

The Knife Edge Cove is a modular lighting system consisting of two parts:

- 1- An aluminum fixture housing extrusion
- 2- Drop-in lighting modules

The fixture will provide a continuous knife edge architectural structure on a wall, floating ceiling or soffit edge. It will provide balanced illumination of the vertical wall behind and on the ceiling area above.

IMPORTANT: The fixture housing extrusion is intended to be mounted to structurally secure framing prior to application of sheetrock on that framing.

After attachment of the fixture housing extrusion, sheetrock will be applied on the vertical wall above, on the horizontal surface on the bottom and if required, on the vertical wall below. Designated surfaces are intended to be spackled, creating a smooth transition from the fixture housing extrusion to the sheetrock. All sheetrock and the sloped front surface of the housing are to be painted in the field.

After completion of the fixture housing installation, the lighting modules are inserted (See Figure 1). Lighting modules are self contained with linear LED boards attached to an adjustable mounting plate and the required driver, all pre-wired, with bus connectors at each end so the desired circuiting along the length of the cove can be established quickly and easily. Power is connected to the bus where desired via plug in pigtail adapters.

Fixture Housing Components

Fixture Housing Extrusion (See Figure 1)

- WEIGHT: 4 lbs / ft
- FINISH: Unpainted – surface treated with Alodine to accept high quality wall paint (provided by others)
- LENGTHS: Provided in 8ft nominal lengths only. Field cut final piece in linear run to desired length

Inside and Outside Corners (See Figures 2 & 3)

- WEIGHT: Inside - 9 lbs
Outside - 24 lbs
- FINISH: Unpainted – surface treated with Alodine to accept high quality wall paint (provided by others)

Splines (Total of 3, See Figure 1)

Designed to align and hold sections of fixture housing extrusion together

Mounting Screw Channel Filler (See Figure 1)

Designed to partially fill mounting screw channel, reducing the amount and providing a ground for spackling the screw channel

