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SPEC FILE

Product Number : PT-**D12000**

Product Name : 3-Chip DLP™ Projector

Specifications

Main unit

Power supply	North America	120–240 V AC, 16–9.0 A, 50/60 Hz (3-wire single-phase)
	Europe, Asia	220–240 V AC, 9.5 A, 50/60 Hz (3-wire single-phase)
Power consumption	North America	1,600–1,500 W (10-15 W in standby mode with fan stopped)
	Europe, Asia	1,500 W (15 W in standby mode with fan stopped)
DLP™ chip	Panel size	24.1 mm (0.95 inches) diagonal (4:3 aspect ratio)
	Display method	DLP™ chip × 3 (R, G, B), DLP™ projection system
	Pixels	1,470,000 (1,400 × 1,050) × 3, total of 4,410,000 pixels
Lens		Optional powered zoom/focus lenses
Lamp		300 W UHM lamp × 4
Screen size		1.78–15.24 m (70–600 inches), 4:3 aspect ratio (1.78–7.62 m (70–300 inches) with the ET-D75LE5, 4:3 aspect ratio)
Brightness*1		12,000 lumens (four lamp)
Center-to-corner uniformity*1		90%
Contrast*1		5,000:1 (full on/full off, in dynamic iris 3 mode)
Resolution		1,400 × 1,050 pixels (Input signals that exceed this resolution will be converted to 1,400 × 1,050 pixels.)
Scanning frequency	RGB	f_H: 15–100 kHz, fv: 24–120 Hz*2, dot clock: 20–162 MHz
	$Y P_B P_R$ ($Y C_B C_R$)	480i (525i): f_H 15.75 kHz; fv 60 Hz, 576i (625i): f_H 15.63 kHz; fv 50 Hz, 480p (525p): f_H 31.50 kHz; fv 60 Hz, 576p (625p): f_H 31.25 kHz; fv 50 Hz, 720 (750)/60p: f_H 45.00 kHz; fv 60 Hz, 720 (750)/50p: f_H 37.50 kHz; fv 50 Hz, 1035/60i: f_H 33.75 kHz; fv 60 Hz, 1080 (1125)/60i: f_H 33.75 kHz; fv 60 Hz, 1080 (1125)/50i: f_H 28.13 kHz; fv 50 Hz, 1080/25p: f_H 28.13 kHz; fv 25 Hz, 1080/24p: f_H 27.00 kHz; fv 24 Hz, 1080/24sF: f_H 27.00 kHz; fv 48 Hz, 1080/30p: f_H 33.75 kHz; fv 30 Hz, 1080/60p: f_H 67.50 kHz; fv 60 Hz, 1080/50p: f_H 56.25 kHz; fv 50 Hz
	Video/S-Video	f_H: 15.75 kHz, fv: 60 Hz [NTSC/NTSC4.43/PAL-M/PAL60] f_H: 15.63 kHz, fv: 50 Hz [PAL/PAL-N/SECAM]
Optical axis shift*3	Vertical	±50% (±40% with the ET-D75LE6) from center of screen, powered
	Horizontal	±30% (±20% with the ET-D75LE6) from center of screen, powered
Keystone correction range		When using only the KEYSTONE correction of the Geometric Adjustment function: Vertical ±40°, horizontal ±15° (vertical ±22° and horizontal ±15° with the ET-D75LE5, vertical ±28° and horizontal ±10° with the ET-D75LE6) When using both the KEYSTONE and CURVED corrections of the Geometric Adjustment function: Vertical ±5°, horizontal ±5° (vertical ±10° and horizontal ±10° with the ET-D75LE3, vertical ±10° and horizontal ±15° with the ET-D75LE4/D75LE8)
Installation		Ceiling/floor, front/rear
Terminals	DVI-D IN	DVI-D 24-pin × 1, DVI 1.0 compliant, compatible with HDCP, compatible with single link only, 480p, 576p, 720/60p, 720/50p, 1080/60i, 1080/50i, 1080/24p, 1080/24sF, 1080/25p, 1080/30p, 1080/60p, 1080/50p VGA (640 × 480)–WUXGA*4 (1,920 × 1,200), compatible with non-interlaced signals only, dot clock: 25–162 MHz

	RGB1 IN	BNC × 5
	R, G, B	R: 0.7 Vp-p, 75 ohms, G: 0.7 Vp-p (G: 1.0 Vp-p for sync on G), 75 ohms, B: 0.7 Vp-p, 75 ohms HD, VD/SYNC: 1.4–5.0 Vp-p, positive/negative, 75 ohms **NOTE: SYNC/HD and VD terminals do not accept tri-level sync signals.**
	Y, P_B, P_R	Y: 1.0 p-p (incl. sync signal), P_B/P_R: 0.7 Vp-p, 75 ohms
	RGB2 IN	D-sub HD 15-pin × 1
	R, G, B	R: 0.7 Vp-p, 75 ohms, G: 0.7 Vp-p (G: 1.0 Vp-p for sync on G), 75 ohms, B: 0.7 Vp-p, 75 ohms HD, VD/SYNC: 1.4–5.0 Vp-p, positive/negative, 75 ohms **NOTE: SYNC/HD and VD terminals do not accept tri-level sync signals.**
	Y, P_B, P_R	Y: 1.0 p-p (incl. sync signal), P_B/P_R: 0.7 Vp-p, 75 ohms
	VIDEO IN	BNC × 1, 1.0 Vp-p, 75 ohms
	VIDEO OUT	BNC × 1, 1.0 Vp-p, active through
	S-VIDEO IN	Mini DIN 4-pin × 1 Y: 1.0 Vp-p, C: 0.286 Vp-p, 75 ohms (S1 signal compatible)
	LAN	RJ-45 × 1, 100Base-TX/10Base-T, compatible with PJLink™ (class 1)
	SERIAL IN*5	D-sub 9-pin (female) × 2, for external control (RS-232C/RS-422 compliant)
	SERIAL OUT*5	D-sub 9-pin (male) × 1, for link control (RS-422 compliant)
	REMOTE 1 IN	M3 jack × 1 for wired remote control
	REMOTE 1 OUT	M3 jack × 1 for link control
	REMOTE 2 IN	D-sub 9-pin × 1 for external control (parallel)
Optional board slot*6		
With ET-MD77SD1 installed	SERIAL IN	BNC × 1, SD-SDI signal (YC_BC_R 4:2:2 10-bit): SMPTE 259M compliant: 480i, 576i
	SERIAL OUT	BNC × 1, active through
With ET-MD77SD3 installed	SERIAL IN	BNC × 1 SD-SDI signal (YC_BC_R 4:2:2 10-bit): SMPTE 259M compliant: 480i, 576i Single-link HD-SDI signal (YP_BP_R 4:2:2 10-bit): SMPTE 292M compliant: 720/50p, 720/60p, 1035/60i, 1080/50i, 1080/60i, 1080/25p, 1080/24p, 1080/24sF, 1080/30p
	SERIAL OUT	BNC × 1, active through
With ET-MD100SD4 installed	Link A/Link B IN	BNC × 1 for each SD-SDI signal (YC_BC_R 4:2:2 10-bit): SMPTE 259M compliant: 480i, 576i Single-link HD-SDI signal (YP_BP_R 4:2:2 10-bit): SMPTE 292M compliant: 720/50p, 720/60p, 1080/50i, 1080/60i, 1080/25p, 1080/24p, 1080/24sF, 1080/30p Dual-link HD-SDI signal (RGB 4:4:4 12-bit/10-bit): SMPTE 372M compliant: 1920 × 1080/50i, 1920 × 1080/60i, 1920 × 1080/25p, 1920 × 1080/24p, 1920 × 1080/24sF, 1920 × 1080/30p Dual-link HD-SDI signal (X Y Z 4:4:4 12-bit): 2048 × 1080/24p, 2048 × 1080/24sF
With ET-MD77DV installed	DVI-D IN	DVI-D 24-pin × 1, DVI 1.0 compliant, compatible with HDCP, compatible with single link only, 480p, 576p, 720/60p, 720/50p, 1080/60i, 1080/50i, 1080/24p, 1080/24sF, 1080/25p, 1080/30p, 1080/60p, 1080/50p VGA (640 × 480) – WUXGA*4 (1,920 × 1,200), compatible with non-interlaced signals only, dot clock: 25–162 MHz
Power cord		3.0 m (9 ft 10 in)
Cabinet material		Molded plastic
Dimensions (W × H × D)		578 × 320 × 643 mm (22-3/4″ × 12-19/32″ × 25-5/16″) (without lens)
Weight*7		Approx. 35 kg (77.2 lbs) (without lens)

