BenQ

Digital Projector

User Manual

LU960UST

V3.00

Copyright and disclaimer

Copyright

Disclaimer

Statement regarding hyperlinks and third-party websites

Table of Contents

Important safety instructions

Your projector is designed and tested to meet the latest standards for safety of information technology equipment. However, to ensure safe use of this product, it is important that you follow the instructions mentioned in this manual and marked on the product.

General safety instruction

1. Do not look straight at the projector lens during operation. The intense light beam may damage your eyes.
2. Always open the lens shutter or remove the lens cap when the projector light source is on.
3. In some countries, the line voltage is NOT stable. This projector is designed to operate safely within a mains voltage between 100 to 240 volts AC, but could fail if power cuts or surges of ±10 volts occur. In areas where the mains voltage may fluctuate or cut out, it is recommended that you connect your projector through a power stabilizer, surge protector or uninterruptible power supply (UPS).
4. Do not block the projection lens with any objects when the projector is under operation as this could cause the objects to become heated and deformed or even cause a fire. To temporarily turn off the light source, press **BLANK** on the remote control.
5. Do not place this product on an unstable cart, stand, or table. The product may fall, sustaining serious damage.
6. Do not attempt to disassemble this projector. There are dangerous high voltages inside which may cause death if you should come into contact with live parts.
   Under no circumstances should you ever undo or remove any other covers. Refer servicing only to suitably qualified professional service personnel.
7. Do not place this projector in any of the following environments.
   - Space that is poorly ventilated or confined. Allow at least 50 cm clearance from walls and free flow of air around the projector.
   - Locations where temperatures may become excessively high, such as the inside of a car with all windows rolled up.
   - Locations where excessive humidity, dust, or cigarette smoke may contaminate optical components, shortening the projector's life span and darkening the image.
   - Locations near fire alarms
   - Locations with an ambient temperature above 40°C / 104°F
   - Locations where the altitudes are higher than 3000 m (10000 feet).
8. Do not block the ventilation holes.
   - Do not place this projector on a blanket, bedding or any other soft surface.
   - Do not cover this projector with a cloth or any other item.
   - Do not place inflammables near the projector.
   If the ventilation holes are seriously obstructed, overheating inside the projector may result in a fire.

9. Do not step on the projector or place any objects upon it. Besides probable physical damage to the projector, doing so may result in accidents and possible injury.

10. Do not place liquids near or on the projector. Liquids spilled into the projector may cause it to fail. If the projector does become wet, disconnect it from the power supply's wall socket and call BenQ to have the projector serviced.
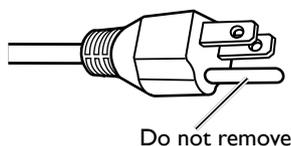
Do not remove

This equipment has a three-pin grounding-type power plug. Do not remove the grounding pin. As a safety feature, this plug will only fit a grounding-type power outlet. If you are unable to fit the plug into the outlet, contact an electrician.

Notice on laser

Caution – use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation 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.
Do not allow to look into the projector beam at any distance from the projector. An adult should supervise the children to prevent exposure risks.
Check that there is no one looking at the lens, when using the remote control for starting the projector.
Do not look at the projected light using optical devices(binoculars, telescopes, magnifying glasses, reflectors, etc).

Laser class

This Laser Product is designated as Class 1 and CONSUMER LASER PRODUCT: EN 50689:2021 during all procedures of operation and complies with IEC 60825-1:2014 and
EN 60825-1:2014/A11:2021

Laser parameters

Wavelength	449nm - 461nm (Blue)
Mode of operation	Pulsed, due to frame rate
Pulse width	1.15ms
Pulse repetition rate	120Hz
Maximum laser energy	0.76mJ
Total internal power	>100w
Apparent source size	>10mm, at lens stop
Divergence	>100 mili Radian

Label instruction

Below drawing show the label's location.

1. **Laser warning label**

LASER APERTURE
雷射輻射之孔徑
激光辐射窗口
OUVERTURE LASER

WARNING!
Do not look into the beam less than 1m.
No direct eye exposure to the beam is permitted.

AVERTISSEMENT!
Ne regardez pas dans le faisceau à moins de 1 m.
Aucune exposition directe des yeux au faisceau n'est autorisée.

3262329700

2. **Spec label**

BenQ

Product Name / Nama Produk / Nom du produit / Наименование товара / 品名:
Digital Projector / Proyektor / Projecteur digital / цифровые проекторы / 數位投影機
Model Name / Nama Model / Nom du modèle / Модель / 型號: LU960UST   P/N/產品料號 9H.JMT77.25E
Power Rating / Nilai Daya / Puissance nominale / Диапазон питающего напряжения
/額定電壓/頻率/電流:100-240V∼ 50/60Hz   7.00A
Made in China / Buatan China / Сделано в Китае / 製造產地: 中國
Rev./版本 XX-XXX

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received,
including interference that may cause undesired operation.
CAN ICES-003(B) / NMB-003(B)
Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan
Apparatet må tilkoples jordet stikkontakt
Apparaten skall anslutas till jordat uttag
Apparatets stikprop skal tilsluttes en stikkontakt med jord,
som giver forbindelse til stikproppens jord

BenQ Corporation
16 Jihu Road, Neihu,
Taipei 114,Taiwan(Таïвань)
台灣及經銷商:明基電通
台北市內湖區
基湖路16號

"Patent"
http://patmarking.benq.com/

(For EU) IMPORTER :
BenQ Europe B.V.
Meerenakkerweg 1-17,5652 AR,
Eindhoven, the Netherlands

(For UK) IMPORTER:
BenQ UK Limited
14th Floor, 33 Cavendish Square,
London W1G 0PW

인증번호 KTL ZU10002-20010
       R-R-BQR-LU960UST
제품명:모델 텍터(Digital Projector)
모 델 명: LU960UST
정격전압: 100-240V∼,50/60Hz,7.00A
제조회사명:벨타 알맨드로닉스 (참수)
                유한회사
A/S센터: +82 15883866
제 조 국: China/중국
신청인/제조자: BenQ Corporation
제조년월: 202103

LASER
1
等級1雷射產品

IEC 60825-1:2014;EN 60825-1:2014/A11:2021
IEC62471-5:2015
CONSUMER LASER PRODUCT: EN 50689:2021
Complies with 21 CFR 1040.10 and 1040.
11 except for conformance as a Risk Group 2
LIP as defined in IEC 62471-5:Ed. 1.0. For more
information see Laser Notice No. 57, dated May 8, 2019.

IS 13252 (Part1)/
IEC 60950-1

R-41009695
www.bis.gov.in

3264668003   XXXXX XXXXX

RG2

Caution:

As with any bright light source, do not stare into the beam, RG2 IEC 62471-5:2015
Possibly hazardous optical radiation emitted from this product.
Do not stare at operating light source. May be harmful to the eyes.

Prepare for installation

Focus adjustment

The high clarity projection lens is thermally affected by the light from the light source; thus, the focus is unstable for a short period immediately after the power is turned on. Please wait at least 15 minutes of continuous projection before adjusting the focus.

Focus adjustment
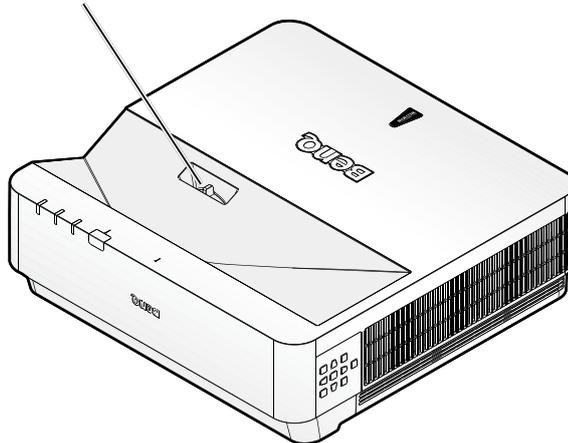
Cooling notice

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.

Air outlet   Air inlet
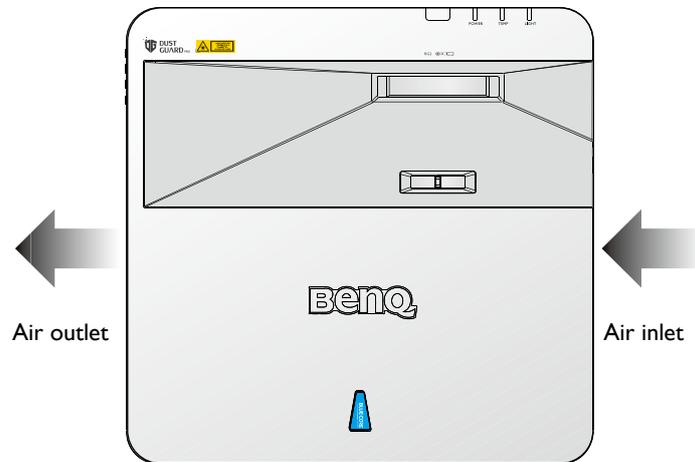
- The projector can be installed at following angles:
  360-degree projection
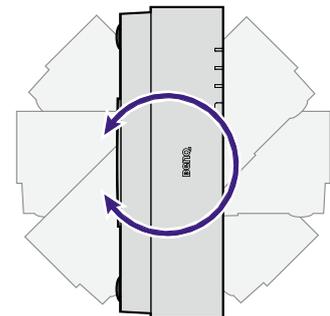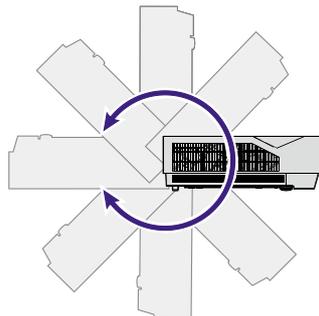
⚠ **Caution:**

Installation of the projector should be performed carefully Incomplete or improper installation may cause the projector to fall, resulting in personal injury or property damage.

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

Minimum 50 cm (19.69 inch)

Minimum 50 cm (19.69 inch)

Minimum 50 cm (19.69 inch)

Minimum 50 cm (19.69 inch)
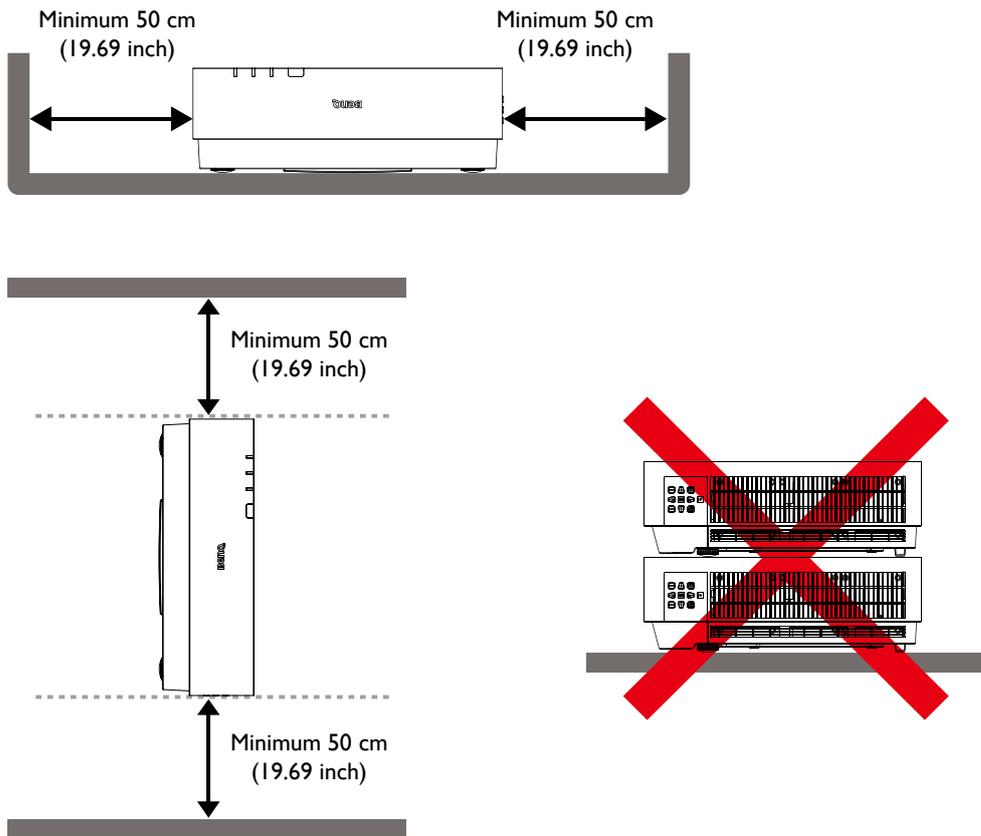
• Ensure that the air intake vents do not recycle hot air from the exhaust vent.
• When operating in an enclosed space, make sure that the surrounding air temperature does not exceed the projector's operating temperature and that the air intake and exhaust vents are unobstructed.
• All enclosures should 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.

Package contents

Standard packing items

Projector	Remote Control	Batteries	Installation Guide

Power Cord(s)	Regulatory Statement
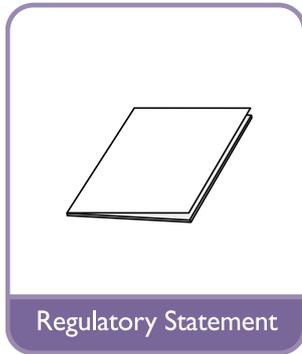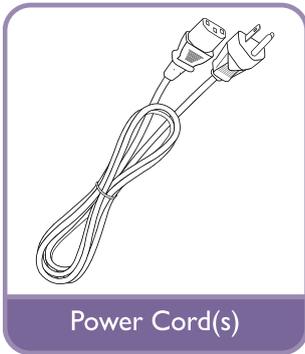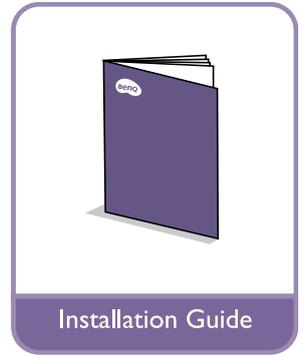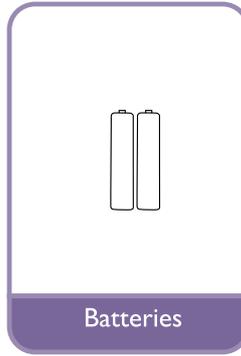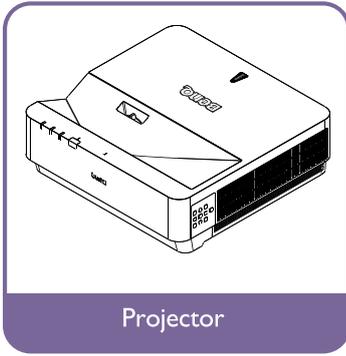
Introduction

Projector exterior view

Front and upper side view
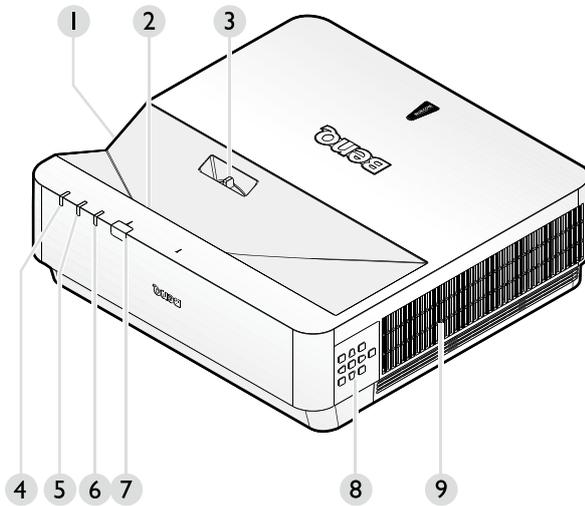
1. Side vent (air inlet)
2. Projection lens
3. Focus adjustment
4. LIGHT SOURCE indicator light
5. TEMPerature indicator light
6. POWER indicator light
7. Front IR remote sensor
8. Control panel
9. Side vent (air outlet)

Rear view
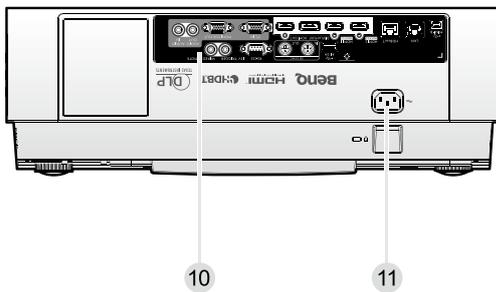
10. Control terminals
11. AC power cord inlet

Controls and functions

Control panel
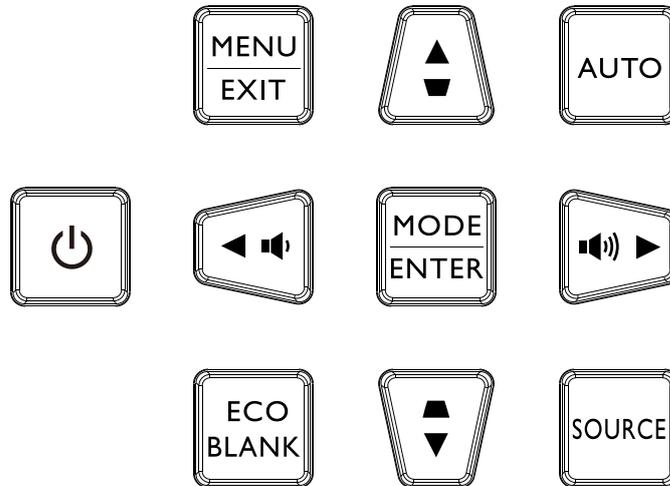
- ⏻ **Power**
  Toggles the projector between standby mode and on. See "Switch on the projector" on page 27 and "Switch off the projector" on page 33 for details.

