Panasonic ideas for life

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S P E C   F I L E

Product Number : PT-**D4000**

Product Name : DLP™ Projectors

Specifications

Main Unit

Power supply:	North America:	120 V AC, 50/60 Hz	
	Europe:	220–240 V AC, 50/60 Hz	
Power consumption:	North America:	540 W (540 VA) (10 W during standby mode with fan stopped)	
	Europe:	520 W (570 VA) (15 W during standby mode with fan stopped)	
DLP™ chip:	Panel size:	0.7˝ diagonal (4:3 aspect ratio)	
	Display method:	DLP™ chip x 1, DLP™ system	
	Pixels:	786,432 (1,024 x 768) x 1, total of 786,432 pixels	
Lens:		Powered zoom/focus lenses (4:3 aspect ratio: 1.8–2.4:1), F 1.7–2.0, f 25.6–33.8 mm	
Lamp:		210 W UHM lamps (x 2) (dual lamp system)	
Screen size:		50–600 inches (50–200 inches with the ET-DLE050 and ET-DLE055), 4:3 aspect ratio	
Brightness*1:		4,000 lumens (dual lamp, high power mode)	
Center-to-corner uniformity*1:		90%	
Contrast*1:		1,600:1 (full on/full off, contrast mode: high, brightness: 2,000 lumens) 800:1 (full on/full off, contrast mode: normal)	
Resolution:		1,024 x 768 pixels (1,600 x 1,200 pixels compatible, compression mode)	
Scanning frequency:	RGB:	Horizontal: 15–91 kHz, Vertical: 50–85 Hz, Dot clock: 150 MHz or lower	
	YPBPR (YCBCR):	480i: fH 15.75 kHz; fv 59.94 Hz, 576i: fH 15.63 kHz; fv 50 Hz, 480p: fH 31.50 kHz; fv 59.94 Hz, 576p: fH 31.25 kHz; fv 50 Hz, 720/60p: fH 45 kHz; fv 60 Hz, 720/50p: fH 37.5 kHz; fv 50 Hz, 1035/60i: fH 33.75 kHz; fv 60 Hz, 1080/60i: fH 33.75 kHz; fv 60 Hz, 1080/50i: fH 28.13 kHz; fv 50 Hz, 1080/60p: fH 67.5 kHz; fv 60 Hz, 1080/50p: fH 56.25 kHz; fv 50 Hz	
	S-Video/Video:	Horizontal: 15.75/15.63 kHz, Vertical: 50/60 Hz, (NTSC, NTSC4.43, PAL, PAL60, PAL-N, PAL-M, SECAM)	
Optical axis shift:		Horizontal (manual) and vertical (powered), Horizontal: ±10%, vertical: +50%	
Keystone correction range:		Vertical: ±30°	
Installation:		Ceiling/floor, front/rear	
Terminals*2:	DVI-D IN:	DVI-D 24-pin x 1, DVI 1.0 compliant, HDCP compatible, for single link only	
	RGB 1 IN:	BNC x 5	
	R, G, B:	G: 0.7 Vp-p (G: 1.0 Vp-p for sync on G), 75 ohms, B, R: 0.7 Vp-p, 75 ohms HD/VD, SYNC: TTL (positive/negative)	
	Y, PB, PR:	Y: 1.0 p-p, 75 ohms (including sync signal), PB/PR: 0.7 Vp-p, 75 ohms	
	RGB 2 IN:	D-sub HD 15-pin x 1	
	R, G, B:	G: 0.7 Vp-p (G: 1.0 Vp-p for sync on G), 75 ohms, B, R: 0.7 Vp-p, 75 ohms HD/VD, SYNC: TTL (positive/negative)	
	Y, PB, PR:	Y: 1.0 p-p, 75 ohms (including sync signal), PB,/PR: 0.7 Vp-p, 75 ohms	
	VIDEO IN:	BNC x 1, 1.0 Vp-p, 75 ohms	
	S-VIDEO IN:	Mini DIN 4-pin x 1, Y: 1.0 Vp-p, C: 0.286 Vp-p, 75 ohms	
	SERIAL IN:	D-sub 9-pin x 1 (RS-232C compliant) for external controller	
	SERIAL OUT:	D-sub 9-pin x 1 (RS-232C compliant) for external controller	
	REMOTE 1 IN:	M3 jack x 1 for wired remote control or link control	
	REMOTE 1 OUT:	M3 jack x 1 for link control	
	REMOTE 2 IN:	D-sub 9-pin x 1 for external control (parallel)	
	LAN:	RJ-45 x 1, compliant with PJLink™, 10Base-T/100Base-TX	
Power cord length:		3.0 m (9´10˝)	
Cabinet materials:		Molded plastic	
On-screen menu:		9 languages: English, French, German, Spanish, Italian, Russian, Korean, Chinese, and Japanese	

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Dimensions (W x H x D):	530 x 167 x 441 mm (20-7/8˝ x 6-9/16˝ x 17-3/8˝)
Weight:	13.7 kg (30.2 lbs) (with supplied lens)
Operating temperature:	0°–45°C (32°–113°F)
Operating humidity:	20%–80% (no condensation)

Remote Control Unit

Power supply:		3 V DC (AA battery x 2)
Operation range*3:	Wireless:	Approx. 30 m (98.4 feet) when operated from directly in front of the signal receptor
Dimensions (W x H x D):		51 x 176 x 22.5 mm (2˝ x 6-15/16˝ x 7/8˝)
Weight:		134 g (4.7 oz) (including batteries)

Supplied Accessories

Power cord, Wireless/wired remote control unit, Batteries for remote control (x 2), Wire rope

Optional Accessories

Replacement lamp unit:	ET-LAD40 (1 unit)
	ET-LAD40W (set of two lamps)
Ceiling mount bracket:	ET-PKD56H (for high ceilings)
	ET-PKD55S (for low ceilings)
Zoom lens (1.3–1.8:1)	ET-DLE100
Zoom lens (2.4–4.0:1)	ET-DLE200
Zoom lens (3.4–4.4:1)	ET-DLE310
Zoom lens (4.5–8.4:1)	ET-DLE410
Fixed-focus lens (0.8:1)	ET-DLE050
Zoom lens (1.3–2.0:1)	ET-DLE150
Zoom lens (2.4–3.7:1)	ET-DLE250
Zoom lens (3.7–5.6:1)	ET-DLE350
Zoom lens (5.5–8.9:1)	ET-DLE450
Fixed-focus lens (0.8:1)	ET-DLE055