Operating temperature*8	0°C–45°C (32°F–113°F)
Operating humidity	10%–80% (no condensation)

Remote control unit

Number of functions	35 keys, 39 functions
Power supply	3 V DC (R6/LR6/AA type battery × 2)
Operation range*9	Approx. 30 m (98 ft 5 in) when operated from directly in front of the signal receptor
Dimensions (W × H × D)	51 × 23 × 176 mm (2″ × 29/32″ × 6-15/16″)
Weight	Approx. 134 g (4.7 oz) (including batteries)

Supplied accessories

Power cord
Wireless/wired remote control unit
Batteries for remote control (R6/LR6/AA type × 2)
Eye bolts (× 4)
Wire rope

Optional accessories

Zoom lens (1.0–1.2:1)	ET-D75LE6
Zoom lens (1.4–1.8:1)	ET-D75LE10
Zoom lens (1.8–2.6:1)	ET-D75LE20
Zoom lens (2.6–5.1:1)	ET-D75LE30
Zoom lens (5.0–8.0:1)	ET-D75LE4
Zoom lens (7.9–15.0:1)	ET-D75LE8
Fixed-focus lens (0.8:1)	ET-D75LE5
SD-SDI board	ET-MD77SD1
HD/SD-SDI board	ET-MD77SD3
Dual link HD-SDI board	ET-MD100SD4
DVI-D board	ET-MD77DV
Replacement lamp unit	ET-LAD12K (one unit) ET-LAD12KF (a set of four lamps)
Ceiling mount bracket	ET-PKD100H (for high ceilings) ET-PKD100S (for low ceilings)
Frame	ET-PFD100
Carrying handle	ET-HAD100
Smoke cut filter	ET-SFD100

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

***1 Measurement, measuring conditions, and method of notation all comply with ISO 21118 international standards.**

***2 Smooth image reproduction may not be possible when a motion video signal with a vertical frequency other than 50 or 60 Hz is input.**

***3 Shift range is limited during simultaneous horizontal and vertical shifting.**

***4 WUXGA resolution is supported only when the signals are compliant with VESA CVT-RB (Coordinated Video Timing-Reduced Blanking).**

***5 Contact your dealers for details when the control using RS-232C or RS-422 is required.**

***6 The LAN terminal on the optional board will be inactivated after installation. Use the LAN terminal on the main unit.**

***7 Average value (excluding the optional lens). May differ depending on models.**

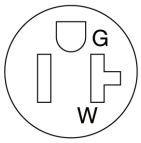
***8 The operating temperature range is 0°C (32°F) to 40°C (104°F) when used in High-Altitude mode (1,400 m (4,593 feet) to 2,700 m (8,858 feet)). Also, if the ambient temperature exceeds 40°C (104°F) (35°C (95°F) in High-Altitude mode) when using all four lamps, the light output may be reduced approximately 30% to protect the projector.**

