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Lens E-Vision 0.74 - 1.08:1

Part Number: 124-320 | Series: E-Vision



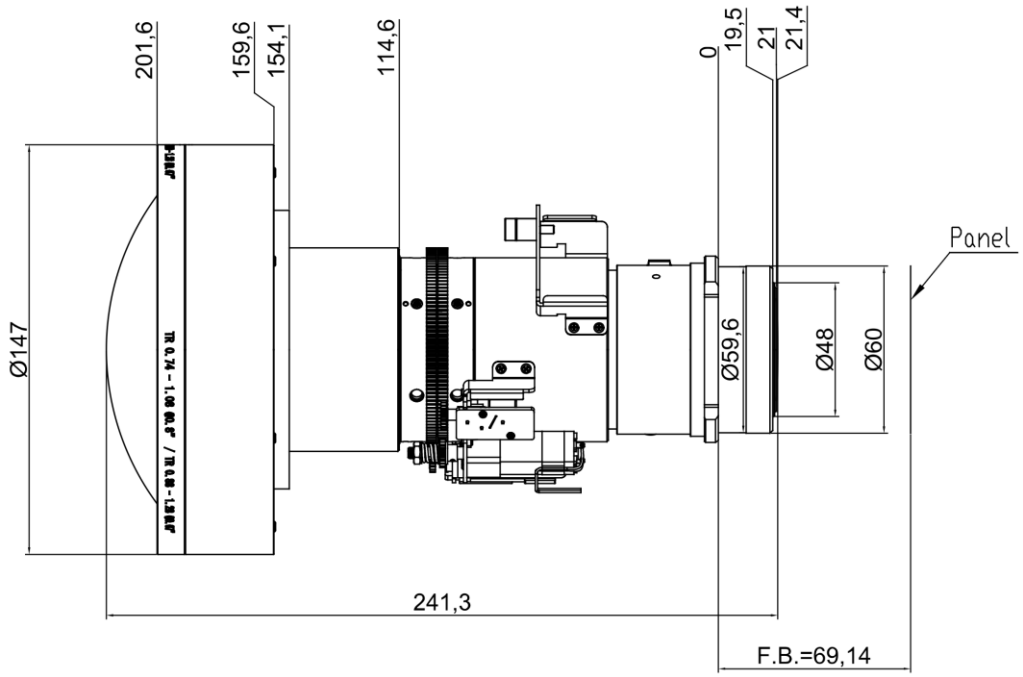
OPTICAL

Throw Ratio:	0.74 - 1.08:1
Focal length:	13.47 - 19.67 mm
Throw distance range:	0.75 - 12.19 m
F/#:	F/2.02 - F/2.33
Vertical offset:	50% (up); 50% (down)
Horizontal offset:	15% (left); 15% (right)

PHYSICAL

Size (W x D x H):	147.0 x 241.3 x 147.0 mm
Lens Extension:	105.3 mm
Weight:	2.8 kg
Lens material:	Optical glass

MECHANICAL DRAWING



Compatible Projectors

Projector	Part Number
E-Vision 10000i 4K+ RGB	124-360
E-Vision 12000i 4K+	124-459
E-Vision 13500i WU	123-526
E-Vision 15000i 4K+	124-361
E-Vision 16000i WU	123-522
E-Vision 22000i 4K+	124-471
E-Vision 24000i WU	124-359

Aspect Ratio 16:10 (WUXGA)

W (m)	H (m)	Diag (in)	Dist Min	Dist Max	Base Off	V Up	V Down	H Left	H Right
0.70	0.44	32.50	0.75	0.76	0.00	0.22	0.22	0.11	0.11
1.00	0.63	46.43	0.75	1.08	0.00	0.31	0.31	0.15	0.15
1.50	0.94	69.64	1.11	1.62	0.00	0.47	0.47	0.23	0.23
2.00	1.25	92.85	1.48	2.16	0.00	0.63	0.63	0.30	0.30
2.50	1.56	116.07	1.85	2.70	0.00	0.78	0.78	0.38	0.38
3.00	1.88	139.28	2.22	3.24	0.00	0.94	0.94	0.45	0.45
3.50	2.19	162.49	2.59	3.78	0.00	1.09	1.09	0.53	0.53
4.00	2.50	185.71	2.96	4.32	0.00	1.25	1.25	0.60	0.60

