



Introduction

Welcome to Drafty, a CAD tool for lighting, sound, and video professionals to generate plots and paperwork in record time. With a wide array of smart tools and auto-layer management, Drafty frees you to focus on getting the job done.

Traditional drafting programs offer a dizzying suite of tools when only a tiny fraction of them are used in the generation of a typical plot. This excess of options leads to work slowdowns, confusion, layer mismanagement, and overly complex drawings for all but the hardest core of power users. For the rest of us, who just want to get our paperwork out the door quickly, being freed from endless palettes, tools, layers, classes, sheets, viewports, and myriad other complexities is a relief. The simplicity of Drafty lets you focus on your craft, not the tool.

Does Drafty do 3D? Well, YES...and no. 3D is just math, complex trigonometry and the like. And there is a lot of complex 3D math in Drafty from the Smart Section to Auto-Worksheets. What Drafty does not have is a difficult to use 3D GUI that gets you spun around in useless isometric views. Drafty is a 3D program with a 2D interface.

We have limited the amount of styling to just a few options. Drawing the walls of a theater? We have already decided what that looks like. A light? Done. A Pipe? Done. The default style was developed around contemporary Broadway best practices. While full style controls are not currently available, there are more options in Drafty Pro than in the basic plans.

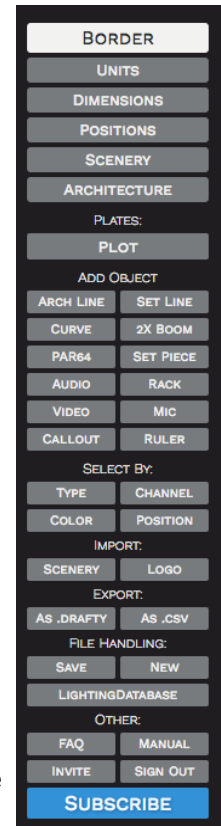
By focusing down to the essentials of making a plot you put your energy into the design and function of the lighting, audio, or projections without worrying if you are in the right layer/class/viewport/sheet. Just draw.

Does this simplicity mean Drafty can not create complex drawings?

While the tool set is limited, there is depth through the use of contextual menus, modifier keys, and smart objects. We try to display only as many options as are needed for the task at hand. Neither more nor less. Many tools have advanced features built in to further reduce workspace clutter.

Nearly anything you can do with a button or selection, you can do better with a modifier key. Click on the ERS button and you get a Source-4. Command-Click and it's a VL3500. The pipes button creates a Pipe object. Shift-Click and you get a Boom object. The default Arch Object is a rectangle. Shift-Click and it's a line. You get the idea.

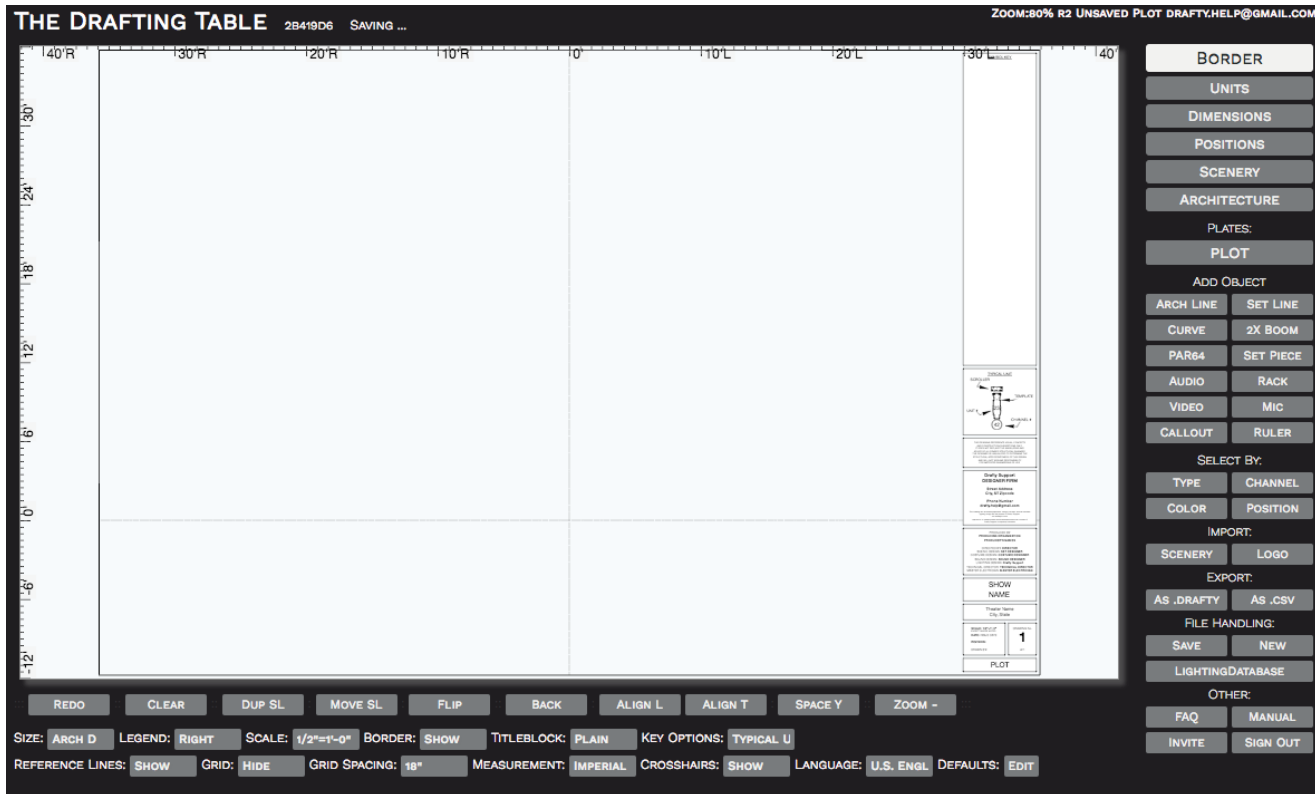
Everything in Drafty works like that. Simple tool sets that become complex with modifier keys. The objects themselves have built in tools that appear when the object is selected. Style controls for Pipes, as well as auto-numbering and dimensioning, show up upon pipe selection. Jump to the end of this guide for a complete list of buttons, modifiers, and keyboard shortcuts.



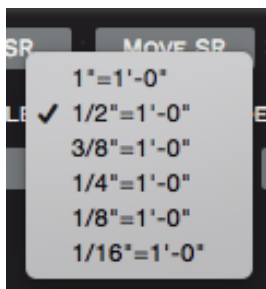


Let's Begin

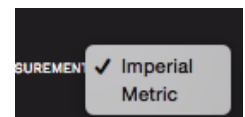
When you create a new Drafty document you are given a blank drawing space with a Centerline, Plasterline, and an empty titleblock contained in a bounding box. The program starts you off on the BORDER layer, which is at the top of the drawing stack.