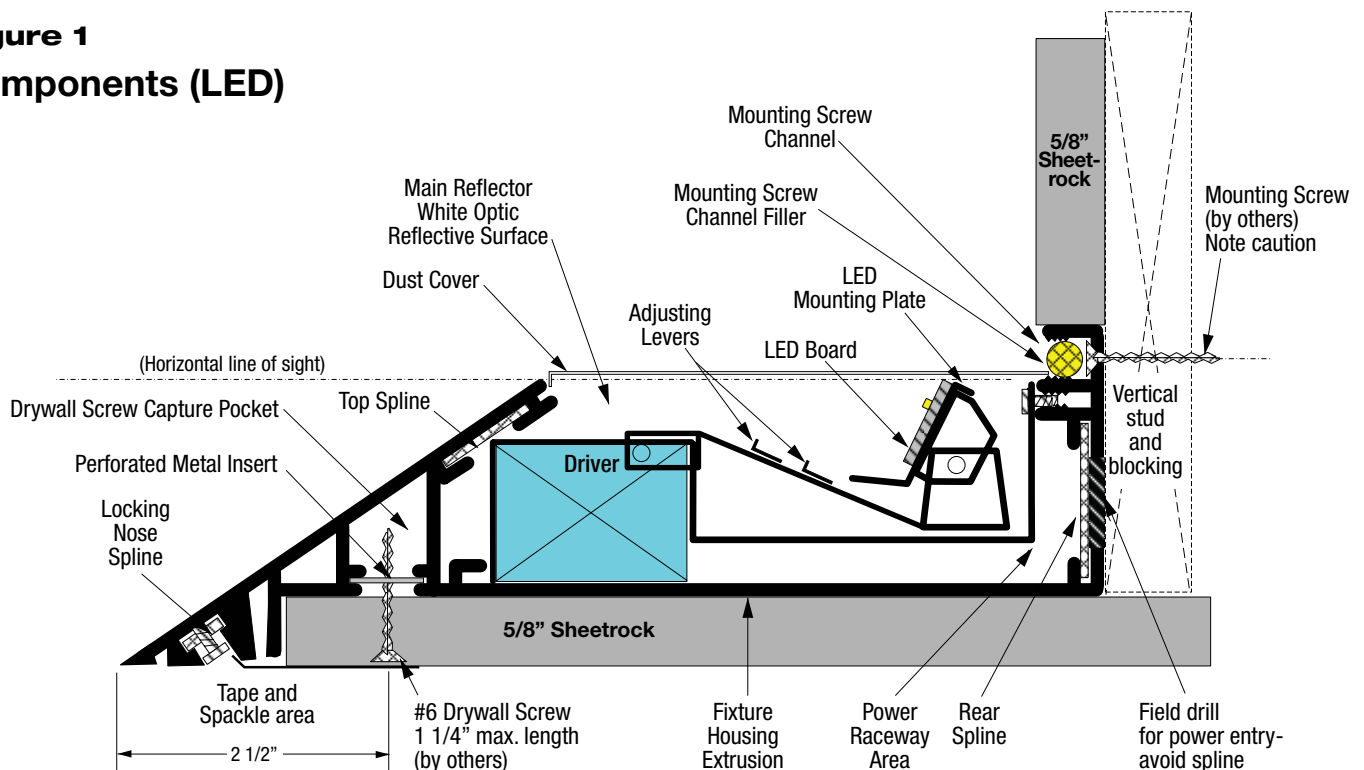
Fixture Housing Extrusion End Cap

Used to close the end of the fixture housing extrusion. Not required when the fixture housing extrusion ends in a corner or against a wall. Available in Left and Right configurations

Drywall Screw Capture Pocket (See Figure 1)

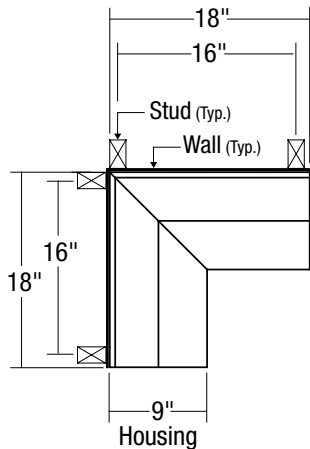
Perforated steel insert for drywall screws to enter and hold

Figure 1
Components (LED)



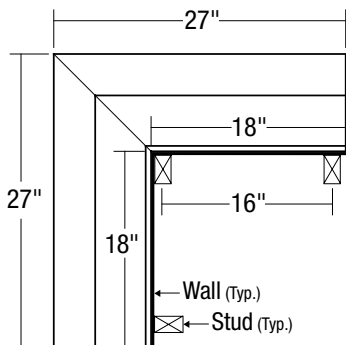
Knife Edge Corner Details

Figure 2



Inside Corner Plan View

Figure 3



Outside Corner Plan View

Lighting Module Components

Lighting Tray (See Figure 1)

Tray includes metal frame, LED boards on adjustable mounting plate, driver, and power bus wiring. Lighting trays are always installed tightly abutting each other with no gaps to minimize socket shadow and to form an approved electrical raceway.

- SIZES: (See Lighting Modules Size Chart)

Extension Module

Extension trays position LEDs into corner and fills gaps at end of run.

Lighting Tray End Cap

End caps are required at the ends of every continuous run of lighting trays. To create an approved electrical raceway.

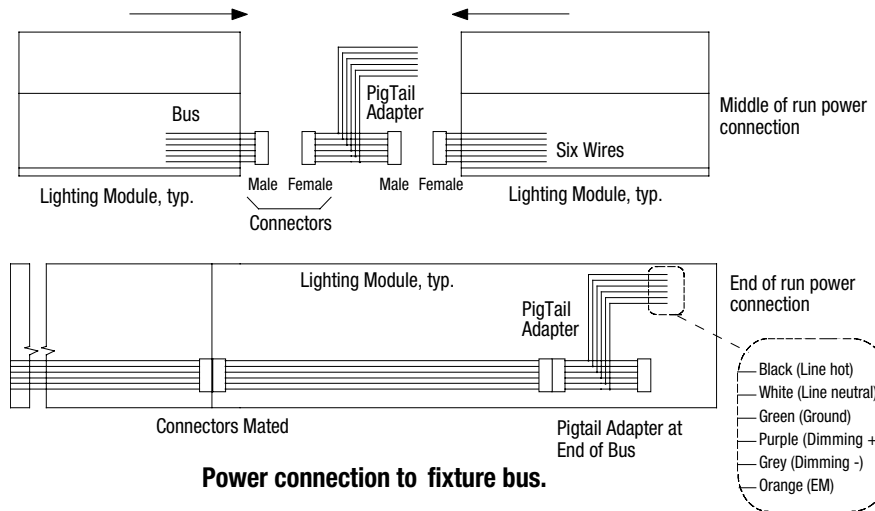
Power Bus Adapter (See Figure 4)

An adapter allowing power and dimming control connections to the internal wiring bus.

