FLOWBAR
Architectural Linear Diffuser

FL-10 LED

Titus

FlowBar Installed During Hard Ceiling Installation

Titus FlowBar Linear Diffusers are designed to integrate with the ceiling system. The integration process takes place by installing the diffuser concurrently with the ceiling framing. Figure 1 below summarizes the steps required to install a FlowBar Diffuser System as part of the hard ceiling installation.
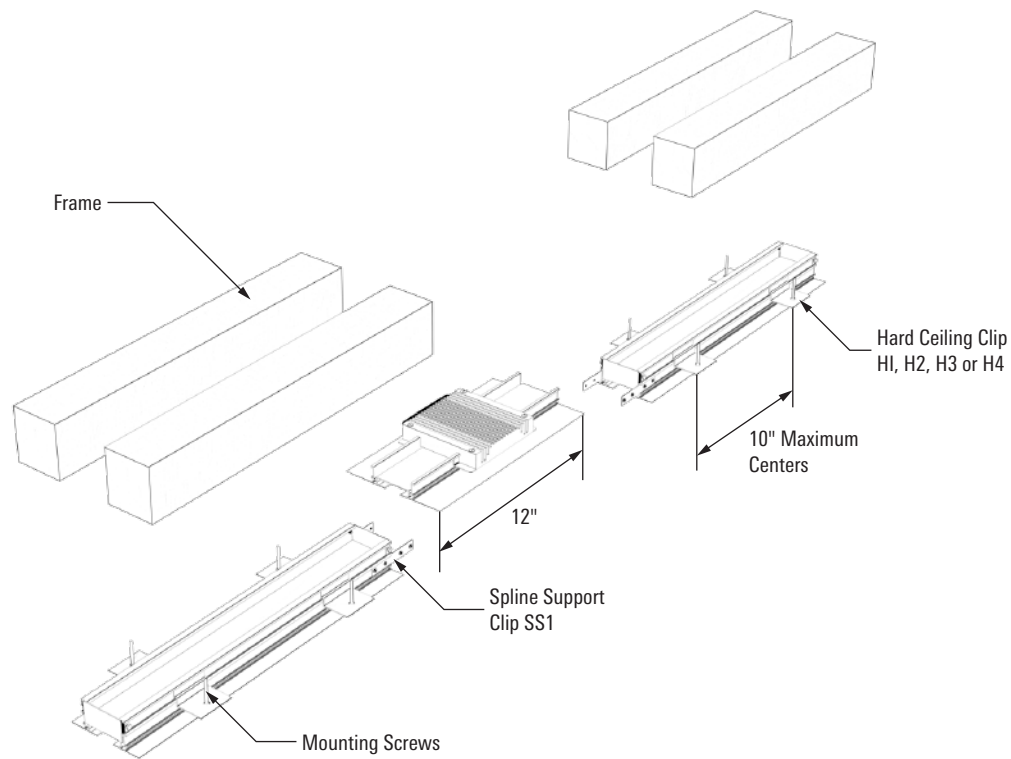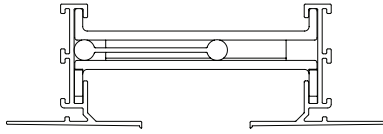
Frame

Hard Ceiling Clip
HI, H2, H3 or H4

10" Maximum
Centers

12"

Spline Support
Clip SS1

Mounting Screws

Figure 1. Installation of FlowBar with a Hard Ceiling

SUMMARY OF STEPS TO INSTALL FLOWBAR WITH A HARD CEILING

STEP 1. Diffuser Border Type 22

STEP 2. Construct Ceiling Frame Work

STEP 3. Attach Mounting Clips to Diffuser

STEP 4. Attach Diffuser to Ceiling Frame Work

STEP 5. Make low voltage electrical connections to lighting module

STEP 6. Attach Plenum to Diffuser

STEP 7. Attach Inlet Damper (if required)

STEP 8. Install Drywall

STEP 9.   Review Installation

STEP 10. Finish the Surface

FlowBar Installed During Hard Ceiling Installation (continued)

STEP 1. DIFFUSER BORDER TYPE 22

(Border Type 22 shown)

FRAME 2. is designed for use with hard ceiling applications where the finishing flange is taped and spackled into the ceiling to leave only the air slot exposed to the room. Frame 2 is used with order type 22.

STEP 2. CONSTRUCT CEILING FRAMEWORK

Before installing drywall, a framed opening must be constructed to support the FlowBar Diffuser.

