

Installation, Operation and Maintenance Manual

Please read and save these instructions for future reference. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with these instructions will result in voiding of the product warranty and may result in personal injury and/or property damage.

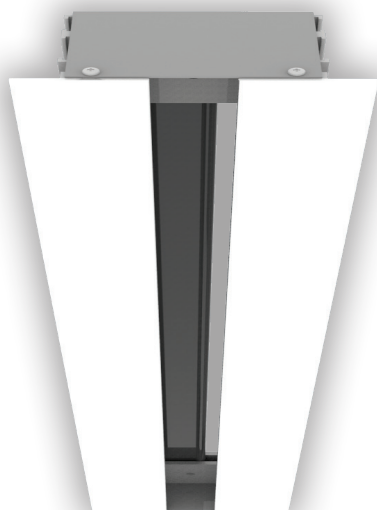


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Getting Started/Model Nomenclature

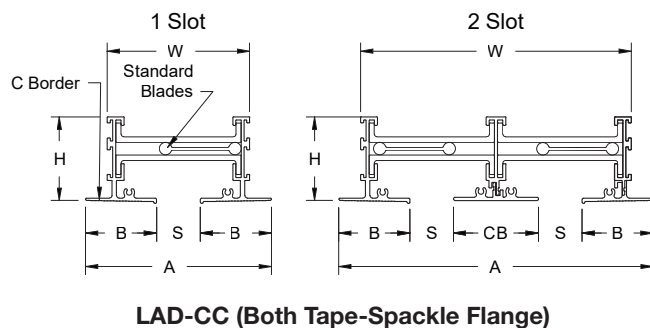
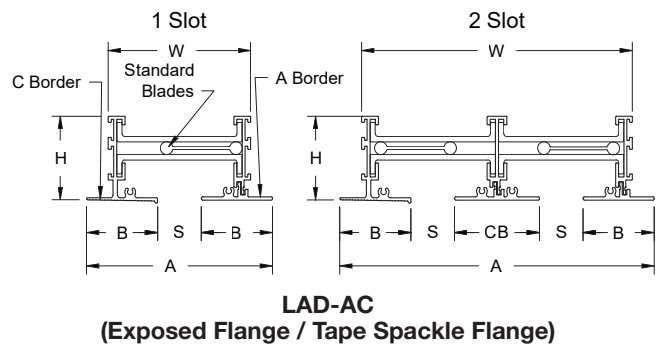
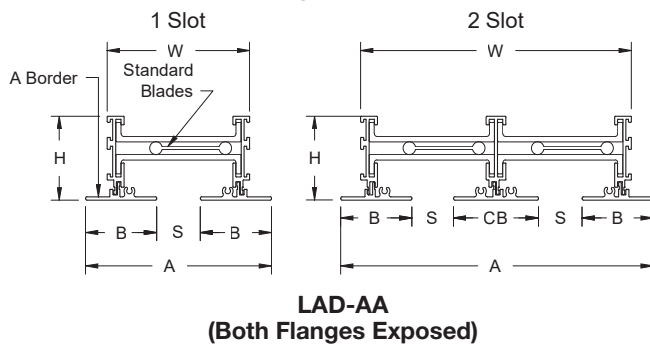
1. Before starting, inspect all shipping boxes for visible damage. If any visible damage is found, note it on the BOL and contact your local Greenheck Representative.
2. If you decide to keep the shipment, take all linear diffusers out of the shipping boxes and inspect for any manufacturing flaws or hidden damage. If anything is found, contact your local Greenheck Representative.
3. Once all product is accounted for in acceptable condition locate any mounting hardware (if included) and be sure to keep this hardware with the applicable diffuser.
4. Referring to the Model Nomenclature on the following page and the Table of Contents on this page, proceed to the appropriate page within this IOM to begin installation.

Model Nomenclature Linear Architectural Diffuser

Base Model	Slot Width	Border Style	Border/Type	Length	Slots	End Caps	Finish Color	Left /Right Hardware	Mounting	Pattern Controller
LAD	10	AA	1	48	x 2	2EB	20	F21	CM	C
	10 = 1" Slot 15 = 1.5" Slot 20 = 2" Slot 25 = 2.5" Slot 30 = 3" Slot	AA = Both Exposed Flange/Face AC = Exposed Face / Tape and Spackle CA = Tape-Spackle Flange / Exposed Flange CC = Both Concealed Tape and Spackle FF = Both Flush Frame FA = Flush Frame / Exposed Flange FC = Flush Frame / Tape-Spackle Flange AF = Exposed Flange / Flush Frame CF = Tape-Spackle Flange / Flush Frame FH = Offset Flush Frame GG = Beveled Frame	-1 = Flush Surface Mount -6 = T-Bar Lay in	Nominal linear diffuser length	Number of slot openings	1EB = 1 End Border and 1 Open End 1EC = 1 End Cap and 1 Open End 2EB = 2 End Borders (both ends have borders) 2EC = 2 End Caps (both ends have caps) MM = Both Ends are Mitered MO = 1 Mitered End and 1 Open End OO = 2 Open Ends (both ends are open)	20 = White/Black 02 = Satin Silver 03 = Black 28 = Match Color Chip	None* F21 = 1/2" Drywall Clip F22 = 5/8" Drywall Clip F23 = Bolt Slot Clip F24 = Sidewall 1" Stand-Off Clip F25 = Sidewall 5/8" Stand-Off Clip F26 = Hanger Clip F27 = Cross Tee Clip F28 = Spline Alignment Strips F23G = Beveled Frame 5/8" Drywall Clip	Standard CM = Concealed	C = Combo Pattern Controller S = Straight Pattern Controller NB = No Pattern Controller