W (m)	H (m)	Diag (in)	Dist Min	Dist Max	Base Off	V Up	V Down	H Left	H Right
4.50	2.81	208.92	3.33	4.86	0.00	1.41	1.41	0.68	0.68
5.00	3.13	232.14	3.70	5.40	0.00	1.56	1.56	0.75	0.75
5.50	3.44	255.35	4.07	5.94	0.00	1.72	1.72	0.83	0.83
6.00	3.75	278.56	4.44	6.48	0.00	1.88	1.88	0.90	0.90
6.50	4.06	301.78	4.81	7.02	0.00	2.03	2.03	0.98	0.98
7.00	4.38	324.99	5.18	7.56	0.00	2.19	2.19	1.05	1.05
7.50	4.69	348.20	5.55	8.10	0.00	2.34	2.34	1.13	1.13
8.00	5.00	371.42	5.92	8.64	0.00	2.50	2.50	1.20	1.20
8.50	5.31	394.63	6.29	9.18	0.00	2.66	2.66	1.28	1.28
9.00	5.63	417.84	6.66	9.72	0.00	2.81	2.81	1.35	1.35
9.50	5.94	441.06	7.03	10.26	0.00	2.97	2.97	1.43	1.43
10.00	6.25	464.27	7.40	10.80	0.00	3.13	3.13	1.50	1.50
11.00	6.88	510.70	8.14	11.88	0.00	3.44	3.44	1.65	1.65
12.00	7.50	557.12	8.88	12.19	0.00	3.75	3.75	1.80	1.80
13.00	8.13	603.55	9.62	12.19	0.00	4.06	4.06	1.95	1.95
14.00	8.75	649.98	10.36	12.19	0.00	4.38	4.38	2.10	2.10
15.00	9.38	696.41	11.10	12.19	0.00	4.69	4.69	2.25	2.25
16.00	10.00	742.83	11.84	12.19	0.00	5.00	5.00	2.40	2.40
16.47	10.29	764.65	12.19	12.19	0.00	5.15	5.15	2.47	2.47

Aspect Ratio 16:9 (FullHD)

W (m)	H (m)	Diag (in)	Dist Min	Dist Max	Base Off	V Up	V Down	H Left	H Right
0.70	0.39	31.62	0.75	0.76	0.00	0.20	0.20	0.11	0.11
1.00	0.56	45.17	0.75	1.08	0.00	0.28	0.28	0.15	0.15
1.50	0.84	67.76	1.11	1.62	0.00	0.42	0.42	0.23	0.23
2.00	1.13	90.34	1.48	2.16	0.00	0.56	0.56	0.30	0.30
2.50	1.41	112.93	1.85	2.70	0.00	0.70	0.70	0.38	0.38
3.00	1.69	135.51	2.22	3.24	0.00	0.84	0.84	0.45	0.45
3.50	1.97	158.10	2.59	3.78	0.00	0.98	0.98	0.53	0.53
4.00	2.25	180.68	2.96	4.32	0.00	1.13	1.13	0.60	0.60
4.50	2.53	203.27	3.33	4.86	0.00	1.27	1.27	0.68	0.68
5.00	2.81	225.86	3.70	5.40	0.00	1.41	1.41	0.75	0.75
5.50	3.09	248.44	4.07	5.94	0.00	1.55	1.55	0.83	0.83
6.00	3.38	271.03	4.44	6.48	0.00	1.69	1.69	0.90	0.90
6.50	3.66	293.61	4.81	7.02	0.00	1.83	1.83	0.98	0.98
7.00	3.94	316.20	5.18	7.56	0.00	1.97	1.97	1.05	1.05
7.50	4.22	338.78	5.55	8.10	0.00	2.11	2.11	1.13	1.13
8.00	4.50	361.37	5.92	8.64	0.00	2.25	2.25	1.20	1.20
8.50	4.78	383.95	6.29	9.18	0.00	2.39	2.39	1.28	1.28
9.00	5.06	406.54	6.66	9.72	0.00	2.53	2.53	1.35	1.35
9.50	5.34	429.13	7.03	10.26	0.00	2.67	2.67	1.43	1.43
10.00	5.63	451.71	7.40	10.80	0.00	2.81	2.81	1.50	1.50