It is recommended that the framework be continuous to accommodate the Hard Ceiling Clip spacing requirements.

The framing material must be suitable to hold the Diffuser in place when attached with screws through the FlowBar Mounting Clips.

The width of the framed opening required depends on the model of FlowBar being installed. The frame opening width dimension, 'W', is listed in Table 1.

NOTE: If it appears that it will be difficult to install plenums after the opening is framed and FlowBar installed, then use wires to support the Plenums above the framework first.

FlowBar Model	Frame Opening Width (W)
	1-SLOT
FL-10 LED	3¼

Table 1. Frame Opening Dimensions

STEP 3. ATTACH MOUNTING CLIPS

Hard Ceiling Clips are shipped loose for field attachment to the FlowBar Diffuser.

Slide the Hard Ceiling Clips into the lower bosses of each frame rail as shown in Figure 2.

Position the clips at a maximum of 10" intervals along the Diffuser frame.

The Hard Ceiling Clips must be secured to a framing member.

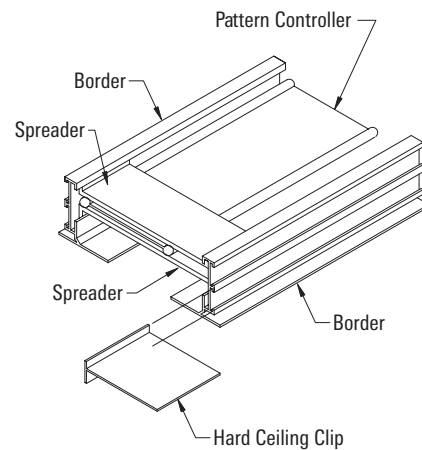These Mounting Clips should be attached to the ceiling framework at a maximum of 10" intervals.

Figure 2. Installation of Hard Ceiling Clips

FlowBar Installed During Hard Ceiling Installation (continued)

STEP 4. ATTACH DIFFUSER TO CEILING FRAME

Lift the FlowBar Diffuser into the framed opening and secure the Mounting Clips to the frame with flat head screws as shown in Figure 4.

If multiple sections of FlowBar are required, repeat previous step by lifting additional sections into the framed opening. Be sure to insert Spline Support Clips-SS1 into the FlowBar ends to insure a tight and aligned connection as shown in Figure 4.

Attach the lighting module using the Spline Support Clips SS1 to the Flowbar sections on either side.

Install and secure end caps and mitered corners if required as shown in Figure 5.
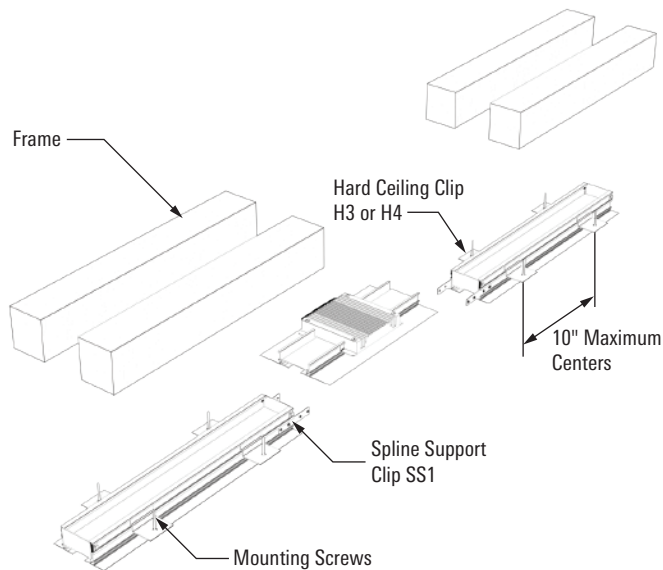

Figure 4. Installation of Diffuser in Ceiling

STEP 5. MAKE LOW VOLTAGE ELECTRICAL CONNECTIONS TO LIGHTING MODULE

WARNING & SAFTEY INSTRUCTIONS

- DO NOT INSTALL DAMAGED PRODUCT! Upon receipt, thoroughly inspect for any freight damage which should be brought to the attention of the delivery carrier.
- Compare the catalog description listed on the packing slip with the label on the carton to ensure you have received the correct merchandise.
- Read and familiarize yourself with the nomenclature and instructions before starting installation.
- RISK OF ELECTRIC SHOCK! Turn off electricity at the breaker panel or fuse box and follow NEC and all local electrical building codes and practices.