***9 Operation range differs depending on environments.**

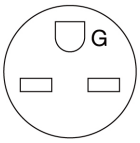
Shape of the plug receptacle

PT-D12000U

125 V AC, 20 A
(NEMA 5-20R)

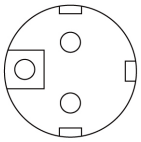


250 V AC, 15 A
(NEMA 6-15R)

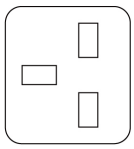


PT-D12000E

220-240V AC, 16 A

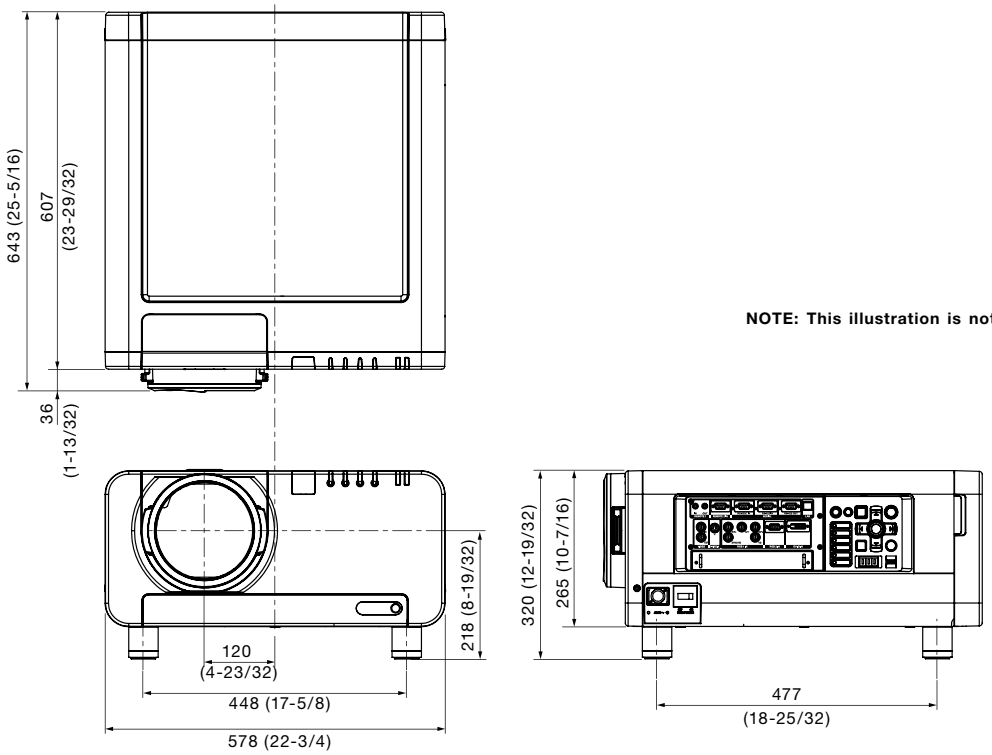


220-240V AC, 13 A/15 A



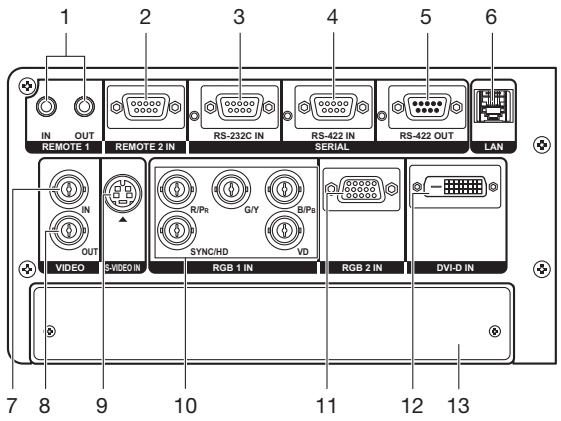
Note: Be sure to use the power plug adaptor cord supplied with the projector. The supplied power plug adaptor can be used with the PT-D12000 only.

Dimensions



unit : mm (inch)
NOTE: This illustration is not drawn to scale.

Terminals

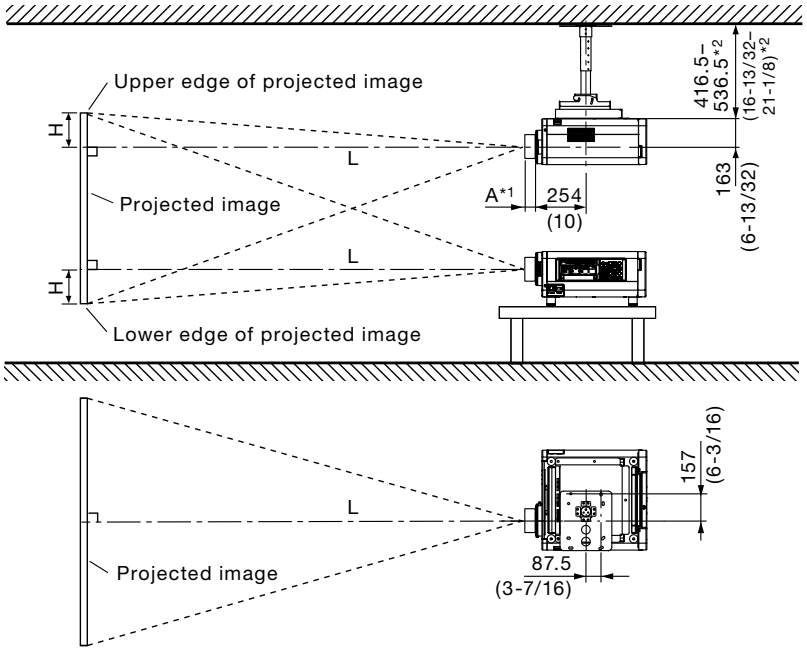


1 Remote 1 input/output
2 Remote 2 input
3 Serial input (RS-232C)
4 Serial input (RS-422)
5 Serial output (RS-422)
6 LAN connector (10Base-T/100Base-TX)
7 Video input
8 Video output
9 S-Video input
10 RGB 1 ($Y P_B P_R$) input
11 RGB 2 Input
12 DVI-D input
13 Optional board slot

3-Chip DLP™ Projector

PT-D12000

Standard setting-up positions



*1 When the lens protrudes to the maximum.

A: 160 mm (6-5/16˝) with the ET-D75LE6
73 mm (2-7/8˝) with the ET-D75LE10
62.5 mm (2-15/32˝) with the ET-D75LE1
69 mm (2-23/32˝) with the ET-D75LE20
47 mm (1-27/32˝) with the ET-D75LE2
69 mm (2-23/32˝) with the ET-D75LE30
50.5 mm (2˝) with the ET-D75LE3
74 mm (2-29/32˝) with the ET-D75LE4
202.5 mm (7-31/32˝) with the ET-D75LE8
150.5 mm (5-15/16˝) with the ET-D75LE5

*2 Adjustable in 40 mm (1-9/16˝) steps.

unit : mm (inch)

NOTE:

Illustrations show the projector installed using optional ceiling mount bracket ET-PKD100H and an optional lens.

This illustration is not drawn to scale.

Caution:

- All construction work should be done by a qualified technician.
- When mounting to the ceiling, use the special mounting bracket. To prevent the projector from swaying or dropping, attach the wire that is included with the projector between the mounting bracket and the ceiling.

