Digital Projector
Installation Guide

Installation Projector | LU960UST

數位投影機安裝指南
数码投影机安装指南
Guide d'installation du projecteur numérique
Digitalprojektor Installationsanleitung
Guida all'installazione del proiettore digitale
Руководство по установке цифрового проектора
디지털 프로젝터 설치 안내서
デジタルプロジェクタインストールガイド

English

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Please visit below website for latest version of User Manual / Installation Guide.
http://business-display.benq.com/

V1.00

Notice

Notice on laser



This symbol indicates that there is a potential hazard of eye exposure to laser radiation unless the instructions are closely followed.

- **Laser class**



(for USA) This Laser Product is designated as Class 3R during all procedures of operation and complies with IEC/EN 60825-1:2007.
(for WW) This Laser Product is designated as Class 1 during all procedures of operation and complies with IEC/EN 60825-1:2014.

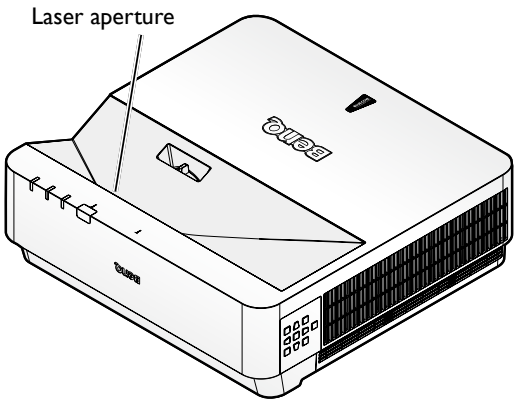


LASER LIGHT - AVOID DIRECT EYE EXPOSURE.
Do not point laser or allow laser light to be directed or reflected toward other people or reflective objects.
Direct or scattered light can be hazardous to eyes and skin.
There is a potential hazard of eye exposure to laser radiation if the included instructions are not followed.
Caution – use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

- **Laser parameters**

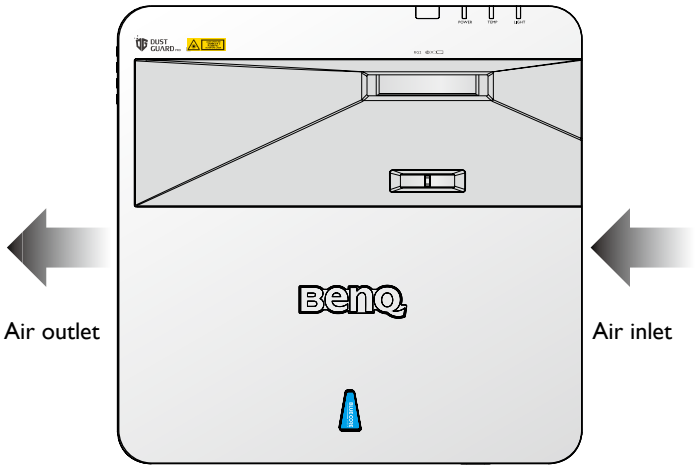
Wavelength	450nm - 460nm (Blue)
Mode of operation	Pulsed, due to frame rate
Pulse width	1.34ms
Pulse repetition rate	120Hz
Maximum laser energy	0.698mJ
Total internal power	>100w
Apparent source size	>10mm, at lens stop
Divergence	>100 mili Radian

- **Laser light instruction**

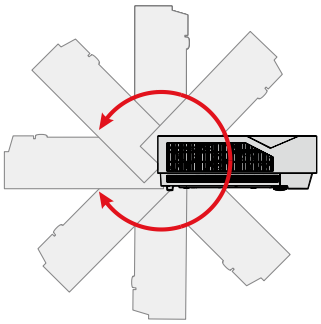


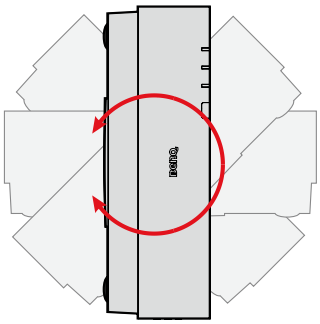
Cooling notice

Allow at least 50 cm (19.7 inch) for clearance around the exhaust vent. Make sure no objects block air inlet within 50 cm (19.7 inch).
Keep the outlet at least 1 m away from the inlets of other projectors.

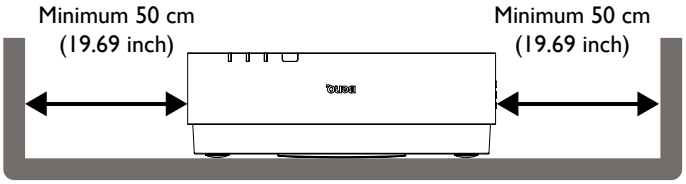


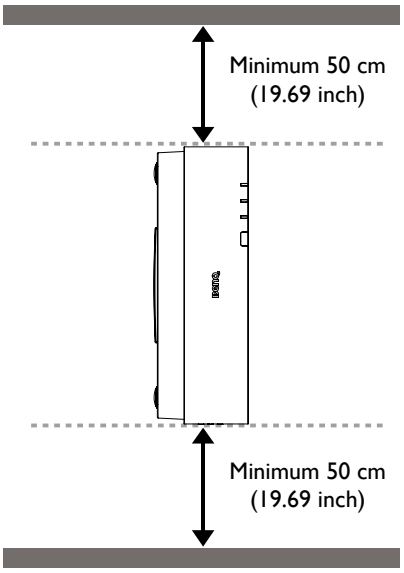
- The projector can be installed at any angle.

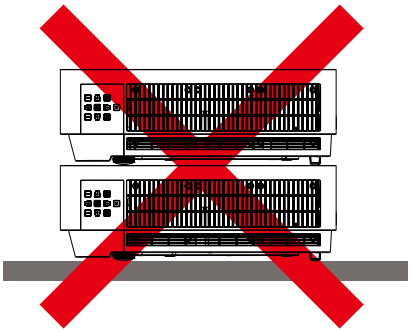




- Allow at least 50 cm of clearance around the exhaust vent.