- RISK OF INJURY! Avoid direct eye exposure to the light source while it is on.
- Do not install directly to line voltage! Remote power supply is required. Follow all instructions by the manufacturer!
- Do not power on fixture with lens protector installed.
- Avoid direct contact with light source. The fixture lens must have a minumum clearance of 1 foot (30cm) at all times.
- Do not submerge this product under water.
- Do not install incompatiable dimmers with driver. Check dimmer compatiablity on the driver cutsheet.

THESE INSTRUCTIONS DO NOT PURPORT TO COVER ALL DETAILS OR VARIATIONS IN EQUIPMENT NOR TO PROVIDE FOR EVERY POSSIBLE CONTINGENCY TO BE MET IN CONNECTION WITH INSTALLATION, OPERATION OR MAINTENANCE. SHOULD FURTHER INFORMATION BE DESIRED OR SHOULD PARTICULAR PROBLEMS ARISE WHICH ARE NOT COVERED SUFFICIENTLY FOR THE CUSTOMER/OPERA-TOR'S PURPOSES THE MATTER SHOULD BE REFERRED TO APURE DISTRIBUTION, LLC.

Failure to follow any of these instructions could void product warranties. For a complete listing of product Terms and Conditions, please visit www.apure-system.com. Apure assumes no responsibility for claims arising out of improper or careless installation or handling of its products.
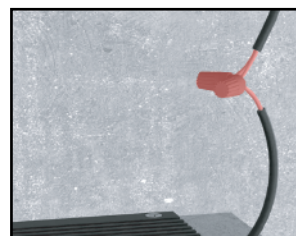
Resources / Resources / Installation Videos
Scan QR Code or visit at apurelighting.com/resources/
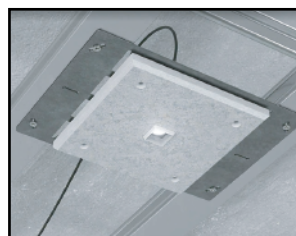

Resources   Videos

Feed low voltage wiring to the bracket and lift the fixture board assembly to the low voltage electrical connection and make the connection.
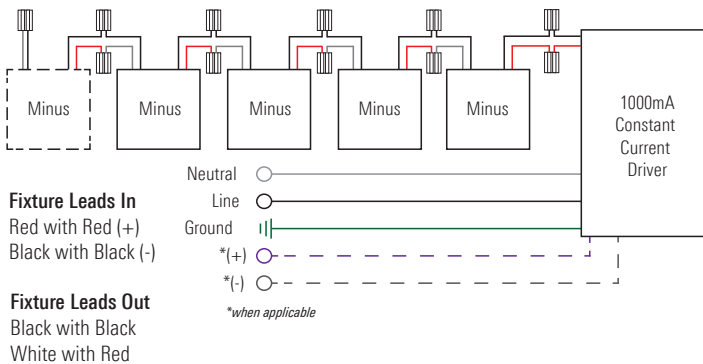
Please refer to wiring diagram.

Test and confirm that the fixture is fully operational. Do not move on to the next step until the fixture is operational.

FlowBar Installed During Hard Ceiling Installation (continued)

Wiring Diagram for 12V Minus Products - [EU]

Fixture Leads In
Red with Red (+)
Black with Black (-)

Neutral
Line
Ground
*(+)
*(-)

*when applicable

Fixture Leads Out
Black with Black
White with Red

Warning: failure to wire correctly may cause fixture to fail.

Note: The white and black cables of the last fixture in the series must be bridged together!
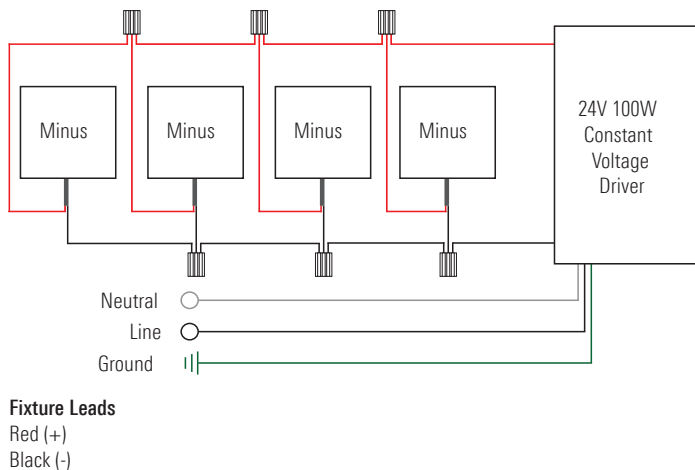
Additional Considerations

The above wiring diagram applies only to 12V Minus products with product ordering codes ending with "EU".

