

2 SERIES INTERNATIONAL FITTINGS

RECESSED LED FITTINGS

INSTALLATION

Before beginning any DOWNLIGHT installation, disconnect electrical power at main switch or circuit breaker.

A. CAUTIONS

To reduce the risk of fire, electric shock, and potential damage to recessed housing assembly when electrical power is re-connected, DO NOT ATTEMPT TO CONNECT the following on branch circuit serving recessed downlight assembly:

- Motors
- Power tools
- Extension cords
- Appliances or similar electronics

Downlight fittings to be mounted in ceiling/plenum conditions *where ambient temperatures do not exceed 40°C*

Lucifer Lighting LED downlights must be used with Lucifer Lighting mounting components.

Ensure AC input voltage is protected against surges & load shifts prior to power supply input.

B. SAFETY INSTRUCTIONS

1. Read installation instructions completely before attempting installation.
2. Failure to follow instructions may result in improper installation and void warranty.
3. Contact Lucifer Lighting Company with any questions or concerns before beginning any installation.
4. Ensure qualified electrician will perform all electrical procedures.
5. Disconnect electrical power circuit before attempting to install recessed downlight fitting, or if adding to or changing configuration of downlight fitting assembly.

6. Install / mount recessed downlight fitting assembly on structurally sound surface.

7. [Spacing Requirements \(diagram on next page\):](#)

Minimum 168mm (6.63") radius setback from combustible and non-combustible materials from fitting centerline and **19mm (.75")** clearance from top of fitting.

Minimum 76mm (3") clearance from surfaces of power supply / junction box.

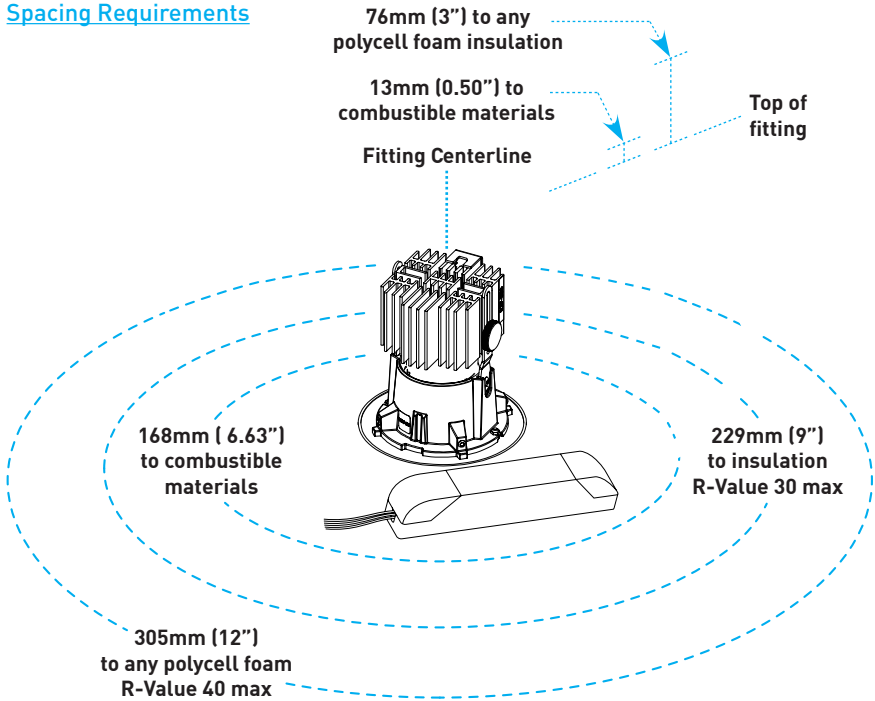
Minimum 229mm (9") setback from insulation material having max R-Value of 30 from sides of downlight fitting assembly.

Minimum 305mm (12") setback from polycell foam insulation materials (any type) having max R-Value of 40 and sides of downlight fitting assembly.

Consult factory for spacing requirements for any installations exceeding R-Value of 40.

8. Do not attempt this installation if you do not understand these instructions.

Spacing Requirements



C. WIRING

1. GENERAL WIRING NOTES

Note: Consult Safety Instructions in Section "B. SAFETY INSTRUCTIONS" prior to commencing wiring or servicing.

The downlight fitting assembly should be installed by a registered electrician and shall comply with national and local codes and ordinances .

The installer of the downlight fitting assembly is responsible for furnishing proper electrical equipment and materials for the installation of the downlights as intended by these installation instructions.

Install downlight fitting and supply sufficient length mains voltage wiring to permit access to components and splice connections, which may require future servicing.

Metal conduit shall be used if required by applicable codes. The conductor insulation must feature the appropriate temperature rating as specified on the label for each Lucifer Lighting Company downlight assembly.

Attach protective earth grounds to driver, as apply. No part of the secondary circuit shall be grounded.

For systems that will be dimmed, consult controls manufacturer to verify driver compatibility and proper installation procedures and parameters.

