

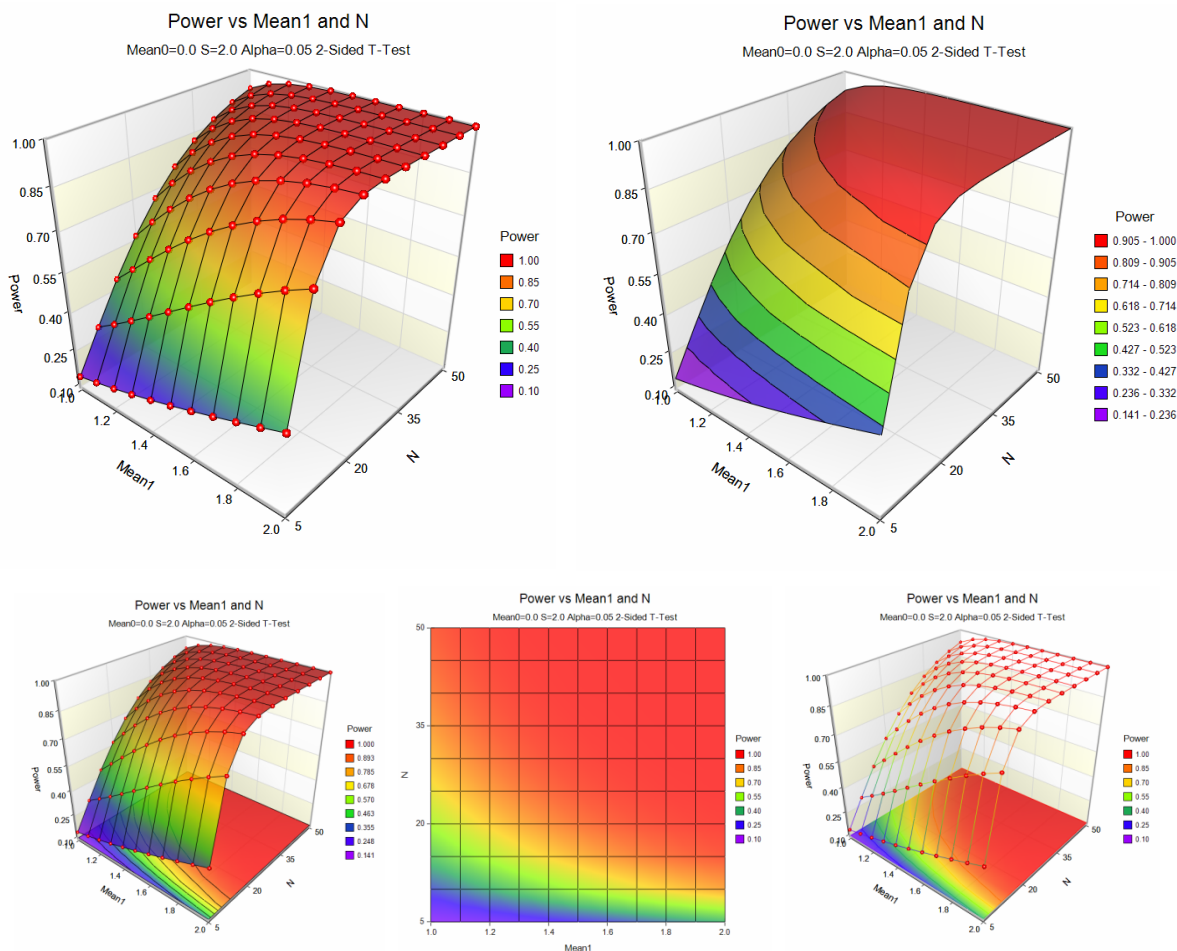
Chapter 941

3D Surface Plots

Introduction

In **PASS**, it is easy to study power and sample size calculations for a range of possible parameter values. When at least 2 input parameters vary, you can create stunning 3D power or sample size surface plots with colors that vary according to the value of the Y-axis (solve for) parameter.

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



Data Structure

A 3D surface plot is constructed from three 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. All three variables must be numeric.

