

S P E C F I L E



Product Number : **PT-LZ370**

Product Name : LCD Projector

Specifications

Main unit

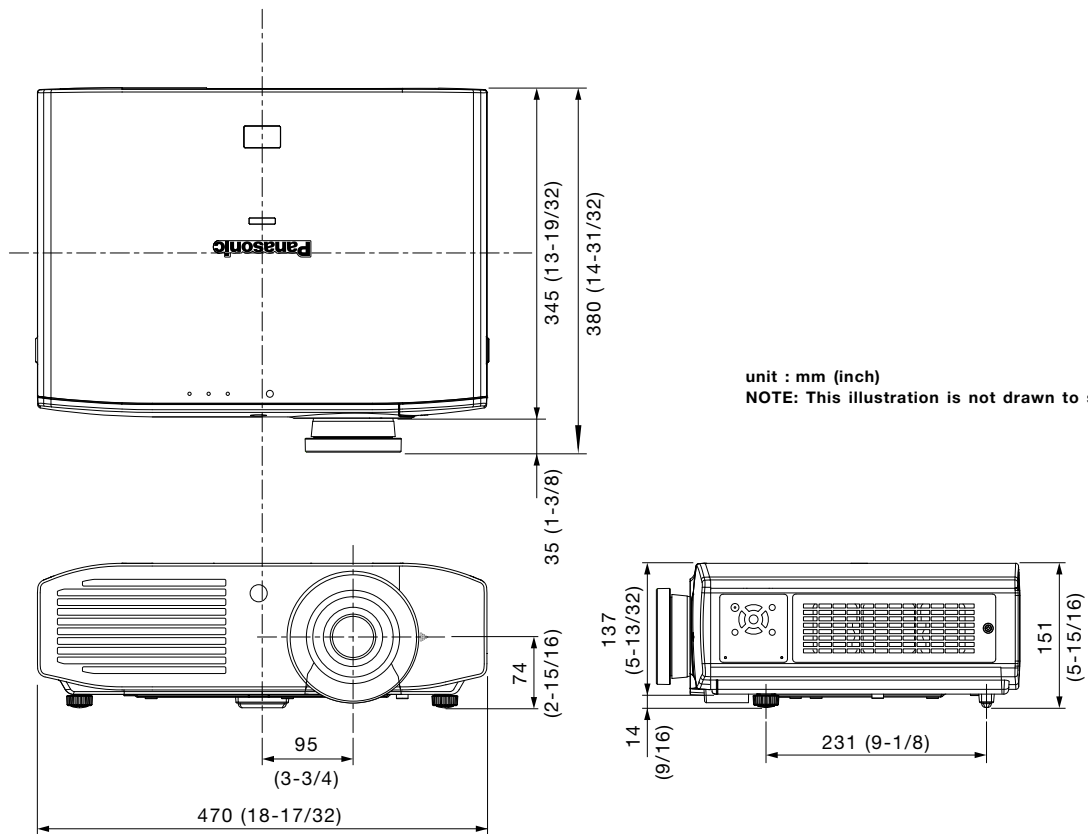
Power supply		100–240 V AC, 50/60 Hz
Power consumption		350 W (0.08 W with standby mode set to eco* ¹ , 10 W with standby mode set to normal.)
LCD* ² panel	Panel size	18.7 mm (0.74 in) diagonal (16:9 aspect ratio)
	Display method	Transparent LCD panel (× 3, R/G/B)
	Drive method	Active matrix
	Pixels	2,073,600 (1,920 × 1,080) × 3, total of 6,220,800 pixels
Lamp* ³		280 W UHM lamp
Lens		Manual zoom (1.33–2.69:1), manual focus lenses, F2.0–3.4, f 21.5–43.0 mm
Projection size		1.02–7.62 m (40–300 inches)
Throw distance		1.11–17.45 m (3 ft 8 in to 57 ft 3 in)
Colors		Full color (1,073,741,824 colors)
Brightness* ⁴		3,000 lumens
Center-to-corner uniformity ratio* ⁴		85%
Contrast ratio* ⁴		10,000:1* ⁵ (full on/full off, with dynamic iris on)
Resolution		1,920 × 1,080 pixels (Input signals that exceed this resolution will be converted to 1,920 × 1,080 pixels.)
Scanning frequency	HDMI	f _H : 27.0 kHz–75.0 kHz, f _V : 24.0 Hz–85.0 Hz, dot clock: 25.2 MHz–162.0 MHz
	RGB	f _H : 15.6 kHz–91.1 kHz, f _V : 24.0 Hz–85.1 Hz, dot clock: 162.0 MHz or lower
	YPbPr (YCbCr)	525i (480i): f _H 15.75 kHz; f _V 60 Hz, 625i (576i): f _H 15.63 kHz; f _V 50 Hz, 525p (480p): f _H 31.50 kHz; f _V 60 Hz, 625p (576p): f _H 31.25 kHz; f _V 50 Hz, 750 (720)/60p: f _H 45.00 kHz; f _V 60 Hz, 750 (720)/50p: f _H 37.50 kHz; f _V 50 Hz, 1125 (1080)/60i: f _H 33.75 kHz; f _V 60 Hz, 1125 (1080)/50i: f _H 28.13 kHz; f _V 50 Hz, 1125 (1080)/24p: f _H 27.00 kHz; f _V 24 Hz, 1125 (1080)/60p: f _H 67.50 kHz; f _V 60 Hz, 1125 (1080)/50p: f _H 56.25 kHz; f _V 50 Hz
	Video/S-Video	f _H : 15.75 kHz, f _V : 60 Hz [NTSC/NTSC4.43/PAL-M/PAL60] f _H : 15.63 kHz, f _V : 50 Hz [PAL/PAL-N/SECAM]
Optical axis shift* ⁶		Vertical: ±65%, horizontal: ±26%
Keystone correction range		Vertical: approx. ±30°
Installation		Ceiling/desk, front/rear (menu selection)
On-screen menu languages		English, French, German, Spanish, Italian, Chinese, Korean, Russian, Swedish, Danish, Norwegian, Polish, Czech, Hungarian, Portuguese, Thai, Japanese
Terminals	HDMI IN	HDMI 19-pin × 2, Deep Color, compatible with HDCP 525p (480p), 625p (576p), 750 (720)/60p, 750 (720)/50p, 1125 (1080)/60i, 1125 (1080)/50i, 1125 (1080)/24p, 1125 (1080)/60p, 1125 (1080)/50p VGA (640 × 480)–UXGA+ (1,600 × 1,200), Audio signal: linear PCM (sampling frequencies: 48 kHz, 44.1 kHz, 32 kHz)
	COMPUTER (RGB) IN RGB signal	D-sub HD 15-pin (female) × 1 R, G, B: 0.7 Vp-p (1.0 Vp-p for sync on G), 75 ohms, HD/SYNC, VD: TTL (positive/negative polarity compatible) NOTE: HD/SYNC, and VD terminals do not accept tri-level sync signals.
	YPbPr/YCbCr signal	Y: 1.0 Vp-p (including sync signal), Pb/Pr: 0.7 Vp-p, 75 ohms
	COMPONENT IN	RCA pin (Y, Pb/Cb, Pr/Cr) × 3
	Y	1.0 Vp-p, 75 ohms,
	Pb/Cb, Pr/Cr	0.7 Vp-p, 75 ohms
	VIDEO IN	RCA pin × 1, 1.0 Vp-p, 75 ohms
	S-VIDEO IN	Mini DIN 4-pin × 1, Y: 1.0 Vp-p, C: 0.286 Vp-p, 75 ohms