- **MENU/EXIT**
  Turns on the On-Screen Display (OSD) menu. Goes back to previous OSD menu, exits and saves menu settings. See "Using the menu" on page 34 for details.

- **Volume keys (◼ , ◼)))**
  Decreases or increasesthe projector volume.

- **ECO BLANK**
  The automatic switch to Eco Blank Mode after the projector is turned on for over three minutes without a display source.

- **Arrow keys (▲, ▼, ◀, ▶)**
  When the On-Screen Display (OSD) menu is activated, these keys are used as directional arrows to select the desired menu items and to make adjustments. See "Using the menu" on page 34 for details.

- **MODE/ENTER**
  Selects an available picture setup mode.
  Enacts the selected On-Screen Display (OSD) menu item. See "Using the menu" on page 34 for details.

- **Keystone keys (◣ , ◤)**
  Manually corrects distorted images resulting from an angled projection.

- **AUTO**
  Automatically determines the best picture timings for the displayed image. See "Auto adjusting the image" on page 32 for details.

- **SOURCE**
  Displays the source selection bar.

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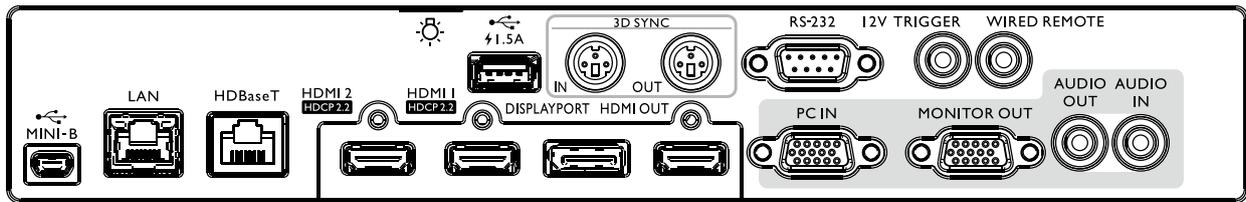
MINI-B
Support Mini USB type B for service only.

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 supports RS-232/ IR/LAN Control, which can be selected in OSD

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
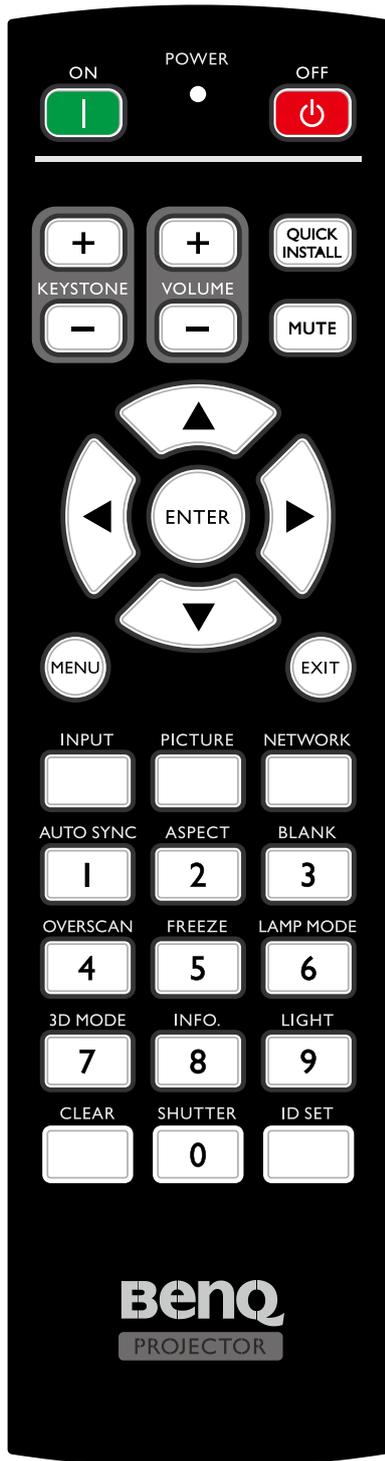
- **ON / OFF**
  Toggles the projector between standby mode and on.
- **KEYSTONE+/KEYSTONE-**
  Manually corrects distorted images resulting from an angled projection.
- **VOLUME +/VOLUME -**
  Increases/decreases the projector volume.
- **QUICK INSTALL**
  Displays the **Quick Install** OSD menu.
- **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. See "Using the menu" on page 34 for details.
- **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.
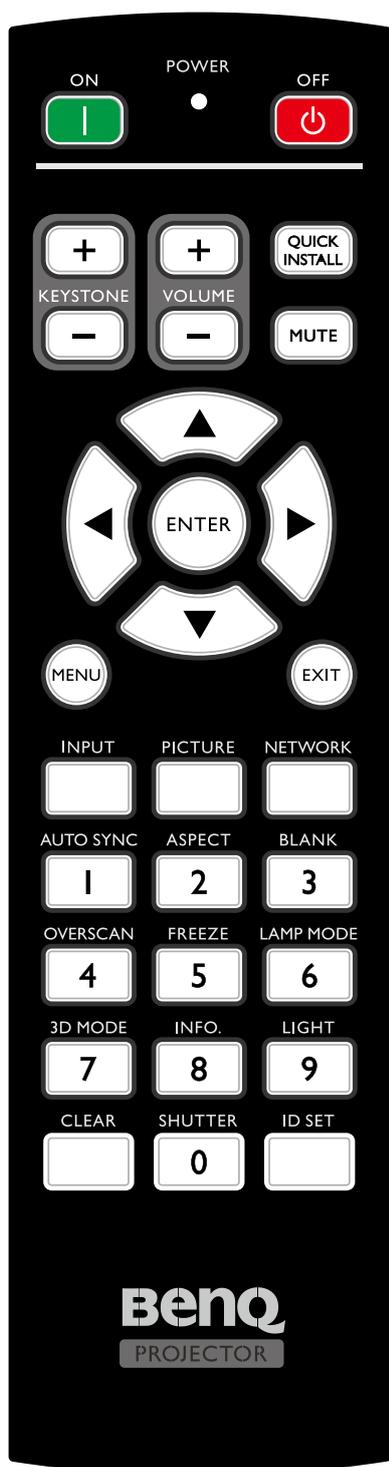
- **OVERSCAN**
  Press to select overscan mode.
- **FREEZE**
  Freezes the projected image.
- **LAMP MODE**
  Press to display OSD menu to select desired light mode.
- **3D MODE**
  Press to display 3D setup menu.
- **INFO.**
  Press to display INFORMATION menu.
- **LIGHT**
  Press to open backlight 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.

Connect with projector

When you use a system with multiple projectors, use commercially available M3 stereo mini jack cables to connect the other projectors via the WIRED REMOTE IN/WIRED REMOTE OUT terminals.

The remote control is effective even in places where obstacles stand in the light path or where devices are susceptible to outside light.
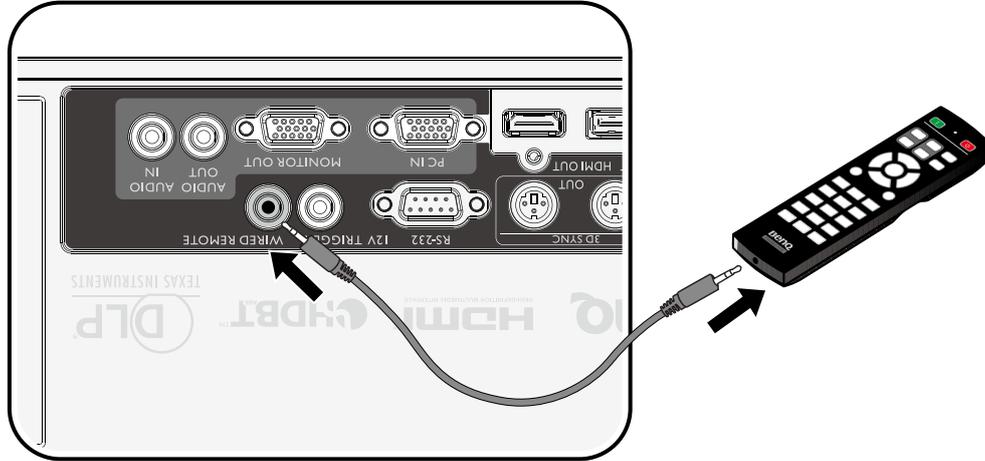
✎ Note:

Use two core shielded cables no longer than 15 m (49.2 ft). The remote control may not operate when the length of the cable exceeds 15 m (49.2 ft) or when it is not properly shielded.

Remote control effective range

Infra-Red (IR) remote control sensor is located on the front and rear of the projector. The remote control must be held at an angle within 30 degrees perpendicular to the projector's IR remote control sensor to function correctly. The distance between the remote control and the sensor should not exceed 8 meters (~ 26 feet).

Make sure that there are no obstacles between the remote control and the IR sensor on the projector that might obstruct the infra-red beam.
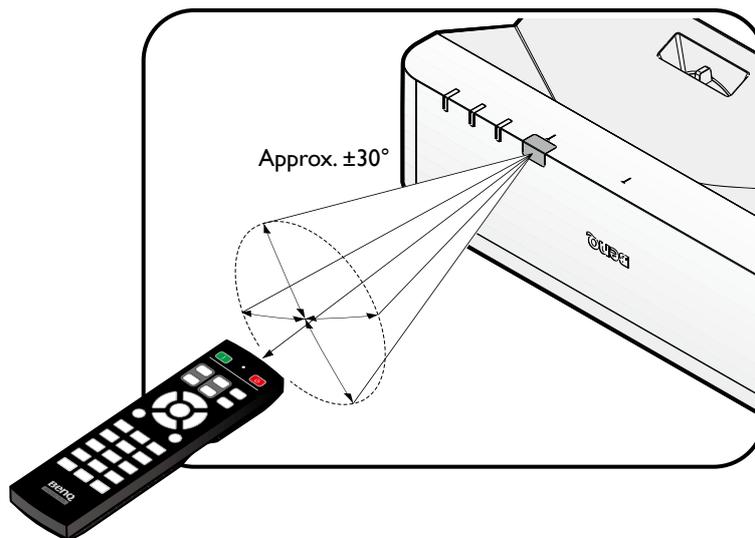
Replacing the remote control battery

1. To open the battery cover, turn the remote control over to view its back, push on the finger grip on the cover and slide it up in the direction of the arrow as illustrated. The cover will slide off.

2. Remove any existing batteries (if necessary) and install two AA batteries observing the battery polarities as indicated in the base of the battery compartment. Positive (+) goes to positive and negative (-) goes to negative.

3. Refit the cover by aligning it with the base and sliding it back down into position. Stop when it clicks into place.
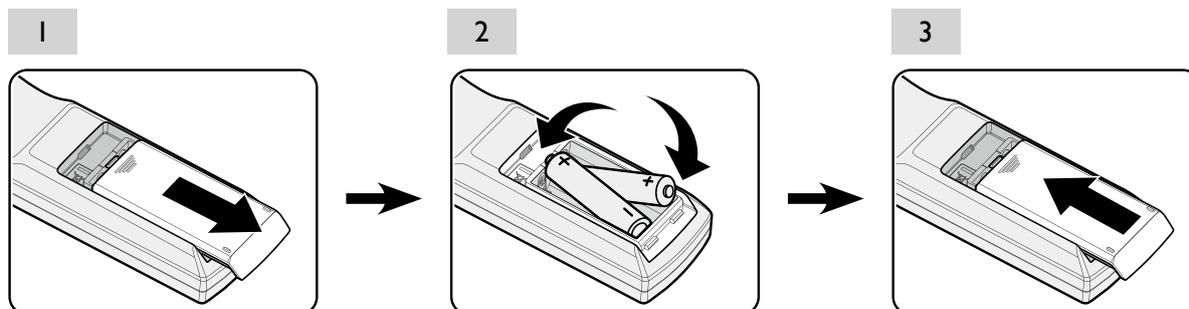
Caution:

• Avoid excessive heat and humidity.
• There may be battery damage if the battery is incorrectly replaced.
• Replace only with the same or equivalent type recommended by the battery manufacturer.
• Dispose of the used battery according to the battery manufacturer's instructions.
• Never throw a battery into a fire. There may be danger of an explosion.
• If the battery is dead or if you will not be using the remote control for a long time, remove the battery to prevent damage to the remote control from possible battery leakage.

Installation

Evaluate for distance by image size

Obtaining a preferred projected image size

The distance from the projector lens to the screen, the zoom setting (if available), and the video format each factors in the projected image size.

Projection dimensions

Refer to "Dimensions" on page 68 for the center of lens dimensions of this projector before calculating the appropriate position.

Projection Image

Image Height

Diagonal
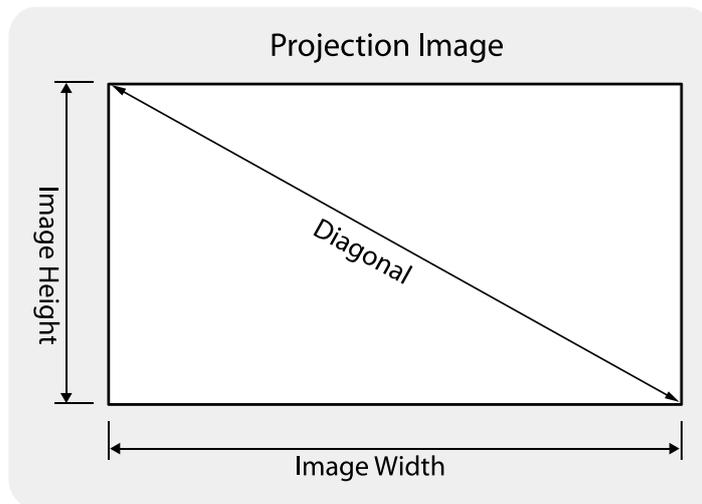
Image Width

- **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	942	5.5	140	12.9	328	15.8	402
80	2032	67.8	1723	42.4	1077	6.7	169	15.0	382	17.9	456
87	2210	73.8	1874	46.1	1171	7.5	190	16.5	420	19.4	494
90	2286	76.3	1939	47.7	1212	7.8	199	17.2	436	20.1	510
100	2540	84.8	2154	53.0	1346	9.0	228	19.3	491	22.2	565
120	3048	101.8	2585	63.6	1615	11.3	288	23.6	599	26.5	673
150	3810	127.2	3231	79.5	2019	14.8	377	30.0	762	32.9	836
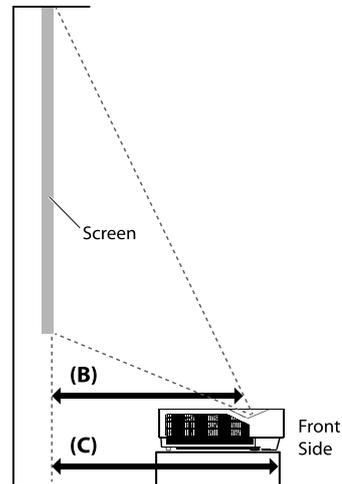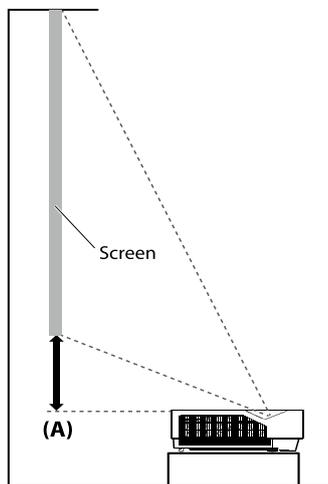
📝 **Note:**

There is 5% tolerance among these numbers due to optical component variations. BenQ recommends that if you intend to permanently install the projector, you should physically test the projection size and distance using the actual projector before you permanently install it, so as to make allowance for this projector's optical characteristics. This will help you determine the exact mounting position so that it best suits your installation location.

Connection

Before connecting

- Before connecting, carefully read the operating instructions for connecting the external device
- Turn off the power to all devices before connecting cables.
- Take note of the following before connecting cables. Failure to do so may result in malfunctions.
  - Before connecting a cable to the projector or to a device that is connected to the projector, touch any nearby metallic objects to remove any static electricity from your body.
  - Do not use unnecessarily long cables to connect the projector or a device to the projector. Using a longer cable that is wound makes it act like an antenna, making it more susceptible to noise.
  - When connecting cables, connect GND first and then insert the connecting terminal of the connecting device.
- Acquire any connection cables necessary to connect external devices to the system that are not supplied.
- The images on the screen may wobble if the video signal contains too much jitter. In this case, a time base corrector (TBC) must be connected.
- If synchronization signal outputs from computers or video equipment are disrupted due to changes in the video output settings or any other reasons, the colors of projected images may be temporarily disrupted.
- The projector accepts video signals, Y/C signals, YCBCR/YPBPR signals, analog RGB signals (synchronization signals are TTL level), and digital signals.
- Some computer models are not compatible with the projector.
- Use a cable compensator when you connect devices to the projector with long cables. If a cable compensator is not used, the image may not display properly.