Weights and dimensions shown are approximate. Specifications subject to change without notice.
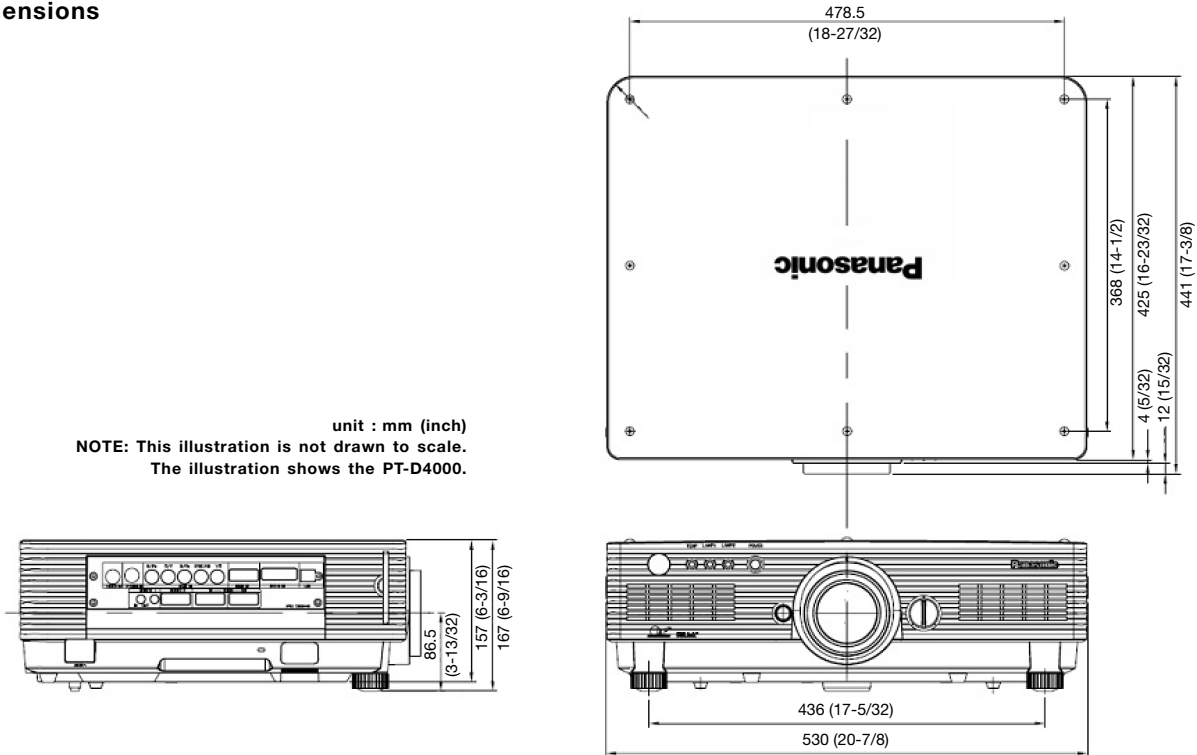***1 Measurement, measuring conditions, and method of notation all comply with ISO 21118 international standards.**
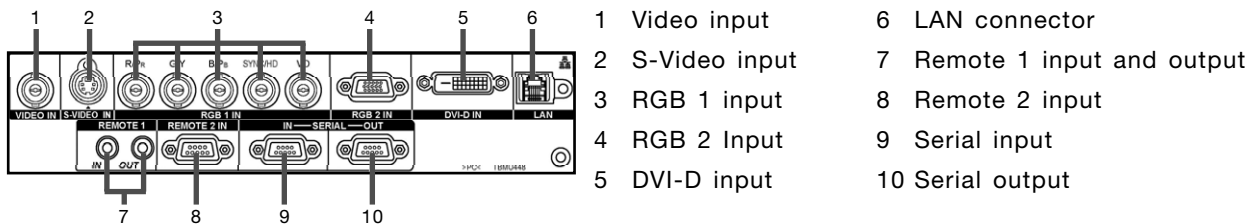***2 The HD/SYNC and VD inputs do not accept the tri-level sync signal.**
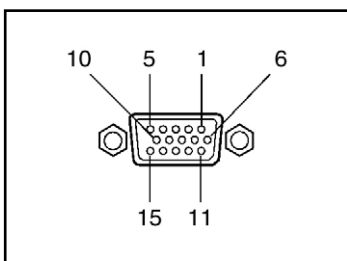***3 Operation range differs depending on environments.**

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Dimensions

unit : mm (inch)
NOTE: This illustration is not drawn to scale.
The illustration shows the PT-D4000.

478.5
(18-27/32)

368 (14-1/2)
425 (16-23/32)
441 (17-3/8)

4 (5/32)
12 (15/32)

86.5
(3-13/32)
157 (6-3/16)
167 (6-9/16)

436 (17-5/32)
530 (20-7/8)

Terminals

1 Video input	6 LAN connector
2 S-Video input	7 Remote 1 input and output
3 RGB 1 input	8 Remote 2 input
4 RGB 2 Input	9 Serial input
5 DVI-D input	10 Serial output

RGB IN connector pin assignment

no.	signal	no.	signal	no.	signal
1	R/P$_R$	6	GND	11	GND
2	G/Y	7	GND	12	NC
3	B/P$_B$	8	GND	13	HD/SYNC
4	GND	9	NC	14	VD
5	GND	10	GND	15	NC

