

DH-IC/DH-NIC

RECESSED DOWNLIGHT HOUSINGS

INSTALLATION

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

CAUTION

To reduce the risk of fire, electric shock, and potential damage to the recessed housing assembly when electrical power is re-connected.

DO NOT ATTEMPT TO CONNECT the following on the branch circuit serving the recessed downlight assembly:

1. Motors
2. Power tools
3. Extension cords
4. Appliances or similar electronics

IMPORTANT SAFETY INSTRUCTIONS

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

IMPORTANT SAFETY INSTRUCTIONS (Continued)

6. Install and mount the recessed downlight assembly on a structurally sound surface.
7. Do not install the recessed downlight assembly closer than six-inches (6") from curtains, exotic veneers, or similar combustible materials.
8. DH-IC/DH-NIC Recessed housing assemblies may be installed in dry and damp locations only.
9. Disconnect electrical power circuit before adding to or changing the configuration of the recessed downlights.

C. GENERAL INSTALLATION AND WIRING INSTRUCTIONS

1. The DH-NIC, and DH-IC housing assemblies should be installed by a registered electrician and shall comply with National Electric Code (NEC) and local codes and ordinances having jurisdiction.
2. The installer of the DH-NIC, and DH-IC housing assemblies is responsible for furnishing proper electrical equipment and materials for the installation of the housings as intended by these installation instructions

C. GENERAL INSTALLATION AND WIRING INSTRUCTIONS

3. Install housings in a manner to permit access to components and splice connections which may require future service.
4. Set recessed housing plumb square and level with the ceilings and walls, in alignment with adjacent structural members. Secure in accordance with these installation instructions for the specified housing.
5. Recessed housings installed in accessible and non-accessible ceilings shall be supported from the structural members of the building. Do not support housings by lay-in ceiling support T-bars only.
6. Metal conduit shall be used if required by applicable codes. The conductor insulation must be rated for the appropriate temperature rating as specified for each Lucifer recessed downlight assembly.
7. The ground wire at the service junction box shall be secured to a ground screw. No part of the secondary 12-volt circuit shall be grounded.
8. Switching or dimming should be controlled on the primary 20-volt side of the transformer. The switch must be rated to resist the effect of the switch-on surge (usually 1.25 to 1.50 times the running current). Use only dimmers specially designed and manufactured for dimming the primary side of transformers.
7. Verify with the dimmer manufacturer that the dimmer is suitable for dimming the primary side of low voltage magnetic or electronic transformers, whichever is applicable, and can accommodate transformer load.
8. The recessed downlights are thermally protected as required by underwriters laboratories (UL). Blinking lamp may indicate that the installation of the housing is improper and the surrounding space above the ceiling is causing over-heating or a higher wattage lamp is being used other than the wattage in which the housing is approved. Check if insulation is too close to the housing or if the lamps wattage is too high contrary to housing label and specific installation instructions.
9. Lucifer downlights operate on a 12-volt secondary system, except when used as a line voltage housing. When circuiting Lucifer 12-volt recessed downlights either singly or in series with a remote transformer, it is important to note a lower voltage signifies a higher current in amperes. Secondary fusing based on a multiplier of 1.25% (NEC) must be used. The conductor on the secondary side of the transformer at 12-volts must be sized for the full load amperage.

EXAMPLE #1

$$\text{watts} = \text{volts} \times \text{amps}$$

$$\text{amps} = \frac{\text{watts}}{\text{volts}}$$

$$\frac{50 \text{ watts}}{12 \text{ volts}} = 4.16 \text{ amps}$$

$$4.16 \text{ amps} \times 1.25 = 5.20 \text{ amps}$$

Result: Use a 5 amp fuse.

SAVE THESE INSTRUCTIONS.

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7. The proper size of supply wire is also critical to reduce the possibility of voltage drop. Undersizing of supply wire reduces efficiency, affects color temperatures and will affect lamp life. Refer to the following chart for recommended wire sizes for specified distances of housing from a 12-volt remote transformer.