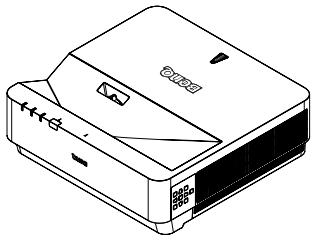


- Ensure that the air intake vents do not recycle hot air from the exhaust vent.
- When operating in an enclosed space, make sure that the surrounding air temperature does not exceed the projector's operating temperature and that the air intake and exhaust vents are unobstructed.

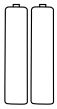
All enclosures should pass a certified thermal evaluation to ensure that the projector does not recycle exhaust air. Recycling exhaust air may cause the projector to shutdown even if the ambient temperature is within the acceptable operating temperature range.

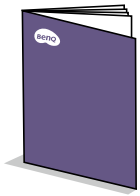
Product information

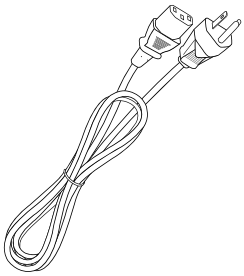
Packing content

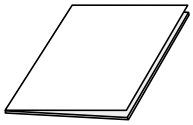

Projector


Remote Control


Batteries


Installation Guide


Power Cord(s)


Regulatory Statement

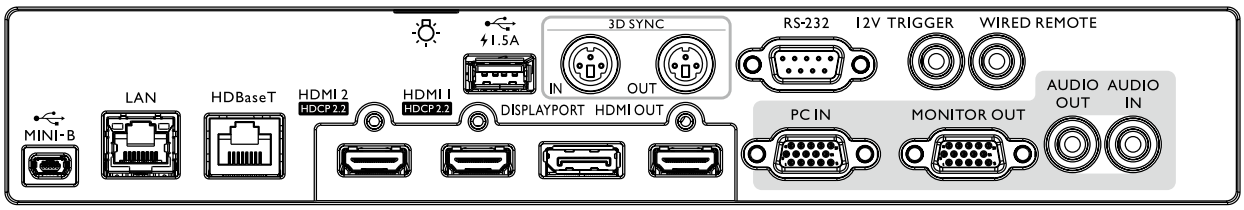
Specification

	LU960UST
Projection system	1-CHIP DMD
Native resolution	1920*1200 pixels, 16:10
Light source	Laser diodes
Power consumption	500Watts (Normal mode)/ 380Watts (Eco mode)
Dimension	480 x 157.4 x 473 mm
Weight	12 kg

Note:

- The brightness output will vary depending on each units and actual usage.
- Please find the latest user's manual on the local website.

Terminals



MINI-B
Support Mini USB type B for service only.

LAN
For connection to RJ45 Cat5/Cat6 Ethernet cable to control the projector through a network.

HDBaseT
For connection to a HDBaseT transmitter via an Ethernet cable (Cat5/Cat6) to input up to 4K 30Hz, RS232 control signal and IR
control signal. The HDBaseT port does not support LAN control.

HDMI 2
Connection to HDMI source.

HDMI 1
Connection to HDMI source.

DISPLAYPORT
Connection to a Display Port source.

HDMI OUT
Connection to HDMI device.

PC IN
15-pin VGA port for connection to RGB, component HD source, or PC.

MONITER OUT
Connection to other display equipment for concurrent playback display.

AUDIO OUT
Connection to a speaker amplifier or headset.

AUDIO IN
Connection to an audio input source via an audio cable.

REAR LIGHT
Illumination for terminals.

USB 1.5A
Support 5V/1.5A output.

3D SYNC IN
Connect 3D-sync in cable from a computer or an enabled device.

3D SYNC OUT
Connection to 3D IR sync signal transmitter.

RS-232 IN
Standard 9-pin D-sub interface for connection to PC control system and projector maintenance.

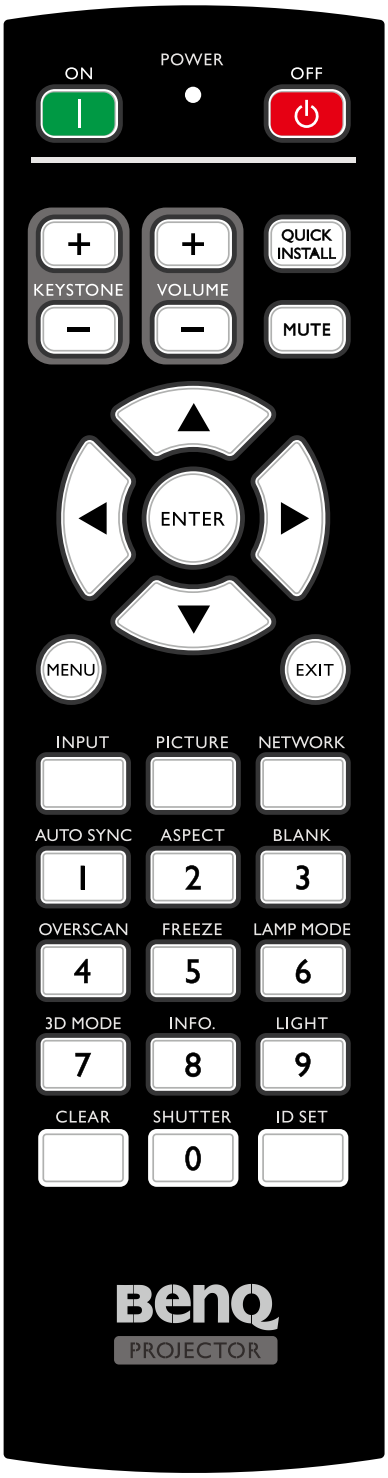
12V TRIGGER
3.5mm mini earphone jack, employs 200mA display relay to provide 12(+/-1.5)V output and short circuit protection.

WIRED REMOTE
Connection to wire remote controller.

