



Lighting Fixtures Lab

Program: Electrician Technician

Course: EL150 Commercial Applications

Objectives: Under the supervision of your instructor, you should be able to do the following:

- Install each of the following lighting fixtures and their associated lamps.
 - Recessed can light
 - Emergency light
 - Exit light
 - Surface mounted light
 - Keyless light

Lab Equipment:

- Commercial Bay

Required Tools:

- 1 – Pair of strippers
- 1 – Flathead screwdriver
- 1 – Phillips screwdriver
- 1 – Cordless Drill
- 1 – Armored Cable Cutter
- 1 – Ladder

Materials:

- 6 – Wire nuts
- 4 – Light fixtures from list above
- 1 – pre-wired light outlet with switch
- 10' - Metal-Clad (MC) Cable 14/2
- 4 - Anti-Short Bushings

Safety (PPE):

- Safety glasses/goggles
- Hard hat

Resources: N/A

Required Time: One Day



Shop Maintenance:

- All work will cease 20 minutes prior to the end of class.
- All work areas must be cleaned.
- Tools and equipment must be cleaned and returned to the designated areas (cage, tool room, cabinets etc.)
- Any broken or missing tools must be reported immediately.
- Tools and equipment are students' responsibility

Procedures: *(Eye protection must always be worn)*

- After the lights are mounted, have your instructor test each one.
- All the following fixtures must be wired after you wire a switch from the panel. Then run a switch leg up for each one of the light fixtures below.

Recessed Light

1. Knock out one of the wire entrance tabs (small tab on top on either edge of junction box).
2. Mark location on framing to where the center of the light will be.
3. Using one hand, hold the recessed light up to the framing so the center of the opening of the light will match the mark on the framing.
4. While holding the light in place with one hand, pull the support bars of the light tight to the framing. Take your hammer and hit the nails on the support bars of the light until flush. Repeat this step for both sides of the light.
5. Slide the light on the support bars until the center of the light lines up to the desired measurement. Tighten screw on the side of support bars so the light will retain its position.
6. Strip about 6" of exterior insulation from the end of the MC Cable and remove the junction box cover on the light.
7. Strip ½" of individual insulation from both the black and white wires.
8. Insert the wire through the knockout on top of the junction box until about 1/8" of insulation is showing in the junction box past the support clamp.
9. Connect the wires to the proper matching colored wires in the junction box. Black to black, white to white and bare copper to green.
10. Replace the junction box cover and secure the wire to the framing between 8" and 12" from the junction box.
11. Install the appropriate lamp in the fixture.
12. Connect switch-leg to switch and test



Various flush mounted lights (Exit light, emergency light, surface mounted light)

1. Install the support cross bar or round bracket from the fixture to the light box using two (8/32) screws.
2. Take the two 8/32 screws and install them into the support bracket so they will be facing away from the box, aligning with the hole on the face of the base plate of the light fixture.
3. Pull the existing wires from the light box out past the support bracket.
4. While supporting the light fixture, connect the light wires to the corresponding wires in the box. Black to black, white to white and bare copper to green.
5. Slide the light fixture onto the two mounting screws on the bracket, making sure, all the wires are in either the light fixture or the box and screw the end caps onto the mounting screws until the light fixture is tight and flush to the surface of the wall.
6. Adjust the light, if needed.
7. Connect switch-leg to switch and test