

This zoom lens is designed for use with Panasonic's applicable projectors.

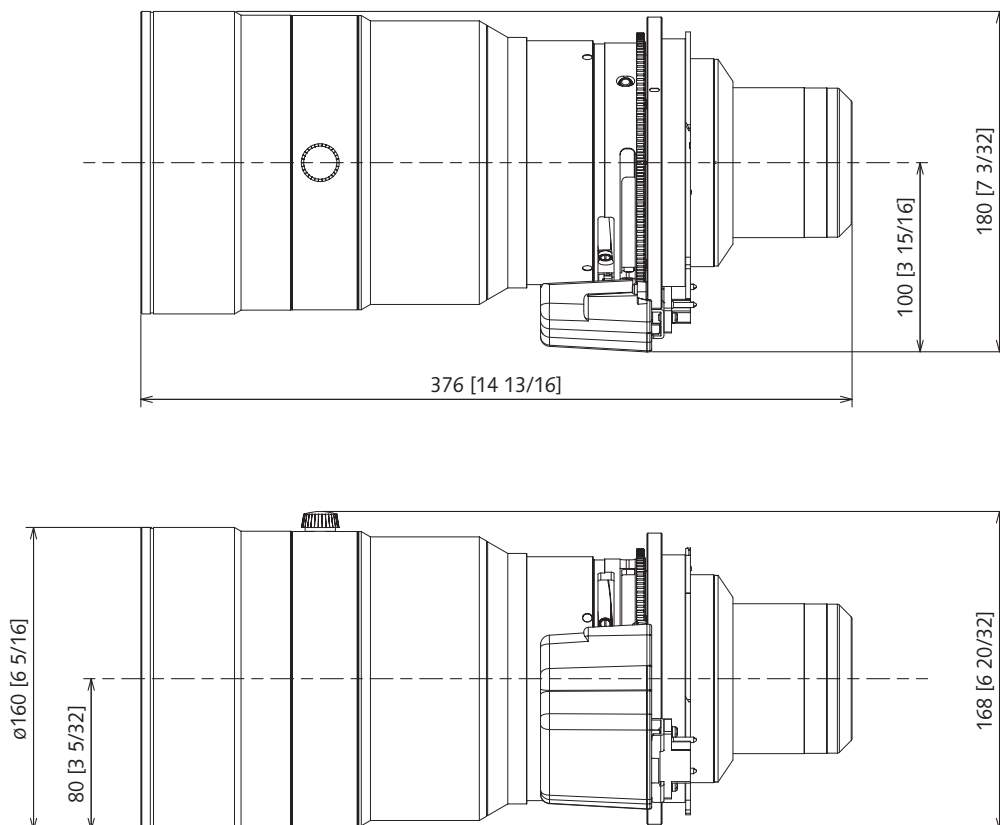
**Please use the lens only on the specified Panasonic projector.*

Specifications (Specifications subject to change without notice.)

F-number	2.5	
Focal distance (f)	19.8-27.5 mm [25/32-1 5/64 in]	
Throw ratio	0.993-1.38:1	PT-RQ32K/RQ22K (16:10 aspect ratio)
	0.924-1.28:1	PT-RQ45K/RZ44K/RQ35K2/RZ34K2/HTQ20/RQ35K/RZ34K/RZ31K/RZ21K/RZ16K (16:10 aspect ratio)
	1.12-1.55:1	PT-RQ25K/RZ24K/RQ18K/RZ17K/RZ14K (16:10 aspect ratio)
	1.01-1.39:1	PT-RS30K/RS20K (4:3 aspect ratio)
Auto Lens Identification function Compatible models	PT-RQ45K/RZ44K/RQ35K2/RZ34K2/HTQ20/RQ35K/RZ34K/RQ32K/RZ31K/RS30K PT-RQ25K/RZ24K/RQ18K/RZ17K/RZ14K/RQ22K/RZ21K/RZ16K/RS20K	
Dimensions	Width	180 mm [7 3/32 in]
	Height	168 mm [6 20/32 in]
	Depth	376 mm [14 13/16 in]
Weight	Approximately 7.6 Kg (16.12 lbs)	
Applicable projector	Group A	PT-RQ22K/RZ21K/RS20K/RZ16K
	Group B	PT-RQ32K/RZ31K/RS30K
		PT-RQ45K/RZ44K/RQ35K2/RZ34K2/HTQ20/RQ35K/RZ34K/RQ25K/RZ24K/RQ18K/RZ17K/RZ14K <i>*For these projectors see the individual spec files of the projectors.</i>

Dimensions

unit : mm [inch]
This illustration is not drawn to scale.



