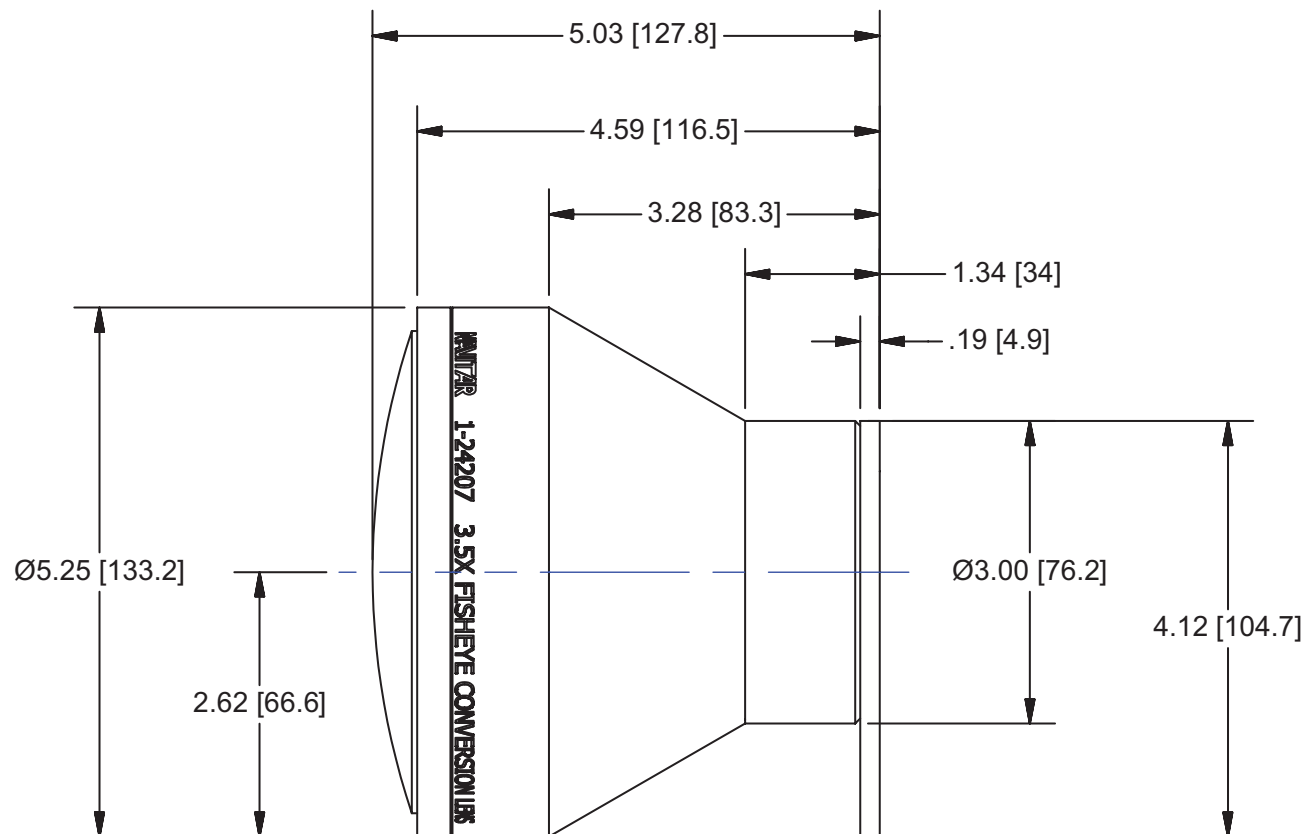


3.5X Fisheye Conversion Lens

Examples of Projectors and Projection Angles*					
Projector	Panel	Aspect Ratio	Prime Lens Throw Ratio	With Conversion Lens	
				Short Throw Angles H x V (°)	Long Throw Angles H x V (°)
JVC DLA X55R/ X75R/ X95R	0.70" D-ILA x3	16:9 HD	1.38 - 2.79:1	172.3 x 84.3	73.4 x 40.6
Panasonic PR RZ370 /RZ470	0.66" DLP	16:9 HD	1.46 - 2.94:1	155.6 x 79.2	71.3 x 39.3
Canon WUX450	0.70" LCOS x3	16:10	1.39 - 2.51:1	169.8 x 94.1	82.2 x 50.8
Sony VPL VW600ES/ VPL VW1100ES	0.70" SXRD x3	17:9	1.38 - 2.38:1	172.3 x 78.6	87.2 x 45.0
NEC PE401H	0.66" DLP	16:9 HD	1.60 - 2.72:1	137.3 x 71.9	75.4 x 41.8
Epson PL Pro Cinema 6030UB	0.70" 3LCD	16:9 HD	1.34 - 2.87:1	184.0 x 87.1	71.3 x 39.3

*This lens is designed to work with 0.70" panel projectors with prime zooms that have a focal length of 19-40mm. Lens may work with other panel sizes and other focal length prime lenses. Will require user testing.

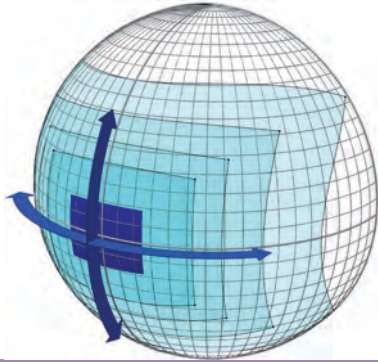


100°H

3.5X Fisheye Conversion Lens

On-Screen Projection

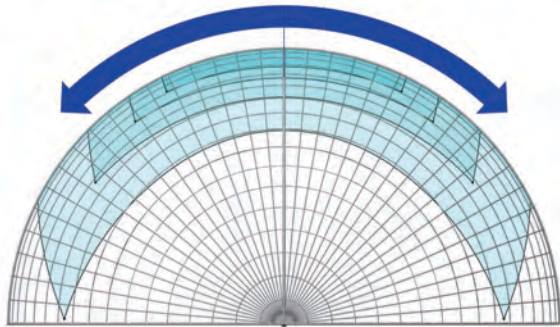
Active Image on Projector Panel



A prime lens, which alone projects a image size shown by the small dark blue rectangle, is fitted with the 3.5X conversion lens to provide a magnified image, as shown by the light blue shaded areas.

