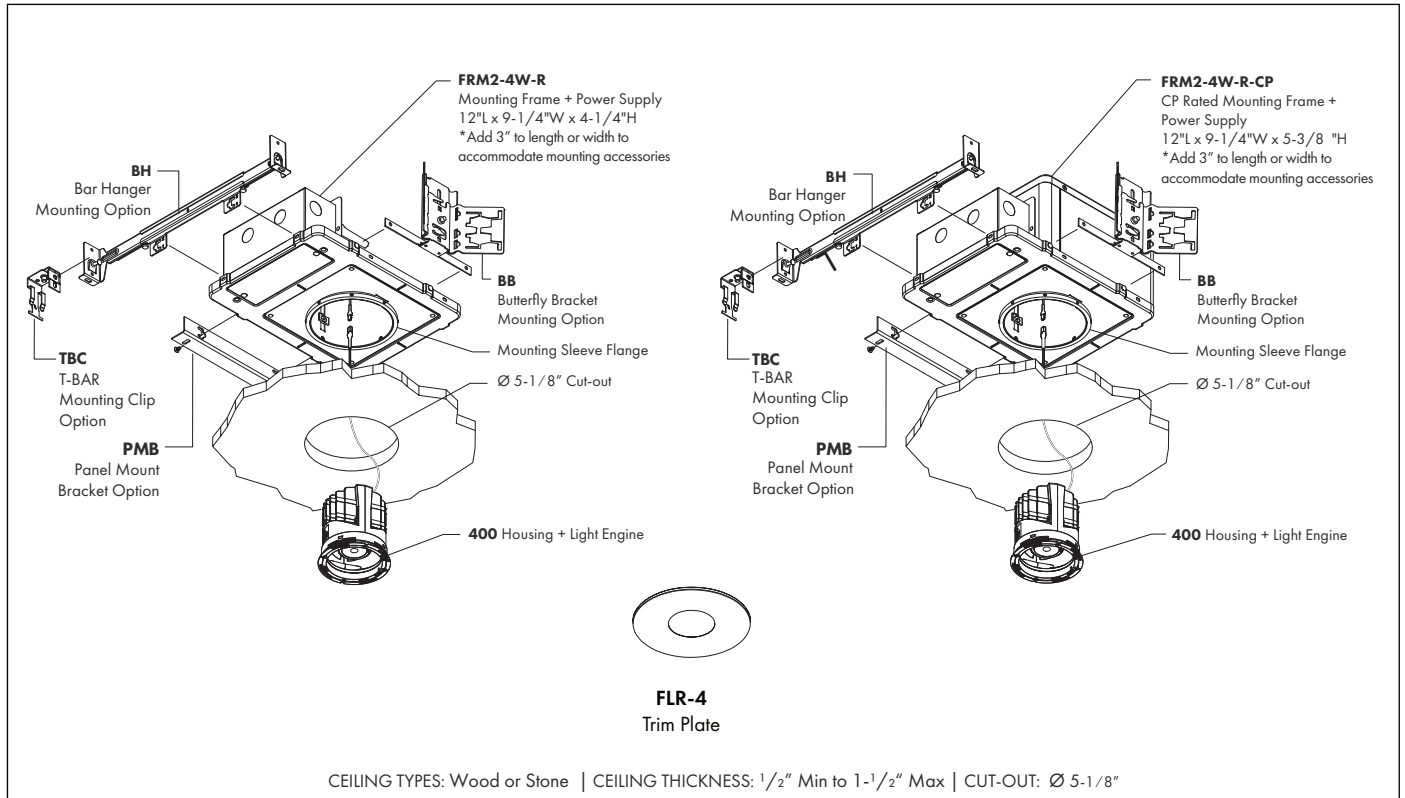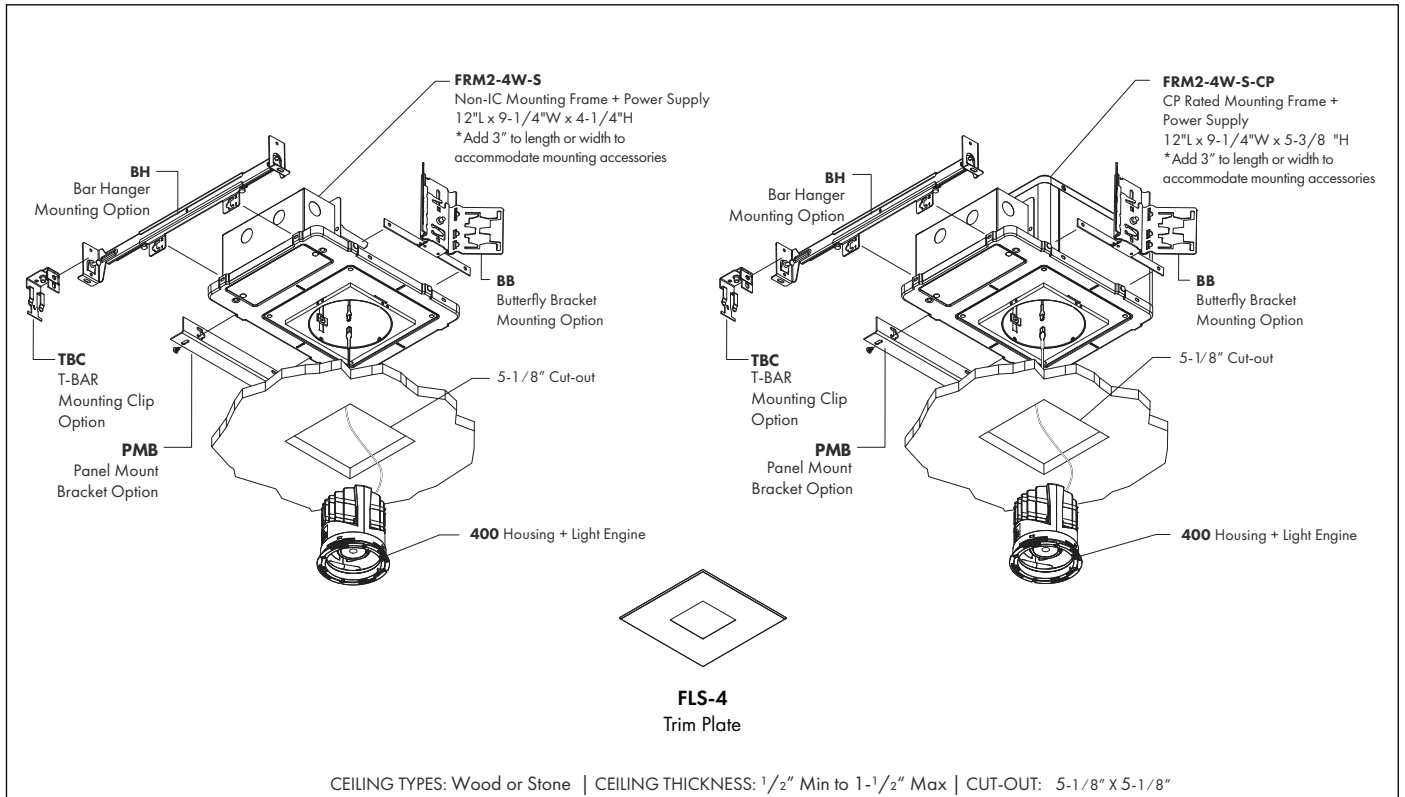CEILING TYPES: Wood or Stone | CEILING THICKNESS: $1/2$" Min to 1-$1/2$" Max | CUT-OUT: Ø 5-1/8"