With nothing selected the bottom contextual menu is filled with various Layer level controls. On the BORDER layer you can control several key drawing elements like Page Size, Scale, Titleblock layout and style, Measurement Units, several drafting guides, and your user Defaults. That last item appears under Defaults:Edit. Click to set up your user information that will pre-populate in all NEW drawings moving forwards.



Set your drawing size and scale with the dropdown menus in the lower left-hand corner. Metric and Imperial options are set here as well. Gridlines are available as a drawing reference. Set your spacing or turn them off entirely. Similarly, you can toggle on and off the cursor crosshairs.



The point of intersection between Centerline and Plasterline is your 0-0 point. When you add objects, use the X/Y text boxes to precisely position them. Drafty accepts 6'3", or 75, or 6'3, or 6 3 all as valid inputs to indicate something at six-foot three-inches.



Plots and Plates

Often your paperwork will need more than a single page of drafting to communicate the design. Thus Drafty allows you to draw on several different Plates. All new Drafty documents come with five pre-named Plates. Plot, Section (more on this later), Elevation, Signal Flow, and Racks. Clicking 'Edit...' in the dropdown opens up the Plate Name Panel where you can set names for up to 30 plates on your drawing or rename the defaults.



Like all tools in Drafty our Plates are aware of the drawing elements you place in the document. As such the Plate numbering is automatically generated based upon the uniquenesses of your drawings. Only have a Plot and Elevation drawing? Drafty will name the Plot drawing 1 of 2 and Elevation 2 of 2. Likewise Plot, Section, and Signal Flow will be 1 of 3, 2 of 3, and 3 of 3 respectively. Everything in Drafty is a Smart object down to the Titleblock.

When you open a new document to set your Border and Titleblock controls, all the edits you make to the Plot Plate will carry through to the other plates to ensure a consistent style for all Plates of Drafting. You can go to each plate and discretely edit the styles if, for example, you wanted a simplified layout for your Rack drawings.

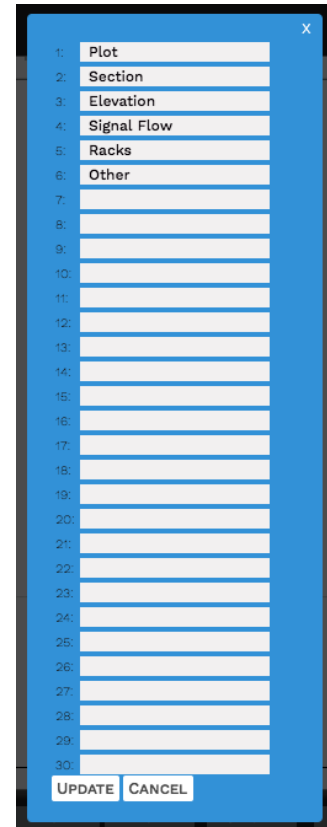
All style and drafting settings can be unique to each plate. Thus, you can set different Centerline and Plasterline origins for your Plot and Section as needed. Scale can also be discretely set on a per Plate basis allowing your Rack or Signal Flow drawings greater flexibility in terms of layout for their more abstracted nature while maintaining strict scale accuracy for your Plot and Section.

Centerline and Plasterline markers can be easily added from the Dimensions layer with a single button click. There are three text styles available and CL markers are locked to the CL and draggable along it. PL markers likewise are locked to Plasterline and draggable along it.

Magic Sheets are simply another Plate in Drafty. So you can set your Page Size and Scale appropriately to that drawing and build your Magic Sheets with our Magic Sheet Tools. This keeps all elements of your drawing neatly organized within a single document and allows edits and updates to be made fast and efficiently.

Plate names may be edited from the Plate Name Panel or directly on the Plate itself from the Border Layer. Any changes made in the Plate Name Panel will be reflected on the Drawing and *vice versa*.

User Defaults allow you to set the basic Plate Style that all new documents will start from. This includes Titleblock Style and Orientation, Design Type (Lighting, Sound, or Projections), default name of the Plot Plate, and more.





Importing and the Architecture Layer



Auto-layer management means that you simply select the tool you need and Drafty will navigate you to the proper layer and insert the object there including importing Architectural and Scenic . The import function works like any other import function you've used in the past and draws the PDF to the Architecture layer at the bottom of the layer stack. You will find this with the Import: [Venue] button on the right hand toolbar.

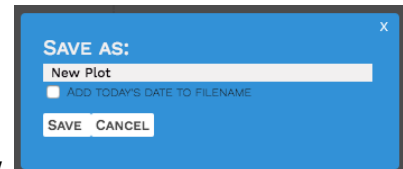
NOTE: To get your PDF scaled properly, **FIRST** set the Page Size and Scale in Drafty to match that of the PDF you are importing. Once the PDF is in the drawing you can resize and rescale the Drafty document as needed for your final output.

Once the PDF is in the drawing, you can move it to get the Centerline and Plasterline to line up with the ones in Drafty. Notice how Drafty's CL and PL draw *above* the PDF? This is the magic of automated layer management. If you don't like the overlapping lines, you can turn off the CL/PL in Drafty on the Border Layer. If you need to relocate the CL or PL, go to the Dimensions Layer and Shift-Click the line you need to move and position it accordingly. You can also resize the PL using Shift, or enter its length manually.

Once the PDF is imported, you can draw new walls of your own, or re-scale as needed. To trace, start with the outer walls of the venue. Use the [Arch Rect] tool to place a rectangle in your drawing. Move and resize it appropriately and then repeat this process until all walls are drawn. To finish off the stage edge, Shift-Click the [Arch Rect] and set its styling to "Inner Wall". Now you have a line. Place and shape your lines to make the stage edge.

Quick note, many non-proscenium stages probably want to have the Plasterline be in the same place as the stage edge. For full round and site specific installations, you're on your own to figure out what works best.

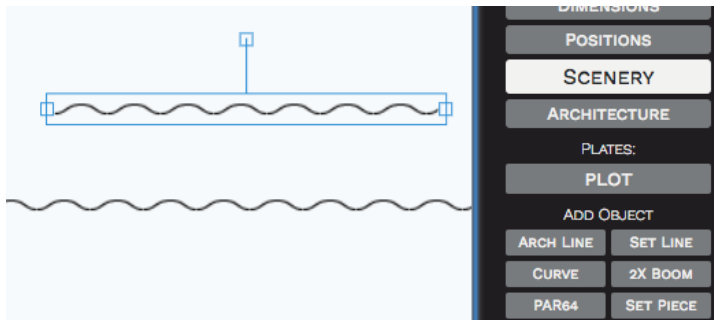
At this point, if not before, it would be a good idea to save your working file. All new Drafty files are unsaved until you click [Save As]. Doing so brings up a dialog box where you set a title for your document. If this is your first time saving a Drafty file, the program will create a "Drafty" folder in your Google Drive. From there on, every new file you create goes into that folder. Drafty saves in the background as you work, never interrupting your workflow to bug you about it. But if you prefer, you can [Save As] to make a new backup version or Shift-[Save As] to force a save. For working versions click "Add today's date" to append that to the file.