WARNING: Conductor size and lengths shall not exceed figures set forth in table below:

Maximum Length from Transformer

Watts/12v	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300
Amps/12v	1.7	3.3	5.0	6.7	8.3	10.0	11.7	13.3	15.0	16.7	18.3	20.0	21.7	23.3	25.0
12AWG	65	33	22	16	13	11	9	8	7	7	6	5	-	-	-
10AWG	104	52	35	26	21	17	15	13	12	10	9	8	7	7	7
8AWG	165	83	55	41	33	28	24	21	18	17	15	14	13	12	11
6AWG	263	132	88	66	53	44	38	33	29	26	24	22	20	19	18

D. POWER SOURCE

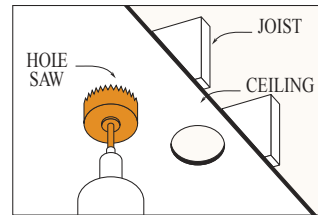
The secondary power supply is either a remote-12 volt transformer installed between the primary power supply and the recessed downlight, an integral transformer, or the housing is set up to be used on a 120 volt AC line voltage. In remote transformer installations, each low-voltage circuit from the power supply must be protected by an in-line circuit breaker or a fuse that is properly sized for the connected load. For example, a 1.25% multiplier as required by the national

E. HOUSING CEILING CUTOUT REFERENCE

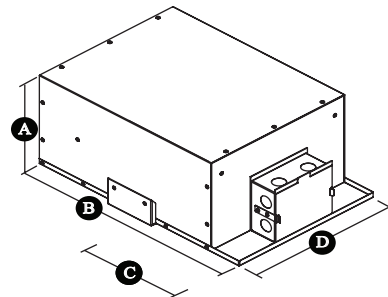
1. Housings: DH-IC-XF, DH-NIC-XF
Ceiling cutout: 4 1/2" diameter
2. Housings: DH-IC-ZF, DH-NIC-ZF
Ceiling cutout: 3 1/2" diameter

3. Housings: DH-IC-ZO, DH-NIC-ZO
Ceiling cutout: 5" diameter

NOTE: Lucifer Lighting recommends the use of a Hole Saw for a more accurate ceiling cut. Many trims

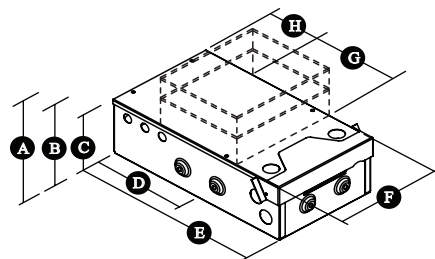


F. HOUSING ILLUSTRATIONS



- A** 7" 177mm
- B** 16.3" 413mm
- C** 7.2" 185mm (aperture centerline)
- D** 10.9" 276mm

DH-IC



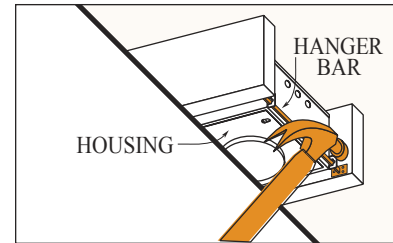
- A** 7" 177mm (CFL/Par)
- B** 5.1" 129mm (HID)
- C** 3.7" 94mm (HAL)
- D** 6.3" 160mm (aperture centerline)
- E** 12" 305mm
- F** 6.8" 172mm
- G** 6.3" 160mm
- H** 3.3" 84mm

DH-NIC

G. HOUSING INSTALLATION

1. MOUNTING

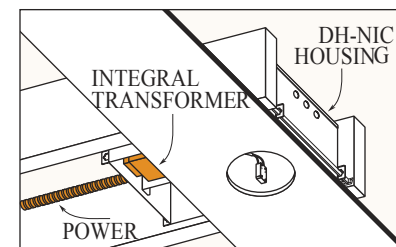
Install the housing where the trim model is specified to be located and rough-in framing of housing with the use of hanger bars brackets provided. In ceiling grid systems, clip the hanger bar end clips onto the ceiling grid to secure the housing. In other ceilings, nail the hanger bar end brackets into the crossbeam supports. In drywall ceilings it is required that the cutout is sized properly for the housing. The neck of the housing should fit snugly into the circular cutout and be level with the finished ceiling plane. In ceilings where insulation is present, all insulation must be at least 3" away from each side of the downlight housing, except for the DH-IC Insulated housing.



2. WIRE CONNECTIONS

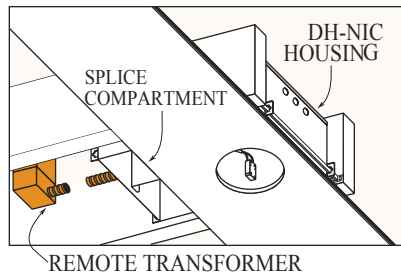
NOTE: Verify that all wiring meets the temperature requirements labeled on the housing.

a. Where the transformer is integral to housing, remove a knockout on the housing suitable for conductors. Use an approved fitting or strain relief to protect the wire. Consult the NEC and your local code authority as to the appropriate wire type, wire gauge, and wire connectors for your application. The housing is provided with three wires in the transformer compartment. The green wire is to be connected to an earth ground. The white wire is to be connected to the neutral leg of the circuit. The black wire is to be connected to the line leg of the circuit. Locate all wiring connections within the transformer compartment. Replace cover plate, where provided.