Zoom Lens

Figure attached to the [Group A, PT-RQ22K/RZ21K/RS20K/RZ16K] projector

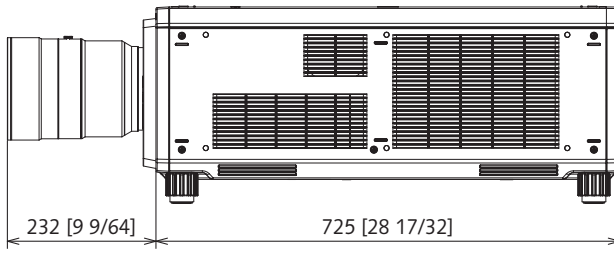
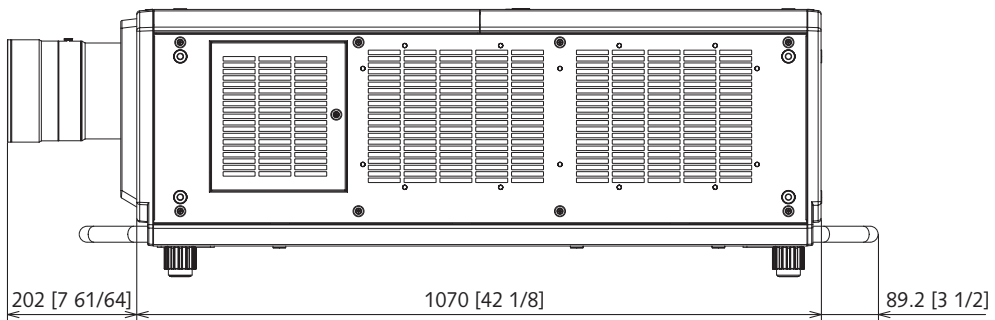
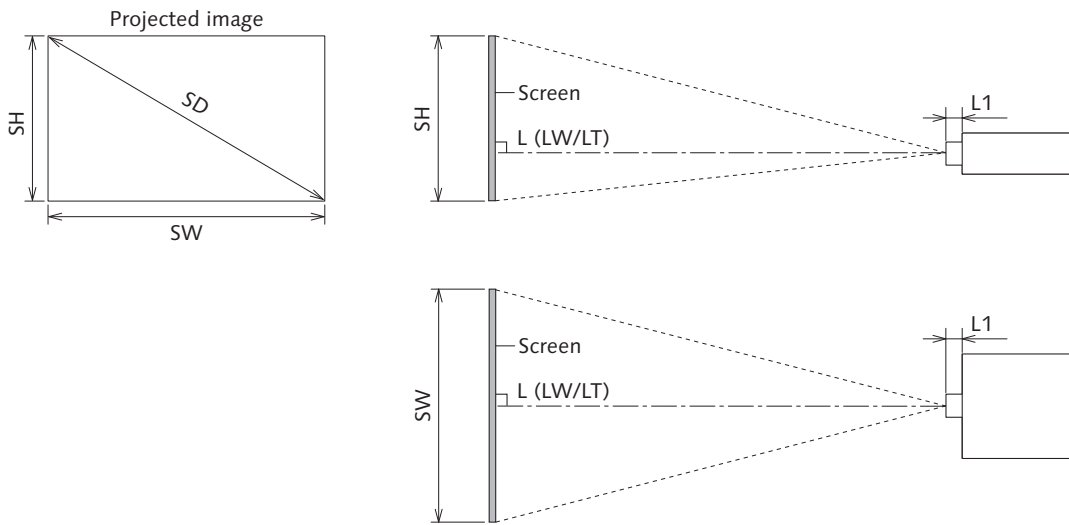


Figure attached to the [Group B, PT-RQ32K/RZ31K/RS30K] projector



Dimensional relationship diagram

The dimensional relationship between the screen and the projector is shown below.



Note

- This illustration is prepared on the assumption that the projected image size and position have been aligned to fit full in the screen.
- This illustration is not drawn to scale.
- The values are approximate.