NOTE: Drafty defaults to 45° and 30° rotation increments. If you need a different angle, use Shift while dragging. Don't want to drag the handle bar? Use Shift-LeftArrow or Shift-RightArrow with an object selected. Lights are more limited than other objects. The arrow keys only move lights at 45° increments. Other objects rotate at 30° and 45° intervals. And you can always set a specific rotation in the Angle dialog box.



Scenery



Now onto Scenery. Again, you have the option of PDF import, hold down Shift and [Venue] becomes [Scenery], or free drawing. This time use the [Set Obj] tool and set styling as needed to draw the scenery. Add your masking legs and borders using the [Softgoods] tool. Care about Extreme Sitalines? Use the [Dimensions] tool to draw your sightline objects.

Click [Set Piece] to add scenic elements like chairs, couches, musical instruments, flats, and more. All Scenic element, including symbols and shapes, have opacity controls so you can determine the proper value and balance for your plot.

If you have been working on the Architecture layer and add a Set Object, Drafty automatically jumped you to the Scenery layer. Rather than generic drawing tools that can place items anywhere in your drawing, Drafty has specialized toolsets that understand layers implicitly and will move you to the proper layer when you select a tool. No more hand wringing over what layer did you *really* draw that object on.

Drafty Pro users have access to a selection of scenic objects to layout basic ground plans. An offering of chairs, tables, and other furniture are available with more symbols coming regularly. Drafty is not built with complex scenic drafting in mind but we know that sometimes it is clearer to rough in your collaborators work than to import their drawings in toto.

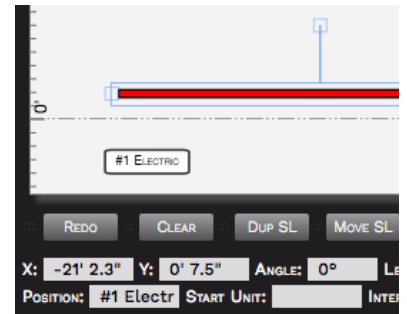
All Scenic objects, be they a chair or a rectangle, draw to the Scenery layer. Speaking of layers, you can't move an object unless it is on the active layer. The sole exception to this is that if you are on the Positions Layer and you move an Electric, the lights locked to that position will move. You can also reposition lights along a pipe while on the Positions Layer.



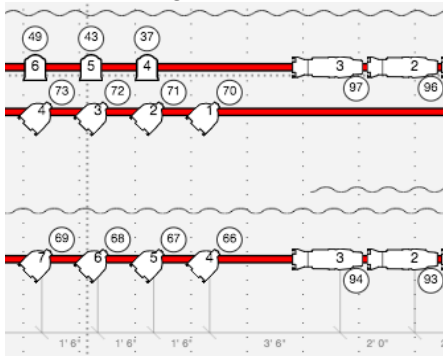
Lights and Speakers and Positions

Add hanging Positions with the [Pipe] tool. A Position Label appears with each pipe. Use the textbox or double click the label to edit directly. All lights on a Position automatically inherit the Position Name and are given a Unit Number based on their relative position on the Pipe.

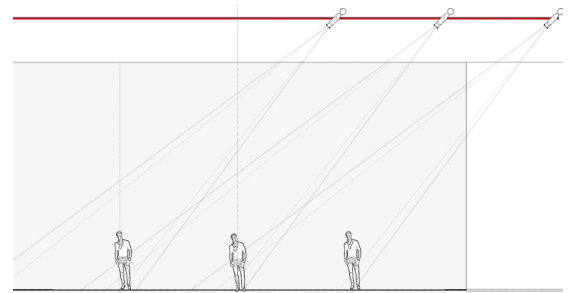
FUN FACT: duplicating a pipe with lights also duplicates the lights. If the Position name is #1 Electric, the duplicated pipe will be #2 Electric. If you are drawing a repertory dance plot for example you might only need to draw one electric and then duplicate it a few times.



Add lights with the [ERS] button. Duplicate creates a copy of an object offset Stage Right at the spacing set in the Interval Dropdown. Shift-Duplicate duplicates Stage Left. Start at CL and duplicate to one end of the position. Then go back and swap out unit types and rotate as needed. If you have a symmetrical plot there is no need to draw everything discretely. Draw half your pipe then use the Mirror Tool to mirror objects across Centerline.

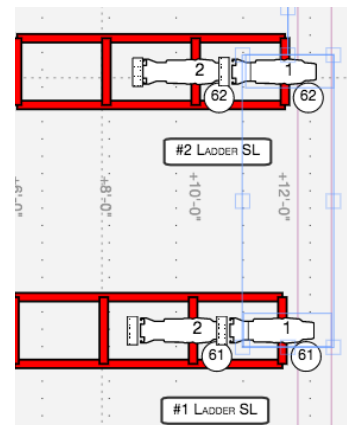


Speakers and lights all have a beam visualizer to calculate lighting and sound coverage. The Angles dropdown defaults to OFF but switching it ON gives you an adjustable cone to draw coverage diagrams and beam sections. For lights, the two lines represent the Beam Angle and Field Angle for fixed degree instruments, and min/max zoom for zoomable lights. For speakers, they represent the narrow and wide angles for asymmetrical spreads. Obviously, symmetrical speakers only have one set of lines.



The [Pipe] and [Boom] buttons create Position Objects. Straight pipes, curved pipes, truss, booms, and ladders are just a mouse click away. Booms and ladders have dimensions on by default at +2'-0" increments. Each text box can be edited or deleted as necessary.

If you have a position, say a Balcony Rail, made up of several discrete physical pipes, give all those pipes the same Position Name "Balcony Rail". Then, in the field 'Start Unit' letter them A, B, C, &c, from SL to SR and our auto numbering will number units jumping from pipe to pipe as though they are a single physical pipe.



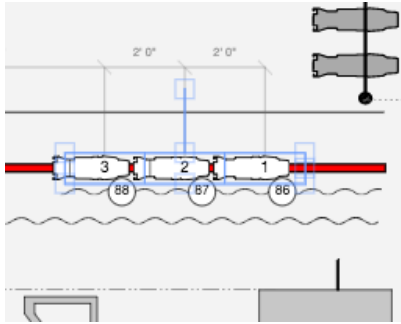
You can set a Pipe visibility to OFF. This makes the stroke and fill white. You can see it on the Drafting Table but it prints invisible. Useful for Groundrows or Speaker/Projector rigging points.



Data Entry and Drafting Details

Drafty offers myriad options for speeding up your workflow. Multi-Unit data editing is just one. Color, Purpose, and Template can all be edited as a grouped selection so that all the lights in your

template wash for example have the same pattern, color, and purpose. Or use “Select By” to edit lights with similar features.



Dimmers and Channels work differently than other attributes. While it's possible to make everything Channel 301, you probably break up the lights into more discrete control. Select the lights in the order you want their channels to increase and type “301+”. This results in the first light selected being channel 301, the second 302, 303, &c. If these channels were movers with 23 DMX addresses type “513+23” to return 513, 536, 559, &c.

