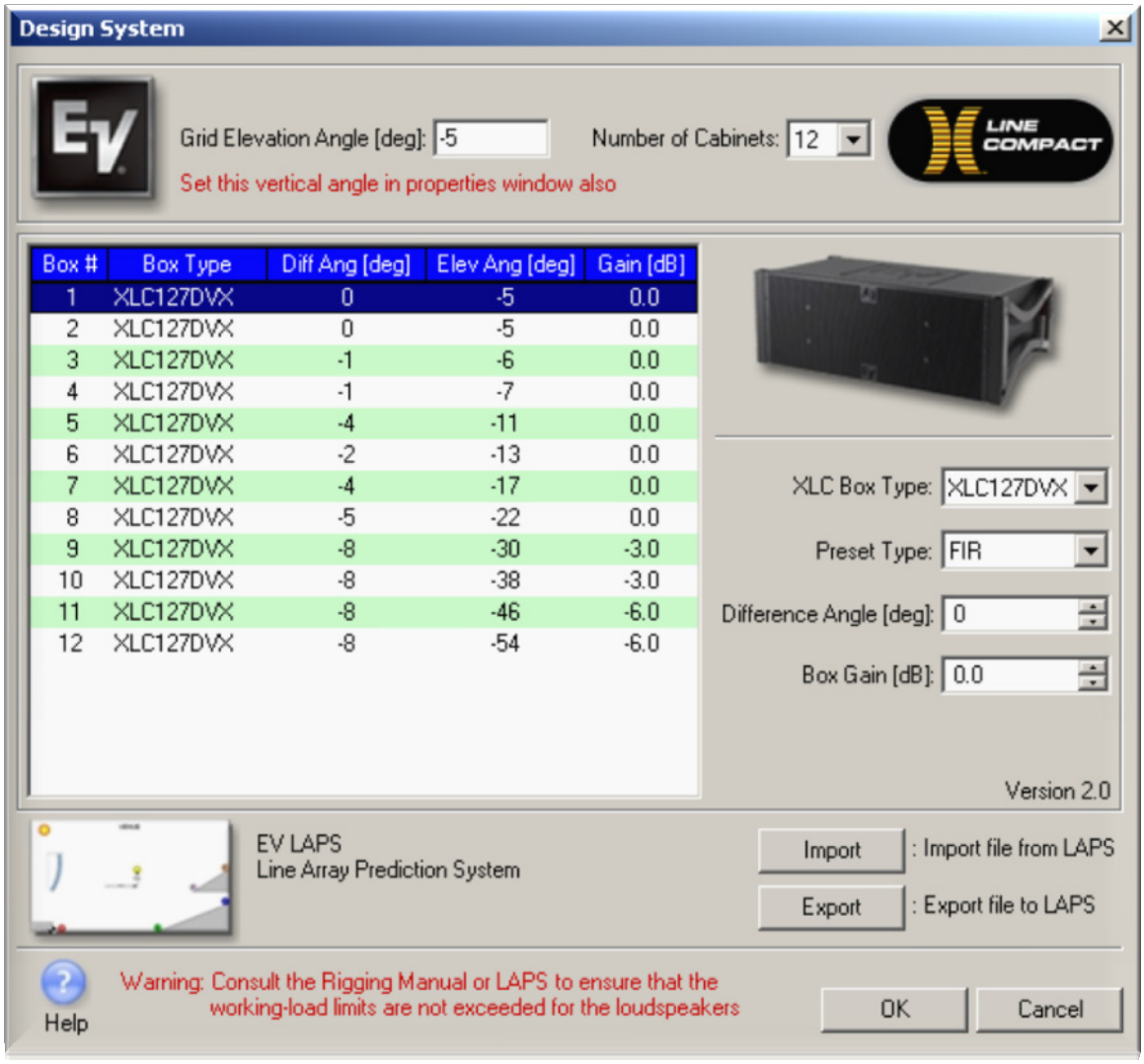
XLC EASE DLL v2.0 Help File



The XLC EASE DLL v2.0 is a tool that will help you to construct XLC line arrays for EASE simulations. There are several new features that will help you as you build your array, including EV Line Array Prediction System (LAPS) file import and export. Below is a quick overview of each feature of the DLL.

NOTE: This DLL is only for use with the Electro-Voice XLC family of speakers. To create arrays from other product families you must use the appropriate DLL for that speaker.

NOTE: For best results, always use LAPS first to determine the most appropriate array configuration.