DVI-D output connector pin assignment
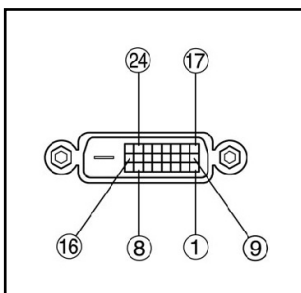
no.	signal	no.	signal	no.	signal
1	T, M, D, S data 2-	9	T, M, D, S data 1-	17	T, M, D, S data 0-
2	T, M, D, S data 2+	10	T, M, D, S data 1+	18	T, M, D, S data 0+
3	T, M, D, S data 2 shield	11	T, M, D, S data 1 shield	19	T, M, D, S data 0 shield
4	NC	12	NC	20	NC
5	NC	13	NC	21	NC
6	DDC clock	14	+5 V	22	T, M, D, S clock shield
7	DDC clock	15	GND	23	T, M, D, S clock +
8	NC	16	Hot plug detection	24	T, M, D, S clock -

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Standard setting-up position (when installed using the ET-PKD56H)
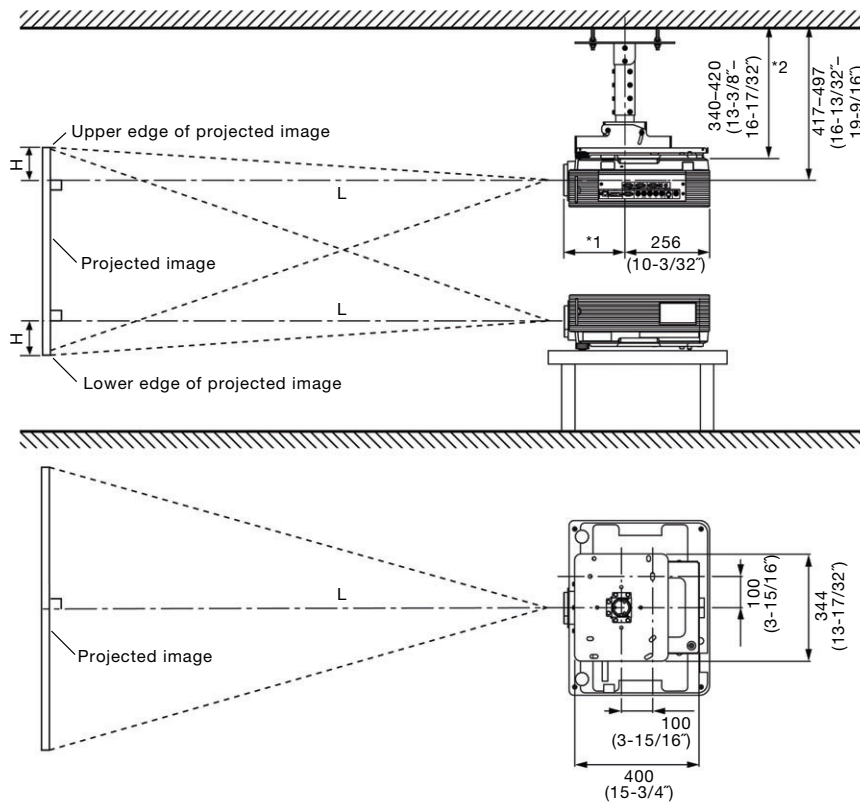
*1 When the lens protrudes to the maximum.
185 mm (7-9/32″) with the supplied lens
209 mm (8-7/32″) with the ET-DLE100
208 mm (8-3/16″) with the ET-DLE200
220 mm (8-21/32″) with the ET-DLE310
209 mm (8-7/32″) with the ET-DLE410
177 mm (6-31/32″) with the ET-DLE050
212 mm (8-11/32″) with the ET-DLE150
213 mm (8-3/8″) with the ET-DLE250
219 mm (8-5/8″) with the ET-DLE350
263 mm (10-11/32″) with the ET-DLE450
195 mm (7-11/16″) with the ET-DLE055

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

unit : mm (inch)

C A U T I O N
The ET-DLE050 and ET-DLE055 have a fixed short-focus lens. Therefore, the lens shift function provided in the main unit cannot be used.
If the lens shift function is used, the corners of images may not be displayed or images may remain out of focus in some cases.

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Projection distance for 4:3 aspect ratio screen: ET-DLE100/DLE200/DLE310/DLE410/DLE050

Unit: millimeters

Screen size (inch, diagonal)	Distance to screen (L)								Zoom		Fixed-focus	Height from the edge of screen to center of lens (H)	
	ET-DLE100 Zoom lens		ET-DLE200 Zoom lens		ET-DLE310 Zoom lens		ET-DLE410 Zoom lens				ET-DLE050 Fixed-focus lens	Zoom lenses	Fixed-focus lens
	min.	max.	min.	max.	min.	max.	min.	max.					
50	1,335	1,812	2,454	4,044	3,379	4,444	4,493	8,515			794	0 – 381	381
60	1,611	2,184	2,958	4,868	4,076	5,354	5,419	10,245			960	0 – 457	457
70	1,887	2,556	3,462	5,692	4,773	6,264	6,345	11,975			1,126	0 – 533	533
80	2,163	2,928	3,966	6,516	5,470	7,174	7,271	13,705			1,292	0 – 610	610
90	2,439	3,300	4,470	7,340	6,167	8,084	8,197	15,435			1,458	0 – 686	686
100	2,715	3,672	4,974	8,164	6,864	8,994	9,123	17,165			1,624	0 – 762	762
120	3,267	4,416	5,982	9,812	8,258	10,814	10,975	20,625			1,956	0 – 914	914
150	4,095	5,532	7,494	12,284	10,349	13,544	13,753	25,815			2,454	0 – 1,143	1,143
200	5,475	7,392	10,014	16,404	13,834	18,094	18,383	34,465			3,284	0 – 1,524	1,524
250	6,855	9,252	12,534	20,524	17,319	22,644	23,013	43,115			–	0 – 1,905	–
300	8,235	11,112	15,054	24,644	20,804	27,194	27,643	51,765			–	0 – 2,286	–
400	10,995	14,832	20,094	32,884	27,774	36,294	36,903	69,065			–	0 – 3,048	–
500	13,755	18,552	25,134	41,124	34,744	45,394	46,163	86,365			–	0 – 3,810	–
600	16,515	22,272	30,174	49,364	41,714	54,494	55,423	103,665			–	0 – 4,572	–