AUDIO IN	M3 (L, R) × 1, 0.5 Vrms, impedance 22 kilohms or more
AUDIO OUT	M3 (L, R) × 1 (monitor out: 0–2.0 Vrms, variable)
SERIAL IN	D-sub 9-pin × 1 for external control (RS-232C compliant)
LAN	RJ-45 × 1, for network connection, 100Base-TX/10Base-T, compliant with PjLink™
Power cord length	2.0 m (6 ft 7 in)
Cabinet materials	Molded plastic (PC+ABS)
Dimensions (W × H × D)	470 mm × 151 mm × 380 mm* ⁷ (18-17/32" × 5-15/16" × 14-31/32")* ⁷
Weight* ⁸	Approx. 8.6 kg (19.0 lbs)
Operation noise* ⁴	35 dB (lamp power: normal), 29 dB (lamp power: eco)
Operating temperature	0°–40°C (32°–104°F)
Operating humidity	20%–80% (no condensation)
Remote control unit	
Power supply	3 V DC (AA/LR6/R6 type battery × 2)
Operation range* ⁹	Approx. 15 m (49 ft 3 in) when operated from directly in front of the signal receptor
Dimensions (W × H × D)	48 × 163 × 24.5 mm (1-7/8" × 6-13/32" × 31/32")
Weight	Approx. 117 g (4.1 oz) (including batteries)
Supplied accessories	
	Power cord (× 1) (× 2 for PT-LZ370EA)
	Wireless remote control unit (× 1)
	Batteries for remote control (AA/R6 type × 2)
	Software CD-ROM (Logo Transfer Software, Multi Projector Monitoring and Control Software, Wireless Manager ME 5.5) (× 1)
Optional accessories	
Replacement lamp unit	ET-LAA110
Ceiling mount bracket	ET-PKA110H (for high ceilings) ET-PKA110S (for low ceilings)