The diagram above shows the typical wiring schematic, however the total number of fixtures per driver is driver specific.

Magnitude AFLEX Power Supply (1000mA 60W)	1-4 Minus	16AWG - 82ft (25m)
Apure Phase Dimmable (1000mA 29W)	1-2 Minus	16AWG - 82ft (25m)
Apure Phase Dimmable (1000mA 30-65W)	3-5 Minus	16AWG - 82ft (25m)
Apure DALI, Push, 1-10V (1000mA 30-65W)	1-4 Minus	16AWG - 82ft (25m)

WARNING: The power supply must operate within the range of mimimum to maximum fixtures. Operation with less or more fixtures from the specified amount will result in damage to the power supply and/or lighting fixture. Incorrectly wiring the 12V EU lighting fixture may cause luminaire to fail.

Wiring Diagram for 24V Minus Products - [A] MLV or [L] Lutron

Neutral
Line
Ground

Fixture Leads
Red (+)
Black (-)

Additional Considerations

The above wiring diagram applies only to 24V Minus products with product ordering codes ending with "A" or "L"
The diagram above shows the typical wiring schematic, however the total number of fixtures per driver is driver specific.

Magnitude Constant Voltage Driver (96W 24VDC)	1-4 Minus	≤16AWG - 150ft (45m)
Lutron Hi-Lume Constant Voltage Driver (96W 24VDC)	1-4 Minus	≤16AWG - 150ft (45m)
Lutron HomeWorks Constant Voltage Driver (96W 24VDC)	1-4 Minus	≤16AWG - 150ft (45m)

WARNING: The power supply must operate within the range of mimimum to maximum fixtures. Operation with less or more fixtures from the specified amount will result in damage to the power supply and/or lighting fixture.

STEP 6. ATTACH PLENUM TO DIFFUSER

If Plenums were mounted earlier, attach the Plenum by snapping it to the Diffuser using the clips on the Plenum as shown in Figure 6.

If Plenums were not mounted earlier, lift the Plenums into place and attach them to the FlowBar at this time.

Plenums may need support with ceiling wire to the building structure per code requirements.
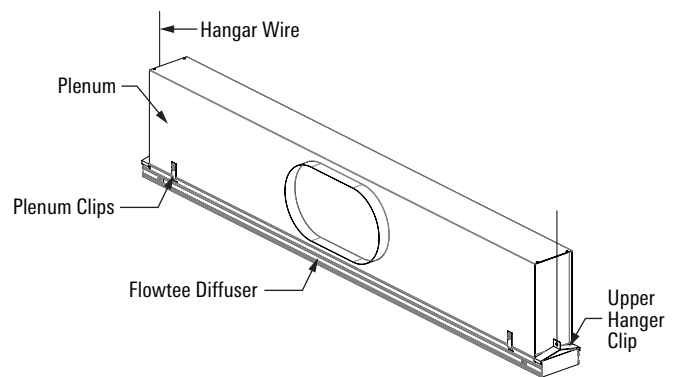

Hangar Wire
Plenum
Plenum Clips
Flowtee Diffuser
Upper Hanger Clip

Figure 6. Attachment of Plenum to Diffuser

FlowBar Installed During Hard Ceiling Installation (continued)

STEP 7. ATTACH INLET DAMPER (IF REQUIRED)

Attach optional Inlet Damper assembly (if supplied) to the Inlet Collar. Position the lever inside the Plenum on the bottom of the Inlet Collar.

Install the Inlet Duct on the Plenum Inlet Collar using the methods prescribed by the sheet metal specification.

STEP 8. INSTALL DRYWALL

Slide the Drywall tightly between the mounting clips and the FlowBar Flange as shown in Figure 8. For ease of installation, insert the tapered edge of the Drywall into this opening. For the best fit, slide the edge of the Drywall all the way to the vertical leg of the frame.

Every 12" and between the Hard Ceiling Clips, attach screws just beside the Diffuser Flange, through the Drywall and into the Framing Member.