SH	Projected image height
SW	Projected image width
SD	Projected image size
L	Projection distance (distance from the front end of the projection lens to the screen)
	LW Minimum distance
	LT Maximum distance
L1	Lens protrusion dimension (distance from the front surface of the projector to the front end of the projection lens)

Unit : m

Projector model	Dimension for L1 (approximate value)
PT-RQ22K/RZ21K/RS20K/RZ16K	0.232
PT-RQ32K/RZ31K/RS30K	0.202

Projection distance

A $\pm 5\%$ error in listed projection distances may occur.

When [GEOMETRY] is used, distance is corrected to become smaller than the specified image size.

Screen aspect ratio 16:10

Unit: meters

Projector model			PT-RQ32K/RQ22K		PT-RZ31K/RZ21K/RZ16K		
Throw ratio			0.993-1.38:1		0.924-1.28:1		
Projected image size			Projection distance (L)				
Diagonal (SD)		Height (SH)	Width (SW)	Min (LW)	Max (LT)	Min (LW)	Max (LT)
m	inches						
1.778	70	0.942	1.508	1.45	2.02	1.35	1.87
2.032	80	1.077	1.723	1.67	2.32	1.55	2.16
2.286	90	1.212	1.939	1.89	2.63	1.76	2.44
2.540	100	1.346	2.154	2.11	2.93	1.96	2.73
3.048	120	1.615	2.585	2.55	3.54	2.37	3.30
3.810	150	2.019	3.231	3.21	4.46	2.99	4.15
5.080	200	2.692	4.308	4.30	5.99	4.01	5.58
6.350	250	3.365	5.385	5.40	7.51	5.03	7.00
7.620	300	4.039	6.462	6.49	9.04	6.05	8.42
8.890	350	4.712	7.539	7.59	10.56	7.08	9.85
10.160	400	5.385	8.616	8.69	12.09	8.10	11.27
12.700	500	6.731	10.77	10.88	15.14	10.15	14.12
15.240	600	8.077	12.923	13.07	18.19	12.19	16.96
17.780	700	9.423	15.077	15.27	21.25	14.24	19.81
20.320	800	10.770	17.231	17.46	24.30	16.28	22.66
22.860	900	12.116	19.385	19.65	27.35	18.33	25.51
25.400	1000	13.462	21.539	21.84	30.40	20.37	28.35

- The throw ratio is based on the value during projection with the projected image size of 3.810 m [150 in].

Screen aspect ratio 16:10

Unit: feet

Projector model			PT-RQ32K/RQ22K		PT-RZ31K/RZ21K/RZ16K		
Throw ratio			0.993-1.38:1		0.924-1.28:1		
Projected image size			Projection distance (L)				
Diagonal (SD)		Height (SH)	Width (SW)	Min (LW)	Max (LT)	Min (LW)	Max (LT)
m	inches						
1.778	70	3.092	4.947	4.76	6.62	4.42	6.15
2.032	80	3.533	5.653	5.48	7.62	5.10	7.08
2.286	90	3.975	6.360	6.20	8.62	5.77	8.02
2.540	100	4.417	7.067	6.92	9.62	6.44	8.95
3.048	120	5.300	8.480	8.36	11.63	7.78	10.82
3.810	150	6.625	10.600	10.52	14.63	9.79	13.62
5.080	200	8.833	14.133	14.11	19.64	13.15	18.29
6.350	250	11.042	17.667	17.71	24.64	16.51	22.96
7.620	300	13.250	21.200	21.31	29.65	19.86	27.63
8.890	350	15.458	24.733	24.91	34.66	23.22	32.30
10.160	400	17.667	28.267	28.50	39.66	26.57	36.97
12.700	500	22.083	35.333	35.70	49.68	33.28	46.32
15.240	600	26.500	42.400	42.89	59.69	40.00	55.66
17.780	700	30.917	49.467	50.09	69.70	46.71	65.00
20.320	800	35.333	56.533	57.28	79.72	53.42	74.34
22.860	900	39.750	63.600	64.47	89.73	60.13	83.68
25.400	1000	44.167	70.667	71.67	99.74	66.84	93.02

- The throw ratio is based on the value during projection with the projected image size of 3.810 m [150 in].