FRM2-4W-S and FRM2-4W-S-CP MOUNTING FRAMES

FRM2-4W-S
Non-IC Mounting Frame + Power Supply
12"L x 9-1/4"W x 4-1/4"H
*Add 3" to length or width to accommodate mounting accessories

BH
Bar Hanger
Mounting Option

BB
Butterfly Bracket
Mounting Option

5-1/8" Cut-out

TBC
T-BAR
Mounting Clip
Option

PMB
Panel Mount
Bracket Option

400 Housing + Light Engine

FRM2-4W-S-CP
CP Rated Mounting Frame +
Power Supply
12"L x 9-1/4"W x 5-3/8 "H
*Add 3" to length or width to accommodate mounting accessories

BH
Bar Hanger
Mounting Option

BB
Butterfly Bracket
Mounting Option

5-1/8" Cut-out

TBC
T-BAR
Mounting Clip
Option

PMB
Panel Mount
Bracket Option

400 Housing + Light Engine

FLS-4
Trim Plate

CEILING TYPES: Wood or Stone | CEILING THICKNESS: $1/2$" Min to 1-$1/2$" Max | CUT-OUT: 5-1/8" X 5-1/8"
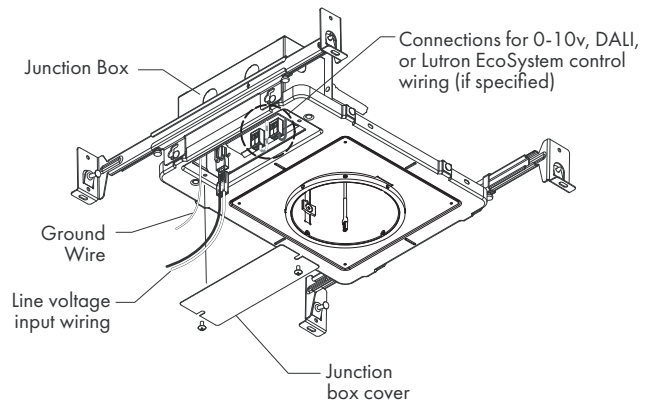
STEP 1 – **FRM2-4W-S/R** and **FRM2-4W-S/R-CP** MOUNTING FRAME ASSEMBLY and INSTALLATION (see page 4)

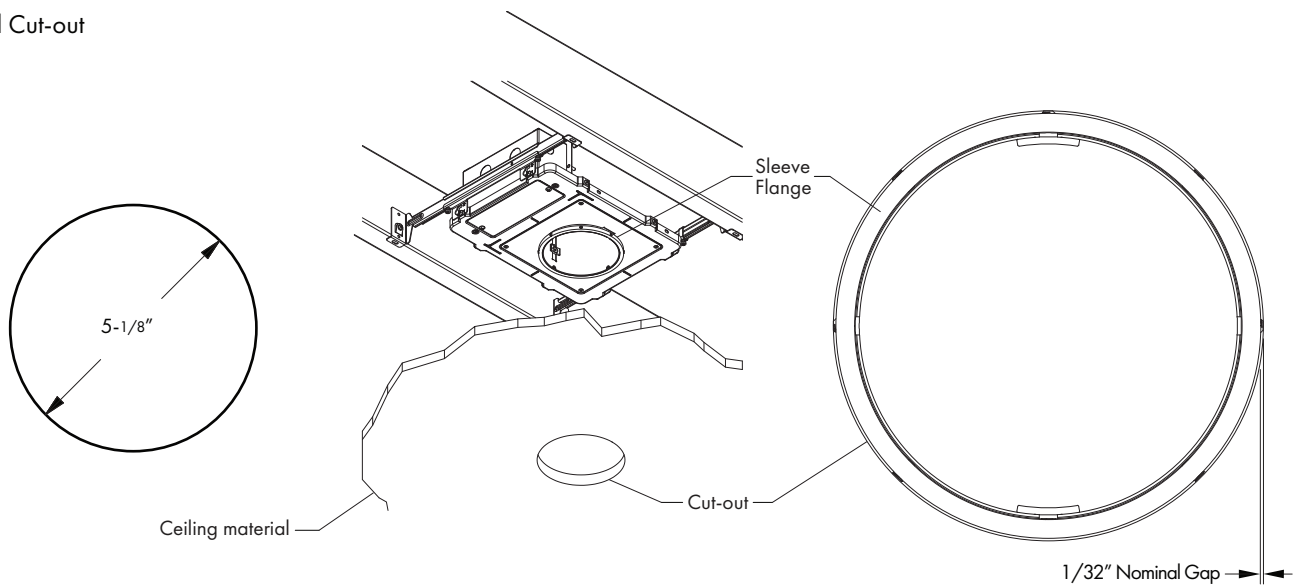# FRM2-4W-S/R & FRM2-4W-S/R-CP - FLANGELESS TRIM INSTALLATION with WOOD/STONE CEILINGS

2a. Disconnect power at circuit breaker.