STEP 9. REVIEW INSTALLATION (BORDERS 22 ONLY)

Before continuing it is recommended that the installer confirm that:

- The FlowBar Diffuser is secure and straight.

For units longer than twelve feet, a 1/8" gap between sections is recommended to allow for thermal expansion.

Do not run the HVAC system during the finishing procedures. This could cause premature drying of the compounds, making them more prone to cracking.
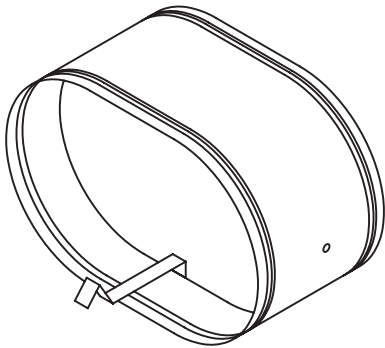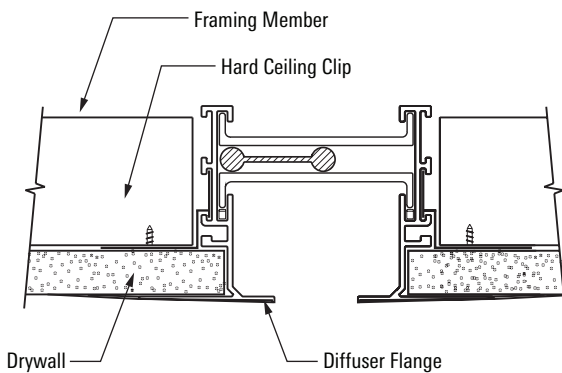

Figure 7. View of Inlet Damper

Figure 8. Drywall Installation

FlowBar Installed During Hard Ceiling Installation (continued)

STEP 10. FINISH THE SURFACE (BORDERS 22 ONLY)

Sand the finishing surface with medium grit sandpaper in order to rough up the surface for good joint compound adhesion.

Remove dust from finishing surface following sanding with a tacky cloth. Or clean with a mild cleaner/degreaser.

Apply first coat of joint compound onto the diffuser's finishing flange and onto the sheetrock three inches. Use a durabond setting-type compound.

Embed a 4" wide mesh or paper tape into the first coat of joint compound. Smooth to remove air pockets. The tape should cover the aluminum rail, but not extend over the raised lip on the rail. Apply second coat of finishing compound over the tape and smooth.

After compound has dried, apply two coats of standard finishing compound and let dry. Sand smooth, prime, and paint as scheduled.
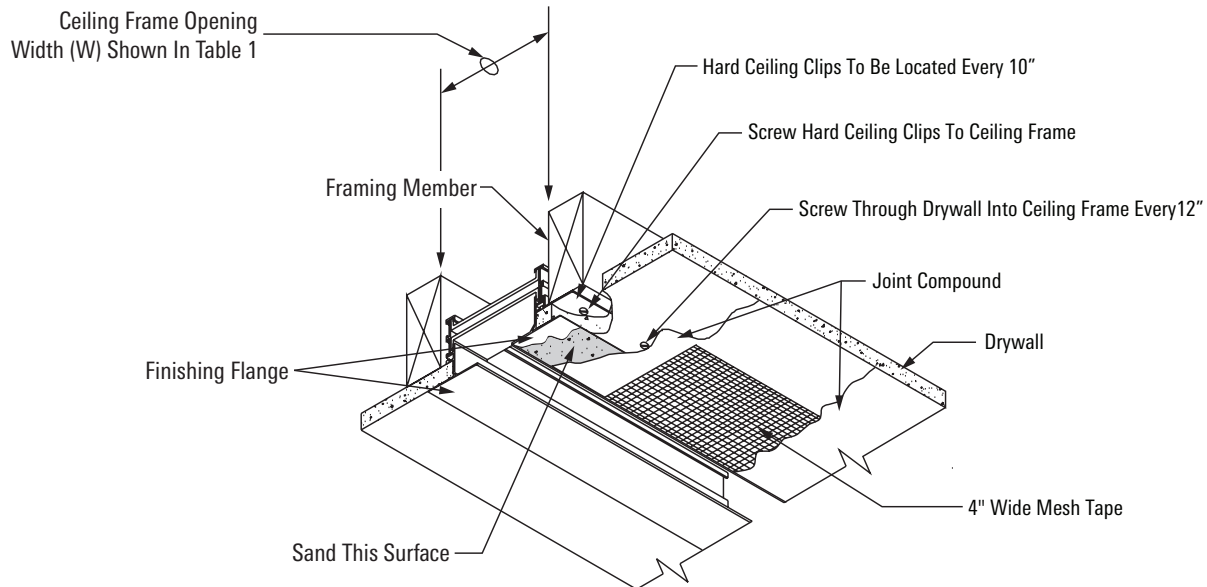

Figure 10. Summary of Border Type 22 Installation

Field Cutting Linear FlowBar

STEP 1. PREPARE DIFFUSER FOR CUTTING

Working from a table covered with indoor/outdoor carpet, measure the length of Diffuser to be cut.

