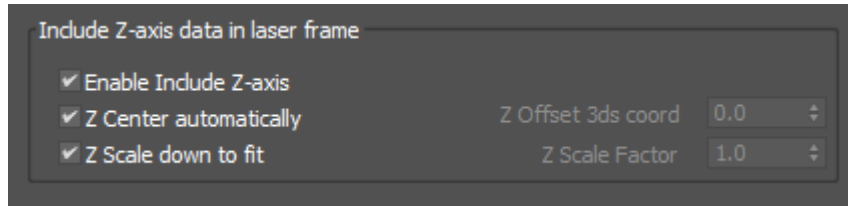# Renderer: Include Z-axis data in laser frames

This section allows you to select the inclusion of and also to control the Z-axis data in the frames generated by Lasershow Converter MAX.

As a non-photorealisic renderer, Lasershow Converter MAX typically creates only two-dimensional output in the laser frames. That is, the laser frames have only X and Y data that change, and normally the Z-axis data is set to zero. However, for certain special effect applications, it may be handy to have the plugin include Z-axis data.

This may be used in BEYOND to map the Z-axis data onto color, onto brightness or other special effects. This may also be used with single wireframe objects which are then further manipulated and rotated in BEYOND.

Enable Include Z-axis

This allows you to specify whether Z-axis data will be included in the laser frame output. If this check box is not checked, then the Z-axis data is always set to 0.0 in the frames. When this is checked, then Z-axis data is included in accordance with other parameters contained in this panel.

Z Offset ,and Center Z Automatically

For the quickest and easiest results, the plugin can simply automatically center the output on the Z-axis. This is the best choice to use when you want to use the Z-axis data for special effects in BEYOND.

Alternatively you can specify an exact Z-axis coordinate – in 3ds Max coordinates – that will correspond with "0.0" on the laser.

Z Scale Factor, and Scale to Fit Automatically

Similar to the Z-Offset options above, the Z-axis output may be automatically scaled to the typical laser coordinate space. Alternatively, you may specify the scale factor correspondence between 3ds Max coordinates and laser coordinate space.

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