Lighting Adjusters

The Lighting module tray has two levers. The lever at the center of tray raises and lowers the LEDs adjusting the far wall cutoff. The lever at the end of the module changes the LED angle, adjusting the light throw.

Figure 4
Power Bus Adapter



1. Mains power, dimming and EM circuits are connected to the fixture buss using supplied jumpers. These may be placed either between adjacent housing sections or at one end as shown.
2. The fixture wiring bus consists of six wires as shown, though, depending on the installation requirements, not all may be used.
3. Wiring color code is as shown. Any unused connectors are insulated and need not be terminated. Unused leads from the jumper are unpowered but should be terminated.

Lighting Modules - Size Chart

Nominal Length	Actual Length	# of LED Boards	Output Level*	# of Drivers	Available Drivers
2 Ft	22.5"	2	S, H, M, C	1	Std (0-10V dim), Lutron Eco, Lutron High-Lume, Dali
3 Ft	33.5"	3	S, H, M, C	1	Std (0-10V dim), Lutron Eco, Lutron High-Lume, Dali
4 Ft	44.625"	4	S, H, M, C	1	Std (0-10V dim), Lutron Eco, Lutron High-Lume, Dali
6 Ft	66.875"	6	S, H, M, C	1	Std (0-10V dim), Lutron Eco, Lutron High-Lume, Dali
8 Ft	89"	8	S, H, M, C	1	Std (0-10V dim), Lutron Eco, Lutron High-Lume, Dali

* S = T5 Equivalent ~ 540 Lu/Ft, H = T5HO Equivalent ~ 840 Lu/Ft, M = ~ 1100 Lu/Ft, C = Custom

Note: All levels are factory set. Optional EM pack available in 4ft module.

Fixture Housing Attachment

1. If used on a vertical wall, determine desired vertical position of fixture on wall and strike a level line at the top of the fixture housing extrusion for the entire length of the run. If used on a floating ceiling/ soffit the bottom rear should be flush with the bottom of the floating ceiling/soffit structure allowing sheetrock to evenly transition from the ceiling to the bottom of the fixture housing extrusion. (See Figure 5)
2. If inside or outside corners are to be used at the end of run, these must be installed first. Then install straight lengths of fixture housing extrusion to fill the space between them. Field cutting of the straight lengths may be required.



