LCD Projector

PT-MZ682L

Specifications

Main unit

Power supply			AC 100V-240V, 50Hz/60Hz
Power consumption[1]	Maximum power consumption		360 W (4.1A-1.6A) (385VA) (The power consumption is 345 W at 200-240V)
	On-mode power consumption (Light power)	[Normal]	325 W (100-240V), 310 W (200-240V) * Operating Temperature: 25 °C (77 °F), Altitude: 700 m (2,297 ft)
		[Eco]	240 W (100-240V), 230 W (200-240V)
		[QUIET]	235 W (100-240V), 225 W (200-240V)
	Standby mode power consumption	[Normal]	15 W When [IN STANDBY MODE] in [AUDIO SETTING] is set to [OFF], [QUICK STARTUP] is set to [OFF], and <DC OUT> terminal is not in use.
		[Eco]	0.5 W
BTU value			Max 1,229 BTU
LCD panel	Size		19.3 mm [0.76 in] diagonal (16:10 aspect ratio)
	Display system		Transparent LCD panel (x 3, R/G/B)
	Number of pixels		2,304,000 (1920 x 1200)
Refresh rate			24-60 Hz Refresh rate varies depending on scanning frequency.
Light source			Laser Diode
Light output[1, 7]	Light Power	[Normal]	6,500 lm
		[Eco]	6,500 lm * When [Picture Mode] is set to [Dynamic]
		[QUIET]	4,500 lm
Time until light output declines to 50%[2]	Light Power	[Normal]	20,000 hours
		[Eco]	24,000 hours
		[QUIET]	20,000 hours
Resolution			1920 x 1200 pixels
Contrast ratio[1]			3,000,000:1 (all white/all black) ([Picture Mode]: [Dynamic], [Dynamic Contrast]: [1/2], [Input signal]: [HDMI™])
Screen size			1.02-10.16 m [40-400 in], 16:10 aspect ratio 1.52-10.16 m [60-400 in] (with ET-ELW22), 2.54-10.16m [100-400 in] (with ET-ELU20)
Center to corner zone ratio[1]			85%
Lens			Optional powered zoom (excluding ET-ELW21) / powered focus lenses
Lens shift (from the origin point of the lens mounter)			Vertical ±67%, Horizontal ±35% Vertical ±60%, Horizontal ±30% (with ET-ELW22) Vertical ±50%, Horizontal ±24% (with ET-ELU20) NOTE: Lens shift function cannot be operated when used with the ET-ELW21.
Installation			Ceiling/floor, front/rear, free 360-degree installation
Compatible Signal	HDMI™ signal input		Moving image signal resolution: 480/60p, 576/50p to 4096 x 2160/60p Still image signal resolution: 640 x 480 to 1920 x 1200 (non-interlace) Dot clock frequency: 25 MHz to 594 MHz
	DIGITAL LINK signal input		Moving image signal resolution: 480/60p, 576/50p to 4096 x 2160/60p Still image signal resolution: 640 x 480 to 1920 x 1200 (non-interlace) Dot clock frequency: 25 MHz to 297 MHz
	RGB signal input		Resolution: 640 x 480 to 1920 x 1200 Dot clock frequency: 162 MHz or less PIAS (Panasonic Intelligent Auto Scanning) system
	YC_BC_R/YP_BP_R signal input		Resolution: 480/60p, 576/50p to 1920 x 1080 Dot clock frequency: 148.5 MHz or less The HD/SYNC and VD terminals do not support 3 value SYNC.
Terminals	HDMI™ IN		HDMI™-19pin x 3 Deep Color, compatible with HDCP2.3, 4K/60p[3] signal input, CEC supported
	DIGITAL LINK/LAN		RJ-45 x 1 for network and DIGITAL LINK connection (video/network/serial control) (HDBaseT™ compliant), 100 Base-TX (Compatible with PJLink™ [Class 2], Art-Net, Deep Color compatible, HDCP2.3 compatible, 4K/60p[3] signal input)
	LAN		RJ-45 x 1 for network connection, 10Base-T, 100Base-TX (Compatible with PJLink™ [Class 2], Art-Net)
	COMPUTER IN		D-sub 15pin (female) x 1 RGB/YP_BP_R
	MONITOR OUT		D-sub 15pin (female) x 1 RGB/YP_BP_R

Terminals	AUDIO IN		M3 stereo mini-jack x 1 0.5 V [rms], input Impedance 22 k ohms and more
	AUDIO OUT		M3 stereo mini-jack x 1 0 V [rms] to 2.0 V [rms] variable, output Impedance 2.2 k ohms and less
	SERIAL/MULTI SYNC IN		D-sub 9-pin (female) x 1 for external/link control (RS-232C compliant)
	MULTI SYNC OUT		D-sub 9-pin (male) x 1 for link control
	REMOTE 1 IN		M3 stereo mini-jack for link control (for wired remote control)
	REMOTE 2 IN		D-sub 9-pin (female) x 1 for external control (parallel)
	DC OUT		USB type-A x 1 Output (5V/2A)
Power cord length			2.0 m [6 ft 7 in] (3.0 m [9 ft 10 in] for India)
Cabinet materials			Molded plastic
Dimensions		Width	561 mm [22 3/32 in]
		Height	224 mm [8 13/16 in] (with the feet at shortest position)
		Depth	437 mm [17 7/32 in] (excluding protrusions)
Weight[4]			Approx. 16.8 kg (37.0 lbs.) (excluding the optional lens)
Operating noise[1]		[Normal]	32 dB
		[Eco]	32 dB
		[QUIET]	25 dB
Laser Classification	Laser Class		USA and Canada: Class 3R (IEC60825-1:2007) Other counties or regions: Class 1 (IEC/EN 60825-1:2014)
	Risk Group		Risk Group 2 (IEC 62471-5:2015) Risk Group 3 (IEC 62471-5:2015) (with ET-ELT23)
Operating environment	Operating environment temperature		0 °C (32 °F) to 45 °C (113 °F)[5]
	Operating environment humidity		20% to 80% (no condensation)

Remote control unit

Power supply		3V DC (AAA/R03/LR03 battery x 2)
Operation range		Approx. 30 m (98 ft 5 in) (when operated directly in front of signal receptor)
Dimensions	Width	48 mm [1-7/8 in]
	Height	145 mm [5-23/32 in]
	Depth	27 mm [1-1/16 in]
Weight[4]		Approx. 102 g (3.60 ozs.) including batteries

Supplied accessories

Wireless remote control unit (x 1)
Power cord (3.0m x 1) (x 2 for Europe and Asia model)
Batteries for remote control (R03/AAA type x 2)
Lens Cover (x 1)

Other Applications

Multi Monitoring and Control Software (for Windows)
Logo Transfer Software (for Windows)
Smart Projector Control (for iOS/Android™)
Geometry Manager Pro (for Windows)

Optional accessories

Lens	Fixed-focus lens	ET-ELW21
	Zoom lens	ET-ELW22
		ET-ELU20
		ET-ELW20
		ET-ELS20
		ET-ELT22
		ET-ELT23
Ceiling Mount Bracket	with 6-axis adjustment for high ceilings	ET-PKD130H
	for high ceilings	ET-PKD120H
	for low ceilings	ET-PKD120S
Attachment for ceiling mount bracket		ET-PKE301B[6]
Replacement Filter Unit		ET-RFM200
Digital Interface Box		ET-YFB100G *ET-YFB100G is not compatible with 4K signals.
DIGITAL LINK switcher		ET-YFB200G *ET-YFB200G is not compatible with 4K signals.
Wireless Presentation System (PressIT)		TY-WPS1 (Basic set)

Weights and dimensions shown are approximate. Specifications subject to change without notice.

1 Measurement, measuring conditions, and method of notation all comply with ISO/IEC 21118: 2020 international standards. Value is average of all products when shipped.

2 Around this time, light output will have decreased by approximately 50 %. IEC62087: 2008 Broadcast contents, Dynamic Contrast [2], under conditions with 30 °C (86 °F), 700 m (2,297 ft) above sea level, and 0.15 mg/m³ of particulate matter. Panasonic recommends cleaning or checkup at point of purchase after about 20,000 hours. Light-source lifetime may be reduced depending on environmental conditions.
Replacement of parts other than the light source may be required in a shorter period. Estimated maintenance time varies depending on environment.

3 4K/60p input signal is converted to projector's resolution (1920 x 1200), YP_BP_R 4:2:0 format only for signals input via DIGITAL LINK.

4 Average value. May differ depending on models.

5 Note that projector cannot be used at altitudes 2,700 m (8,858 ft) or higher above sea level. In the following operating environments, light output may be reduced to protect the projector; when the projector is used at altitudes below 700 m (2,297 ft) and ambient temperature is 36 °C (97 °F) or higher; when the projector is used at altitudes between 700 m (2,297 ft) and 1,400 m (4,593 ft) exclusive and ambient temperature is 34 °C (93 °F) or higher; when the projector is used at altitudes between 1,400 m (4,593 ft) and 2,100m (6,890 ft) exclusive and ambient temperature is 32 °C (90 °F) or higher; and when the projector is used at altitudes between 2,100 m (6,890 ft) and 2,700 m (8,858 ft) exclusive and ambient temperature is 30 °C (86 °F) or higher.

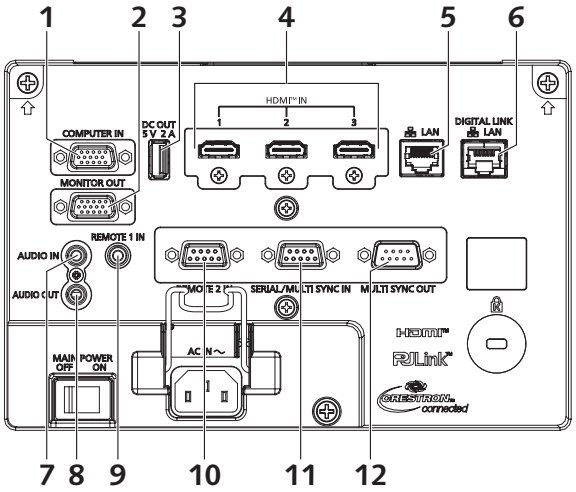
6 When the projector is mounted to the existing Ceiling Mount Bracket (in combination with the Model No.: ET-PKD120H (for High Ceilings) or - ET-PKD120S (for Low Ceilings), and the Model No.: ET-PKE300B (Projector Mount Bracket)), it is necessary to replace the drop-prevention - wire rope with the one corresponding to this projector. Consult your dealer. Drop-prevention set (service model no.: DPPW1004ZA/X1)