2b. Remove junction box cover and install appropriate conduit connector(s) using one or more of the provided junction box knock-outs.

2c. Review wiring diagrams on pages 19-21, wire fixture accordingly. Place all wiring and connectors back in junction box and replace cover.

Note: 0-10v, DALI, or Lutron EcoSystem power supplies (if specified) require additional dimming control wiring.
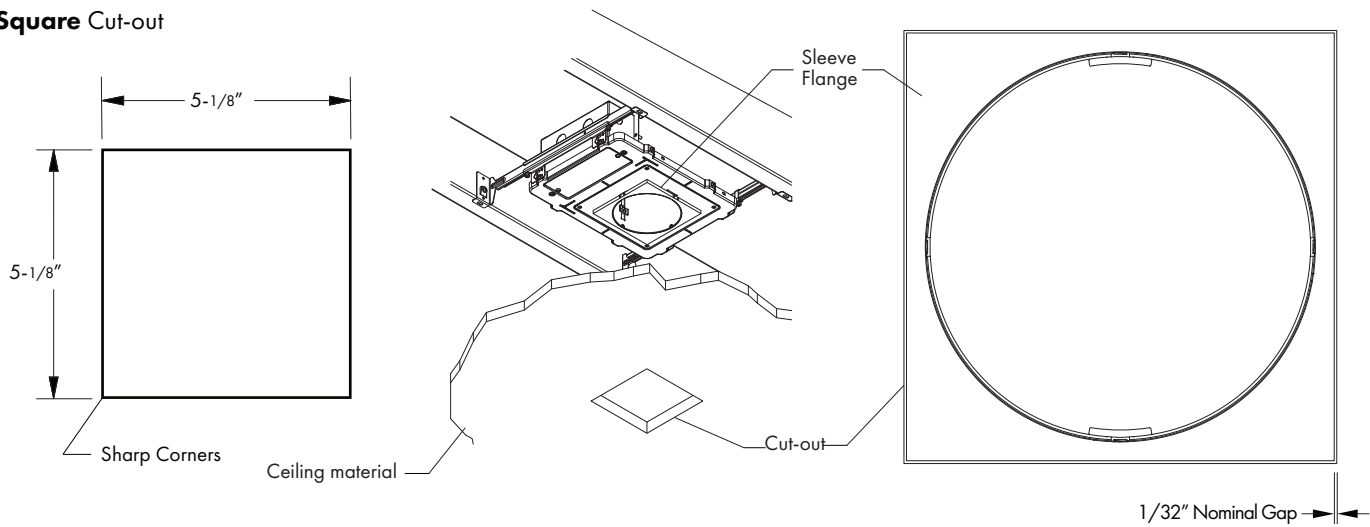
Junction Box

Connections for 0-10v, DALI, or Lutron EcoSystem control wiring (if specified)

Ground Wire

Line voltage input wiring

Junction box cover

3a. Ceiling cut-out must be precisely located & oriented to Square or Round collar location. All dimensions are +/- 1/32".

Round Cut-out

5-1/8"

Sleeve Flange

Ceiling material

Cut-out

1/32" Nominal Gap

Square Cut-out

5-1/8"

5-1/8"

Sleeve Flange

Sharp Corners

Ceiling material

Cut-out

1/32" Nominal Gap

FRM2-4W-S/R & FRM2-4W-S/R-CP - **FLANGELESS** TRIM INSTALLATION with WOOD/STONE CEILINGS

STEP 4 – FLANGELESS TRIM COLLAR ADJUSTMENT

CAUTION: Accurate Collar depth is required to install trim plate flush to surface.
To ensure trim plate will be flush to the mounting surface, the collar must be recessed up into the mounting surface by the depth of the supplied trim plate gauge tip. Use tip marked ◀**400**.

4a. Loosen the collar screws and check depth of mounting sleeve at each set screw location using the trim plate gauge.

4b. Confirm depth using gauge. Once depth is corrected at each location, tighten the set screws to lock in the collar depth. (DO NOT OVERTIGHTEN!)
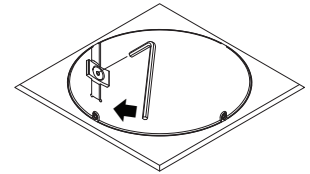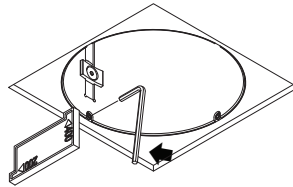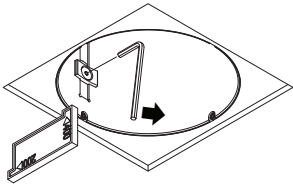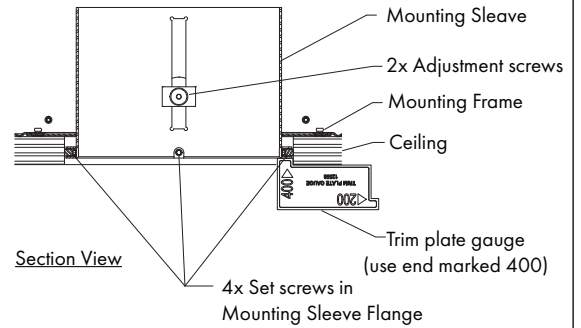
4c. Tighten 4x collar screws.