PC

No.	Serial
1	R/PR
2	G/Y
3	B/PB
4	N.C.
5	GND
6	GND
7	GND
8	GND

No.	Serial
9	DDC 5V
10	GND
11	N.C.
12	DDC data
13	HSYNC
14	VSYNC
15	DDC clock
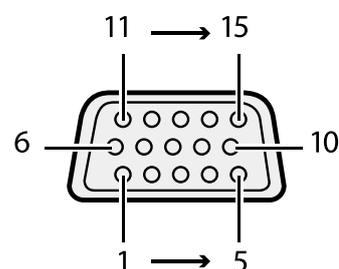
11 ⟶ 15

6 ⟶ 10

1 ⟶ 5

HDMI 1

No.	Serial		No.	Serial
1	TMDS Data2+		11	TMDS Clock Shield
2	TMDS Data2 Shield		12	TMDS Clock-
3	TMDS Data2-		13	CEC
4	TMDS Data1+		14	Reserved (N.C. on device)
5	TMDS Data1 Shield		15	SCL
6	TMDS Data1-		16	SDA
7	TMDS Data0+		17	DDC/CEC Ground
8	TMDS Data0 Shield		18	+5 V Power (max 50 mA)
9	TMDS Data0-		19	Hot Plug Detect
10	TMDS Clock+			

Even-numbered pins of 2 to 18

2   18

1   19
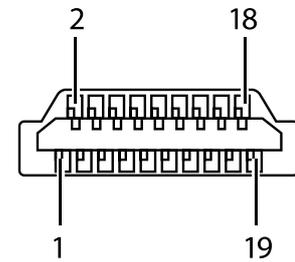
Odd-numbered pins of 1 to 19

Display Port

No.	Serial		No.	Serial
1	ML_Lane 0 (p)		11	GND
2	GND		12	ML_Lane 3 (n)
3	ML_Lane 0 (n)		13	CONFIG1
4	ML_Lane 1 (p)		14	CONFIG2
5	GND		15	AUX CH (p)
6	ML_Lane 1 (n)		16	GND
7	ML_Lane 2 (p)		17	AUX CH (n)
8	GND		18	Hot plug
9	ML_Lane 2 (n)		19	Return
10	ML_Lane 3 (p)		20	DP_PWR

Odd-numbered pins of 1 to 19

19   1

20   2
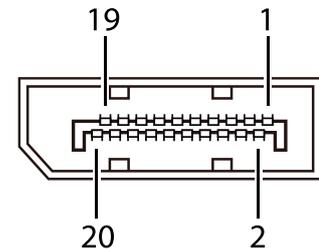
Even-numbered pins of 2 to 20

Connecting with AV equipment

Blu-ray disc player

DVD player with HDMI terminal (HDCP)

VCR (with built-in TBC)
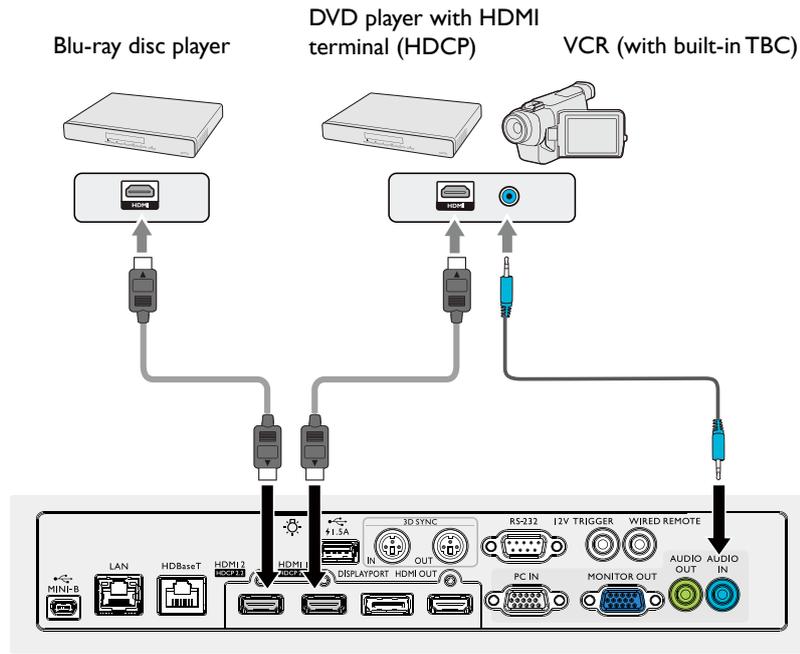
Connecting with computer

Control Computer   Monitor   Computer   Speaker
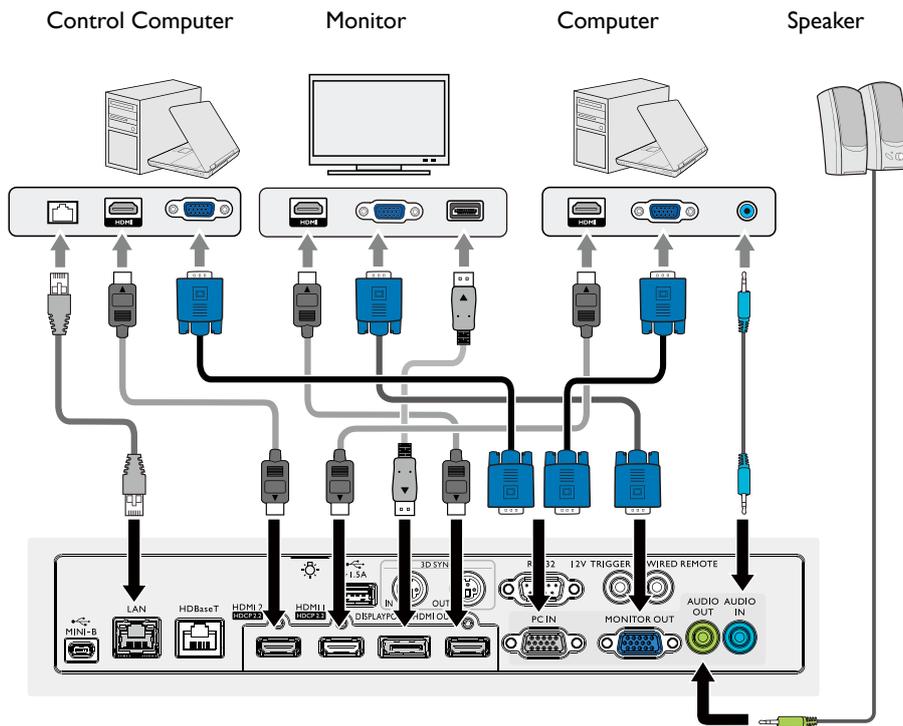
Connecting with HDBaseT transmitter
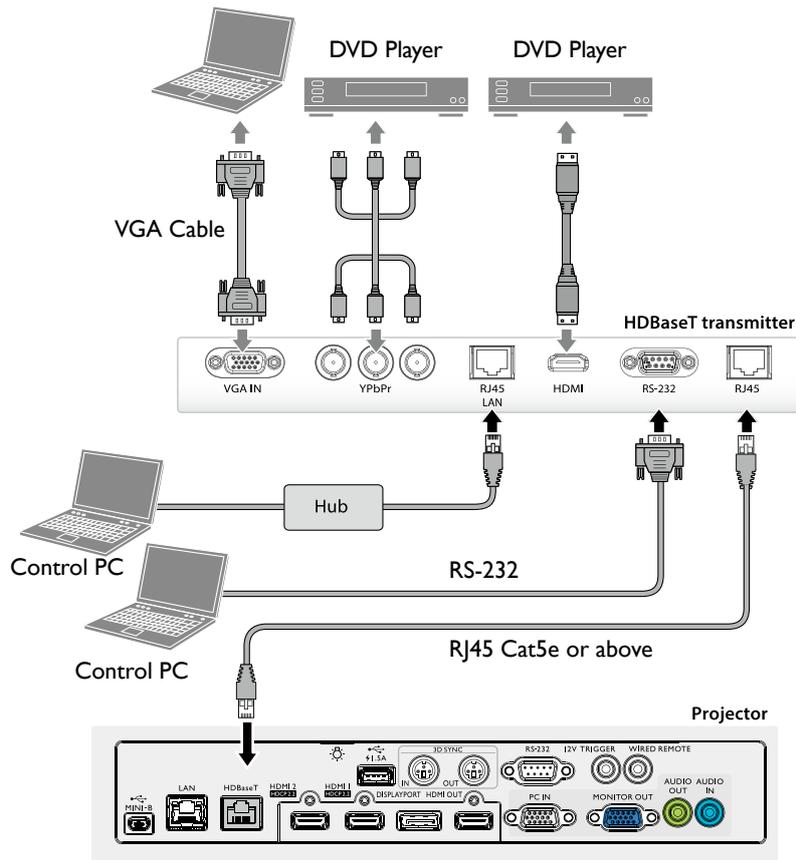
Connecting with LAN
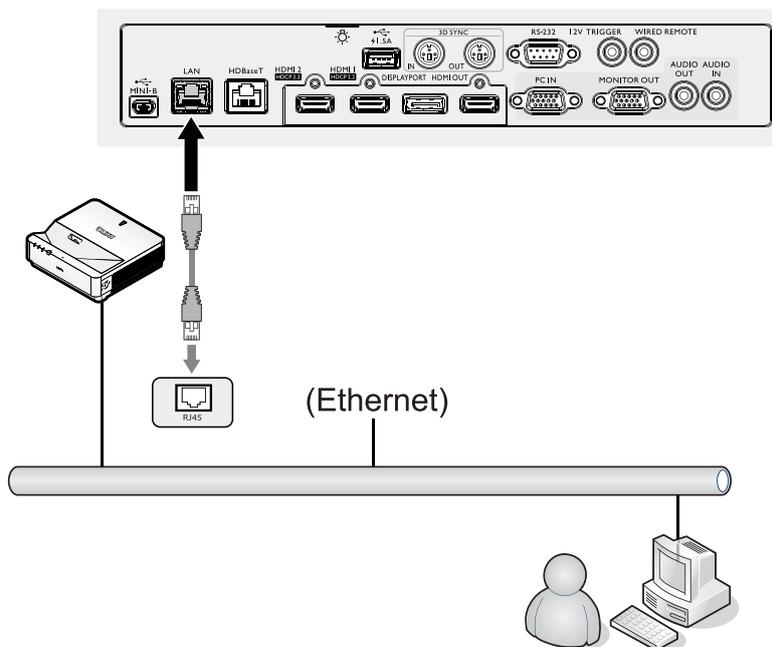
Operations

Switch on/off the projector

Connecting the power cord

Plug the power cord into the projector and into a wall socket. Turn on the wall socket switch (where fitted). Check that the POWER indicator light on the projector lights orange after power has been applied.
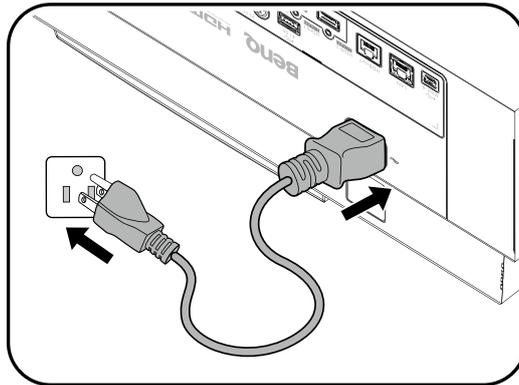
Caution:

Please use the original accessories (e.g. power cable) only with the device to avoid possible dangers such as electric shock and fire.

Power indicator

Power	Temp	Light	Filter	Status & Description
Orange	-	-	-	Stand-by
Green Flashing	-	-	-	Powering up
Green	-	-	-	Normal operation
Orange Flashing	-	-	-	Normal power down cooling

Switch on the projector

Press ⏻ **POWER** on the projector or **ON** on the remote control to start the projector and a start up tone sounds. The **POWER** indicator light flashes green and stays green when the projector is on.

The start up procedure takes about 30 seconds. In the later stage of start up, a startup logo is projected.

(If necessary) Rotate the focus ring to adjust the image clearness.
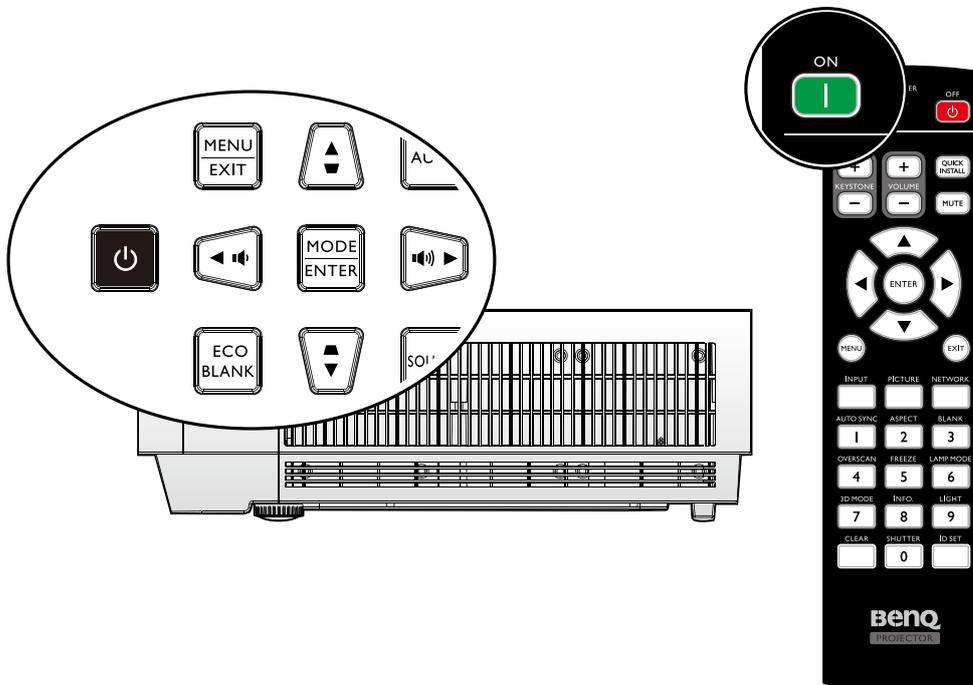
Select language

To use the OSD menus, please set them to your familiar language first.

Please Select Language			
English	한국어	Hrvatski	हिन्दी
Français	Svenska	Română	
Deutsch	Nederlands	Norsk	
Italiano	Türkçe	Dansk	
Español	Čeština	Български	
Русский	Português	suomi	
繁體中文	ไทย	Indonesian	
简体中文	Polski	Ελληνικά	
日本語	Magyar	العربية	
Press Enter to confirm, Exit to leave			

*After this process is done, this menu will not show up again after 1st time adjustment unless user presses **Reset All Settings**.

1. Press **ENTER** on the projector or remote control to turn the OSD menu on.

DISPLAY

Wall Color		Off
Aspect Ratio		Auto
2D Keystone		
Corner Fit		
Position		
Phase	15	
H. Size	0	
Digital Image Resizing		
Screen Fill		
Overscan	0	
3D		
Fast Mode		Off

HDMI-1　　　　　　　　　　(MENU) Exit
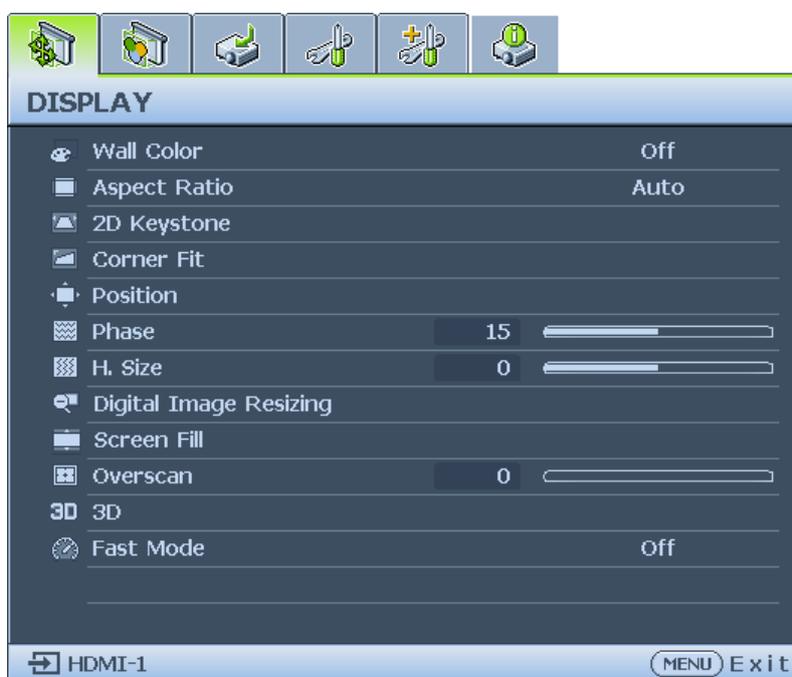
2. Use ◄/► to highlight the **System Setup: Basic** menu.

