Chapter 942

3D Surface Plots with Groups

Introduction

In **PASS**, it is easy to study power and sample size calculations for a range of possible parameter values. When at least 3 input parameters vary, you can create 3D power or sample size surface plots containing layers with colors assigned by the legend variable.

This section describes the options that are available for the appearance of 3D surface plots with groups. A set of all these options can be stored as a template file which can be retrieved later.
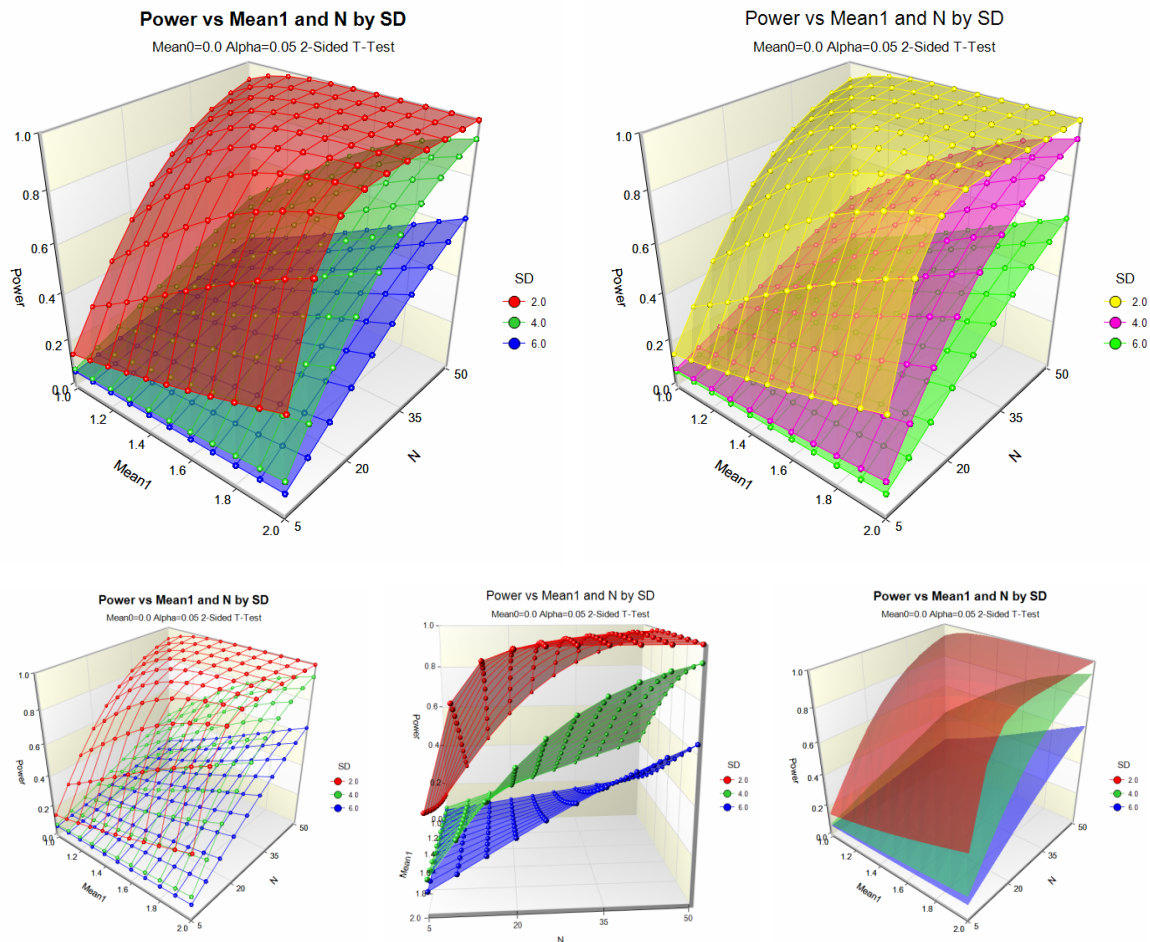
Data Structure

A 3D surface plot with groups is constructed from four variables. The X and Z (input parameter) variables are shown on the horizontal axes. The Y (solve for) variable is shown along the vertical axis. The grouping variable is shown in the legend. All four variables must be numeric.

