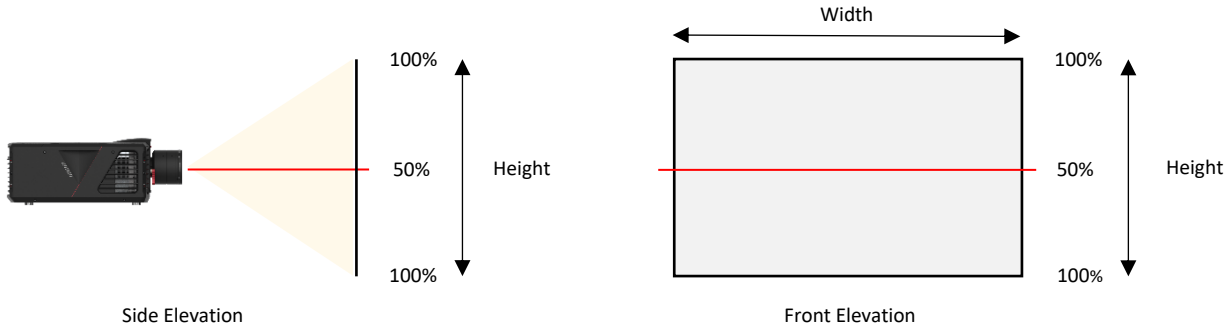
Norxe Lens Shift Explained

norxe Lens Shift

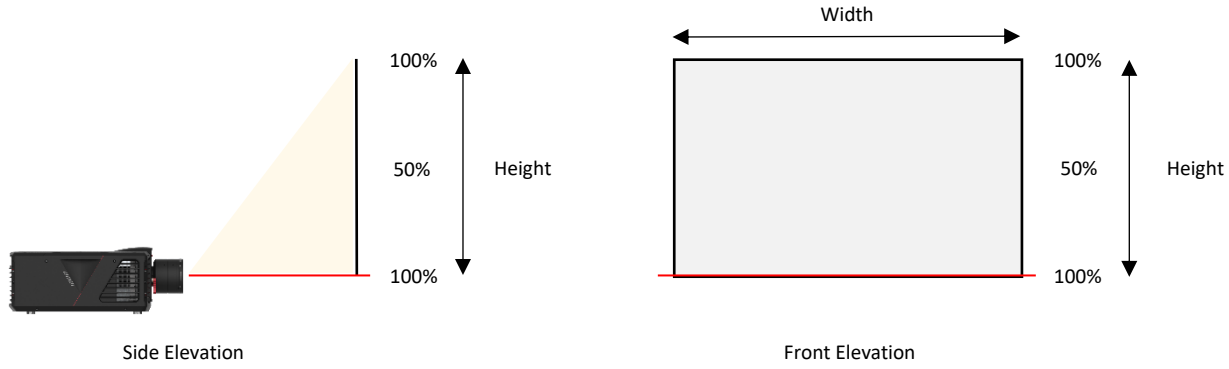
Norxe states that when the centre line of the lens is aligned with the centre line of the screen Lens Shift is centred (i.e. on axis). This is because the centre line is half way up or down / left or right. Lens Shift is therefore 50%.

The illustrations below show how norxe defines vertical Lens Shift (the same methodology applies to horizontal Lens Shift): -

50% shift equals on axis (i.e. no shift) -



100% Lens Shift equals half of image height / width -



Calculating norxe Lens Shift

The formula for calculating Norxe Lens Shift is as follows: -

Vertical Lens Shift: Vertical Lens Shift = Screen Height x ((Vertical Lens Shift in percent - 50) ÷ 100).

Example: How much is the image shifted vertically when the screen height = 1.2 M and the lens has a vertical Lens Shift value of 68%?

Calculation: 1.2 x ((68 - 50) ÷ 100) = 0.216 M

Answer = 0.216 M (216 mm). This means that the centre of the image has shifted vertically by 0.216 M (216 mm). Assuming the projector is perpendicular to the screen it logically follows that the vertical image extremities have shifted by the same amount.

Horizontal Lens Shift: Horizontal Lens Shift = Screen Width x ((Horizontal Lens Shift in percent - 50) ÷ 100).

Example: How much is the image shifted horizontally when the screen width = 1.92 M and the lens has a horizontal Lens Shift value of 57.5%?

Calculation: 1.92 x ((57.5 - 50) ÷ 100) = 0.144 M

Answer: 0.144 M (144 mm). This means that the centre of the image has shifted horizontally by 0.144 M (144 mm). Assuming the projector is perpendicular to the screen it logically follows that the horizontal image extremities have shifted by the same amount.

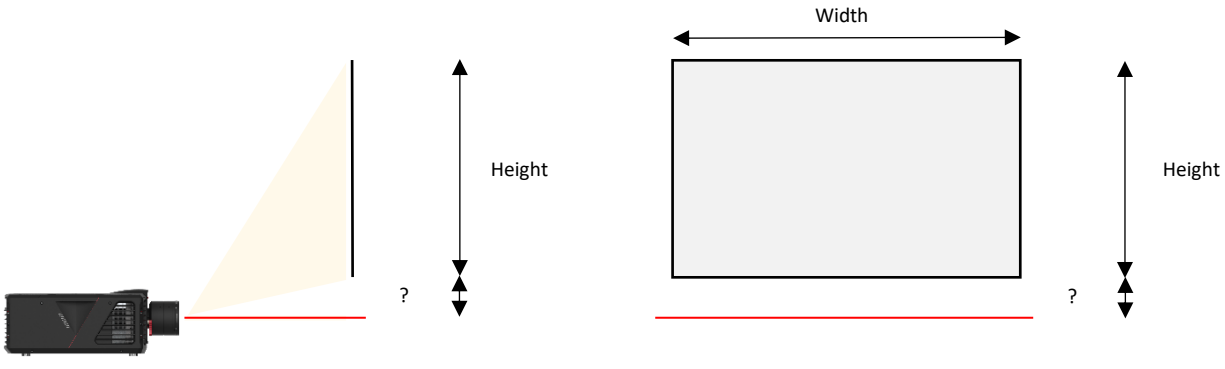
If Lens Shift values are less than 100% it is possible to calculate how much of the image is above / below, left or right of the lens centre line.

Example: How much of the image is above the lens centre line when the screen height = 1.2 M and the lens has a vertical Lens Shift value of 68%?

Calculation: 1.2 x 68% = 0.816 M

Answer: 0.816 M (816 mm). Assuming the projector is perpendicular to the screen 0.816 M of the image is above the lens centre line whilst 0.384 (1.2 – 0.816 = 0.384) is below. The same methodology applies to horizontal calculations.

If Lens Shift values are more than 100% (typically only applicable to vertical Lens Shift) it is possible to calculate the distance between the lens centre line & the top / bottom of the image as illustrated below: -



The distance between the lens centre line & the bottom / top of image can be calculated as follows: -

Example: What is the distance between the lens centre line and the bottom of the image when the screen height = 1.2 M and the lens has a vertical Lens Shift value of 120.5%.

Calculation: 1.2 x ((120.5 - 50) ÷ 100) = 0.846
Screen Height ÷ 2 = 0.60 M
Lens centre to bottom of screen = 0.846 - 0.60 = 0.246 M

Answer: 0.246 M (246.0 mm).