Unit: feet

Screen size (inch, diagonal)	Distance to screen (L)								Zoom		Fixed-focus	Height from the edge of screen to center of lens (H)	
	ET-DLE100 Zoom lens		ET-DLE200 Zoom lens		ET-DLE310 Zoom lens		ET-DLE410 Zoom lens				ET-DLE050 Fixed-focus lens	Zoom lenses	Fixed-focus lens
	min.	max.	min.	max.	min.	max.	min.	max.					
50	4.4	5.9	8.1	13.3	11.1	14.6	14.7	27.9			2.6	0.0 – 1.3	1.3
60	5.3	7.2	9.7	16.0	13.4	17.6	17.8	33.6			3.1	0.0 – 1.5	1.5
70	6.2	8.4	11.4	18.7	15.7	20.6	20.8	39.3			3.7	0.0 – 1.8	1.8
80	7.1	9.6	13.0	21.4	18.0	23.5	23.9	45.0			4.2	0.0 – 2.1	2.1
90	8.0	10.8	14.7	24.1	20.2	26.5	26.9	50.6			4.8	0.0 – 2.3	2.3
100	8.9	12.0	16.3	26.8	22.5	29.5	29.9	56.3			5.3	0.0 – 2.5	2.5
120	10.7	14.5	19.6	32.2	27.1	35.5	36.0	67.7			6.4	0.0 – 3.0	3.0
150	13.4	18.2	24.6	40.3	34.0	44.4	45.1	84.7			8.1	0.0 – 3.8	3.8
200	18.0	24.3	32.9	53.8	45.4	59.4	60.3	113.1			10.8	0.0 – 5.0	5.0
250	22.5	30.4	41.1	67.3	56.8	74.3	75.5	141.5			–	0.0 – 6.3	–
300	27.0	36.5	49.4	80.9	68.3	89.2	90.7	169.8			–	0.0 – 7.5	–
400	36.1	48.7	65.9	107.9	91.1	119.1	121.1	226.6			–	0.0 – 10.0	–
500	45.1	60.9	82.5	134.9	114.0	148.9	151.5	283.3			–	0.0 – 12.5	–
600	54.2	73.1	99.0	162.0	136.9	178.8	181.8	340.1			–	0.0 – 15.0	–

- 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.
- The brightness varies depending on the zoom setting.

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Projection distance for 4:3 aspect ratio screen:
Supplied lens and ET-DLE150/DLE250/DLE350/DLE450/DLE055

Unit: millimeters

Screen size (inch, diagonal)	Distance to screen (L)											Height from the edge of screen to center of lens (H)	
	Zoom										Fixed-focus		
	ET-DLE150 Zoom lens		Supplied lens		ET-DLE250 Zoom lens		ET-DLE350 Zoom lens		ET-DLE450 Zoom lens		ET-DLE055 Fixed-focus lens	Zoom lenses	Fixed-focus lens*
	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.			
50	1,344	1,967	1,804	2,400	2,361	3,777	3,713	5,681	5,525	8,912	808	0 – 381	381
60	1,623	2,370	2,175	2,890	2,850	4,548	4,483	6,844	6,690	10,754	979	0 – 457	457
70	1,903	2,773	2,546	3,380	3,338	5,319	5,253	8,007	7,855	12,596	1,150	0 – 533	533
80	2,183	3,177	2,917	3,870	3,826	6,090	6,023	9,170	9,020	14,438	1,322	0 – 610	610
90	2,462	3,580	3,288	4,360	4,315	6,861	6,792	10,333	10,186	16,280	1,493	0 – 686	686
100	2,742	3,983	3,659	4,850	4,803	7,633	7,562	11,496	11,351	18,123	1,664	0 – 762	762
120	3,301	4,790	4,401	5,830	5,779	9,175	9,101	13,823	13,681	21,807	2,006	0 – 914	914
150	4,140	6,000	5,514	7,300	7,244	11,489	11,411	17,312	17,177	27,333	2,519	0 – 1143	1143
200	5,537	8,016	7,369	9,750	9,686	15,344	15,259	23,127	23,004	36,544	3,375	0 – 1,524	1,524
250	6,935	10,033	9,224	12,200	12,127	19,200	19,108	28,943	28,830	45,755	–	0 – 1,905	–
300	8,333	12,049	11,079	14,650	14,568	23,056	22,956	34,758	34,656	54,966	–	0 – 2,286	–
400	11,129	16,082	14,789	19,550	19,451	30,768	30,653	46,389	46,309	73,387	–	0 – 3,048	–
500	13,924	20,115	18,499	24,450	24,334	38,480	38,350	58,020	57,961	91,809	–	0 – 3,810	–
600	16,720	24,148	22,209	29,350	29,217	46,192	46,047	69,651	69,614	110,231	–	0 – 4,572	–

Unit: feet

Screen size (inch, diagonal)	Distance to screen (L)											Height from the edge of screen to center of lens (H)	
	Zoom										Fixed-focus		
	ET-DLE150 Zoom lens		Supplied lens		ET-DLE250 Zoom lens		ET-DLE350 Zoom lens		ET-DLE450 Zoom lens		ET-DLE055 Fixed-focus lens	Zoom lenses	Fixed-focus lens*
	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.			
50	4.5	6.5	6.0	7.9	7.8	12.4	12.2	18.7	18.2	29.3	2.7	0.0 – 1.3	1.3
60	5.4	7.8	7.2	9.5	9.4	15.0	14.8	22.5	22.0	35.3	3.3	0.0 – 1.5	1.5
70	6.3	9.1	8.4	11.1	11.0	17.5	17.3	26.3	25.8	41.4	3.8	0.0 – 1.8	1.8
80	7.2	10.5	9.6	12.7	12.6	20.0	19.8	30.1	29.6	47.4	4.4	0.0 – 2.1	2.1
90	8.1	11.8	10.8	14.4	14.2	22.6	22.3	34.0	33.5	53.5	4.9	0.0 – 2.3	2.3
100	9.0	13.1	12.1	16.0	15.8	25.1	24.9	37.8	37.3	59.5	5.5	0.0 – 2.5	2.5
120	10.9	15.8	14.5	19.2	19.0	30.2	29.9	45.4	44.9	71.6	6.6	0.0 – 3.0	3.0
150	13.6	19.7	18.1	24.0	23.8	37.7	37.5	56.8	56.4	89.7	8.3	0.0 – 3.8	3.8
200	18.2	26.3	24.2	32.0	31.8	50.4	50.1	75.9	75.5	119.9	11.1	0.0 – 5.0	5.0
250	22.8	33.0	30.3	40.1	39.8	63.0	62.7	95.0	94.6	150.2	–	0.0 – 6.3	–
300	27.4	39.6	36.4	48.1	47.8	75.7	75.4	114.1	113.8	180.4	–	0.0 – 7.5	–
400	36.6	52.8	48.6	64.2	63.9	101.0	100.6	152.2	152.0	240.8	–	0.0 – 10.0	–
500	45.7	66.0	60.7	80.3	79.9	126.3	125.9	190.4	190.2	301.3	–	0.0 – 12.5	–
600	54.9	79.3	72.9	96.3	95.9	151.6	151.1	228.6	228.4	361.7	–	0.0 – 15.0	–