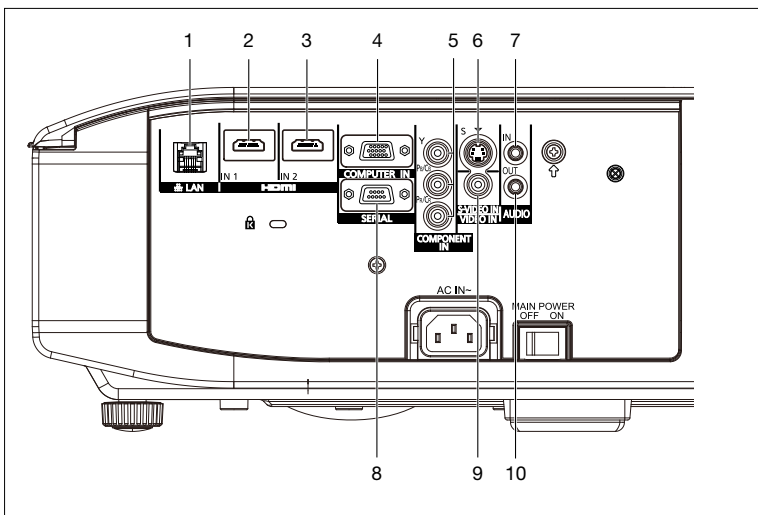
Weights and dimensions shown are approximate. Specifications and appearance are subject to change without notice.

- *1 When the standby mode is set to eco, network functions such as power on over the LAN network will not operate. Also, only certain commands can be received for external control using the serial terminal.
- *2 The projector uses a type of liquid crystal panel that typically consists of millions of pixels. This panel is built with very high-precision technology to provide the finest possible image. Occasionally, a few pixels may remain turned on (bright) or turned off (dark). Please note that this is an intrinsic characteristic of the manufacturing technology that affects all products using LCD technology.
- *3 The projector uses a high-voltage mercury lamp that contains high internal pressure. This lamp may break, emitting a large sound, or fail to illuminate, due to impact or extended use. The length of time that it takes for the lamp to break or fail to illuminate varies greatly depending on individual lamp characteristics and usage conditions.
- *4 Measurement, measuring conditions, and method of notation all comply with ISO 21118 international standards.
- *5 With dynamic iris on.
- *6 Shift range is limited during simultaneous horizontal and vertical shifting.
- *7 With legs at shortest position.
- *8 Average value. May differ depending on models.
- *9 Operation range differs depending on environments.