SYSTEM SETUP : Basic

🌐 Language	
🖥 Projector Installation	Front Table
▣ Menu Settings	
🔧 Operation Settings	
🔒 Panel Key Lock	Off
▨ Background Color	BenQ
🔲 Splash Screen	BenQ
☀ Rear Light	Off
🔢 Projector ID Setting	Off

⏎ HDMI-1   (MENU) E x i t
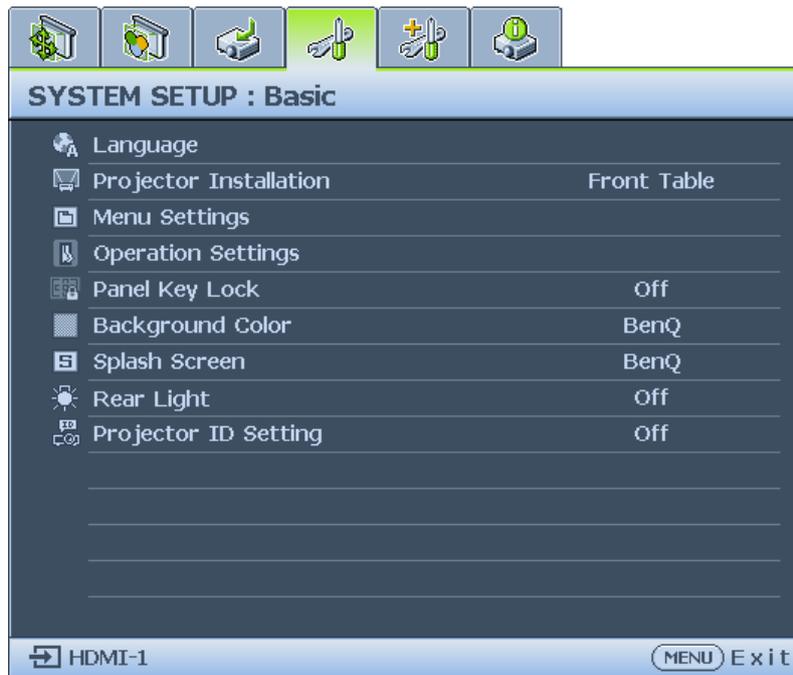
3. Press ▼ to highlight **Language** and press **ENTER** to select a preferred language.

SYSTEM SETUP : Basic

🌐 Language	(ENTER)
🖥 Projector Installation	Front Table
▣ Menu Settings	
🔧 Operation Settings	
🔒 Panel Key Lock	Off
▨ Background Color	BenQ
🔲 Splash Screen	BenQ
☀ Rear Light	Off
🔢 Projector ID Setting	Off

⏎ HDMI-1   (MENU) E x i t

4. Press **ENTER** twice* on the projector or remote control to leave and save the settings.
   *The first press leads you back to the main menu and the second press closes the OSD menu.

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Using the OSD

Choosing a location

Your projector is designed to be installed in one of four possible installation locations:

1. **Front Table**

   Select this location with the projector placed on a table in front of the screen. This is the most common way to position the projector for quick setup and portability.
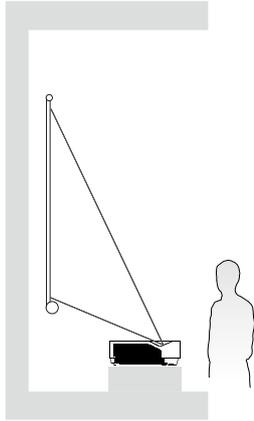
2. **Rear Table**

   Select this location with the projector placed on a table behind the screen. Note that a special rear projection screen is required.

   *Set **Rear Table** in the **SYSTEM SETUP: Basic > Projector Installation** menu after you turn the projector on.
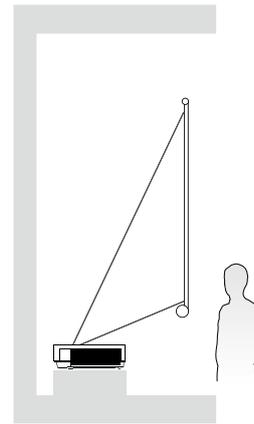
3. **Front Ceiling**

   Select this location with the projector suspended upside-down from the ceiling in front of the screen.

   Purchase the BenQ Projector Ceiling Mounting Kit from your dealer to mount your projector on the ceiling.

   *Set **Front Ceiling** in the **SYSTEM SETUP: Basic > Projector Installation** menu after you turn the projector on.
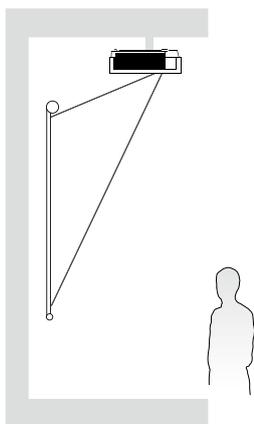
4. Rear Ceiling

   Select this location with the projector suspended upside-down from the ceiling behind the screen.

   Note that a special rear projection screen and the BenQ Projector Ceiling Mounting Kit are required for this installation location.

   *Set **Rear Ceiling** in the **SYSTEM SETUP: Basic > Projector Installation** menu after you turn the projector on.
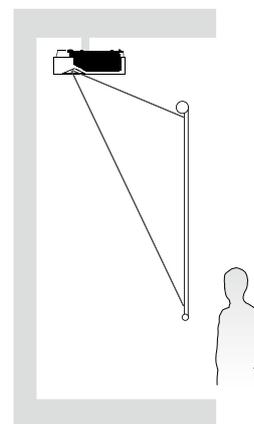
Your room layout or personal preference will dictate which installation location you select. Take into consideration the size and position of your screen, the location of a suitable power outlet, as well as the location and distance between the projector and the rest of your equipment.

Using test pattern

The projector is capable of displaying the grid test pattern. It can be used to assist you with the adjustment of image size and focus, ensuring that the projected image is free from distortion. To display the test pattern, open the OSD menu and go to the **System Setup: Advanced** > **Test Pattern** and press ◄/► to select On.
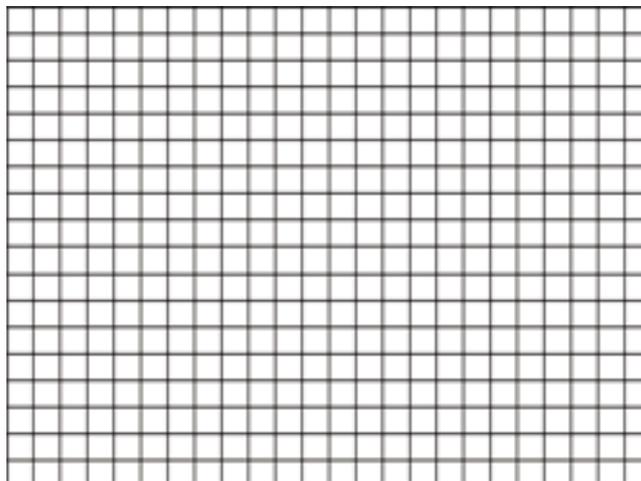
Adjusting by corner fit

Manually adjust four corners of the image by setting the horizontal and vertical values.

Using the OSD menu

1. Press **MENU** and then press ◄/► until the **Display** menu is highlighted.
2. Press ▼ to highlight **Corner Fit** and press **ENTER**. The **Corner Fit** page displays.

DISPLAY	
Wall Color	Off
Aspect Ratio	Auto
2D Keystone	
Corner Fit	
Position	
Phase	15
H. Size	0
Digital Image Resizing	
Screen Fill	
Overscan	0
3D	
Fast Mode	Off
HDMI-1	(MENU) Exit

3. Press ▲/▼/◄/► to select one of the four corners and press **ENTER**.
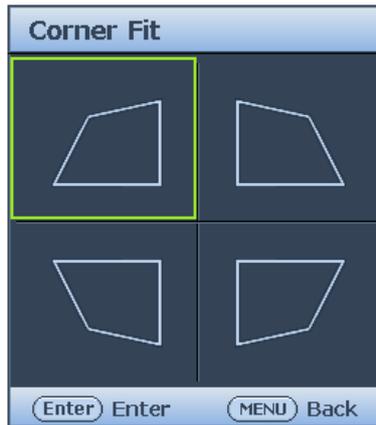
4. Press ▲/▼ to adjust vertical values.
5. Press ◄/► to adjust horizontal values.
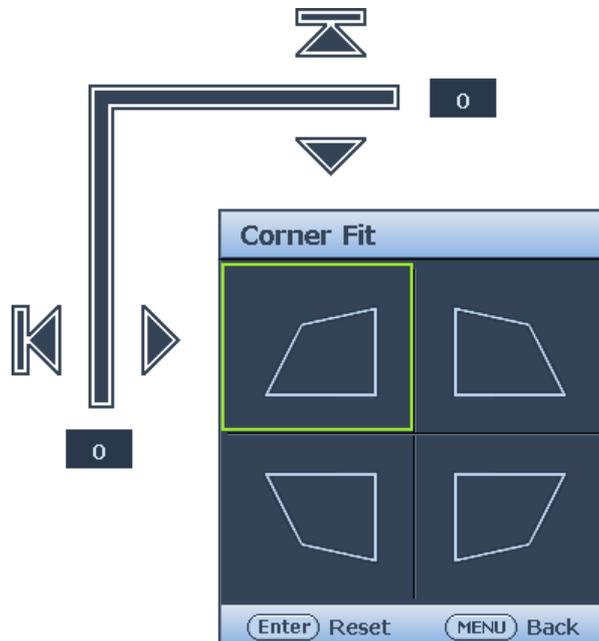
Auto adjusting the image

In some cases, you may need to optimize the picture quality. To do this, press **AUTO** on the projector or remote control. Within 3 seconds, the built-in Intelligent Auto Adjustment function will re-adjust the values of Frequency and Clock to provide the best picture quality.
The current source information will be displayed in the upper left corner of the screen for 3 seconds.

📝 Note:

*   The screen will be blank while AUTO is functioning.
*   This function is only available when PC signal (analog RGB) is selected.

Fine tuning the image clarity

Sharpen the image by rotating the FOCUS ring.

Focus ring
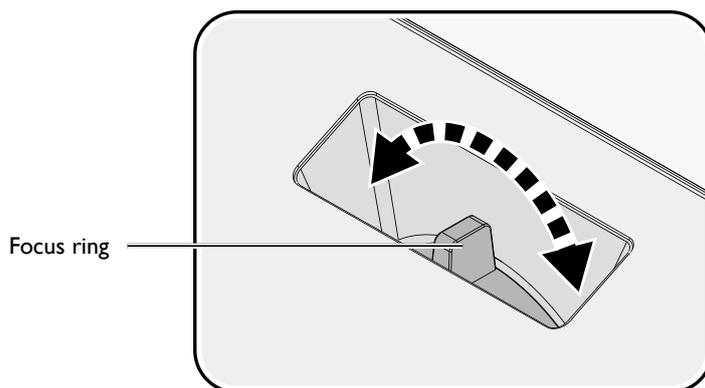
Switch off the projector

1. Press ⏻ **POWER** or **OFF** and a confirmation message will appear prompting you. If you don't respond in a few seconds, the message will disappear.
2. Press ⏻ **POWER** or **OFF** a second time. The **POWER** indicator light flashes orange, the projection light source shuts down.
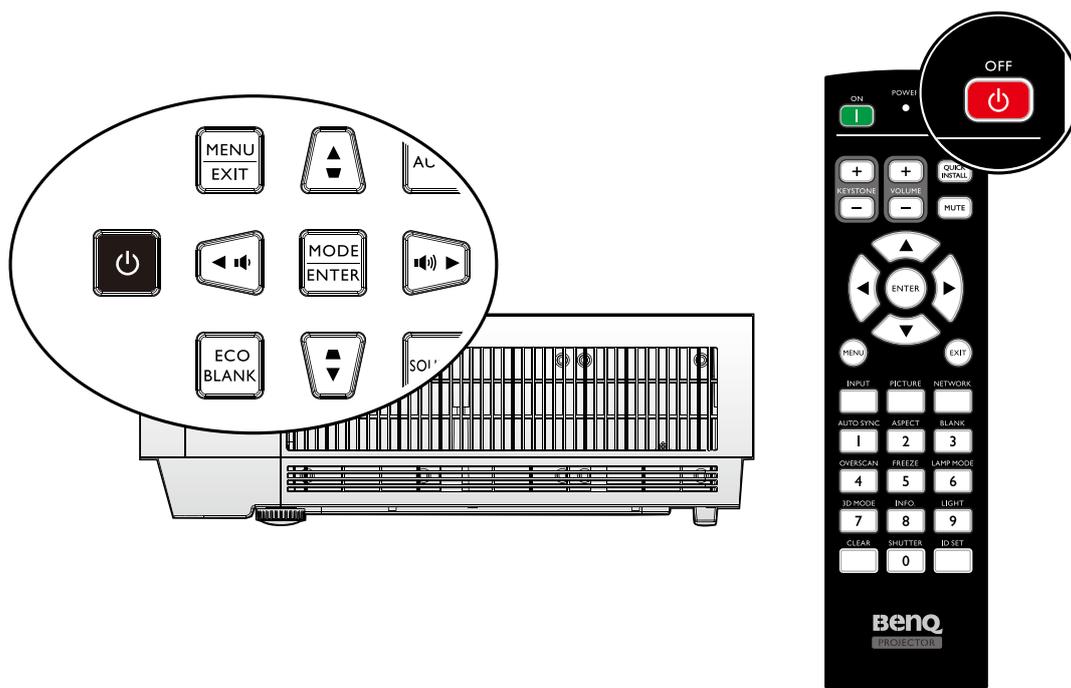
3. Once the cooling process finishes, a **"Power Off Ring Tone"** will be heard. The **POWER** indicator light is a steady orange and fans stop. Disconnect the power cord from the power outlet.

✏️ **Caution:**

• To protect the light source, the projector will not respond to any commands during the cooling process.
• Press ⏻ **POWER** or **ON** again to start the projector after the **POWER** indicator light turns orange.

Using the menu

Main menu

The projector is equipped with On-Screen Display (OSD) menus for making various adjustments and settings.

Below is the overview of the OSD menu.

Main menu icon

Main menu

Sub-menu

Status

DISPLAY

🐷	Wall Color	Off
▣	Aspect Ratio	Auto
▲	2D Keystone	
▣	Corner Fit	
▪	Position	
▨	Phase	15
▨	H. Size	0
⬛	Digital Image Resizing	
■	Screen Fill	
⊞	Overscan	0
3D	3D	
⊘	Fast Mode	Off

Current input signal

⊡ HDMI-1

(MENU) E x i t

Press **MENU** to the previous page or to exit.
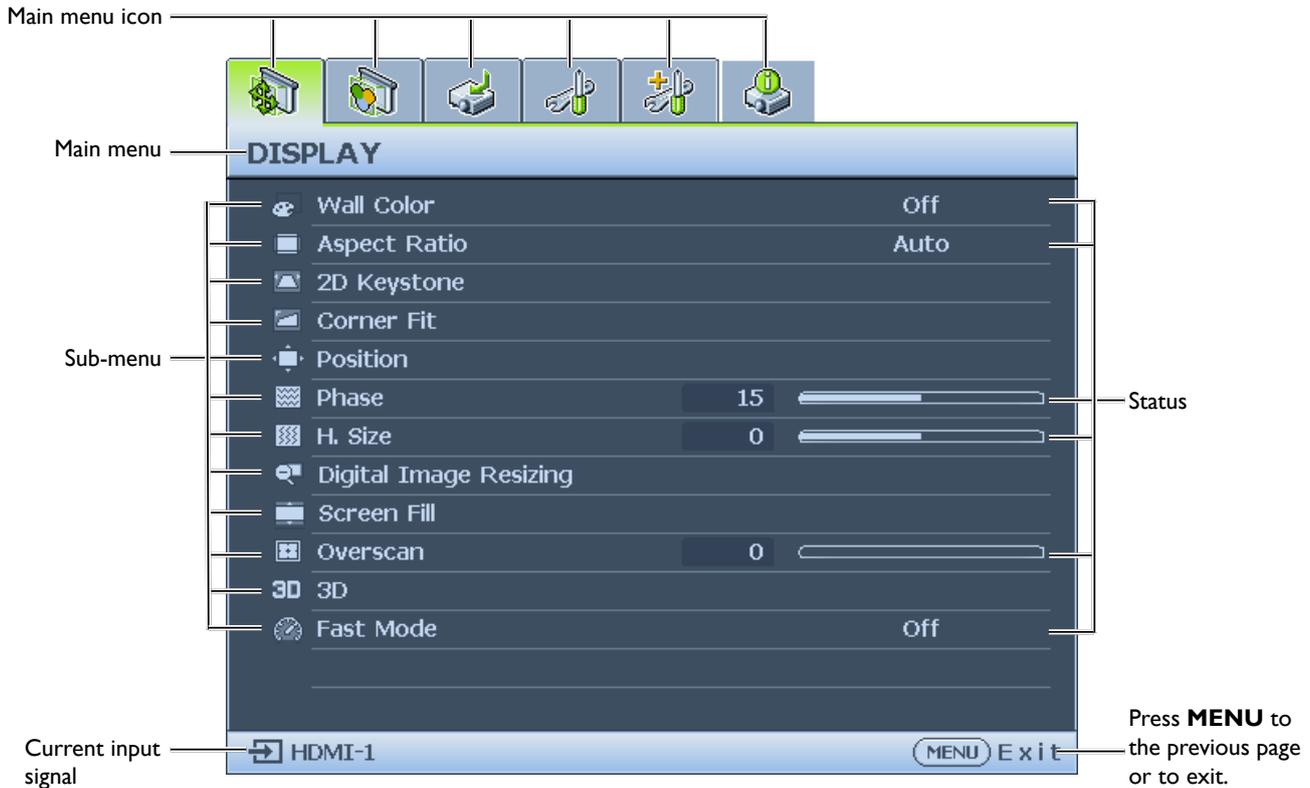
1. Display menu (see "Display menu" on page 35)
2. Picture menu (see "Picture menu" on page 41)
3. Source menu (see "Source menu" on page 46)
4. System Setup : Basic menu (see "System Setup : Basic menu" on page 47)
5. System Setup : Advanced menu (see "System Setup : Advanced menu" on page 50)
6. Information menu (see "Information menu" on page 55)

Available menu items may vary depending on the connected video sources or specified settings. Menu items that are not available will become grayed out.