Zoom Lens

Screen aspect ratio 16:9

Unit: meters

Projector model			PT-RQ32K/RQ22K		PT-RZ31K/RZ21K/RZ16K		PT-RS30K/RS20K		
Throw ratio			0.987-1.38:1		0.925-1.28:1		1.01-1.39:1		
Projected image size			Projection distance (L)						
Diagonal (SD)		Height (SH)	Width (SW)	Min (LW)	Max (LT)	Min (LW)	Max (LT)	Min (LW)	Max (LT)
m	inches								
1.778	70	0.872	1.550	1.49	2.08	1.39	1.93	1.51	2.10
2.032	80	0.996	1.771	1.72	2.39	1.60	2.22	1.74	2.41
2.286	90	1.121	1.992	1.94	2.70	1.81	2.52	1.97	2.74
2.540	100	1.245	2.214	2.17	3.02	2.02	2.81	2.19	3.05
3.048	120	1.494	2.657	2.62	3.65	2.44	3.39	2.65	3.69
3.810	150	1.868	3.321	3.30	4.59	3.07	4.27	3.33	4.64
5.080	200	2.491	4.428	4.42	6.16	4.12	5.73	4.47	6.22
6.350	250	3.113	5.535	5.55	7.72	5.17	7.20	5.61	7.81
7.620	300	3.736	6.641	6.68	9.29	6.22	8.66	6.75	9.39
8.890	350	4.358	7.748	7.80	10.86	7.28	10.12	7.89	10.98
10.160	400	4.981	8.855	8.93	12.43	8.33	11.59	9.03	12.56
12.700	500	6.226	11.069	11.19	15.57	10.43	14.51	11.30	15.73
15.240	600	7.472	13.283	13.44	18.70	12.53	17.44	13.58	18.90
17.780	700	8.717	15.497	15.69	21.84	14.63	20.37	15.86	22.07
20.320	800	9.962	17.710	17.95	24.98	16.74	23.29	18.13	25.24
22.860	900	11.207	19.924	20.20	28.11	18.84	26.22	20.41	28.41
25.400	1000	12.453	22.138	22.45	31.25	20.94	29.14	22.69	31.58

- The throw ratio is based on the value during projection with the projected image size of 3.810 m [150 in].

Screen aspect ratio 16:9

Unit: feet

Projector model			PT-RQ32K/RQ22K		PT-RZ31K/RZ21K/RZ16K		PT-RS30K/RS20K		
Throw ratio			0.987-1.38:1		0.925-1.28:1		1.01-1.39:1		
Projected image size			Projection distance (L)						
Diagonal (SD)		Height (SH)	Width (SW)	Min (LW)	Max (LT)	Min (LW)	Max (LT)	Min (LW)	Max (LT)
m	inches								
1.778	70	2.860	5.084	4.90	6.82	4.55	6.33	4.96	6.89
2.032	80	3.268	5.811	5.64	7.84	5.24	7.29	5.70	7.93
2.286	90	3.677	6.537	6.38	8.87	5.93	8.25	6.45	8.97
2.540	100	4.086	7.263	7.12	9.90	6.62	9.21	7.20	10.01
3.048	120	4.903	8.716	8.60	11.96	8.00	11.13	8.69	12.09
3.810	150	6.128	10.895	10.82	15.05	10.07	14.01	10.93	15.21
5.080	200	8.171	14.526	14.51	20.19	13.52	18.81	14.67	20.41
6.350	250	10.214	18.158	18.21	25.34	16.97	23.61	18.40	25.61
7.620	300	12.257	21.789	21.91	30.49	20.42	28.41	22.14	30.81
8.890	350	14.299	25.421	25.61	35.63	23.87	33.21	25.87	36.01
10.160	400	16.342	29.053	29.30	40.78	27.32	38.01	29.61	41.21
12.700	500	20.428	36.316	36.70	51.07	34.22	47.62	37.08	51.61
15.240	600	24.513	43.579	44.09	61.36	41.12	57.22	44.55	62.01
17.780	700	28.599	50.842	51.49	71.65	48.01	66.82	52.02	72.41
20.320	800	32.684	58.105	58.88	81.94	54.91	76.42	59.49	82.81
22.860	900	36.770	65.368	66.27	92.24	61.81	86.02	66.96	93.21
25.400	1000	40.855	72.631	73.67	102.53	68.71	95.62	74.43	103.61

- The throw ratio is based on the value during projection with the projected image size of 3.810 m [150 in].