3D Surface Plot Format Window Options

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

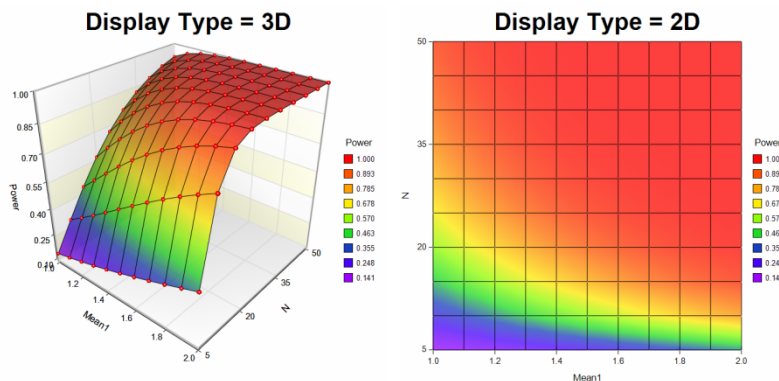
3D Surface Plot Tab

Display Section

This section contains options that control the display of the plot, whether 3D or 2D.

Display Type

Control the display of the plot. Make the plot 2D or 3D using these options. When using 2D, only the X and Z axes are displayed; the Y axis is not displayed.

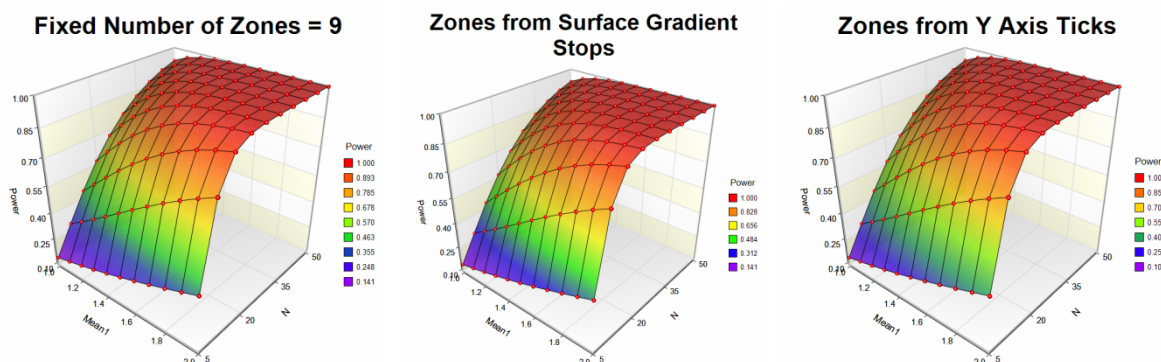


Appearance Section

This section contains options that control the colors and shading of interior plot items.

Y (Vertical) Zones

Specify how the vertical zones will be assigned. This option affects the coloring of the plot in the Y direction.

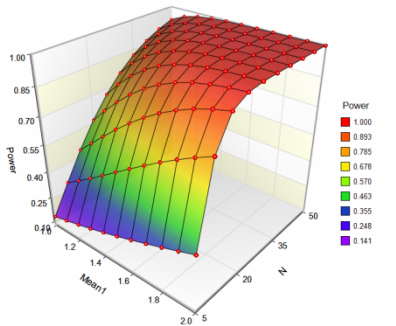


3D Surface Plots

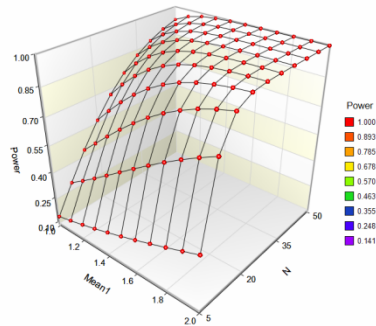
Surface Gradient

Check this option to fill the Y (Vertical) Zones with the corresponding colors from the gradient.