D. CEILING SUBSTRATE AND FINISH OUT

1. CEILING THICKNESS

Fittings compatible with 3.2mm (.125") to 73mm (3.00") ceilings.

2. CEILING CUT-OUTS

Factory recommends use of properly sized hole saw for cut-outs. Correct size and quality of hole is critical. Many fittings have minimal ceiling overlay of flange.

Make proper hole cut-out, referencing measurements from adjacent walls to housing collar / aperture centerline.

CEILING CUT-OUT: 92mm (3.625") diameter for all applications

3. GYPSUM BOARD

Install drywall in typical fashion. Oversized hole cut-outs must be filled in with mud or plaster, utilizing appropriate tape in accordance with industry standards, prior to fitting installation.

Note: For zero-sightline drywall installations, see Section H.2.

Important: If zero-sightline, appliqué must be installed prior to mudding or finishing of ceiling. Failure to follow these instructions will lead to failed expectations and added expense.

Sand, prime, and apply finish coat to ceiling.

4. T-GRID LAY-IN TILE CEILING

Install tiles in accordance with manufacturer's recommendations.

Important: Zero-sightline installations are not compatible with lay-in tile ceiling applications.

5. FLANGE OVERLAY WOOD CEILING

Install wood in accordance with local and national building codes, employing suitable fire barriers as required. Hole cut-outs should be clean and precise. Sand, stain and apply finish seal coat prior to installing fitting.

6. ZERO-SIGHTLINE WOOD CEILING

Note: It is recommended to perform the following installation method on a test piece of wood to become familiar with the process and to verify that the plunge router depth is set accurately, prior to proceeding to an actual fitting location.

Note: This procedure utilizes DLA-RTG-2S-RD (Round Router Tool Guide) **"Fig.1"**, or DLA-RTG-2S-SQ (Square Router Tool Guide) **"Fig.2"**.

Locate the center of the fitting and drill a 2mm (5/64") pilot hole **"Fig.3"**.

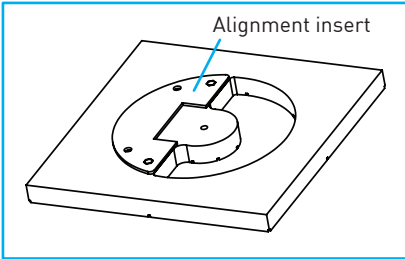


Fig.1

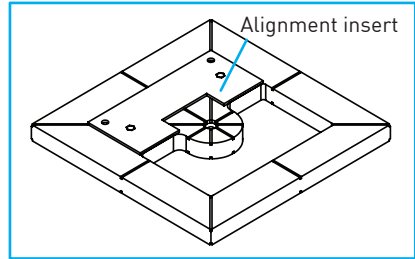


Fig.2

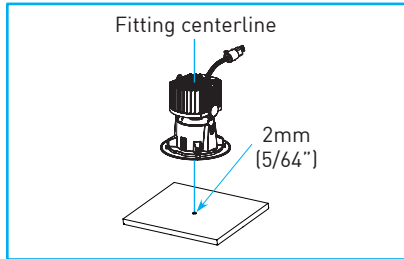


Fig.3

Remove alignment insert from the template using a #1 Phillips head screwdriver, making sure to reserve insert and screws for later step **"Fig.4"**.

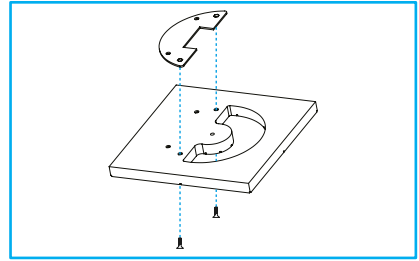


Fig.4

Place the smooth side of the template against the wood surface, aligning the center mounting hole with the pilot hole. Attach template loosely with a #6 wood screw, using alignment grooves to properly position unit **"Fig.5"**.

Tighten center screw and then tighten other two template mounting screws.

Note: Hardness of wood may require pilot holes be drilled for template mounting screws, ensuring proper alignment before drilling.

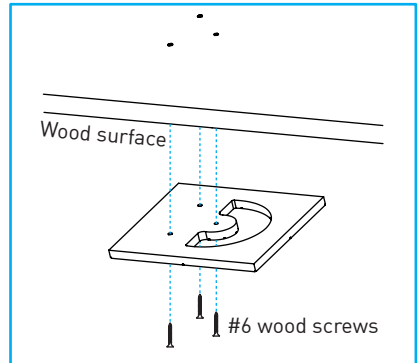


Fig.5

Using plunge router with depth set per test sample, insert into interior portion of template and remove material to required depth, ensuring that the router base is kept level with the template **"Fig.6"**.

Remove template from ceiling.

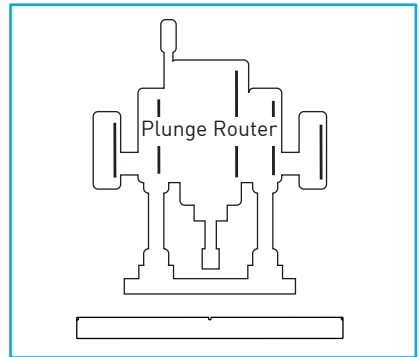


Fig.6

Note: For square fitting installations, use a sharp utility knife to score wood, forming two square corners. Then, use a sharp wood chisel to remove the remaining material to the same depth **"Fig.7"**.