7 This is the value when the Zoom Lens (Model No.: ET-ELS20) is used. The value varies depending on the lens.

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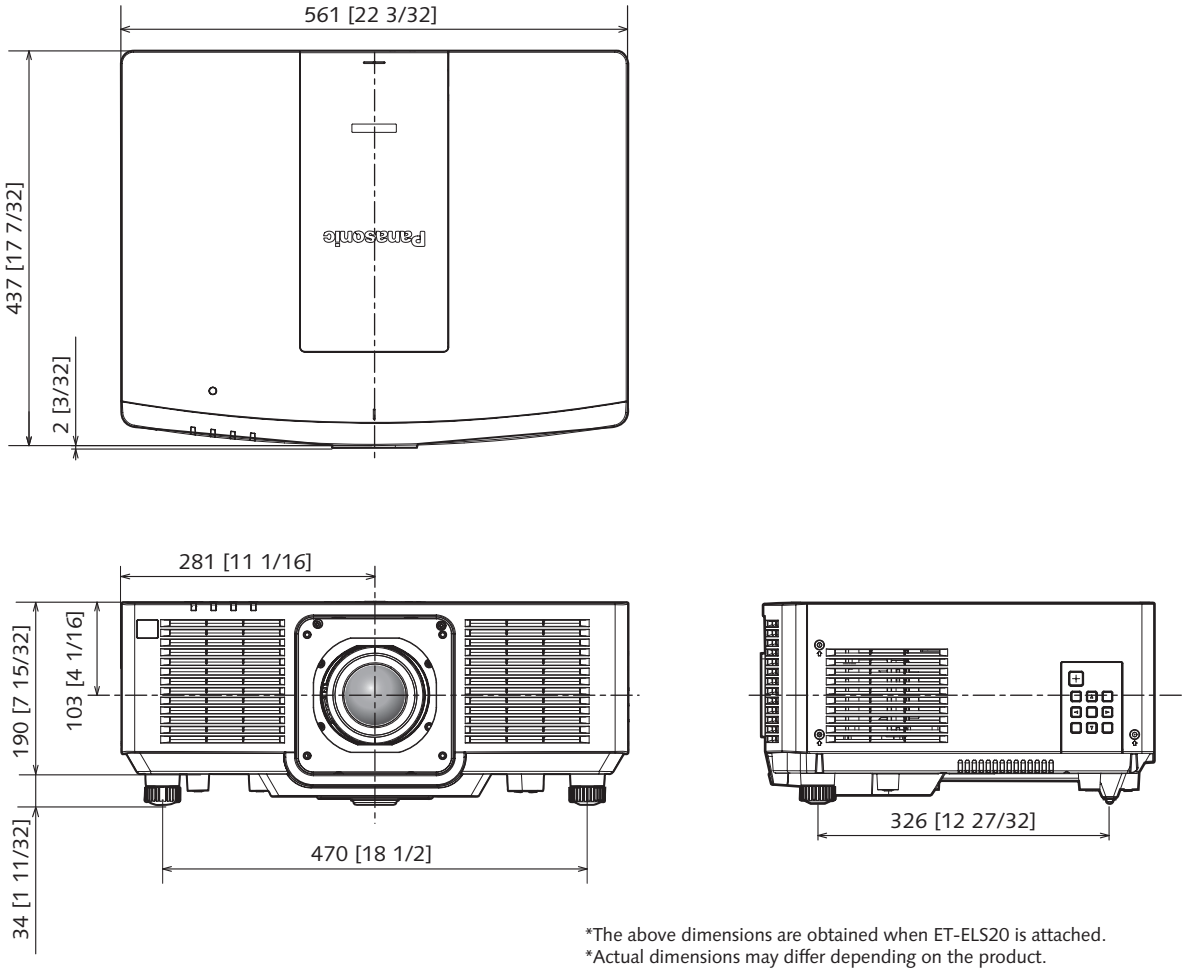
Terminals



1	COMPUTER IN	7	AUDIO IN
2	MONITOR OUT	8	AUDIO OUT
3	DC OUT	9	REMOTE 1 IN
4	HDMI™ IN 1/2/3	10	REMOTE 2 IN
5	LAN	11	SERIAL/MULTI SYNC IN
6	DIGITAL LINK/LAN	12	MULTI SYNC OUT

Dimensions

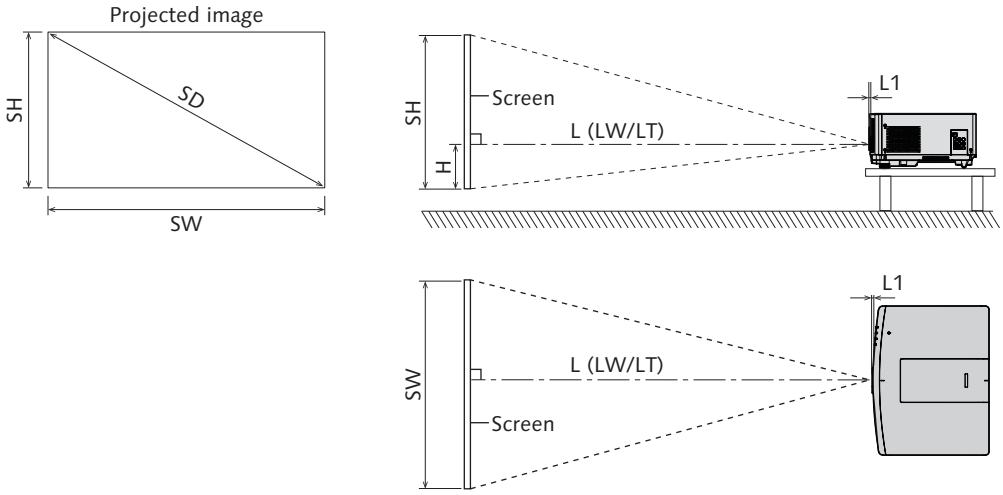
unit : mm [inch]
NOTE: This illustration is not drawn to scale.



*The above dimensions are obtained when ET-ELS20 is attached.
*Actual dimensions may differ depending on the product.

Projected image and throw distance

Install the projector referring to the projected image size and projection distance. Image size and image position can be adjusted in accordance with the screen size and screen position.



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 (distance from the front end of the projection lens to the screen)
	LW	Minimum projection distance when the Zoom Lens is used
	LT	Maximum projection distance when the Zoom Lens is used
L1		Lens protrusion dimension (distance from the front surface of the projector to the front end of the projection lens)
SH		Projected image height
SW		Projected image width
H		Distance from the lens center to the bottom edge of the projected image
SD		Projected image size

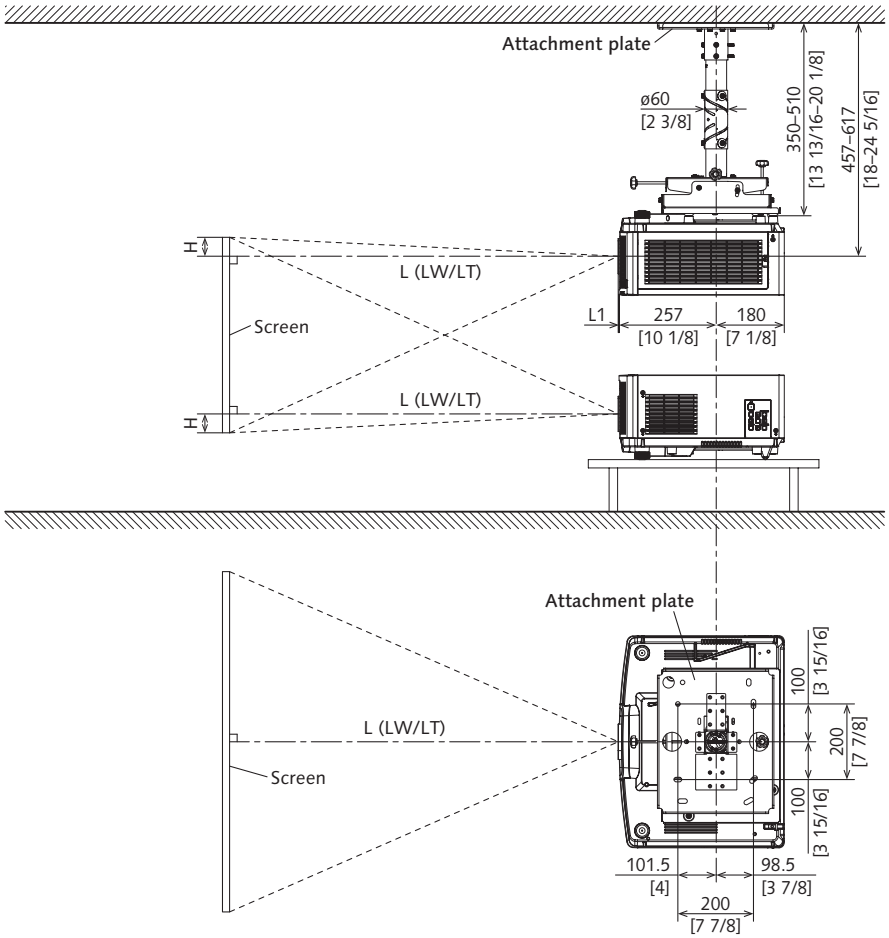
unit : m

Projection lens Model No.	Dimension for L1 (approximate value)
ET-ELS20	0.002
ET-ELW22	0.037
ET-ELU20	0.275
ET-ELW20	0.022
ET-ELT22	0.023
ET-ELT23	0.019
ET-ELW21	-0.008

Standard setting position

Illustrations show the projector installed using optional ceiling mount bracket ET-PKD130H, optional bracket assembly ET-PKE301B.

unit : mm [inch]



Caution

- All construction work should be done by a qualified technician.
- When mounting to the ceiling, use the special mounting bracket.
  Furthermore, in order to prevent it from falling down from the ceiling, use the supplied wire on the mounting bracket.

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.

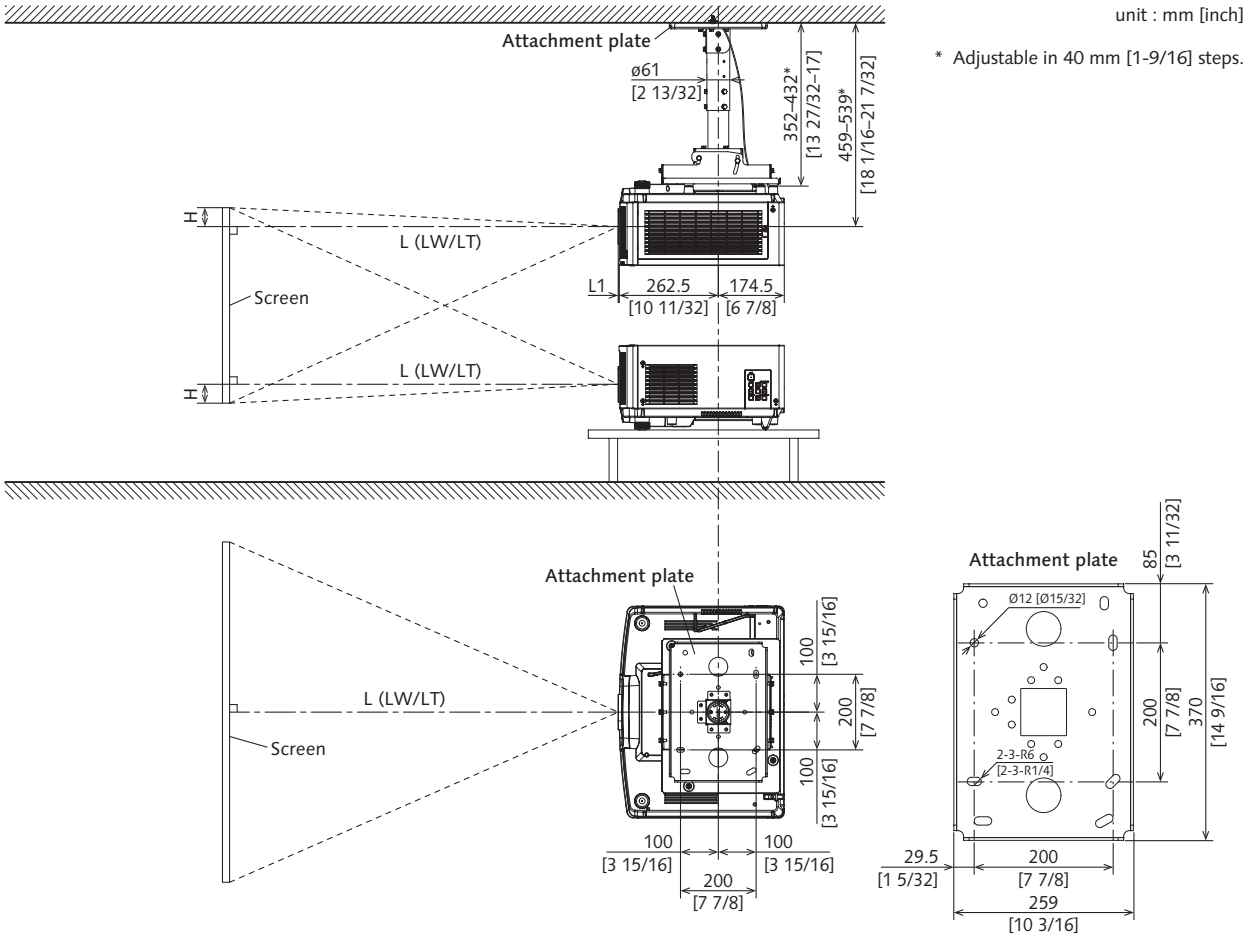
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Illustrations show the projector installed using optional ceiling mount bracket ET-PKD120H, optional bracket assembly ET-PKE301B.

unit : mm [inch]

* Adjustable in 40 mm [1-9/16] steps.