DLL Display:

The DLL Display contains the currently edited array information including the following:

- The number of boxes
- The type of box
- The individual difference angle of each box
- The total array angle (elevation angle)
- The individual box gain value

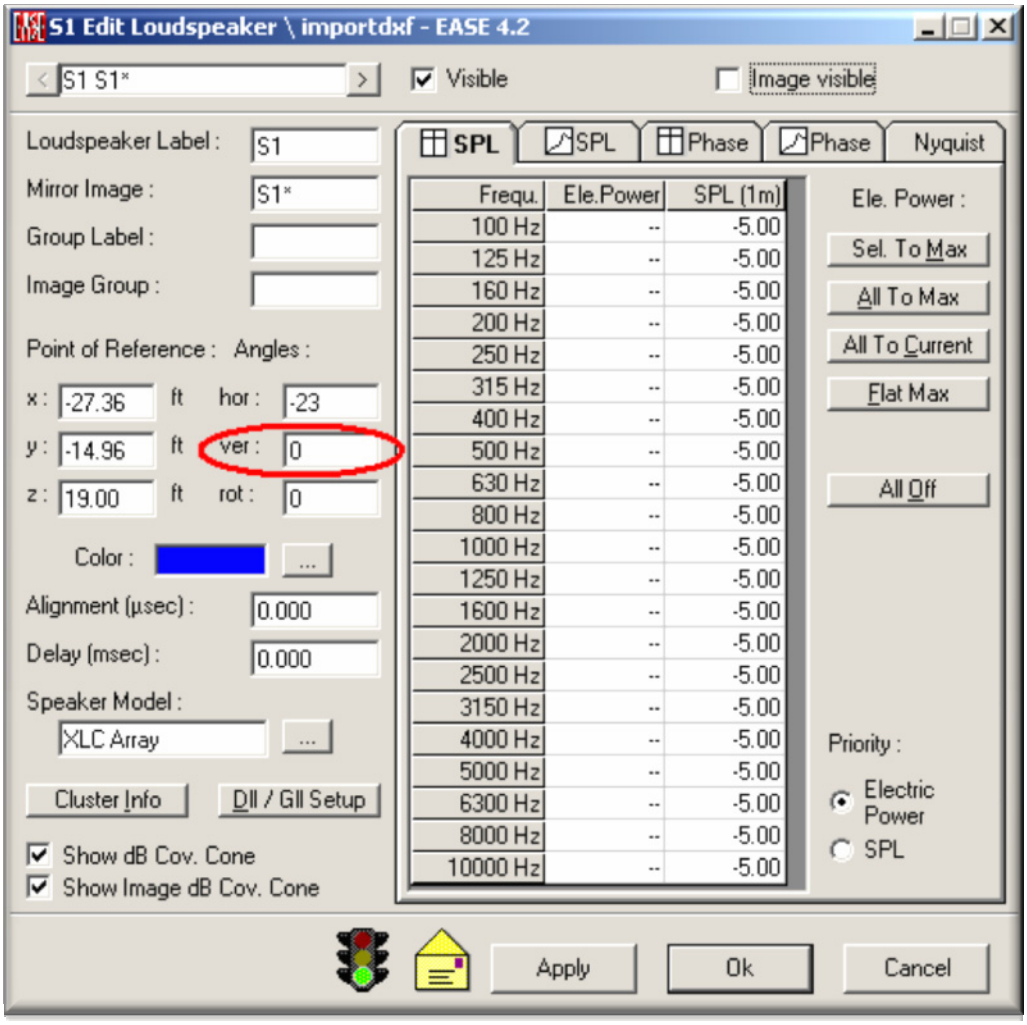
This table will allow you to edit individual, or multiple loudspeakers. You select an individual box by left-clicking on it with your mouse. You can also change the individual box you have selected by using your keyboard's arrow keys to move up and down through the list. To select multiple boxes, you can use standard Windows procedures:

Left-click and drag over the boxes you want to select.
-or-
Hold down **Ctrl** and click the left mouse button (called *right-click)*
-or-
Hold down **Shift** and left-click

The elevation angle shows the cumulative sum of the combined angles in the array. If the initial hang point is angled, this value can be entered into the Grid Elevation Angle and will be added to the sum of the elevation angles in the DLL display.

Grid Elevation Angle [deg]:

This field contains the angle (in degrees) that the entire array is elevated. In EASE, in the Loudspeaker Properties sheet, this corresponds to the *ver* field under the angles column. This is circled in red in the image below. You may want to change the Grid Elevation Angle in the DLL to match your LAPS simulation; this will allow the Elevation Angles in the DLL display to match Total Tilt in the LAPS display.