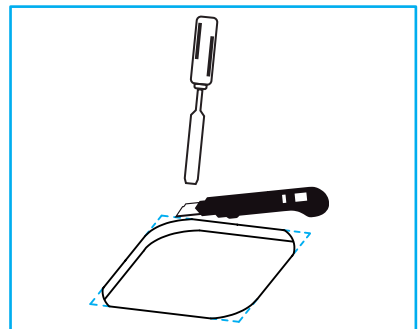


Fig.7

Reattach alignment insert to flat side of template, using reserved screws from prior step **"Fig.8"**.

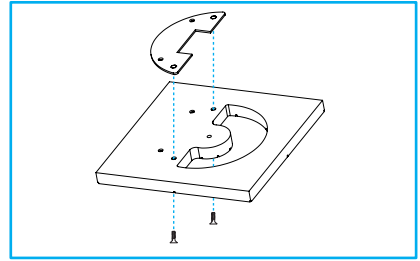


Fig.8

With template rotated 180°, position alignment insert into the dado cut, ensuring that it seats firmly against the outer edge of the primary cut **"Fig.9"**.

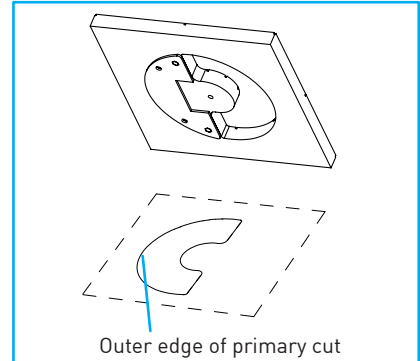


Fig.9

Use plunge router to remove material to required depth, ensuring that the router base is kept level with the template **"Fig.10"**.

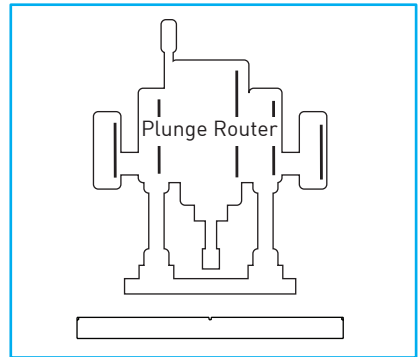


Fig.10

Remove template from ceiling.

Note: For square fitting installations, use a sharp utility knife to score wood, forming two square corners. Then, use a sharp wood chisel to remove the remaining material to the same depth **"Fig.11"**.

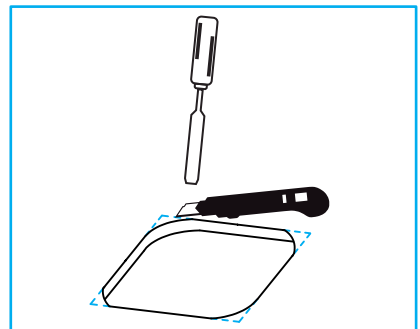


Fig.11

Note: Prior to drilling through hole, ensure that dado is cut to sufficient depth.

Cut a hole using a 92mm (3.625") hole saw, centered on the pilot hole **"Fig.12"**.

Note: With proper care, the template should be suitable for many uses. Replace worn or damaged template to ensure satisfactory installation.

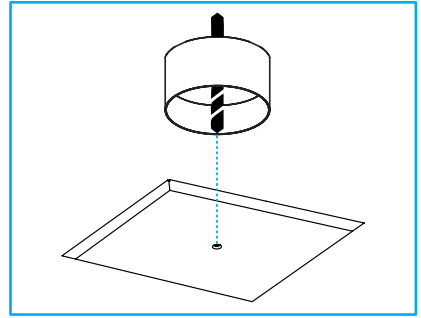


Fig.12

E. POWER SUPPLY INSTALLATION

1. INSTALL POWER SUPPLY

Remove splice compartment cover, gaining access to wiring compartment of power supply **"Fig.13"**.

Driver assembly provides integral wiring terminal **"Fig.13"** and typically accepts 3 wires for connecting to the mains voltage: Black (Line / Hot / Switching), White (Common) and Green (Protective Earth Ground).

Use appropriate raceway, connectors, wire and strain reliefs as required.

Note: Improper polarity may cause damage to the unit and can void the warranty.

Consult wiring diagrams in Section "I. WIRING DIAGRAMS", joining structured building wires to corresponding driver terminals.

Carefully raise finished power supply up through ceiling cutout, and rest atop ceiling **"Fig.14"**.