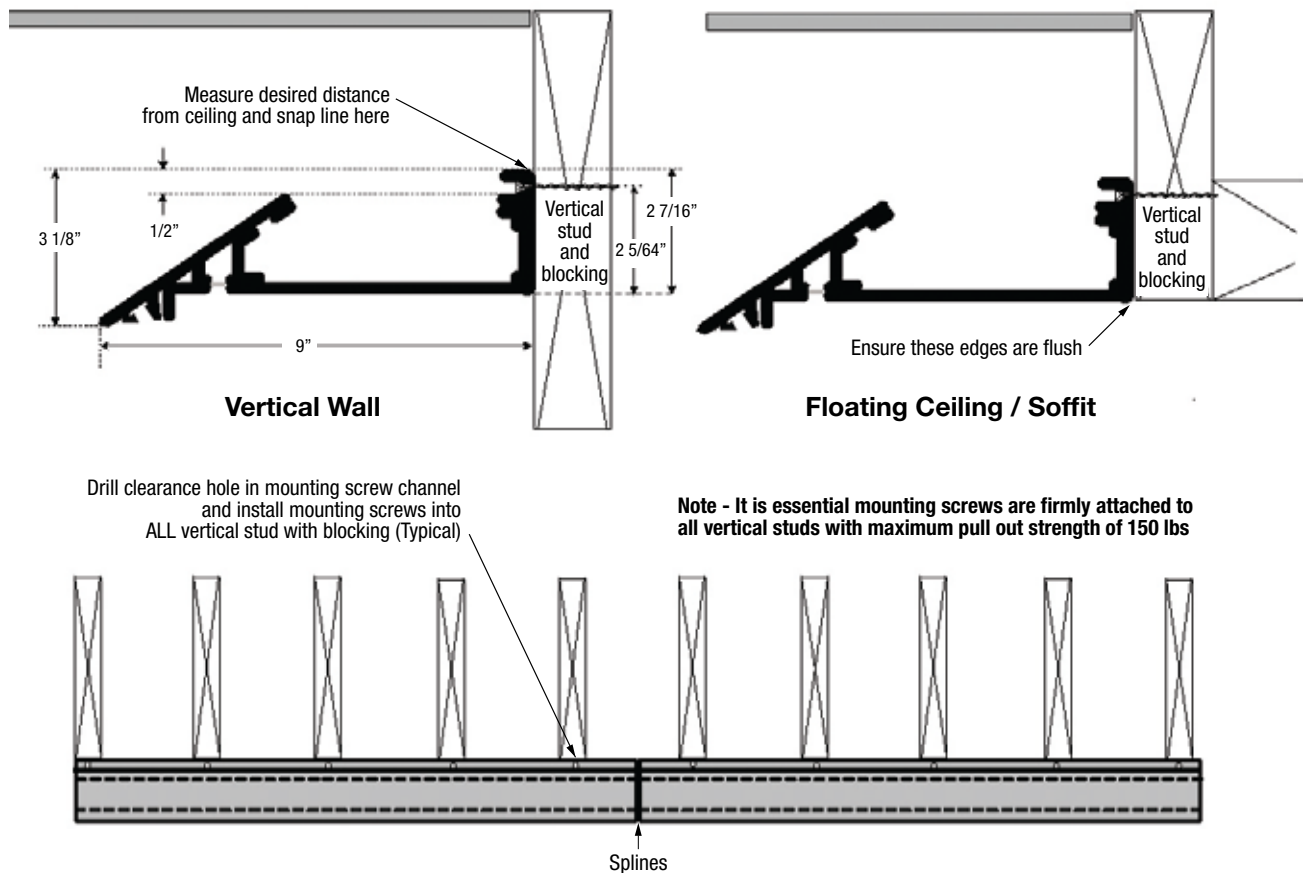
3. Mark the fixture housing extrusion at each vertical stud.



4. Pre-drill 1/4" clearance holes at each mark.
5. Screws must be sized to allow screw head to fit inside the Mounting Screw Channel and long enough to fully engage the vertical studs and blocking. Number 7 course thread drywall screw is recommended. A guide notch in the center of the mounting screw channel has been provided to assist this process.
6. **IT IS ESSENTIAL THE EXTRUSION BE AFFIXED TO THE WALL AT EACH VERTICAL STUD. THE SCREWS, STUDS AND BLOCKING MUST BE CAPABLE OF HOLDING THE WEIGHT OF THE FULLY LOADED FIXTURE WITH THE ABILITY TO WITHSTAND A PULLOUT FORCE OF AT LEAST 150 LBS. VERTICAL STUDS AND MOUNTING TO THEM MUST BE NO FARTHER APART THAN ON 16" CENTERS.**

(continued on next page)

Figure 5
Housing Position



Fixture Housing Attachment *(continued)*

7. Locate the position in the fixture extrusion housing where power will enter and pre-drill a 7/8" hole in the power raceway. This will accept a 3/8" conduit connector and nut flush to the rear of the extrusion. (See Figure 6)



8. Place the predrilled extrusion section against the wall at the designated height and screw it to the vertical studs and blocking through the clearance holes.