• Use the arrow keys (▲/▼/◄/►) on the projector or remote control to move through the menu items.

• Use **ENTER** to confirm the selected menu item.

Display menu

DISPLAY

Wall Color		Off
Aspect Ratio		Auto
2D Keystone		
Corner Fit		
Position		
Phase	15	
H. Size	0	
Digital Image Resizing		
Screen Fill		
Overscan	0	
3D		
Fast Mode		Off

HDMI-1   (MENU) Exit

- **Wall Color**

  Press ◄/► to correct the image color bias reflected by the wall. The options are Off, Light Yellow, Pink, Light Green, Blue and Blackboard.

- **Aspect Ratio**

  Press ◄/► to adjust the aspect of the projected image. The options are Auto, Real, 4:3, 16:9, 16:10 and 2.4:1.

  - Using the remote control
  1. Press **ASPECT** to show the current setting.
  2. Press **ASPECT** repeatedly to select an aspect ratio to suit the format of the video signal and your display requirements.

1. **Auto:** Scales an image proportionally to fit the projector's native resolution in its horizontal width. This is suitable for the incoming image which is neither in 4:3 nor 16:9 and you want to make most use of the screen without altering the image's aspect ratio.
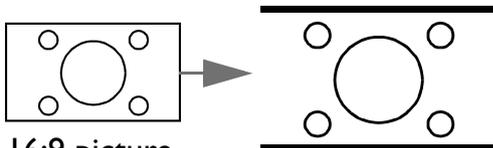
   16:9 picture
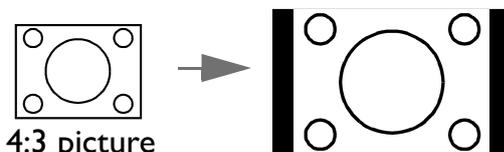
   4:3 picture

2. **Real:** The image is projected as its original resolution, and resized to fit within the display area. For input signals with lower resolutions, the projected image will display smaller than if resized to full screen. You could adjust the zoom setting or move the projector away from the screen to increase the image size if necessary. You may also need to refocus the projector after making these adjustments.
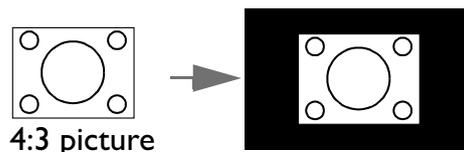
   4:3 picture
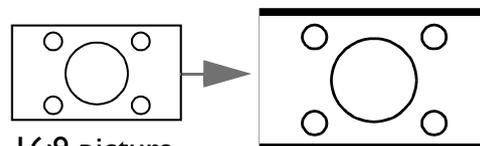
   16:9 picture

3. **4:3:** Scales an image so that it is displayed in the center of the screen with a 4:3 aspect ratio. This is most suitable for 4:3 images like computer monitors, standard definition TV and 4:3 images aspect DVD movies, as it displays them without aspect alteration.

4:3 picture

4. **16:9:** Scales an image so that it is displayed in the center of the screen with a 16:9 aspect ratio. This is most suitable for images which are already in a 16:9 aspect, like high definition TV, as it displays them without aspect alteration.

16:9 picture
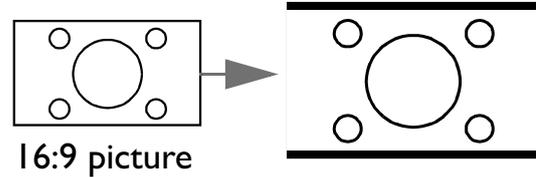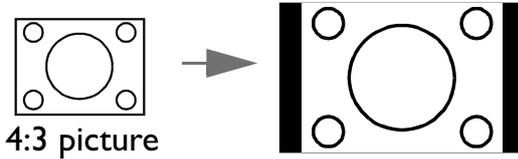
5. **16:10:** Scales an image so that it is displayed in the center of the screen with a 16:10 aspect ratio. This is most suitable for images which are already in a 16:10 aspect, as it displays them without aspect alteration.

16:9 picture

6. **2.4:1:** Scales an image so that it is displayed in the center of the screen with a 2.4:1 aspect ratio. This is most suitable for widescreen cinemascope formats for movie theaters or images which already vary to 2.40 aspect, as it displays them without aspect alteration.

16:9 picture
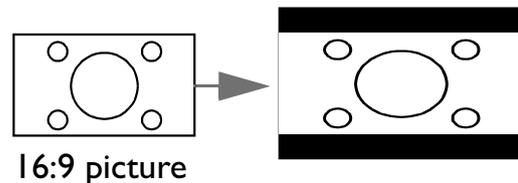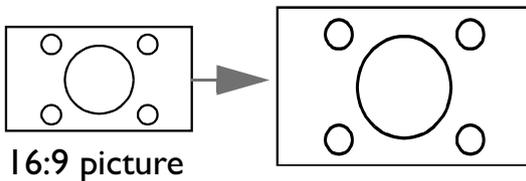
- **2D Keystone**
  Press **ENTER** and press ▲/▼/◄/► to adjust horizontal or vertical distortion brought by the projection angle.
- **Corner Fit**
  Press **ENTER** to enter the **Corner Fit** menu. See "Corner Fit menu" on page 37 for more details.
- **Position**
  Press **ENTER** and press ▲/▼/◄/► to adjust the position of the projectored picture.
- **Phase**
  Press ◄/► to adjust Phase for the projectored picture.
- **H. Size**
  Press ◄/► to adjust H. Size for the projectored picture.
- **Digital Image Resizing**
  Press **ENTER** to enter the **Digital Image Resizing** menu. See "Digital Image Resizing" on page 37 for more details.
- **Native Resolution**
  Press **ENTER** to enter the **Native Resolution** menu. See "Native Resolution" on page 38.
- **Screen Fill**
  Press **ENTER** to enter the **Screen Fill** menu. See "Screen Fill" on page 39.
- **Overscan**
  Press ◄/► to hide edge of the projected image to damage the noise.
- **3D**
  Press **ENTER** to enter the **3D** menu. See "3D menu" on page 39 for more details.
- **Fast Mode**
  Press ◄/► to enable or disable **Fast Mode**.

Corner Fit menu
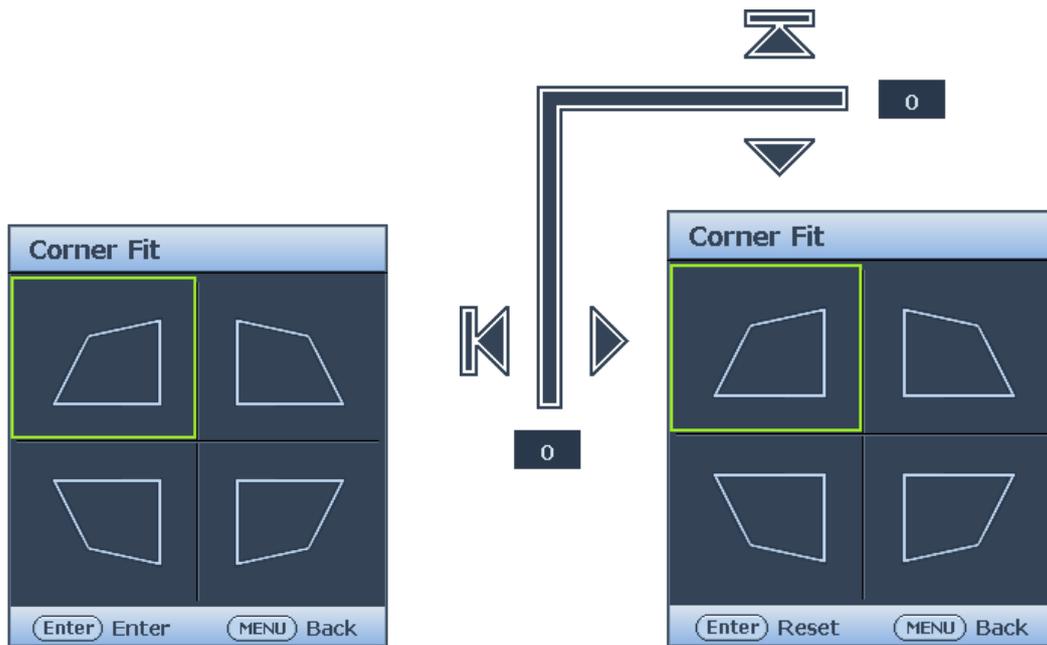
- Top Left
  Press **ENTER** and press ▲/▼/◄/► to correct the top left corner.
- Top Right
  Press **ENTER** and press ▲/▼/◄/► to correct the top right corner.
- Bottom Left
  Press **ENTER** and press ▲/▼/◄/► to correct the bottom left corner.
- Bottom Right
  Press **ENTER** and press ▲/▼/◄/► to correct the bottom right corner.

Digital Image Resizing
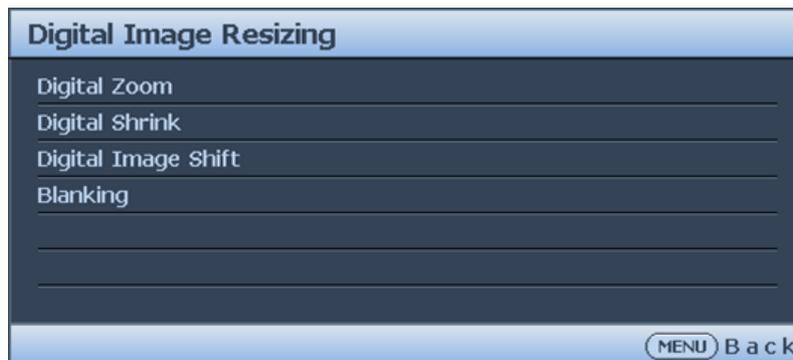
- **Digital Zoom**
  Press **ENTER** and press ◄/► to reduce the image to a desired size. Press **AUTO** to restore the picture to its original size.
- **Digital Shrink**
  Press **ENTER** and press ◄/► to reduce the image to a desired size. Press **AUTO** to restore the picture to its original size.
- **Digital Image Shift**
  Press **ENTER** and press ▲/▼/◄/► to shift the image. Press **AUTO** to restore the picture to its original position.
- **Blanking**
  Press **ENTER** to enter the **Blanking** menu. See for more details.

Blanking menu

Blanking		
Top	0	
Bottom	0	
Left	0	
Right	0	
Reset		

(MENU) B a c k

- Top
  Press ◄/► to adjust the top blanking area on the projected picture.
- Bottom
  Press ◄/► to adjust the bottom blanking area on the projected picture.
- Left
  Press ◄/► to adjust the left blanking area on the projected picture.
- Right
  Press ◄/► to adjust the right blanking area on the projected picture.
- Reset
  Press **ENTER** to set up all Blanking settings to default.

Native Resolution

Native Resolution	
Display Resolution	WUXGA
Digital Lens Shift	

(MENU) B a c k

- **Display Resolution**
  Select the native resolution of this projector between **WUXGA** and **1080P**.
- **Digital Lens Shift**
  After the **Digintal Lens Shift** page displays, press ▲/▼ to shift the projected image.

✎ **Note:**

This function is not available in the following situations: **Picture Mode** is **3D**; **Native Resolution** is **WUXGA**

Screen Fill

```
Screen Fill
─────────────────────────────────────────
 Screen Aspect Ratio
 Digital Lens Shift
─────────────────────────────────────────




                                  (MENU) B a c k
```

- **Screen Aspect Ratio**
  Press **ENTER** and press ▲/▼ to select the maximum active area that the image can be projected. The options are 16:10 (1920x1200), 16:9 (1920x1080), 4:3 (1600x1200), 1:1 (1200x1200), and 21:9 (1920x822).
- **Digital Lens Shift**
  After the **Digintal Lens Shift** page displays, press ▲/▼ to shift the projected image.

3D menu

```
3D
─────────────────────────────────────────
 3D Sync Mode                      DLP Link
 3D Mode
 3D Sync Invert                    Disable
 3D Sync Out Delay          0  [            ]
 3D Sync Out Reference             3D VESA
 Save 3D Settings
 Apply 3D Settings
─────────────────────────────────────────
                                  (MENU) B a c k
```

- **3D Sync Mode**
  Press ◄/► to select the 3D sync mode. The options are DLP Link and VESA 3D.
- **3D Mode**
  Press **ENTER** to enter the **3D Mode** menu. Press ▲/▼ to select the 3D format. The options are Auto, Top-Bottom, Frame Sequential, Frame Packing, Side-By-Side and Off.
- **3D Sync Invert**
  Press ◄/► to enable or disable 3D Sync Invert.
- **3D Sync Out Delay**
  Press ◄/► to adjust 3D sync out signal delay.
- **3D Sync Out Reference**
  Press ◄/► to select the 3D sync out behavior. The options are 3D VESA and Bypass to another projector.
- **Save 3D Settings**
  Press **ENTER** to enter the **Save 3D Settings** menu. Press ▲/▼ and **ENTER** to save the current 3D settings.
- **Apply 3D Settings**
  Press **ENTER** to enter the **Apply 3D Settings** menu. Press ▲/▼ and **ENTER** to apply the saved 3D settings.

Fast Mode

Minimizing the response time (one frame) between the source input and the image output, this mode will enhance the controlling experience.

Note:

When using **Fast Mode**:

- In order to have minimized response time, Keystone, Aspect Ratio, 2D Keystone, Corner Fit, Digital Zoom, Digital Shrink, Digital Image Shift, Blanking, Overscan, Display Resolution should be reset to factory preset value.
- Recommend timings are 1920x1200 60Hz. See "Timing table" on page 69 for more details.

Picture menu

PICTURE	
🎞 Picture Mode	Presentation
↻ Reference Mode	Presentation
☀ Brightness	50
◐ Contrast	50
◖ Color	50
◐ Tint	50
▨ Sharpness	15
🔅 Brilliant Color	On
⊿ Gamma Selection	2.2
HDR Brightness	0
Color Temperature	Normal
Color Temperature Fine Tuning	
🎨 3D Color Management	
⤺ Reset Picture Settings	
⤵ HDMI-1	(MENU) Exit

- **Picture Mode**
  Press ◄/► to select a picture mode. The options are Bright / Presentation / sRGB / Simulator / Video / (3D)/(HDR10) / (HLG) / User 1 / User 2.
  - **Bright mode:** Maximizes the brightness of the projected image. This mode is suitable for environments where extra-high brightness is required, such as using the projector in well lit rooms.
  - **Presentation mode:** Is designed for presentation. The brightness is emphasized in this mode to match PC and notebook coloring.
  - **sRGB mode:** Maximizes the purity of RGB colors to provide true-to-life images regardless of brightness setting. It is most suitable for viewing photos taken with an sRGB compatible and properly calibrated camera, and for viewing PC graphic and drawing applications such as AutoCAD.
  - **Simulator:** Optimized setting for multiple projector blending purpose.
    Below batch setup will be executed
    - Color table same as sRGB
    - Dynamic Dimming turn Off
    - Direct power on turn On
    - Fast mode turn On
    - Standby Mode turn to Normal standby
    - Disable digital correction include Aspect ratio, keystone, corner fit, digital zoom/shrink and EDID switch to keep native resolution.
    Please refer to content below, more settings.
  - **Video:** Is suitable for playing videos in an environment where there is ambient light. Dynamic color details are preserved by BenQ enhancement technology.
  - **3D mode:** Is appropriate for playing 3D images and 3D video clips. This mode is only available when 3D function is enabled and 3D content is detected.
  - **HDR10 mode:** Only available when detecting HDR10 content, other picture mode can't be selected
  - **HLG mode:** Only available when detecting HLG content, other picture mode can't be selected

- **User 1/User 2 mode:** Recalls the settings customized based on the current available picture modes.
- **Reference Mode**

  Press ◄/► to select a reference mode. The options are Bright, Presentation, sRGB and Video.
- **Brightness**

  Press ◄/► to adjust the brightness of the projected image.