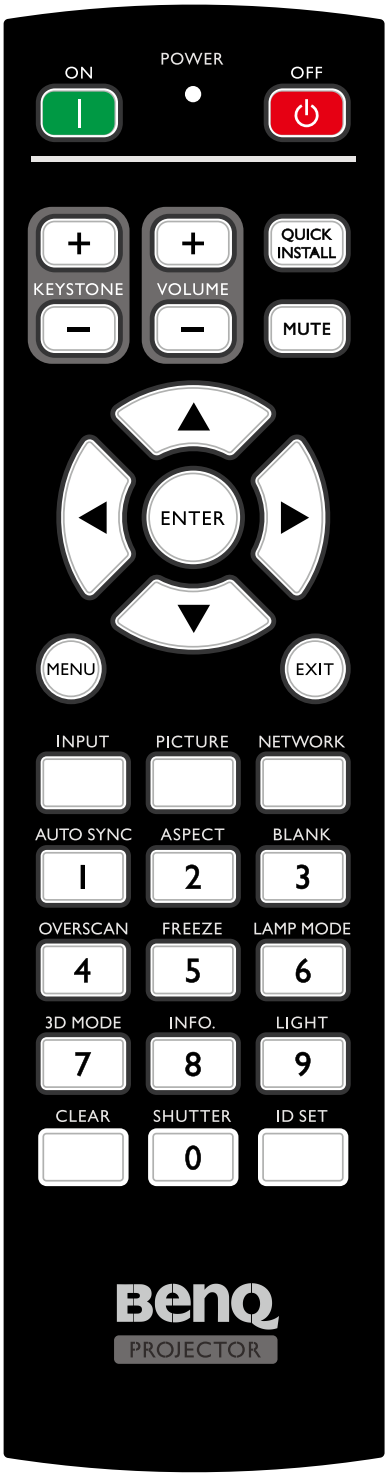
Caution:

Make sure the port is valid before inserting a wired remote controller. The remote controller may be damaged in case of an invalid port, e.g. a wired remote controller is connected to trigger output. For more information about upgrading firmware via Lan, please contact BenQ service.

Remote control



ON / OFF
Toggles the projector between standby mode and on.
KEYSTONE+/KEYSTONE-
Manually corrects distorted images resulting from an angled projection.
VOLUME +/VOLUME -
Increases/decreases the projector volume.
QUICK INSTALL
Displays the Quick Install OSD menu.
MUTE
Toggles projector audio between on and off.
Arrow keys (▲ Up, ▼ Down, ◄ Left, ► Right)
When the On-Screen Display (OSD) menu is activated, the arrow keys are used as directional arrows to select the desired menu items and to make adjustments.
ENTER
Selects an available picture setup mode. Activates the selected On-Screen Display (OSD) menu item.
MENU
Turns on the On-Screen Display (OSD) menu. Goes back to previous OSD menu, exits and saves menu settings.
EXIT
Goes back to previous OSD menu, exits and saves menu settings.
INPUT
Selects an input source for display.
PCITURE
Press to display **Picture** menu.
NETWORK
Selects Network Display as the input signal source.
AUTO SYNC
Automatically determines the best picture timings for the displayed image.
ASPECT
Selects the display aspect ratio.
BLANK
Used to hide the screen picture.



OVERSCAN
Press to select overscan mode.
FREEZE
Freezes the projected image.
LAMP MODE
Press to display OSD menu to select desired light mode.
3D MODE
Press to display 3D setup menu.
INFO.
Press to display **INFORMATION** menu.
LIGHT
Press to open backlight of remote controller.
CLEAR
Clear remote ID SET assigned to all projectors.
Press **CLEAR** and **ID SET** for five seconds. The LED blinks three times then the ID setting is cleared.
SHUTTER
The function is not available on this projector.
ID SET

- Remote control ID SET (set the particular remote code)
  Press to set remote ID.
  Press ID SET for three seconds. The POWER indicator on the remote control blinks, then press 01~99 to designate an ID.

Note:

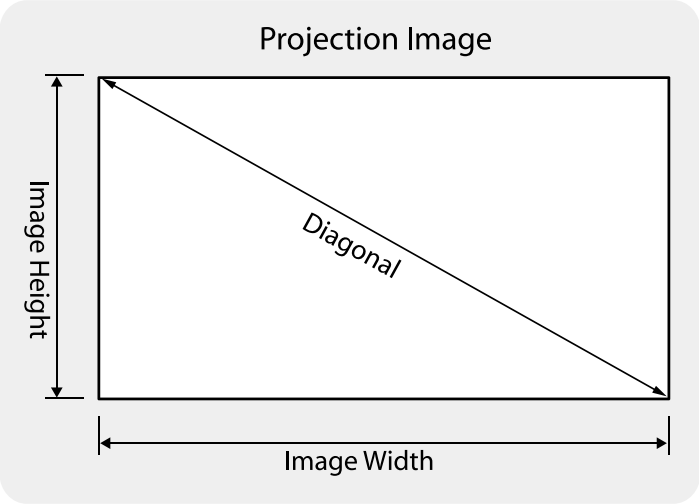
The remote control number (Remote control ID) must match the Projector ID Setting number for accurate control.

- Clear Remote ID SET (set remote code to all)
  Press **CLEAR** and **ID SET** for five seconds. The POWER indicator on the remote control blinks a single instance to reset remote code to all, can control projector no matter projector id setting.

Numeric buttons
Enters numbers in network settings.
Numeric buttons 1, 2, 3, 4 cannot be pressed when asked to enter password.
WIRE REMOTE jack
Connect to projector for wire remote control.

Installation

Projection table



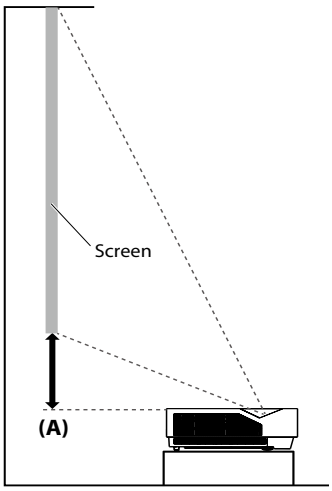
- **LU960UST**

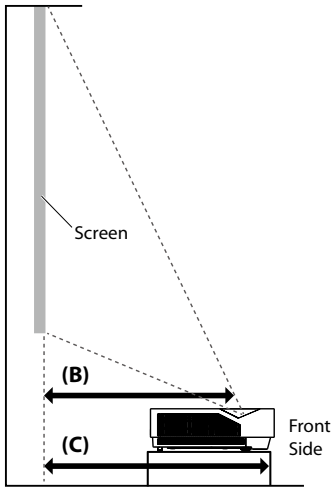
The screen aspect ratio is 16:10 and the projected picture is 16:10.

Note:

To optimize the projection quality, we suggest to project images in an area without grayscale.

