

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)	16.4 mm - 19.6 mm [41/64 - 49/64 in]	
Throw ratio	0.825 - 1.00:1 PT-RQ32K/RQ22K (16:10 aspect ratio)	
	0.770 - 0.933:1 PT-RQ35K/RZ34K/RZ31K/RZ21K/RZ16K (16:10 aspect ratio)	
	0.924 - 1.12:1 PT-RQ25K/RZ24K/RQ18K/RZ17K/RZ14K (16:10 aspect ratio)	
	0.834 - 1.01:1 PT-RS30K/RS20K (16:9 aspect ratio) (4:3 aspect ratio)	
Dimensions	Width	183 mm [7 13/64 in]
	Height	170 mm [6 11/16 in]
	Depth	411 mm [16 3/16 in]
Weight	8.0 kg (17.63 lbs)	
Applicable projector	PT-RQ35K/RZ34K/RQ25K/RZ24K/RQ18K/RZ17K/RZ16K/RZ14K	
	PT-RQ32K/RZ31K/RS30K/RQ22K/RZ21K/RS20K	

### Dimensions

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

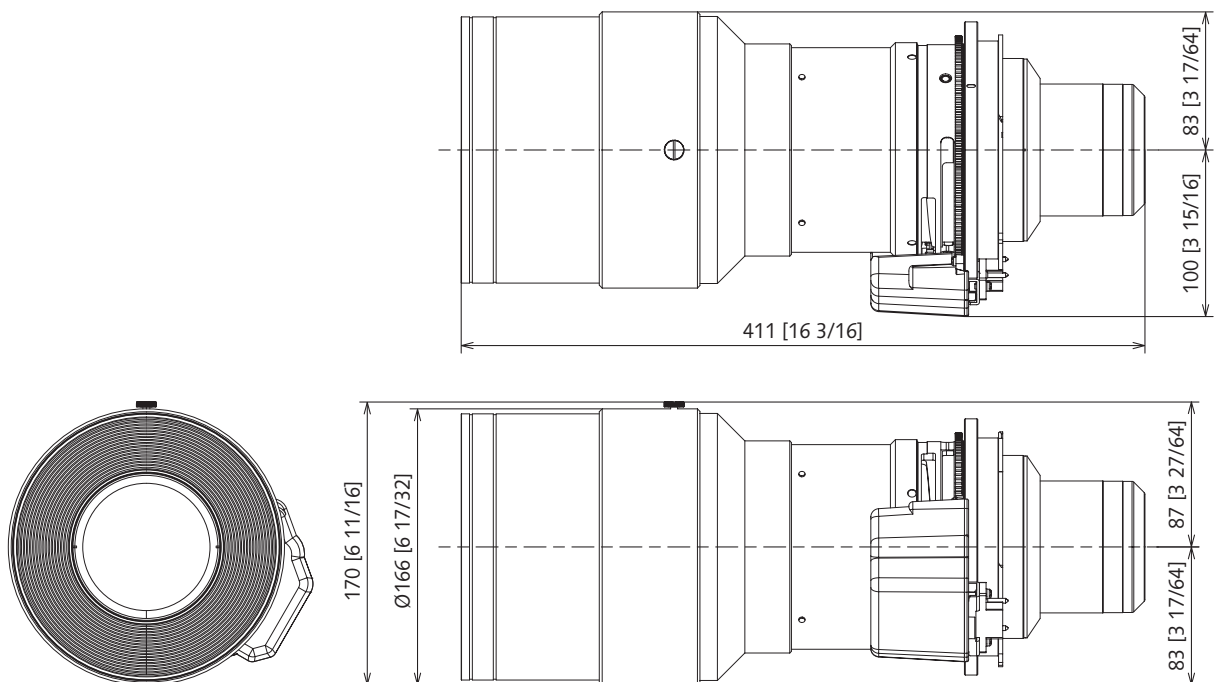


Figure attached to the [PT-RQ35K/PT-RZ34K] projector

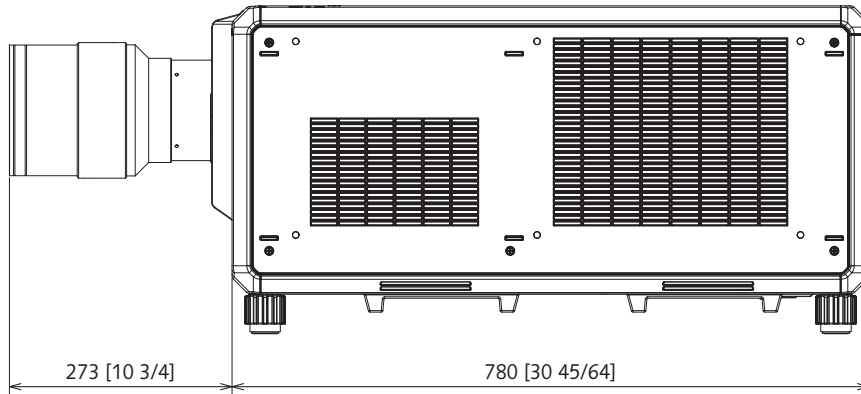


Figure attached to the [PT-RQ32K/PT-RZ31K/PT-RS30K] projector

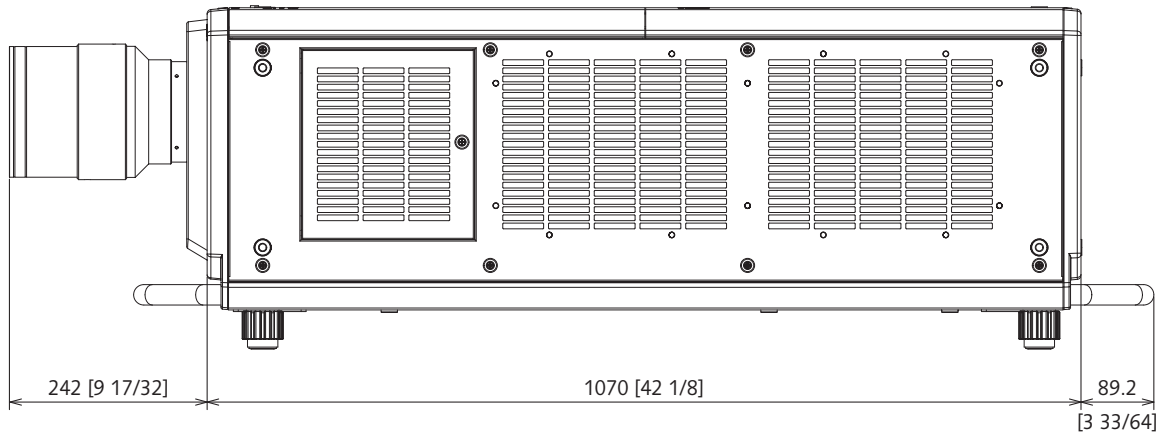
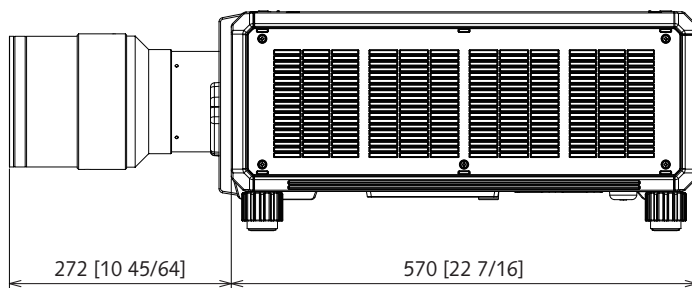
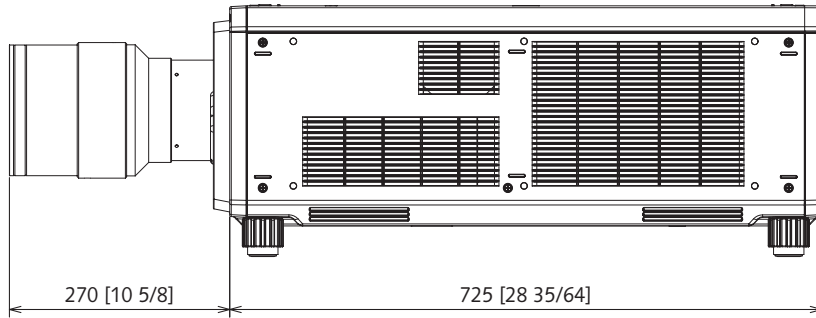