  The higher the value, the brighter the image. And lower the setting, darker the image. Adjust this control so the black areas of the image appear just as black and that detail in the dark areas is visible.
- **Contrast**
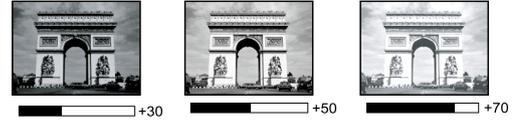
  Press ◄/► to adjust the contrast of the projected image.

  The higher the value, the greater the contrast. Use this to set the peak white level after you have previously adjusted the Brightness setting to suit your selected input and viewing environment.
- **Color**
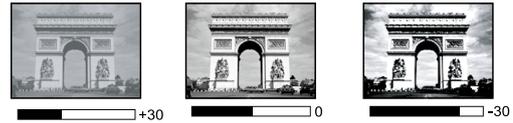
  Press ◄/► to adjust the color saturation.

  Lower setting produces less saturated colors. If the setting is too high, colors on the image will be overpowering, which makes the image unrealistic.
- **Tint**

  Press ◄/► to adjust the tint of the projected image.

  The higher the value, the more reddish the picture becomes. The lower the value, the more greenish the picture becomes.
- **Sharpness**

  Press ◄/► to adjust the display sharpness of the projected image.

  The higher the value, the sharper the picture becomes. The lower the value, the softer the picture becomes.
- **Brilliant Color**

  Press ◄/► to adjust the brilliant color of the projected image.

  This feature utilizes a new color-processing algorithm and system level enhancements to enable higher brightness while providing truer, more vibrant colors in picture. It enables a greater than 50% brightness increase in mid-tone images, which are common in video and natural scenes, so the projector reproduces images in realistic and true colors. If you prefer images with that quality, select a desired level.

  When **0** is selected, the **Color Temperature** function is not available.
- **Gamma Selection**

  Gamma refers to the relationship between input source and picture brightness.
  - **1.8/2.0/2.1/BenQ:** Select these values according to your preference.
  - **2.2/2.3:** Increases the average brightness of the picture. Best for a lit environment, meeting room or family room.
  - **2.4:** Best for viewing movies in a dark environment.
  - **2.6:** Best for viewing movies which are mostly composed of dark scenes.
- **HDR Brightness**

  Press ◄/► to adjust the HDR brightness.

- **Color Temperature**

  Press ◄/► to adjust the color temperature. The options are Cool, Normal and Warm.
  - **Cool:** makes the image appear bluish white.
  - **Normal:** Maintains normal colorings for white.
  - **Warm:** Makes images appear reddish white.

- **Color Temperature Fine Tuning**

  Press **ENTER** to enter the **Color Temperature Fine Tuning** menu. See "Color Temperature Fine Tuning menu" on page 43 for more details.**3D Color Management**

- **3D Color Management**

  Press **ENTER** to enter the **3D Color Management** menu. See "3D Color Management menu" on page 44 for more details.

- **Reset Picture Settings**

  Press **ENTER** to enter the **Reset Picture Settings** menu. Press ▲/▼ and press **ENTER** to set to the default value.
  - **Current:** Returns current picture mode to the factory preset settings.
  - **All:** Returns all settings, except User 1/User 2 in the Picture menu to the factory preset settings.

Color Temperature Fine Tuning menu

- **R Gain**

  Press ◄/► to adjust the Red Gain.
- **G Gain**

  Press ◄/► to adjust the Green Gain.
- **B Gain**

  Press ◄/► to adjust the Blue Gain.
- **R Offset**

  Press ◄/► to adjust the Red Offset.
- **G Offset**

  Press ◄/► to adjust the Green Offset.
- **B Offset**

  Press ◄/► to adjust the Blue Offset.

To set a preferred color temperature:

1. Highlight **Color Temperature** and select **Warm**, **Normal** or **Cool** by pressing ◄/► on the projector or remote control.
2. Press ▼ to highlight **Color Temperature Fine Tuning** and press **ENTER**. The Color Temperature Fine Tuning page appears.
3. Press ▲/▼ to highlight the item you want to change and adjust the values by pressing ◄/►.

- **R Gain/G Gain/B Gain:** Adjusts the contrast levels of Red, Green, and Blue.
- **R Offset/G Offset/B Offset:** Adjusts the brightness levels of Red, Green, and Blue.

4. Press **MENU** to exit and save the settings.

3D Color Management menu

```
3D Color Management

Primary Color                        R
Hue                    0      [=========      ]
Saturation            100     [============   ]
Gain                  100     [============   ]




                              (MENU) B a c k
```
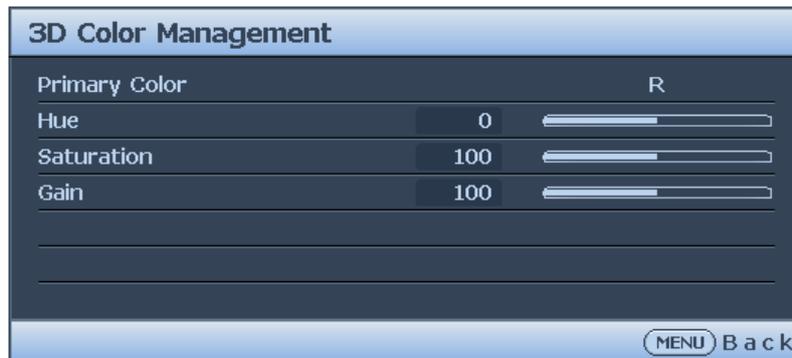
- **Primary Color**
  Press **ENTER** to enter the **Primary Color** menu. Press ▲/▼ to select the primary color. The options are R, G, B, C, M, Y, and W.
- When **Primary Color** select R, G, B, C, M and Y, Adjusting Hue, Saturation and Gain.
  - **Hue**
    Press **ENTER** to enter the **Hue** menu. Press ▲/▼/◄/► to adjust settings.
  - **Saturation**
    Press **ENTER** to enter the **Saturation** menu. Press ▲/▼/◄/► to adjust settings.
  - **Gain**
    Press **ENTER** to enter the **Gain** menu. Press ▲/▼/◄/►to adjust settings.
- When **Primary Color** Select White, Adjusting Red Gain/Green Gain/Blue Gain.

```
3D Color Management

Primary Color                        W
Red Gain              200     [==========     ]
Green Gain            200     [==========     ]
Blue Gain             200     [=========      ]




                              (MENU) B a c k
```
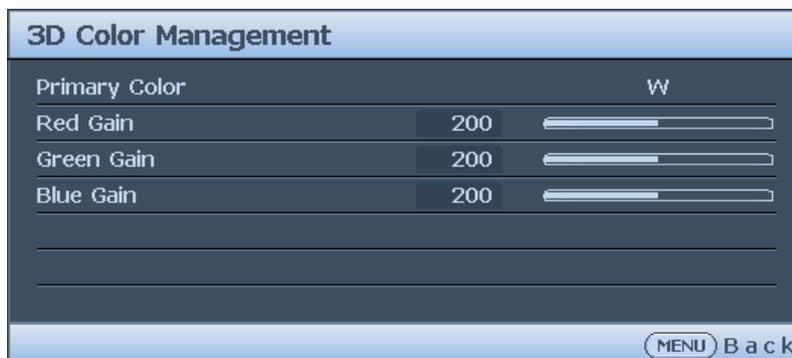
3D Color Management

In most installation situations, color management will not be necessary, such as in classroom, meeting room, or lounge room situations where lights remain on, or where building external windows allow daylight into the room.

Only in permanent installations with controlled lighting levels such as boardrooms, lecture theaters, or home theaters, should color management be considered. Color management provides fine color control adjustment to allow for more accurate color reproduction, should you require it.

Proper color management can only be achieved under controlled and reproducible viewing conditions. You will need to use a colorimeter (color light meter), and provide a set of suitable source images to measure color reproduction. These tools are not provided with the projector, however, your projector supplier should be able to provide you with suitable guidance, or even an experienced professional installer.

The Color Management provides seven sets (RGBCMYW) of colors to be adjusted. When you select each color, you can independently adjust its range and saturation according to your preference.

If you have purchased a test disc which contains various color test patterns and can be used to test the color presentation on monitors, TVs, projectors, etc. You can project any image from the disc on the screen and enter the 3D Color Management menu to make adjustments.

To adjust the settings:

1. Go to the **Picture** menu and highlight **3D Color Management**.
2. Press **ENTER** and the 3D Color Management page displays.
3. Highlight **Primary color** and press ◄/► to select a color from among Red, Green, Blue, Cyan, Magenta, Yellow.
4. Press ▼ to highlight **Hue** and press ◄/► to select its range. Increase in the range will include colors consisted of more proportions of its two adjacent colors.
   Please refer to the illustration to the right for how the colors relate to each other.
   For example, if you select Red and set its range at 0, only pure red in the projected picture will be selected. Increasing its range will include red close to yellow and red close to magenta.
5. Press ▼ to highlight **Saturation** and adjust its values to your preference by press ◄/►. Every adjustment made will reflect to the image immediately.
   For example, if you select Red and set its value at 0, only the saturation of pure red will be affected.
6. Adjusting the **RGB Gain** to get an accurate white point. For example, if you want to correct a reddish white, you can decrease the R gain value. .
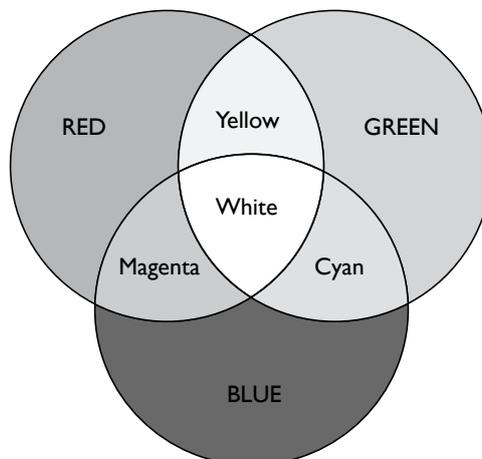
Source menu

- **Quick Auto Search**
  Press ◄/► to enable or disable search the input source automatically.
- **HDR**
  Press ◄/► to select a suitable HDR setting. The options are Auto, SDR, HDR 10 and HLG.
- **HDMI Format**
  Press ◄/► to selects a suitable color format to to optimize display quality. The options are Auto, RGB Limited, RGB Full, YUV Limited and YUV Full.
  - **Auto:** Automatically selects a suitable color space and gray level for the incoming HDMI signal.
  - **RGB Limited:** Utilizes the Limited range RGB 16-235.
  - **RGB Full:** Utilizes the Full range RGB 0-255.
  - **YUV Limited:** Utilizes the Limited range YUV 16-235.
  - **YUV Full:** Utilizes the Full range YUV 0-255.
- **HDMI EDID**
  Press **ENTER** to enter the **HDMI EDID** menu. Press ▲/▼ and press **ENTER** to select the HDMI. Press ◄/► to set to the default value.
  - **Enhance:** Enhanced mode can switch to HDMI 2.0 EDID.
  - **Standard:** Standard mode can switch to HDMI 1.4 EDID.
- **HDMI Equalizer**
  Press **ENTER** to enter the **HDMI Equalizer** menu. Press ▲/▼ and press **ENTER** to select the HDMI. Press ◄/► to set to the default value.
- **Auto Sync**
  Press ◄/► to enable or disable auto sync function.

System Setup : Basic menu

SYSTEM SETUP : Basic

	Language	
	Projector Installation	Front Table
	Menu Settings	
	Operation Settings	
	Panel Key Lock	Off
	Background Color	BenQ
	Splash Screen	BenQ
	Rear Light	Off
	Projector ID Setting	Off

HDMI-1   (MENU) Exit
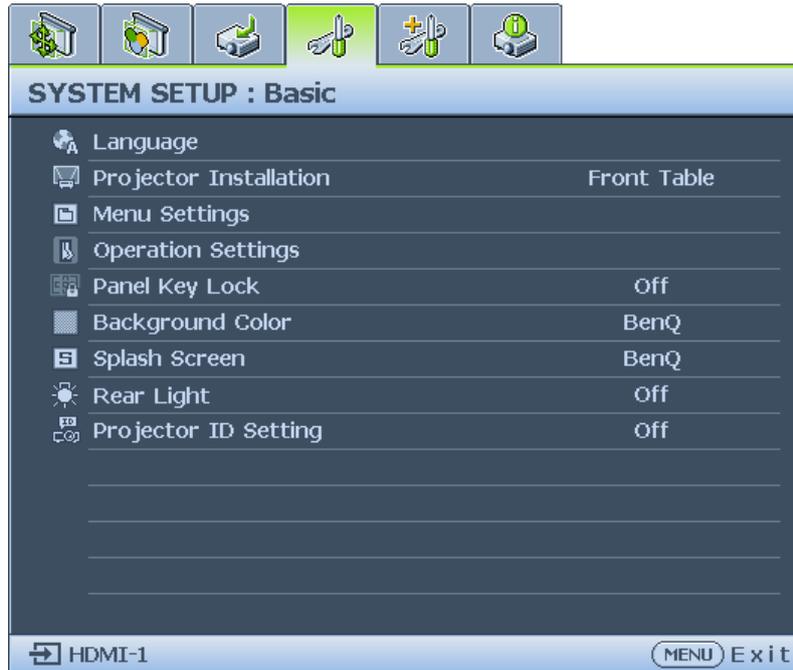
- **Language**
  Press **ENTER** to enter the **Language** menu. Press ▲/▼/◀/▶ to select the language of OSD menu.

- **Projector Installation**
  Press ◀/▶ to select the projector installation. The options are Front Table, Rear Table, Rear Celling and Front Ceiling.

- **Menu Settings**
  Press **ENTER** to enter the **Menu Settings** menu. See "Menu Settings menu" on page 48 for more details.

- **Operation Settings**
  Press **ENTER** to enter the **Operation Settings** menu. See "Operation Settings menu" on page 48 for more details.

- **Panel Key Lock**
  Press ◀/▶ to enable or disable all panel key functions except **POWER** on the projector.

- **Background Color**
  Press ◀/▶ to select the background color when no input signal. The options are BenQ, Black, Blue and Purple.

- **Splash Screen**
  Press ◀/▶ to select the start up patern when the projector turns on. The options are BenQ, Black and Blue.

- **Rear Light**
  To enable or disable Rear LED light for Illumination on terminals.

- **Projector ID Setting**
  To use the Left and Right keys to enable or disable the projector ID.

Menu Settings menu

Menu Settings

Menu Settings	
Menu Display Time	20 sec
Menu Position	Center
Reminder Message	On

(MENU) B a c k

- **Menu Display Time**
  Press ◄/► to select the menu display time period. The options are 5 sec, 10 sec, 20 sec, 30 sec and Always.
- **Menu Position**
  Press ◄/► to select the menu display position. The options are Center, Top-Left, Top-Right, Bottom-Right and Bottom-Left.
- **Reminder Message**
  Press ◄/► to enable or disable reminder message displays.

Operation Settings menu

Operation Settings

Operation Settings	
Direct Power On	Off
Signal Power On	
Auto Power Off	20 min
Blank Timer	Disable
Sleep Timer	Disable
Filter Settings	

(MENU) B a c k

- **Direct Power On**
  Press ◄/► to enable or disable automatically turning on the projector when the AC power is connected.
- **Signal Power On**
  Press ◄/► to enable or disable automatically turning on the projector when an input signal is detected.
- **Auto Power Off**
  Press ◄/► to enable or disable automatically turning off the projector when there is no input signal.
- **Blank Timer**
  Press ◄/► to set the length of time the image is blanked. The options are Disable, 5 mins, 10 mins, 15 mins, 20 mins, 25 mins and 30 mins.
- **Sleep Timer**
  Press ◄/► to set the length of time before the projector is turned off. The options are Disable, 30 mins, 1 hr, 2 hrs, 3 hrs, 4 hrs, 8 hrs and 12 hrs.
- **Filter Settings**
  Press **ENTER** to enter the **Filter Settings** menu. See "Filter Settings menu" on page 49 for more details.

Filter Settings menu

- **Filter Timer**
  Press ◄/► to enable or disable filter timer.
- **Reset Filter Timer**
  Press **ENTER** to reset the filter timer when the filter is replaced.
- **Filter Usage Time**
  Displays the cureent number of hours the filter has been used.

System Setup :Advanced menu

```
SYSTEM SETUP : Advanced

    High Altitude Mode              Off
    Dynamic Dimming                 Off
    Audio Settings
    Light Settings
    Security Settings
    HDBaseT                         Off
    Baud Rate                       115200
    Test Pattern                    Off
    Image Memory
    12V Trigger                     Off
    Standby Settings
    Network Settings
    Reset All Settings

    HDMI-1                    (MENU) Exit
```

- **High Altitude Mode**

  Press ◄/► to enable or disable High Altitude Mode. Enable this function when the operating altitude is higher than 1500m or the ambient temperature is over 40°C.

- **Dynamic Dimming**

  Press ◄/► to enable or disable dynamic dimming function. Enable the function to automatically reduces the screen's brightness level when the displayed image contains a high proportion of bright areas.