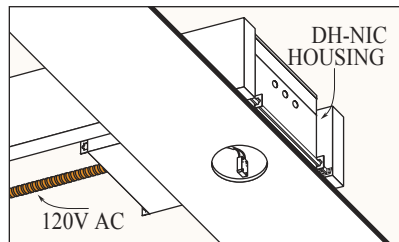
b. REMOTE TRANSFORMER

Where the transformer is remote, install a Lucifer supplied transformer with 12 volt output and adequate volt amp rating in a well-ventilated and accessible location. Place the transformer to allow the shortest possible run of the voltage conductors. Magnetic transformers are heavy. Assure that the transformer is securely attached to sound support. Be sure to properly size wiring in accordance with the distance to the transformer, lamp wattage and transformer size. Refer to wire chart under section C-12 proceeding. Specific instructions for transformer wiring may be found with the remote transformer.



c. WIRING LINE VOLTAGE SPECIFICS

The model DH-IC, and DH-NIC housings are line voltage capable housings intended for use on a 120 volt AC branch circuit. Route the branch circuit wiring through one of the knockouts provided in the splice compartment access panel or the top of the housing. Use an approved fitting or strain relief to protect the wire. Consult the NEC and your local code authority as to the appropriate wire type, wire gauge, and wire connectors for your application. The housing is provided with three wires in the splice compartment. The green wire is to be connected to an earth ground. The white wire is to be connected to the neutral leg of the circuit. The black wire is to be connected to the line leg of the circuit. Locate all wiring



H. LAMP WATTAGE

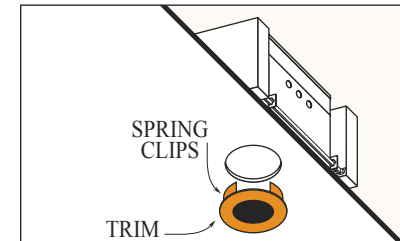
Lucifer recessed downlights are low voltage lighting fixtures, (except the 40 series of downlights), designed to operate with a 12-volt power supply only. With the use of either a 120-volt, or 277-volt primary the DH-IC housing can utilize up to a 50 watt MR-16 lamp; while the DH-NIC can utilize up to a 75 watt MR-16 lamp.

I. LENS AND LAMP INSTALLATION

When the housing has been properly and securely installed, and all electrical connections have been made, install the specified MR-16 lamp into the socket hanging from the housing's opening. When a glass barrier (lens) is not used, install a sealed (lensed) MR-16 lamp only. When using lenses, the proper installation order is to place the spread lens closest to the lamp, prism side away, then diffusion lens, color lens, and louver, respectively.

J. TRIM INSTALLATION

After lamping, insert the downlight trim into the downlight housing by carefully depressing the outer ends of the spring clips toward the center of the trim with the thumb and forefinger of each hand. Slip the trim up into the neck of the downlight housing, applying even pressure.



LIMITED WARRANTY

LUCIFER LIGHTING COMPANY (Seller) warrants that for a period of one (1) year from date of sale to the first non-retail purchaser, Seller will repair or replace, at the Seller's sole option, free of charge, any defective products purchased from Seller provided that prior authorization is obtained from the Seller and the products are sent prepaid to the Seller's manufacturing facility. Lamps are not warranted or guaranteed in any manner for any length of time. In no event shall Seller's obligations under this warranty extend beyond the initial cost of the products and accordingly, consequential damages arising out of any claimed product defect are expressly excluded. This Warranty does not cover the costs, if any, in reinstallation of products serviced under this Warranty. This Warranty does not cover damage or failure caused by acts of God, abuse, misuse, abnormal usage, faulty installation, or any repairs or modifications other than

those made by Seller. This Warranty does not cover damage or failure caused by light fixtures used with transformers or other products not supplied by Seller, nor shall it apply to defects for which written notice thereof is not received by Seller within one (1) year from date of purchase. Except as to Seller's Warranty of repair or replacement set forth above, there are no understandings, agreements, representations, or warranties, express or implied (including any regarding the merchantability or fitness for a particular purpose), respecting Lucifer products. This Warranty is the purchaser's sole and exclusive remedy against the Seller for the repair or replacement at Seller's option of defective Lucifer products. Under no circumstances shall Seller be liable for any loss or damage, direct or consequential, arising out of the use of, or inability to use, the products sold hereunder.

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