Figure attached to the [PT-RQ25K/PT-RQ18K/PT-RZ24K/PT-RZ17K/PT-RZ14K] projector



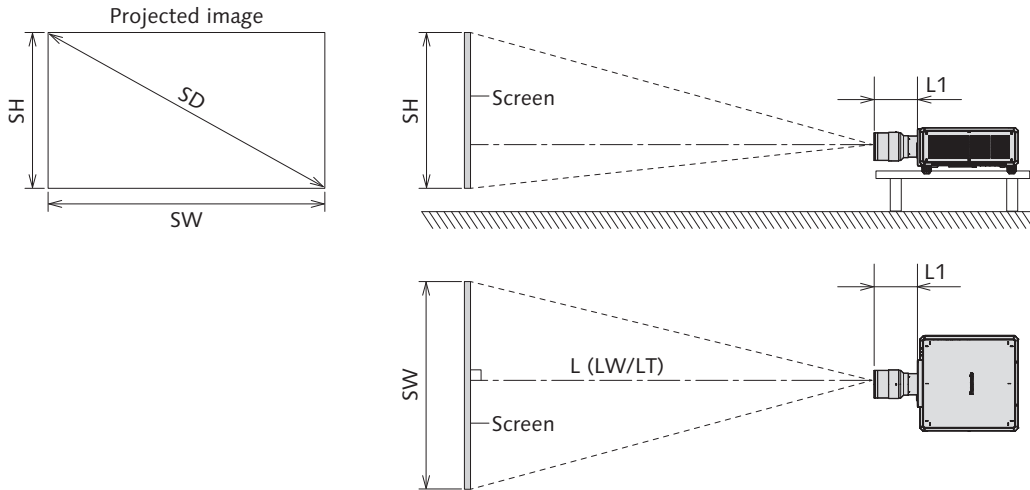
Zoom Lens

Figure attached to the [PT-RQ22K/PT-RZ21K/PT-RS20K/PT-RZ16K] 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.

L		Projection distance
	LW	Minimum distance
	LT	Maximum distance
L1		Lens protrusion dimension
SH		Projected image height
SW		Projected image width
SD		Projected image size

Unit : m

Projector model	Dimension for L1 (approximate value)
PT-RQ35K/PT-RZ34K	0.273
PT-RQ32K/PT-RZ31K/PT-RS30K	0.242
PT-RQ25K/PT-RQ18K/PT-RZ24K/PT-RZ17K PT-RZ14K	0.272
PT-RQ22K/PT-RZ21K/PT-RS20K/PT-RZ16K	0.270

## Projected image size and Projection distance

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

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

Screen aspect ratio 16:10

Unit: meters

Projector model				PT-RQ32K PT-RQ22K		PT-RQ35K/PT-RZ34K PT-RZ31K/PT-RZ21K/PT-RZ16K		PT-RQ25K/PT-RZ24K PT-RQ18K/PT-RZ17K/PT-RZ14K	
Throw ratio				0.825 - 1.00:1		0.770 - 0.933:1		0.924 - 1.12:1	
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								
1.78	70	0.942	1.508	1.23	1.50	1.15	1.40	1.38	1.68
2.03	80	1.077	1.723	1.41	1.71	1.31	1.60	1.58	1.92
2.29	90	1.212	1.939	1.59	1.93	1.48	1.80	1.79	2.17
2.54	100	1.346	2.154	1.77	2.15	1.65	2.00	1.98	2.41
3.05	120	1.615	2.585	2.13	2.58	1.98	2.41	2.39	2.90
3.81	150	2.019	3.231	2.66	3.23	2.49	3.02	2.99	3.63
5.08	200	2.692	4.308	3.56	4.32	3.32	4.03	4.00	4.85
6.35	250	3.365	5.385	4.46	5.41	4.16	5.04	5.00	6.06
7.62	300	4.039	6.462	5.36	6.49	5.00	6.05	6.01	7.28
8.89	350	4.712	7.539	6.25	7.58	5.83	7.07	7.01	8.50
10.16	400	5.385	8.616	7.15	8.66	6.67	8.08	8.02	9.72
12.70	500	6.731	10.77	8.95	10.84	8.35	10.11	10.03	12.15
15.24	600	8.077	12.923	10.74	13.01	10.02	12.13	12.04	14.58
17.78	700	9.423	15.077	12.54	15.18	11.70	14.16	14.05	17.02
20.32	800	10.770	17.231	14.33	17.35	13.37	16.18	16.06	19.45
22.86	900	12.116	19.385	16.13	19.52	15.05	18.21	18.08	21.89
25.40	1000	13.462	21.539	17.92	21.69	16.72	20.24	20.09	24.32

- The throw ratio is based on the value during projection with the projected image size of 3.81 m [150 in].