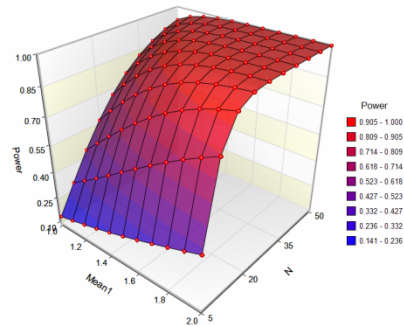
Smooth Surface Gradient



No Surface Gradient Fill



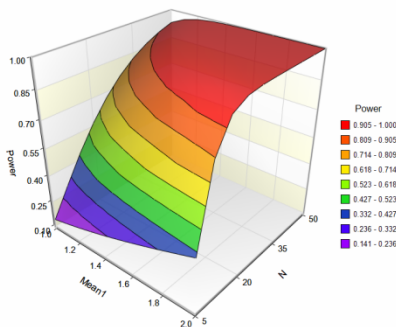
Two-Color Surface Gradient



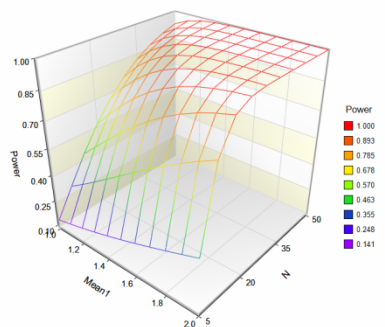
Surface Lines

Check this option to display wireframe and/or surface contour lines.

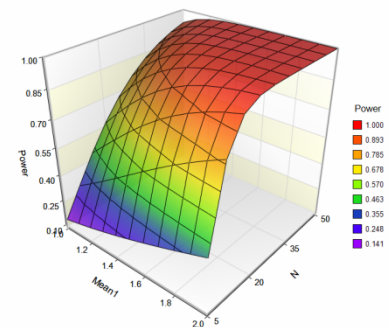
Contour Lines



Wireframe with Line Colors from Zone Colors



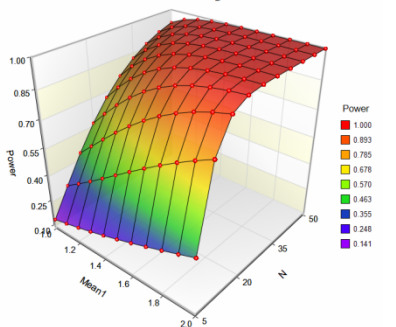
Wireframe + Contour Lines



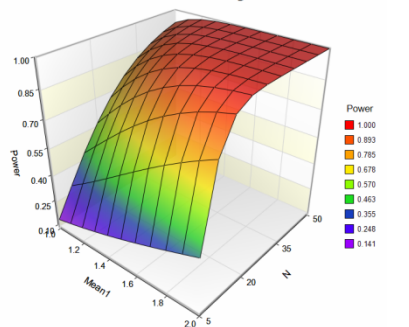
Point Symbols

Check this option to display symbols for each point used to generate the surface.

With Point Symbols



Without Point Symbols

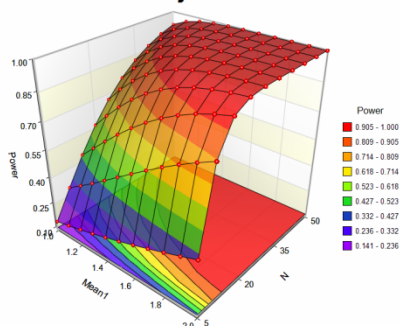


3D Surface Plots

Show Contour Projection on Floor

Check this option to show a contour projection on the floor. This contour plot is the 2D projection for the surface.

Contour Projection on Floor



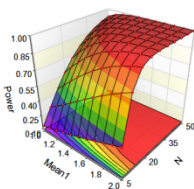
3D Layout Tab

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.

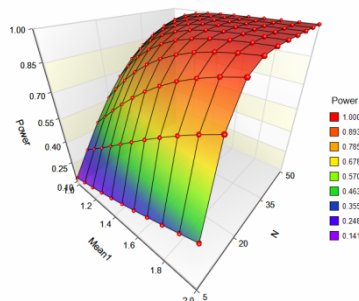
Display Section

Control the zoom and perspective angle.