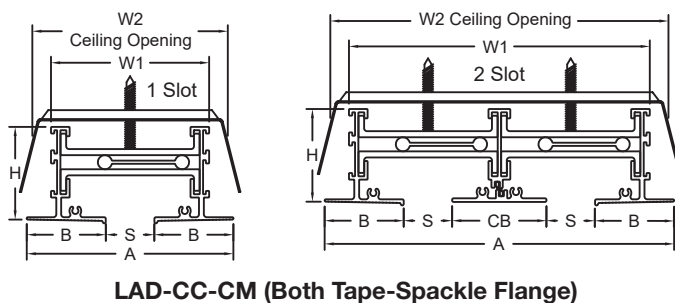
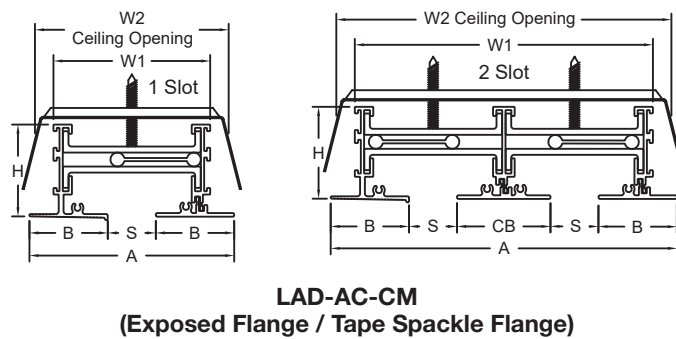
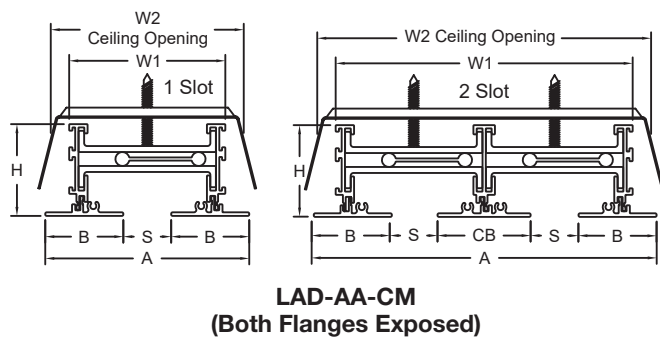
Border Types – Dimensional Drawings

LAD Standard Mounting:



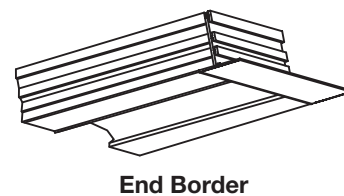
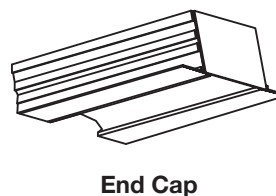
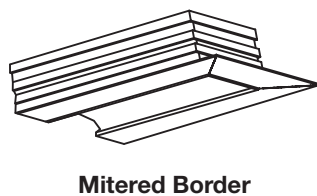
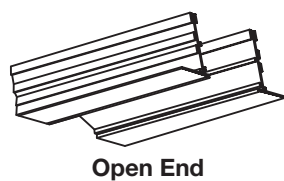
Border Types – Dimensional Drawings (continued)

LAD-CM – Concealed Mounting:

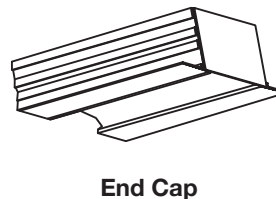
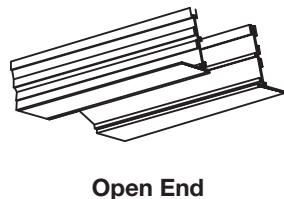


End Types

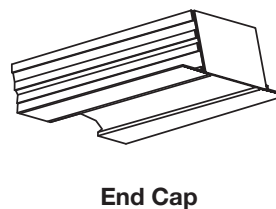
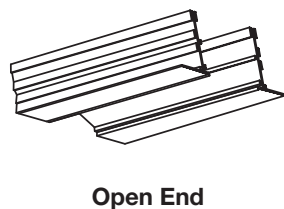
LAD-AA Options:



LAD-AC Options:

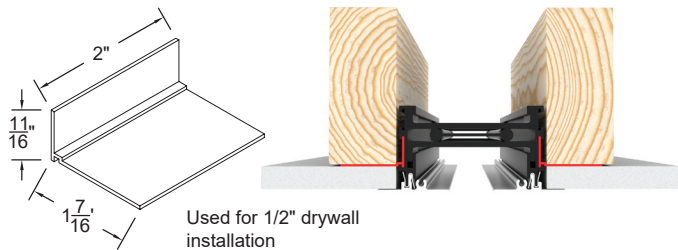


LAD-CC Options:

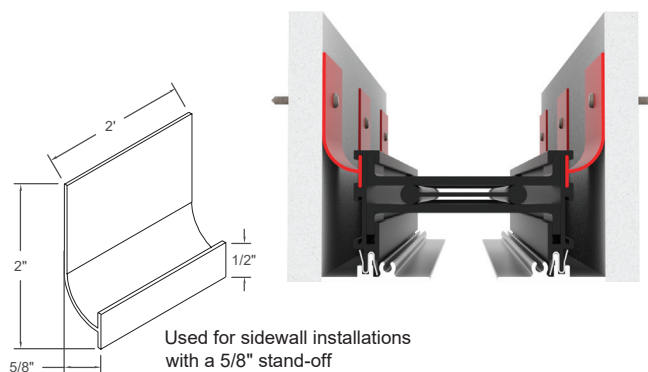


Mounting F Clip Breakdown for the LAD

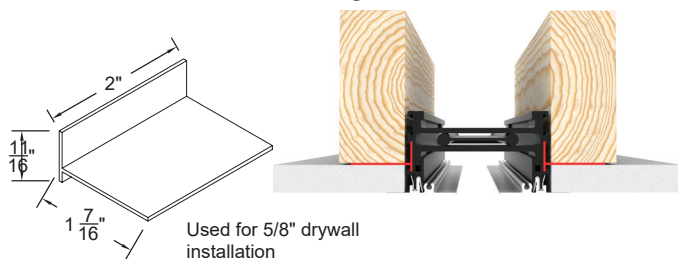
F21 Mounting Hardware



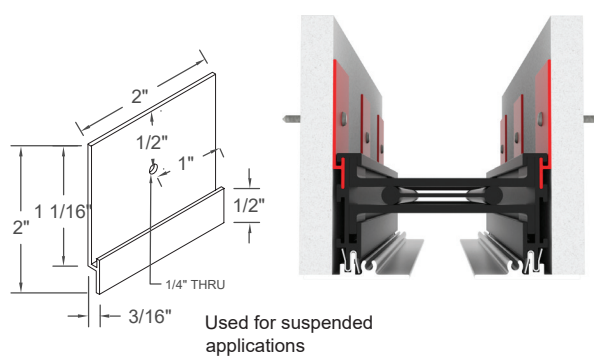
F25 Mounting Hardware



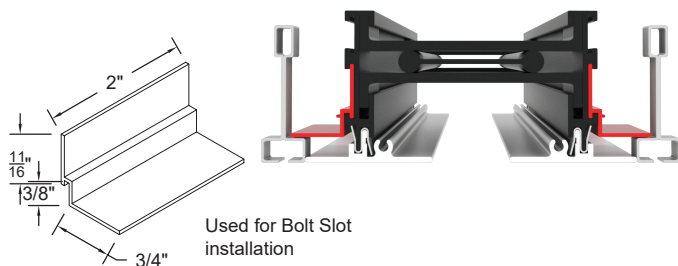
F22 Mounting Hardware



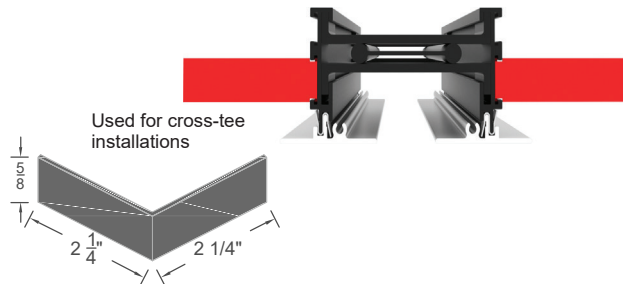
F26 Mounting Hardware



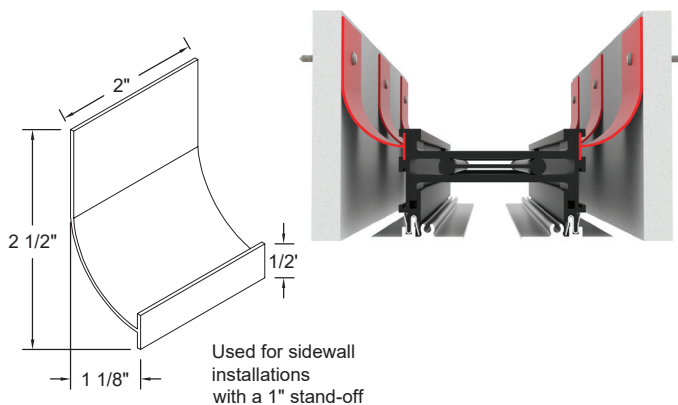
F23 Mounting Hardware



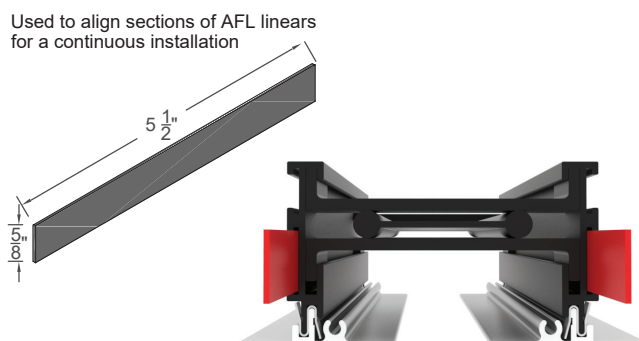
F27 Mounting Hardware



F24 Mounting Hardware



F28 Mounting Hardware



Installation Instructions for Drywall Surface Mount - Model LAD

This section applies to Greenheck model LAD-AA, LAD-AC, LAD-CC specifically. The LAD is a high capacity architectural linear slot diffuser. The “A” represents exposed frame/flange border and the “C” represents a tape and spackle border.

Step 1 – Mounting Hardware

- A. Locate and ensure all proper mounting clips were supplied with the linear diffuser before starting installation. Installation clips for the LAD are referred to as F Clips and the types are displayed on the previous page. Regardless of the type of F Clip ordered, Figure 1 shows how many should have been supplied by the factory for installation based on the length of the linear.

LAD Linear Length	# of F Clips Supplied
24" or less	2 each side (4 total)
> 24" to 48"	3 each side (6 total)
> 48" to 72"	4 each side (8 total)

Figure 1 (Step 1A)

Step 2 – Framing the Opening