W (m)	H (m)	Diag (in)	Dist Min	Dist Max	Base Off	V Up	V Down	H Left	H Right
11.00	6.19	496.88	8.14	11.88	0.00	3.09	3.09	1.65	1.65
12.00	6.75	542.05	8.88	12.19	0.00	3.38	3.38	1.80	1.80
13.00	7.31	587.23	9.62	12.19	0.00	3.66	3.66	1.95	1.95
14.00	7.88	632.40	10.36	12.19	0.00	3.94	3.94	2.10	2.10
15.00	8.44	677.57	11.10	12.19	0.00	4.22	4.22	2.25	2.25
16.00	9.00	722.74	11.84	12.19	0.00	4.50	4.50	2.40	2.40
16.47	9.26	743.97	12.19	12.19	0.00	4.63	4.63	2.47	2.47

Aspect Ratio 16:9 (4K-UHD)

W (m)	H (m)	Diag (in)	Dist Min	Dist Max	Base Off	V Up	V Down	H Left	H Right
0.70	0.39	31.62	0.75	0.76	0.00	0.20	0.20	0.11	0.11
1.00	0.56	45.17	0.75	1.08	0.00	0.28	0.28	0.15	0.15
1.50	0.84	67.76	1.11	1.62	0.00	0.42	0.42	0.23	0.23
2.00	1.13	90.34	1.48	2.16	0.00	0.56	0.56	0.30	0.30
2.50	1.41	112.93	1.85	2.70	0.00	0.70	0.70	0.38	0.38
3.00	1.69	135.51	2.22	3.24	0.00	0.84	0.84	0.45	0.45
3.50	1.97	158.10	2.59	3.78	0.00	0.98	0.98	0.53	0.53
4.00	2.25	180.68	2.96	4.32	0.00	1.13	1.13	0.60	0.60
4.50	2.53	203.27	3.33	4.86	0.00	1.27	1.27	0.68	0.68
5.00	2.81	225.86	3.70	5.40	0.00	1.41	1.41	0.75	0.75
5.50	3.09	248.44	4.07	5.94	0.00	1.55	1.55	0.83	0.83
6.00	3.38	271.03	4.44	6.48	0.00	1.69	1.69	0.90	0.90
6.50	3.66	293.61	4.81	7.02	0.00	1.83	1.83	0.98	0.98
7.00	3.94	316.20	5.18	7.56	0.00	1.97	1.97	1.05	1.05
7.50	4.22	338.78	5.55	8.10	0.00	2.11	2.11	1.13	1.13
8.00	4.50	361.37	5.92	8.64	0.00	2.25	2.25	1.20	1.20
8.50	4.78	383.95	6.29	9.18	0.00	2.39	2.39	1.28	1.28
9.00	5.06	406.54	6.66	9.72	0.00	2.53	2.53	1.35	1.35
9.50	5.34	429.13	7.03	10.26	0.00	2.67	2.67	1.43	1.43
10.00	5.63	451.71	7.40	10.80	0.00	2.81	2.81	1.50	1.50
11.00	6.19	496.88	8.14	11.88	0.00	3.09	3.09	1.65	1.65
12.00	6.75	542.05	8.88	12.19	0.00	3.38	3.38	1.80	1.80
13.00	7.31	587.23	9.62	12.19	0.00	3.66	3.66	1.95	1.95
14.00	7.88	632.40	10.36	12.19	0.00	3.94	3.94	2.10	2.10
15.00	8.44	677.57	11.10	12.19	0.00	4.22	4.22	2.25	2.25
16.00	9.00	722.74	11.84	12.19	0.00	4.50	4.50	2.40	2.40
16.47	9.26	743.97	12.19	12.19	0.00	4.63	4.63	2.47	2.47