Diagonal		Image Width		Image Height		Offset	Fix	Distance (mm)		Distance (mm)	
						Projector Top to Screen Bottom (A)		Center of Cover Glass to Screen (B)		Projector Front to Screen (C)	
(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)
70	1778	59.4	1508	37.1	943	5.4	136	12.9	328	15.8	402
80	2032	67.8	1723	42.4	1077	6.4	163	15.0	382	17.9	456
87	2210	73.8	1874	46.1	1171	7.2	182	16.5	420	19.4	494
90	2286	76.3	1939	47.7	1212	7.5	190	17.2	436	20.1	510
100	2540	84.8	2154	53.0	1346	8.6	217	19.3	491	22.2	565
120	3048	101.8	2585	63.6	1616	10.7	271	23.6	599	26.5	673
150	3810	127.2	3231	79.5	2019	13.9	352	30.0	762	32.9	836

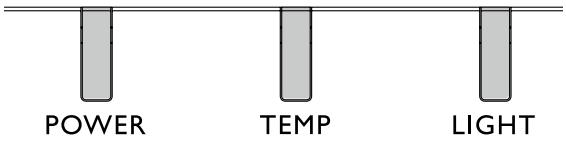




Note:

- For more visualized instructions, please go to BenQ calculator website http://projectorcalculator.benq.com/.
- Ceiling installation must be done by a qualified professional. Contact your dealer for more information. It is not recommended you install the projector yourself.
- Only use the projector on a solid, level surface. Serious injury and damage can occur if the projector is dropped.
- Do not use the projector in an environment where extreme temperature occurs. The projector must be used at temperatures between 41 degrees Fahrenheit (5 degrees Celsius) and 104 degrees Fahrenheit (40 degrees Celsius).
- Screen damage will occur if the projector is exposed to moisture, dust or smoke.
- Do not cover the vents on the projector. Proper ventilation is required to dissipate heat. Damage to the projector will occur if the vents are covered.

LED indicator



- **LED Usage**

LED Name	Detailed Description
Power LED	Display the power on/off sequence status Orange : Power Off (Green + Red) Green : Power On Blink : Warming up/Shutting Down & Cooling / Error Code
Temperature Status LED	Display the Thermal status (Fan Fail, Over Temperature, etc.) Red : Thermal Over Temperature Blink : Error Code
Lamp Status LED	Display the Lamp status (Lamp fail, Lamp spoil etc.) Red : Lamp Fail Blink : Error Code

- **System message**

Power	Temp	Light	Status & Description
Orange	-	-	Stand-by
Green Flashing	-	-	Powering up
Green	-	-	Normal operation
Orange Flashing	-	-	Normal power-down cooling
Red Flashing	Red Flashing	Red Flashing	Download
Green	-	Red	CW start fail
Green	-	Red Flashing	Phosphor Wheel start fail
Red Flashing	-	-	Scaler shutdown fail(data abord)
Red	-	Red	Scaler reset fail(video projector only)
-	Red	-	LAN download fail
-	Green	-	LAN download processing
Orange	-	Green Flashing	Light source life exhausted
Orange	-	Green	Lens release

Power	Temp	Light	Status & Description
Orange	-	Red	Case open
Orange	-	Red Flashing	Filter replace warning
Orange	Green Flashing	-	Thermal break sensor error

• Burn-In Messages

Power	Temp	Light	Status & Description
Green	-	-	Burn-in ON
Green	Green	Green	Burn-in OFF

• Lamp Error Messages

Power	Temp	Light	Status & Description
-	-	Red	Lamp1 error in normal operation
-	-	-	Lamp2 error in normal operation
-	-	Red	Both Lamp fail
-	-	Red Flashing	Lamp is not lit up