- A. Before installing drywall, an adequate frame must be constructed for the Greenheck LAD Architectural Linear Slot Diffuser. This framing must be suitable to hold the weight of the diffuser (typically wood framing). The length and width of the framing depends on the length and number of slots of the linear diffuser being installed.
- B. In general, the length of the opening within the framing should be the ordered/listed size (see Figure 2) and the opening width should be the “D” Dimension (see Figure 4).

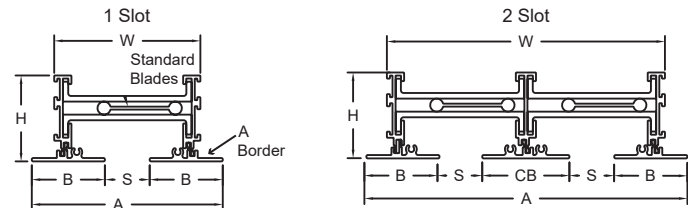
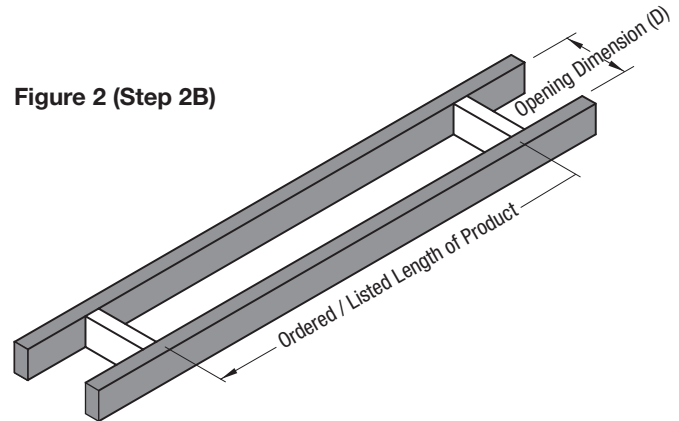


Figure 3 (Step 2B): LAD Cut Section (-AA shown)

Model	S	Opening D Dimension	
	Slot Width	1 Slot	2 Slot
LAD-10	1"	4"	6-15/16"
LAD-15	1-1/2"	4-1/2"	7-15/16"
LAD-20	2"	5"	8-15/16"
LAD-25	2-1/2"	6-1/2"	11-15/16"
LAD-30	3"	7"	12-15/16"

Figure 4 (Step 2B): LAD “D” Dimension Table

Step 3 – Installing F Clips

- A. The F Clip is meant to be secured to the framing made in Step 2. The following information will show the installation of the F22 Clip, however other clip installations are similar. For a better understanding of how other F Clips are installed, please refer to the “Mounting F Clip Breakdown” earlier in this document.
- B. First attach the F Clip to the LAD Linear Slot Diffuser (see Figure 5) with equal spacing between clips.
- C. Then attach the F Clip and LAD Linear Diffuser to the underside of the framing with screws or nails by others (see Figure 6).