Projection distance for 4:3 aspect ratio screen

(ET-D75LE6/D75LE10/D75LE20/D75LE30/D75LE4/D75LE8/D75LE5)

Unit: meters

Screen size (diagonal)	Distance to screen (L)													Height from the edge of screen to center of lens (H)		
	Zoom												Fixed-focus			
	ET-D75LE6 Zoom lens		ET-D75LE10 Zoom lens		ET-D75LE20 Zoom lens		ET-D75LE30 Zoom lens		ET-D75LE4 Zoom lens		ET-D75LE8 Zoom lens		ET-D75LE5 Fixed-focus lens	Zoom lenses		Fixed-focus lens
														Except ET-D75LE6	ET-D75LE6	
[m] / [in]	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.				
1.78 / 70	1.39	1.66	1.95	2.52	2.52	3.66	3.64	7.10	7.10	11.37	11.09	21.14	1.02	0.00 – 1.07	0.11 – 0.96	0.53
2.03 / 80	1.60	1.91	2.24	2.89	2.89	4.20	4.17	8.13	8.13	13.01	12.73	24.22	1.18	0.00 – 1.22	0.12 – 1.10	0.61
2.29 / 90	1.81	2.16	2.53	3.27	3.26	4.74	4.71	9.17	9.16	14.65	14.37	27.29	1.34	0.00 – 1.37	0.14 – 1.23	0.69
2.54 / 100	2.01	2.41	2.82	3.64	3.63	5.28	5.24	10.21	10.19	16.29	16.01	30.36	1.50	0.00 – 1.52	0.15 – 1.37	0.76
3.05 / 120	2.43	2.90	3.40	4.39	4.37	6.36	6.32	12.29	12.26	19.57	19.29	36.50	1.81	0.00 – 1.83	0.18 – 1.65	0.91
3.81 / 150	3.05	3.65	4.27	5.52	5.49	7.98	7.92	15.41	15.35	24.49	24.21	45.72	2.29	0.00 – 2.29	0.23 – 2.06	1.14
5.08 / 200	4.08	4.89	5.72	7.39	7.34	10.67	10.60	20.60	20.50	32.69	32.40	61.08	3.08	0.00 – 3.05	0.31 – 2.74	1.52
6.35 / 250	5.12	6.13	7.17	9.27	9.20	13.37	13.28	25.80	25.66	40.88	40.60	76.44	3.87	0.00 – 3.81	0.38 – 3.43	1.91
7.62 / 300	6.15	7.37	8.62	11.14	11.06	16.07	15.96	30.99	30.81	49.08	48.80	91.79	4.66	0.00 – 4.57	0.46 – 4.12	2.29
10.16 / 400	8.22	9.85	11.52	14.90	14.77	21.46	21.31	41.38	41.12	65.47	65.19	122.51	–	0.00 – 6.10	0.61 – 5.49	–
12.70 / 500	10.29	12.33	14.42	18.65	18.48	26.86	26.67	51.77	51.43	81.87	81.59	153.23	–	0.00 – 7.62	0.76 – 6.86	–
15.24 / 600	12.36	14.81	17.33	22.40	22.20	32.25	32.03	62.15	61.74	98.26	97.98	183.95	–	0.00 – 9.14	0.91 – 8.23	–

Unit: feet

Screen size (diagonal)	Distance to screen (L)													Height from the edge of screen to center of lens (H)		
	Zoom												Fixed-focus			
	ET-D75LE6 Zoom lens		ET-D75LE10 Zoom lens		ET-D75LE20 Zoom lens		ET-D75LE30 Zoom lens		ET-D75LE4 Zoom lens		ET-D75LE8 Zoom lens		ET-D75LE5 Fixed-focus lens	Zoom lenses		Fixed-focus lens
														Except ET-D75LE6	ET-D75LE6	
[m] / [in]	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.				
1.78 / 70	4.6	5.5	6.4	8.3	8.3	12.0	11.9	23.3	23.3	37.3	36.4	69.4	3.4	0.0 – 3.5	0.4 – 3.2	1.8
2.03 / 80	5.2	6.3	7.3	9.5	9.5	13.8	13.7	26.7	26.7	42.7	41.8	79.4	3.9	0.0 – 4.0	0.4 – 3.6	2.0
2.29 / 90	5.9	7.1	8.3	10.7	10.7	15.5	15.4	30.1	30.1	48.1	47.1	89.5	4.4	0.0 – 4.5	0.5 – 4.1	2.3
2.54 / 100	6.6	7.9	9.2	11.9	11.9	17.3	17.2	33.5	33.4	53.5	52.5	99.6	4.9	0.0 – 5.0	0.5 – 4.5	2.5
3.05 / 120	8.0	9.5	11.1	14.4	14.3	20.9	20.7	40.3	40.2	64.2	63.3	119.8	5.9	0.0 – 6.0	0.6 – 5.4	3.0
3.81 / 150	10.0	12.0	14.0	18.1	18.0	26.2	26.0	50.5	50.4	80.3	79.4	150.0	7.5	0.0 – 7.5	0.8 – 6.8	3.8
5.08 / 200	13.4	16.0	18.8	24.3	24.1	35.0	34.8	67.6	67.3	107.2	106.3	200.4	10.1	0.0 – 10.0	1.0 – 9.0	5.0
6.35 / 250	16.8	20.1	23.5	30.4	30.2	43.9	43.6	84.6	84.2	134.1	133.2	250.8	12.7	0.0 – 12.5	1.3 – 11.3	6.3
7.62 / 300	20.2	24.2	28.3	36.6	36.3	52.7	52.4	101.7	101.1	161.0	160.1	301.2	15.3	0.0 – 15.0	1.5 – 13.5	7.5
10.16 / 400	27.0	32.3	37.8	48.9	48.5	70.4	69.9	135.8	134.9	214.8	213.9	401.9	–	0.0 – 20.0	2.0 – 18.0	–
12.70 / 500	33.8	40.4	47.3	61.2	60.6	88.1	87.5	169.8	168.7	268.6	267.7	502.7	–	0.0 – 25.0	2.5 – 22.5	–
15.24 / 600	40.6	48.6	56.8	73.5	72.8	105.8	105.1	203.9	202.6	322.4	321.5	603.5	–	0.0 – 30.0	3.0 – 27.0	–

- **The value for L (distance to screen) varies slightly depending on the zoom lens characteristics.**
- **At the shortest projection distance, the zoom lens characteristics may cause slight image distortion.**
- **When vertical keystone correction is used, the image is corrected in the direction that reduces its projected size.**

NOTE: When the ET-D75LE5 is mounted, the optical lens shift function cannot be used.