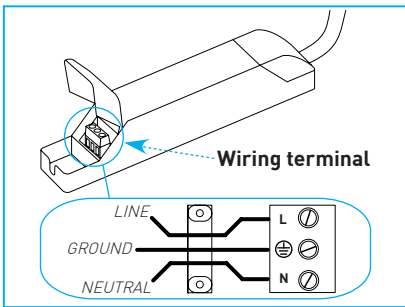


Fig.13

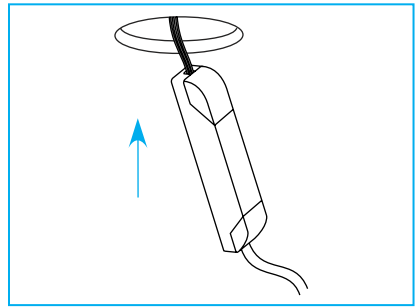


Fig.14

Drive Current Information:

	80S				90S				97S				90L			90T
	06A	11A	15A	21A	06A	11A	15A	21A	06A	11A	15A	21A	11A	15A	22A	17A
Min. Vf	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5
Max. Vf	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
Current mA	150	250	350	500	150	250	350	500	150	250	350	500	250	350	500	400
Wattage W	4.9	8.4	12.1	17.9	4.9	8.4	12.1	17.9	4.9	8.4	12.1	17.9	8.3	11.8	17.9	16.8

	10 DEGREE OPTIC		
	80S15C	90S15C	97S15C
Minimum Vf	30.5	30.5	30.5
Maximum Vf	39	39	39
Current mA	350	350	350
Wattage W	12.1	12.1	12.1

F. FITTING INSTALLATION

Important: Fitting adaptor must be removed prior to any refinishing or repainting of ceiling. Presence of paint, ceiling mud or other construction materials on or in adaptor represents unsafe condition, must be replaced or cleaned to original condition and specifications to maintain factory warranty.

1. INSTALL FITTING ADAPTOR - FLANGE OVERLAY / ZERO-SIGHTLINE WOOD

Ensure ceiling is finished before beginning fitting installation.

Determine direction or wallwashing surface fitting is intended to aim at, pointing the blue line on the fitting adaptor in that direction "**Fig.15**".

Ensure fitting adaptor arms are pointed inward. Insert adaptor up through ceiling cut-out "**Fig.16**".

Begin tightening adaptor arm screws, ensuring arms swing out, then down engaging top of housing collar lip or ceiling substrate in remodel applications.

Utilize string line or laser level to obtain uniform or desired alignment between multiple fittings and square fittings in relation to parallel planes referencing markings on fitting adaptor face perimeter "**Fig.17**".

Hand-tighten adaptor arm screws, not exceeding 5 in.-lbs. (0.565 Nm), ensuring adaptor lip seats uniformly flush with finished ceiling plane and housing collar "**Fig.18**".

Guide low-voltage wiring and safety lanyard through adaptor to hang below ceiling to facilitate fitting installation "**Fig.19**".

Connector type varies and may look different than graphic.

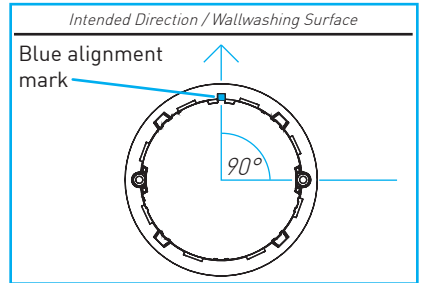


Fig.15

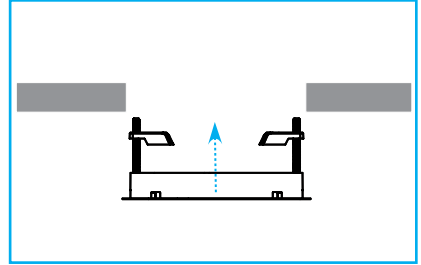


Fig.16

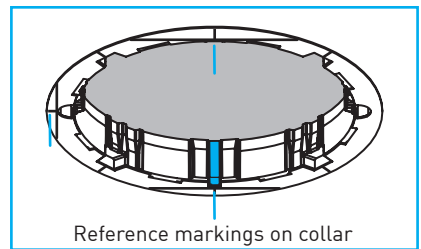


Fig.17

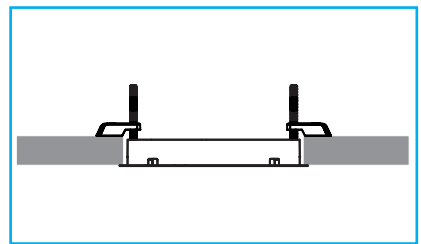


Fig.18

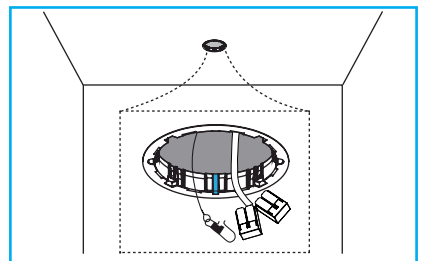


Fig.19

2. INSTALL APPLIQUÉ AND FITTING ADAPTOR - ZERO-SIGHTLINE DRYWALL

An appliqué is required for zero-sightline installations. The following instructions assume housing has been installed and / or proper ceiling cut-out has been made ready to accept appliqué and / or fitting adaptor.