Screen aspect ratio 16:10

Unit: feet

Projector model				PT-RQ32K PT-RQ22K		PT-RQ35K/PT-RZ34K PT-RZ31K/PT-RZ21K/PT-RZ16K		PT-RQ25K/PT-RZ24K PT-RQ18K/PT-RZ17K/PT-RZ14K	
Throw ratio				0.825 - 1.00:1		0.770 - 0.933:1		0.924 - 1.12:1	
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								
1.78	70	3.09	4.95	4.04	4.92	3.77	4.59	4.53	5.51
2.03	80	3.53	5.65	4.63	5.61	4.30	5.25	5.18	6.30
2.29	90	3.98	6.36	5.22	6.33	4.86	5.91	5.87	7.12
2.54	100	4.42	7.07	5.81	7.05	5.41	6.56	6.50	7.91
3.05	120	5.30	8.48	6.99	8.46	6.50	7.91	7.84	9.51
3.81	150	6.62	10.60	8.73	10.60	8.17	9.91	9.81	11.91
5.08	200	8.83	14.13	11.68	14.17	10.89	13.22	13.12	15.91
6.35	250	11.04	17.67	14.63	17.75	13.65	16.54	16.40	19.88
7.62	300	13.25	21.20	17.59	21.29	16.40	19.85	19.72	23.88
8.89	350	15.46	24.73	20.51	24.87	19.13	23.20	23.00	27.89
10.16	400	17.67	28.27	23.46	28.41	21.88	26.51	26.31	31.89
12.70	500	22.08	35.33	29.36	35.56	27.39	33.17	32.91	39.86
15.24	600	26.50	42.40	35.24	42.68	32.87	39.80	39.50	47.83
17.78	700	30.91	49.46	41.14	49.80	38.39	46.46	46.10	55.84
20.32	800	35.33	56.53	47.01	56.92	43.86	53.08	52.69	63.81
22.86	900	39.75	63.60	52.92	64.04	49.38	59.74	59.32	71.82
25.40	1000	44.17	70.67	58.79	71.16	54.85	66.40	65.91	79.79

- The throw ratio is based on the value during projection with the projected image size of 3.81 m [150 in].

Screen aspect ratio 16:9

Unit: meters

Projector model			PT-RQ32K PT-RQ22K		PT-RQ35K/PT-RZ34K PT-RZ31K/PT-RZ21K PT-RZ16K		PT-RQ25K/PT-RZ24K PT-RQ18K/PT-RZ17K PT-RZ14K		PT-RS30K PT-RS20K		
Throw ratio			0.825 - 1.00:1		0.770 - 0.933:1		0.924 - 1.12:1		0.834 - 1.01:1		
Projected image size			Projection distance (L)								
Diagonal (SD)		Height (SH)	Width (SW)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)
m	inches										
1.78	70	0.872	1.550	1.27	1.54	1.18	1.44	1.42	1.73	1.28	1.56
2.03	80	0.996	1.771	1.45	1.76	1.35	1.64	1.63	1.98	1.46	1.78
2.29	90	1.121	1.992	1.64	1.99	1.52	1.85	1.84	2.23	1.65	2.01
2.54	100	1.245	2.214	1.82	2.21	1.69	2.06	2.04	2.48	1.84	2.23
3.05	120	1.494	2.657	2.19	2.66	2.04	2.48	2.46	2.98	2.21	2.69
3.81	150	1.868	3.321	2.74	3.33	2.55	3.10	3.07	3.73	2.77	3.36
5.08	200	2.491	4.428	3.66	4.44	3.42	4.14	4.11	4.98	3.70	4.49
6.35	250	3.113	5.535	4.58	5.56	4.28	5.18	5.14	6.23	4.63	5.62
7.62	300	3.736	6.641	5.51	6.67	5.14	6.22	6.17	7.48	5.56	6.74
8.89	350	4.358	7.748	6.43	7.79	6.00	7.26	7.21	8.74	6.50	7.87
10.16	400	4.981	8.855	7.35	8.91	6.86	8.31	8.24	9.99	7.43	9.00
12.70	500	6.226	11.069	9.20	11.14	8.58	10.39	10.31	12.49	9.29	11.25
15.24	600	7.472	13.283	11.04	13.37	10.30	12.47	12.38	14.99	11.16	13.51
17.78	700	8.717	15.497	12.89	15.60	12.02	14.55	14.44	17.49	13.02	15.77
20.32	800	9.962	17.710	14.73	17.83	13.74	16.63	16.51	20.00	14.88	18.02
22.86	900	11.207	19.924	16.58	20.07	15.47	18.72	18.58	22.50	16.75	20.28
25.40	1000	12.453	22.138	18.42	22.30	17.19	20.80	20.65	25.00	18.61	22.53

• The throw ratio is based on the value during projection with the projected image size of 3.81 m [150 in].