Projection distance for 4:3 aspect ratio screen

(ET-D75LE1/D75LE2/D75LE3)

Unit: meters

Screen size (diagonal)	Distance to screen (L)						Height from the edge of screen to center of lens (H)
	ET-D75LE1 Zoom lens		ET-D75LE2 Zoom lens		ET-D75LE3 Zoom lens		
[m] / [in]	min.	max.	min.	max.	min.	max.	
1.78 / 70	2.07	2.77	2.80	4.22	4.23	7.10	0.00 – 1.07
2.03 / 80	2.38	3.18	3.21	4.83	4.84	8.13	0.00 – 1.22
2.29 / 90	2.69	3.59	3.62	5.45	5.46	9.16	0.00 – 1.37
2.54 / 100	2.99	4.00	4.04	6.07	6.08	10.19	0.00 – 1.52
3.05 / 120	3.61	4.82	4.86	7.30	7.31	12.25	0.00 – 1.83
3.81 / 150	4.53	6.05	6.09	9.15	9.16	15.34	0.00 – 2.29
5.08 / 200	6.06	8.10	8.15	12.24	12.25	20.50	0.00 – 3.05
6.35 / 250	7.59	10.15	10.21	15.33	15.34	25.65	0.00 – 3.81
7.62 / 300	9.13	12.20	12.27	18.41	18.42	30.81	0.00 – 4.57
10.16 / 400	12.19	16.29	16.38	24.59	24.60	41.12	0.00 – 6.10
12.70 / 500	15.26	20.39	20.50	30.76	30.77	51.43	0.00 – 7.62
15.24 / 600	18.33	24.49	24.61	36.93	36.94	61.73	0.00 – 9.14

Unit: feet

Screen size (diagonal)	Distance to screen (L)						Height from the edge of screen to center of lens (H)
	ET-D75LE1 Zoom lens		ET-D75LE2 Zoom lens		ET-D75LE3 Zoom lens		
[m] / [in]	min.	max.	min.	max.	min.	max.	
1.78 / 70	6.8	9.1	9.2	13.8	13.9	23.3	0.0 – 3.5
2.03 / 80	7.8	10.4	10.5	15.9	15.9	26.7	0.0 – 4.0
2.29 / 90	8.8	11.8	11.9	17.9	17.9	30.0	0.0 – 4.5
2.54 / 100	9.8	13.1	13.2	19.9	19.9	33.4	0.0 – 5.0
3.05 / 120	11.8	15.8	15.9	24.0	24.0	40.2	0.0 – 6.0
3.81 / 150	14.8	19.8	20.0	30.0	30.1	50.3	0.0 – 7.5
5.08 / 200	19.9	26.6	26.7	40.2	40.2	67.2	0.0 – 10.0
6.35 / 250	24.9	33.3	33.5	50.3	50.3	84.2	0.0 – 12.5
7.62 / 300	29.9	40.0	40.2	60.4	60.4	101.1	0.0 – 15.0
10.16 / 400	40.0	53.5	53.7	80.7	80.7	134.9	0.0 – 20.0
12.70 / 500	50.1	66.9	67.2	100.9	100.9	168.7	0.0 – 25.0
15.24 / 600	60.1	80.3	80.7	121.2	121.2	202.5	0.0 – 30.0

- **The value for L (distance to screen) varies slightly depending on the zoom lens characteristics.**
- **At the shortest projection distance, the zoom lens characteristics may cause slight image distortion.**
- **When vertical keystone correction is used, the image is corrected in the direction that reduces its projected size.**

NOTE: When the ET-D75LE5 is mounted, the optical lens shift function cannot be used.

Calculation of the projection distance

For a screen size different from the above, use the equation below to calculate the projection distance.

Aspect ratio 4:3

Zoom lenses

ET-D75LE6	minimum	L (m) = (diagonal screen size in inches) × 0.0207 – 0.0566
	maximum	L (m) = (diagonal screen size in inches) × 0.0248 – 0.0736
ET-D75LE10	minimum	L (m) = (diagonal screen size in inches) × 0.0290 – 0.0857
	maximum	L (m) = (diagonal screen size in inches) × 0.0375 – 0.1085
ET-D75LE1	minimum	L (m) = (diagonal screen size in inches) × 0.0307 – 0.0760
	maximum	L (m) = (diagonal screen size in inches) × 0.0410 – 0.1004
ET-D75LE20	minimum	L (m) = (diagonal screen size in inches) × 0.0371 – 0.0832
	maximum	L (m) = (diagonal screen size in inches) × 0.0540 – 0.1162
ET-D75LE2	minimum	L (m) = (diagonal screen size in inches) × 0.0412 – 0.0795
	maximum	L (m) = (diagonal screen size in inches) × 0.0617 – 0.1064
ET-D75LE30	minimum	L (m) = (diagonal screen size in inches) × 0.0536 – 0.1131
	maximum	L (m) = (diagonal screen size in inches) × 0.1039 – 0.1765
ET-D75LE3	minimum	L (m) = (diagonal screen size in inches) × 0.0617 – 0.0958
	maximum	L (m) = (diagonal screen size in inches) × 0.1031 – 0.1216
ET-D75LE4	minimum	L (m) = (diagonal screen size in inches) × 0.1031 – 0.1158
	maximum	L (m) = (diagonal screen size in inches) × 0.1639 – 0.1013
ET-D75LE8	minimum	L (m) = (diagonal screen size in inches) × 0.1640 – 0.3862
	maximum	L (m) = (diagonal screen size in inches) × 0.3072 – 0.3598

Fixed-focus lens

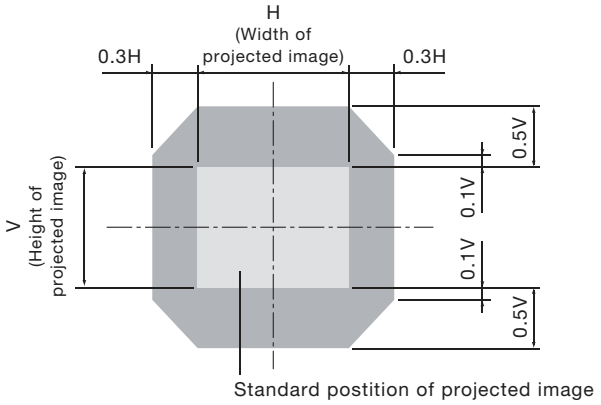
ET-D75LE5		L (m) = (diagonal screen size in inches) × 0.0158 – 0.0835

- **Distances calculated with the above equations will include slight deviations.**

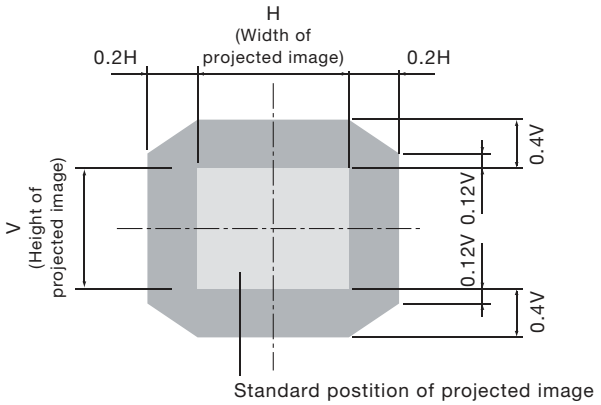
Shift range

Optical axis shift function allows to shift the position of a projected image as shown below.