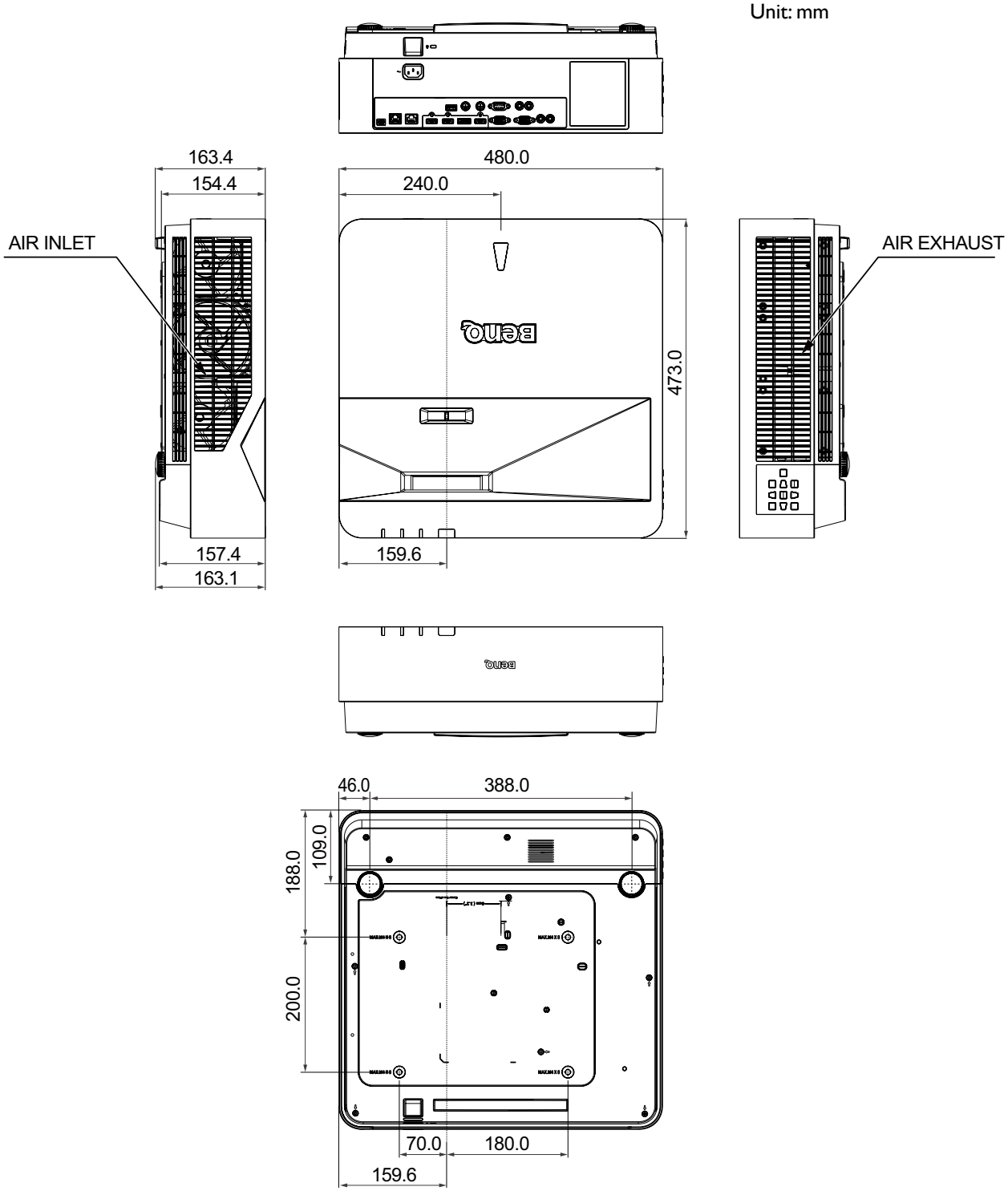
• Thermal Error Messages

Power	Temp	Light	Status & Description
Red	Red	-	Fan 1 error (the actual fan speed is outside the desired speed)
Red	Red Flashing	-	Fan 2 error (the actual fan speed is outside the desired speed)
Red	Green	-	Fan 3 error(the actual fan speed is outside the desired speed)eed)
Red	Green Flashing	-	Fan 4 error (the actual fan speed is outside the desired speed)
Red Flashing	Red	-	Fan 5 error (the actual fan speed is outside the desired speed)
Red Flashing	Red Flashing	-	Fan 6 error (the actual fan speed is outside the desired speed)
Red Flashing	Green	-	Fan 7 error (the actual fan speed is outside the desired speed)
Red Flashing	Green Flashing	-	Fan 8 error (the actual fan speed is outside the desired speed)
Red	Green	Red Flashing	Fan 9 error (the actual fan speed is outside the desired speed)
Red	Green	Red	Fan 10 error (the actual fan speed is outside the desired speed)

Power	Temp	Light	Status & Description
Red	Green Flashing	Red Flashing	Fan 11 error (the actual fan speed is outside the desired speed)
Red	Green Flashing	Red	Fan 12 error (the actual fan speed is outside the desired speed)
Green	Red	-	Temperature 1 error (over limited temperature)
Green	Red Flashing	-	Thermal Sensor 1 open error
Green	Green	-	Thermal Sensor 1 short error
Green	Green Flashing	-	Thermal IC #1 I2C Connection error
Green Flashing	Red	-	Temperature 2 error (over limited temperature)
Green Flashing	Red Flashing	-	Thermal Sensor 2 open error
Green Flashing	Green	-	Thermal Sensor 2 short error
Green Flashing	Green Flashing	-	Thermal IC #2 I2C Connection error
Green	Red	Red	Temperature 3 error (over limited temperature)
Green	Red	Red Flashing	Thermal Sensor 3 open error
Green	Red	Green	Thermal Sensor 3 short error
Green	Red	Green Flashing	Thermal IC #3 I2C Connection error
Green	Red Flashing	Red	Temperature 4 error (over limited temperature)
Green	Red Flashing	Red Flashing	Thermal Sensor 4 open error
Green	Red Flashing	Green	Thermal Sensor 4short error
Green	Red Flashing	Green Flashing	Thermal IC #4 I2C Connection error
Orange	Red	Red	Temperature 5 error (over limited temperature)
Orange	Red	Red Flashing	Thermal Sensor 5 open error
Orange	Red	Green	Thermal Sensor 5 short error
Orange	Red	Green Flashing	Thermal IC #5 I2C Connection error

Projector dimension

Unit: mm

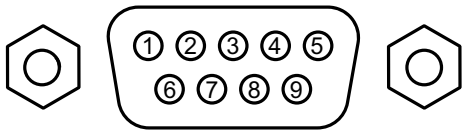


RS232 command control

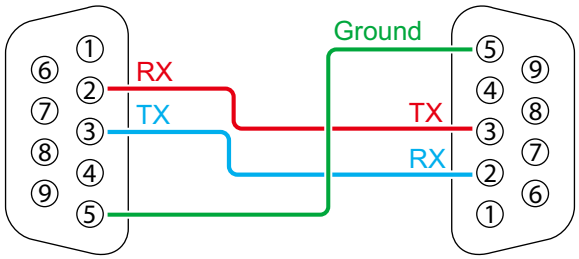
RS232 pin assignment

No.	Serial
1	N.C
2	RXD
3	TXD
4	N.C
5	Ground

No.	Serial
6	N.C
7	Short with pin8
8	Short with pin7
9	N.C



RS232 serial port with a crossover cable



Function	Type	Operation	ASCII
Power	Write	Power On	<CR>*pow=on#<CR>
	Write	Power off	<CR>*pow=off#<CR>
	Read	Power Status	<CR>*pow=?#<CR>
Source Selection	Write	COMPUTER/YPbPr	<CR>*sour=RGB#<CR>
	Write	HDMI(MHL)	<CR>*sour=hdmi#<CR>
	Write	HDMI 2(MHL2)	<CR>*sour=hdmi2#<CR>
	Write	HDBaseT	<CR>*sour=hdbaset#<CR>
	Write	DisplayPort	<CR>*sour=dp#<CR>
	Read	Current source	<CR>*sour=?#<CR>
Audio Control	Write	Mute On	<CR>*mute=on#<CR>
	Write	Mute Off	<CR>*mute=off#<CR>
	Read	Mute Status	<CR>*mute=?#<CR>
	Write	Volume +	<CR>*vol=+#<CR>
	Write	Volume -	<CR>*vol=-#<CR>
	Write	Volume level for customer	<CR>*vol=value#<CR>
	Read	Volume Status	<CR>*vol=?#<CR>