When you move a pipe, the lights go along for the ride. So making changes and corrections to a plot is quick and easy. Duplicating a pipe duplicates all the lights on it.

Use the notes tool to add any special notes you may have. You can set basic style controls for the bounding box, opacity, and font.

Dimensioning is a critical part of generating plots and often a difficult and onerous task. In Drafty it is as simple as selecting your position and turning ON Dimensions. Dimension lines and text will update in real time as you add, delete, or move a light on a pipe. You can drag and drop the dimension lines to have them sit wherever you want relative to the pipe.

While drafting it can be useful to turn off the visibility of a certain layers or isolate one or two types of object. Hold down Shift and press a layer button and all items on that layer are temporarily rendered invisible. This is a toggle state. Thus, to turn that layer back on press the layer button again whilst holding Shift.

To finish off your plot edit the respective text fields on your Border. Double click the text field you want to edit and make your changes. Note the Instrument Key auto generated based on the lights you used. It updates based on the proper order the lights should be in rather than the order added to the drawing. You can edit the default name of a light, projector, or speaker by editing the Key field in any selected object. Use the ‘Import:Image’ button to place a show logo or Union Bug on your titleblock.

On the BORDER layer you will find a contextual menu below the main drafting space. On it is a button labeled Defaults:Edit. Click that and a you are presented with a popup that will let you set your default drawing information. Fields for Address, Phone, and Email will populate on all new drawings. You may also set ‘Design Type’ to Sound or Video in order to replace the default text about Lighting Designers.



The Lineset Scheduler

Designing for a fly system presents some unique challenges. Fitting everything into a tightly packed overhead, managing constant updates to the order of the linesets, and myriad other tasks make such a deceptively simple piece of information become a critical lynchpin holding multiple departments, and ultimately the whole show, together. As such many designers prefer to work from a lineset schedule before they even begin to dive into the real meat of a design. We have made a tool that is both easy to use from a design perspective and robust enough to keep up with all the demanding changes that happen on a show.

Controls for the Lineset Schedule can be found on the Scenic Layer. There, with nothing else selected, you will see a simple show/hide toggle. Select Lineset:Show and you see a lineset schedule object appear at the Plaster Line on the left hand side of your drawing.

Selecting the lineset schedule reveals several contextual items for building your lineset schedule. Count refers to how many linesets there are. Enter that number and the lineset schedule will grow to that size. Next is Spacing. Drafty defaults to 6" spacing but you can set any standard spacing you need (including Metric standards). Many venues do not have consistent spacing for all lines, though often there is some standard default. For irregular spacing you set Distance Markers to Show and then individually edit each lineset as needed. Use TAB and Shift-TAB to go through cell by cell. For very tight spacing of linesets it is common to stagger the layout. To do this in Drafty select Width:Double.

10	Unused	4'-6"
9	Unused	4'-0"
8	Unused	3'-6"
7	Unused	3'-0"
6	Unused	2'-6"
5	Unused	2'-0"
4	Unused	1'-6"
3	Unused	1'-0"
2	Unused	0'-6"
1	Unused	0'-0"

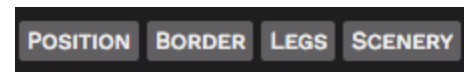
91	Unused	92	Unused
89	Act 2 Drop	90	Translucency
87	Unused	88	Act 1 Drop
85	Black Scrim	86	Unused
		84	Unused

The Purpose of any lineset may be directly edited by double clicking on the text. TAB or Shift-TAB will scroll you through the Purpose column allowing you to enter all your values as necessary.

Selecting a Purpose cell will also reveal some additional contextual controls. If you work from a Lineset Schedule out to a design then this should all make sense. To place a lighting position on the 5th lineset you select the Purpose of LS5 and click the

Position button. Likewise for Borders and Legs and Scenery.

Each item created from the Lineset Schedule itself has the Y position locked to the lineset. Thus, in order to move the position you select and drag the Lineset purpose. Borders work the same way. Legs are a little different in that the legs always maintain an opposite distance from CL. So moving one leg Left or Right will move the other leg the same distance in the opposite direction. The Scenery object is a rectangle that can be made flat to represent a drop or dimensional to represent scenery.



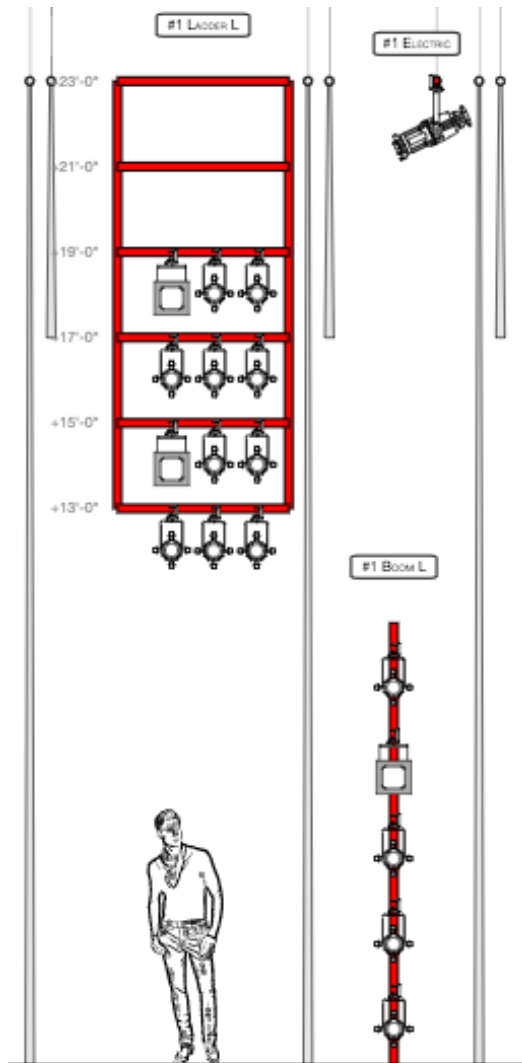
To always ensure your plot is in sync with the Lineset Schedule we suggest creating all your positions, border and legs using the Lineset Scheduler. This way, as your show evolves all you do is drag and drop items to their new Lineset position rather than trying to update information in several places at once.



Smart Section

While Drafty does not provide a traditional 3D user interface, our software employs complex 3D tools that work for you under the hood without the complexity of a 3D GUI. The cornerstone of this is our Smart Section.

Begin your drawing on the default PLOT layer utilizing all the tools outlined in the previous section to attach Pipes to your lineset. Once you are done, navigate to the Scenery Layer and you will find an On/Off toggle labeled 'Smart Section'. Turning this ON begins drawing your plot elements on the section plate. Now when you navigate to the Section Plate you will see all your Pipes, Booms, Ladders, Legs, and Borders represented in Section. If you did not touch the Z height for any of these then they will draw at the default trim of 23'.



On the Section Plate you may adjust the trim of any element via drag and drop or by using the text inputs in the lower contextual menu. Ladders and booms will reflect the number and placement of lights on them as per the Plot.