Slide the top Spacer sufficiently to allow for removal of the Pattern Controller(s) as shown in Figure 16.

Remove the Pattern Controller(s) as shown in Figure 17.

Slide both top and bottom Spacers back into the FlowBar frame as shown in Figure 18, to inside the cut mark to clear the saw blade.

Figure 16. Diffuser Spacer Removal

STEP 2. CUT DIFFUSER TO LENGTH

Secure FlowBar to table. Cut through both FlowBar rails with the finished flanges facing up as shown in Figure 19.

A 10" miter saw with an aluminum cutting blade is recommended.

Caution: Use/Wear proper safety equipment.

Cut the pattern controller(s) by the same amount as the rails so as to fit between the spacers in their new positions. For JT pattern controllers, the pins in the pattern controllers should be removed prior to cutting and replaced after cutting.

Figure 17. Removal of Pattern Controller

STEP 3. REASSEMBLE DIFFUSER

Move both Spacers to the end of FlowBar.

Slide the top Spacer sufficiently to allow for replacement of the Pattern Controller(s).

Reinstall the Pattern Controller(s) and slide the top Spacer back over the Pattern Controller(s).

Lubricate the portion of the Pattern Controller that fits between the top and bottom spreader with WD-40 or other lubricants of your choice.

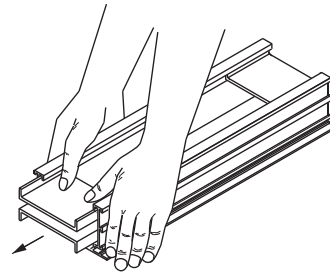All FlowBar components may be reused after cutting, however, additional Spacer Kits are an available option.

Figure 18. Replacement of Diffuser Spreader
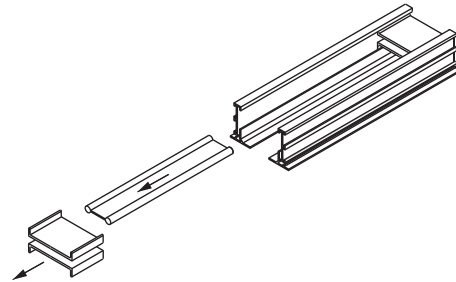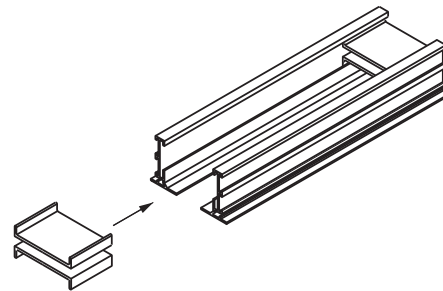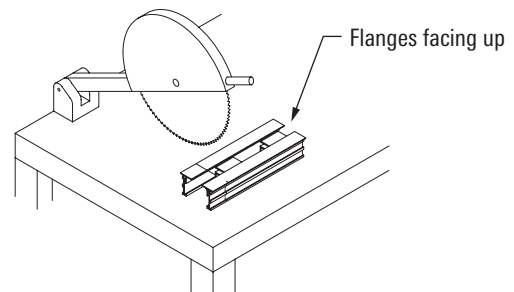

Flanges facing up

Figure 19. Field Cutting Diffuser

FlowBar Installed In Acoustical Ceiling

STEP 1. INSTALL HANGER CLIPS TO DIFFUSER

FlowBar Diffusers with one-slot are supported by sliding Upper Hanger Clips through the top bosses in the FlowBar rails as shown in Figure 20.

FlowBar Diffusers with two-slots are supported by sliding Upper Support Hangers through the top bosses in the FlowBar rails as shown in Figure 21.