Screen aspect ratio 16:9

Unit: feet

Projector model			PT-RQ32K PT-RQ22K		PT-RQ35K/PT-RZ34K PT-RZ31K/PT-RZ21K PT-RZ16K		PT-RQ25K/PT-RZ24K PT-RQ18K/PT-RZ17K PT-RZ14K		PT-RS30K PT-RS20K		
Throw ratio			0.825 - 1.00:1		0.770 - 0.933:1		0.924 - 1.12:1		0.834 - 1.01:1		
Projected image size			Projection distance (L)								
Diagonal (SD)		Height (SH)	Width (SW)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)
m	inches										
1.78	70	2.86	5.09	4.17	5.05	3.87	4.72	4.66	5.68	4.20	5.12
2.03	80	3.27	5.81	4.76	5.77	4.43	5.38	5.35	6.50	4.79	5.84
2.29	90	3.68	6.54	5.38	6.53	4.99	6.07	6.04	7.32	5.41	6.59
2.54	100	4.08	7.26	5.97	7.25	5.54	6.76	6.69	8.14	6.04	7.32
3.05	120	4.90	8.72	7.18	8.73	6.69	8.14	8.07	9.78	7.25	8.83
3.81	150	6.13	10.90	8.99	10.93	8.37	10.17	10.07	12.24	9.09	11.02
5.08	200	8.17	14.53	12.01	14.57	11.22	13.58	13.48	16.34	12.14	14.73
6.35	250	10.21	18.16	15.03	18.24	14.04	16.99	16.86	20.44	15.19	18.44
7.62	300	12.26	21.79	18.08	21.88	16.86	20.41	20.24	24.54	18.24	22.11
8.89	350	14.30	25.42	21.10	25.56	19.68	23.82	23.65	28.67	21.33	25.82
10.16	400	16.34	29.05	24.11	29.23	22.51	27.26	27.03	32.78	24.38	29.53
12.70	500	20.43	36.32	30.18	36.55	28.15	34.09	33.83	40.98	30.48	36.91
15.24	600	24.51	43.58	36.22	43.86	33.79	40.91	40.62	49.18	36.61	44.32
17.78	700	28.60	50.84	42.29	51.18	39.44	47.74	47.37	57.38	42.72	51.74
20.32	800	32.68	58.10	48.33	58.50	45.08	54.56	54.17	65.62	48.82	59.12
22.86	900	36.77	65.37	54.40	65.85	50.75	61.42	60.96	73.82	54.95	66.53
25.40	1000	40.86	72.63	60.43	73.16	56.40	68.24	67.75	82.02	61.06	73.92

• The throw ratio is based on the value during projection with the projected image size of 3.81 m [150 in].

Zoom Lens

Screen aspect ratio 4:3

Unit: meters

Projector model		PT-RQ32K PT-RQ22K		PT-RQ35K/PT-RZ34K PT-RZ31K/PT-RZ21K PT-RZ16K		PT-RQ25K/PT-RZ24K PT-RQ18K/PT-RZ17K PT-RZ14K		PT-RS30K PT-RS20K			
Throw ratio		0.992- 1.20:1		0.925- 1.12:1		1.11- 1.35:1		0.834- 1.01:1			
Projected image size				Projection distance (L)							
Diagonal (SD)		Height (SH)	Width (SW)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)
m	inches										
1.78	70	1.067	1.422	1.40	1.70	1.30	1.58	1.57	1.91	1.17	1.43
2.03	80	1.219	1.626	1.60	1.94	1.49	1.81	1.79	2.18	1.34	1.63
2.29	90	1.372	1.829	1.80	2.19	1.68	2.04	2.03	2.46	1.52	1.84
2.54	100	1.524	2.032	2.00	2.44	1.87	2.27	2.25	2.73	1.68	2.05
3.05	120	1.829	2.438	2.41	2.93	2.25	2.73	2.71	3.29	2.03	2.46
3.81	150	2.286	3.048	3.02	3.66	2.82	3.42	3.39	4.11	2.54	3.08
5.08	200	3.048	4.064	4.04	4.89	3.77	4.56	4.53	5.49	3.39	4.12
6.35	250	3.810	5.080	5.05	6.12	4.71	5.71	5.67	6.87	4.25	5.15
7.62	300	4.572	6.096	6.07	7.35	5.66	6.86	6.80	8.25	5.10	6.19
8.89	350	5.334	7.112	7.08	8.58	6.61	8.00	7.94	9.62	5.96	7.22
10.16	400	6.096	8.128	8.10	9.81	7.56	9.15	9.08	11.00	6.82	8.26
12.70	500	7.620	10.160	10.13	12.27	9.45	11.44	11.36	13.76	8.53	10.33
15.24	600	9.144	12.192	12.16	14.73	11.35	13.74	13.64	16.51	10.24	12.40
17.78	700	10.668	14.224	14.20	17.19	13.25	16.03	15.91	19.27	11.95	14.47
20.32	800	12.192	16.256	16.23	19.64	15.14	18.32	18.19	22.03	13.66	16.54
22.86	900	13.716	18.288	18.26	22.10	17.04	20.62	20.47	24.78	15.37	18.61
25.40	1000	15.240	20.320	20.29	24.56	18.93	22.91	22.74	27.54	17.08	20.68

• The throw ratio is based on the value during projection with the projected image size of 3.81 m [150 in].