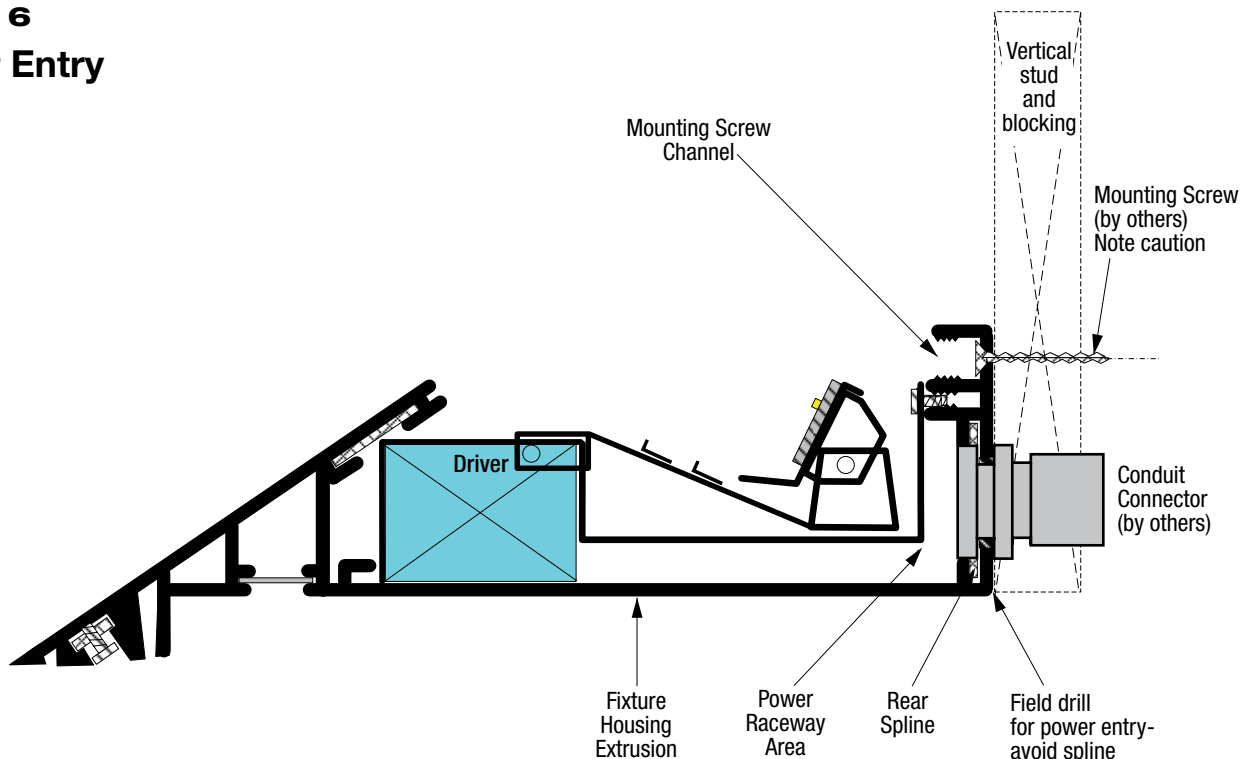
9. Ensure the screws are tight without stripping. If this section is a power feed section, attach the conduit connector and conduit if necessary as the section is mounted. (See Figure 6)
10. Select the next section and mark the center of the vertical stud positions along the extrusion mounting screw channel and pre-drill the holes as described above. If the section exceeds the run length, mark and cut off the excess using a metal cutting chop saw to ensure a clean square edge. (See Note 11, below) Utilize a fine file to remove any remaining metal burs.
11. **IF DESIRED, THE STEEL PERFORATED METAL INSERT MAY BE REMOVED BEFORE FIELD CUTTING (IT SLIDES OUT OF ITS POCKET). REINSERT AND TRIM WITH SHEARS FLUSH.**

12. Place the predrilled section against the wall and engage the 3 splines (See Figure 1) protruding from the end of one section onto the corresponding slots on the other section. Press the section tightly together and screw the new section into the vertical studs to hold it on place.
13. At the joint between sections ensure the fixture housing extrusion is tightly mated. Tighten the Allen screws in the locking nose spline to ensure the sections remain closely positioned.
14. When installing the final section, fully retract the three splines at the final joint into the installed fixture housing extrusion. The locking nose spline can be moved by loosening the set screw with an Allen key. Install the last section and slide the retracted splines back between the sections.
15. If the final section ends in free air, install the fixture housing extrusion end cap (left or right) by sliding the bent tabs into the spline and installing a locking screw into the lighting module screw boss. If the last section ends against a wall or other structure, end caps are not required. They are not part of the electrical raceway.