Caution

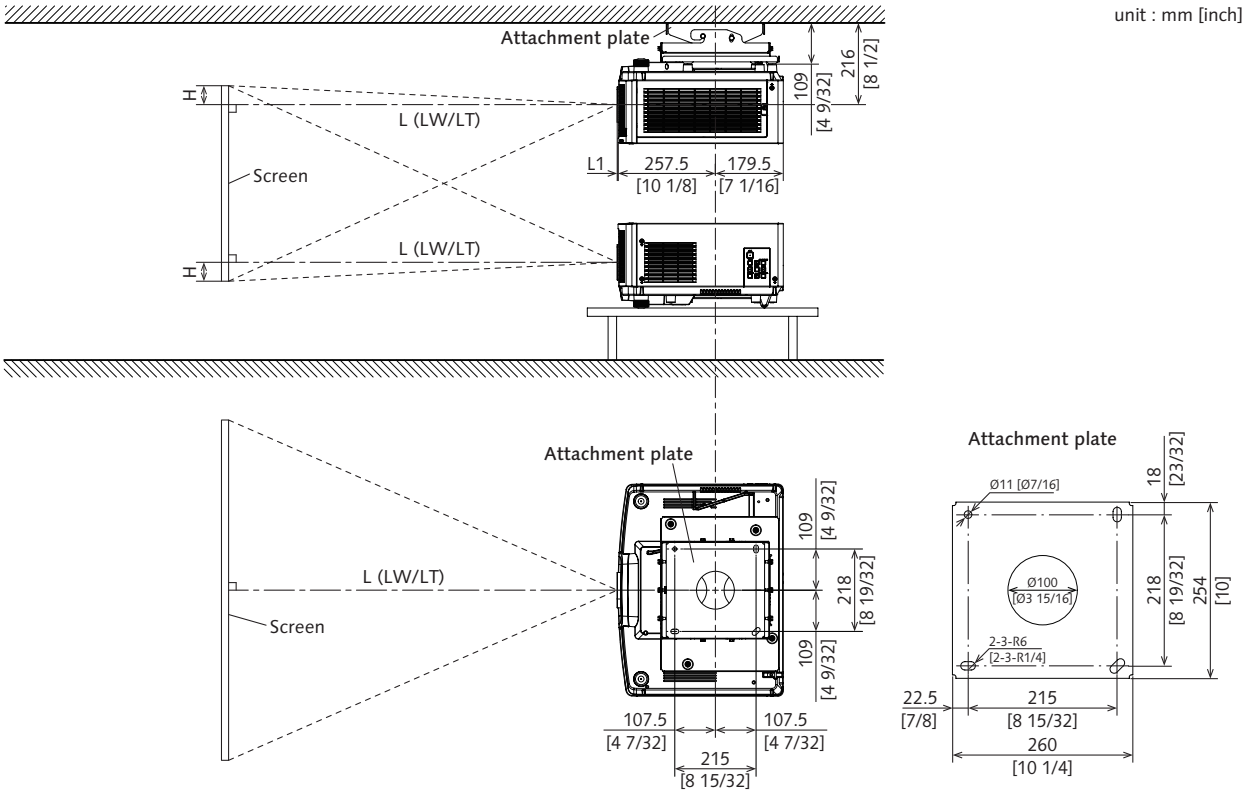
- All construction work should be done by a qualified technician.
- When mounting to the ceiling, use the special mounting bracket.
  Furthermore, in order to prevent it from falling down from the ceiling, use the supplied wire on the mounting bracket.

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.

Illustrations show the projector installed using optional ceiling mount bracket ET-PKD120S, optional bracket assembly ET-PKE301B.

unit : mm [inch]



Caution

- All construction work should be done by a qualified technician.
- When mounting to the ceiling, use the special mounting bracket.
  Furthermore, in order to prevent it from falling down from the ceiling, use the supplied wire on the mounting bracket.

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.

Projection distance of each projection lens

A ±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

Lens type				Zoom Lens												Fixed- focus Lens
Projection lens Model No.				ET-ELS20		ET-ELW22		ET-ELU20		ET-ELW20		ET-ELT22		ET-ELT23		ET-ELW21
Throw ratio[1]				1.61-2.76:1		0.786-0.983:1		0.330-0.353:1		1.21-1.66:1		2.72-4.48:1		4.44-7.12:1		0.764:1
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)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Fixed
m	inches															
1.016	40	0.538	0.862	1.36	2.35	-	-	-	-	1.02	1.41	2.29	3.81	3.72	6.03	0.63
1.270	50	0.673	1.077	1.71	2.95	-	-	-	-	1.29	1.77	2.89	4.79	4.70	7.59	0.80
1.524	60	0.808	1.292	2.06	3.55	1.00	1.26	-	-	1.55	2.14	3.49	5.77	5.68	9.15	0.97
1.778	70	0.942	1.508	2.42	4.15	1.18	1.48	-	-	1.82	2.50	4.09	6.75	6.66	10.71	1.14
2.032	80	1.077	1.723	2.77	4.76	1.35	1.69	-	-	2.09	2.87	4.69	7.73	7.64	12.27	1.32
2.286	90	1.212	1.939	3.12	5.36	1.53	1.91	-	-	2.36	3.23	5.30	8.71	8.63	13.83	1.49
2.540	100	1.346	2.154	3.48	5.96	1.71	2.13	0.70	0.75	2.63	3.60	5.90	9.69	9.61	15.39	1.66
3.048	120	1.615	2.585	4.18	7.16	2.06	2.56	0.84	0.91	3.16	4.33	7.10	11.65	11.57	18.51	2.00
3.810	150	2.019	3.231	5.24	8.96	2.58	3.22	1.06	1.14	3.97	5.42	8.90	14.59	14.52	23.19	2.52
5.080	200	2.692	4.308	7.01	11.96	3.46	4.30	1.43	1.53	5.31	7.25	11.91	19.49	19.43	30.99	3.38
6.350	250	3.365	5.385	8.77	14.96	4.34	5.39	1.79	1.93	6.65	9.07	14.91	24.39	24.34	38.79	4.24
7.620	300	4.039	6.462	10.54	17.97	5.21	6.48	2.16	2.32	7.99	10.90	17.92	29.29	29.25	46.59	5.10
8.890	350	4.712	7.539	12.30	20.97	6.09	7.56	2.52	2.71	9.33	12.73	20.92	34.19	34.16	54.39	5.95
10.160	400	5.385	8.616	14.07	23.97	6.97	8.65	2.88	3.10	10.67	14.55	23.93	39.09	39.07	62.19	6.81

Lens type				ET-ELS20 ET-ELW20 ET-ELT22 ET-ELT23	ET-ELW22	ET-ELU20	ET-ELW21 (Fixed)
Projection lens Model No.							
Throw ratio[1]							
Projected image size				Height position (H)[2]			
Diagonal (SD)		Height (SH)	Width (SW)				
m	inches						
1.016	40	0.538	0.862	-0.09 - 0.63	-	-	0.27
1.270	50	0.673	1.077	-0.11 - 0.79	-	-	0.34
1.524	60	0.808	1.292	-0.14 - 0.95	-0.08 - 0.89	-	0.40
1.778	70	0.942	1.508	-0.16 - 1.10	-0.09 - 1.04	-	0.47
2.032	80	1.077	1.723	-0.18 - 1.26	-0.11 - 1.18	-	0.54
2.286	90	1.212	1.939	-0.21 - 1.42	-0.12 - 1.33	-	0.61
2.540	100	1.346	2.154	-0.23 - 1.58	-0.13 - 1.48	0.00 - 1.35	0.67
3.048	120	1.615	2.585	-0.27 - 1.89	-0.16 - 1.78	0.00 - 1.62	0.81
3.810	150	2.019	3.231	-0.34 - 2.36	-0.20 - 2.22	0.00 - 2.02	1.01
5.080	200	2.692	4.308	-0.46 - 3.15	-0.27 - 2.96	0.00 - 2.69	1.35
6.350	250	3.365	5.385	-0.57 - 3.94	-0.34 - 3.70	0.00 - 3.37	1.68
7.620	300	4.039	6.462	-0.69 - 4.73	-0.40 - 4.44	0.00 - 4.04	2.02
8.890	350	4.712	7.539	-0.80 - 5.51	-0.47 - 5.18	0.00 - 4.71	2.36
10.160	400	5.385	8.616	-0.92 - 6.30	-0.54 - 5.92	0.00 - 5.38	2.69

1 The throw ratio is based on the value during projection of 2.03 m [80 in] projected image size. However, the throw ratio for ET-ELU20 is based on the value during projection of 3.81 m [150 in] projected image size.

2 When the Fixed-focus Lens (Model No.: ET-ELW21) is attached, the lens shift is not possible, therefore the height position (H) becomes SH/2.

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Screen aspect ratio 16:10 Unit: feet

Lens type				Zoom Lens												Fixed- focus Lens
Projection lens Model No.				ET-ELS20		ET-ELW22		ET-ELU20		ET-ELW20		ET-ELT22		ET-ELT23		ET-ELW21
Throw ratio[1]				1.61-2.76:1		0.786-0.983:1		0.330-0.353:1		1.21-1.66:1		2.72-4.48:1		4.44-7.12:1		0.764:1
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)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Fixed
m	inches															
1.016	40	1.77	2.83	4.46	7.71	-	-	-	-	3.35	4.63	7.51	12.50	12.20	19.78	2.07
1.270	50	2.21	3.53	5.61	9.68	-	-	-	-	4.23	5.81	9.48	15.72	15.42	24.90	2.62
1.524	60	2.65	4.24	6.76	11.65	3.28	4.13	-	-	5.09	7.02	11.45	18.93	18.63	30.02	3.18
1.778	70	3.09	4.95	7.94	13.62	3.87	4.86	-	-	5.97	8.20	13.42	22.15	21.85	35.14	3.74
2.032	80	3.53	5.65	9.09	15.62	4.43	5.54	-	-	6.86	9.42	15.39	25.36	25.07	40.26	4.33
2.286	90	3.98	6.36	10.24	17.59	5.02	6.27	-	-	7.74	10.60	17.39	28.58	28.31	45.37	4.89
2.540	100	4.42	7.07	11.42	19.55	5.61	6.99	2.30	2.46	8.63	11.81	19.36	31.79	31.53	50.49	5.45
3.048	120	5.30	8.48	13.71	23.49	6.76	8.40	2.76	2.99	10.37	14.21	23.29	38.22	37.96	60.73	6.56
3.810	150	6.62	10.60	17.19	29.40	8.46	10.56	3.48	3.74	13.02	17.78	29.20	47.87	47.64	76.08	8.27
5.080	200	8.83	14.13	23.00	39.24	11.35	14.11	4.69	5.02	17.42	23.79	39.07	63.94	63.75	101.67	11.09
6.350	250	11.04	17.67	28.77	49.08	14.24	17.68	5.87	6.33	21.82	29.76	48.92	80.02	79.85	127.26	13.91
7.620	300	13.25	21.20	34.58	58.96	17.09	21.26	7.09	7.61	26.21	35.76	58.79	96.09	95.96	152.85	16.73
8.890	350	15.46	24.73	40.35	68.80	19.98	24.80	8.27	8.89	30.61	41.76	68.63	112.17	112.07	178.44	19.52
10.160	400	17.67	28.27	46.16	78.64	22.87	28.38	9.45	10.17	35.01	47.74	78.51	128.25	128.18	204.03	22.34