Screen aspect ratio 4:3

Unit: feet

Projector model		PT-RQ32K PT-RQ22K		PT-RQ35K/PT-RZ34K PT-RZ31K/PT-RZ21K PT-RZ16K		PT-RQ25K/PT-RZ24K PT-RQ18K/PT-RZ17K PT-RZ14K		PT-RS30K PT-RS20K			
Throw ratio		0.992- 1.20:1		0.925- 1.12:1		1.11- 1.35:1		0.834- 1.01:1			
Projected image size				Projection distance (L)							
Diagonal (SD)		Height (SH)	Width (SW)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)
m	inches										
1.78	70	3.50	4.67	4.59	5.58	4.27	5.18	5.15	6.27	3.84	4.69
2.03	80	4.00	5.33	5.25	6.36	4.89	5.94	5.87	7.15	4.40	5.35
2.29	90	4.50	6.00	5.91	7.18	5.51	6.69	6.66	8.07	4.99	6.04
2.54	100	5.00	6.67	6.56	8.01	6.14	7.45	7.38	8.96	5.51	6.73
3.05	120	6.00	8.00	7.91	9.61	7.38	8.96	8.89	10.79	6.66	8.07
3.81	150	7.50	10.00	9.91	12.01	9.25	11.22	11.12	13.48	8.33	10.10
5.08	200	10.00	13.33	13.25	16.04	12.37	14.96	14.86	18.01	11.12	13.52
6.35	250	12.50	16.67	16.57	20.08	15.45	18.73	18.60	22.54	13.94	16.90
7.62	300	15.00	20.00	19.91	24.11	18.57	22.51	22.31	27.07	16.73	20.31
8.89	350	17.50	23.33	23.23	28.15	21.69	26.25	26.05	31.56	19.55	23.69
10.16	400	20.00	26.67	26.57	32.18	24.80	30.02	29.79	36.09	22.38	27.10
12.70	500	25.00	33.33	33.23	40.26	31.00	37.53	37.27	45.14	27.99	33.89
15.24	600	30.00	40.00	39.89	48.33	37.24	45.08	44.75	54.17	33.60	40.68
17.78	700	35.00	46.67	46.59	56.40	43.47	52.59	52.20	63.22	39.21	47.47
20.32	800	40.00	53.33	53.25	64.43	49.67	60.10	59.68	72.28	44.82	54.26
22.86	900	45.00	60.00	59.91	72.51	55.90	67.65	67.16	81.30	50.43	61.06
25.40	1000	50.00	66.67	66.57	80.58	62.11	75.16	74.61	90.35	56.04	67.85

• The throw ratio is based on the value during projection with the projected image size of 3.81 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/PT-RQ22K	$=0.7066 \times SD - 0.0272$	$=0.8550 \times SD - 0.0231$
PT-RQ35K/PT-RZ34K/PT-RZ31K PT-RZ21K/PT-RZ16K	$=0.6594 \times SD - 0.0272$	$=0.7976 \times SD - 0.0231$
PT-RQ25K/PT-RZ24K/PT-RQ18K PT-RZ17K/PT-RZ14K	$=0.7919 \times SD - 0.0272$	$=0.9585 \times SD - 0.0231$

#### Screen aspect ratio 16:9

Unit: m

Projector model	Projection distance (L) formula	
	Min. (LW)	Max. (LT)
PT-RQ32K/PT-RQ22K	$=0.7263 \times SD - 0.0272$	$=0.8788 \times SD - 0.0231$
PT-RQ35K/PT-RZ34K/PT-RZ31K PT-RZ21K/PT-RZ16K	$=0.6777 \times SD - 0.0272$	$=0.8197 \times SD - 0.0231$
PT-RQ25K/PT-RZ24K/PT-RQ18K PT-RZ17K/PT-RZ14K	$=0.8139 \times SD - 0.0272$	$=0.9852 \times SD - 0.0231$
PT-RS30K/PT-RS20K	$=0.7338 \times SD - 0.0272$	$=0.8880 \times SD - 0.0231$