Mounting Sleeve
2x Adjustment screws
Mounting Frame
Ceiling

Trim plate gauge
(use end marked 400)

4x Set screws in
Mounting Sleeve Flange

Section View

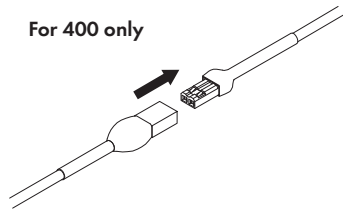**Fig 4a.** Loosen Adjustment Screws, check & adjust Mounting Sleeve depth

Fig 4b. Confirm depth and tighten Set Screws. DO NOT OVERTIGHTEN.
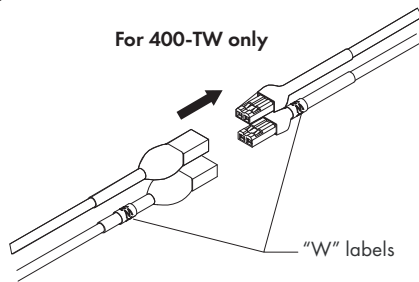
Fig 4c. Tighten Collar Screws

STEP 5 – HOUSING + LIGHT ENGINE WIRING & INSTALLATION

5a. Support housing and connect fixture wire lead to power supply wire lead. Ensure connectors labeled "W" are attached together.
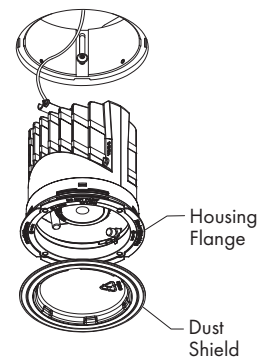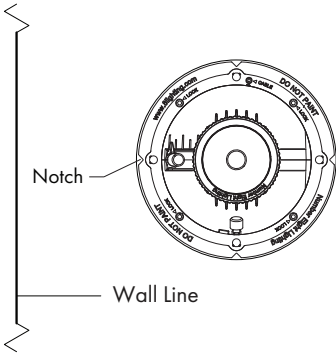
For 400 only

For 400-TW only

"W" labels

5b. Remove temporary dust cover and save. Install housing into mounting sleeve.
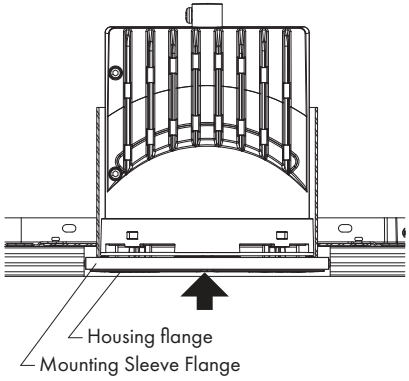
Housing Flange

Dust Shield

5c. Orient light engine so a notch on the housing flange will be perpendicular with adjacent wall.
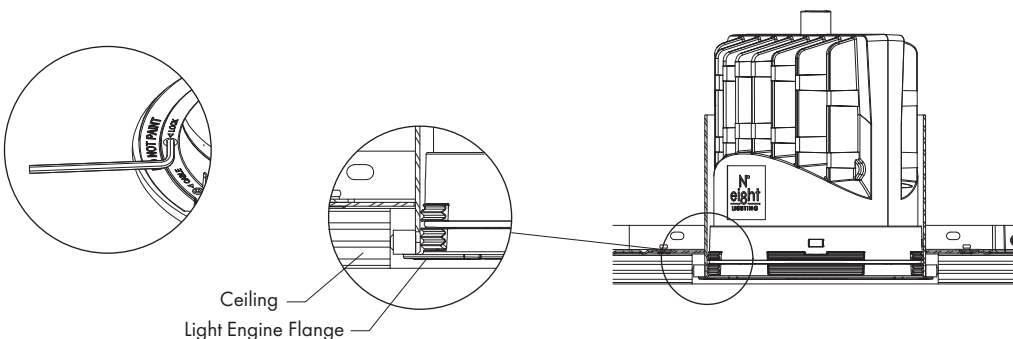
Notch

Wall Line

5d. Install light engine through cut-out and push housing flange flush up against Mounting Sleeve Flange.

Housing flange
Mounting Sleeve Flange

5e. Locate (4) four locking screws. While applying upward pressure on housing flange, hand tighten using supplied $3/32$" hex-key. Ensure housing flange is tight against finished ceiling. **Caution:** Ceiling finish must not extend above backside of housing flange.

Ceiling
Light Engine Flange

5f. Replace temporary dust cover before finishing ceiling.

AIMING & ADJUSTING

STEP 1 – VERTICAL AND HORIZONTAL AIMING AND ADJUSTMENT

1a. After ceiling is finished, remove temporary dust cover and discard.

1b. Loosen vertical and horizontal adjustment locks.

1c. Adjust vertical aiming by sliding the lamp holder to desired angle (0-35°).

1d. Adjust the horizontal aiming by rotating the lamp holder & housing assembly to desired angle (0-360°).

1e. Tighten vertical and horizontal adjustment screws.

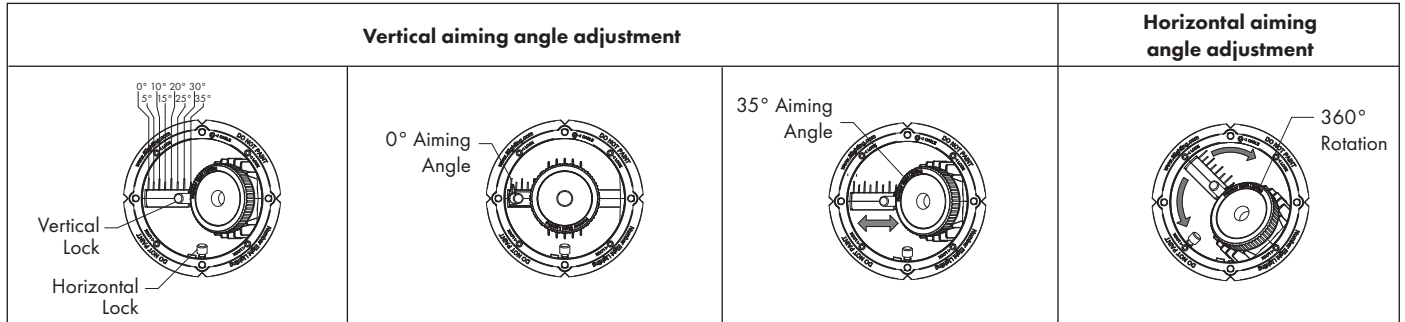| Vertical aiming angle adjustment			Horizontal aiming angle adjustment
0° 10° 20° 30° 5° 15° 25° 35° Vertical Lock Horizontal Lock	0° Aiming Angle	35° Aiming Angle	360° Rotation

STEP 2 – LENS AND ACCESSORY REMOVAL AND REPLACEMENT

2a. Remove lens ring from lamp holder by unscrewing counter-clockwise.