- **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.**
- **The brightness varies depending on the zoom setting.**

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Calculation of the projection distance

For a screen size different from the above, use the equation below to calculate the projection distance.
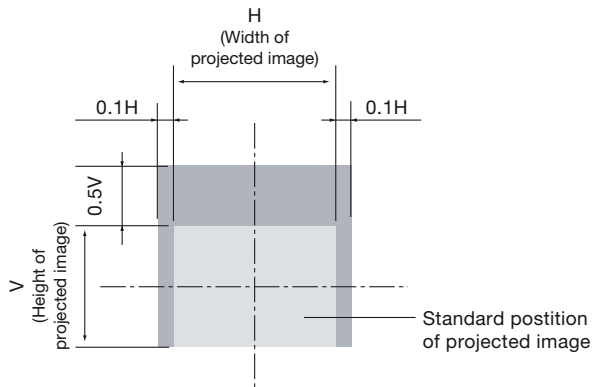
Aspect ratio 4:3

| ET-DLE100 | minimum | L (m) = (diagonal screen size in inches) x 27.6 - 45 |
| | maximum | L (m) = (diagonal screen size in inches) x 37.2 - 48 |

| ET-DLE150 | minimum | L (m) = (diagonal screen size in inches) x 28.0 - 54.0 |
| | maximum | L (m) = (diagonal screen size in inches) x 40.3 - 49.8 |

| Supplied lens | minimum | L (m) = (diagonal screen size in inches) x 37.1 - 51 |
| | maximum | L (m) = (diagonal screen size in inches) x 49.0 - 50 |

| ET-DLE200 | minimum | L (m) = (diagonal screen size in inches) x 50.4 - 66 |
| | maximum | L (m) = (diagonal screen size in inches) x 82.4 - 76 |

| ET-DLE250 | minimum | L (m) = (diagonal screen size in inches) x 48.8 - 80.0 |
| | maximum | L (m) = (diagonal screen size in inches) x 77.1 - 79.2 |

| ET-DLE310 | minimum | L (m) = (diagonal screen size in inches) x 69.7 - 106 |
| | maximum | L (m) = (diagonal screen size in inches) x 91.0 - 106 |

| ET-DLE350 | minimum | L (m) = (diagonal screen size in inches) x 77.0 - 135.1 |
| | maximum | L (m) = (diagonal screen size in inches) x 116.3 - 134.6 |

| ET-DLE410 | minimum | L (m) = (diagonal screen size in inches) x 92.6 - 137 |
| | maximum | L (m) = (diagonal screen size in inches) x 173.0 - 135 |

| ET-DLE450 | minimum | L (m) = (diagonal screen size in inches) x 116.5 - 301.7 |
| | maximum | L (m) = (diagonal screen size in inches) x 184.2 - 299.1 |

| ET-DLE050 | (fixed focus) | L (m) = (diagonal screen size in inches) x 16.6 - 36 |

| ET-DLE055 | (fixed focus) | L (m) = (diagonal screen size in inches) x 17.1 - 47.6 |

- **Distances calculated with the above equations will include a slight error.**
- **When an SXGA signal is input, the left and right edges of the image are blanked, and the image is projected at a screen aspect ratio of 5:4.**
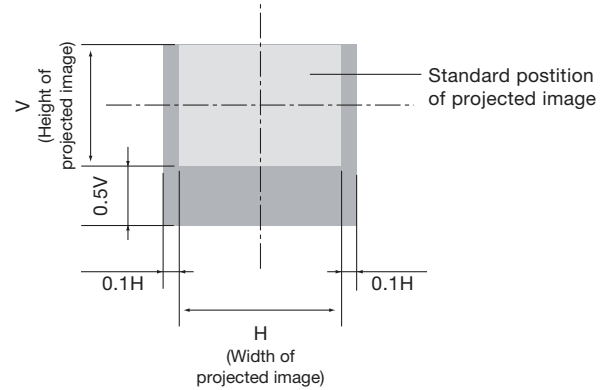- **The brightness varies depending on the zoom setting.**

DLP™ Projectors

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Shift range

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

< 9 >

• Floor mount

H
(Width of
projected image)

0.1H   0.1H

0.5V

V
(Height of
projected image)

Standard postition
of projected image

• Ceiling mount

V
(Height of
projected image)

Standard postition
of projected image

0.5V

0.1H   0.1H

H
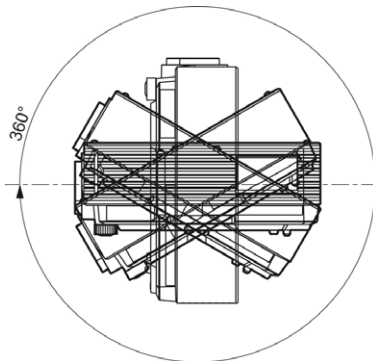(Width of
projected image)

Installable angle

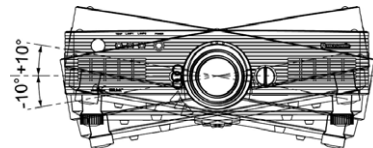Install the projector at an angle within the range shown below.