Aspect Ratio 4:3

W (m)	H (m)	Diag (in)	Dist Min	Dist Max	Base Off	V Up	V Down	H Left	H Right
0.59	0.44	28.87	0.75	0.76	0.00	0.22	0.22	0.09	0.09
1.00	0.75	49.21	0.89	1.30	0.00	0.38	0.38	0.15	0.15
1.50	1.13	73.82	1.33	1.94	0.00	0.56	0.56	0.23	0.23
2.00	1.50	98.43	1.78	2.59	0.00	0.75	0.75	0.30	0.30
2.50	1.88	123.16	2.22	3.24	0.00	0.94	0.94	0.38	0.38
3.00	2.25	147.64	2.66	3.89	0.00	1.13	1.13	0.45	0.45
3.50	2.63	172.24	3.11	4.54	0.00	1.31	1.31	0.53	0.53
4.00	3.00	196.85	3.55	5.18	0.00	1.50	1.50	0.60	0.60
4.50	3.37	221.44	4.00	5.83	0.00	1.69	1.69	0.67	0.67
5.00	3.75	246.04	4.44	6.48	0.00	1.87	1.87	0.75	0.75
5.50	4.12	270.63	4.88	7.13	0.00	2.06	2.06	0.82	0.82
6.00	4.50	295.22	5.33	7.77	0.00	2.25	2.25	0.90	0.90
6.50	4.87	319.82	5.77	8.42	0.00	2.44	2.44	0.97	0.97
7.00	5.25	344.41	6.21	9.07	0.00	2.62	2.62	1.05	1.05
7.50	5.62	369.00	6.66	9.72	0.00	2.81	2.81	1.12	1.12
8.00	6.00	393.60	7.10	10.37	0.00	3.00	3.00	1.20	1.20
8.50	6.38	418.31	7.55	11.02	0.00	3.19	3.19	1.28	1.28
9.00	6.75	442.78	7.99	11.66	0.00	3.37	3.37	1.35	1.35
9.50	7.12	467.38	8.43	12.19	0.00	3.56	3.56	1.42	1.42
10.00	7.50	492.13	8.88	12.19	0.00	3.75	3.75	1.50	1.50
11.00	8.25	541.34	9.77	12.19	0.00	4.13	4.13	1.65	1.65
12.00	9.00	590.55	10.66	12.19	0.00	4.50	4.50	1.80	1.80
13.00	9.75	639.76	11.54	12.19	0.00	4.88	4.88	1.95	1.95
13.72	10.29	675.20	12.18	12.19	0.00	5.15	5.15	2.06	2.06

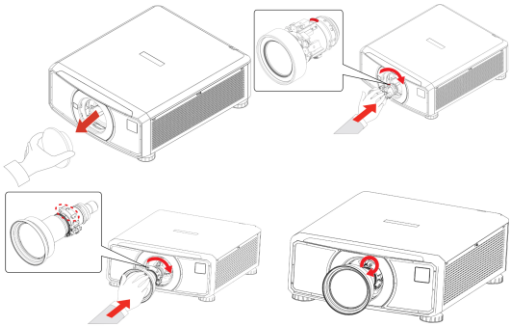
Throw Ratio Correction (TRC)

The throw ratio (TRC) of the projector is defined based on the full optical image width. When displaying content with a different aspect ratio, the active image width (W) may occupy only a portion of the projected image. To correctly calculate the throw ratio, a width utilization coefficient (k) must be applied: TRC = (TD x k) / W, where TD = Throw Distance, W = Active image width, k = Width utilization coefficient.