The Smart Section will default to standard Profiles but you can swap to scroller units or other types of fixture as shown in the image on this page.

Items on the Smart Section that are attached to the Lineset Scheduler may be moved via the Lineset Scheduler at the top of the Section Plate just like on the Plot Plate. Items such as Booms and Ladders need to be positioned on the Plot Plate.

Position names are inherited from the Plot and can be arranged as needed for your drawing.

Border trim and length can be set in the Smart Section. Legs will always land on the deck so setting the trim will also set the height of the softgoods.

Ladder trim defaults to 23'-0" as per battens and is taken from the TOP of the unit. Booms default to 0'-0" and the measurement is from the BOTTOM of the unit. Thus a trim of 0'-0" would be sitting on the stage floor. To place a boom on a 1' piece of scenery set the Z height to 1' and the Boom will now sit 1'-0" above the stage floor.

You can change the view from SL to SR with the click of a button and all your items drawn by Drafty will swap. Imported PDFs will not flip.



Auto-worksheeting

Drafty provides several tools to make basic layout of your lightplot fast, efficient, and accurate. You already saw above how Drafty can duplicate positions and the lights duplicate as well. But we have taken this one step further to reduce the mechanical tedium that goes into a lot of lightplot generation. Meet the Auto-Worksheeting Tool.

Note: Auto-Worksheeting requires a very specific workflow to operate properly.

First lay out all your lighting positions. These include Pipes, Booms & Ladders, Truss, Curved Pipes, and so forth. Get everything sized properly and in place. When you first add a Pipe or Truss the default Z height is 23'-0". Edit this to be the proper trim of your position. Ladders also get a Z of 23'. This marks the TOP of the ladder. Booms have a Z of 0'-0" and this marks the BOTTOM of the boom.

Once Positions are layed out properly with the correct Z height, add your Focus Points. On the Units Layer, when nothing else is selected you will see a few buttons in the contextual menus. Focus Point:[Add] and Make:[Plot]. Clicking [Add] you get a Focus Point Labeled 'A' with a default diameter of 8'-0" and a Z of 6'0". You can resize the diameter by dragging a control point or entering a value in the text box. The Z is the height at which Drafty will guarantee full coverage of the Focus Point. You may also click Command-F to add a Focus Point at the cursor point.

As you add Focus Points, either by using Command-F, the [Add] button, or Duplicating existing Points, Drafty will increment your points A, B, C, D &c. Until you are complete. Layout your focus points in the order in which you would like to see your channels increment. If you increment your control channel from SR to SL layout Focus Points A, B, C. If SL to SR layout point C, B, A.

Once your Focus Points are in place Click Make:[Plot]. This presents you with a dialog box asking you to select the type of lighting System, a System Name, which Focus Points are included in that System, the Optimal Angle, Color, and Start Channel. Enter as much of this data as you would like. Drafty adds one light per Focus Point at the closest match to the optimal angle incrementing the Channel Number by the Focus Point letter, and adding Color and Purpose information to each light.

SYSTEM: SYSTEM NAME: FOCUS POINTS: OPTIMAL ANGLE: COLOR: START CHANNEL:

Example: Selecting 'Side ->' you give it a System Name of 'Warm', Focus Points 'A-C', an Optimal Angle of 45°, a Color of R53, and a Start Channel of 1. Drafty will return three lights as close to the Optimal Angle from the Center of the FP to the best Position possible, Channels will be 1, 2, 3 with Purposes as 'Side -> Warm A', 'Side -> Warm B', and 'Side -> Warm C' respectively.

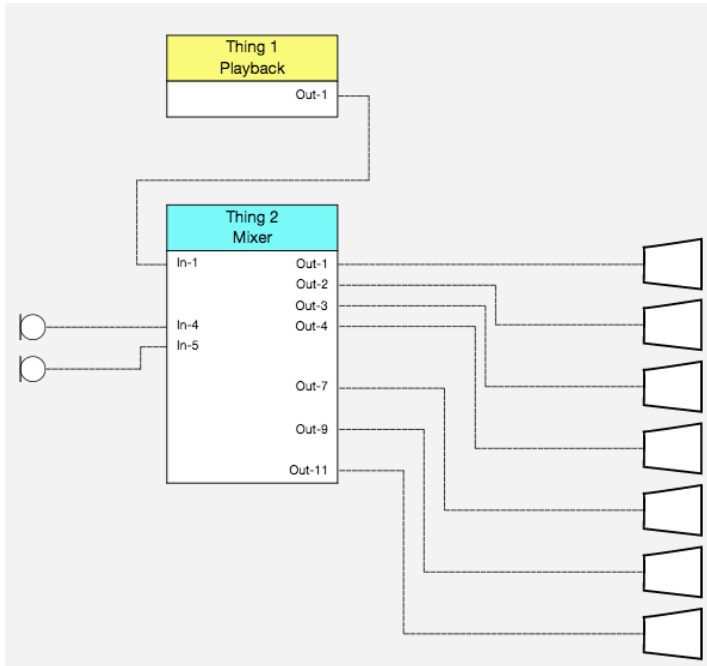
If Drafty cannot find a suitable Position it will draw a unit off-Pipe within 10' and outline it in RED. If there is nothing within 10' of a pipe Drafty will tell you it could not find a suitable location.

SPECIAL NOTE: While Drafty does handle all the fancy 3D trigonometry it does not currently understand objects in space like Walls and Borders. So you still need to use your judgement as to the appropriateness of the 45° Backlight just a few inches US of the #3 Border.



Signal Flow and Media Routing

Audio and Video paperwork operates a little differently than Lighting. Lighting designers use the plot as the primary piece of paperwork to convey the design to their technicians. Sound and video is much more concerned with the signal flow or media patch. Thus we have created the Signal Processor Tool. The tool itself is deceptively simple but allows for the generation of very complex paperwork.



Press the [Flow] button to create a new Processor Object in your drawing. The default Processor Object has 3 Inputs and 3 Outputs represented by 3 circles on the left and right side of the object respectively. To change the number of outputs click and drag on the control point at the bottom of the selected Processor Object.

To connect an Output to another item click and drag an Output to a Speaker, Mic, or other Processor Object's Input. The clamp position is the same as when adding a Speaker to a Position Object, roughly the center of the symbol. To disconnect, select the wire itself and delete. This will only delete the selected wire(s). Thus if you have a single Output going to several speakers you can re-patch one of those in the group to be individually controlled.

The text label at the top can be edited to make the Processor Object whatever kind of item you may need. In the Audio world this could be a Computer playback device, mixing console, effects processor, &c. In the Video world this might be a Computer Playback, Video Switcher, & so forth.