Function	Type	Operation	ASCII
Audio Source Select	Write	Audio pass Through off	<CR>*audiosour=off#<CR>
	Write	Audio-Computer1	<CR>*audiosour=RGB#<CR>
	Write	Audio-HDMI	<CR>*audiosour=hdmi#<CR>
	Write	Audio-HDMI2	<CR>*audiosour=hdmi2#<CR>
	Write	DisplayPort	<CR>*audiosour=dp#<CR>
	Write	HDBaseT	<CR>*audiosour=hdbaset#<CR>
	Read	Audio pass Status	<CR>*audiosour=?#<CR>
Picture Mode	Write	Presentation	<CR>*appmod=preset#<CR>
	Write	sRGB	<CR>*appmod=srgb#<CR>
	Write	Bright	<CR>*appmod=bright#<CR>
	Write	DICOM	<CR>*appmod=dicom#<CR>
	Write	Infographic	<CR>*appmod=infographic#<CR>
	Write	User1	<CR>*appmod=user1#<CR>
	Write	User2	<CR>*appmod=user2#<CR>
	Write	3D	<CR>*appmod=threed#<CR>
	Write	HDR10	<CR>*appmod=hdr<CR>
	Write	HLG	<CR>*appmod=hlg<CR>
	Read	Picture Mode	<CR>*appmod=?#<CR>

Function	Type	Operation	ASCII
Picture Setting	Write	Contrast +	<CR>*con=+#<CR>
	Write	Contrast -	<CR>*con=-#<CR>
	Write	Set Contrast value	<CR>*con=value#<CR>
	Read	Contrast value	<CR>*con=?#<CR>
	Write	Brightness +	<CR>*bri=+#<CR>
	Write	Brightness -	<CR>*bri=-#<CR>
	Write	Set Brightness value	<CR>*bri=value#<CR>
	Read	Brightness value	<CR>*bri=?#<CR>
	Write	Color +	<CR>*color=+#<CR>
	Write	Color -	<CR>*color=-#<CR>
	Write	Set Color value	<CR>*color=value#<CR>
	Read	Color value	<CR>*color=?#<CR>
	Write	Sharpness +	<CR>*sharp=+#<CR>
	Write	Sharpness -	<CR>*sharp=-#<CR>
	Write	Set Sharpness value	<CR>*sharp=value#<CR>
	Read	Sharpness value	<CR>*sharp=?#<CR>
	Write	Color Temperature-Warm	<CR>*ct=warm#<CR>
	Write	Color Temperature-Normal	<CR>*ct=normal#<CR>
	Write	Color Temperature-Cool	<CR>*ct=cool#<CR>
	Read	Color Temperature Status	<CR>*ct=?#<CR>
	Write	Aspect 4:3	<CR>*asp=4:3#<CR>
	Write	Aspect 16:9	<CR>*asp=16:9#<CR>
	Write	Aspect 16:10	<CR>*asp=16:10#<CR>
	Write	Aspect Auto	<CR>*asp=AUTO#<CR>
	Write	Aspect Real	<CR>*asp=REAL#<CR>
	Write	Aspect 2.4:1	<CR>*asp=2.4#<CR>
	Read	Aspect Status	<CR>*asp=?#<CR>
	Write	Vertical Keystone +	<CR>*vkeystone=+#<CR>
	Write	Vertical Keystone -	<CR>*vkeystone=-#<CR>
	Read	Vertical Keystone value	<CR>*vkeystone=?#<CR>
	Write	Horizontal Keystone +	<CR>*hkeystone=+#<CR>
	Write	Horizontal Keystone -	<CR>*hkeystone=-#<CR>
	Read	Horizontal Keystone value	<CR>*hkeystone=?#<CR>
	Write	Overscan Adjustment +	<CR>*overscan=+#<CR>
	Write	Overscan Adjustment -	<CR>*overscan=-#<CR>
	Read	Overscan Adjustment value	<CR>*overscan=?#<CR>
	Write	4 Corners Top-Left-X Decrease	<CR>*cornerfittlx=-#<CR>
	Write	4 Corners Top-Left-X Increase	<CR>*cornerfittlx=+#<CR>
	Read	4 Corners Top-Left-X Status	<CR>*cornerfittlx=?#<CR>
	Write	4 Corners Top-Left-Y Decrease	<CR>*cornerfittly=-#<CR>
	Write	4 Corners Top-Left-Y Increase	<CR>*cornerfittly=+#<CR>
	Read	4 Corners Top-Left-Y Status	<CR>*cornerfittly=?#<CR>

Function	Type	Operation	ASCII
Picture Setting	Write	4 Corners Top-Right-X Decrease	<CR>*cornerfittrx=-#<CR>
	Write	4 Corners Top-Right-X Increase	<CR>*cornerfittrx=+#<CR>
	Read	4 Corners Top-Right-X Status	<CR>*cornerfittrx=?#<CR>
	Write	4 Corners Top-Right-Y Decrease	<CR>*cornerfittry=-#<CR>
	Write	4 Corners Top-Right-Y Increase	<CR>*cornerfittry=+#<CR>
	Read	4 Corners Top-Right-Y Status	<CR>*cornerfittry=?#<CR>
	Write	4 Corners Bottom-Left-X Decrease	<CR>*cornerfitblx=-#<CR>
	Write	4 Corners Bottom-Left-X Increase	<CR>*cornerfitblx=+#<CR>
	Read	4 Corners Bottom-Left-X Status	<CR>*cornerfitblx=?#<CR>
	Write	4 Corners Bottom-Left-Y Decrease	<CR>*cornerfitbly=-#<CR>
	Write	4 Corners Bottom-Left-Y Increase	<CR>*cornerfitbly=+#<CR>
	Read	4 Corners Bottom-Left-Y Status	<CR>*cornerfitbly=?#<CR>
	Write	4 Corners Bottom-Right-X Decrease	<CR>*cornerfitbrx=-#<CR>
	Write	4 Corners Bottom-Right-X Increase	<CR>*cornerfitbrx=+#<CR>
	Read	4 Corners Bottom-Right-X Status	<CR>*cornerfitbrx=?#<CR>
	Write	4 Corners Bottom-Right-Y Decrease	<CR>*cornerfitbry=-#<CR>
	Write	4 Corners Bottom-Right-Y Increase	<CR>*cornerfitbry=+#<CR>
	Read	4 Corners Bottom-Right-Y Status	<CR>*cornerfitbry=?#<CR>
	Write	Digital Zoom In	<CR>*zoomI#<CR>
	Write	Digital Zoom out	<CR>*zoomO#<CR>
	Write	Auto	<CR>*auto#<CR>
	Write	Brilliant color +	<CR>*BC=+#<CR>
	Write	Brilliant color -	<CR>*BC=-#<CR>
	Write	Brilliant color set value	<CR>*BC=value#<CR>
	Read	Brilliant color status	<CR>*BC=?#<CR>
	Write	Reset current picture settings	<CR>*rstcurpicsetting#<CR>
	Write	Reset all picture settings	<CR>*rstallpicsetting#<CR>