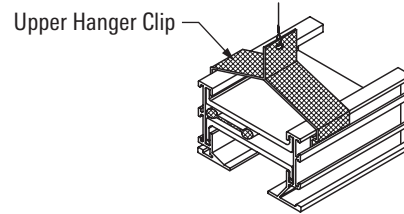The clips are secured to the building structure with hanger wire.

STEP 2. INSTALL DIFFUSER IN CEILING

If continuous FlowBar is being installed in multiple sections, assemble the sections together using Spline Support Clips (SS1). Attach end caps or end borders as required. (Refer to Step 4, Page 5.) (SS1 clips may be secured using #8 - 18 x 1/2" crimptite head screw).

Where ceiling tees (By Others) intersect the FlowBar, bend the connecting Spline Support Clip-SS1 90°, slide into the lower FlowBar rail bosses, and secure to the ceiling tee as shown in Figure 22.
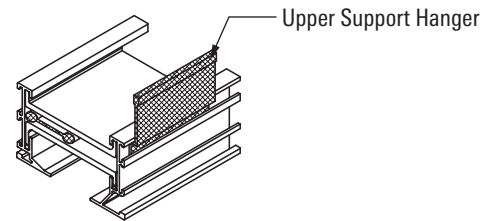
STEP 3. ATTACHED PLENUMS TO DIFFUSERS

After installing the FlowBar into the ceiling suspension system, install the air distribution plenums and connect to ductwork.

STEP 4. ATTACHED PLENUMS TO DIFFUSERS

After installing the FlowBar into the ceiling suspension system, install the air distribution plenums and connect to ductwork.

STEP 5. INSTALL CEILING TILES
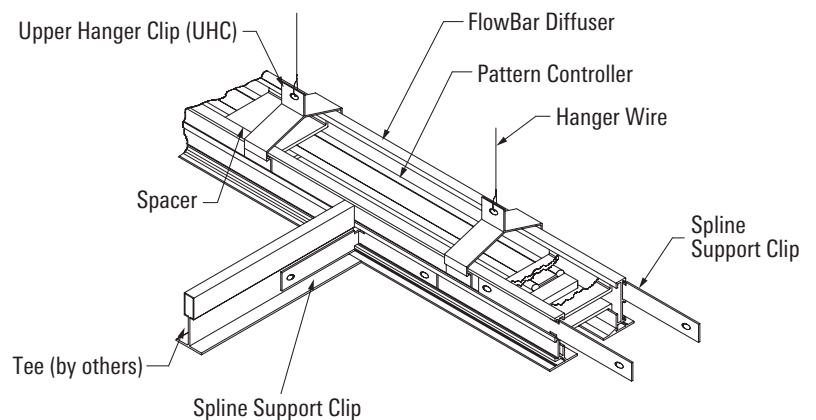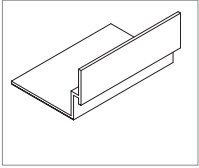
Trim and install the acoustic ceiling tiles.

Upper Hanger Clip

Figure 20. Attachment of UHC to One-Slot Diffuser

Upper Support Hanger

Figure 21. Attachment of USH to Two-Slot Diffuser

Upper Hanger Clip (UHC) FlowBar Diffuser Pattern Controller Hanger Wire Spacer Spline Support Clip Tee (by others) Spline Support Clip

Figure 22. Installation of FlowBar in Acoustical Ceiling

FlowBar Parts List
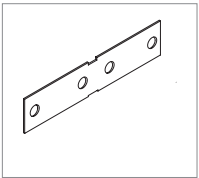
Model: H3   **Description:** Hard Ceiling Clip

Application: Use with Frame 2, Frame 4 or Frame 5 in hard ceiling installation. Insert a clip into the extrusion boss on the outside of the Diffuser frame. Attach clip to Framing Member with flat head screw. Clips should be spaced at 10" intervals.

Quantity per Bag: 48 pieces
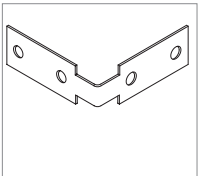

Model: SS1   **Description:** Spline Support Clip

Application: Used to connect multiple sections of FL-LED diffusers and Apure Minus Two lighting modules.

Quantity per Bag: 28 pieces

Model: SS1   **Description:** Spline Support Clip

Application: SS1 can also be used to connect FL-LED diffuser to acoustical ceiling T-bar.

Quantity per Bag: 28 pieces

FLOWBAR
Architectural Linear Diffuser

FL LED IOM

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