Lens type				ET-ELS20 ET-ELW20 ET-ELT22 ET-ELT23	ET-ELW22	ET-ELU20	ET-ELW21 (Fixed)
Projection lens Model No.							
Throw ratio[1]							
Projected image size				Height position (H)[2]			
Diagonal (SD)		Height (SH)	Width (SW)				
m	inches						
1.016	40	1.77	2.83	-0.30 - 2.07	-	-	0.89
1.270	50	2.21	3.53	-0.36 - 2.59	-	-	1.12
1.524	60	2.65	4.24	-0.46 - 3.12	-0.26 - 2.92	-	1.31
1.778	70	3.09	4.95	-0.52 - 3.61	-0.30 - 3.41	-	1.54
2.032	80	3.53	5.65	-0.59 - 4.13	-0.36 - 3.87	-	1.77
2.286	90	3.98	6.36	-0.69 - 4.66	-0.39 - 4.36	-	2.00
2.540	100	4.42	7.07	-0.75 - 5.18	-0.43 - 4.86	0.00 - 4.43	2.20
3.048	120	5.30	8.48	-0.89 - 6.20	-0.52 - 5.84	0.00 - 5.32	2.66
3.810	150	6.62	10.60	-1.12 - 7.74	-0.66 - 7.28	0.00 - 6.63	3.31
5.080	200	8.83	14.13	-1.51 - 10.33	-0.89 - 9.71	0.00 - 8.83	4.43
6.350	250	11.04	17.67	-1.87 - 12.93	-1.12 - 12.14	0.00 - 11.06	5.51
7.620	300	13.25	21.20	-2.26 - 15.52	-1.31 - 14.57	0.00 - 13.26	6.63
8.890	350	15.46	24.73	-2.62 - 18.08	-1.54 - 16.99	0.00 - 15.45	7.74
10.160	400	17.67	28.27	-3.02 - 20.67	-1.77 - 19.42	0.00 - 17.65	8.83

1 The throw ratio is based on the value during projection of 2.03 m [80 in] projected image size. However, the throw ratio for ET-ELU20 is based on the value during projection of 3.81 m [150 in] projected image size.
2 When the Fixed-focus Lens (Model No.: ET-ELW21) is attached, the lens shift is not possible, therefore the height position (H) becomes SH/2.

LCD Projector

PT-MZ682L

Screen aspect ratio 16:9

Unit: meters

Lens type				Zoom Lens												Fixed- focus Lens
Projection lens Model No.				ET-ELS20		ET-ELW22		ET-ELU20		ET-ELW20		ET-ELT22		ET-ELT23		ET-ELW21
Throw ratio[1]				1.61-2.76:1		0.787-0.984:1		0.330-0.353:1		1.21-1.66:1		2.73-4.49:1		4.44-7.12:1		0.765:1
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)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Fixed
m	inches															
1.016	40	0.498	0.886	1.40	2.42	-	-	-	-	1.05	1.45	2.36	3.92	3.83	6.20	0.65
1.270	50	0.623	1.107	1.76	3.04	-	-	-	-	1.32	1.82	2.97	4.92	4.83	7.81	0.83
1.524	60	0.747	1.328	2.12	3.65	1.03	1.30	-	-	1.60	2.20	3.59	5.93	5.84	9.41	1.00
1.778	70	0.872	1.550	2.49	4.27	1.21	1.52	-	-	1.87	2.57	4.21	6.94	6.85	11.01	1.18
2.032	80	0.996	1.771	2.85	4.89	1.39	1.74	-	-	2.15	2.95	4.83	7.95	7.86	12.62	1.35
2.286	90	1.121	1.992	3.21	5.51	1.57	1.97	-	-	2.43	3.32	5.45	8.95	8.87	14.22	1.53
2.540	100	1.245	2.214	3.57	6.12	1.75	2.19	0.72	0.77	2.70	3.70	6.06	9.96	9.88	15.82	1.71
3.048	120	1.494	2.657	4.30	7.36	2.11	2.64	0.87	0.93	3.25	4.45	7.30	11.97	11.90	19.03	2.06
3.810	150	1.868	3.321	5.39	9.21	2.66	3.31	1.09	1.17	4.08	5.58	9.15	15.00	14.93	23.84	2.59
5.080	200	2.491	4.428	7.20	12.29	3.56	4.42	1.47	1.58	5.46	7.45	12.24	20.03	19.98	31.86	3.47
6.350	250	3.113	5.535	9.02	15.38	4.46	5.54	1.84	1.98	6.83	9.33	15.33	25.07	25.02	39.87	4.36
7.620	300	3.736	6.641	10.83	18.47	5.36	6.66	2.22	2.38	8.21	11.20	18.42	30.10	30.07	47.89	5.24
8.890	350	4.358	7.748	12.65	21.55	6.26	7.77	2.59	2.79	9.59	13.08	21.51	35.14	35.12	55.91	6.12
10.160	400	4.981	8.855	14.46	24.64	7.16	8.89	2.97	3.19	10.97	14.96	24.60	40.18	40.17	63.92	7.00

Lens type				ET-ELS20 ET-ELW20 ET-ELT22 ET-ELT23	ET-ELW22	ET-ELU20	ET-ELW21 (Fixed)
Projection lens Model No.							
Throw ratio[1]							
Projected image size				Height position (H)[2]			
Diagonal (SD)		Height (SH)	Width (SW)				
m	inches						
1.016	40	0.498	0.886	-0.12 - 0.62	-	-	0.25
1.270	50	0.623	1.107	-0.15 - 0.77	-	-	0.31
1.524	60	0.747	1.328	-0.18 - 0.93	-0.12 - 0.87	-	0.37
1.778	70	0.872	1.550	-0.21 - 1.08	-0.15 - 1.02	-	0.44
2.032	80	0.996	1.771	-0.24 - 1.24	-0.17 - 1.16	-	0.50
2.286	90	1.121	1.992	-0.27 - 1.39	-0.19 - 1.31	-	0.56
2.540	100	1.245	2.214	-0.30 - 1.55	-0.21 - 1.45	-0.07 - 1.31	0.62
3.048	120	1.494	2.657	-0.37 - 1.86	-0.25 - 1.74	-0.08 - 1.58	0.75
3.810	150	1.868	3.321	-0.46 - 2.32	-0.31 - 2.18	-0.10 - 1.97	0.93
5.080	200	2.491	4.428	-0.61 - 3.10	-0.42 - 2.91	-0.14 - 2.63	1.25
6.350	250	3.113	5.535	-0.76 - 3.87	-0.52 - 3.63	-0.17 - 3.29	1.56
7.620	300	3.736	6.641	-0.91 - 4.65	-0.62 - 4.36	-0.21 - 3.94	1.87
8.890	350	4.358	7.748	-1.07 - 5.42	-0.73 - 5.08	-0.24 - 4.60	2.18
10.160	400	4.981	8.855	-1.22 - 6.20	-0.83 - 5.81	-0.28 - 5.26	2.49

1 The throw ratio is based on the value during projection of 2.03 m [80 in] projected image size. However, the throw ratio for ET-ELU20 is based on the value during projection of 3.81 m [150 in] projected image size.

2 When the Fixed-focus Lens (Model No.: ET-ELW21) is attached, the lens shift is not possible, therefore the height position (H) becomes SH/2.

LCD Projector

PT-MZ682L

Screen aspect ratio 16:9

Unit: feet

Lens type				Zoom Lens												Fixed- focus Lens
Projection lens Model No.				ET-ELS20		ET-ELW22		ET-ELU20		ET-ELW20		ET-ELT22		ET-ELT23		ET-ELW21
Throw ratio[1]				1.61-2.76:1		0.787-0.984:1		0.330-0.353:1		1.21-1.66:1		2.73-4.49:1		4.44-7.12:1		0.765:1
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)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Fixed
m	inches															
1.016	40	1.63	2.91	4.59	7.94	-	-	-	-	3.44	4.76	7.74	12.86	12.57	20.34	2.13
1.270	50	2.04	3.63	5.77	9.97	-	-	-	-	4.33	5.97	9.74	16.14	15.85	25.62	2.72
1.524	60	2.45	4.36	6.96	11.97	3.38	4.27	-	-	5.25	7.22	11.78	19.46	19.16	30.87	3.28
1.778	70	2.86	5.09	8.17	14.01	3.97	4.99	-	-	6.14	8.43	13.81	22.77	22.47	36.12	3.87
2.032	80	3.27	5.81	9.35	16.04	4.56	5.71	-	-	7.05	9.68	15.85	26.08	25.79	41.40	4.43
2.286	90	3.68	6.54	10.53	18.08	5.15	6.46	-	-	7.97	10.89	17.88	29.36	29.10	46.65	5.02
2.540	100	4.08	7.26	11.71	20.08	5.74	7.18	2.36	2.53	8.86	12.14	19.88	32.68	32.41	51.90	5.61
3.048	120	4.90	8.72	14.11	24.15	6.92	8.66	2.85	3.05	10.66	14.60	23.95	39.27	39.04	62.43	6.76
3.810	150	6.13	10.90	17.68	30.22	8.73	10.86	3.58	3.84	13.39	18.31	30.02	49.21	48.98	78.21	8.50
5.080	200	8.17	14.53	23.62	40.32	11.68	14.50	4.82	5.18	17.91	24.44	40.16	65.71	65.55	104.53	11.38
6.350	250	10.21	18.16	29.59	50.46	14.63	18.18	6.04	6.50	22.41	30.61	50.29	82.25	82.09	130.81	14.30
7.620	300	12.26	21.79	35.53	60.60	17.59	21.85	7.28	7.81	26.94	36.74	60.43	98.75	98.65	157.12	17.19
8.890	350	14.30	25.42	41.50	70.70	20.54	25.49	8.50	9.15	31.46	42.91	70.57	115.29	115.22	183.43	20.08
10.160	400	16.34	29.05	47.44	80.84	23.49	29.17	9.74	10.47	35.99	49.08	80.71	131.82	131.79	209.71	22.97

Lens type				ET-ELS20 ET-ELW20 ET-ELT22 ET-ELT23	ET-ELW22	ET-ELU20	ET-ELW21 (Fixed)
Projection lens Model No.							
Throw ratio[1]							
Projected image size				Height position (H)[2]			
Diagonal (SD)		Height (SH)	Width (SW)				
m	inches						
1.016	40	1.63	2.91	-0.39 - 2.03	-	-	0.82
1.270	50	2.04	3.63	-0.49 - 2.53	-	-	1.02
1.524	60	2.45	4.36	-0.59 - 3.05	-0.39 - 2.85	-	1.21
1.778	70	2.86	5.09	-0.69 - 3.54	-0.49 - 3.35	-	1.44
2.032	80	3.27	5.81	-0.79 - 4.07	-0.56 - 3.81	-	1.64
2.286	90	3.68	6.54	-0.89 - 4.56	-0.62 - 4.30	-	1.84
2.540	100	4.08	7.26	-0.98 - 5.09	-0.69 - 4.76	-0.23 - 4.30	2.03
3.048	120	4.90	8.72	-1.21 - 6.10	-0.82 - 5.71	-0.26 - 5.18	2.46
3.810	150	6.13	10.90	-1.51 - 7.61	-1.02 - 7.15	-0.33 - 6.46	3.05
5.080	200	8.17	14.53	-2.00 - 10.17	-1.38 - 9.55	-0.46 - 8.63	4.10
6.350	250	10.21	18.16	-2.49 - 12.70	-1.71 - 11.91	-0.56 - 10.79	5.12
7.620	300	12.26	21.79	-2.99 - 15.26	-2.03 - 14.30	-0.69 - 12.93	6.14
8.890	350	14.30	25.42	-3.51 - 17.78	-2.39 - 16.67	-0.79 - 15.09	7.15
10.160	400	16.34	29.05	-4.00 - 20.34	-2.72 - 19.06	-0.92 - 17.26	8.17

1 The throw ratio is based on the value during projection of 2.03 m [80 in] projected image size. However, the throw ratio for ET-ELU20 is based on the value during projection of 3.81 m [150 in] projected image size.

2 When the Fixed-focus Lens (Model No.: ET-ELW21) is attached, the lens shift is not possible, therefore the height position (H) becomes SH/2.