3D Surface Plot with Groups Format Window Options

This section describes the specific options available on the 3D Surface Plot with Groups format window, which is displayed when the 3D Surface Plot with Groups format button is clicked. Common options, such as axes, labels, legends, and titles are documented in the Scatter Plots chapter.
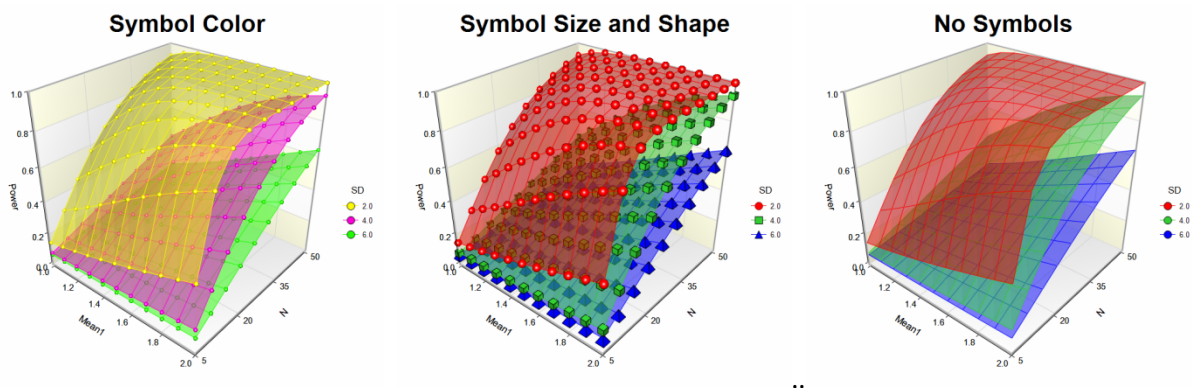
3D Surface Plot Tab

Symbols Section

This section contains options that control the group colors and symbols. The surface colors are derived from the symbol colors.

Symbols

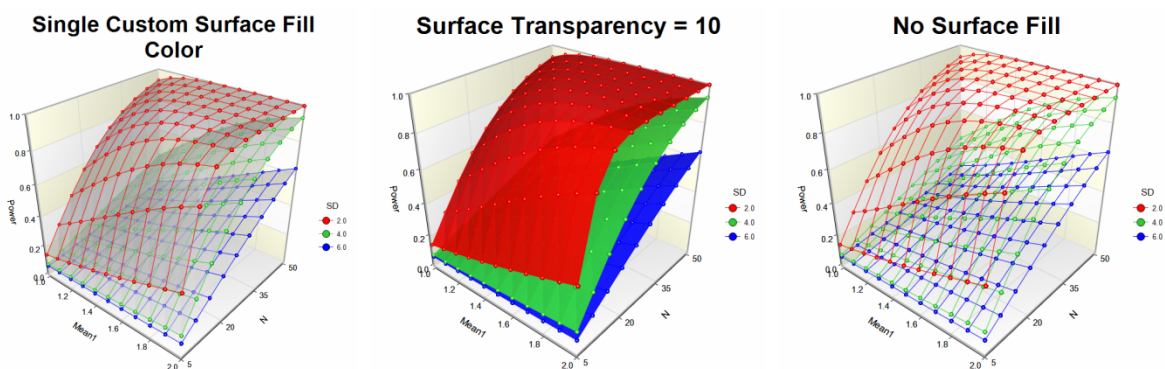Control whether or not symbols are displayed and their appearance.