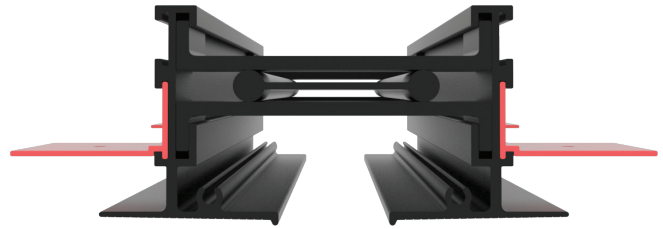


Figure 5 (Step 3B): LAD with F Clip (F22 Clip Shown)

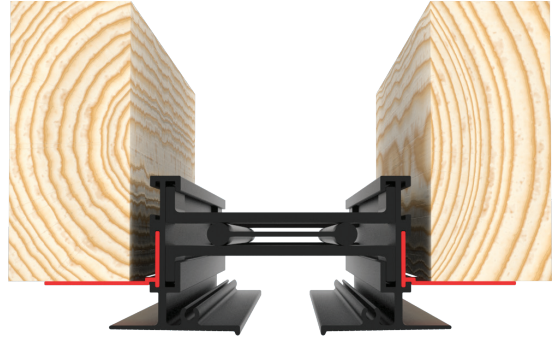


Figure 6 (Step 3C): LAD Installed in Framing

Step 4 – Optional Use of Plenum

- A. The Greenheck model UP can be used with the LAD linear architectural slot diffuser. A plenum can also be fabricated in the field. If the plenum is the UP, there will be clips on the plenum that attach to the LAD linear slot diffuser (see Figure 7).

To install the LAD onto the plenum, first place the LAD unit onto the plenum so it's aligned on all four sides. Once it's aligned, the LAD linear can be pushed up into the plenum and the clips will click and lock into the side of the linear, securing the unit in place.

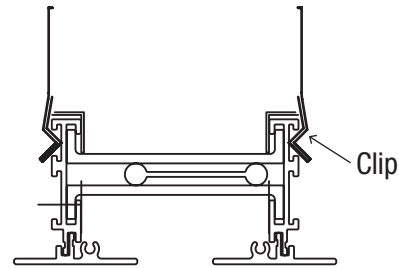


Figure 7 (Step 4A):
LAD Installed in UP Plenum

Step 5 – Install Drywall

A. Lastly, install sheetrock into the slot created by the F Clip and the border of the LAD diffuser (see Figure 8). If one or both borders have a tape and spackle border (“C”), see Figure 9.

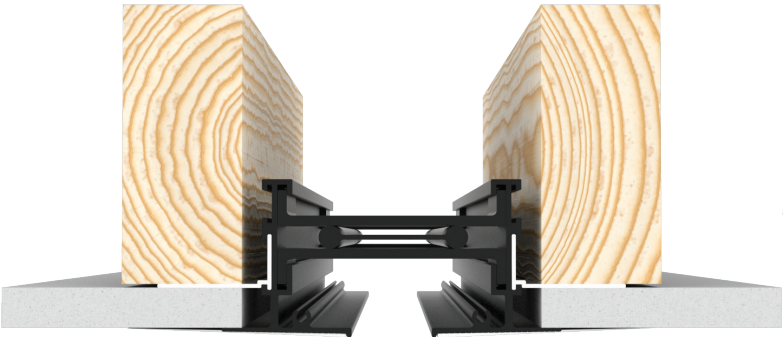


Figure 8 (Step 5A): Install Drywall – Exposed Face/Flange Border (A)

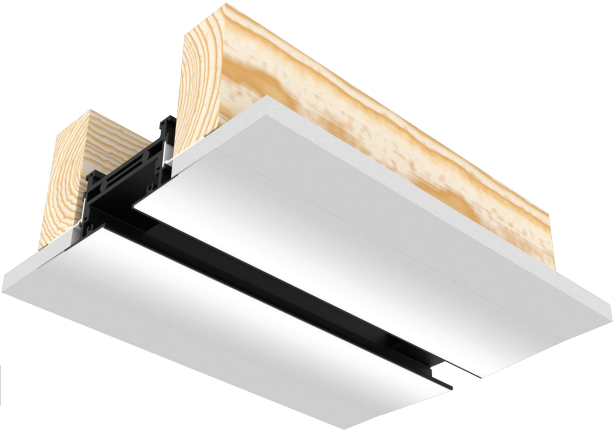


Figure 9 (Step 5A): Install Drywall – Tape and Spackle Border (C)

Installation Instructions for Drywall Surface Mount with Concealed Mounting Hardware - Model LAD-CM

This section applies to Greenheck model LAD-AA-CM, LAD-AC-CM and LAD-CC-CM specifically. The LAD-CM is a high capacity architectural linear slot diffuser with mounting hardware for concealed installation. The “A” represents exposed frame/flange border and the “C” represents a tape and spackle border.

Step 1 – Mounting Hardware

A. Locate and ensure all proper mounting brackets and screws were supplied with the linear diffuser before starting installation. See Figure 10 for a table showing how many hanger brackets are shipped with the corresponding linear lengths.