Function	Type	Operation	ASCII
Operation Settings	Write	Projector Position-Front Table	<CR>*pp=FT#<CR>
	Write	Projector Position-Rear Table	<CR>*pp=RE#<CR>
	Write	Projector Position-Rear Ceiling	<CR>*pp=RC#<CR>
	Write	Projector Position-Front Ceiling	<CR>*pp=FC#<CR>
	Read	Projector Position Status	<CR>*pp=?#<CR>
	Write	Quick auto search	<CR>*QAS=on#<CR>
	Write	Quick auto search	<CR>*QAS=off#<CR>
	Read	Quick auto search status	<CR>*QAS=?#<CR>
	Write	Menu Position - Center	<CR>*menuposition=center#<CR>
	Write	Menu Position - Top-Left	<CR>*menuposition=tl#<CR>
	Write	Menu Position - Top-Right	<CR>*menuposition=tr#<CR>
	Write	Menu Position - Bottom-Right	<CR>*menuposition=br#<CR>
	Write	Menu Position - Bottom-Left	<CR>*menuposition=bl#<CR>
	Read	Menu Position Status	<CR>*menuposition=?#<CR>
	Write	Direct Power On-on	<CR>*directpower=on#<CR>
	Write	Direct Power On-off	<CR>*directpower=off#<CR>
	Read	Direct Power On-Status	<CR>*directpower=?#<CR>
	Write	Signal Power On-on	<CR>*autopower=on#<CR>
	Write	Signal Power On-off	<CR>*autopower=off#<CR>
	Read	Signal Power On-Status	<CR>*autopower=?#<CR>
Baud Rate	Write	2400	<CR>*baud=2400#<CR>
	Write	4800	<CR>*baud=4800#<CR>
	Write	9600	<CR>*baud=9600#<CR>
	Write	14400	<CR>*baud=14400#<CR>
	Write	19200	<CR>*baud=19200#<CR>
	Write	38400	<CR>*baud=38400#<CR>
	Write	57600	<CR>*baud=57600#<CR>
	Write	115200	<CR>*baud=115200#<CR>
	Read	Current Baud Rate	<CR>*baud=?#<CR>
Lamp Control	Read	Lamp Hour	<CR>*ltim=?#<CR>
	Write	Normal mode	<CR>*lampm=lnor#<CR>
	Write	Eco mode	<CR>*lampm=eco#<CR>
	Write	Dimming mode	<CR>*lampm=dimming#<CR>
	Write	Custom mode	<CR>*lampm=custom#<CR>
	Write	Light level for custom mode	<CR>*lampcustom=value#<CR>
	Read	Light level status for custom mode	<CR>*lampcustom=?#<CR>
	Read	Lamp Mode Status	<CR>*lampm=?#<CR>

Function	Type	Operation	ASCII
Miscellaneous	Read	Model Name	<CR>*modelname=?#<CR>
	Read	System F/W Version	<CR>*sysfwversion=?#<CR>
	Read	Scaler F/W Version	<CR>*scalerfwversion=?#<CR>
	Read	Lan F/W Version	<CR>*lanfwversion=?#<CR>
	Read	MCU F/W Version	<CR>*mcufwversion=?#<CR>
	Write	Blank On	<CR>*blank=on#<CR>
	Write	Blank Off	<CR>*blank=off#<CR>
	Read	Blank Status	<CR>*blank=?#<CR>
	Write	Freeze On	<CR>*freeze=on#<CR>
	Write	Freeze Off	<CR>*freeze=off#<CR>
	Read	Freeze Status	<CR>*freeze=?#<CR>
	Write	Menu On	<CR>*menu=on#<CR>
	Write	Menu Off	<CR>*menu=off#<CR>
	Read	Menu Status	<CR>*menu=?#<CR>
	Write	Up	<CR>*up#<CR>
	Write	Down	<CR>*down#<CR>
	Write	Right	<CR>*right#<CR>
	Write	Left	<CR>*left#<CR>
	Write	Enter	<CR>*enter#<CR>
	Write	Back	<CR>*back#<CR>
	Write	Source Menu On	<CR>*sourmenu=on#<CR>
	Write	Source Menu Off	<CR>*sourmenu=off#<CR>
	Read	Source Menu Status	<CR>*sourmenu=?#<CR>
	Write	3D Sync Off	<CR>*3d=off#<CR>
	Write	3D Auto	<CR>*3d=auto#<CR>
	Write	3D Sync Top Bottom	<CR>*3d=tb#<CR>
	Write	3D Sync Frame Sequential	<CR>*3d=fs#<CR>
	Write	3D Frame packing	<CR>*3d=fp#<CR>
	Write	3D Side by side	<CR>*3d=sbs#<CR>
	Write	3D inverter disable	<CR>*3d=da#<CR>
	Write	3D inverter	<CR>*3d=iv#<CR>
	Write	3D nVIDIA	<CR>*3d=nvidia#<CR>
	Read	3D Sync Status	<CR>*3d=?#<CR>
	Write	AMX Device Discovery-on	<CR>*amxdd=on#<CR>
	Write	AMX Device Discovery-off	<CR>*amxdd=off#<CR>
	Read	AMX Device Discovery Status	<CR>*amxdd=?#<CR>
	Read	Mac Address	<CR>*macaddr=?#<CR>
	Write	High Altitude mode on	<CR>*Highaltitude=on#<CR>
	Write	High Altitude mode off	<CR>*Highaltitude=off#<CR>
	Read	High Altitude mode status	<CR>*Highaltitude=?#<CR>