Dimensions



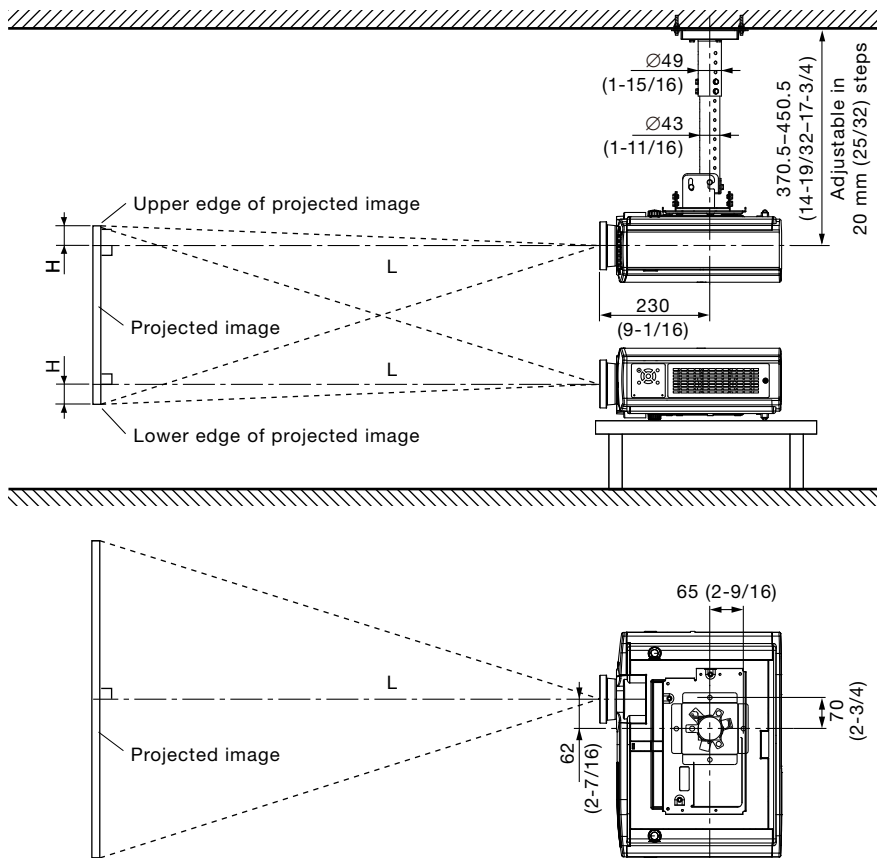
Terminals



- 1 LAN connector
- 2 HDMI 1 input
- 3 HDMI 2 input
- 4 Computer input
- 5 Component input
- 6 S-Video input
- 7 Audio input
- 8 Serial input
- 9 Video input
- 10 Audio output

Standard setting-up position

unit : mm (inch)



NOTE:
 Illustrations show the projector installed using optional ceiling mount bracket ET-PKA110H.
 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 16:9 aspect ratio screen

Projection size [diagonal]	Projection distance [L]		Height from the edge of screen to center of lens [H]	
	Min [wide]	Max [telephoto]		
1.02 m / 40"	1.1 (3.7)	2.3 (7.5)	-0.08 - 0.58	(-0.26 - 1.90)
1.27 m / 50"	1.4 (4.6)	2.9 (9.4)	-0.09 - 0.71	(-0.30 - 2.33)
1.52 m / 60"	1.7 (5.6)	3.5 (11.3)	-0.11 - 0.86	(-0.36 - 2.82)
1.78 m / 70"	2.0 (6.5)	4.1 (13.3)	-0.13 - 1.00	(-0.43 - 3.28)
2.03 m / 80"	2.3 (7.5)	4.7 (15.2)	-0.15 - 1.15	(-0.49 - 3.77)
2.29 m / 90"	2.6 (8.4)	5.2 (17.1)	-0.17 - 1.29	(-0.56 - 4.23)
2.54 m / 100"	2.9 (9.4)	5.8 (19.0)	-0.19 - 1.44	(-0.62 - 4.72)
3.05 m / 120"	3.5 (11.3)	7.0 (22.8)	-0.22 - 1.71	(-0.72 - 5.61)
3.81 m / 150"	4.3 (14.2)	8.7 (28.6)	-0.28 - 2.15	(-0.92 - 7.05)
5.08 m / 200"	5.8 (19.0)	11.6 (38.1)	-0.37 - 2.86	(-1.21 - 9.38)
6.35 m / 250"	7.3 (23.8)	14.6 (47.7)	-0.47 - 3.58	(-1.54 - 11.75)
7.62 m / 300"	8.7 (28.6)	17.5 (57.2)	-0.56 - 4.30	(-1.84 - 14.11)