No Autofit, Zoom = 50%



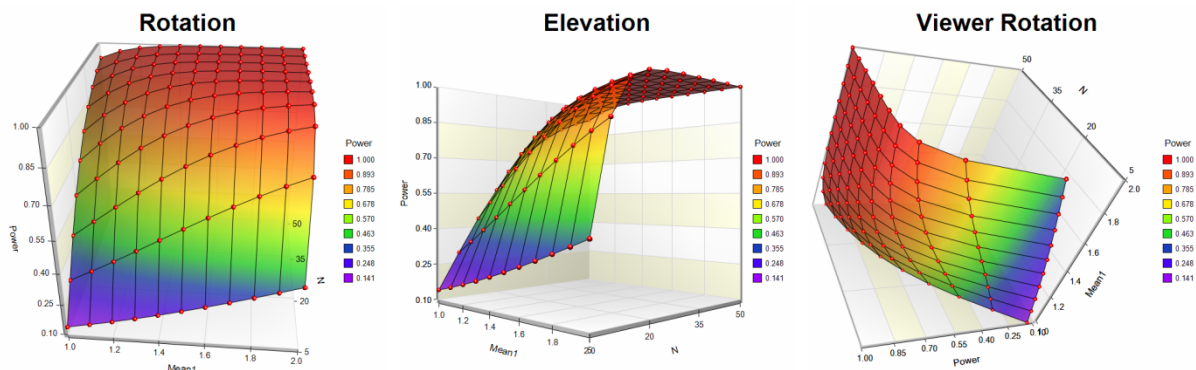
Perspective Angle



3D Surface Plots

3D Orientation Section

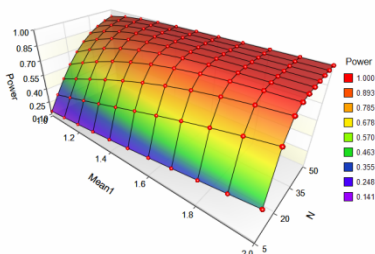
Control rotation, elevation, and viewer rotation of the 3D plot. You can modify the rotation and elevation interactively by left-clicking on the plot in the 3D Plot Preview display and dragging your mouse.



Relative Dimensions Section

Control the relative display dimensions for the X, Y, and Z axes of the plot.

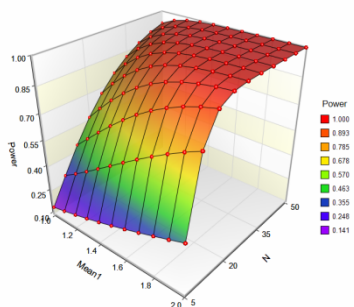
Relative Dimensions



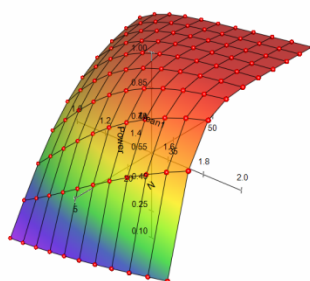
Quick Layout Tools Section

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

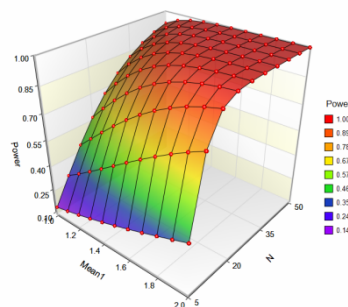
Result of Clicking "Reset Zoom, 3D Orientation, and Dimensions"



Result of Clicking "Remove All Walls and Center the Axes"



Result of Clicking "Add Walls and Move the Axes to the Sides"