Important: For square fitting installations, appliqué must be properly aligned. Utilize string line or laser level to obtain uniform or desired alignment between multiple fittings, or in relation to parallel planes **"Fig.20"**.

With Housing: For installations utilizing a downlight housing, align 4 countersunk screw holes in appliqué with corresponding holes of rotatable housing collar in ceiling cut-out. Use 4 provided screws through proper holes in appliqué and tighten until appliqué is fully seated against ceiling surface **"Fig.21"**, ensuring desired alignment if square appliqué is used.

Without Housing: For remodel or tethered power supply installations without a housing, center appliqué in cut-out and install fitting adaptor (with arms pointed inward) up through appliqué. To secure, tighten adaptor screws so arms swing out then down, until appliqué is fully seated against ceiling surface **"Fig.22"**, ensuring desired alignment if square appliqué is used.

Fitting adaptor should rest completely and uniformly in appliqué recess.

Important: After plaster mudding / floating has been performed, subsequent appliqué adjustment is not possible. Ensure proper, fully seated fit and desired alignment if square.

After appliqué is secured (by screws or fitting adaptor), install plaster plug **"Fig.23"**.

Do not remove plug until all plaster and paint work is complete.

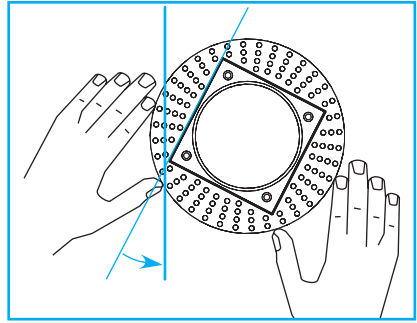


Fig.20

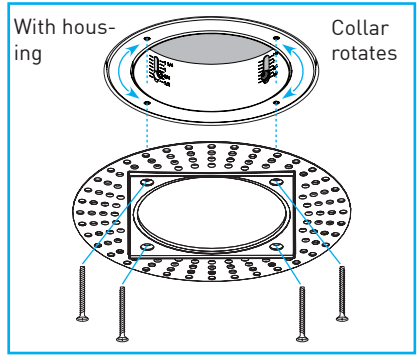


Fig.21

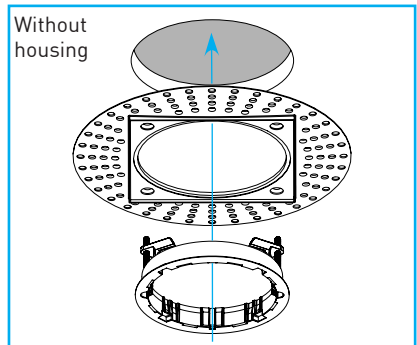


Fig.22

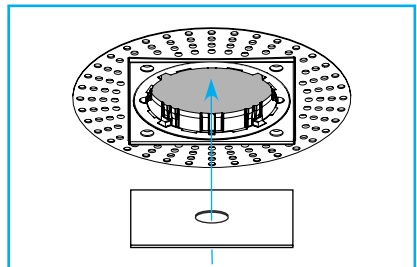


Fig.23

With paint / plaster plug installed, **"Fig.24"** use floating knife to apply first pass of drywall compound and float area up to slightly below edge of flange / plaster stop. Float out as far as necessary to hide perforated appliqué and allow first pass of joint compound to dry **"Fig.25"**.

After first pass is dry, apply second coat of drywall compound. Make surface as smooth as possible. Ensure coat of compound falls below flange / plaster stop **"Fig.26"**.

On final pass, feather compound as you move away from flange to give appearance of a perfectly flat ceiling **"Fig.27"**. Allow drywall compound to dry fully and cure.

Gently use block sanding screen and sand surface until drywall compound is even with bottom of flange / plaster stop **"Fig.28"**. Ensure surface is smooth.

Apply primer and paint as required. After paint is dry, remove plaster plug making sure adhesive tape is removed as well.

Check for any drywall compound or paint that may have seeped beneath plug and carefully scrape if necessary.

Important: Any foreign material left in or on recessed appliqué surface or fitting adaptor may prevent proper fitting installation and satisfactory zero-sightline fitting installation.

Note: The size of some power supplies may require removal of fitting adaptor to facilitate insertion through cut-out.