2b. Remove optic lens (and accessory lens if installed) by gently pressing upward on the center while holding the lens ring.

2c. Install desired optic (and accessory lens if used) by aligning the optic lens teeth with notches in lens ring.

2d. Re-install lens ring on to lamp holder by turning clockwise.

	Optical Lens, Accessory Lens, Notch, Lens Ring	Install teeth into Lens Ring notches	Lens must fully seat into Lens Ring opening
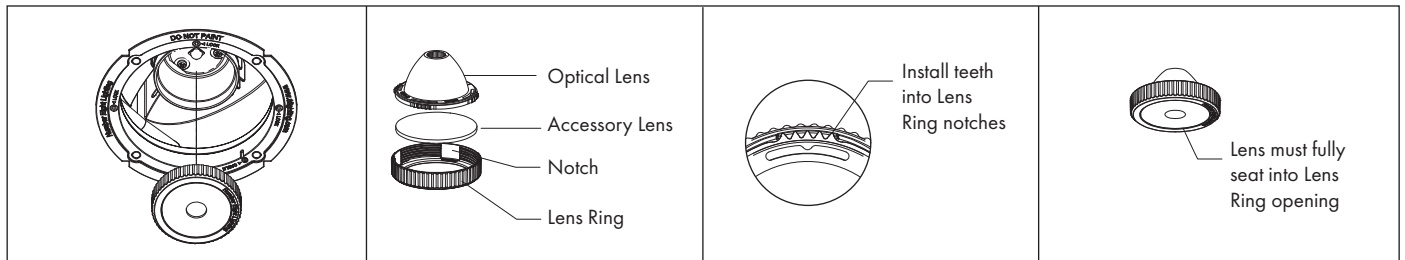
STEP 3 (OPTIONAL) – AIMING AND ADJUSTMENT FOR **WW-4** WALL WASH LENS ACCESSORY

3a. Install 40° optic in lens ring.

3b. Adjust the vertical aiming to 20°.

3c. Adjust the horizontal aiming aiming so the lamp holder is aimed perpendicular towards the wall surface.

NOTE: For optimal wall wash effect, position fixtures 24"-30" from wall using 24"-30" maximum on center housing spacing. Refer to **WW-4** installation instructions 11701 (included with **WW-4** trim plate) for additional information.

20° Aiming Angle

Wall Line
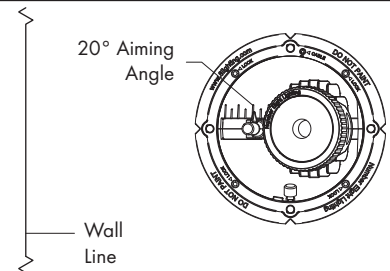
TRIM PLATE FINISHING & INSTALLATION

– PAINT TRIM PLATE

1a. Remove the trim plate from packaging.

1b. Clean and prepare exposed surfaces for painting following the paint manufacturer's instructions and warnings.

1c. Paint as desired using a "dry roller" or light spray application.

    Note: If applying paint by spray method, mask trim plate lens (if installed).

    Caution: Paint must be rated for minimum 90°C (150°F). Do not paint trim plate while installed in fixture. Do not paint backside of trim plate or trim safety cable. Do not paint edges of **FR-4** or **FS-4** trim plate.

1d. Allow trim plate to dry completely before installing.

STEP 2 – INSTALL TRIM PLATE

2a. Remove temporary dust cover and discard.

2b. Install trim safety cable into attachment hole on housing marked "CABLE," and secure by hand tightening set screw using supplied $1/16$" hex key.
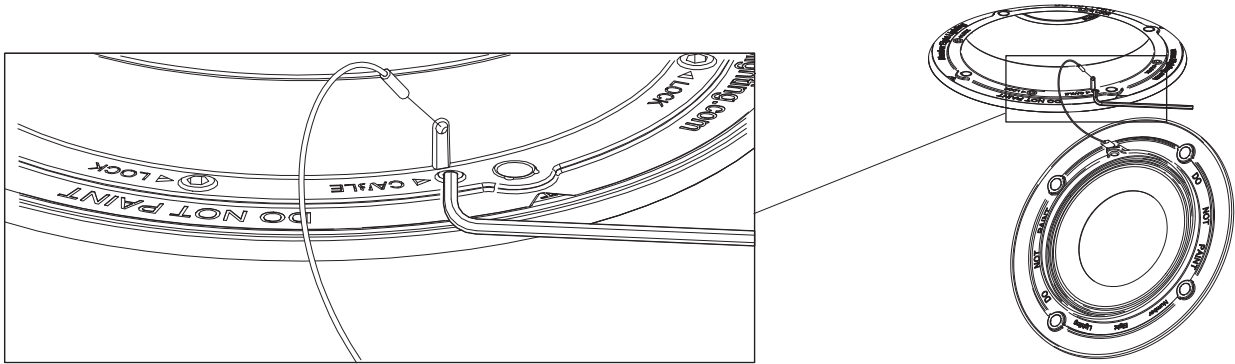
2c. Align trim plate with magnets and install.

WIRING DIAGRAMS

DIM1 / PR1 / LU1 - PHASE CONTROL

Input Power Wiring (by installer)

120V/60Hz Supply

Green
White
Black

N
L

To Fixture **DIM1, PR1, LU1** Power Supply

Forward or Reverse Phase Dimmer w/ Neutral Connection (as required)

Phase Control Notes:
DIM1 / PR1 drivers are Forward or Reverse Phase dimmable.
For compatible dimmers for use with **DIM1 / PR1** drivers see: www.8lighting.com/resources-downloads
LU1 drivers are Forward Phase dimmable only.
For compatible dimmers for use with **LU1** drivers, contact Lutron LED Center of Excellance at 1.877.346.5338 or LEDs@lutron.com.