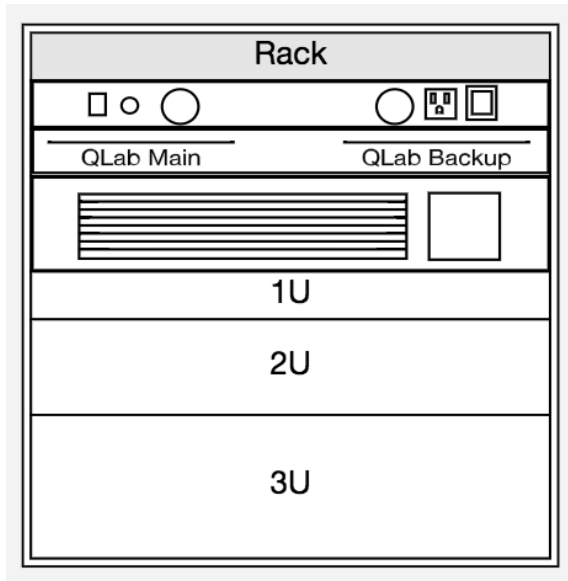
Not only can the Processor Object be labeled, but each Input and Output can be discretely labeled as well. Thus you can skip Outputs for better visual spacing and still retain the proper numbering of your outputs. Hold down Shift to turn [Flow] into [Mic] to add a mic input to your signal flow drawings. Hold Option/Alt and it becomes [Multi] allowing you to add various multi-circuit passthrough objects including amplifiers and multi-circuit break-ins/outs. If you have a line selected when you create a passthrough object it will automatically insert itself into the line flow. This is also a convenient tool for manual routing if our automated tools don't guess properly.

Much of this process can be automated. Simply navigate to the Signal Flow Plate and turn ON the Smart Flow. This will create a second instance of every light on the Plot. Not only will your inventory stay current with changes to the plot, but the duplicate speakers will not appear in the Audio Database. So no duplicate items.



The Rack Tool

Drafty provides a Rack builder tool for Audio and Video paperwork. Click the [Rack] button to create a new Rack Object. Or press Shift and Alt/Option then the 'C' key to insert at your cursor point.



When you create a Rack Object it will be selected and display several contextual menus. You may select a 1U, 2U, or 3U Component as well as how many of each you would like. Click the [Add] button and those Components will be added to your Rack Object. All of these items are resizable (via drag and drop on their control points) and re-nameable (by double clicking the text inside the Component).

Each Rack Object has a Label at the top that can be edited via a double click on the text. You also have the option to Show/Hide Casters on the bottom of the Rack via a contextual dropdown.

Drafty's built in graphical Components are featured above. Only the most common everyday objects are in our built-in library. Thus you have a 2U

UPS, a 1U Power Conditioner, and 1U QLab and MacMini rack mounted Components. These are not resizable into different RUs. If your rack mounted playback is larger than 1U you will need to either use our text based Components or import your own image files.

Importing image files is easy. Click the [Import] button in the contextual menu and a standard file picker pop-up will appear allowing you to choose the image you prefer. Drafty assumes the image you are uploading is cropped to be a standard Rack Mount Component. As such the image is scaled using the horizontal axis to fit inside the Rack Object. Thus it is important to properly prepare your artwork so that it renders correctly in Drafty.

Creating and preparing images can be done in the graphics program of your choosing. One RU is 19" wide by 1.75" tall. If you are using vector-graphics from a program like Adobe Illustrator® to create your artwork we suggest drawing items in a scale of 10 pixels per inch. Thus a 1U component would be 190px wide by 17.5px high. This will help you keep lineweights in the same proportion as the native Drafty Components. If using a program like Adobe Photoshop® we suggest locking your crop aspect ratio to 19x1.75 to ensure properly prepared artwork.

The maximum file size for an imported image is 512kb. This ought to allow you to create a 10U high graphic at 140dpi for printing. If your file is too large we suggest exploring compression options in a program like Adobe Photoshop® to find the right balance of image integrity and file size.



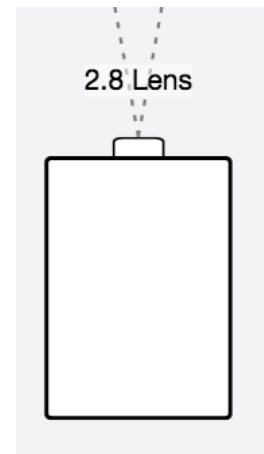
Miscellaneous AV Tools

For the audiophiles we have the option of setting the orientation of your speakers. Obviously a line array is not going to be side-hung, but many of your other speaker options will be. If your speakers hang straight down (or up) you are best off using the Side orientation. We plan to offer more orientation options (including top and bottom) as well as side views of Line Arrays for section drawings.

The default audio symbol set in Drafty is very simple. The objects are size accurate but only a rough outline of the speaker in question. If you prefer a more real world accurate drafting style we offer an additional symbol set available for in-app purchase. These are not necessary for the functioning of the program but are a preferred drafting style for many designers. The additional symbol library was made by our friends at Team Sound in New York City.



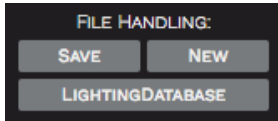
Video Projectors have a 'Screen Object' that you add by clicking the 'Add' button next to Device:Screen. The screen object will automatically calculate the minimum lens needed to make the shot. It assume a projector at the top of the screen. If you want to hang your projector above the screen, use the Z-Height to indicate the height above the top of the screen that the projector sits.





The Lighting Database Manager

For smaller plots you can do most of the data entry on the Drafting Table. Once things scale up you need a spreadsheet view. Click [Lighting Database] to open The Database Manager in a new window. This is a spreadsheet view of all your plot information. You can sort by any column simply by clicking the column name. Position, obviously, does a double sort by Position Name and then by Unit Number.



To Bulk edit, select contiguous cells in a column, enter the value, and press return. Or enter data in one cell and then drag the cell selector handle UP or DOWN to fill in the other cells.

Incrementing numbers works just like on the lightplot. Enter your start number and follow with the plus sign so, for example, to enter dimmers in the second universe you would enter '513+' into the first cell. And jumping numbers is easy too. Enter '513+10' to return 513, 523, 533, 543, 553, &c.

Autocomplete is available for Instrument Type and Wattage. The Database Manager only allows valid entries as per the drop downs in the Drafting Table. Changing any of these items will of course update the fixtures on the plot to the corresponding symbol.

Drafty believes in saving you time and effort. As such the Database Manager automatically calculates basic information relevant to your interests. To the right of the main spreadsheet window are two smaller windows one calculating unit totals and the other color totals. The color window breaks down the count by cuts and by sheets. And because Drafty knows so much about your lights there is rarely any need to enter frame sizes or frame per circuit information. Although you can override defaults if you need to.

INST TYPE	TOTALS	FRAME SIZE
SOURCE-4 10° 750w	6	12" x 12"
SOURCE-4 19° 575w	36	6.25" x 6.25"
SOURCE-4 26° 575w	92	6.25" x 6.25"
SOURCE-4 36° 575w	80	6.25" x 6.25"
8" FRESNEL 1Kw	40	10" x 10"
S4 PAR MFL 575w	16	7.5" x 7.5"
FAR CYC 3 CELL 1Kw	8	12" x 10"
MINI-STRIP 6FT 3 CIRC 750w	6	4.75" x 3.25"
MINI-10 500w	6	3" x 5"

Scrolling over to the far right hand side of the Database Manager you will see a column for arranging your Position information. This is used for the Position Sort function both inside the Database Manager and when printing your Hookups and Instrument Schedules.