Zoom Lens

Screen aspect ratio 4:3

Unit: meters

Projector model			PT-RQ32K/RQ22K		PT-RZ31K/RZ21K/RZ16K		PT-RS30K/RS20K		
Throw ratio			1.20-1.66:1		1.12-1.54:1		1.01-1.39:1		
Projected image size			Projection distance (L)						
Diagonal (SD)		Height (SH)	Width (SW)	Min (LW)	Max (LT)	Min (LW)	Max (LT)	Min (LW)	Max (LT)
m	inches								
1.778	70	1.067	1.422	1.65	2.30	1.54	2.14	1.38	1.92
2.032	80	1.219	1.626	1.90	2.65	1.77	2.46	1.59	2.21
2.286	90	1.372	1.829	2.15	2.99	2.00	2.78	1.80	2.50
2.540	100	1.524	2.032	2.40	3.34	2.23	3.10	2.01	2.79
3.048	120	1.829	2.438	2.90	4.03	2.70	3.75	2.43	3.38
3.810	150	2.286	3.048	3.64	5.06	3.39	4.72	3.05	4.25
5.080	200	3.048	4.064	4.88	6.79	4.55	6.33	4.10	5.70
6.350	250	3.810	5.080	6.12	8.52	5.71	7.94	5.14	7.16
7.620	300	4.572	6.096	7.36	10.25	6.86	9.55	6.19	8.61
8.890	350	5.334	7.112	8.60	11.97	8.02	11.16	7.23	10.06
10.160	400	6.096	8.128	9.85	13.70	9.18	12.77	8.28	11.52
12.700	500	7.620	10.160	12.33	17.16	11.50	16.00	10.37	14.43
15.240	600	9.144	12.192	14.81	20.61	13.81	19.22	12.46	17.34
17.780	700	10.668	14.224	17.29	24.07	16.13	22.44	14.55	20.25
20.320	800	12.192	16.256	19.78	27.52	18.44	25.67	16.64	23.16
22.860	900	13.716	18.288	22.26	30.98	20.76	28.89	18.73	26.07
25.400	1000	15.240	20.320	24.74	34.43	23.07	32.11	20.82	28.98

- The throw ratio is based on the value during projection with the projected image size of 3.810 m [150 in].

Screen aspect ratio 4:3

Unit: feet

Projector model			PT-RQ32K/RQ22K		PT-RZ31K/RZ21K/RZ16K		PT-RS30K/RS20K		
Throw ratio			1.20-1.66:1		1.12-1.54:1		1.01-1.39:1		
Projected image size			Projection distance (L)						
Diagonal (SD)		Height (SH)	Width (SW)	Min (LW)	Max (LT)	Min (LW)	Max (LT)	Min (LW)	Max (LT)
m	inches								
1.778	70	3.500	4.667	5.43	7.55	5.04	7.01	4.53	6.29
2.032	80	4.000	5.333	6.24	8.68	5.80	8.07	5.21	7.25
2.286	90	4.500	6.000	7.06	9.81	6.56	9.13	5.90	8.20
2.540	100	5.000	6.667	7.87	10.95	7.32	10.19	6.58	9.16
3.048	120	6.000	8.000	9.50	13.21	8.84	12.30	7.96	11.07
3.810	150	7.500	10.000	11.94	16.61	11.12	15.47	10.01	13.93
5.080	200	10.000	13.333	16.01	22.28	14.92	20.76	13.44	18.70
6.350	250	12.500	16.667	20.09	27.95	18.72	26.05	16.87	23.48
7.620	300	15.000	20.000	24.16	33.62	22.52	31.34	20.30	28.25
8.890	350	17.500	23.333	28.23	39.29	26.32	36.62	23.73	33.02
10.160	400	20.000	26.667	32.30	44.95	30.12	41.91	27.16	37.79
12.700	500	25.000	33.333	40.45	56.29	37.71	52.49	34.01	47.34
15.240	600	30.000	40.000	48.59	67.63	45.31	63.06	40.87	56.89
17.780	700	35.000	46.667	56.74	78.96	52.91	73.64	47.73	66.43
20.320	800	40.000	53.333	64.88	90.30	60.51	84.21	54.59	75.98
22.860	900	45.000	60.000	73.02	101.63	68.10	94.79	61.44	85.52
25.400	1000	50.000	66.667	81.17	112.97	75.70	105.36	68.30	95.07

- The throw ratio is based on the value during projection with the projected image size of 3.810 m [150 in].

Calculation of the projection distance

To use a projected image size not listed in this manual, check the projected image size SD (m) and use the respective formula to calculate the value.

The unit of all the formulae is m. (Values obtained by the following calculation formulae contain a slight error.)
When calculating the value using image size designation (value in inches), multiply the value in inches by 0.0254 and substitute it into SD in the formula.