DIM2 / EL1 - 0-10V CONTROL

Switched Input Power Wiring (by installer)

120V-277V 50/60Hz Supply

Green
White
Black

N
L

Input 0-10V Control Wiring (by installer)

0-10V Control

+
+
Optional daisy chained wiring

Purple

-
-
Optional daisy chained wiring

Pink

To Fixture **DIM2, EL1** Power Supply
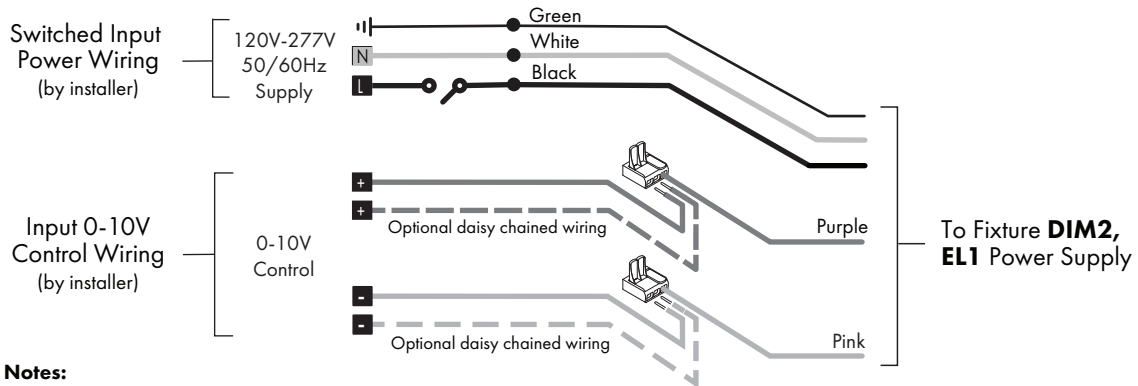
0-10V Control Notes:
0-10V control wiring is not polarity sensitive and should be run as Class 2.
300' is the maximum control wiring run length to reduce EMI susceptibility and voltage drop. Voltage drop should be no greater than 0.3V.
For compatible dimmers for use with **DIM2 / EL1** drivers see: www.8lighting.com/resources-downloads.
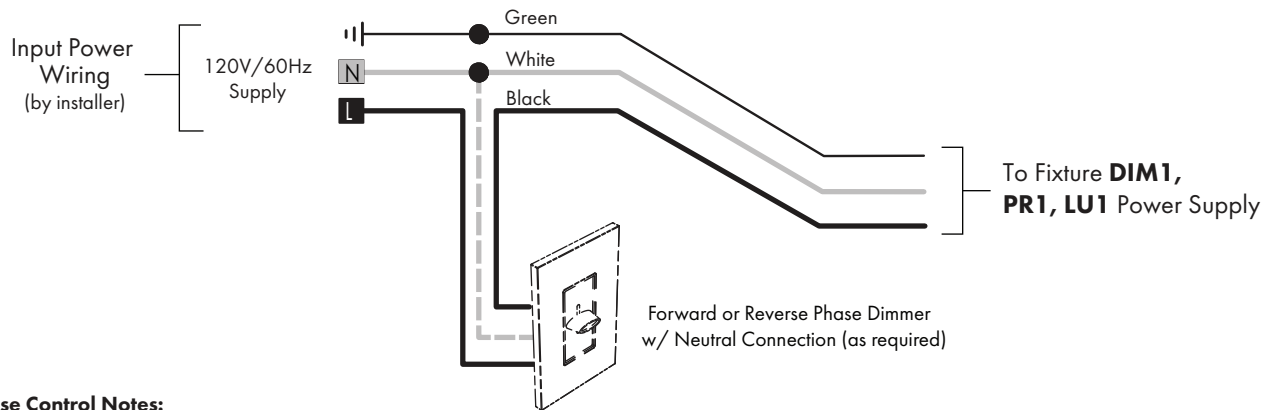
EL2 - DALI CONTROL

Input Power Wiring (by installer)

120V-277V 50/60Hz Supply

Green
White
Black

N
L

Input DALI Control Wiring (by installer)

DALI Control

D1
D1
Optional daisy chained wiring

Orange

D2
D2
Optional daisy chained wiring

Orange

To Fixture **EL2** Power Supply

DALI Control Notes:
DALI control wiring is not polarity sensative and can be run as Class 1 or 2. Up to 64 **EL2** power supplies can be daisy chained per DALI control loop.
Maximum control wiring run length is 1000'.
For compatible dimmers for use with **EL2** drivers see: www.8lighting.com/resources-downloads.

WIRING DIAGRAMS continued

EL3 - 2 CHANNEL DALI CONTROL (FOR TUNABLE WHITE)

Input Power Wiring (by installer)

120V-277V 50/60Hz Supply

Green
White
N
L
Black

To Fixture **EL3** Power Supply

Input DALI Control Wiring (by installer)

D1
D2

Orange
Orange

D2
D1
Optional daisy chained wiring

DALI Control Notes:

DALI control wiring is not polarity sensitive and can be run as Class 1 or 2. Each **EL3** driver will be discovered with two incremented short addresses: one for CCT and one for INTENSITY. Up to 32 **EL3** drivers can be daisy-chained per DALI control loop. Maximum control wiring run length is 1000'.