#### Screen aspect ratio 4:3

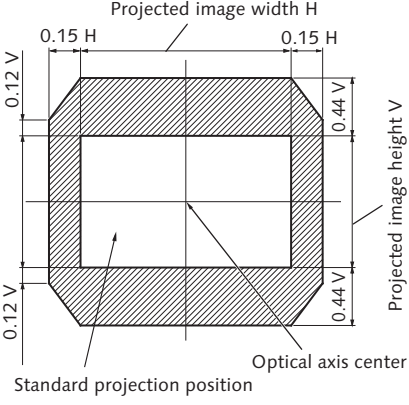
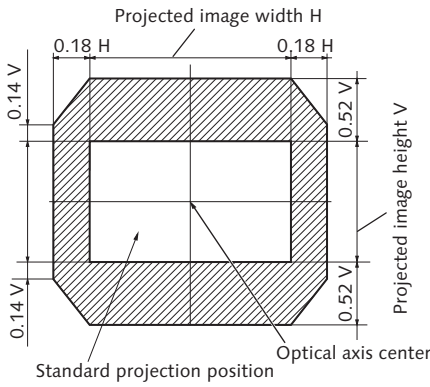
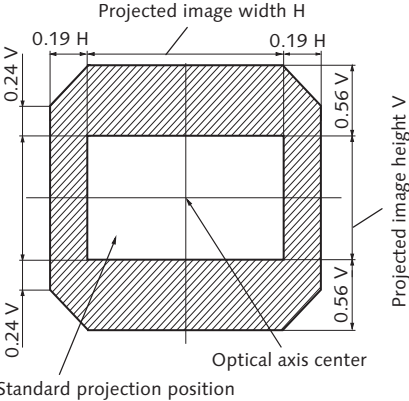
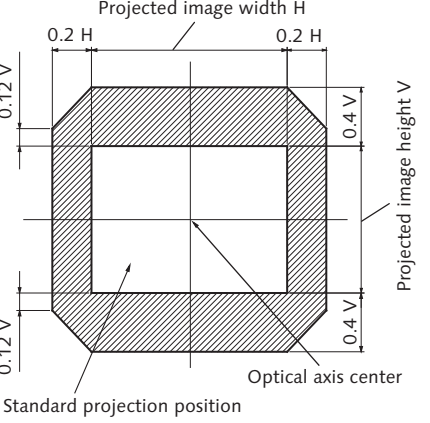
Unit: m

Projector model	Projection distance (L) formula	
	Min. (LW)	Max. (LT)
PT-RQ32K/PT-RQ22K	$=0.8000 \times SD - 0.0272$	$=0.9679 \times SD - 0.0231$
PT-RQ35K/PT-RZ34K/PT-RZ31K PT-RZ21K/PT-RZ16K	$=0.7465 \times SD - 0.0272$	$=0.9029 \times SD - 0.0231$
PT-RQ25K/PT-RZ24K/PT-RQ18K PT-RZ17K/PT-RZ14K	$=0.8965 \times SD - 0.0272$	$=1.0851 \times SD - 0.0231$
PT-RS30K/PT-RS20K	$=0.6735 \times SD - 0.0272$	$=0.8151 \times SD - 0.0231$