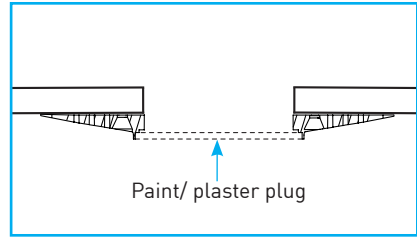


Fig.24

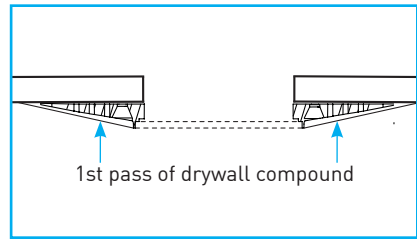


Fig.25

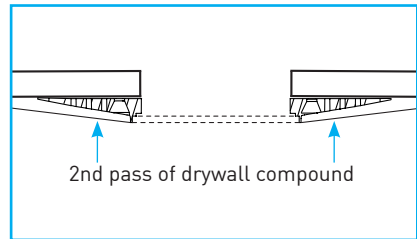


Fig.26

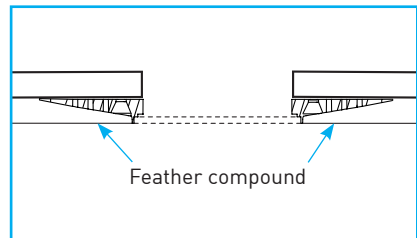


Fig.27

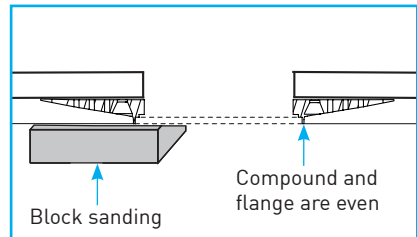


Fig.28

3. INSTALL FITTING - ALL APPLICATIONS

Attach safety lanyard from mounting adaptor to designated hole in support arm of downlight fitting using supplied clasp.

Attach LED wiring to the corresponding 2-pin lever-nut connectors. Red to Red (+), Black to Black or Blue (-) **"Fig.29"**.

Connector type varies and may look different than graphic.

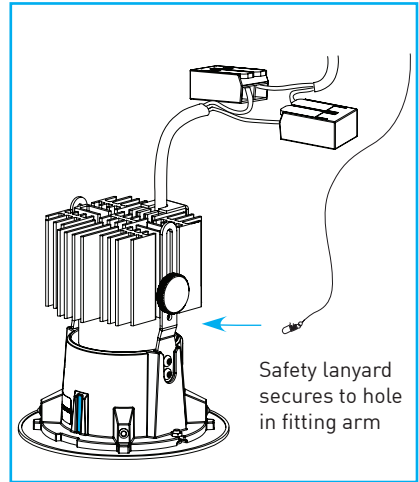


Fig.29

LED downlight fittings typically accept multiple effects devices.

To install, change, or rearrange reflector or effects devices, loosen thumb screws of fitting, then slide LED engine assembly up and swing out for access **"Fig.30"**.

To change reflector, carefully grab and twist counter-clockwise to remove and clockwise to secure.

Position required special effects device(s) in lens recess of downlight in preferred order and correct orientation.

Return LED engine assembly to locking position and secure by tightening thumb screws.

Important: Before final downlight installation in ceiling, ensure LED engine assembly is secure and safety lanyard is properly affixed to downlight and mounting adaptor.

Downlight fitting mates with housing / ceiling collar via positive engagement, high performance ball-plungers.

To install downlight, ensure blue line of fitting is aligned with blue line of fitting ceiling adaptor, guide safety lanyard and power supply wires up through opening so that they do not become entangled or pinched and insert fitting up into neck of adaptor.

Apply even pressure to underside of fitting faceplate (mechanism, if adjustable fitting) until the unit "pops" up into final resting position in adaptor **"Fig.31"**.

Verify fitting faceplate seats fully and uniformly flush to ceiling plane **"Fig.32"**.

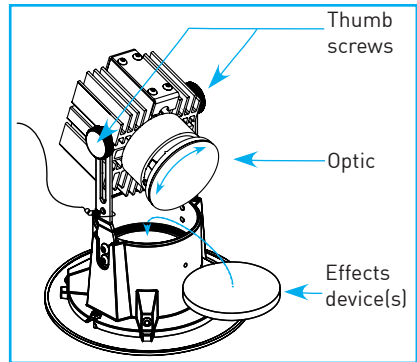


Fig.30

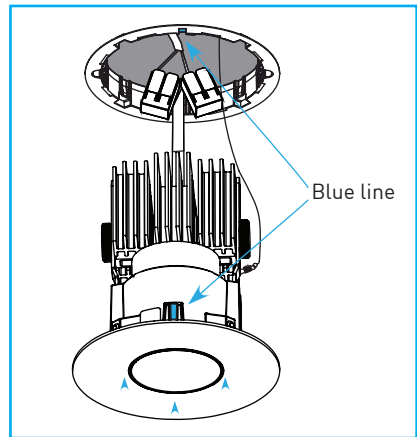


Fig.31

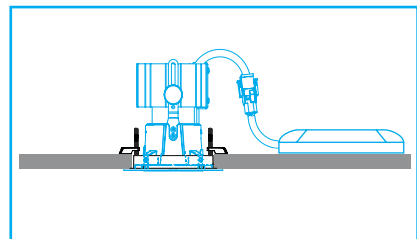
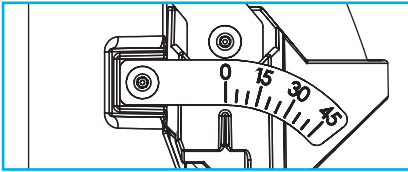


Fig.32

G. ADJUSTABLE FITTINGS

Hot-aim tilt and rotation adjustment is accessed by removing fitting's faceplate held in place by rare earth magnets, revealing adjustment mechanisms "Fig.33".