• Vertical direction
The projector may be installed at a vertical angle of 360°.

360°

• Horizontal direction
The projector may be installed at a horizontal angle of ±10°.

-10°/+10°

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PT-**D4000**

List of compatible signals

This projector supports RGB signals with horizontal frequencies of 15 to 91 kHz, vertical frequencies of 50 to 85 Hz and up to 150 MHz dot clock.

NOTE: The native resolution of this projector is 1,024 x 768 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)	V (kHz)	Dot clock frequency (MHz)	Picture quality[2]	Format
NTSC/NTSC4.43/PAL-M/PAL60	720 x 480i	15.7	59.9	-	A	VIDEO/S-VIDEO
PAL/PAL-N/SECAM	720 x 576i	15.6	50.0	-	A	
480i (525i)	720 x 480i	15.7	59.9	13.5	A	YPBPR /RGB
576i (625i)	720 x 576i	15.6	50.0	13.5	A	
480p (525p)	720 x 483	31.5	59.9	27.0	A	YPBPR /RGB/DVI
576p (625p)	720 x 576	31.3	50.0	27.0	A	
720/60p	1,280 x 720	45.0	60.0	74.3	A	
720/50p	1,280 x 720	37.5	50.0	74.3	A	
1080/60i	1,920 x 1,080i	33.8	60.0	74.3	A	
1080/50i	1,920 x 1,080i	28.1	50.0	74.3	A	
1080/60p	1,920 x 1,080	67.5	60.0	148.5	A	
1080/50p	1,920 x 1,080	56.3	50.0	148.5	A	
VGA400	640 x 400	31.5	70.1	25.2	A	RGB
		37.9	85.1	31.5	A	
VGA480	640 x 480	31.5	59.9	25.2	A	RGB/DVI
		35.0	66.7	30.2	A	RGB
		37.9	72.8	31.5	A	
		37.5	75.0	31.5	A	
		43.3	85.0	36.0	A	
SVGA	800 x 600	35.2	56.3	36.0	A	
		37.9	60.3	40.0	A	RGB/DVI
		48.1	72.2	50.0	A	RGB
		46.9	75.0	49.5	A	
		53.7	85.1	56.3	A	
MAC16	832 x 624	49.7	74.6	57.3	A	
XGA	1,024 x 768	39.6	50.0	51.9	AA	RGB/DVI
		48.4	60.0	65.0	AA	
		56.5	70.1	75.0	AA	
		60.0	75.0	78.8	AA	
		68.7	85.0	94.5	AA	
		35.5	87.0	44.9	AA	RGB
WXGA	1,280 x 768	39.6	50.0	65.2	A	RGB/DVI
		47.7	60.0	80.1	A	
	1,280 x 800	41.3	50.0	68.0	A	RGB
		49.7	59.8	83.5	A	
MXGA	1,152 x 864	64.0	71.2	94.2	A	
		67.5	74.9	108.0	A	
		76.7	85.0	121.5	A	
MAC21	1,152 x 870	68.7	75.1	100.0	A	
MSXGA	1,280 x 960	60.0	60.0	108.0	A	
SXGA	1,280 x 1,024	64.0	60.0	108.0	A	RGB/DVI
		80.0	75.0	135.0	A	RGB
		91.1	85.0	157.5	A	
SXGA+	1,400 x 1,050	64.0	60.0	108.0	A	RGB/DVI
UXGA	1,600 x 1,200	75.0	60.0	162.0	A	RGB

1. The "i" appearing after the resolution indicates an interlaced signal.
2. The following symbols are used to indicate picture quality.
   AA   Maximum picture quality can be obtained.
   A   Signals are converted by the image processing circuit before picture is projected.

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Serial connector

The serial connector complies with RS-232C. 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.
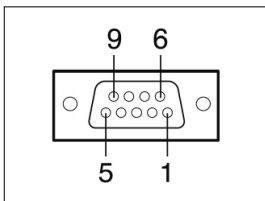
Pin assignments and signal names

6 9

1 5
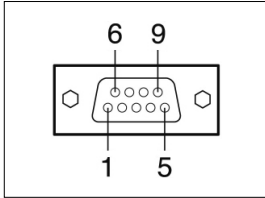
D-sub 9-pin (female)
Serial input

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

Pin assignments and signal names

9 6

5 1

D-sub 9-pin (male)
Serial output

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

Communication conditions (factory setting)

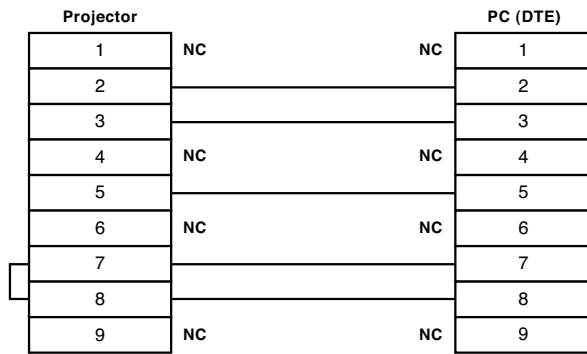|	
Signal level	RS-232C-compliant
Synchronization method	Start-stop synchronization
Baud rate	9,600 bps
Parity	None
Character length	8 bits
Stop bit	1 bit
X parameter	None
S parameter	None

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.

| STX | | A | D | | I1 | I2 | | ; | | C1 | C2 | C3 | | : | | P1 | P2 | ... | Pn | | ETX |

Start
(1 byte)

ID 2 characters
(2 bytes)

Semicolon
(1 byte)

Command
(3 bytes)
(Control and/or query commands)

Colon
(1 byte)

Parameters
(undefined length)

End
(1 byte)