For compatible dimmers for use with **EL3** drivers see: www.8lighting.com/resources-downloads.
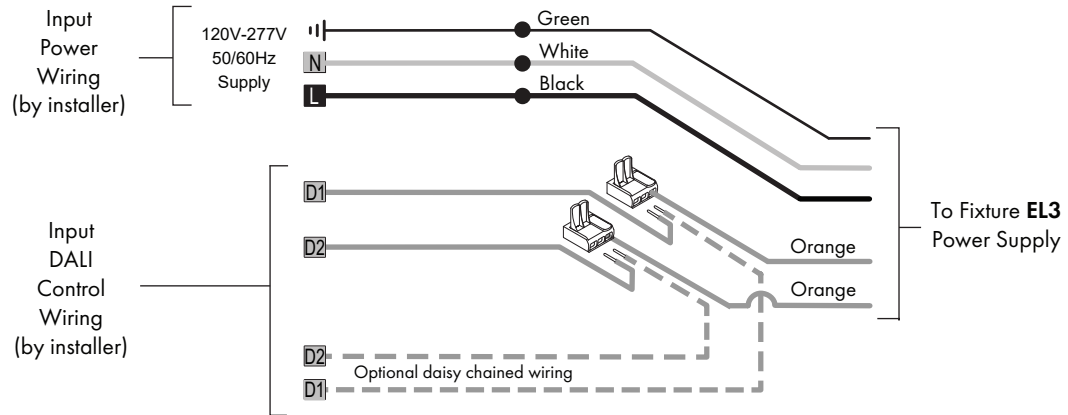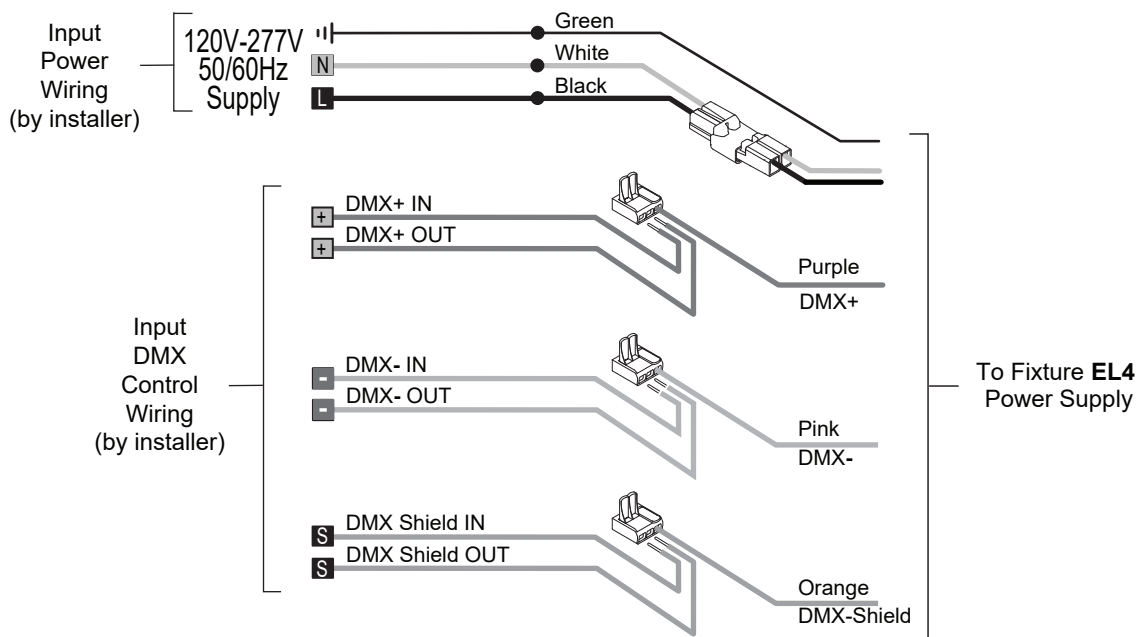
EL4 - 2 Channel DMX CONTROL

Input Power Wiring (by installer)

120V-277V 50/60Hz Supply

Green
White
N
L
Black

To Fixture **EL4** Power Supply

Input DMX Control Wiring (by installer)

+ DMX+ IN
+ DMX+ OUT

Purple
DMX+

- DMX- IN
- DMX- OUT

Pink
DMX-

S DMX Shield IN
S DMX Shield OUT

Orange
DMX-Shield

DMX Notes:

DMX control wiring is polarity sensitive and should be run as Class 2. Each **EL4** driver is one "unit load". DMX runs without a repeater/signal booster should be limited to no more than 32 fixtures including controller depending on the site conditions. **EL4** drivers are RDM compatible and addressable by others in the field. Termination of the DMX runs is to be done by others per DMX512A specification. Maximum control wiring run length is 1000'.