- **When the lens except the ET-D75LE6 is mounted (ET-D75LE1/D75LE2/D75LE3/D75LE4/D75LE8/D75LE10/D75LE20/D75LE30)**



- **When the ET-D75LE6 is mounted**



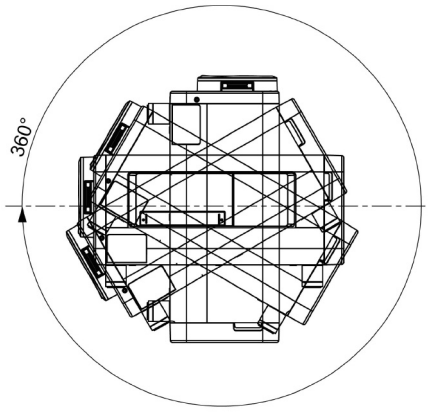
• Because the ET-D75LE5 is a fixed short-throw lens, the lens shift function cannot be used with it.

Installable angle

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

• Vertical direction

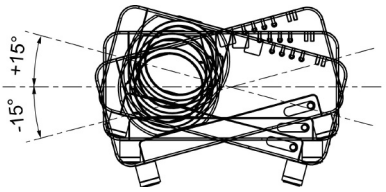
The projector may be installed at a vertical angle of 360°.*



*** A special fixture must be mounted onto the lamp unit when installing the projector in the range of ±45° from the vertical.**

• Horizontal direction

The projector may be installed at a horizontal angle of ±15°.



List of compatible signals

This projector supports RGB signals with horizontal frequencies of 15 kHz to 100 kHz, vertical frequencies of 24 Hz to 120 Hz and dot clock frequencies of 20 MHz to 162 MHz.

NOTE: The native resolution of this projector is 1,400 × 1,050 pixels. If the display resolution of the input signal is different from the native resolution, image compression or expansion will be used to convert the input signal to a level within the native resolution.

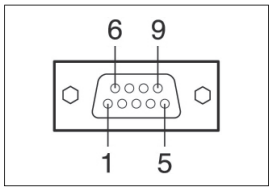
Display mode	Display resolution (dots)*1	Scanning frequency H (kHz)	Scanning frequency V (kHz)	Dot clock frequency (MHz)	Format	Plug and Play compatibility RGB 2 input	Plug and Play compatibility DVI-D input EDID1	Plug and Play compatibility DVI-D input EDID2
NTSC/NTSC4.43/PAL-M/PAL60	720 x 480i	15.7	59.9	–	VIDEO/S-VIDEO	No	No	No
PAL/PAL-N/SECAM	720 x 576i	15.6	50.0	–				
480i	720 x 480i	15.7	59.9	13.5	YPBPR/RGB	No	No	No
576i	720 x 576i	15.6	50.0	13.5				
480p	720 x 483	31.5	59.9	27.0	YPBPR/RGB/DVI	No	Yes	No
576p	720 x 576	31.3	50.0	27.0				
720/60p	1,280 x 720	45.0	60.0	74.3				
720/50p		37.5	50.0	74.3				
1080/60i	1,920 x 1,080i	33.8	60.0	74.3				
1080/50i		28.1	50.0	74.3				
1080/24p	1,920 x 1,080	27.0	24.0	74.3				
1080/24sF	1,920 x 1,080i	27.0	24.0	74.3			No	
1080/25p	1,920 x 1,080	28.1	50.0	74.3		No	Yes	No
1080/30p		33.8	60.0	74.3			No	
1080/60p		67.5	60.0	148.5		No	Yes	No
1080/50p		56.3	50.0	148.5				
VGA400	640 x 400	31.5	70.1	25.2	RGB/DVI		No	
		37.9	85.1	31.5				
VGA480	640 x 480	31.5	59.9	25.2	RGB/DVI		Yes	
		35.0	66.7	30.2			No	
		37.9	72.8	31.5		Yes	No	Yes
		37.5	75.0	31.5				
		43.3	85.0	36.0			No	
SVGA	800 x 600	35.2	56.3	36.0		Yes	No	Yes
		37.9	60.3	40.0				
		48.1	72.2	50.0				
		46.9	75.0	49.5				
		53.7	85.1	56.3			No	
MAC16	832 x 624	49.7	74.6	57.3		Yes	No	Yes
XGA	1,024 x 768	39.6	50.0	51.9			No	
		48.4	60.0	65.0		Yes	No	Yes
		56.5	70.1	75.0				
		60.0	75.0	78.8				
		65.5	81.6	86.0			No	
		68.7	85.0	94.5				
	1,024 x 768i	35.5	87.0	44.9	RGB	Yes	No	
	1,024 x 768	80.0	100.0	105.0	RGB/DVI		No	
		96.7	120.0	130.0				
MXGA	1152 x 864	64.0	71.2	94.2				
		67.5	74.9	108.0				
		76.7	85.0	121.5				
MAC21	1152 x 870	68.7	75.1	100.0		Yes	No	Yes
1280 x 768	1,280 x 768	39.6	49.9	65.3			No	
		47.8	59.9	79.5				
1280 x 80	1,280 x 800	41.3	50.0	68.0				
		49.7	59.8	83.5				
MSXGA	1,280 x 960	60.0	60.0	108.0				
SXGA	1,280 x 1,024	52.4	50.0	88.0				
		64.0	60.0	108.0		Yes	No	Yes
		72.3	66.3	125.0			No	
		78.2	72.0	135.1				
		80.0	75.0	135.0		Yes	No	Yes
		91.1	85.0	157.5			No	
SXGA+	1,400 x 1050	65.2	60.0	122.6		Yes	No	Yes
		78.8	72.0	149.3			No	
		82.2	75.0	155.9				
WXGA+	1,440 x 900	55.9	59.9	106.5				
UXGA	1,600 x 1,200	75.0	60.0	162.0		Yes	No	Yes
WSXGA+	1,680 x 1,050	65.3	60.0	146.3			No	
1920 x 1080*2	1,920 x 1,080	66.6	59.9	138.5				
WUXGA*2	1,920 x 1,200	74.0	60.0	154.0		Yes	No	Yes

***1.The "i" appearing after the resolution indicates an interlaced signal. Line flicker occurs when an interlaced signal is input.**
***2.Compliant with VESA CVT-RB (Coordinated Video Timing-Reduced Blanking).**

Serial connector

The serial connector complies with RS-232C/RS-422. To control the projector from a personal computer, commands must be input through communication software, based on the format and satisfying the communication conditions shown below.