- The value for H (the height from the edge of the screen to the centre of the lens) is the value when the horizontal optical axis shift function is not used. The value decreases when the horizontal optical axis shift function is used. For details, see Shift range on page 6.
- 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.

Calculation of the projection distance

For a screen size different from the chart shown on the page 5, use the equation below to calculate the projection distance.

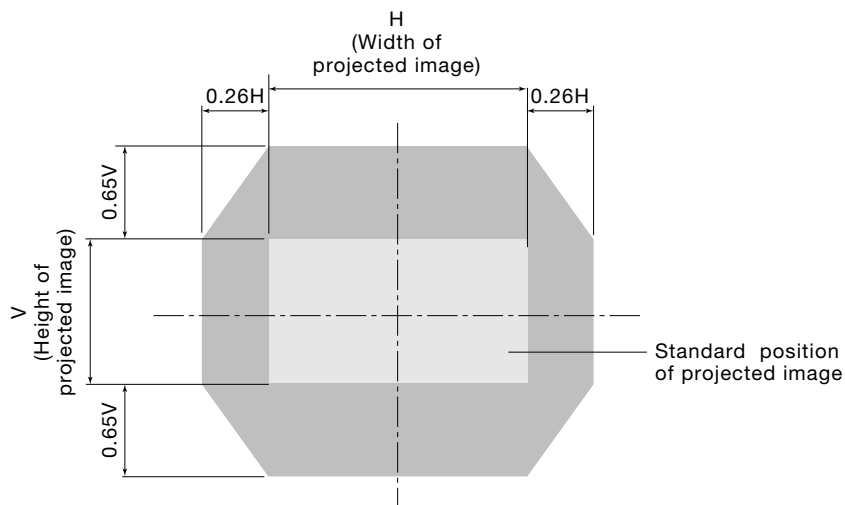
16:9 minimum $L (m) = (\text{diagonal screen size in inches}) \times 0.0292 - 0.054$

 maximum $L (m) = (\text{diagonal screen size in inches}) \times 0.0583 - 0.041$

NOTE: The accuracy of calculated value by the formula shown above is $\pm 5\%$.

Shift range

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

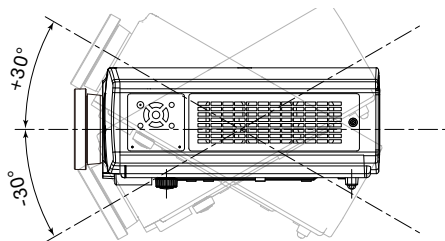


Installable angle

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

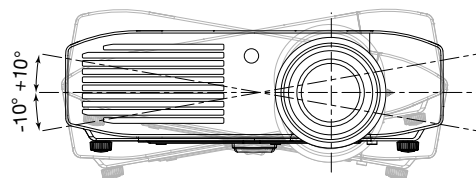
• Vertical direction

The projector may be installed at a vertical angle of $\pm 30^\circ$.



• Horizontal direction

The projector may be installed at a horizontal angle of $\pm 10^\circ$.



List of compatible signals

The signals that can be input to this projector are shown in the table below. Horizontal scanning frequencies of 15 kHz to 91 kHz, vertical scanning frequencies of 24 Hz to 85 Hz, and a dot clock of 162 MHz maximum can be input.