Surface Section

This section contains options that control the colors and shading of the surfaces.
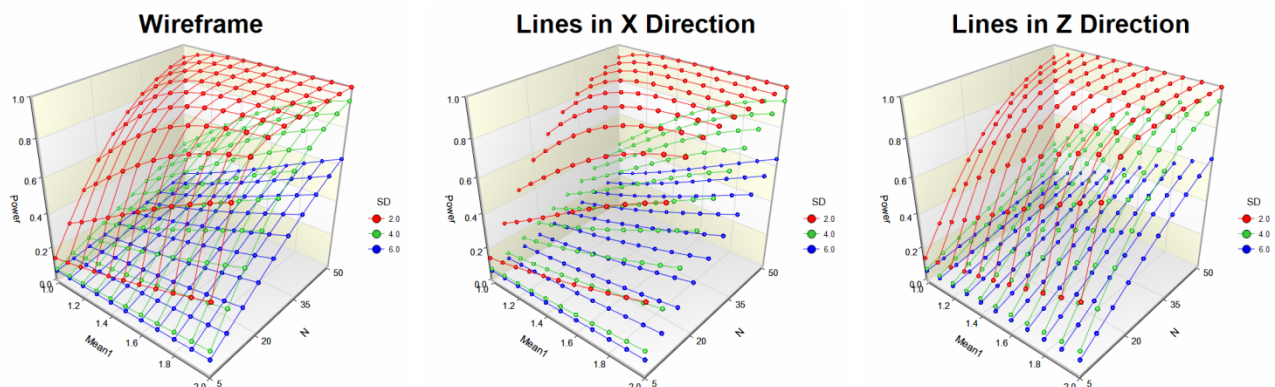
Surface Fills

Specify how the surfaces will be filled.

Surface Lines

Specify how surface lines will be displayed.

3D Layout Tab

Use this tab to control the 3D viewing aspects of the plot. Click on **Show in New Window** beneath the 3D Plot Preview display to show the plot in a separate window where you can auto-spin the plot and interact with the 3D orientation on the fly. All of the options on this tab are also available on the 3D Plot Preview window.
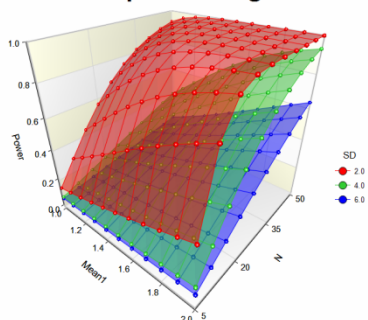
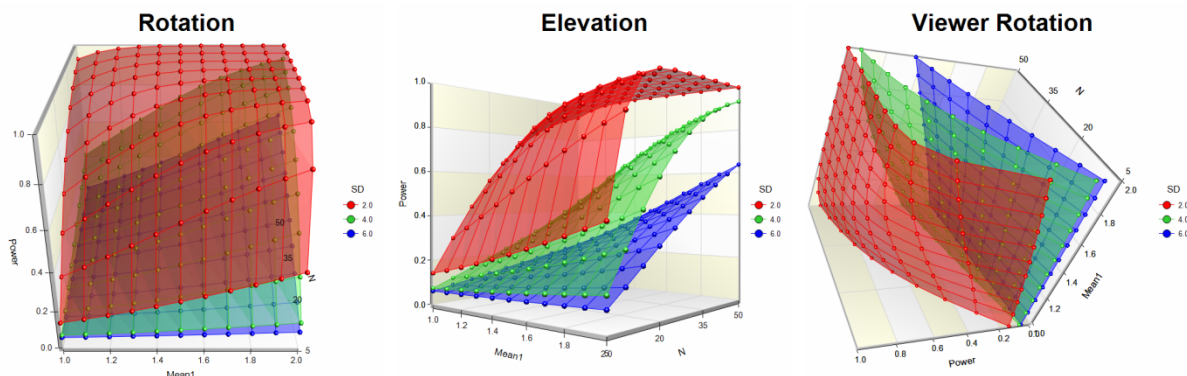## Display Section

Control the zoom and perspective angle.
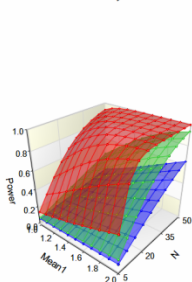
3D Orientation Section

Control rotation, elevation, and viewer rotation of the 3D plot. You can modify the rotation and elevation interactively by left-clicking on the plot in the 3D Plot Preview display and dragging your mouse.