ID designator:
01 to 64: Address number
0A to 0Z: Group ID
ZZ: All units (ID ALL)
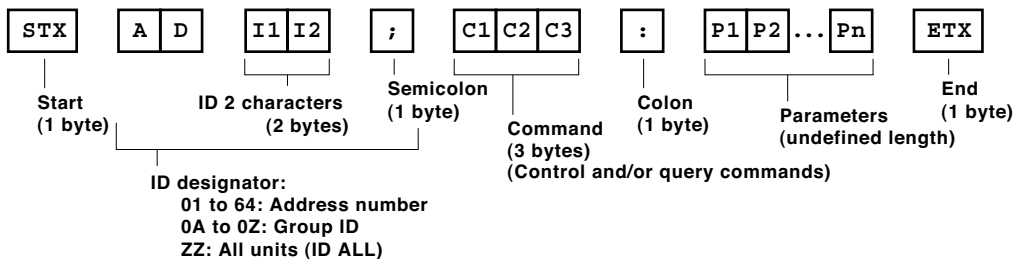
CAUTIION
• **It may not be possible to send or receive commands for about 10 to 60 seconds when the lamp is first turned on. If this occurs, wait for 60 seconds, then try sending or receiving again.**
• **When sending multiple commands, be sure to wait for at least 0.5 second after receiving a response 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.**

Panasonic

DLP™ Projectors

PT-**D4000**

Cable specifications

Projector				PC (DTE)
1	NC		NC	1
2				2
3				3
4	NC		NC	4
5				5
6	NC		NC	6
7				7
8				8
9	NC		NC	9

Control commands

Item	Command : Parameter	Function	Callback
POWER	PON[*1]	Power on	PON
	POF[*1]	Standby power off	POF
FREEZE	OFZ:0	Freeze off	OFZ:0
	OFZ:1	Freeze on	OFZ:1
AUTO SETUP	OAS	Auto setup	OAS
SHUTTER	OSH:0[*1/*2]	Shutter off	OSH:0
	OSH:1[*1/*2]	Shutter on	OSH:1
INPUT SELECT	IIS:RG1	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
TEST	OTS:00	Exit test pattern	OTS:00
	OTS:01	White (full on)	OTS:01
	OTS:02	Black (full off)	OTS:02
	OTS:03	Flag	OTS:03
	OTS:05	Window	OTS:05
	OTS:07	Focus	OTS:07
	OTS08	Color bar	OTS08
ON SCREEN	OOS:0	On-screen display off	OOS:0
	OOS:1	On-screen display on	OOS:1

*1   Do not send PON, POF, OSH, or OLP commands continuously in a short period of time. Doing so may burst the lamp or shorten the lamp replacement cycle.

*2   When a command that cannot be executed during standby mode is sent, the projector will send an ER401 command in reply.

Adjustment mode

Item	Command: Parameter	Description	Callback: Parameter	Parameter value Min.	Max.
PICTURE MODE	VPM:NAT	Natural	VPM:NAT	–	–
	VPM:STD	Standard	VPM:STD	–	–
	VPM:DYN	Dynamic	VPM:DYN	–	–
	VPM:CIN	Cinema	VPM:CIN	–	–
	VPM:GRA	Graphic	VPM:GRA	–	–
SYSTEM DAYLIGHT VIEW	VXX:DLVI0=+00000	Off	VXX:DLVI0=+00000	–	–
	VXX:DLVI0=+00001	1	VXX:DLVI0=+00001	–	–
	VXX:DLVI0=+00002	2	VXX:DLVI0=+00002	–	–
	VXX:DLVI0=+00003	3	VXX:DLVI0=+00003	–	–
COLOR	VCO:p1p2p3	Color	VCO:p1p2p3	1	63
TINT	VTN:p1p2p3	Tint	VTN:p1p2p3	1	63
COLOR TEMP.	OTE:1	Middle	OTE:1	–	–
	OTE:2	High	OTE:2	–	–
	OTE:4	User	OTE:4	–	–
	OTE:10	Default	OTE:10	–	–
CONTRAST	VCN:p1p2p3	Contrast	VCN:p1p2p3	1	63
BRIGHTNESS	VBR:p1p2p3	Brightness	VBR:p1p2p3	1	63
SHARPNESS	VSR:p1p2p3	Sharpness	VSR:p1p2p3	0	15
SET DATE	TSD:y1y2y3y4m1m2d1d2w	Date setting	TSD:y1y2y3y4m1m2d1d2w	200701011	203512317
SET TIME	TST:h1h2m1m2s1s2	Time setting	TST:h1h2m1m2s1s2	000000	235959

Status asking commands

Item	Command:Parameter	Function	Callback		Description
POWER CONDITION	`QPW`	Main power status	`000`		Standby (Off)
			`001`		On
FREEZE	`QFZ`	Freeze function status	`0`		Off
			`1`		On
SHUTTER	`QSH`	Shutter function status	`0`		Off
			`1`		On
INPUT SIGNAL	`QIN`	Input signal status	`RG1`		RGB 1
			`RG2`		RGB 2
			`VID`		Video
			`SVD`		S-Video
			`DVI`		DVI
TEST	`QTS`	Test pattern status	`0`		Exit test pattern
			`1`		White (full on)
			`2`		Black (full off)
			`3`		Flag
			`5`		Window
			`7`		Focus
			`8`		Color bar
ON SCREEN	`QOS`	On-screen display status	`0`		Off
			`1`		On
PICTURE MODE	`QPM`	Picture mode status	`NAT`		Natural
			`STD`		Standard
			`DYN`		dynamic
			`CIN`		Cinema
			`GRA`		Graphic
SYSTEM DAYLIGHT VIEW	`QVX:DLVI0`	System daylight view status	`DLVI0=+00000`		Off
			`DLVI0=+00001`		1
			`DLVI0=+00002`		2
			`DLVI0=+00003`		3
COLOR	`QVC`	Color adjustment value	`p1p2p3`		
TINT	`QVT`	Tint adjustent value	`p1p2p3`		
COLOR TEMP.	`QTE`	Color temperature adjustment status	`1`		Middle
			`2`		High
			`4`		User
			`10`		Default
CONTRAST	`QVR`	Contrast adjustment value	`p1p2p3`		
BRIGHTNESS	`QVB`	Brightness adjustment value	`p1p2p3`		
SHARPNESS	`QVS`	Sharpness adjustment value	`p1p2p3`		
SET RUNTIME	`QST`	Picture mode status	`p1p2p3p4p5`		00000h–99999h
LAMP ON TIME	`Q$L:1`	Lamp 1 run time	`p1p2p3p4`		0000h–9999h
(LAMP TIMER)	`Q$L:2`	Lamp 2 run time	`p1p2p3p4`		0000h–9999h
LAMP SELECT	`QSL`	Lamp operation mode status	`0`		Dual
			`1`		Single
			`2`		Lamp 1
			`3`		Lamp 2
VPS SYSTEM	`QVY`	VPS system status	`0`		Slave
			`1`		Master
TMP CHECK	`QTM:0`	Temperature status	`p1p2p3p4/p5p6p7p8` [1]		p0 = Intake air
	`QTM:1`				p1 = Exhaust air
	`QTM:2`				p2 = DLP™ chip
GET DATE	`QGD`	Date setting status	`y1y2y3y4m1m2d1d2w`		yyyymmdd (day of week) [2]
GET TIME	`QGT`	Time setting status	`h1h2m1m2s1s2`		hhmmss [3]