Initial adjustment to fitting tilt may be made prior to installing downlight by using marked indicator.



Spring loaded tilt allows fitting to pass through ceiling opening in vertical position and return to pre-set angle once installed.

Adjustments made with supplied, standard .050" Allen tool.

With faceplate removed, locate tilt adjustment screw and rotation lock screw.

1. ROTATION

To rotate, use supplied hex tool and loosen lock screw, then carefully set fitting to desired position by hand. Tighten lock screw to secure "Fig.34". **DO NOT OVER TIGHTEN.**

2. TILT

To adjust tilt, use hex tool with countersunk jack screw and rotate counter-clockwise to increase tilt angle (up to 45° max), or clockwise to decrease tilt angle "Fig.35".

DO NOT TURN SCREW PAST LIMITS OF ADJUSTMENT, DAMAGE TO MECHANISM MAY ARISE.

Complete installation by bringing faceplate close to mechanism, aligning magnets, and allow faceplate to seat to fitting and ceiling plane.

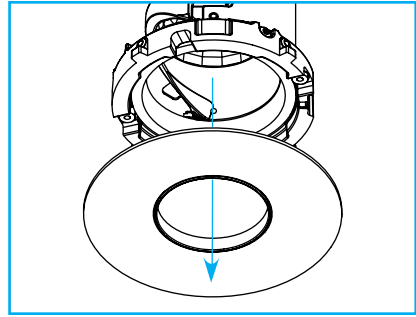


Fig.33

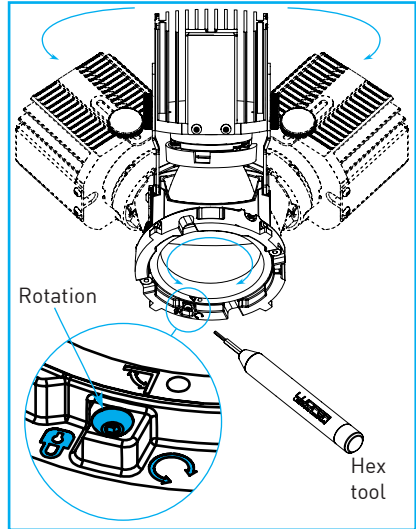


Fig.34

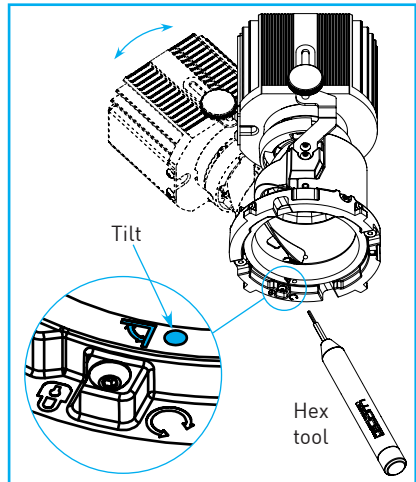


Fig.35

H. SERVICING

Important: Before servicing or maintaining trim or housing, disconnect electrical power at main switch or circuit breaker. Additionally, heed all WARNINGS and CAUTIONS, review the Safety Instructions, and refer to figures in main installation instructions where necessary.

1. REPLACING LED ENGINE ASSEMBLY:

A. Remove trim from ceiling using following techniques for the respective fitting type.

- Fixed – Using round-shafted flat blade screw driver, carefully position blade of screw driver on top of baffle with shaft gently resting on opposing trim aperture. Pry slightly to dislodge trim from trim adaptor.
- Wallwash – Grasp baffle using soft gloves or with clean soft cloth, pulling away from mounting plane.
- Adjustable:
 1. Dry / Damp – Insert fingers in trim aperture, grabbing and pulling downward on removable faceplate.
 2. Wet – Carefully grasp perimeter of trim pulling downward on removable faceplate.
 3. With respective faceplate removed, grasp trim mechanism with fingers and pull downward.

B. Release trim from wiring harness by disconnecting male / female connectors, or releasing fitting wiring from 2-pin lever-nut connectors.

C. Detach LED Engine assembly by loosening and removing two knurled knob thumb screws. Save thumb screws **"Fig.36"**.

D. Replace with new OEM LED engine assembly sourced through Lucifer Lighting, reversing order of preceding steps. Replacement LED engines will be provided with 2-pin lever-nut connectors.

E. Reinstall the fitting in the fitting adapter.

2. EXCHANGING EFFECTS DEVICE OR OPTIC

A. To begin installing, changing, or rearranging optic or effects devices, remove the fitting from the fitting adapter.

To change effects device, loosen thumb screws of fixture, then slide LED engine assembly up and swing out for access **"Fig.36"**.

B. To change optic, carefully grab and twist counter-clockwise to remove and clockwise to secure. Ensure that both feet of optic properly engage LED base **"Fig.36"**.