Once you have entered all your color, purpose, and dimming information you can tab back to the Drafting Table and see it all drawn to your plot. No refresh needed nor any managing of sidecar files. It just works.

Printing is just a click away. Hold down Shift and the 'Export:Plate' button becomes 'Export:Hookup'. By pressing that Drafty will output a pre-formatted Channel Hookup and Instrument Schedule in PDF format that can either be emailed to collaborators or printed directly from your computer. The paperwork also includes a totals page at the end for quickly generating shop orders and color lists.



The Audio Database Manager

When using the Smart Flow tool the Audio Database keeps track of not only your speakers and mixers but also who plugs in where. You can specify cable lengths, plugs and more. Hold down the Option key and 'Lighting Database' becomes 'Audio Database'. Click that and you will be taken to a new window where you can edit all the relevant information for your Speakers, Cables, Amps, Mixers, and more.

When you route your cables using the Smart Flow, Drafty will track where those wires go. Thus in the Database Manager you can quickly see what an object plugs into and where it goes. Inputs show what is plugged into the particular object while Outputs shows where it is sending to.

Using our Smart Flow tool ensures that your database is clean as all the duplicate speakers added via the Smart Flow tool are not counted in the Database Manager. This makes the Signal Flow plate and Database Manager simply alternate views into the same drawing reducing the need to manage multiple instances of objects.

Currently we only offer one Printout option. In the main Drafting Table hold down Option and Export:Hookup becomes Export:Ins&Outs. This report is organized by the Parent object (most often a Mixer or Rack as defined by a Processor Object in the Signal Flow, although it could be an Amp or other item).



Miscellaneous Features

Working offline? If you download your .drafty files to your desktop you are able to load them directly within the program without needing access to Drive. While it will create a separate instance of the .drafty file every time you download, this does allow you to work on multiple files in series without need of an internet connection.

Drafty has a couple of handy tools for moving around your document quickly. First is scroll wheel or trackpad zoom. This lets you quickly zoom in and out of various areas of your drawing. Command-[Zoom] zooms to show your full page drawing. Alt-[Zoom] zooms to fill the screen with whatever object you have selected. Holding the command key and dragging a selection will zoom to the selection area. Spacebar-Drag allows you to pan the view of your page. Note: for speed, Drafty uses Spacebar-Drag rather than spacebar-Click-Drag.



Did you remember to put your name on the drawing? No? Don't worry, Drafty already did it for you using your log-in credentials. Want to add your middle initial? Edit the text directly, or set your name and other identifying info in the Defaults dialog, available from the Border level. If you primarily draft only your own shows, you may wish to have the contact information default to your information. For Sound and Video designers, the most important for you will probably be changing 'Lightplot'

to 'Speaker Plot' or 'Video Plot'.

Every object draws to the correct layer. It is entirely possible to never touch the Layer buttons during the whole drafting process. The lights are always drawn over the pipes which are over the scenery, which is over the theater. As it should be. Line-weights are all balanced based on what kind of information is being conveyed.

To print click the 'Export:Plate' button and your plot is downloaded as a properly sized, scale accurate PDF. To print a Hookup or Instrument Schedule just hold down Shift while pressing the Plot (renamed Hookup) button.

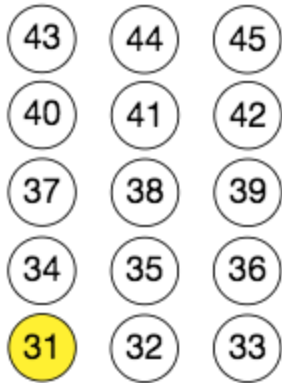
If you prefer to finish your paperwork in another database program Drafty offers you export as a CSV. Click 'Export: As csv', to download a text file which can then be imported into the spreadsheet or database program of your choice. Some programs may provide auto collating services for the different fields with the option to automate the process. If yours does, we encourage you to do that in order to save time in the future.

You can email PDF files to your electricians, or share Drafty files directly. To enable file sharing, log-in to your Google Drive account and navigate to the file under the Drafty folder. Right-click or control-click to open the context menu and click 'share'. Enter the intended recipient's email address. We suggest making a copy of the file first such that you always have your personal and unadulterated version to fall back on.



Magic Sheets

Building a Magic Sheet in Drafty is very straightforward. The Magic Sheet tools are really just light objects and thus all the advanced selection tools you use to quickly edit and manipulate lights are applicable to your Magic Sheets.



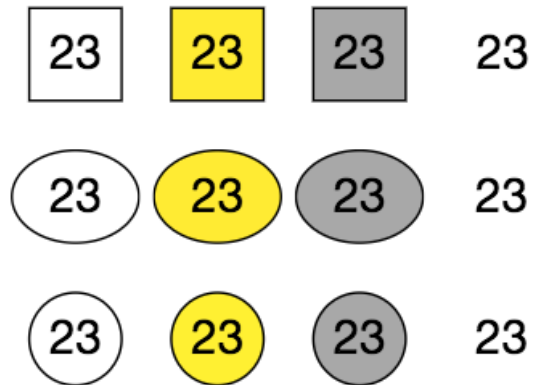
High Side ->



Head Hi ->

Drafty provides three basic channel shape: Circle, Oval, and Square. Each of these have four styles: Normal (white fill with black outline), Yellow fill, Grey Fill, and Plain (white fill with no outline). This ought to cover all your different needs on a Magic Sheet for differentiating Channels, Groups, Focus Points, Presets, or whatever else you need.

In the Drafty environment a Magic Sheet is just another plate. As such head over to the Plates dropdown, select Edit... and then label your preferred plate(s) for the Magic Sheet. Set the Page size to Letter (ANSI A/A4) or Legal (ANSI B/A3) and scale to $\frac{1}{2}'' = 1'-0''$. Depending on your design it may make sense to reset the origin point to the bottom left hand corner. If your plot is very symmetrical, like a dance rep plot, then keeping the Centerline in the middle might be best to allow use of our Mirror Tool for copying and a faster workflow.



We find using the Normal Circle for the channels and a Yellow filled circle to indicate group numbers to be very effective. If your plot has very large channel numbers, over 999, the wider oval shape may be more effective. Or use different shapes to indicate different types of lights. Some users enjoy indicating striplights with squares and movers with ovals.

The Plain Style is useful for system and color naming in lieu of the typical notes tool since in the creation of a Magic Sheet it can often be useful to have all items on a single layer. Find the method that works best for you.



Webtools and Offline Editing

While we all want to live in the future where high-speed internet is always ready and available, that is not yet the reality. Especially in older theaters, or traveling on the road from gig to gig where most of us get most of our work done. As such Drafty provides Offline support.

When you first fire up a Drafty session and log-in, the program will download essential tools and objects to local storage thus allowing you to continue working in the event that the wifi at the theater cuts out, your plane does not offer it, or the hotel network is down. But this ability comes with some limitations as certain features rely on the more advanced processing available to our servers that we can not accomplish in browser.