Relative Dimensions Section

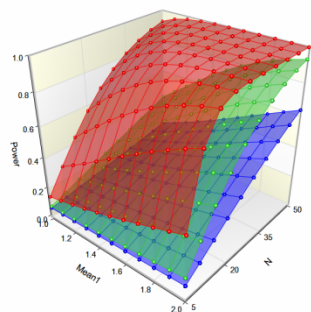Control the relative display dimensions for the X, Y, and Z axes of the plot.
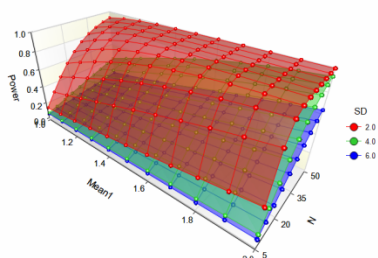
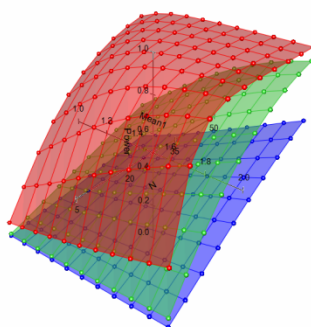# Quick Layout Tools Section

Use these tools to quickly change multiple plot settings simultaneously to achieve a 3D display result.

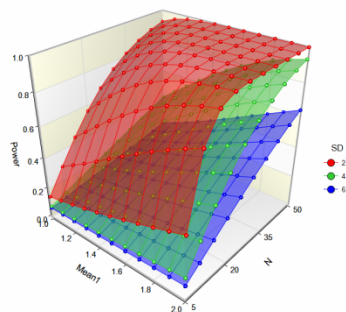**Load the Interactive 3D Plot Preview Window**

Click this button to show the plot in a separate window where you can auto-spin the plot and interact with the 3D orientation on the fly. All of the options on this tab are also available on the 3D Plot Preview window.

Walls Tab

Use this tab to control the display of walls on the plot.

XY Walls, YZ Walls, and XZ Walls Section
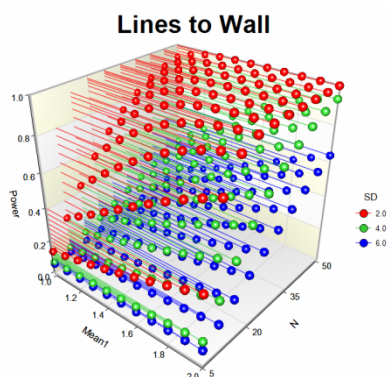
Control how walls are displayed on the plot.
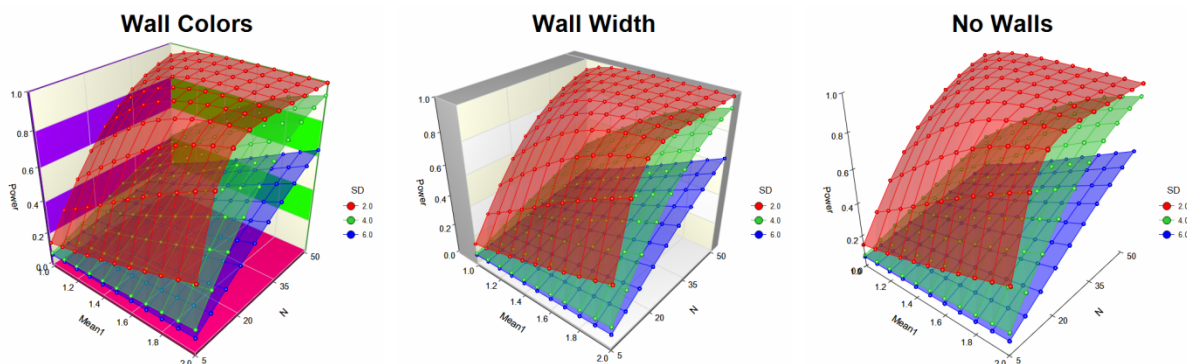
Points to Walls Tab

Use this tab to control the display of lines or bars from points to walls on the plot. This is really only useful when there are not many points.
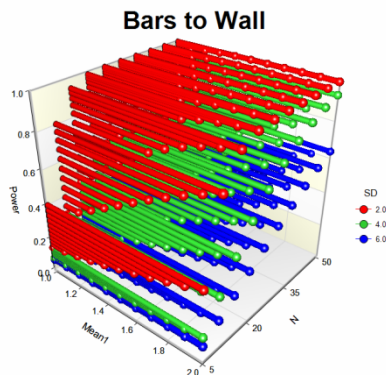
Lines from each Point Section

You can display a line between the data point and any wall.