C. Reinstall the fitting in the fitting adapter.

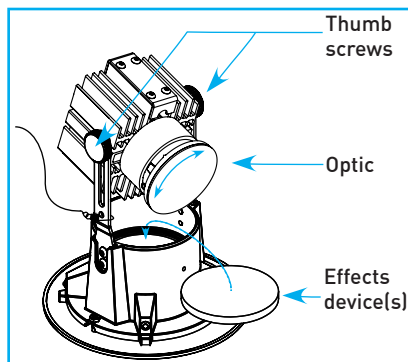


Fig.36

3. DRIVER REPLACEMENT

- A. With fitting removed, pull wiring harness to facilitate guiding driver down, through and just below ceiling cutout.
- B. Disconnect driver from line / mains and control wiring as applies.
- C. Replace with OEM driver sourced through Lucifer Lighting.
- D. Connect driver to line / mains and control wiring as applies.
- E. Guide driver assembly back through ceiling cutout and place atop ceiling.
- F. Attach LED wiring to the corresponding 2-pin lever-nut connectors, Red to Red (+), Black to Black or Blue (-).
- G. Reinstall fitting.

4. FIELD PAINTING OF FITTING:

Though we strongly recommend custom paint be applied by factory during manufacturing, fittings may be field painted without impacting factory mechanical warranty using following guidelines.

- Select paint suitable for application and location of fitting, recognizing Lucifer Lighting Company fittings are tested not to exceed temperatures of 90° Celsius, where typical operating temperature of faceplate is 46° Celsius nominal.
- Fitting plate surface must be properly prepped in accordance with paint manufacturer's instructions. Paint supplied and furnished by customer.

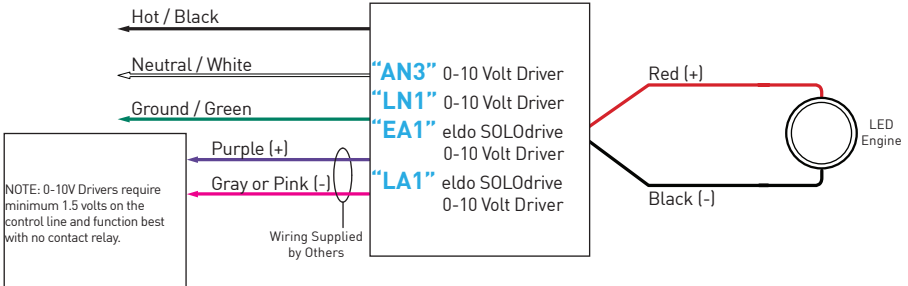
Important: Paint to be applied to fitting faceplate only. Do not apply paint to magnets of adjustable series fitting. Any disassembly or modification to fitting or mechanism voids factory warranty and may represent an unsafe operating condition.

I. WIRING DIAGRAMS

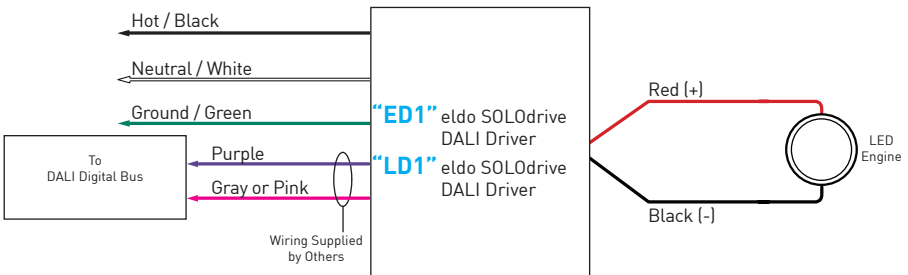
GENERAL WIRING NOTES

1. Consult approved dimmer list to ensure compatibility.
2. Install in accordance with manufacturer's dimmer installation guidelines.
3. Secondary and 0-10V connections are polarity sensitive.

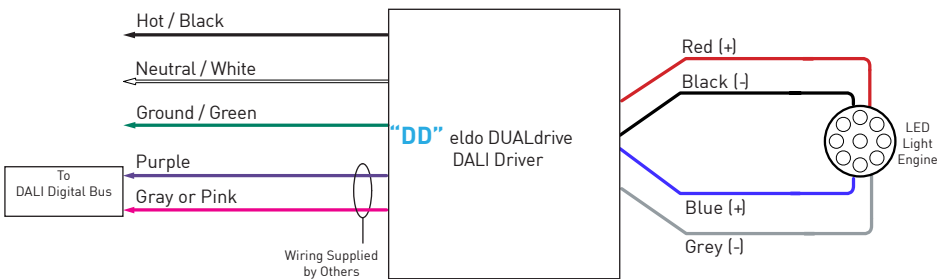
WIRING DIAGRAM FOR ANALOG CONTROL



WIRING DIAGRAM FOR DIGITAL CONTROL



WIRING DIAGRAM FOR TUNABLE WHITE DALI CONTROL



Please consult website for full warranty terms and conditions:

www.luciferlighting.com/warranty

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