## 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.

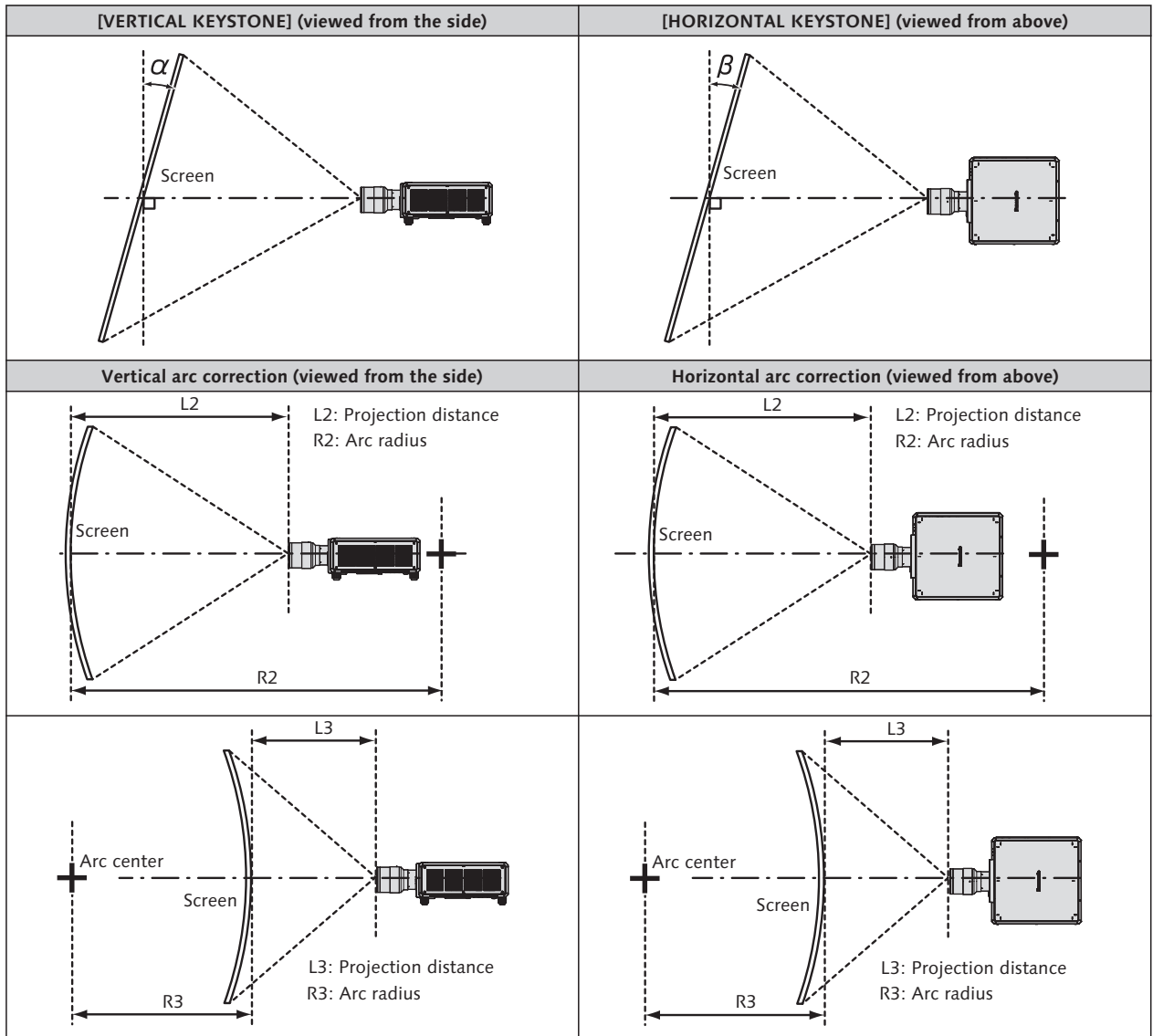
Following figure shows the adjustment range when the projector is installed on the floor.

Projector model	PT-RQ35K/PT-RZ34K/PT-RZ31K/PT-RZ21K PT-RZ16K is mounted.	PT-RQ25K/PT-RQ18K/PT-RZ24K/PT-RZ17K PT-RZ14K is mounted.
Lens shift range		
Lens shift range		

- The home position of the projector is a point of origin position for the lens shift (i.e., vertical and horizontal positions of the lens) based on the results of lens calibration. It is not the optical center position of the screen.



[SCREEN ADJUSTMENT] projection range



Projector model	Only [KEYSTONE] used <sup>1</sup>		[KEYSTONE] and [CURVED CORRECTION] used together <sup>1</sup>				Only [CURVED CORRECTION] used	
	Vertical keystone correction angle $\alpha$ (°)	Horizontal keystone correction angle $\beta$ (°)	Vertical keystone correction angle $\alpha$ (°)	Horizontal keystone correction angle $\beta$ (°)	Min. value of R2/L2	Min. value of R3/L3	Min. value of R2/L2	Min. value of R3/L3
PT-RQ32K PT-RQ22K	±15	±5	-	-	-	-	-	-
PT-RQ35K PT-RZ34K PT-RZ31K PT-RZ21K PT-RZ16K	±15	±5	-	-	-	-	-	-
PT-RQ25K PT-RZ24K PT-RQ18K PT-RZ17K PT-RZ14K	±28	±15	±10	±10	1.2	3.0	0.7	1.7
PT-RS30K PT-RS20K	±15	±5	-	-	-	-	-	-

## When using the optional upgrade kit (ET-UK20)

Projector model	Only [KEYSTONE] used <sup>1</sup>		[KEYSTONE] and [CURVED CORRECTION] used together <sup>1</sup>				Only [CURVED CORRECTION] used	
	Vertical keystone correction angle $\alpha$ (°)	Horizontal keystone correction angle $\beta$ (°)	Vertical keystone correction angle $\alpha$ (°)	Horizontal keystone correction angle $\beta$ (°)	Min. value of R2/L2	Min. value of R3/L3	Min. value of R2/L2	Min. value of R3/L3
PT-RQ32K PT-RQ22K	±15	±5	-	-	-	-	-	-
PT-RS30K PT-RS20K	±15	±5	-	-	-	-	-	-

<sup>1</sup> When [VERTICAL KEYSTONE] and [HORIZONTAL KEYSTONE] are used simultaneously, correction cannot be made exceeding total of 30°.