Function	Type	Operation	ASCII
Color Calibration	Write	Tint +	<CR>*tint=+#<CR>
	Write	Tint -	<CR>*tint=-#<CR>
	Write	Set Tint value	<CR>*tint=value#<CR>
	Read	Get Tint value	<CR>*tint=?#<CR>
	Write	Set gamma value	<CR>*gamma=value#<CR>
	Read	Gamma value status	<CR>*gamma=?#<CR>
	Write	Set HDR Brightness value	<CR>*hdrbri=value#<CR>
	Read	Get HDR Brightness value	<CR>*hdrbri=?#<CR>
	Write	Red Gain +	<CR>*RGain=+#<CR>
	Write	Red Gain -	<CR>*RGain=-#<CR>
	Write	Set Red Gain value	<CR>*RGain=value#<CR>
	Read	Get Red Gain value	<CR>*RGain=?#<CR>
	Write	Green Gain +	<CR>*GGain=+#<CR>
	Write	Green Gain -	<CR>*GGain=-#<CR>
	Write	Set Green Gain value	<CR>*GGain=value#<CR>
	Read	Get Green Gain value	<CR>*GGain=?#<CR>
	Write	Blue Gain +	<CR>*BGain=+#<CR>
	Write	Blue Gain -	<CR>*BGain=-#<CR>
	Write	Set Blue Gain value	<CR>*BGain=value#<CR>
	Read	Get Blue Gain value	<CR>*BGain=?#<CR>
	Write	Red Offset +	<CR>*ROffset=+#<CR>
	Write	Red Offset -	<CR>*ROffset=-#<CR>
	Write	Set Red Offset value	<CR>*ROffset=value#<CR>
	Read	Get Red Offset value	<CR>*ROffset=?#<CR>
	Write	Green Offset +	<CR>*GOffset=+#<CR>
	Write	Green Offset -	<CR>*GOffset =-#<CR>
	Write	Set Green Offset value	<CR>*GOffset=value#<CR>
	Read	Get Green Offset value	<CR>*GOffset=?#<CR>
	Write	Blue Offset +	<CR>*BOffset=+#<CR>
	Write	Blue Offset -	<CR>*BOffset=-#<CR>
	Write	Set Blue Offset value	<CR>*BOffset=value#<CR>
	Read	Get Blue Offset value	<CR>*BOffset=?#<CR>
	Write	Primary Color	<CR>*primcr=value#<CR>
	Read	Primary Color Status	<CR>*primcr=?#<CR>
	Write	Hue +	<CR>*hue=+#<CR>
	Write	Hue -	<CR>*hue=-#<CR>
	Write	Set Hue value	<CR>*hue=value#<CR>
	Read	Get Hue value	<CR>*hue=?#<CR>
	Write	Saturation +	<CR>*saturation=+#<CR>
	Write	Saturation -	<CR>*saturation=-#<CR>
	Write	Set Saturation value	<CR>*saturation=value#<CR>
	Read	Get Saturation value	<CR>*saturation=?#<CR>

Function	Type	Operation	ASCII
	Write	Gain +	<CR>*gain=+#<CR>
	Write	Gain -	<CR>*gain=-#<CR>
	Write	Set Gain value	<CR>*gain=value#<CR>
	Read	Get Gain value	<CR>*gain=?#<CR>
Service	Read	Error Code report	<CR>*error=report#<CR>
	Read	FAN 1 speed	<CR>*fan1=?#<CR>
	Read	FAN 2 speed	<CR>*fan2=?#<CR>
	Read	FAN 3 speed	<CR>*fan3=?#<CR>
	Read	FAN 4 speed	<CR>*fan4=?#<CR>
	Read	FAN 5 speed	<CR>*fan5=?#<CR>
	Read	FAN 6 speed	<CR>*fan6=?#<CR>
	Read	FAN 7 speed	<CR>*fan7=?#<CR>
	Read	Temperature 1	<CR>*tmp1=?#<CR>
	Read	Temperature 2	<CR>*tmp2=?#<CR>
	Read	Temperature 3	<CR>*tmp3=?#<CR>
	Read	Temperature 4	<CR>*tmp4=?#<CR>
	Read	LED indicator	<CR>*led=?#<CR>

PJLink

• PJLink protocal

The network function of this projector support the PJLink class 1, and the PJLink protocal can be used to perform projector setting and projector status query operations from a computer.

• Control commands

The following table lists the PJLink protocal commands that can be used to control the projector.

- x characters in table are non-specific characters.

Command	Control Details	Parameter/ Return String	Remark		
POWR	Power supply control	0 1	Standby Power on		
POWR?	Power supply status query	0 1	Standby Power on		
INPT	Input selection	11	PC1 / YPbPr1		
INPT?	Input status query	12 21 31 32 33 34	PC2 / YPbPr2 VIDEO HDMI1 HDMI2 DVI-D HDBaseT		
AVMT	Mute	11	Video mute On		
AVMT?	Mute query	10 21 20 31 30	Video mute Off Audio mute On Audio mute Off Video & Audio mute On Video & Audio mute Off		
ERST?	Error status query	xxxxxx	1st byte	Indicates fan errors, and returns 0 - 2	0 = No error is detected 1 = Warning 2 = Error
			2nd byte	Indicates light source errors, and returns 0 - 2	
			3rd byte	Indicates temperature errors, and returns 0 - 2	
			4th byte	Return 0	
			5th byte	Return 0	
			6th byte	Indicates other errors, and returns 0 - 2	
LAMP?	Light source status query	xxxxxxxxxxxx	1st number (1-5 digitals): Light source 1 runtime		
INST?	Input selection list query	11 12 21 31 32 33 34	LU960UST		
NAME?	Projector name query	xxxxx	Returns the name set in [PROJECTOR NAME] of [NETWORK SETUP]		

Command	Control Details	Parameter/ Return String	Remark
INF1?	Manufacturer name query	BenQ	Returns manufacturer name
INF2?	Model name query	LU960UST	Returns moder name
INF0?	Other information queries	xxxxx	Returns information such as version number
CLASS?	Class information query	1	Returns class for PJLink

Note:

RS-232 baud rate options are 2400, 4800, 9600, 14400, 19200, 38400, 57600 and 115200 (Default : 115200).



HIGH-DEFINITION MULTIMEDIA INTERFACE

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