Sapphire® 4K40-RGBH lens throw ratios

The following table details the information required to calculate the lens throw ratios for the Sapphire® 4K40-RGBH projectors.

Lens	Throw distance formula		Vertical and horizontal offset (%)	Minimum diagonal screen sizes	
	Imperial (in)	Metric (m)		Imperial (in)	Metric (m)
0.38:1 HB fixed* (144-136101-XX)	TD = 0.3864 x W - 5.68	TD = 0.3864 x W - 0.144	-60% / +85% V -35% / +15% H	55	1.4
0.72:1 HB/UHC fixed (144-110103-XX) (163-116109-XX)	TD = 0.7449 x W + 9.45	TD = 0.7449 x W + 0.240	0% V 0% H	55	1.4
0.9:1 HB/UHC fixed (144-111014-XX) (163-117100-XX)	TD = 0.9354 x W + 9.53	TD = 0.9354 x W + 0.242	+/- 45% V +/- 15% H	150	3.8
1.13-1.31:1 HB zoom (144-103105-XX - Discontinued)	TD = 1.130 x W + 7.84 TD = 1.325 x W + 7.12	TD = 1.130 x W + 0.199 TD = 1.325 x W + 0.181	+/- 60% V +/- 25% H	122	3.1
1.13 - 1.66:1 HB/UHC zoom (144-129103-XX) (163-118101-XX)	TD = 1.129 x W + 9.28 TD = 1.670 x W + 8.73	TD = 1.129 x W + 0.236 TD = 1.670 x W + 0.222	+/- 45% V +/- 20% H	395	10.03

Lens	Throw distance formula		Vertical and horizontal offset (%)	Minimum diagonal screen sizes	
	Imperial (in)	Metric (m)		Imperial (in)	Metric (m)
1.31-1.63:1 HB zoom (144-104106-XX - Discontinued)	TD = 1.305 x W + 6.04 TD = 1.644 x W + 4.60	TD = 1.305 x W + 0.153 TD = 1.644 x W + 0.117	+/- 80% V +/- 30% H	106	2.7
1.45 - 2.17:1 HB/UHC zoom (144-130105-XX) (163-119102-XX)	TD = 1.449 x W + 6.52 TD = 2.195 x W + 2.96	TD = 1.449 x W + 0.166 TD = 2.195 x W + 0.075	+/- 55% V +/- 20% H	302	7.7
1.63-2.17:1 HB zoom (144-105107-XX - Discontinued)	TD = 1.631 x W + 4.76 TD = 2.195 x W + 2.95	TD = 1.631 x W + 0.121 TD = 2.195 x W + 0.075	+/- 80% V +/- 30% H	87	2.2
1.95 - 3.26:1 HB/UHC zoom (144-131106-XX) (163-120103-XX)	TD = 1.951 x W + 2.07 TD = 3.318 x W - 1.63	TD = 1.951 x W + 0.053 TD = 3.318 x W - 0.041	+/- 45% V +/- 30% H	201	5.1
1.99-2.71:1 HB zoom (144-106108-XX - Discontinued)	TD = 2.007 x W + 1.05 TD = 2.728 x W - 1.44	TD = 2.007 x W + 0.027 TD = 2.728 x W - 0.036	+/- 15% V +/- 5% H	71	1.8
2.71-3.89:1 HB/UHC zoom (144-107109-XX) (163-121105-XX)	TD = 2.734 x W + 1.02 TD = 3.945 x W - 2.01	TD = 2.734 x W + 0.026 TD = 3.945 x W - 0.051	+/- 45% V +/- 15% H	51	1.3
3.89-5.43:1 HB/UHC zoom (144-108100-XX) (163-122106-XX)	TD = 3.942 x W + 7.47 TD = 5.553 x W + 3.84	TD = 3.942 x W + 0.190 TD = 5.553 x W + 0.098	+/- 85% V +/- 25% H	75	1.9
4.98-7.69:1 HB zoom** (144-109101-XX)	TD = 5.031 x W + 1.52 TD = 7.860 x W -2.69	TD = 5.031 x W + 0.039 TD = 7.860 x W - 0.068	+/- 90% V +/- 40% H	59	1.5

* Brightness is reduced up to 30% when using the 0.38:1 lens. Focus drift occurs with this lens when switching between prolonged periods of light and dark content.

** For Christie Sapphire® 4K40-RGBH 2D YNF at 220 VAC (full power mode, highest brightness configuration), the 4.98-7.69:1 zoom (P/N: 144-109101-XX) lens requires a 185 mm lens hood extension (P/N: 163-168106-XX).

Note the following about the throw distances:

- Throw distances measured from the center of the front foot of the projector.
- The 0.38:1 lens throw distance measured from the center of the side feet of the projector.
- All lenses are made of glass.
- Calculated throw distance (TD) values are subject to a +/- 5% tolerance for individual lens variation.
- Calculated offset values are subject to a +/- 7% centering tolerance.