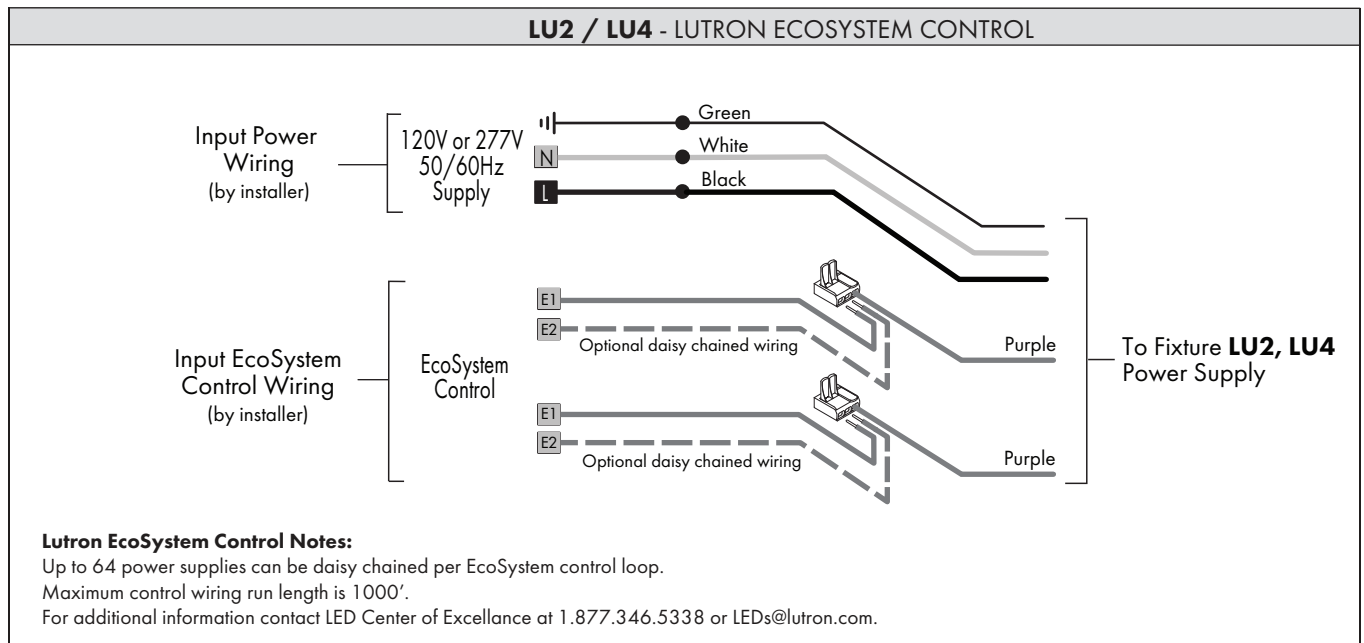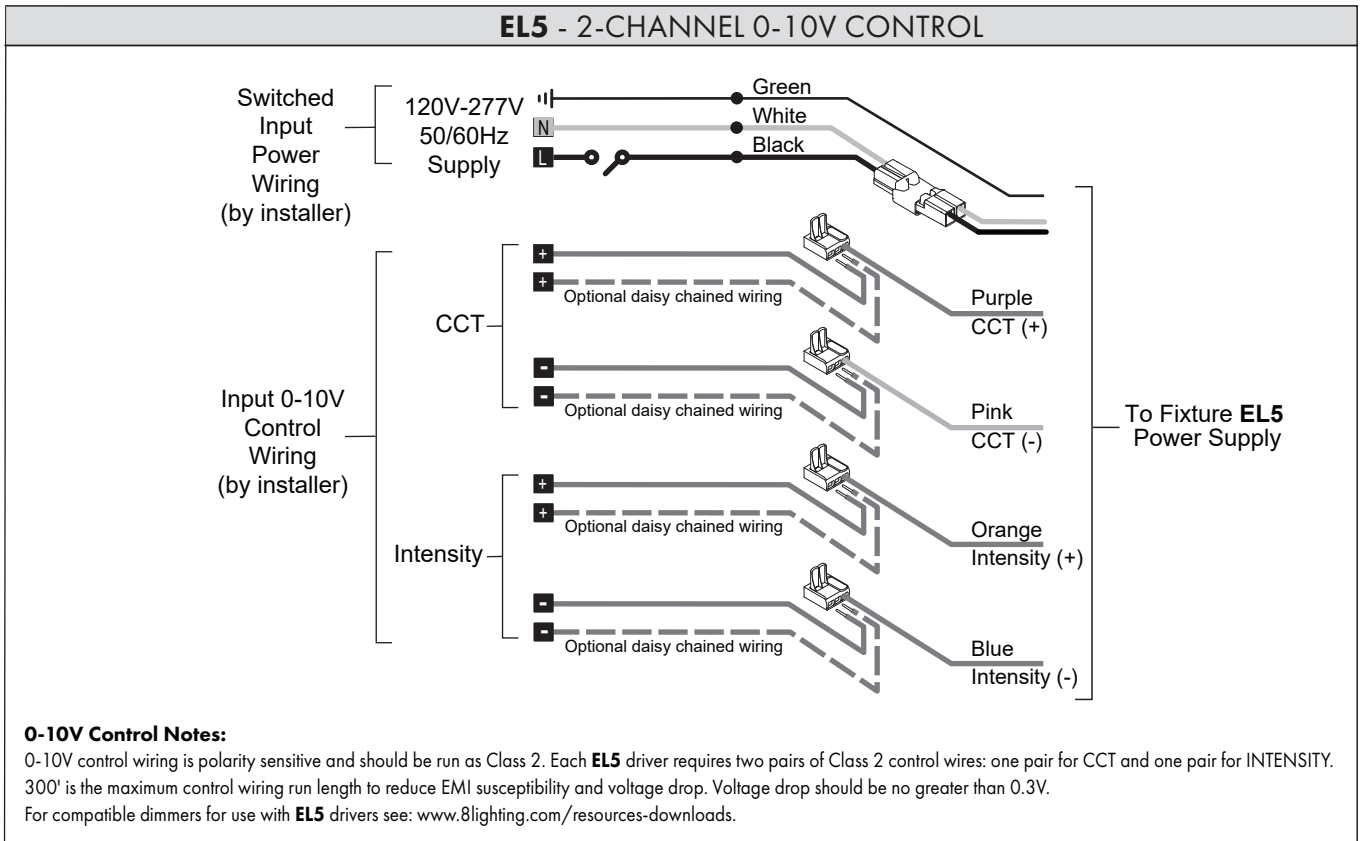For compatible dimmers for use with **EL4** drivers see: www.8lighting.com/resources-downloads.

20

EL5 - 2-CHANNEL 0-10V CONTROL

Switched
Input
Power
Wiring
(by installer)

120V-277V
50/60Hz
Supply

Green
White
Black

Input 0-10V
Control
Wiring
(by installer)

CCT

+
+ Optional daisy chained wiring

-
- Optional daisy chained wiring

Intensity

+
+ Optional daisy chained wiring

-
- Optional daisy chained wiring

Purple
CCT (+)

Pink
CCT (-)

Orange
Intensity (+)

Blue
Intensity (-)

To Fixture **EL5**
Power Supply

0-10V Control Notes:
0-10V control wiring is polarity sensitive and should be run as Class 2. Each **EL5** driver requires two pairs of Class 2 control wires: one pair for CCT and one pair for INTENSITY.
300' is the maximum control wiring run length to reduce EMI susceptibility and voltage drop. Voltage drop should be no greater than 0.3V.
For compatible dimmers for use with **EL5** drivers see: www.8lighting.com/resources-downloads.

LU2 / LU4 - LUTRON ECOSYSTEM CONTROL

Input Power
Wiring
(by installer)

120V or 277V
50/60Hz
Supply

Green
White
Black

Input EcoSystem
Control Wiring
(by installer)

EcoSystem
Control

E1
E2 Optional daisy chained wiring

E1
E2 Optional daisy chained wiring

Purple

Purple

To Fixture **LU2, LU4**
Power Supply

Lutron EcoSystem Control Notes:
Up to 64 power supplies can be daisy chained per EcoSystem control loop.
Maximum control wiring run length is 1000'.
For additional information contact LED Center of Excellance at 1.877.346.5338 or LEDs@lutron.com.

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