16. When all sections are properly mounted and aligned, press lengths of the Screw Channel filler into the Mounting Screw Channel. Ensure it is fully seated (See Figure 7/ 8). This material reduces the amount of spackle required to fill the channel.

Figure 6
Power Entry



Fixture Housing Finishing – Vertical Wall

1. Install 5/8" sheetrock on the wall above the fixture housing extrusion. Sheetrock should reach the top of that extrusion but not be supported by it. (A on Figure 7)
2. Install a piece of 5/8" sheetrock along the bottom surface of the fixture housing extrusion. The width of this section is 7 1/2", allowing the sheetrock to cover the space from the vertical wall structure to the end of the sheetrock pocket in the bottom of the fixture housing extrusion. Do NOT make this section of sheetrock too wide as it will force the fixture away from the wall and/or tip the knife edge upward. Attach this section of sheetrock to the fixture housing extrusion using a #6 drywall screws no longer than 1 1/4". There is a drywall screw capture pocket located at the front of the sheetrock pocket 2 1/4" back from the knife edge. Perforated steel material will easily accept the designated drywall screw. Do not over tighten. (B on Figure 7)

IMPORTANT: Install drywall screws every 6" along length to ensure sheetrock is firmly attached to housing.

3. Install 5/8" sheetrock on the wall below the fixture housing extrusion. Sheetrock should reach the bottom the fixture housing extrusion and hold the bottom sheetrock section tight to that housing. (C on Figure 7)
4. Install corner bead, if designated, along the bottom corner
5. Spackle the Mounting Screw Channel and the sheetrock at the top of the fixture to create a smooth surface. Do not Spackle the lighting module screw boss. (See Figure 7)
6. Use dry wall joint tape along leading edge of sheetrock. Insert edge of drywall tape into NOSE Spline channel (This is the larger groove near the Knife Edge, not the small groove at the Knife Edge). Self adhesive fiber glass joint tape may be easier to use for this application. If used, a setting compound is required for first spackling coat.
7. Complete spackling the bottom sheetrock covering the drywall screws right to the knife edge. The tip of the knife edge is slightly below the sheetrock line allowing for a clean strike off. (See Figure 7)
8. The sloped surface of the fixture housing extrusion is the only visible metal surface of the fixture. Seams in the surface will be tight and flush if the wall supporting the fixture is level and true. If there are any minor gaps they can be filled with acrylic latex caulk or other paintable caulk and wiped smooth before painting.
9. Paint the sheetrock and sloped surface of the Fixture Housing with high quality paint creating a uniform architectural surface. Do not paint the inside of the fixture housing extrusion.