Screen aspect ratio 16:10

Unit: m

Projector model	Projection distance (L) formula	
	Min. (LW)	Max. (LT)
PT-RQ32K/RQ22K	$=0.8633 \times SD - 0.0835$	$=1.2016 \times SD - 0.1185$
PT-RZ31K/RZ21K/RZ16K	$=0.8054 \times SD - 0.0835$	$=1.1209 \times SD - 0.1185$

Screen aspect ratio 16:9

Unit: m

Projector model	Projection distance (L) formula	
	Min. (LW)	Max. (LT)
PT-RQ32K/RQ22K	$=0.8873 \times SD - 0.0835$	$=1.2350 \times SD - 0.1185$
PT-RZ31K/RZ21K/RZ16K	$=0.8278 \times SD - 0.0835$	$=1.1521 \times SD - 0.1185$
PT-RS30K/RS20K	$=0.8965 \times SD - 0.0835$	$=1.2480 \times SD - 0.1185$

Screen aspect ratio 4:3

Unit: m

Projector model	Projection distance (L) formula	
	Min. (LW)	Max. (LT)
PT-RQ32K/RQ22K	$=0.9773 \times SD - 0.0835$	$=1.3603 \times SD - 0.1185$
PT-RZ31K/RZ21K/RZ16K	$=0.9117 \times SD - 0.0835$	$=1.2690 \times SD - 0.1185$
PT-RS30K/RS20K	$=0.8229 \times SD - 0.0835$	$=1.1455 \times SD - 0.1185$

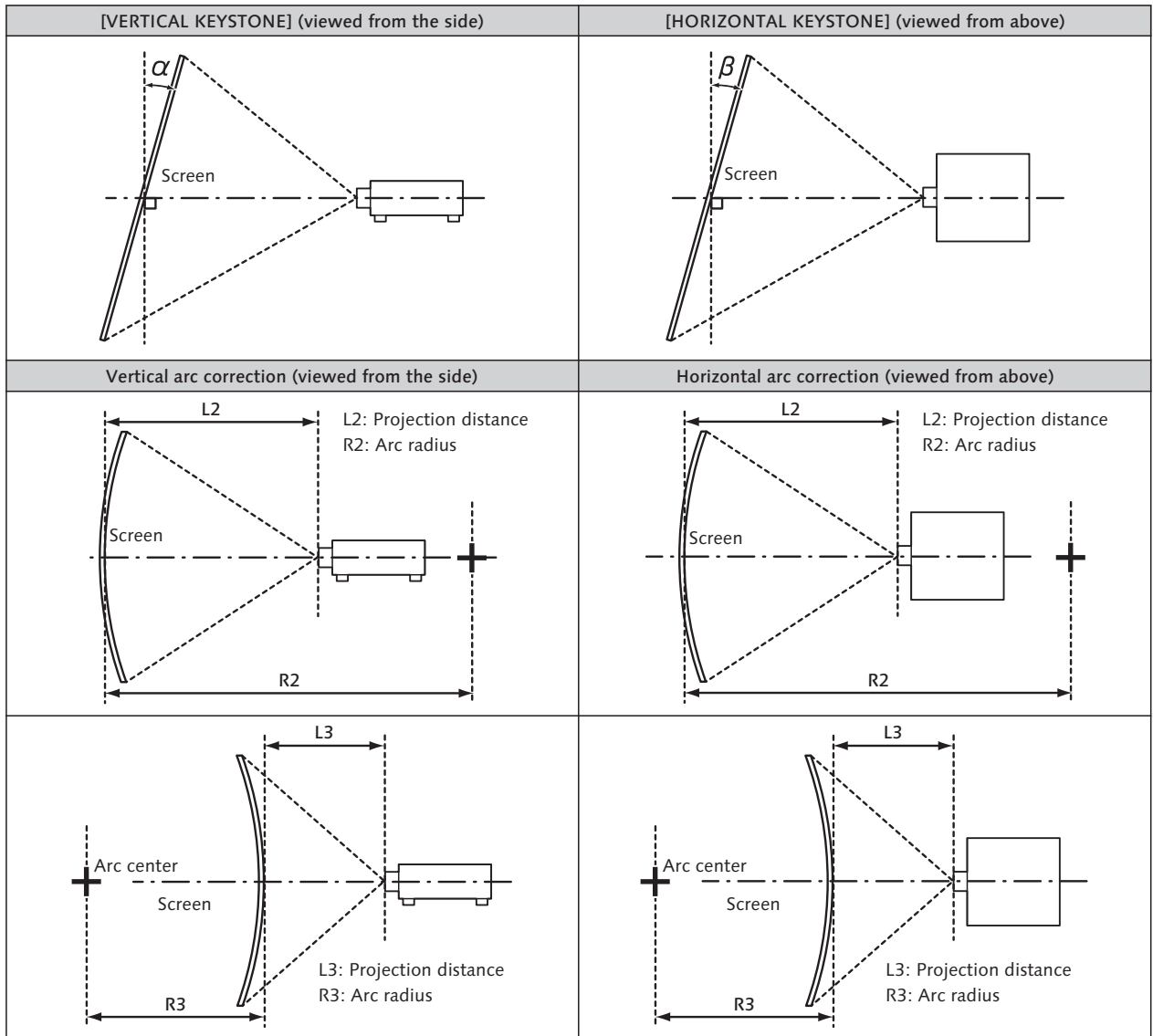
Adjustment range by the lens position shift (optical shift)