NOTE: The native resolution of this projector is 1,920 × 1,080 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		Dot clock frequency (MHz)	Format	Plug and Play compatibility	
		H (kHz)	V (kHz)			HDMI input	Computer input
NTSC/NTSC4.43/PAL-M/PAL60	720 × 480i	15.7	59.9	–	VIDEO/S-VIDEO	No	No
PAL/PAL-N/SECAM	720 × 576i	15.6	50.0	–	COMPUTER/YPbPr	No	No
525i (480i)	720 × 480i	15.7	59.9	13.5			
625i (576i)	720 × 576i	15.6	50.0	13.5	HDMI/COMPUTER/YPbPr	Yes	
525p (480p)	720 × 483	31.5	59.9	27.0			
625p (576p)	720 × 576	31.3	50.0	27.0			
750 (720)/60p	1,280 × 720	45.0	60.0	74.3			
750 (720)/50p	1,280 × 720	37.5	50.0	74.3			
1125 (1080)/60i	1,920 × 1,080i	33.8	60.0	74.3			
1125 (1080)/50i		28.1	50.0	74.3			
1125 (1080)/24p		27.0	24.0	74.3			
1125 (1080)/60p		67.5	60.0	148.5			
1125 (1080)/50p	1,920 × 1,080	56.3	50.0	148.5			
1920 × 1080*2		66.6	59.9	138.5			
1920 × 1080		55.6	49.9	141.5			
VESA400	640 × 400	37.9	85.1	31.5	COMPUTER	No	No
VGA		31.5	59.9	25.2			
VGA	640 × 480	31.5	59.9	25.2	HDMI/COMPUTER	Yes	Yes
		31.5	70.1	25.2	COMPUTER	No	No
		35.0	66.7	30.2	COMPUTER	No	No
		37.5	75.0	31.5			
		37.9	72.8	31.5			
		43.3	85.0	36.0			
SVGA	800 × 600	35.2	56.3	36.0	HDMI/COMPUTER	Yes	Yes
		37.9	60.3	40.0			
		46.9	75.0	49.5	COMPUTER	No	No
		48.1	72.2	50.0	COMPUTER	No	No
		53.7	85.1	56.3			
MAC16	832 × 624	49.7	74.6	57.3	HDMI/COMPUTER	Yes	Yes
XGA	1,024 × 768	39.6	50.1	51.9			
		48.4	60.0	65.0			
		56.5	70.1	75.0			
		60.0	75.0	78.8			
MXGA	1,152 × 864	68.7	85.0	94.5	COMPUTER	No	No
		64.0	70.0	94.2			
		67.5	74.9	108.0			
MAC21	1,152 × 870	68.7	75.1	100.0	HDMI/COMPUTER	No	No
1280 × 720	1,280 × 720	37.1	49.8	60.5			
1280 × 768	1,280 × 768	44.8	59.9	74.5	HDMI/COMPUTER	Yes	No
		39.6	49.9	65.3			
1280 × 800	1,280 × 800	47.8	59.9	79.5	COMPUTER	No	Yes
		41.3	50.0	68.0			
MSXGA	1,280 × 960	49.7	59.8	83.5	HDMI/COMPUTER	Yes	Yes
		60.0	60.0	108.0			
SXGA	1,280 × 1,024	64.0	60.0	108.0	COMPUTER	No	No
		80.0	75.0	135.0			
		91.1	85.0	157.5			
SXGA+	1,400 × 1,050	64.0	60.0	108.0	HDMI/COMPUTER	Yes	Yes
		65.2	60.0	122.6	COMPUTER	No	No
WXGA+	1,440 × 900	82.2	75.0	155.9	HDMI/COMPUTER	Yes	Yes
55.9	59.9	106.5					
UXGA	1,600 × 1,200	75.0	60.0	162.0	COMPUTER	No	No
WSXGA+	1,680 × 1,050	65.3	60.0	146.3			
WUXGA*2	1,920 × 1,200	74.0	59.9	154.0			

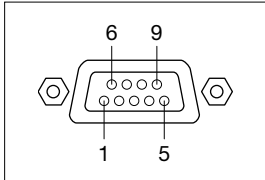
*1 The "i" appearing after the resolution indicates an interlaced signal.