  When **3D Sync Mode** is **DLP Link**, the **Dynamic Dimming** function is not available.

- **Audio Settings**

  Press **ENTER** to enter the **Audio Settings** menu. See "Audio Settings menu" on page 52 for more details.

- **Light Settings**

  Press **ENTER** to enter the **Light Settings** menu. See "Light Settings menu" on page 53 for more details.

- **Security Settings**

  Press **ENTER** to enter the **Security Settings** menu. See "Security Settings menu" on page 53 for more details.

- **HDBaseT**

  Press ◄/► to enable or disable the HDBaseT.

Note:

- Turn on HDBaseT mode will disable internal LAN and RS232 control and switch to Normal power standby mode automatically.

HDbaseT control function table

Control Side	Function	Standby Mode			Remark
		Eco (< 0.5W)	Network (<2W)	Normal (>2W)	
Projector	Front-IR (Wireless)	O	O	O (Can disable by OSD)	
	Rear-IR (Wireless)	O	O	O (Can disable by OSD)	
	RS-232	O	O	O	
	RJ45/LAN	X	O	O	
	Wired Remote	O	O	O	
HDBaseT TX Box	HDBT-IR (Wireless)	X	X	O	
	RS-232	X	X	O	
	RJ45/LAN	X	X	O	
	Wired Remote	X	X	X	User can connect wired remote at HDBaseT TX side to get the wired function.

O: Enable   X: Disable

- **Baud Rate**
  Press ◄/► to select RS-232 baud rate. The rate is fixed at 9600 for HDBaseT mode. The baud-rate option is only available when a 9-pin RS-232 connector is in use.
- **Test Pattern**
  Press ◄/► to select the test pattern. The options are Off, Grid, White, Red, Green, Blue, Black, RGB Ramps, Color Bar, Step Bars, CheckBoard, Horizental Lines, Vertical Lines, Diagonal Lines, Horizontal Ramp and Vertical Ramps.
- **Image Memory**
  To enable users to save and apply a set of image settings customized for regularly used circumstance by source and timing
- **12V Trigger**
  Press ◄/► to enable or disable 12V trigger function.
- **Standby Settings**
  Press **ENTER** to enter the **Standby Settings** menu. See "Standby Settings menu" on page 54 for more details.
- **Network Settings**
  Press **ENTER** to enter the **Network Settings** menu. See "Network Settings menu" on page 54 for more details.
- **Reset All Settings**
  Press **ENTER** to reset all settings to default value.

Audio Settings menu

Audio Settings	
Mute	Off
Volume	5
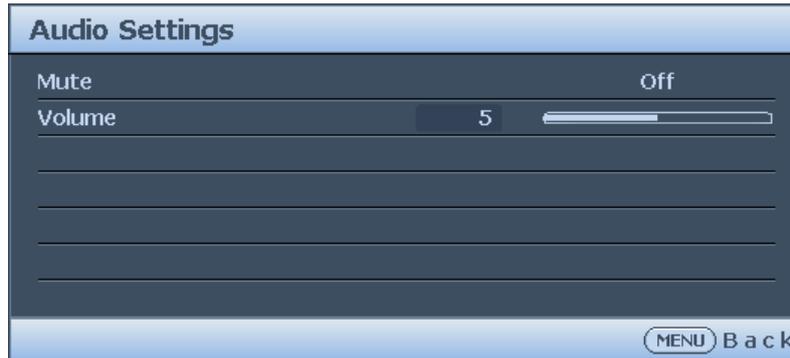
- **Mute**

  Press ◄/► to enable or disable the mute function.
  - Using the remote control

    Press **MUTE** to temporarily turn off the sound. While the sound is off, the screen will display in the upper right corner of the screen.

    To restore the sound, press **MUTE** again.
  - Using the OSD menu
  1. Press **MENU** and then press ◄/► until the **System Setup: Advanced** menu is highlighted.
  2. Press ▼ to highlight **Audio Settings** and press **ENTER**. The Audio Settings page displays.
  3. Highlight **Mute** and press ◄/► to select **On**.
  4. To restore the sound, repeat steps 1-3 and press ◄/► to select **Off**.

- **Volume**

  Press ◄/► to adjust the volume of the projector.
  - Using the remote control

    Press **VOLUME+**/**VOLUME-** to select a desired sound level.
  - Using the OSD menu
  1. Press **MENU** and then press ◄/► until the **System Setup: Advanced** menu is highlighted.
  2. Press ▼ to highlight **Audio Settings** and press **ENTER**. The Audio Settings page displays.
  3. Press ▼ to highlight **Volume** and press ◄/► to select a desired sound level.

Light Settings menu

Light Settings

Light Mode	Normal
Custom Brightness	50
Constant Brightness	Off
Light Usage Time	

(MENU) Back

- **Light Mode**
  Press ◄/► to select the light mode. The options are Normal, Economic, Dimming and Custom.
- **Custom Brightness**
  Press ◄/► to adjust the brightness of the projector.
- **Constant Brightness**
  Press ◄/► to enable or disable the function to maintain the brightness at similar level.
- **Light Usage Time**
  Press **ENTER** to enter the **Light Source Information** menu.

Security Settings menu

Security Settings

Change Password	
Change Security Settings	
Power On Lock	Off

(MENU) Back

- **Change Password**
  Press **ENTER** to change the password.
- **Change Security Settings**
  Press **ENTER** to change the security settings.
- **Power On Lock**
  Press ◄/► to enable or disable the power on lock function. If the function is enabled, you must enter the password every time the projector is turned on.

Standby Settings menu

```
Standby Settings
Standby Mode                          Eco
Auto Disable Network Standby Mode     Never
Audio Pass Through                    Off




                              (MENU) B a c k
```

- **Standby Mode**
  Press ◄/► to select the standby mode. The options are Eco, Network and Normal.
- **Auto Disable Network Standby Mode**
  Press ◄/► to enable or disable the auto switch from network standby mode to non-network standby mode after a period of time.
- **Audio Pass Through**
  Press ◄/► to enable the audio line-out function when the projector is in standby mode. The options are Audio In, HDMI 1, HDMI 2 and Off.

Network Settings menu

```
Network Settings
Wired LAN
AMX Device Discovery                  Off
MAC Address              00:00:00:00:00:00




                              (MENU) B a c k
```

- **Wired LAN**
  Press **ENTER** to enter the **Wired LAN** menu to setup the IP address, subnet mask, default gatway, DNS server and DHCP.
- **AMX Device Discovery**
  Press ◄/► to enable or disable the AMX device discovery function. When the function is enabled, the projector can be detected by an AMX controller.
- **Mac Address**
  Displays the cureent MAC address of the projector.

Information menu
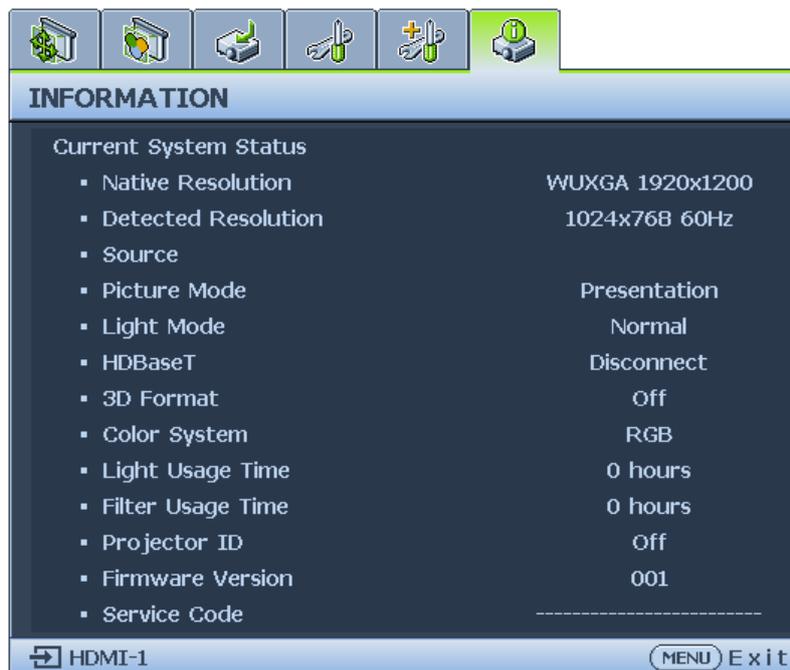
- **Native Resolution**
  Displays the native resolution of the model.
- **Detected Resolution**
  Displays the detected timing.
- **Source**
  Displays the current signal source.
- **Picture Mode**
  Displays the current picture mode.
- **Light Mode**
  Displays the current light mode.
- **HDBaseT**
  Displays the current HDBaseT status.
- **3D Format**
  Displays the current 3D mode. Only available when 3D Mode is enabled.
- **Color System**
  Displays the input system format.
- **Light Usage Time**
  Displays the number of hours the light has been used.
- **Filter Usage Time**
  Displays the number of hours the filter has been used.
- **Projector ID**
  Displays the current projector ID.
- **Firmware Version**
  Displays the firmware version of your projector.
- **Service Code**
  Displays the serial number of your projector.

Menu structure

Main menu	Sub-menu		Options
Display	Wall Color		Off / Light Yellow / Pink / Light Green / Blue / Blackboard
	Aspect Ratio		Auto / Real / 4 : 3 / 16 : 9 / 16 : 10 / 2.4 : 1
	2D Keystone		H: -15~0~15 / V: -15~0~15
	Corner Fit		Top Left / Top Right / Bottom Left / Bottom Right
	Position		H: -5~0~5 / V: -5~0~5
	Phase		0~AUTO~31
	H.size		-15~0~15
	Digital Image Resizing	Digital Zoom	PC:1.0X~2.0X Video : 1.0~1.8X
		Digital Shrink	0.8X~1.0X
		Digital Image Shift	Digital Image Shift
		Blanking	Top/ Bottom / Left / Right / Reset
	Native Resolution	Display Resolution	WUXGA / 1080P
		Digital Lens Shift	
	Screen Fill	Screen Aspect Ratio	16:10 (1920x1200) / 16:9 (1920x1080) / 4:3 (1600x1200) / 1:1 (1200x1200) / 21:9 (1920x822)
		Digital Lens Shift	
	Overscan		Composite / S-Video : 0- 3 others : 0-3
	3D	3D Sync Mode	DLP Link / VESA 3D
		3D Mode	Auto / Frame Sequential/ Frame Packing / Top-Bottom/ Side-By-Side / Off
		3D Sync Invert	Disable / Invert
		3D Sync Out Delay	0~359
		3D Sync Out Reference	3D VESA / Bypass
		Save 3D Settings	3D Settings 1 / 3D Settings 2 / 3D Settings 3
		Apply 3D Settings	3D Settings 1 / 3D Settings 2 / 3D Settings 3 / Off
	Fast Mode		On / Off

Main menu	Sub-menu		Options
Picture	Picture Mode		Bright / Presentation / sRGB / Simulator / Video / (3D) / (HDR10) / (HLG) / User 1 / User 2
	Reference Mode		Bright / Presentation / sRGB / Video / (3D) / (HDR 10) / (HLG)
	Brightness		0 ~50~100
	Contrast		-50~0~50
	Color		-50~0~50
	Tint		-50~0~50
	Sharpness		0~15~31
	Brilliant Color		0~10
	Gamma Selection		1.8 / 2.0 / 2.1 / 2.2 / 2.3 / 2.4 / 2.6 / BenQ
	HDR Brightness		-2/ -1 / 0 / 1 / 2
	Color Temperature		Cool / Normal / Warm
	Color Temperature Fine Tuning		R Gain / G Gain / B Gain / R Offset / G Offset / B Offset
	3D Color Management	Primary Color (R / G / B / C / M / Y)	HUE / Saturation / Gain
		Primary Color (W)	Red Gain / Green Gain / Blue Gain
	Reset Picture Settings		Current / All / Cancel
Source	Quick Auto Search		On / Off
	HDR		Auto / SDR / HDR 10 / HLG
	HDMI Format		Auto / RGB Limited / RGB Full / YUV Limited / YUV Full
	HDMI EDID		Enhanced/ Standard
	HDMI Equalizer	HDMI-1	Auto / Lower / Low / Middle / High / Higher
		HDMI-2	Auto / Lower / Low / Middle / High / Higher
	Auto Sync		On / Off
System Setup: Basic	Language		English / Français / Deutsch / Italiano / Español / Русский / 繁體中文 / 简体中文 / 日本語 / 한국어 / Svenska / Nederlands / Türkçe / Čeština / Português / ไทย / Polski / Magyar/ Hrvatski / Română / Norsk/ Dansk/ Български / Suomi/ Indonesian/Ελληνικά/العربية/ हिन्दी
	Projector Installation		Front Table / Rear Table / Rear Celling / Front Ceiling
	Menu Settings	Menu Display Time	5 sec / 10 sec / 20 sec / 30 sec/ Always
		Menu Position	Center / Top-Left / Top-Right / Bottom-Right / Bottom-Left
		Reminder Message	On / Off

Main menu	Sub-menu		Options
System Setup: Basic	Operation Settings	Direct Power On	On / Off
		Signal Power On	Computer: On / Off HDMI-1: On / Off
		Auto Power Off	Disable / 3 mins / 10 mins / 15 mins / 20 mins / 25 mins / 30 mins
		Blank Timer	Disable / 5 min / 10 min / 15 min / 20 min / 25 min / 30 min
		Sleep Timer	Disable / 30 min / 1 hr / 2 hr / 3 hr / 4 hr / 8 hr / 12 hr
		Filter Settings	Filter Timer: On / Off Reset Filter Timer: Reset / Cancel Filter Usage Time
	Panel Key Lock		On / Off
	Background Color		BenQ / Black / Blue / Purple / Gray
	Splash Screen		BenQ / Black / Blue
	Rear Light		On / Off
	Projector ID Setting		Off / 01 / 02 / … / 99
System Setup: Advanced	High Altitude Mode		On / Off
	Dynamic Dimming		On / Off
	Audio Settings	Mute	On / Off
		Volume	
	Light Settings	Light Mode	Normal / Economic / Dimming / Custom
		Custom Brightness	25%-100%
		Constant Brightness	On / Off
		Light Usage Time	Light Usage Time / Normal Mode / ECO Mode / Dimming Mode / Custom Mode
	Security Settings	Change Password	
		Change Security Settings	
		Power On Lock	On / Off
	HDBaseT		On / Off
	Baud Rate		2400 / 4800 / 9600 / 14400 / 19200 / 38400 / 57600 / 115200
	Test Pattern		Off / Grid / White / Red / Green / Blue / Black / RGB Ramps / Color Bar / Step Bars / CheckBoard / Horizontal Lines / Vertical Lines / Diagonal Lines / Horizontal Ramp / Vertical Ramps

Main menu	Sub-menu		Options
System Setup: Advanced	Image Memory	Save Image Memory	Memory-1 / Memory-2 / Memory-3 / Memory-4 / Memory-5
		Apply Image Memory	Memory-1 / Memory-2 / Memory-3 / Memory-4 / Memory-5
	12V Trigger		On / Off
	Standby Settings	Standby Mode	Eco/ Network / Normal
		Auto Disable Network Standby Mode	Never / 20 min / 1 hr / 3 hr / 6 hr
		Audio Pass Through	Off / Audio In / HDMI 1/ HDMI 2 / DISPLAY PORT / HDBaseT
	Network Settings	Wired LAN	Status
			DHCP
			IP Address
			Subnet Mask
			Default Gateway
			DNS Server
			Apply
		AMX Device Discovery	On / Off
		Mac Address	
	Reset All Settings		Reset / Cancel
Information	Current System Status	Native Resolution	WUXGA 1920x1200 1080p 1920x1080
		Detected Resolution	
		Source	
		Picture Mode	
		Light Mode	
		HDBaseT	Connect / Disconnect
		3D Format	
		Color System	
		Light Usage Time	
		Filter Usage Time	Appears when Filter Timer On
		Projector ID	
		Firmware Version	
		Service Code	SN

Maintenance

Before maintaining the projector

- Make sure to turn off the power before maintaining the projector.
- When switching off the projector, make sure to follow the procedures in "Switch off the projector" on page 33.

Care of the projector

Your projector needs little maintenance. The only thing you need to do on a regular basis is to keep the lens clean.
Never remove any parts of the projector. Contact your dealer if other parts need replacing.

Clean the lens front surface

Clean the lens whenever you notice dirt or dust on the surface.

- Use a canister of compressed air to remove dust.
- If there is dirt or smears, use lens-cleaning paper or moisten a soft cloth with lens cleaner and gently wipe the lens surface.

🖊 Caution:

Never use any type of abrasive pad, alkaline/acid cleaner, scouring powder, or volatile solvent, such as alcohol, benzene, thinner or insecticide. Using such materials or maintaining prolonged contact with rubber or vinyl materials may result in damage to the projector surface and cabinet material.

Clean the projector case

Before you clean the case, turn the projector off using the proper shutdown procedure as described in "Switch off the projector" on page 33 and unplug the power cord.

- To remove dirt or dust, wipe the case with a soft, lint-free cloth.
- To remove stubborn dirt or stains, moisten a soft cloth with water and a neutral pH detergent. Then wipe the case.