The magnified image is capable of focusing onto a curved screen. The illustration shows the range of converted angular sizes for a 4:3 image and a selection of prime lens throw ratios.

At the widest range a 1.3:1 prime lens can produce a 199°H x 125°V image (4:3 aspect ratio) with the 3.5X conversion lens.



Lens Specifications

Image Circle	40mm	MTF Center	55% @ 73lp/mm
Max FOV	200°	MTF Edge	10% @ 50lp/mm
F/#	F/2.5	F-Theta Distortion	< -23% Max
Focus Range	1500mm – Inf.	Relative Illum.	80.5% Horizontal Field 89.6% Trans. related 65.9% Dist. related
Transmittance	89.8% Axis		

Throw Ratio to Projected Angle Conversion Chart

Original Prime Lens Throw	New Projected Angle (°) H	4:3 Angle (°) V	16:10 Angle (°) V	16:9 Angle (°) V	2K/4K 17:9 Angle (°) V
1.30:1	199	125	102	90	84
1.35:1	180	120	97	86	80
1.40:1	167	115	93	83	77
1.44:1	160	112	91	81	75
1.50:1	149	107	86	77	72
1.60:1	137	99	80	72	67
1.70:1	128	92	75	68	63
1.80:1	120	87	71	64	60
1.90:1	113	82	67	60	57
2.00:1	106	77	64	57	54
2.10:1	101	73	61	55	51
2.25:1	93	68	57	51	48
2.50:1	83	61	51	46	43
2.75:1	75	56	46	41	38
3.00:1	68	51	42	37	35
3.50:1	58	44	35	31	29
4.00:1	51	38	30	25	24