*2 Compliant with VESA CVT-RB (Coordinated Video Timing-Reduced Blanking).

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



D-sub 9-pin (female) Serial input

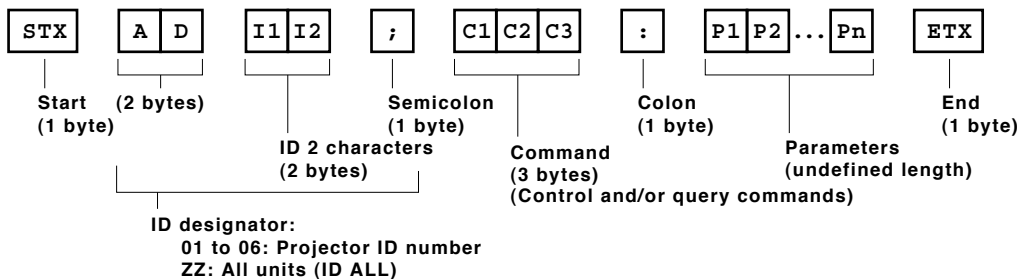
No.	Signal name	Description	No.	Signal name	Description
1	-	NC	6	-	NC
2	TXD	Transmitted data	7	RTS	Connected internally
3	RXD	Received data	8	CTS	Connected internally
4	-	NC	9	-	NC
5	GND	Ground			

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, set different IDs for each unit.

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

Command: <Parameter>	Function	Callback: <Parameter>	Parameter value	
			Min	Max
PON*1	Power on (standby mode on)	PON*1	-	-
POF*1	Power off (standby mode off)	POF*1	-	-
AVL:<pl>	Volume control	AVL:<pl>	0	63
IIS:<input signal>	Input signal selection	IIS:<input signal>	-	-
OST	The same function as "default" button	OST	-	-
OFZ:<off on>	Freeze	OFZ:<off on>	0	1
OEN	Enter	OEN	-	-
VPM:NAT	Picture mode: Natural	VPM:NAT	-	-
VPM:STD	Picture mode: Standard	VPM:STD	-	-
VPM:CIN	Picture mode: Cinema	VPM:CIN	-	-
VPM:DYN	Picture mode: Dynamic	VPM:DYN	-	-
VPM:DIC	Picture mode: DICOM	VPM:DIC	-	-
VPM:BBD	Picture mode: Blackboard	VPM:BBD	-	-
VPM:WBD	Picture mode: Whiteboard	VPM:WBD	-	-
VS1:00	Aspect mode: Auto	VS1:00	-	-
VS1:01	Aspect mode: Normal	VS1:01	-	-
VS1:05	Aspect mode: Native	VS1:05	-	-
VS1:06	Aspect mode: Full	VS1:06	-	-
VS1:09	Aspect mode: H-fit	VS1:09	-	-
AUU	Volume up	AUU	-	-
AUD	Volume down	AUD	-	-
OMN	Menu	OMN	-	-
OCU	Cursor up	OCU	-	-
OCD	Cursor down	OCD	-	-
OCL	Cursor left	OCL	-	-
OCR	Cursor right	OCR	-	-
OAS	Auto setup	OAS	-	-
OSH*1/*2	AV mute	OSH*1/*2	-	-
TSD:<date>	Date setting	TSD:<date>	-	-
TST:<time>	Time setting	TST:<time>	-	-

*1 Do not send PON, POF or OSH 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.