Screen aspect ratio 4:3

Unit: meters

Lens type				Zoom Lens												Fixed- focus Lens
Projection lens Model No.				ET-ELS20		ET-ELW22		ET-ELU20		ET-ELW20		ET-ELT22		ET-ELT23		ET-ELW21
Throw ratio[1]				1.93-3.32:1		0.947-1.18:1		0.397-0.425:1		1.46-2.00:1		3.28-5.39:1		5.34-8.56:1		0.922:1
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)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Fixed
m	inches															
1.016	40	0.610	0.813	1.54	2.67	-	-	-	-	1.16	1.60	2.61	4.33	4.24	6.85	0.72
1.270	50	0.762	1.016	1.94	3.35	-	-	-	-	1.46	2.01	3.29	5.43	5.35	8.62	0.91
1.524	60	0.914	1.219	2.34	4.03	1.14	1.43	-	-	1.77	2.43	3.97	6.54	6.46	10.39	1.11
1.778	70	1.067	1.422	2.74	4.71	1.34	1.68	-	-	2.07	2.84	4.65	7.65	7.57	12.15	1.30
2.032	80	1.219	1.626	3.14	5.39	1.54	1.92	-	-	2.37	3.25	5.33	8.76	8.68	13.92	1.50
2.286	90	1.372	1.829	3.54	6.07	1.74	2.17	-	-	2.68	3.67	6.01	9.87	9.79	15.68	1.69
2.540	100	1.524	2.032	3.94	6.75	1.94	2.42	0.80	0.85	2.98	4.08	6.69	10.98	10.91	17.45	1.89
3.048	120	1.829	2.438	4.74	8.11	2.33	2.91	0.96	1.03	3.59	4.91	8.05	13.20	13.13	20.98	2.28
3.810	150	2.286	3.048	5.94	10.15	2.93	3.65	1.21	1.30	4.50	6.15	10.09	16.53	16.47	26.28	2.86
5.080	200	3.048	4.064	7.94	13.55	3.92	4.88	1.62	1.74	6.02	8.21	13.49	22.08	22.03	35.11	3.83
6.350	250	3.810	5.080	9.94	16.95	4.91	6.11	2.03	2.19	7.53	10.28	16.90	27.62	27.58	43.94	4.80
7.620	300	4.572	6.096	11.94	20.34	5.91	7.34	2.44	2.63	9.05	12.35	20.30	33.17	33.14	52.77	5.78
8.890	350	5.334	7.112	13.93	23.74	6.90	8.57	2.86	3.07	10.57	14.41	23.70	38.72	38.70	61.60	6.75
10.160	400	6.096	8.128	15.93	27.14	7.89	9.80	3.27	3.52	12.09	16.48	27.10	44.27	44.26	70.43	7.72

Lens type				ET-ELS20 ET-ELW20 ET-ELT22 ET-ELT23	ET-ELW22	ET-ELU20	ET-ELW21 (Fixed)
Projection lens Model No.							
Throw ratio[1]							
Projected image size				Height position (H)[2]			
Diagonal (SD)		Height (SH)	Width (SW)				
m	inches						
1.016	40	0.610	0.813	-0.10 - 0.71	-	-	0.30
1.270	50	0.762	1.016	-0.13 - 0.89	-	-	0.38
1.524	60	0.914	1.219	-0.16 - 1.07	-0.09 - 1.01	-	0.46
1.778	70	1.067	1.422	-0.18 - 1.25	-0.11 - 1.17	-	0.53
2.032	80	1.219	1.626	-0.21 - 1.43	-0.12 - 1.34	-	0.61
2.286	90	1.372	1.829	-0.23 - 1.60	-0.14 - 1.51	-	0.69
2.540	100	1.524	2.032	-0.26 - 1.78	-0.15 - 1.68	0.00 - 1.52	0.76
3.048	120	1.829	2.438	-0.31 - 2.14	-0.18 - 2.01	0.00 - 1.83	0.91
3.810	150	2.286	3.048	-0.39 - 2.67	-0.23 - 2.51	0.00 - 2.29	1.14
5.080	200	3.048	4.064	-0.52 - 3.57	-0.30 - 3.35	0.00 - 3.05	1.52
6.350	250	3.810	5.080	-0.65 - 4.46	-0.38 - 4.19	0.00 - 3.81	1.91
7.620	300	4.572	6.096	-0.78 - 5.35	-0.46 - 5.03	0.00 - 4.57	2.29
8.890	350	5.334	7.112	-0.91 - 6.24	-0.53 - 5.87	0.00 - 5.33	2.67
10.160	400	6.096	8.128	-1.04 - 7.13	-0.61 - 6.71	0.00 - 6.10	3.05

1 The throw ratio is based on the value during projection of 2.03 m [80 in] projected image size. However, the throw ratio for ET-ELU20 is based on the value during projection of 3.81 m [150 in] projected image size.

2 When the Fixed-focus Lens (Model No.: ET-ELW21) is attached, the lens shift is not possible, therefore the height position (H) becomes SH/2.

LCD Projector

PT-MZ682L

Screen aspect ratio 4:3

Unit: feet

Lens type				Zoom Lens												Fixed- focus Lens
Projection lens Model No.				ET-ELS20		ET-ELW22		ET-ELU20		ET-ELW20		ET-ELT22		ET-ELT23		ET-ELW21
Throw ratio[1]				1.93-3.32:1		0.947-1.18:1		0.397 - 0.425:1		1.46-2.00:1		3.28-5.39:1		5.34-8.56:1		0.922:1
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)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Fixed
m	inches															
1.016	40	2.00	2.67	5.05	8.76	-	-	-	-	3.81	5.25	8.56	14.21	13.91	22.47	2.36
1.270	50	2.50	3.33	6.36	10.99	-	-	-	-	4.79	6.59	10.79	17.81	17.55	28.28	2.99
1.524	60	3.00	4.00	7.68	13.22	3.74	4.69	-	-	5.81	7.97	13.02	21.46	21.19	34.09	3.64
1.778	70	3.50	4.67	8.99	15.45	4.40	5.51	-	-	6.79	9.32	15.26	25.10	24.84	39.86	4.27
2.032	80	4.00	5.33	10.30	17.68	5.05	6.30	-	-	7.78	10.66	17.49	28.74	28.48	45.67	4.92
2.286	90	4.50	6.00	11.61	19.91	5.71	7.12	-	-	8.79	12.04	19.72	32.38	32.12	51.44	5.54
2.540	100	5.00	6.67	12.93	22.15	6.36	7.94	2.63	2.79	9.78	13.39	21.95	36.02	35.79	57.25	6.20
3.048	120	6.00	8.00	15.55	26.61	7.64	9.55	3.15	3.38	11.78	16.11	26.41	43.31	43.08	68.83	7.48
3.810	150	7.50	10.00	19.49	33.30	9.61	11.97	3.97	4.27	14.76	20.18	33.10	54.23	54.03	86.22	9.38
5.080	200	10.00	13.33	26.05	44.45	12.86	16.01	5.32	5.71	19.75	26.94	44.26	72.44	72.28	115.19	12.57
6.350	250	12.50	16.67	32.61	55.61	16.11	20.05	6.66	7.19	24.70	33.73	55.45	90.62	90.48	144.16	15.75
7.620	300	15.00	20.00	39.17	66.73	19.39	24.08	8.01	8.63	29.69	40.52	66.60	108.82	108.73	173.13	18.96
8.890	350	17.50	23.33	45.70	77.89	22.64	28.12	9.38	10.07	34.68	47.28	77.75	127.03	126.97	202.10	22.15
10.160	400	20.00	26.67	52.26	89.04	25.89	32.15	10.73	11.55	39.66	54.07	88.91	145.24	145.21	231.07	25.33

Lens type				ET-ELS20 ET-ELW20 ET-ELT22 ET-ELT23	ET-ELW22	ET-ELU20	ET-ELW21 (Fixed)
Projection lens Model No.							
Throw ratio[1]							
Projected image size				Height position (H)[2]			
Diagonal (SD)		Height (SH)	Width (SW)				
m	inches						
1.016	40	2.00	2.67	-0.33 - 2.33	-	-	0.98
1.270	50	2.50	3.33	-0.43 - 2.92	-	-	1.25
1.524	60	3.00	4.00	-0.52 - 3.51	-0.30 - 3.31	-	1.51
1.778	70	3.50	4.67	-0.59 - 4.10	-0.36 - 3.84	-	1.74
2.032	80	4.00	5.33	-0.69 - 4.69	-0.39 - 4.40	-	2.00
2.286	90	4.50	6.00	-0.75 - 5.25	-0.46 - 4.95	-	2.26
2.540	100	5.00	6.67	-0.85 - 5.84	-0.49 - 5.51	0.00 - 4.99	2.49
3.048	120	6.00	8.00	-1.02 - 7.02	-0.59 - 6.59	0.00 - 6.00	2.99
3.810	150	7.50	10.00	-1.28 - 8.76	-0.75 - 8.23	0.00 - 7.51	3.74
5.080	200	10.00	13.33	-1.71 - 11.71	-0.98 - 10.99	0.00 - 10.01	4.99
6.350	250	12.50	16.67	-2.13 - 14.63	-1.25 - 13.75	0.00 - 12.50	6.27
7.620	300	15.00	20.00	-2.56 - 17.55	-1.51 - 16.50	0.00 - 14.99	7.51
8.890	350	17.50	23.33	-2.99 - 20.47	-1.74 - 19.26	0.00 - 17.49	8.76
10.160	400	20.00	26.67	-3.41 - 23.39	-2.00 - 22.01	0.00 - 20.01	10.01

1 The throw ratio is based on the value during projection of 2.03 m [80 in] projected image size. However, the throw ratio for ET-ELU20 is based on the value during projection of 3.81 m [150 in] projected image size.

2 When the Fixed-focus Lens (Model No.: ET-ELW21) is attached, the lens shift is not possible, therefore the height position (H) becomes SH/2.

LCD Projector

PT-MZ682L

Screen aspect ratio 21:9

Unit: meters

Lens type				Zoom Lens												Fixed- focus Lens
Projection lens Model No.				ET-ELS20		ET-ELW22		ET-ELU20		ET-ELW20		ET-ELT22		ET-ELT23		ET-ELW21
Throw ratio[1]				1.61-2.76:1		0.788-0.985:1		0.330-0.354:1		1.22-1.67:1		2.73-4.49:1		4.45-7.13:1		0.767:1
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)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Fixed
m	inches															
1.016	40	0.395	0.936	1.48	2.56	-	-	-	-	1.11	1.53	2.50	4.15	4.06	6.57	0.69
1.270	50	0.494	1.170	1.86	3.21	-	-	-	-	1.40	1.93	3.15	5.21	5.12	8.26	0.88
1.524	60	0.592	1.404	2.25	3.87	1.09	1.37	-	-	1.69	2.33	3.80	6.28	6.19	9.96	1.06
1.778	70	0.691	1.638	2.63	4.52	1.29	1.61	-	-	1.98	2.72	4.46	7.34	7.26	11.65	1.25
2.032	80	0.790	1.872	3.01	5.17	1.48	1.84	-	-	2.28	3.12	5.11	8.41	8.32	13.35	1.44
2.286	90	0.889	2.106	3.40	5.82	1.67	2.08	-	-	2.57	3.52	5.76	9.47	9.39	15.04	1.62
2.540	100	0.987	2.340	3.78	6.48	1.86	2.32	0.76	0.82	2.86	3.91	6.42	10.54	10.46	16.74	1.81
3.048	120	1.185	2.808	4.55	7.78	2.24	2.79	0.92	0.99	3.44	4.71	7.72	12.66	12.59	20.13	2.18
3.810	150	1.481	3.510	5.70	9.74	2.81	3.50	1.16	1.24	4.31	5.90	9.68	15.86	15.79	25.21	2.74
5.080	200	1.975	4.681	7.62	13.00	3.76	4.68	1.55	1.67	5.77	7.88	12.95	21.18	21.13	33.69	3.68
6.350	250	2.468	5.851	9.53	16.26	4.71	5.86	1.95	2.10	7.23	9.86	16.21	26.51	26.47	42.16	4.61
7.620	300	2.962	7.021	11.45	19.52	5.67	7.04	2.35	2.52	8.69	11.85	19.48	31.83	31.80	50.64	5.54
8.890	350	3.456	8.191	13.37	22.79	6.62	8.22	2.74	2.95	10.14	13.83	22.74	37.16	37.14	59.11	6.47
10.160	400	3.949	9.361	15.29	26.05	7.57	9.40	3.14	3.37	11.60	15.81	26.01	42.48	42.47	67.59	7.41