Aspect Ratio	Coefficient (k)	Notes
16:10 (native)	1.000	Full chip usage
16:9	0.900	Side margins
4:3	0.833	Pillarbox
2.35:1	1.469	Vertical crop required
1:1	0.625	Side margins
1.85:1	1.156	Slight vertical crop
1.25:1	0.781	Side margins

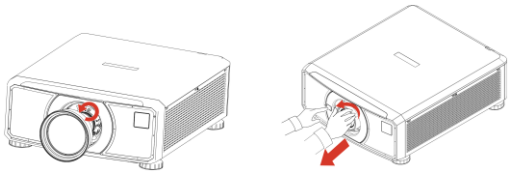
INSERTING A NEW LENS

1. Remove the lens aperture cap from the projector.
2. Remove the front and rear lens caps from the lens.
3. Align the flange and correctly position at the 11 o'clock position as shown in the picture, and gently insert it all the way into the lens mount.
4. Push the lens in firmly and turn it clockwise until it clicks into place.
5. For 0.31 ~ 0.33:1, 0.55 ~ 0.75:1, 0.74 ~ 1.08:1, 1.05 ~ 1.41:1, 1.4 ~ 2.11:1, 2.1 ~ 4.0:1 lenses, after installing the lens, please tighten the thumbscrew to secure the lens to the lens mount.



REMOVING THE LENS

1. Before disassembling the lens, please loosen the fixing screw first.
2. Push the lens release button all the way in.
3. Turn the lens anti-clockwise until it disengages.
4. Slowly remove the lens.

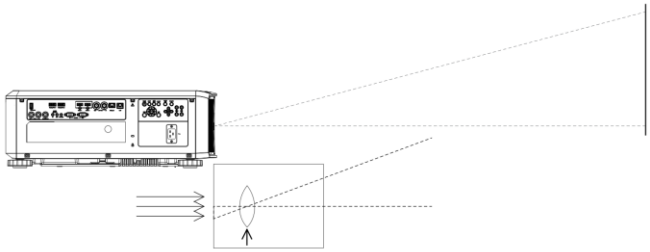


Important notes:

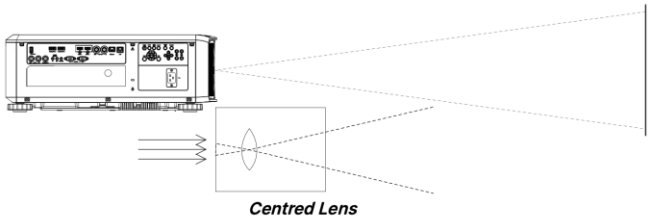
- Before changing the lens, always make sure the projector is switched off and fully disconnected from its power supply.
- When changing the lens, avoid using excessive force as this may damage the equipment.
- Avoid touching the surface of the lens as this may result in image impairment.
- The lens is shipped separately.
- Take care to preserve the original lens packaging and protective caps for future use.
- The projector will not power on without the lens fitted.

POSITIONING THE IMAGE

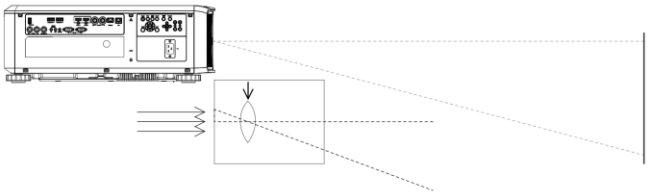
The normal position for the projector is at the centre of the screen. However, you can set the projector above or below the centre, or to one side, and adjust the image using the Lens shift feature (known as rising and falling front) to maintain a geometrically correct image.