Bars from each Point Section

You can display bars between data points and any wall.
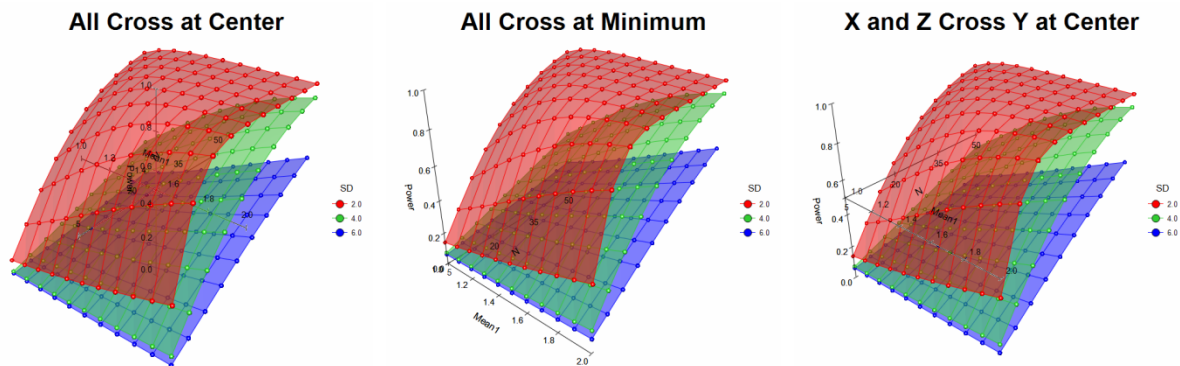

Bars to Wall

Titles, Legend, X Axis, Y Axis, Z Axis, Grid Lines, and Background Tabs

Details on setting the options in these tabs are given in the Scatter Plots chapter. A few specific options are described below.
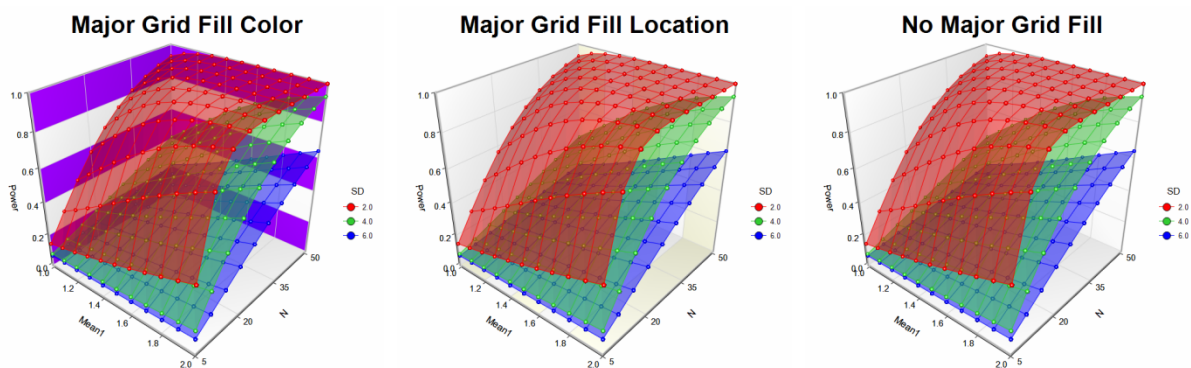
Crosses Axis At (on X, Y, and Z Axis Tabs)

Control where the axes cross in relation to each other.

All Cross at Center

All Cross at Minimum

X and Z Cross Y at Center

Fill Between Major Grid Lines (on Grid Lines Tab)

Control the appearance of reference bands on the plot.

Major Grid Fill Color

Major Grid Fill Location

No Major Grid Fill

Lighting Scheme (on Background Tab)

Control the ambient lighting on the plot. Choose from a number of present lighting schemes. These schemes change the way colors and 3D items appear in the plot.