Lens type				ET-ELS20 ET-ELW20 ET-ELT22 ET-ELT23	ET-ELW22	ET-ELU20	ET-ELW21 (Fixed)
Projection lens Model No.							
Throw ratio[1]							
Projected image size				Height position (H)[2]			
Diagonal (SD)		Height (SH)	Width (SW)				
m	inches						
1.016	40	0.395	0.936	-0.19 - 0.59	-	-	0.20
1.270	50	0.494	1.170	-0.24 - 0.74	-	-	0.25
1.524	60	0.592	1.404	-0.29 - 0.88	-0.23 - 0.82	-	0.30
1.778	70	0.691	1.638	-0.34 - 1.03	-0.27 - 0.96	-	0.35
2.032	80	0.790	1.872	-0.39 - 1.18	-0.31 - 1.10	-	0.39
2.286	90	0.889	2.106	-0.44 - 1.33	-0.35 - 1.23	-	0.44
2.540	100	0.987	2.340	-0.49 - 1.47	-0.38 - 1.37	-0.24 - 1.22	0.49
3.048	120	1.185	2.808	-0.58 - 1.77	-0.46 - 1.65	-0.29 - 1.47	0.59
3.810	150	1.481	3.510	-0.73 - 2.21	-0.58 - 2.06	-0.36 - 1.84	0.74
5.080	200	1.975	4.681	-0.97 - 2.95	-0.77 - 2.74	-0.48 - 2.45	0.99
6.350	250	2.468	5.851	-1.22 - 3.68	-0.96 - 3.43	-0.59 - 3.06	1.23
7.620	300	2.962	7.021	-1.46 - 4.42	-1.15 - 4.11	-0.71 - 3.67	1.48
8.890	350	3.456	8.191	-1.70 - 5.16	-1.34 - 4.80	-0.83 - 4.29	1.73
10.160	400	3.949	9.361	-1.95 - 5.89	-1.54 - 5.48	-0.95 - 4.90	1.97

1 The throw ratio is based on the value during projection of 2.03 m [80 in] projected image size. However, the throw ratio for ET-ELU20 is based on the value during projection of 3.81 m [150 in] projected image size.

2 When the Fixed-focus Lens (Model No.: ET-ELW21) is attached, the lens shift is not possible, therefore the height position (H) becomes SH/2.

LCD Projector

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Screen aspect ratio 21:9

Unit: feet

Lens type				Zoom Lens												Fixed- focus Lens
Projection lens Model No.				ET-ELS20		ET-ELW22		ET-ELU20		ET-ELW20		ET-ELT22		ET-ELT23		ET-ELW21
Throw ratio[1]				1.61-2.76:1		0.788-0.985:1		0.330-0.354:1		1.22-1.67:1		2.73-4.49:1		4.45-7.13:1		0.767:1
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)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Fixed
m	inches															
1.016	40	1.30	3.07	4.86	8.40	-	-	-	-	3.64	5.02	8.20	13.62	13.32	21.56	2.26
1.270	50	1.62	3.84	6.10	10.53	-	-	-	-	4.59	6.33	10.34	17.09	16.80	27.10	2.89
1.524	60	1.94	4.61	7.38	12.70	3.58	4.50	-	-	5.55	7.64	12.47	20.60	20.31	32.68	3.48
1.778	70	2.27	5.37	8.63	14.83	4.23	5.28	-	-	6.50	8.92	14.63	24.08	23.82	38.22	4.10
2.032	80	2.59	6.14	9.88	16.96	4.86	6.04	-	-	7.48	10.24	16.77	27.59	27.30	43.80	4.72
2.286	90	2.92	6.91	11.16	19.09	5.48	6.82	-	-	8.43	11.55	18.90	31.07	30.81	49.34	5.32
2.540	100	3.24	7.68	12.40	21.26	6.10	7.61	2.49	2.69	9.38	12.83	21.06	34.58	34.32	54.92	5.94
3.048	120	3.89	9.21	14.93	25.53	7.35	9.15	3.02	3.25	11.29	15.45	25.33	41.54	41.31	66.04	7.15
3.810	150	4.86	11.52	18.70	31.96	9.22	11.48	3.81	4.07	14.14	19.36	31.76	52.03	51.80	82.71	8.99
5.080	200	6.48	15.36	25.00	42.65	12.34	15.35	5.09	5.48	18.93	25.85	42.49	69.49	69.32	110.53	12.07
6.350	250	8.10	19.20	31.27	53.35	15.45	19.23	6.40	6.89	23.72	32.35	53.18	86.98	86.84	138.32	15.13
7.620	300	9.72	23.04	37.57	64.04	18.60	23.10	7.71	8.27	28.51	38.88	63.91	104.43	104.33	166.14	18.18
8.890	350	11.34	26.87	43.87	74.77	21.72	26.97	8.99	9.68	33.27	45.37	74.61	121.92	121.85	193.93	21.23
10.160	400	12.96	30.71	50.16	85.47	24.84	30.84	10.30	11.06	38.06	51.87	85.34	139.37	139.34	221.75	24.31

Lens type				ET-ELS20 ET-ELW20 ET-ELT22 ET-ELT23	ET-ELW22	ET-ELU20	ET-ELW21 (Fixed)
Projection lens Model No.							
Throw ratio[1]							
Projected image size				Height position (H)[2]			
Diagonal (SD)		Height (SH)	Width (SW)				
m	inches						
1.016	40	1.30	3.07	-0.62 - 1.94	-	-	0.66
1.270	50	1.62	3.84	-0.79 - 2.43	-	-	0.82
1.524	60	1.94	4.61	-0.95 - 2.89	-0.76 - 2.69	-	0.98
1.778	70	2.27	5.37	-1.12 - 3.38	-0.89 - 3.15	-	1.15
2.032	80	2.59	6.14	-1.28 - 3.87	-1.02 - 3.61	-	1.28
2.286	90	2.92	6.91	-1.44 - 4.36	-1.15 - 4.04	-	1.44
2.540	100	3.24	7.68	-1.61 - 4.82	-1.25 - 4.50	-0.79 - 4.00	1.61
3.048	120	3.89	9.21	-1.90 - 5.81	-1.51 - 5.41	-0.95 - 4.82	1.94
3.810	150	4.86	11.52	-2.40 - 7.25	-1.90 - 6.76	-1.18 - 6.04	2.43
5.080	200	6.48	15.36	-3.18 - 9.68	-2.53 - 8.99	-1.58 - 8.04	3.25
6.350	250	8.10	19.20	-4.00 - 12.07	-3.15 - 11.25	-1.94 - 10.04	4.04
7.620	300	9.72	23.04	-4.79 - 14.50	-3.77 - 13.48	-2.33 - 12.04	4.86
8.890	350	11.34	26.87	-5.58 - 16.93	-4.40 - 15.75	-2.72 - 14.08	5.68
10.160	400	12.96	30.71	-6.40 - 19.32	-5.05 - 17.98	-3.12 - 16.08	6.46

1 The throw ratio is based on the value during projection of 2.03 m [80 in] projected image size. However, the throw ratio for ET-ELU20 is based on the value during projection of 3.81 m [150 in] projected image size.

2 When the Fixed-focus Lens (Model No.: ET-ELW21) is attached, the lens shift is not possible, therefore the height position (H) becomes SH/2.

Formula for calculating the projection distance per projection lens

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 projection distance. All the units for the formula are m. (Value obtained by the following calculation formula contains a slight error.)
When calculating a projection distance using image size designation (value in inches), multiply the value in inches by 0.0254 and substitute it into SD in the formula for calculating the projection distance.

Zoom lens

Unit: m

Projection lens Model No.	Throw ratio	Aspect ratio	Projection distance (L) formula	
			Min. (LW)	Max. (LT)
ET-ELS20	1.61 - 2.76:1	16:10	= 1.389961 x SD - 0.054882	= 2.363976 x SD - 0.048228
	1.61 - 2.76:1	16:9	= 1.428602 x SD - 0.054882	= 2.429695 x SD - 0.048228
	1.93 - 3.32:1	4:3	= 1.573583 x SD - 0.054882	= 2.676260 x SD - 0.048228
	1.61 - 2.76:1	21:9	= 1.510215 x SD - 0.054882	= 2.568499 x SD - 0.048228
ET-ELW22	0.786 - 0.983:1	16:10	= 0.690394 x SD - 0.048460	= 0.855787 x SD - 0.045477
	0.787 - 0.984:1	16:9	= 0.709587 x SD - 0.048460	= 0.879578 x SD - 0.045477
	0.947 - 1.18:1	4:3	= 0.781595 x SD - 0.048460	= 0.968837 x SD - 0.045477
	0.788 - 0.985:1	21:9	= 0.750124 x SD - 0.048460	= 0.929827 x SD - 0.045477
ET-ELU20	0.330 - 0.353:1	16:10	= 0.286831 x SD - 0.029388	= 0.308835 x SD - 0.034616
	0.330 - 0.353:1	16:9	= 0.294806 x SD - 0.029388	= 0.317421 x SD - 0.034616
	0.397 - 0.425:1	4:3	= 0.324715 x SD - 0.029388	= 0.349625 x SD - 0.034616
	0.330 - 0.354:1	21:9	= 0.311646 x SD - 0.029388	= 0.335554 x SD - 0.034616
ET-ELW20	1.21 - 1.66:1	16:10	= 1.055748 x SD - 0.055497	= 1.437441 x SD - 0.053400
	1.21 - 1.66:1	16:9	= 1.085098 x SD - 0.055497	= 1.477402 x SD - 0.053400
	1.46 - 2.00:1	4:3	= 1.195197 x SD - 0.055497	= 1.627323 x SD - 0.053400
	1.22 - 1.67:1	21:9	= 1.147088 x SD - 0.055497	= 1.561803 x SD - 0.053400
ET-ELT22	2.72 - 4.48:1	16:10	= 2.366220 x SD - 0.114022	= 3.858307 x SD - 0.112874
	2.73 - 4.49:1	16:9	= 2.432001 x SD - 0.114022	= 3.965568 x SD - 0.112874
	3.28 - 5.39:1	4:3	= 2.678780 x SD - 0.114022	= 4.367992 x SD - 0.112874
	2.73 - 4.49:1	21:9	= 2.570938 x SD - 0.114022	= 4.192114 x SD - 0.112874
ET-ELT23	4.44 - 7.12:1	16:10	= 3.866693 x SD - 0.212284	= 6.141575 x SD - 0.210772
	4.44 - 7.12:1	16:9	= 3.974187 x SD - 0.212284	= 6.312311 x SD - 0.210772
	5.34 - 8.56:1	4:3	= 4.377480 x SD - 0.212284	= 6.952874 x SD - 0.210772
	4.45 - 7.13:1	21:9	= 4.201226 x SD - 0.212284	= 6.672922 x SD - 0.210772

Fixed-focus Lens (Model No.: ET-ELW21)

Unit: m

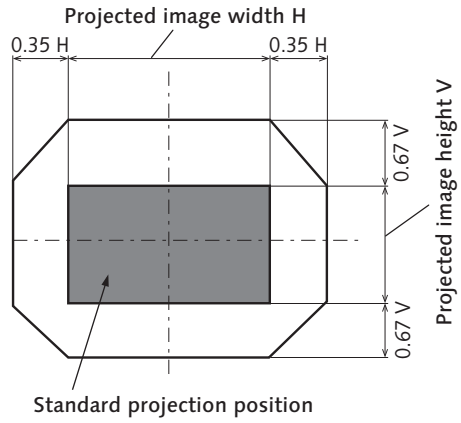
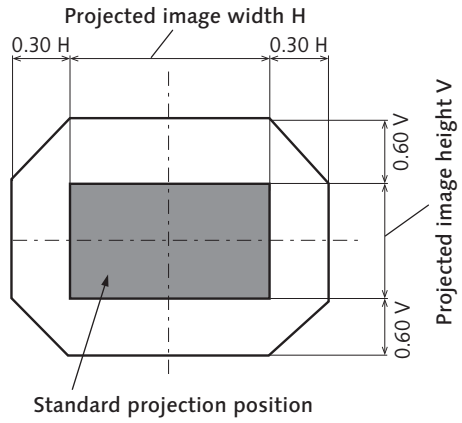
Projection lens Model No.	Throw ratio	Aspect ratio	Projection distance (L) formula
ET-ELW21	0.764:1	16:10	= 0.676299 x SD - 0.057678
	0.765:1	16:9	= 0.695100 x SD - 0.057678
	0.922:1	4:3	= 0.765630 x SD - 0.057678
	0.767:1	21:9	= 0.734810 x SD - 0.057678

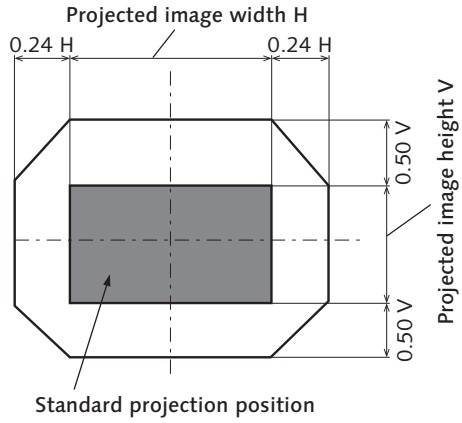
Adjustment range by the lens position shift (optical shift)

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.