LAD-CM Linear Length	# of Hanger Brackets
24" or less	2
> 24" to 48"	3
> 48" to 72"	4

Figure 10 (Step 1A)

Step 2 – Framing the Opening

- A. Before installing drywall, an adequate frame must be constructed for the Greenheck LAD-CM Architectural Linear Slot Diffuser. This framing must be suitable to hold the weight of the diffuser (typically wood framing). The length and width of the framing depends on the length and number of slots of the linear diffuser being installed.
- B. In general, the length of the opening within the framing should be the ordered/listed size (see Figure 11) and the opening width should be the “W2” Dimension. For convenience, we have provided the dimensional drawing (see Figure 12) and dimension table (see Figure 13) from the LAD-CM submittal (please note the most up-to-date information will be on the submittal).

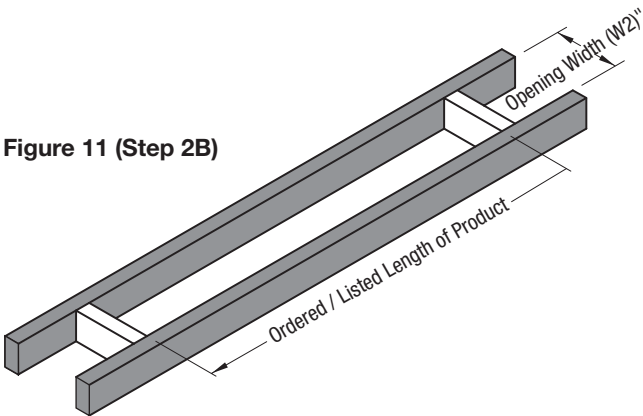


Figure 11 (Step 2B)

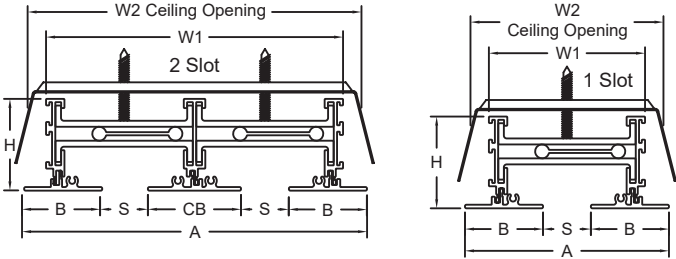


Figure 12 (Step 2B): LAD-CM Cut Section (-AA shown) Sub Frame Installed in Framing

Model	S	Opening W2 Dimension	
	Slot Width	1 Slot	2 Slot
LAD-10-CM	1"	4"	6-15/16"
LAD-15-CM	1-1/2"	4-1/2"	7-15/16"
LAD-20-CM	2"	5"	8-15/16"
LAD-25-CM	2-1/2"	6-1/2"	11-15/16"
LAD-30-CM	3"	7"	12-15/16"

Figure 13 (Step 2B): LAD-CM “W2” Dimension Table

Step 3 – Preparation for the Hanger Supports

- A. The hanger bracket hardware is meant to be installed above the plane of the sheet rock in the ceiling. Once installed above that plane, using the screws provided, you will be able to screw from the face of the diffuser and the linear diffuser will be pulled up into the opening.
- B. There are several ways to support the hanger brackets – see Figure 14.

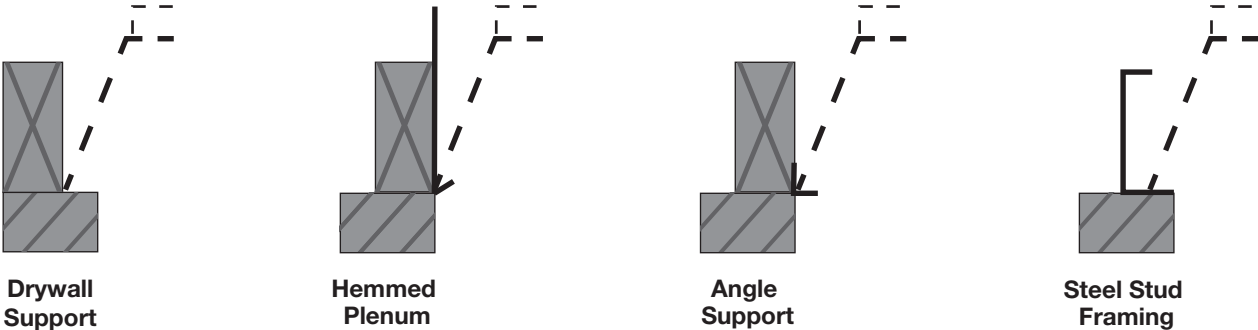


Figure 14 (Step 3B): Hanger Support Options

Step 4 – Installing Hanger Brackets

- A. To start, insert the screw through the face of the diffuser and start the screw into the hanger bracket – do not tighten all the way, only enough to be attached (see Figure 15).
- B. Push all brackets up into the opening until all hanger brackets get caught on the hanger bracket support (drywall, hemmed plenum, angle, steel stud, etc.) – see Figure 16.

