



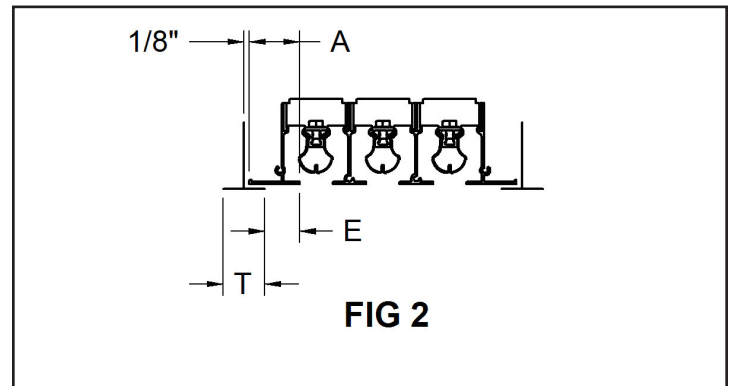
ML Slot Diffuser Lay-in Application

Square or rectangular ceiling diffusers for lay-in applications are easy to order, for example, an OMNI for a 24 x 24 module is simply ordered as a type 3 frame, size 24 x 24. A TDC for a 48 x 24 module is ordered as type 3, size 48 x 24. However, when it comes to ordering an ML series slot diffuser, the ordering is not quite as simple. For starters, the type 3 ML is not a lay-in diffuser.

Starting with the width sizing, in addition to the number of slots and the slot width, a border width must be determined. There are several ML models that are suited to lay-in application, each with different border widths. Border width is a consideration because it determines how much of the diffuser face will be visible when installed in varying tee widths. The border style selected also determines the desired plenum model MP.

As a ground rule for width consideration, auxiliary tees should be installed to create a module of appropriate width to accommodate the diffuser using standard module width clearance of $\frac{1}{4}$ " plus the overall width of the diffuser (which is the catalog/submittal "O" dimension).

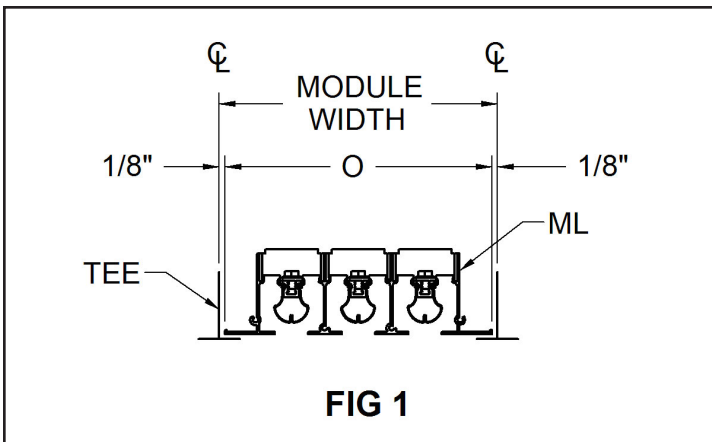
In a 1" wide tee grid (in which the tee width or "T" is actually $\frac{15}{16}$ "), the type 1B or 2A frames have 1- $\frac{1}{8}$ " wide borders ("A"), which will reveal $\frac{3}{4}$ " ("E") of each border. Using a type 2B will result in approximately $\frac{1}{2}$ " of exposed diffuser face and the type 9A, which has a $\frac{3}{4}$ " wide border will reveal a little over $\frac{3}{8}$ ". The figure and table below illustrate the exposed face differences for $\frac{15}{16}$ " and $\frac{9}{16}$ " wide tees with various ML models.



ML TYPE 1B, 2A or 9B		
T	A	E
$\frac{15}{16}$ "	1- $\frac{1}{8}$ "	$\frac{25}{32}$ "
$\frac{9}{16}$ "		$\frac{31}{32}$ "

ML TYPE 2B		
T	A	E
$\frac{15}{16}$ "	$\frac{7}{8}$ "	$\frac{17}{32}$ "
$\frac{9}{16}$ "		$\frac{23}{32}$ "

ML TYPE 9A		
T	A	E
$\frac{15}{16}$ "	$\frac{3}{4}$ "	$\frac{13}{32}$ "
$\frac{9}{16}$ "		$\frac{19}{32}$ "



Using this module width rule of thumb, the following examples reveal how much of the diffuser face is exposed.