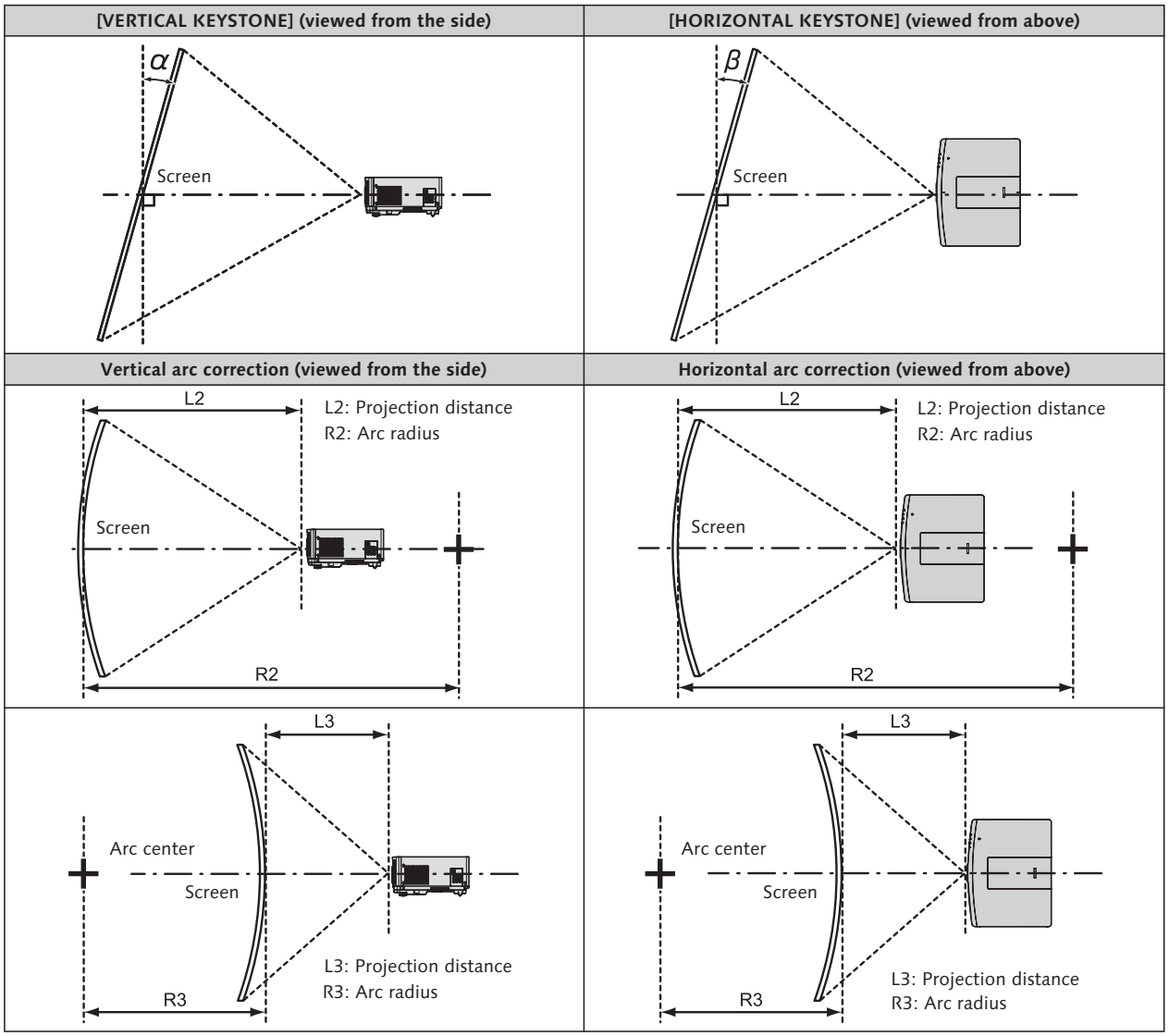
Following figure shows the adjustment range when the projector is installed on the floor.

*Use the projection lens in the standard projection position without adjusting the lens shift when the optional fixed focus lens (ET-ELW21) is attached.

Projection lens Model No.	When ET-ELS20, ET-ELW20, ET-ELT22, ET-ELT23 is mounted.	When ET-ELW22 is mounted.
Lens shift range		

Projection lens Model No.	When ET-ELU20 is mounted.
Lens shift range	

[GEOMETRY] projection range



Projection lens Model No.	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
ET-ELS20	±25	±30	±20	±15	0.9	1.8	0.5	1.0
ET-ELW22	±22	±15	±8	±8	1.7	4.3	1.0	2.6
ET-ELU20	±5	0	-	-	-	-	-	-
ET-ELW20	±25	±30	±20	±15	1.2	3.1	0.7	1.8
ET-ELT22	±25	±30	±20	±15	0.6	1.1	0.3	0.6
ET-ELT23	±25	±30	±20	±15	0.4	0.7	0.2	0.4
ET-ELW21	±22	±15	±8	±8	1.7	4.3	1.0	2.6

1 When [VERTICAL KEYSTONE] and [HORIZONTAL KEYSTONE] are used simultaneously, correction cannot be made exceeding total of 55°.

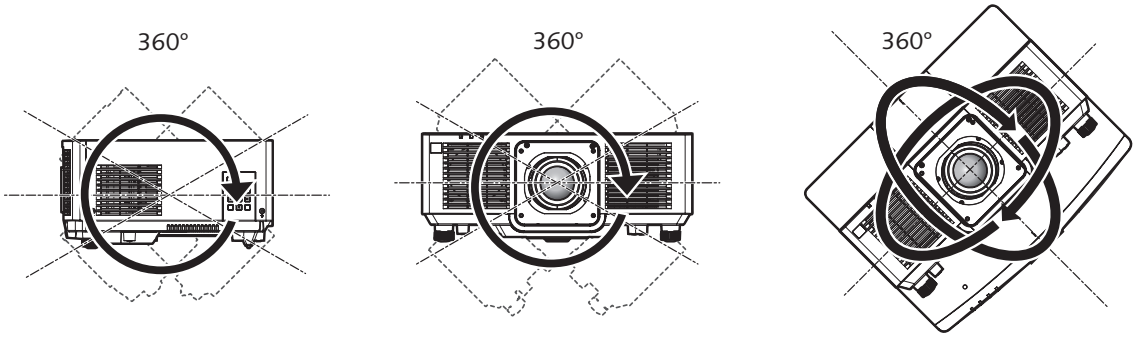
Note

- 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.

Installable angle

Install the projector at an angle within the range shown below.

FULL 360-degree projection



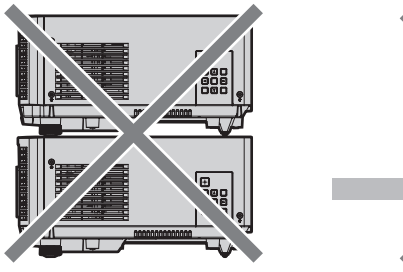
360° vertically

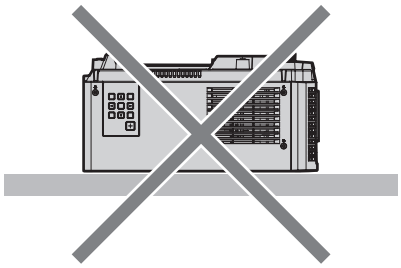
360° horizontally

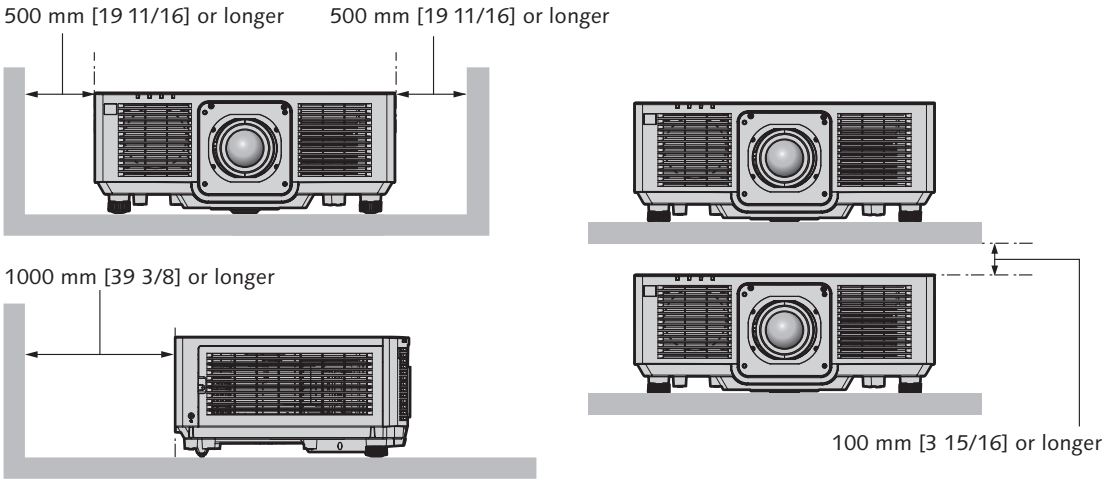
360° tilted
(combination of vertical and horizontal)

Notes on projector placement and operation

1. Never place objects on top of the projector while it is operating.
2. Make sure there is the unobstructed space as shown below or more around the projector's exhaust openings. In addition to this space, also ensure that there is a sufficient work space for removing and installing filter and other parts.
3. Make sure that nothing blocks the projector's air intake and exhaust openings. Also, install the projector so that cool or hot air from other air conditioning equipment does not flow directly toward the projector's air intake or exhaust openings.
4. Do not install the projector in an enclosed space. If it is necessary to install it in an enclosed space, add a separate ventilation system. If ventilation is insufficient, hot air will accumulate at the intake opening. This may cause the projector's protective circuit to interrupt projector operation.







List of compatible signals

The following table specifies the video signals compatible with the projector.
This projector supports the signal with ✓ in the compatible signal column.