Based on the standard projection position using the optical axis shift function, the projection position can be adjusted in the range shown in the following figure.

Following figure shows the adjustment range when the projector is installed on the floor.

Projector model	PT-RQ32K/RQ22K is mounted.	PT-RZ31K/PT-RZ21K/PT-RZ16K is mounted.
Lens shift range	<p>Projected image width H</p> <p>0.19H</p> <p>0.19H</p> <p>0.24V</p> <p>0.24V</p> <p>0.56V</p> <p>0.56V</p> <p>Projected image height V</p> <p>Standard projection position</p> <p>Optical axis center</p>	<p>Projected image width H</p> <p>0.15H</p> <p>0.15H</p> <p>0.12V</p> <p>0.12V</p> <p>0.44V</p> <p>0.44V</p> <p>Projected image height V</p> <p>Standard projection position</p> <p>Optical axis center</p>
Lens shift range	<p>Projected image width H</p> <p>0.2H</p> <p>0.2H</p> <p>0.12V</p> <p>0.12V</p> <p>0.4V</p> <p>0.4V</p> <p>Projected image height V</p> <p>Standard projection position</p> <p>Optical axis center</p>	

[GEOMETRY] projection range



Projector model	Only [KEYSTONE] used ¹		[KEYSTONE] and [CURVED CORRECTION] used together				Only [CURVED CORRECTION] used	
	Vertical keystone correction angle α (°)	Horizontal keystone correction angle β (°)	Vertical keystone correction angle α (°)	Horizontal keystone correction angle β (°)	Min. value of R2/L2	Min. value of R3/L3	Min. value of R2/L2	Min. value of R3/L3
PT-RQ32K/RQ22K	±28	±15	±10	±10	1.6	3.9	0.9	2.3
PT-RZ31K/RZ21K/RZ16K	±28	±15	±10	±10	1.6	3.9	0.9	2.3
PT-RS30K/RS20K	±28	±15	±10	±10	1.6	3.9	0.9	2.3

When using the optional upgrade kit (ET-UK20)

Projector model	Only [KEYSTONE] used ¹		[KEYSTONE] and [CURVED CORRECTION] used together				Only [CURVED CORRECTION] used	
	Vertical keystone correction angle α (°)	Horizontal keystone correction angle β (°)	Vertical keystone correction angle α (°)	Horizontal keystone correction angle β (°)	Min. value of R2/L2	Min. value of R3/L3	Min. value of R2/L2	Min. value of R3/L3
PT-RQ32K/RQ22K	±28	±15	±10	±10	1.2	3.0	0.7	1.7
PT-RZ31K/RZ21K/RZ16K	±28	±15	±10	±10	1.2	3.0	0.7	1.7
PT-RS30K/RS20K	±28	±15	±10	±10	1.2	3.0	0.7	1.7

¹ When [VERTICAL KEYSTONE] and [HORIZONTAL KEYSTONE] are used simultaneously, correction cannot exceed a total of 30° for the PT-RQ32K.

Note

- When [GEOMETRY] is used, the focus of the entire screen may be lost as correction increases.
- Make the curved screen a circular arc shape with one part of a perfect circle removed.
- Adjustment range of the [GEOMETRY] items may not match the listed projection range depending on the projection lens. Use this projector within the projection range, otherwise the correction may not work.