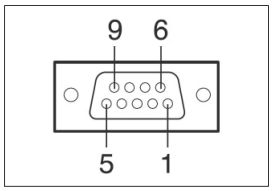
Pin assignments and signal names



D-sub 9-pin (female) Serial input

No.	Signal name	Description	No.	Signal name	Description
1	–	NC	6	–	NC
2	TXD	Send data	7	CTS	Connected internally
3	RXD	Receive data	8	RTS	Connected internally
4	–	Connected internally	9	–	NC
5	GND	Ground			

Pin assignments and signal names



D-sub 9-pin (male) Serial output

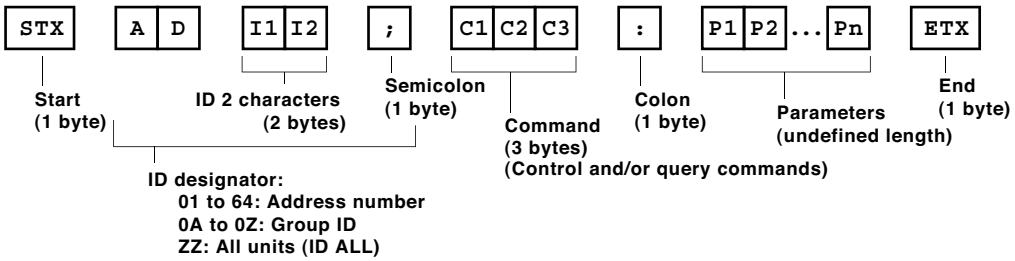
No.	Signal name	Description	No.	Signal name	Description
1	–	NC	6	–	NC
2	RXD	Receive data	7	RTS	Connected internally
3	TXD	Send data	8	CTS	Connected internally
4	–	Connected internally	9	–	NC
5	GND	Ground			

Communication conditions (factory setting)

Signal level	RS-232C-compliant
Synchronization method	Start-stop synchronization
Baud rate	9,600 bps
Parity	None
Character length	8 bits
Stop bit	1 bit
X parameter	None
S parameter	None

Basic format

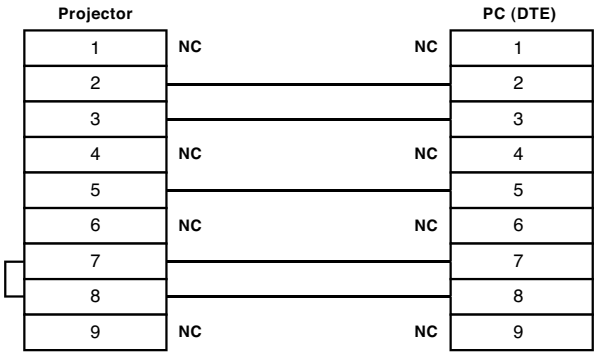
Transmission from the computer begins with STX, then the ID, command, parameter, and ETX are sent in this order. Add parameters according to the details of control.



CAUTION

- **It may not be possible to send or receive commands for about 10 to 60 seconds when the lamp is first turned on. If this occurs, wait for 60 seconds, then try sending or receiving again.**
- **When sending multiple commands, be sure to wait for at least 0.5 second after receiving a response from the projector before sending the next command.**
- **Additional time is sometimes required for response due to processing inside the projector. Set the time-out period for command response to 10 seconds or more.**
- **When using two or more units:**
  1) Set different IDs for each unit.
  2) Designate only one unit as RESPONSE (ID ALL) ON and the rest as RESPONSE (ID ALL) OFF.
  3) Each group should have only one RESPONSE (ID GROUP) ON and the rest should be RESPONSE (ID GROUP) OFF.

Cable specifications



Control commands

Command : Parameter	Function		Callback
PON	POWER (STANDBY)	Standby power on	PON
POF		Standby power off	POF
IIS:RG1	INPUT SELECT	RGB 1	IIS:RG1
IIS:RG2		RGB 2	IIS:RG2
IIS:VID		Video	IIS:VID
IIS:SVD		S-Video	IIS:SVD
IIS:DVI		DVI	IIS:DVI
IIS:AUX		AUX	IIS:AUX
LPM:0	LAMP SELECT	Quad (four lamps)	LPM:0
LPM:1		Lamp 1 + 4	LPM:1
LPM:2		Lamp 2 + 3	LPM:2
LPM:3		Dual (two lamps)	LPM:3
LPM:4		Lamp 1 + 2 + 3	LPM:4
LPM:5		Lamp 1 + 2 + 4	LPM:5
LPM:6		Lamp 1 + 3 + 4	LPM:6
LPM:7		Lamp 2 + 3 + 4	LPM:7
LPM:8		Triple (three lamps)	LPM:8
LPM:9		Lamp 1	LPM:9
LPM:10		Lamp 2	LPM:10
LPM:11		Lamp 3	LPM:11
LPM:12		Lamp 4	LPM:12
LPM:13		Single lamp	LPM:13
OSH:1	SHUTTER	Shutter on	OSH:1
OSH:0		Shutter off	OSH:0
OPP:0	P IN P SELECT	P in P off	OPP:0
OPP:1		User 1	OPP:1
OPP:2		User 2	OPP:2
OPP:3		User 3	OPP:3
OAS	AUTO SETUP		OAS
VPM:NAT	PICTURE MODE	Natural	VPM:NAT
VPM:STD		Standard	VPM:STD
VPM:DYN		Dynamic	VPM:DYN
VPM:CIN		Cinema	VPM:CIN
VPM:GRA		Graphic	VPM:GRA
OTE:0	COLOR TEMPERATURE	Low	OTE:0
OTE:1		Middle	OTE:1
OTE:2		High	OTE:2
OTE:4		User 1	OTE:4
OTE:9		User 2	OTE:9
OTE:10		Default	OTE:10
TSD:y1y2y3y4m1m2d1d2w	DATE	Date setting	TSD:y1y2y3y4m1m2d1d2w
TST:h1h2m1m2s1s2	TIME	Time setting	TST:h1h2m1m2s1s2
OOS:1	ON SCREEN	On-screen display on	OOS:1
OOS:0		On-screen display off	OOS:0