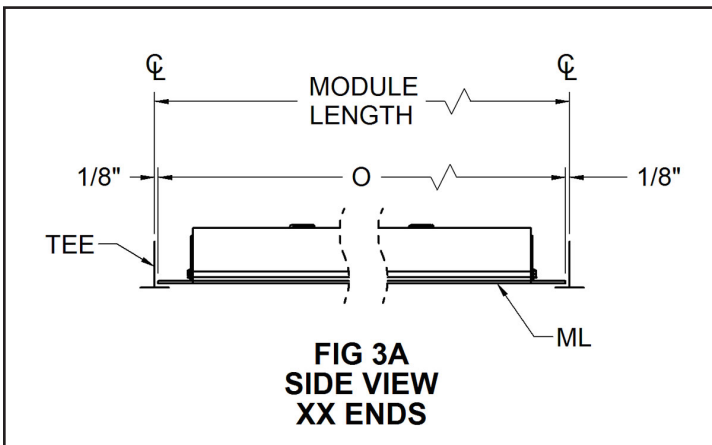
application engineering corner

Moving to the more critical length specification, an order length calculation must be employed, as normally the length of the diffuser must correspond to a fixed tee location. Ordering a diffuser in a length (D) of 48 will not result in a diffuser that can be installed in a 48" lay-in module. Further, the D length calculations are dependent on the end fabrication desired; end borders (XX) or end covers (ZZ).

I always recommend end borders for the lay-in application, but regardless, the following chart details how to specify the length on orders using the following rules:

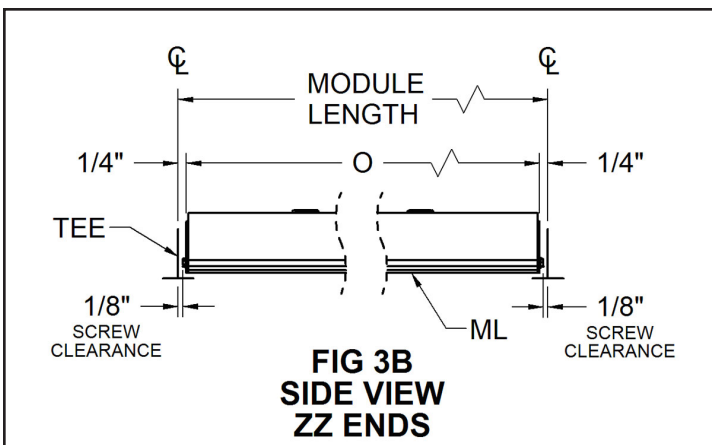
For XX ends, the overall length, which is catalog/submittal dimension "O", is duct size plus 3/4" and the overall dimension on a lay-in unit is module size minus 1/4". To get a unit with an overall length of module size minus .25, the sizing rule is **module size minus 1"**.

For ZZ ends, the overall length, which is catalog/submittal dimension "O", is duct size plus 1/8" however there are end cover screws that must be accounted for by adding an additional 1/4" to the O dimension and the overall dimension on a lay-in unit is module size minus 1/4". To get a unit with an overall length of module size minus .25, the sizing rule is **module size minus 5/8"**.



Using XX ends guarantees adequate clearance for plenums between the tees, but about half of the end border will be exposed. Using the end cover option eliminates the exposed end border but the plenum fit is extremely tight.

NOMINAL MODULE LENGTH	XX ENDS ORDER LENGTH	ZZ ENDS ORDER LENGTH
12	11	11 3/8
24	23	23 3/8
30	29	29 3/8
36	35	35 3/8
48	47	47 3/8
60	59	59 3/8



MARK COSTELLO