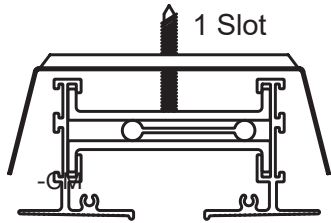


Figure 15 (Step 4A)



Figure 16 (Step 4B): Hanger Bracket Install Using Angles (other methods similar)

Step 5 – Install Drywall

- A. Lastly, install sheetrock as shown in Figure 17. If one or both borders have a tape and spackle ("C") border, see Figure 18.

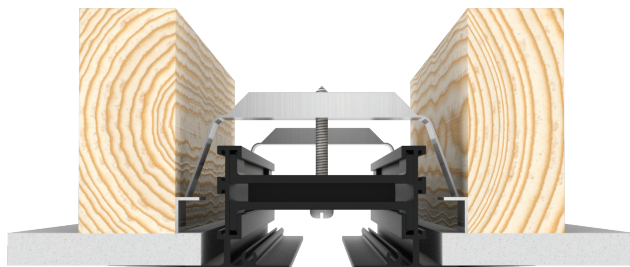


Figure 17 (Step 5A): Install Drywall – Exposed Face/Flange Border (A)

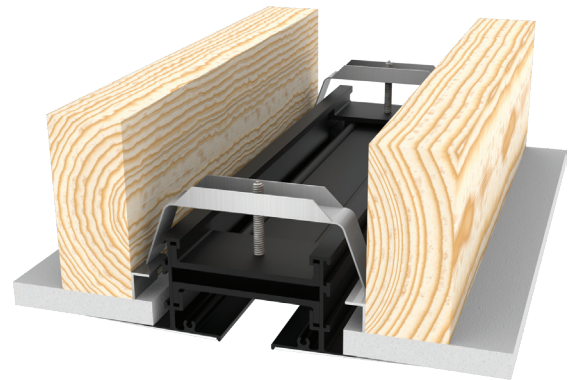


Figure 18 (Step 5A): Install Drywall – Tape and Spackle Border (C)



Step 5A – Install Drywall/Wood for GG Frame

- A. To install the GG frame, sheetrock or wood has to be cut at a 45 degree angle and installed flush against the angled part of the GG frame LAD unit. For an ease of installation, we would recommend using the F23 clips. See figure 19 below.

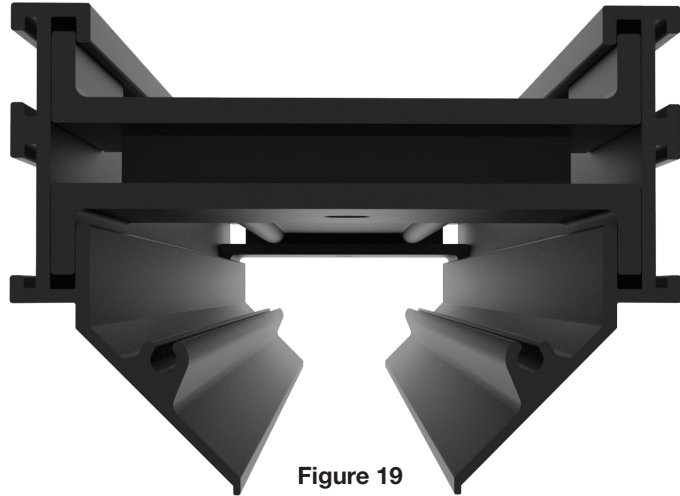
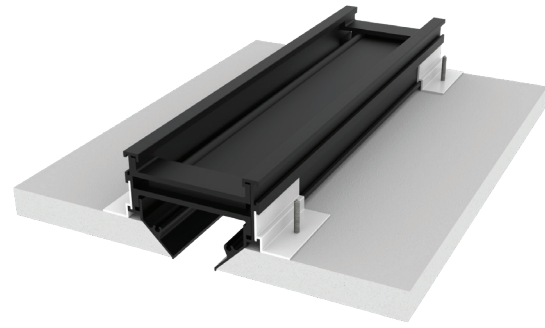


Figure 19



Step 6 – Tape and Spackle Units Only

- A. Once the hanger bracket has been tightened to securely attach the LAD-CM unit to the ceiling, the next step is to use tape and spackle to conceal the flange.
- B. First use medium grit sand paper to rough up the drywall surface to ensure that the joint compound will adhere properly. Ensure surface of the linear is clean and free of dust.
- C. Apply a first coat of joint compound spackle to the surface of the linear's flange and surrounding border of drywall.
- D. Use drywall tape and install it around the entire perimeter of the unit. The tape should cover the aluminum perimeter flange of the linear, as well as overlap onto the drywall to ensure a smooth transition. Then apply another layer of spackle to the surface.
- E. Once the spackle is dry, apply a finishing compound and let it dry. Finish the installation by sanding the surface smooth, priming it and painting it.