NOTE: Changing the Grid Elevation Angle will *not* change the vertical angle in the EASE project. It does allow you to see the correct angles in the DLL. You must change the vertical angle in the Edit Loudspeaker window to affect the array in the model.

Number of Cabinets:

This drop-down combo box allows you to select the total number of cabinets in your array. The maximum number of cabinets in the XLC family is 16.

NOTE: Always consult LAPS or the Rigging Manual to ensure that the loudspeakers do not exceed the working-load limits. Neither EASE nor this DLL will alert you if you are exceeding the limits and creating a potentially hazardous array.

XLC Box Type:
This drop-down combo box allows you to change the selected boxes (highlighted in the display table) to any of the speakers in the XLC family. You change the speaker(s) by selecting the speaker(s) to be changed in the list and selecting the box type that you would like them to be in the combo box. You select the speaker(s) by using standard Windows practices:

Left-click and drag over the boxes you want to select.
-or-
Hold down **Ctrl** and click the left mouse button (called *right-click)*
-or-
Hold down **Shift** and left-click

You can create arrays that contain several different XLC speakers. For example, you can create an array with subwoofers at the top and XLC127+ speakers underneath. You can also create a multi-pattern array (using the DVX speakers only) in which you can have short throw and long throw boxes in the same array.

This DLL includes only suggested combinations from Bosch Communications Systems. For example, XLC127+ loudspeakers should not be used in the same array as XLC-DVX loudspeakers.

NOTE: XLC118 and XLC215 are subwoofer boxes and do not contain any acoustic data. They are included in this DLL for box spacing convenience only.

Preset Type:

Electro-Voice now offers several preset options for some of our concert loudspeakers, including the FIR presets (currently available on the XLC-DVX loudspeakers). Electro-Voice FIR (Finite Impulse Response) DSP is capable of creating filters that have nearly unlimited amount of EQ, incredibly steep (greater than 100dB per octave) crossover slopes and transducer compensating linear phase. Electro-Voice takes advantage of this technology to provide you with loudspeaker presets that have amazing sound, coverage and quality. Since FIR filtering can have dramatic effects on polar radiation characteristics we have included the FIR filter data separately.

NOTE: FIR presets are not available for all Electro-Voice speaker models.

NOTE: When selecting a preset type, you will change the value of the entire array.

Difference Angle [deg]:
This is the angle of the currently selected box to the box above. In LAPS, this is labeled as "Angle Above". As you make incremental changes to the boxes in an array, you will change the overall vertical dispersion pattern of the array. Using LAPS first is the best way to find which angles each box should be at for best line array performance in your venue. Since each box has a limited angle, the DLL will prevent you from exceeding or selecting an angle option that does not exist. *Difference angle* is designed to modify each individual enclosure separately.

NOTE: Always consult LAPS or the Rigging Manual to ensure that the working-load limits are not exceeded for the loudspeakers. Neither EASE nor this DLL will alert you if you are exceeding the limits and creating a potentially hazardous array.