Feature	Offline	Network Needed
Add and delete objects	Yes	No
Change objects already inserted	Yes	No
Open the Database Manager	Yes	No
Edit in the Database Manager	Yes	No
Draw geometric shapes	Yes	No
Dimension tools and smart objects	Yes	No
Create Smart Section	Yes	No
Saving	Local storage only. No Cloud backup	Yes
Opening other Drafty Documents	No	Yes
Importing PDFs and Images	No	Yes
Exporting Plot	No	Yes
Exporting Database	Yes	No
Printing Hookup	No	Yes

As you can see most of what you need is available in an offline scenario. We do recommend that you prepare, especially if traveling, such that you have the documents you need to work on ready and waiting before entering a situation with dodgy wifi.

Also, while all your data will be safe and secure in local storage we do suggest getting on-line as soon as possible to sync with the cloud storage. The data storage ought to be as good as any other piece of software, but we like backups of our work.



Toolbar Buttons

Delete	Deletes selected object from drawing	{Delete} {Backspace}
Clone	Duplicates an object from Right to Left at the spacing set by Interval	D
Front	Sends selected object to the top of the Layer	F
Back	Sends the selected object to the bottom of the layer	Shift-F
Undo	Undoes last action	Cmd-Z
Redo	Redoes last action that had been undone	Shift-Cmd-Z
H-Align	Aligns the X Position of selected objects at their midpoint	H
V-Align	Aligns the Y Position of selected objects at their midpoint	V
H-Spacing	Spaces selected objects horizontally at the spacing set by Interval	K
V-Spacing	Spaces selected objects vertically at the spacing set in by Interval	Shift-K
Move	Move selected object by the distance set in Interval	M
Mirror	Mirrors selected object across Centerline	W
Zoom In	Zooms the window view to enlarge objects on screen	Option--
Zoom Out	Zooms the window to shrink objects on screen	Option++



Sidebar Buttons

[Lights]	Creates a Light Object – Default is Source-4 36° 575w	L
Shift- [Lights]	Adds PAR 64	Shift-L
Opt- [Lights]	Adds Striplight	Opt-L
Cmd- [Lights]	Adds Mover	Cmd-L
Shift-Opt- [Lights]	Adds Fresnel	Shift-Opt-L
Shift-Cmd- [Lights]	Adds Device	Shift-Cmd-L
[Pipe]	Creates a Lighting Position Object	P
Shift- [Pipe]	Creates a curved Pipe	
Alt- [Pipe]	Creates a Truss Object	
[Boom]	Adds single boom	Shift-P
Shift- [Boom]	Adds double boom	Opt-P
Alt- [Boom]	Adds 3X ladder – This object is adjustable to a 1X or 2X ladder	Cmd-P
[Audio]	Creates a Speaker Object – Default is Small Single Speaker	C
[Flow]	Create Processor Object for Signal Flow Diagrams	Shift-C
Shift- [Flow]	Create Microphone object for Signal Flow Diagrams	Opt-C
Alt- [Flow]	Create a Multi-Circuit passthrough object	Y
[Rack]	Creates a Rack Object	Shift-Opt-C
[Video]	Creates a Projector Object – Default is Medium Projector	T
[Arch Obj]	Creates an Architecture Object – Defaults to Rect	A
Shift- [Arch Obj]	Creates an Architecture Line Object	Shift-A
Option- [Arch Obj]	Creates an Architecture Ellipse Object	Opt-A
[Set Obj]	Creates a Scenic Object – Defaults to Rect	S
Shift- [Set Obj]	Creates a Scenic Line Object	Shift-S
Option- [Set Obj]	Creates a Scenic Ellipse Object	Opt-S
[Softgoods]	Creates a Softgoods Object	B
Shift- [Softgoods]	Creates a Scenic Object	
Opt- [Softgoods]	Creates a 6' Figure	
[Dimensions]	Creates a Sightlines Object	
Shift- [Dimensions]	Creates an adjustable Ruler Object	
[Notes]	Creates a Text Object	X
Shift- [Notes]	Creates a callout arrow	Shift-X
[Type]	Selects similar Lights based on a selected light's Type	G
[Channel]	Selects similar Lights based on a selected light's Channel	Shift-G
[Color]	Selects similar Lights based on a selected light's Color	Opt-G
[Position]	Selects similar Lights based on a selected light's Position	Cmd-G



[Plot]	Exports your drawing as PNG	E
[Database]	Exports a CSV file to import into a Database program	Shift-E
[Open]	Opens the Choose File dialog to select a file	O
Shift- [Open]	Creates a New blank file to work on	Shift-Opt-Cmd-N
[Save As]	Opens the Save As dialog to save your current working file	Shift-O
Shift- [Save As]	Saves the current document at its present state.	
[Venue]	Import PDF to Architecture layer	I
Shift- [Venue]	Import PDF to Scenery layer	Shift-I
[Architecture]	Set Active Layer to Architecture	1
[Scenery]	Set Active Layer to Scenery	2
[Positions]	Set Active Layer to Positions	3
[Dimensions]	Set Active Layer to Dimensions	4
[Units]	Set Active Layer to Units	5
[Border]	Set Active Layer to Border	6



Toolbar Modifiers

Shift-[→ ←]	Rotates object by default rotation lock. 45° for lights 30/45° all others.	
Shift-[CLONE]	Clones object from Left to Right at set Interval	Shift-D
Shift-[CLONE] (Pipe)	Pipes Clone Up 2' by default. With Shift they clone down 2'	Shift-D
Option-[CLONE]	Clones object down at set interval	Opt-D
Command-[CLONE]	Clones object up at set interval	Ctrl-D
{Spacebar}-{Drag}	Shifts the view of the drafting space with cursor movement	
Shift-[ZOOM]	Zooms In	
Alt-[ZOOM]	Zooms to fill screen with selection	Shift-Opt--
Cmd-[ZOOM]	Zooms to show everything inside the Border	Shift-Opt+
Shift-{Drag}	Scales an object (pipe, rect, line) from center	
Option-{Drag}	Free scale an object (pipe, rect, line) from control point	
Shift-Option-{Drag}	Free scare an object (pipe, line, rect) from center	
{Arrow}	Pan screen 6" in arrow direction	
Option-{Arrow}	Move selected object(s) 4" in arrow direction	
Shift-[H-Align]	Aligns to the Right Side of the objects	Shift-H
Option-[H-Align]	Aligns to the Left Side of the objects	Opt-H
Shift-[V-Align]	Aligns to the Top of the object	Shift-V
Option-[V-Align]	Aligns to the Bottom of the object	Option-V
Shift-[Move]	Move Object Right	Shift-M
Option-[Move]	Moves object Down	Opt-M
Cmd-[Move]	Moves Object Up	Ctrl-M
Shift-[Mirror]	Flips an object along its own center point	
Select Current Layer	Select All on the current Layer	Ctrl-A
Select All	Select All on the whole drawing	Shift-Ctrl-A