3D Surface Plots

Load the Interactive 3D Plot Preview Window

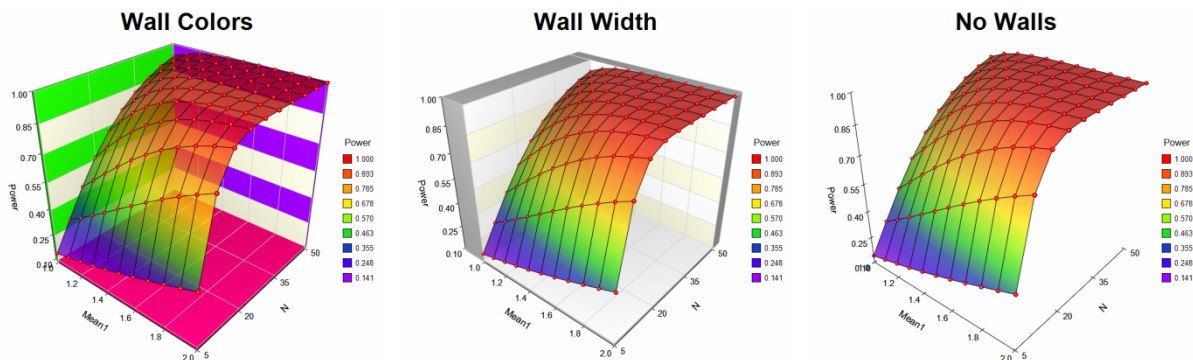
Click this button to show the plot in a separate window where you can auto-spin the plot and interact with the 3D orientation on the fly. All of the options on this tab are also available on the 3D Plot Preview window.

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.

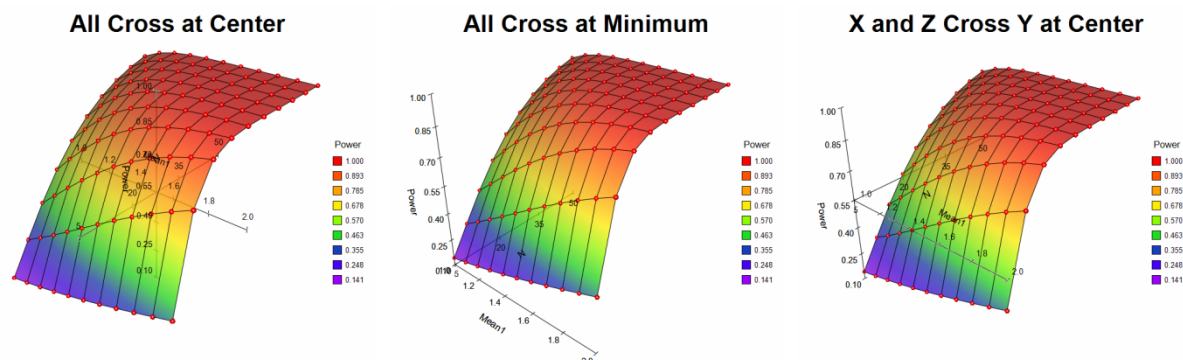


Titles, Legend, X Axis, Y Axis, Z Axis, Grid Lines, and Background Tabs

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)

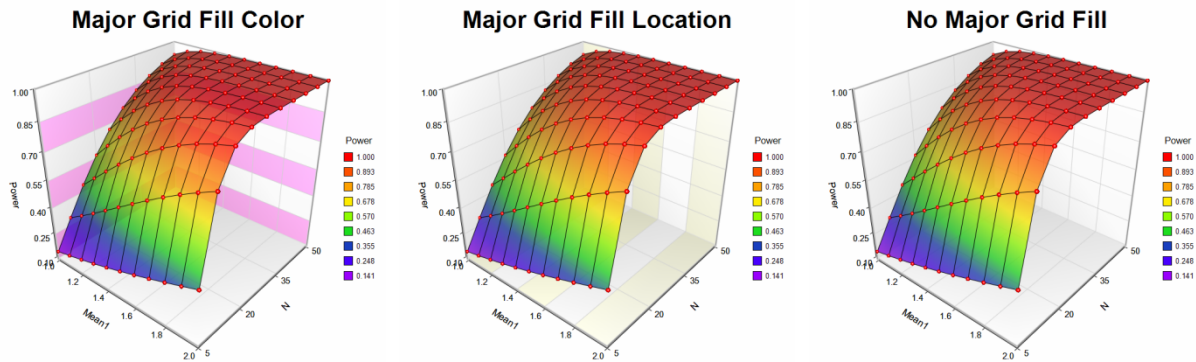
Control where the axes cross in relation to each other.



3D Surface Plots

Fill Between Major Grid Lines (on Grid Lines Tab)

Control the appearance of reference bands on the plot.



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.