Status request commands

Command	Description	Callback <Parameter>
QPW	Standby power status	<power condition>
QSS	Lamp status	<lamp condition>
QIN	Input signal status	<input signal>
QAV	Volume adjustment value	<pl>
QPM	Picture mode status	Natural
		Standard
		Cinema
		Dynamic
		DICOM
		Blackboard
	Whiteboard	
QFZ	Freeze status	<off_on>
QSL	Lamp run time	<acctch>
QSH	AV mute function status	<off_on>
QKS	Keystone correction status	<pl>
QGD	Date setting status	<date>
QGT	Time setting status	<time>

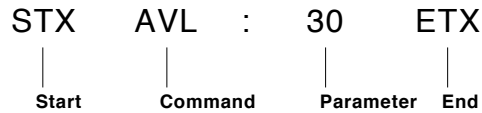
Parameter format

Parameter format	Size (Byte)	Definition
<pl>	3 (1 or 2 bytes also possible when under control)	Decimal without signs: 0-999 (000, 001, 002...999) Decimal 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	HD1 = HDMI 1, HD2 = HDMI 2, RG1 = computer, YUV = component, VID = video, SVD = S-Video
<power condition>	3	000 = power off (standby mode off), 001 = power on (standby mode on)
<lamp condition>	1	0 = standby, 1 = lamp on under control, 2 = lamp on, 3 = lamp off under control
<acctch>	4	Dicimal without signs: 0000-9999 hours
<date>	8	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 or ER402 command to the computer.

Command example

To set the volume to +30, send the command as shown below.

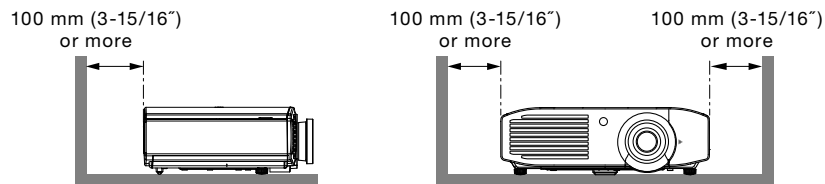


NOTE: When sending commands without parameters, a colon (:) is not necessary.

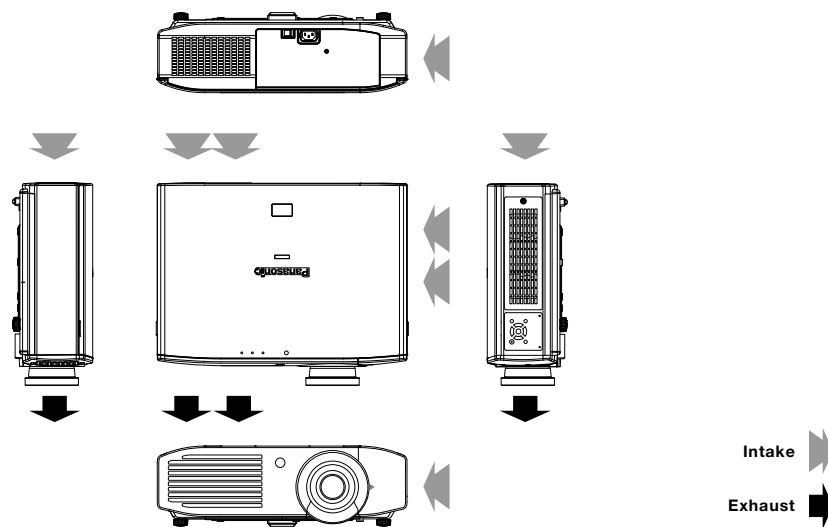
Notes on projector placement and operation

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 100 mm (3-15/16") or more around the projector's air intake openings.
3. Do not stack projector units directly on top of one another for the purpose of multiple (stacked) projection. When stacking projector units, be sure to provide the amount of space indicated below between them. These space requirements also apply to installations where only one projector unit is operating at one time and the other unit is used as a backup.
4. If the projector is installed in an enclosed space, ensure that 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.



Direction of air intake and exhaust



Operating the projector continuously

1. If the projector is to be operated continuously 12 hours or more, lamp replacement cycle duration becomes shorter.
2. The lamp replacement cycle duration becomes shorter if the projector is operated repeatedly for short periods (one hour or less).

Weights and dimensions shown are approximate. Specifications and appearance are subject to change without notice. Product availability differs depending on region and country. This product may be subject to export control regulations.

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