Operation

Pattern Controller Adjustment (Supply Models Only)

The pattern controllers can be used to adjust the direction of the airflow as well as damper the volume of airflow when needed. The Standard/Straight pattern controller is operated by sliding the controller left or right looking at a side profile (see Figure 19). The Combination pattern controller is operated by pivoting one or both slanting pattern controllers to reach desired volume and direction (see Figure 21).

Figure 20 - Standard Blade Pattern Controller

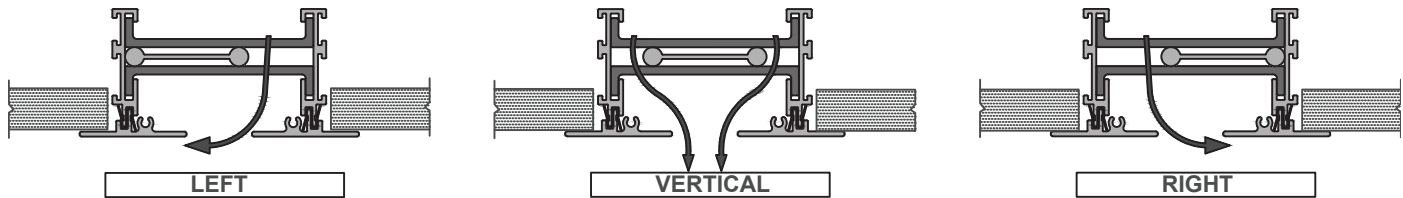
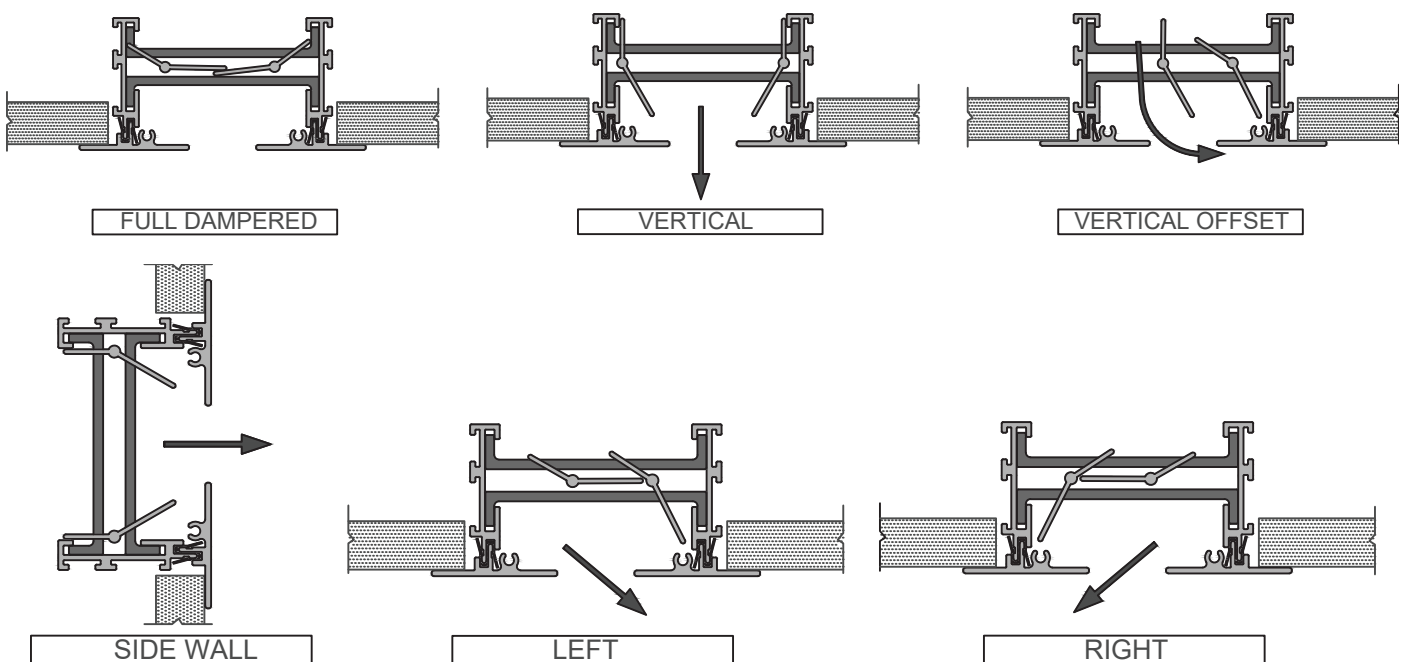


Figure 21 - Combo Blade Pattern Controller



General Maintenance

Linear Slot Diffusers are basically maintenance free. The face of most diffusers can be cleaned with water and mild detergent if dirt and dust begin to build up.

Our Commitment

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

Product warranties can be found online at Greenheck.com, either on the specific product page or in the literature section of the website at Greenheck.com/Resources/Library/Literature.