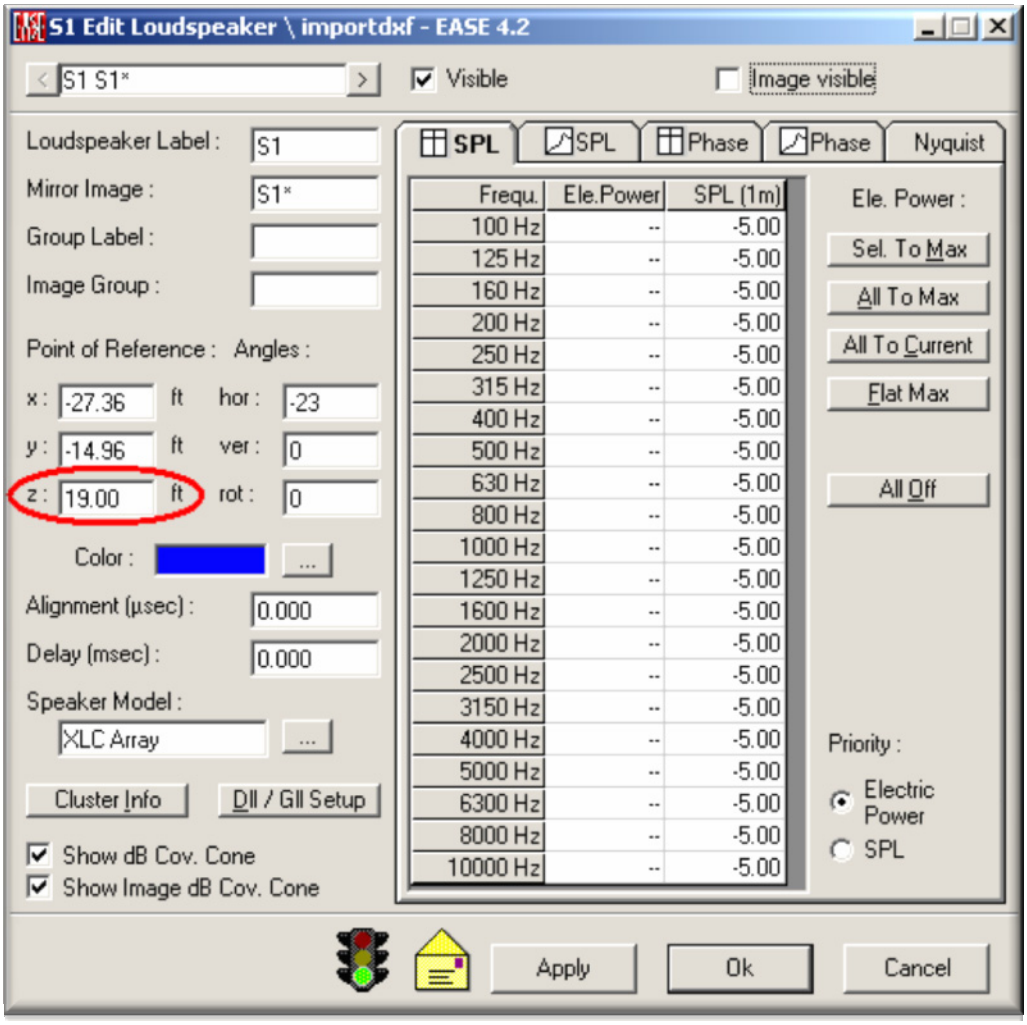
Box Gain [dB]:

This allows you to reduce (attenuate) the level of any individual box or set of boxes at the same time. By changing the level of certain boxes in an array, you can steer the overall vertical dispersion pattern off the array to help create more balanced sound distribution. LAPS is the best way to find which boxes should be attenuated, and it may help to keep in mind the physical configuration of your system, how speakers are wired to amplifiers, and how DSP is applied. For example, if you are wiring the bottom two speakers in parallel, you will need to change their level in the EASE simulation equally.

Import File from LAPS:

The Electro-Voice Line Array Prediction System (LAPS™) is a custom acoustic modeling program that supports prediction of coverage for various configurations of Electro-Voice line array loudspeaker systems. You can import the LAPS data into the EASE DLL by clicking **Import** and navigating to the file.

The LAPS file contains the majority of the array configuration, including the amount of boxes and their types, difference angles, and box gains. You must use the EASE Loudspeaker Properties to manually change the trim height or the Z-axis of the Point of Reference (see image below). This value is shown as "Top" in the Array and Predictions Options, located on the appropriate array sheet of LAPS. You may also want to change the Grid Elevation Angle in the DLL to allow the DLL display to match the LAPS prediction (see grid elevation angle).



Versions of LAPS at or before v2.1 will not contain separate options for the XLC127DVX and the XLC907DVX. By choosing the option XLC-DVX, the DLL will import XLC127DVX boxes by default.

Export File to LAPS:

Click **Export** to create a LAPS file containing the array information currently on your DLL display. If you started the simulation with a LAPS file and have since changed values you want reflected in that LAPS file, click Export and navigate to the existing LAPS file. This will overwrite the previous array configuration data with the current DLL data.

NOTE: If you export to a new LAPS file, you will need to create the venue and reset the array height (Top); this information is not stored in the DLL.

Icon Hyperlinks:

Several icons in this DLL are hyperlinked to get you information quickly. The EV Icon in the upper left-and corner brings you to the Electro-Voice home page at (http://www.electrovoice.com/index.php). The XLC icon in the upper right-hand corner and the LAPS icon in the lower left-hand corner take you to the XLC product family page (http://www.electrovoice.com/productfamilies/11.html), from where you can navigate to any EV loudspeaker, find downloads of loudspeaker presets, and obtain Electro-Voice software, including LAPS.