Status request commands

Command:Parameter	Function	Callback	Description
QPW	Main power status	001	On
		000	Off
QSH	Shutter function status	1	On
		0	Off
QIN	Input signal status	RG1	RGB 1
		RG2	RGB 2
		VID	Video
		SVD	S-Video
		DVI	DVI
		AUX	AUX
QOS	On-screen display status	1	On
		0	Off
QST	Projector run time	00000-99999	00000h–99999h
Q$L:1	Lamp 1 run time	0000-9999	0000h–9999h
Q$L:2	Lamp 2 run time	0000-9999	0000h–9999h
Q$L:3	Lamp 3 run time	0000-9999	0000h–9999h
Q$L:4	Lamp 4 run time	0000-9999	0000h–9999h
QSL	Lamp operation mode status	0	Quad (four lamps)
		1	Lamp 1 + 4
		2	Lamp 2 + 3
		3	Dual (two lamps)
		4	Lamp 1 + 2 + 3
		5	Lamp 1 + 2 + 4
		6	Lamp 1 + 3 + 4
		7	Lamp 2 + 3 + 4
		8	Triple (three lamps)
		9	Lamp 1
		10	Lamp 2
		11	Lamp 3
		12	Lamp 4
		13	Single lamp
QIB	Optional board slot status	MD77SD1	ET-MD77SD1
		MD77SD3	ET-MD77SD3
		MD100SD4	ET-MD100SD4
		MD77DV	ET-MD77DV
		NONE	Uninstalled
		UNKNOWN	Unknown
QPP	P in P status	NOT SUPPORT	Not supported
		0	Off
		1	User 1
		2	User 2
QGD	Date setting status	3	User 3
QGT	Time setting status	y1y2y3y4m1m2d1d2w	yyyymmddw *1
		h1h2m1m2s1s2	hhmmss

*1 w: day of week: Monday = 1, Tuesday = 2, ... Sunday = 7

NOTE: If a wrong command is received, the projector will send an ER401 or ER402 command to the computer.

Command example

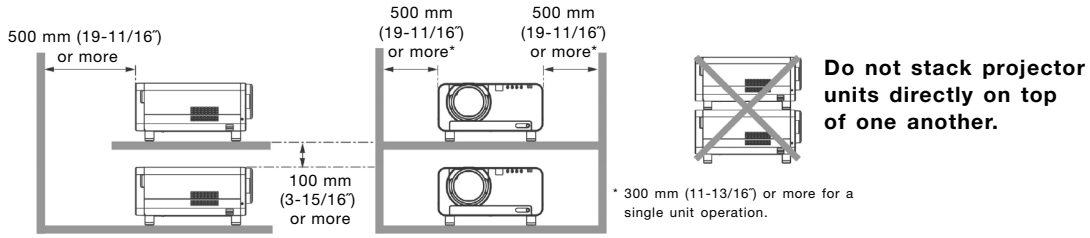
To set the on-screen display off, send the command as shown below.

NOTE: When sending commands without parameters, a colon (:) is not necessary.

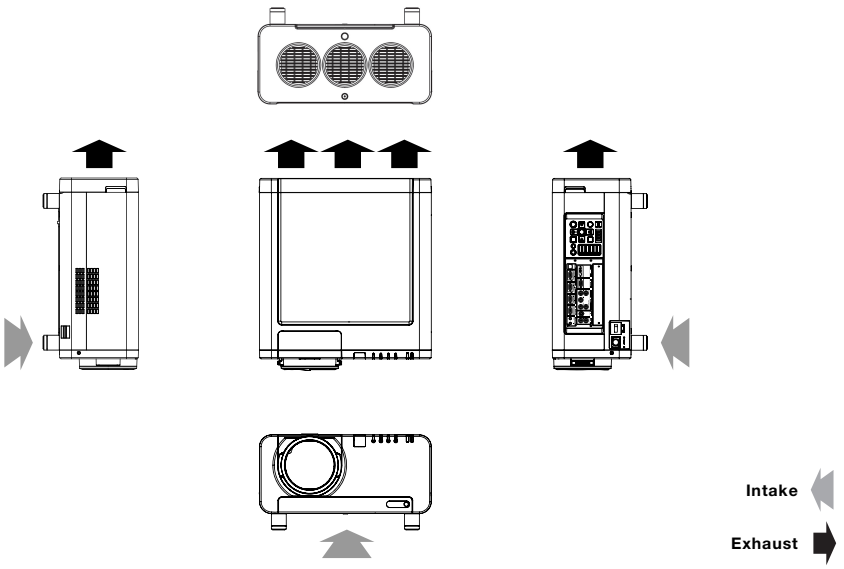
Notes on projector placement and operation

The projector uses a high-wattage lamp that becomes very hot during operation. Please observe the following precautions.

1. Never place objects on top of the projector while it is operating.
2. Make sure there is an unobstructed space of 500 mm (19-11/16˝) or more around the projector's exhaust openings.
3. Do not stack projector units directly on top of one another. If two units must be stacked for back-up use in ordinary projection, use a method as shown below and provide ample space between the units to ensure that exhaust heat does not accumulate near the intake opening or around the units. Dual stacked projection is not recommended.
4. 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.
5. 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.
6. If the projector is installed in an enclosed space, ensure that the temperature of the air surrounding the projector is between 0°C (32°F) and 40°C (104°F). Also make sure that the projector's intake and exhaust openings are not blocked. Even though the air surrounding the projector is 40°C (104°F) or less, if hot exhaust air accumulates inside the space, it may cause the projector's protective circuit to interrupt projector operation. Pay particular attention to the surrounding temperature conditions when planning the installation.



Direction of air intake and exhaust



Operating the projector continuously

1. If the projector is to be operated continuously 24 hours, use the lamp relay mode. The projector cannot be operated continuously 24 hours in quad-lamp mode. Allow a minimum of two hours per day of non-operation time if the projector is to be operated continuously more than 22 hours.
2. The lamp replacement cycle duration becomes shorter if the projector is operated repeatedly for short periods.