∗1 p1p2p3p4: Celsius (°C), p5p6p7p8: Fahrenheit (°F)
∗2 Day of week: Monday = 1, Tuesday = 2, … Sunday = 7
∗3 Set the date and time to UTC (universal time coordinated).

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Parameter format

Parameter format	Size (Byte)	Difinition
<pl>	3 (1 or 2 bytes also possible when under control)	Dicimal without signs: 0-999 (000, 001, 002...999) Dicimal with signs: -99 to +99 (-99...-01, +00, +01, +02...+99) Callback from the projector is 3 Byte.
<off on>	1	0 = off, 1 = on
<input signal>	3	RG1 = computer 1, RG2 = computer 2, VID = video, SVD = S-Video, DVI = DVI
<installation>	1	0 = front, 1 = rear, 2 = ceiling and front, 3 = ceiling and rear
<language>	3	ENG = English, DEU = German, FRA = French, ESP = Spanish, ITL = Italian, JPN = Japanese, CHI = Chinese, RUS = Russian, KOR = Korean
<power condition>	3	000 = standby power off, 001 = standby power on
<lamp on time>	4	Decimal without signs: 0000-9999 hours
<lamp select>	1	0 = dual, 1 = single, 2 = lamp 1, 3 = lamp 2
<acctch>	4	Decimal without signs: 0000-9999 hours
<color temp>	2	1 = mid, 2 = high, 4 = user, 10 = default
<date>	9	y1y2y3y4m1m2d1d2w = year (y) month (m) day (d) day of week (w) Day of week: Monday = 1, Tuesday = 2, ... Sunday = 7
<time>	6	h1h2m1m2s1s2 = hour (h) minute (m) second (s)

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

Command example

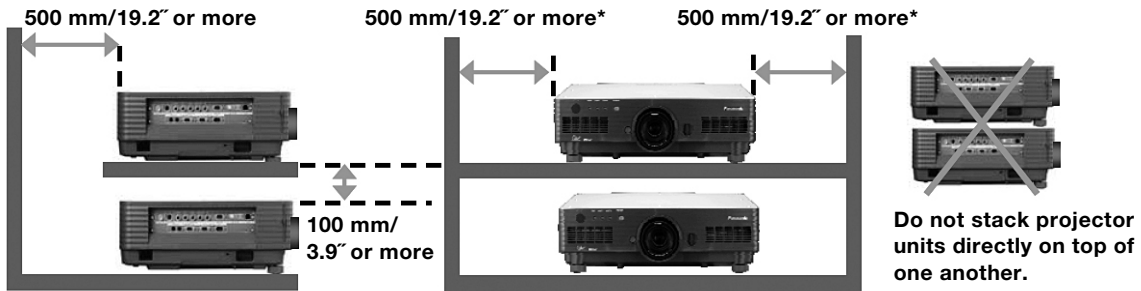To set the on-screen display off, send the command as shown below.

STX	ADZZ ;	OOS :	30	ETX
Start	ID Address	Command	Parameter	End
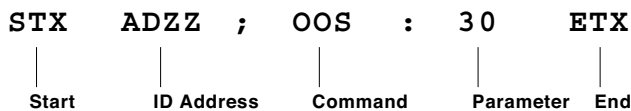
NOTE: When sending commands without parameters, a colon (:) is not necessary.

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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 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 of the PT-D4000 is not recommended.
4. If the projector is placed in a box or enclosure, ensure the temperature of the air surrounding the projector is between 0°C/32°F and 40°C/104°F*. Also make sure the projector's intake and exhaust openings are not blocked. Take particular care to ensure that hot air from the exhaust openings is not sucked into the intake openings.

    * Even when the ambient temperature near the intake opening is 40°C/104°F or lower, an accumulation of hot air inside the cabinet may cause the protective circuit to activate and shut down the projector. Please give ample consideration to the design with regard to ambient temperature conditions.

500 mm/19.2″ or more   **500 mm/19.2″ or more***   **500 mm/19.2″ or more***

100 mm/ 3.9″ or more

Do not stack projector units directly on top of one another.

* Minimum distance when two units are used together. Keep 300 mm/11.8″ or more when a single unit is used.

Direction of Air Intake and Exhaust

Intake

Exhaust
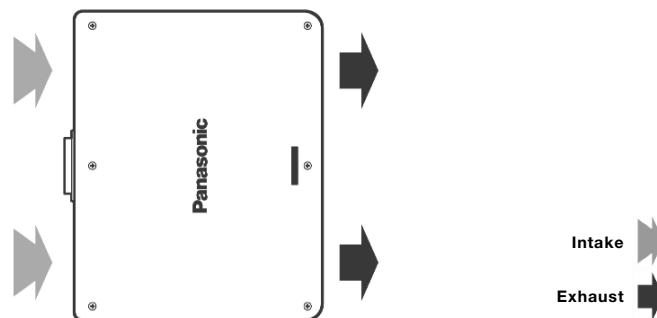
Operating the Projector Continuously

1. If the projector is to be operated continuously 24 hours a day, use the dual-lamp optical system's alternating lamp operation (lamp changer) function. The projector cannot be operated continuously 24 hours a day in dual-lamp mode.
    Allow a minimum of two hours per day of non-operation time.
2. The lamp replacement cycle duration becomes shorter if the projector is operated repeatedly for short periods.

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