Shifting the lens up (rising front)



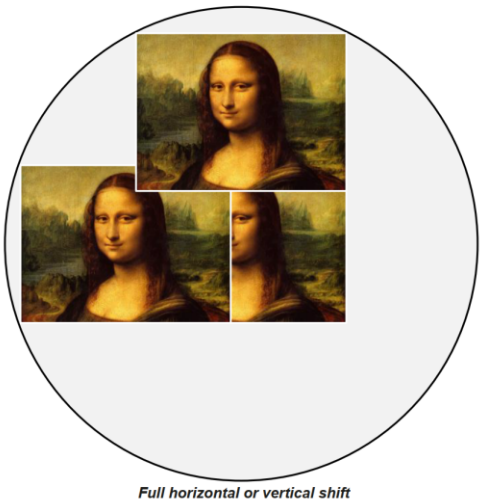
Centred Lens



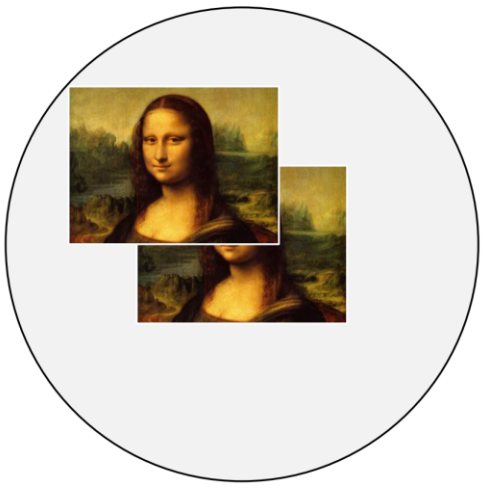
Shifting the lens down (falling front)

Any single adjustment outside the ranges specified on the following page may result in an unacceptable level of distortion, particularly at the corners of the image, due to the image passing through the periphery of the lens optics.

If the lens is to be shifted in two directions combined, the maximum range without distortion will be somewhat less, as can be seen in the illustrations.



Full horizontal or vertical shift



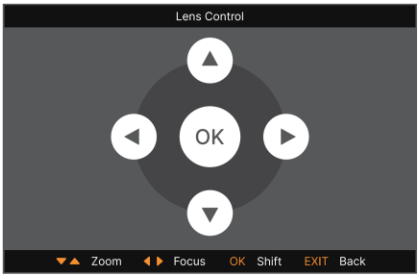
Combined shift is reduced

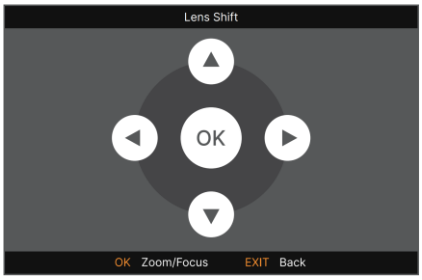
LENS ADJUSTMENTS

Lens menu

Lens Lock - When this feature is On, all other Lens menu items are disabled.
Lens Control - Opens a sub-menu, see below.
Center Lens - Centers the lens.
Lens Type - Select the lens that is installed on the projector.
Lens Memory - Opens a sub-menu, see next page.







Lens control

Lens Control settings operate in Zoom/Focus Adjustment and Shift Adjustment mode. Press ENTER/OK to switch between modes.

When in Zoom/Focus Adjustment mode:
- Use the UP and DOWN arrow buttons to adjust Zoom.
- Use the LEFT and RIGHT arrow buttons to adjust Focus.
When in Shift Adjustment mode, use the arrow buttons to adjust Shift.

Lens memory

This menu allows you to load, save and delete up to ten lens presets, containing position, zoom, focus and shift adjustment information.

For example, if using different screen sizes and aspect ratios, you can save zoom, focus and positioning for each screen size and aspect ratio in a dedicated preset.

Use Clear Memory to delete a memory preset if you need to save a new combination of lens settings in its place. Overwriting a saved memory preset is not possible.









E-VISION SERIES - LENS EXTENSION REFERENCE

Lens model	Part number	Lens extension dim, mm
0.31 - 0.33:1	124-318	345.8
0.55 - 0.75:1	124-319	126.2
0.74 - 1.08:1	**124-320**	**105.3**
1.05 - 1.41:1	124-321	130.0
1.40 - 2.11:1	124-322	118.5
2.10 - 4.00:1	124-323	197.5
3.91 - 7.07:1	124-446	161.9

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Specifications are subject to change without notice. All values are typical. Actual product appearance, colors, and features may vary.