Figure 7
Vertical Wall

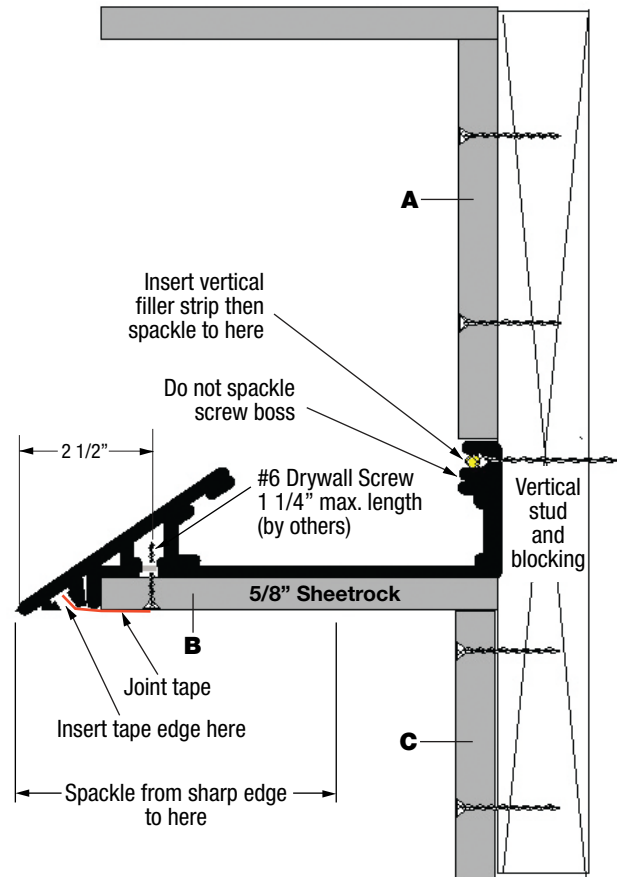
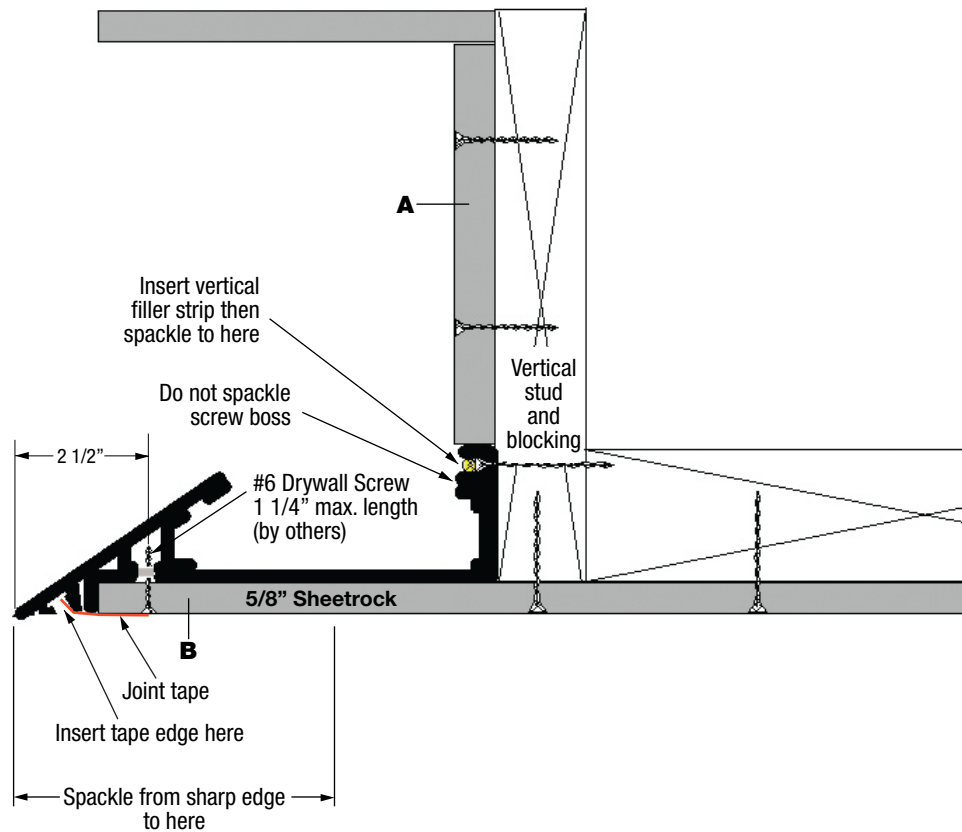


Figure 8
Floating Ceiling / Soffit



Fixture Housing Finishing – Floating Ceiling / Soffit

10. Install 5/8" sheetrock on the wall above the Fixture Housing. Sheetrock should reach the top the fixture housing extrusion but not be supported by that housing. (A on Figure 8)
11. Install 5/8" sheetrock along the bottom surface of the fixture housing extrusion. This sheetrock should run from the bottom of the floating ceiling / soffit to the end of the sheetrock pocket in the bottom of the fixture housing extrusion. Do NOT make this section of sheetrock too wide as it will force the fixture away from the wall and/or tip the fixture extrusion housing upward. Attach this section of sheetrock to the fixture housing extrusion using a #6 drywall screw no longer than 1 1/4". There is a drywall screw capture pocket located at the front of the sheetrock pocket 2 1/2" back from the knife edge. It is 3/4" wide perforated steel material that will easily accept the designated drywall screw. Do not over tighten. (B on Figure 8)
12. Spackle the Mounting Screw Channel and the sheetrock at the top of the fixture to create a smooth surface. Do not Spackle the lighting module screw boss. (See Figure 8)
13. Spackle the bottom sheetrock covering the drywall screws right to the knife edge. The tip of the knife edge is slightly below the sheetrock line allowing for a clean strike off. (See Figure 8)
14. The sloped surface of the fixture housing extrusion is the only visible metal surface of the fixture. Seams in the surface will be tight and flush if the wall supporting the fixture is level and true. If there are any minor gaps they can be filled with acrylic latex caulk or other paintable caulk and wiped smooth before painting.
15. Paint the sheetrock and sloped surface of the Fixture Housing with high quality paint creating a uniform architectural surface. Do not paint the inside of the fixture housing extrusion.