- The content of the compatible signal column is as follows.
  -V: Video signal
  -C: Computer signal

Signal Type	Signal name (SIGNAL FORMAT)	Resolution (Dots)	Scanning freq.		Dot clock freq. (MHz)	Compatible signal		
			Horizontal (kHz)	Vertical (Hz)		COMPUTER	HDMI™	DIGITAL LINK
V	480/60p	720 x 480	31.5	59.9	27.0	✓	✓	✓
	576/50p	720 x 576	31.3	50.0	27.0	✓	✓	✓
	720/60p	1280 x 720	45.0	60.0[2]	74.3	✓	✓	✓
	720/50p	1280 x 720	37.5	50.0	74.3	✓	✓	✓
	1080/60i	1920 x 1080i	33.8	60.0[2]	74.3	✓	✓	✓
	1080/50i	1920 x 1080i	28.1	50.0	74.3	✓	✓	✓
	1080/24p	1920 x 1080	27.0	24.0[2]	74.3	✓	✓	✓
	1080/24sF	1920 x 1080i	27.0	48.0[2]	74.3	✓	✓	✓
	1080/25p	1920 x 1080	28.1	25.0	74.3	✓	✓	✓
	1080/30p	1920 x 1080	33.8	30.0[2]	74.3	✓	✓	✓
	1080/60p	1920 x 1080	67.5	60.0[2]	148.5	✓	✓	✓
	1080/50p	1920 x 1080	56.3	50.0	148.5	✓	✓	✓
	3840 x 2160/24p	3840 x 2160	54.0	24.0[2]	297.0	–	✓	✓
	3840 x 2160/25p	3840 x 2160	56.3	25.0	297.0	–	✓	✓
	3840 x 2160/30p	3840 x 2160	67.5	30.0[2]	297.0	–	✓	✓
	3840 x 2160/60p	3840 x 2160	135.0	60.0[2]	297.0	–	✓ [3]	✓ [3]
		3840 x 2160	135.0	60.0[2]	594.0	–	✓	–
	3840 x 2160/50p	3840 x 2160	112.5	50.0	297.0	–	✓ [3]	✓ [3]
		3840 x 2160	112.5	50.0	594.0	–	✓	–
	4096 x 2160/24p	4096 x 2160	54.0	24.0[2]	297.0	–	✓	✓
	4096 x 2160/25p	4096 x 2160	56.3	25.0	297.0	–	✓	✓
	4096 x 2160/30p	4096 x 2160	67.5	30.0[2]	297.0	–	✓	✓
	4096 x 2160/60p	4096 x 2160	135.0	60.0[2]	297.0	–	✓ [3]	✓ [3]
		4096 x 2160	135.0	60.0[2]	594.0	–	✓	–
	4096 x 2160/50p	4096 x 2160	112.5	50.0	297.0	–	✓ [3]	✓ [3]
		4096 x 2160	112.5	50.0	594.0	–	✓	–
C	640 x 480/60	640 x 480	31.5	59.9	25.2	✓	✓	✓
	1024 x 768/50	1024 x 768	39.6	50.0	51.9	✓	✓	✓
	1024 x 768/60	1024 x 768	48.4	60.0	65.0	✓	✓	✓
	1280 x 800/50	1280 x 800	41.3	50.0	68.0	✓	✓	✓
	1280 x 800/60	1280 x 800	49.7	59.8	83.5	✓	✓	✓
	1280 x 1024/50	1280 x 1024	52.4	50.0	88.0	✓	✓	✓
	1280 x 1024/60	1280 x 1024	64.0	60.0	108.0	✓	✓	✓
	1366 x 768/50	1366 x 768	39.6	49.9	69.0	✓	✓	✓
	1366 x 768/60	1366 x 768	47.7	59.8	85.5	✓	✓	✓
	1400 x 1050/50	1400 x 1050	54.1	50.0	99.9	✓	✓	✓
	1400 x 1050/60	1400 x 1050	65.2	60.0	122.6	✓	✓	✓
	1440 x 900/50	1440 x 900	46.3	49.9	86.8	✓	✓	✓
	1440 x 900/60	1440 x 900	55.9	59.9	106.5	✓	✓	✓
	1600 x 900/50	1600 x 900	46.4	49.9	96.5	✓	✓	✓
	1600 x 900/60	1600 x 900	55.9	60.0	119.0	✓	✓	✓
	1600 x 1200/50	1600 x 1200	61.8	49.9	131.5	✓	✓	✓
	1600 x 1200/60	1600 x 1200	75.0	60.0	162.0	✓	✓	✓
	1680 x 1050/50	1680 x 1050	54.1	50.0	119.5	✓	✓	✓
	1680 x 1050/60	1680 x 1050	65.3	60.0	146.3	✓	✓	✓
	1920 x 1200/50	1920 x 1200	61.8	49.9	158.3	✓	✓	✓
	1920 x 1200/60RB	1920 x 1200[1]	74.0	60.0	154.0	✓	✓	✓
	1920 x 640/60	1920 x 640	39.4	59.8	82.0	–	✓	✓
	1920 x 720/60	1920 x 720	46.0	60.0	95.0	–	✓	✓
	1920 x 810/60	1920 x 810	51.7	60.0	107.0	–	✓	✓

1 VESA CVT-RB (Reduced Blanking)-compliant
2 The signal with 1/1.001x vertical scanning frequency is also supported.
3 YP_BP_R 4:2:0 format only

Note

- A signal with a different resolution is converted to the number of display dots. The number of display dots is as follows.
  - 1920 x 1200
- The "i" at the end of the resolution indicates an interlaced signal.
- When interlaced signals are connected, flickering may occur on the projected image.
- When the DIGITAL LINK connection is made with the long-reach communication method, the signal that the projector can receive is up to 1080/60p (1920 x 1080 dots, dot clock frequency 148.5 MHz).
- Even if it is the signal listed in the list of compatible signals, it may not be displayed by the projector if the video signal is recorded in a special format.

List of Plug and play compatible signals

The following table specifies the video signals compatible with plug and play.

Signal with ✓ in the plug and play compatible signal column is the signal described in the EDID (extended display identification data) of the projector. For the signal without ✓ in the plug and play compatible signal column, the resolution may not be selected on the computer even if the projector is supporting it.

Signal name (SIGNAL FORMAT)	Resolution (Dots)	Scanning freq.		Dot clock freq. (MHz)	Plug and play compatible signal						
		Horizontal (kHz)	Vertical (Hz)		COMPUTER	HDMI™			DIGITAL LINK		
						4K/60P	4K/30P	2K	4K/60P	4K/30P	2K
480/60p	720 x 480	31.5	59.9	27.0	–	✓	✓	✓	✓	✓	✓
576/50p	720 x 576	31.3	50.0	27.0	–	✓	✓	✓	✓	✓	✓
720/60p	1280 x 720	45.0	60.0[2]	74.3	–	✓	✓	✓	✓	✓	✓
720/50p	1280 x 720	37.5	50.0	74.3	–	✓	✓	✓	✓	✓	✓
1080/60i	1920 x 1080i	33.8	60.0[2]	74.3	–	✓	✓	✓	✓	✓	✓
1080/50i	1920 x 1080i	28.1	50.0	74.3	–	✓	✓	✓	✓	✓	✓
1080/24p	1920 x 1080	27.0	24.0[2]	74.3	–	✓	✓	✓	✓	✓	✓
1080/24sF	1920 x 1080i	27.0	48.0[2]	74.3	–	–	–	–	–	–	–
1080/25p	1920 x 1080	28.1	25.0	74.3	–	✓	✓	✓	✓	✓	✓
1080/30p	1920 x 1080	33.8	30.0[2]	74.3	–	✓	✓	✓	✓	✓	✓
1080/60p	1920 x 1080	67.5	60.0[2]	148.5	–	✓	✓	✓	✓	✓	✓
1080/50p	1920 x 1080	56.3	50.0	148.5	–	✓	✓	✓	✓	✓	✓
3840 x 2160/24p	3840 x 2160	54.0	24.0[2]	297.0	–	✓	✓	–	✓	✓	–
3840 x 2160/25p	3840 x 2160	56.3	25.0	297.0	–	✓	✓	–	✓	✓	–
3840 x 2160/30p	3840 x 2160	67.5	30.0[2]	297.0	–	✓	✓	–	✓	✓	–
3840 x 2160/60p	3840 x 2160	135.0	60.0[2]	297.0	–	✓[3]	–	–	✓[3]	–	–
	3840 x 2160	135.0	60.0[2]	594.0	–	✓	–	–	–	–	–
3840 x 2160/50p	3840 x 2160	112.5	50.0	297.0	–	✓[3]	–	–	✓[3]	–	–
	3840 x 2160	112.5	50.0	594.0	–	✓	–	–	–	–	–
4096 x 2160/24p	4096 x 2160	54.0	24.0[2]	297.0	–	✓	✓	–	✓	✓	–
4096 x 2160/25p	4096 x 2160	56.3	25.0	297.0	–	✓	✓	–	✓	✓	–
4096 x 2160/30p	4096 x 2160	67.5	30.0[2]	297.0	–	✓	✓	–	✓	✓	–
4096 x 2160/60p	4096 x 2160	135.0	60.0[2]	297.0	–	✓[3]	–	–	✓[3]	–	–
	4096 x 2160	135.0	60.0[2]	594.0	–	✓	–	–	–	–	–
4096 x 2160/50p	4096 x 2160	112.5	50.0	297.0	–	✓[3]	–	–	✓[3]	–	–
	4096 x 2160	112.5	50.0	594.0	–	✓	–	–	–	–	–
640 x 480/60	640 x 480	31.5	59.9	25.2	✓	✓	✓	✓	✓	✓	✓
1024 x 768/50	1024 x 768	39.6	50.0	51.9	–	–	–	–	–	–	–
1024 x 768/60	1024 x 768	48.4	60.0	65.0	✓	✓	✓	✓	✓	✓	✓
1280 x 800/50	1280 x 800	41.3	50.0	68.0	–	–	–	–	–	–	–
1280 x 800/60	1280 x 800	49.7	59.8	83.5	–	–	–	–	–	–	–
1280 x 1024/50	1280 x 1024	52.4	50.0	88.0	–	–	–	–	–	–	–
1280 x 1024/60	1280 x 1024	64.0	60.0	108.0	–	–	–	–	–	–	–
1366 x 768/50	1366 x 768	39.6	49.9	69.0	–	–	–	–	–	–	–
1366 x 768/60	1366 x 768	47.7	59.8	85.5	–	–	–	–	–	–	–
1400 x 1050/50	1400 x 1050	54.1	50.0	99.9	–	–	–	–	–	–	–
1400 x 1050/60	1400 x 1050	65.2	60.0	122.6	✓	✓	✓	✓	✓	✓	✓
1440 x 900/50	1440 x 900	46.3	49.9	86.8	–	–	–	–	–	–	–
1440 x 900/60	1440 x 900	55.9	59.9	106.5	–	–	–	–	–	–	–
1600 x 900/50	1600 x 900	46.4	49.9	96.5	–	–	–	–	–	–	–
1600 x 900/60	1600 x 900	55.9	60.0	119.0	✓	✓	✓	✓	✓	✓	✓
1600 x 1200/50	1600 x 1200	61.8	49.9	131.5	–	–	–	–	–	–	–
1600 x 1200/60	1600 x 1200	75.0	60.0	162.0	✓	✓	✓	✓	✓	✓	✓
1680 x 1050/50	1680 x 1050	54.1	50.0	119.5	–	–	–	–	–	–	–
1680 x 1050/60	1680 x 1050	65.3	60.0	146.3	–	–	–	–	–	–	–
1920 x 1200/50	1920 x 1200	61.8	49.9	158.3	–	–	–	–	–	–	–
1920 x 1200/60RB	1920 x 1200[1]	74.0	60.0	154.0	✓	✓	✓	✓	✓	✓	✓
1920 x 640/60	1920 x 640	39.4	59.8	82.0	–	✓	✓	✓	✓	✓	✓
1920 x 720/60	1920 x 720	46.0	60.0	95.0	–	–	–	–	–	–	–
1920 x 810/60	1920 x 810	51.7	60.0	107.0	–	✓	✓	✓	✓	✓	✓

1 VESA CVT-RB (Reduced Blanking)-compliant
2 The signal with 1/1.001x vertical scanning frequency is also supported.
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