Lighting Module Installation

1. Select the designated lighting modules for the run to be populated.
2. If extension modules are not used, total the actual lengths of the designated lighting modules and subtract it from the inside linear dimension of the fixture housing extrusion for that run. Typically the difference will be between 0 and 12". Use half that difference as the starting distance from the end of the run to place the first module, unless another dimension is specifically provided in the design drawings.
3. If extension modules are used, position the first fixed module at the beginning edge of run, continue positioning fixed modules until all are in place, then position the extension module in the final position.
4. Select the lighting module to be installed. Place lighting module tray into the fixture housing extrusion by tilting it in with the driver end down and the LED edge upward. Rotate it in so the mounting lip lies against the screw boss. Do not push it beyond that point so the mounting lip goes under the screw boss. Do not screw it into the boss until all modules are in place, aligned and plugged together.
5. With the lighting module loose on the fixture housing extrusion plug it into the adjacent lighting module power bus. Ensure the bus wires are neatly beneath the wiring tray and slide the new module tightly against the adjacent module.
6. At the end of the lighting module closest to point where the power feed enters the fixture housing extrusion, plug in a Pigtail adapter cable. This adapter provides access to the wiring bus. It can be between or at the end of a string of lighting modules. Connect the power and dimming control wired to the pigtail adapter according the chart below. Circuiting of the modules is to be defined by others.
7. **NOTE - THE POWER CONDUCTORS USED IN THE BUSS ARE 18 GAUGE WIRE. DO NOT EXCEED THE MAXIMUM CAPACITY OF THE WIRING BUSS OR DIMMING CONTROL SYSTEM LOADING WHEN CONNECTING LIGHTING MODULES TOGETHER (AT 115 VOLTS, THIS IS APPROX. 140FT OF "S" OUTPUT, 70FT OF "H" OUTPUT OR 50FT OF "M" OUTPUT).**
8. Before installing final lighting module properly position the appropriate left or right lighting module end cap in the fixture housing extrusion. Do not screw in at this time.
9. When all lighting modules are in place and connected together and to the power source, check the positioning of the modules to ensure they are centered (or positioned as otherwise specified) in the Fixture Housing and they are butted together leaving no gaps between modules.
10. Starting at one end, slide the lighting module end cap against the lighting module and screw into fixture housing extrusion screw boss. Install additional screws along the length of the lighting module in the holes provided down the entire length of the run. To access the mounting holes on each lighting module, rotate the center lever to lower the LEDs and rotate the end lever to move the LEDs to a horizontal position.
11. At the far end, slide the lighting module end cap against the lighting module and screw into fixture housing extrusion screw boss.
12. Apply power to the lighting modules and test for illumination and if applicable dimming functions.
13. Starting at one end of the run, rotate the elevation and angle levers to obtain the desired throw and cutoff. Generally it is positioned to achieve a smooth transition of light from the vertical wall to the ceiling and any shadow is cast at the point where the ceiling and wall meet. Once the first section is correctly adjusted, continue along the run adjusting other sections to match.
14. Starting at one end of the run, install dust covers for each lighting module.

Pigtail Adaptor Wiring

Wire Color	Purpose	Notes
Green	Safely Ground	
White	Neutral	
Black	Hot	115VAC - 277VAC
Orange	Emergency Switched Hot	For EM Driver applications, otherwise N/C

Wire Color	Purpose	Non Dimming	0-10 Dimming	Eco System
Purple/White	Dimming	N/C	Positive	E1
Grey	Dimming	N/C	Negative	E2