🖊 Caution:

Never use wax, alcohol, benzene, thinner or other chemical detergents. These can damage the case.

Filter maintenance

Cleaning the filter

The air filter prevents dust from accumulating on the surface of the optical elements inside the projector. If the filter is dirty or clogged, your projector may overheat or degrading the projected image quality.

1. Turn off the projector, and unplug the AC power cord from the AC outlet.
2. Cleaning the filter with a vacuum cleaner.
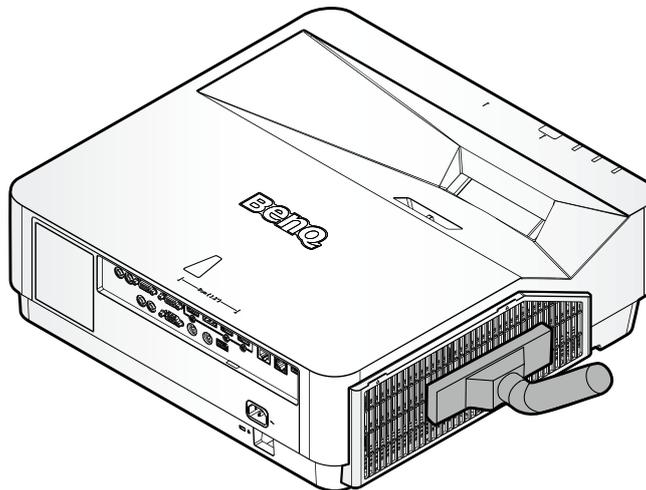
Caution:

Recommend avoiding dusty or smoky environments when you operate the projector, it may cause poor image quality. If the filter is heavily clogged and unable to clean, replace a new filter.

Note:

Using a ladder is recommended to access the filter. Do not remove the projector from the wall mount.

Replacing the filter

1. Turn off the projector and unplug the power cord from the outlet. Remove any dust on the projector and around the air vents.
   Loosen the two hooks that secure the filter module.
2. Remove the filter module from the projector.
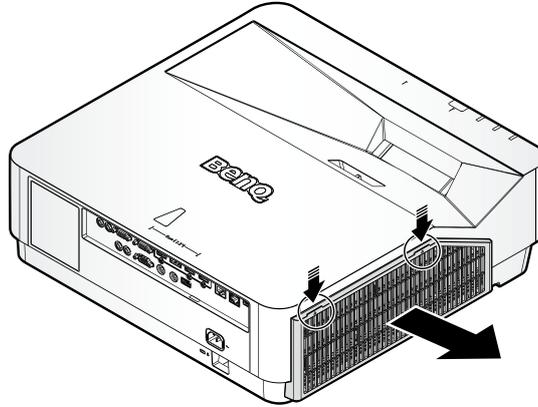
3. Replace the filter module with the new filter.

4. Replace the filter module onto the projector by pushing gently in the direction shown, make sure the two hooks that secure the filter module.
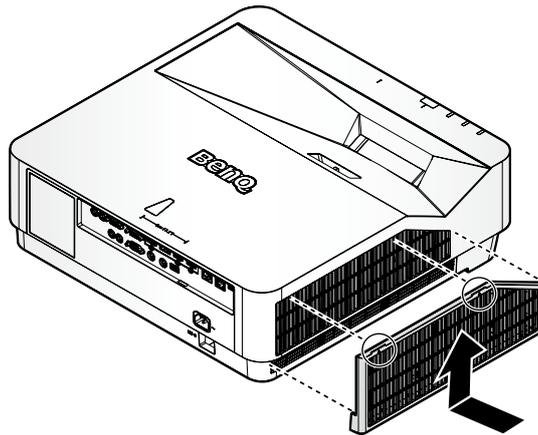
Note:

Do not wash the filter with the water or other liquid matter.

LED indicator

POWER   TEMP   LIGHT
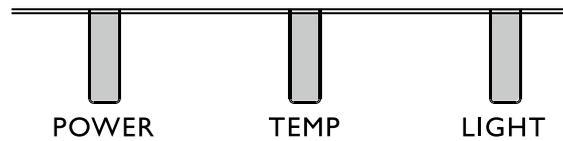
LED Usage

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 I1 error (the actual fan speed is outside the desired speed)
Red	Green Flashing	Red	Fan I2 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

Troubleshooting

Troubleshooting

The projector does not turn on.

Cause	Remedy
There is no power from the power cable.	Plug the power cord into the AC inlet on the projector, and plug the power cord into the power outlet. If the power outlet has a switch, make sure that it is switched on.
Attempting to turn the projector on again during the cooling process.	Wait until the cooling down process has completed.

No picture.

Cause	Remedy
The video source is not turned on or connected correctly.	Turn the video source on and check that the signal cable is connected correctly.
The projector is not correctly connected to the input signal device.	Check the connection.
The input signal has not been correctly selected.	Select the correct input signal with the SOURCE key on the projector or remote control.

Blurred image.

Cause	Remedy
The projection lens is not correctly focused.	Adjust the focus of the lens using the focus ring.
The projector and the screen are not aligned properly.	Adjust the projection angle and direction as well as the height of the unit if necessary.

Remote control does not work.

Cause	Remedy
The battery is out of power.	Replace the battery with new one.
There is an obstacle between the remote control and the projector.	Remove the obstacle.
You are too far away from the projector.	Stand within 7 meters (23 feet) of the projector.

The password is incorrect.

Cause	Remedy
You do not remember the password.	1. Press and hold **AUTO** on the projector or remote control for 3 seconds. The projector will display a coded number on the screen. 2. Write down the number and turn off your projector. 3. Seek help from the local BenQ service center to decode the number. You may be required to provide proof of purchase documentation to verify that you are an authorized user of the projector.

Specifications

Specifications

Optical
Resolution
    LU960UST
        1920 x 1200
Display system
    Single-chip DLP™ system
Light source
    Laser diodes

Electrical
Power supply
    AC100-240V
    50/60 Hz (Automatic)
    7.0A
Power consumption
    500W (Max); < 0.5W (Standby)

Mechanical
Weight
    12kg±500g
Dimension
    480x473x163.1mm

Output terminals
Speaker
    10 watt x 1 (RMS)
Audio signal output
    PC audio jack x 1
Monitor Out
    D-Sub 15-pin (female) x1
USB
    TYPE-A (5V/1.5A)
HDMI OUT x 1
3D SYNC OUT x 1

Control
USB
    Mini USB x1 (for service)
RS-232 serial control
    9 pin x 1 (In)
IR receiver x 1
12V TRIGGER
    12VDC (Max. 0.2 A) x 1
LAN control
    RJ45 x 1 (10/100Mbps)
Wired Remote
    PC audio jack x 1

Input terminals
Computer input
    Digital input
        15-pin VGA port x 1
Video signal input
    COMPONENT
        Share 15 pin VGA port
    SD/HDTV signal input
        Digital - HDMI x 1
            HDMI 2 x 1
            RJ45 x1 (HDBaseT)
Audio signal input
    Audio in
        PC audio jack x 1

Environmental Requirements
Operating temperature
    0°C–40°C at sea level (>35°C, power force to 80%)
Operating relative humidity
    10%–90% (without condensation)
Operating altitude
    0–1499 m at 0°C–35°C
    1500–3000 m at 0°C–30°C (with High Altitude Mode on and power force to 85%)
Storage temperature
    -20°C–60°C
Storage humidity
    10%–90% RH (without condensation)

Note:

All specifications are subject to change without notice.

Dimensions

480.0

Unit: mm

473.0

159.6

163.1

240.0

480.0

473.0
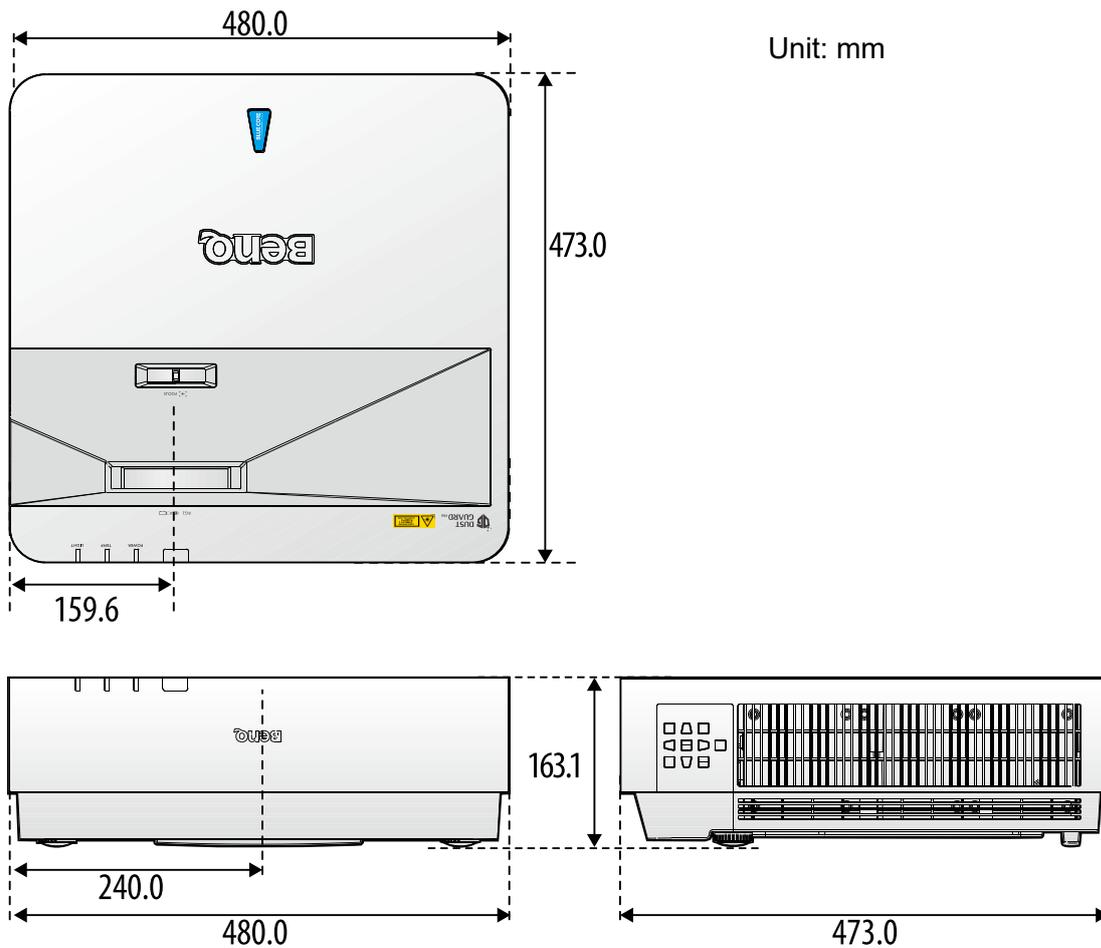
Attaching for ceiling mount

46.0

388.0

109.0

188.0

200.0

M4

8 mm (MAX)

70.0

180.0

159.6
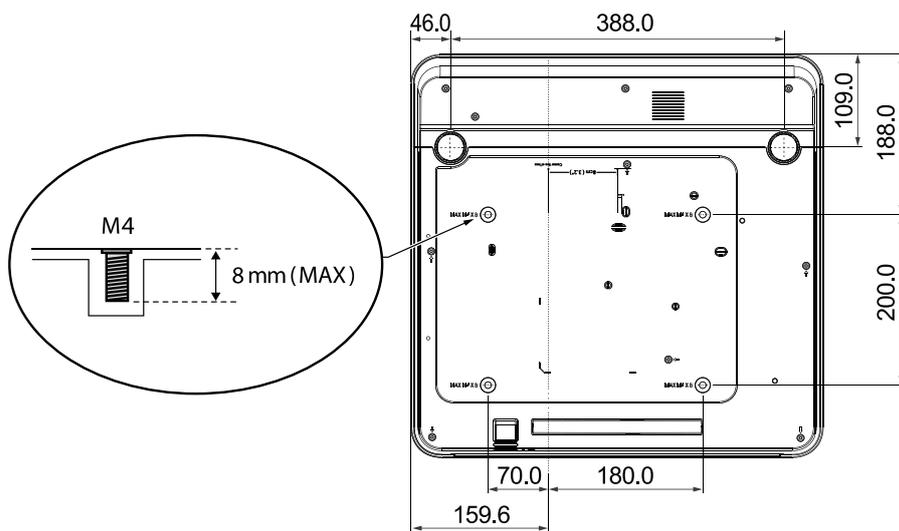
Appendix

Timing table

Support video timing for HDMI input

Timing	Resolution	H-frequency (kHz)	V-frequency (Hz)	Dot Clock Frequency (MHz)	3D Frame Sequential	3D frame packing	3D over-under	3D side-by-side
480i	720(1440) x 480	15.73	59.94	27	◎			
480p	720 x 480	31.47	59.94	27	◎			
576i	720(1440) x 576	15.63	50	27				
576p	720 x 576	31.25	50	27				
720/50p	1280 x 720	37.5	50	74.25		◎	◎	◎
720/60p	1280 x 720	45	60	74.25	◎	◎	◎	◎
1080/24P	1920 x 1080	27	24	74.25		◎	◎	◎
1080/25P	1920 x 1080	28.13	25	74.25				
1080/30P	1920 x 1080	33.75	30	74.25				
1080/50i	1920 x 1080	28.13	50	74.25				◎
1080/60i	1920 x 1080	33.75	60	74.25				◎
1080/50P	1920 x 1080	56.25	50	148.5			◎	◎
1080/60P	1920 x 1080	67.5	60	148.5			◎	◎
2160/24P	3840 x 2160	54	24	297				
2160/25P	3840 x 2160	56.25	25	297				
2160/30P	3840 x 2160	67.5	30	297				
2160/50P	3840 x 2160	112.5	50	594				
2160/60P	3840 x 2160	135	60	594				

Support PC timing for HDMI input

Resolution	Mode	Refresh rate (Hz)	H-frequency (kHz)	Clock (MHz)	3D Frame Sequential	3D over-under	3D side-by-side
640 x 480	VGA_60	59.94	31.469	25.175	◎	◎	◎
	VGA_72	72.809	37.861	31.5			
	VGA_75	75	37.5	31.5			
	VGA_85	85.008	43.269	36			
	VGA_120**	119.518	61.91	52.5			
720 x 400	720x400_70	70.087	31.469	28.3221			

Resolution	Mode	Refresh rate (Hz)	H-frequency (kHz)	Clock (MHz)	3D Frame Sequential	3D over-under	3D side-by-side
800 x 600	SVGA_60	60.317	37.879	40	◎	◎	◎
	SVGA_72	72.188	48.077	50			
	SVGA_75	75	46.875	49.5			
	SVGA_85	85.061	53.674	56.25			
	SVGA_120 (Reduce Blanking)	119.854	77.425	83	◎		
1024 x 768	XGA_60	60.004	48.363	65	◎	◎	◎
	XGA_70	70.069	56.476	75			
	XGA_75	75.029	60.023	78.75			
	XGA_85	84.997	68.667	94.5			
	XGA_120 (Reduce Blanking)	119.989	97.551	115.5	◎		
1152 x 864	1152 x 864_75	75	67.5	108			
1024x576	BenQ Notebook Timing	60	35.82	46.996			
1024x600	BenQ Notebook Timing	64.995	41.467	51.419			
1280x720	1280 x 720_60	60	45	74.25	◎	◎	◎
1280 x 768	1280 x 768_60	59.87	47.776	79.5	◎	◎	◎
1280 x 800	WXGA_60	59.81	49.702	83.5	◎	◎	◎
	WXGA_75	74.934	62.795	106.5			
	WXGA_85	84.88	71.554	122.5			
	WXGA_120 (Reduce Blanking)	119.909	101.563	146.25	◎		
1280 x 1024	SXGA_60	60.02	63.981	108		◎	◎
	SXGA_75	75.025	79.976	135			
	SXGA_85	85.024	91.146	157.5			
1280 x 960	1280 x 960_60	60	60	108		◎	◎
	1280 x 960_85	85.002	85.938	148.5			
1360 x 768	1360 x 768_60	60.015	47.712	85.5		◎	◎
1440 x 900	WXGA+_60	59.887	55.935	106.5		◎	◎
1400X1050	SXGA+_60	59.978	65.317	121.75		◎	◎
1600x1200	UXGA	60	75	162		◎	
1680x1050	1680x1050_60	59.954	65.29	146.25		◎	◎
640x480 @67Hz	MAC13	66.667	35	30.24			
832x624 @75Hz	MAC16	74.546	49.722	57.28			
1024x768 @75Hz	MAC19	75.02	60.241	80			

Resolution	Mode	Refresh rate (Hz)	H-frequency (kHz)	Clock (MHz)	3D Frame Sequential	3D over-under	3D side-by-side
1152x870 @75Hz	MAC21	75.06	68.68	100			
1920x1080 @60HZ	1920X1080_60 (Reduce Blanking)	60	67.5	148.5	◎	◎	◎
1920x1200 @60HZ	1920X1200_60 (Reduce Blanking)	59.95	74.038	154	◎	◎	◎
"1920x1080 @120Hz"	1920X1080_120	120	135	297	◎		
"1920x1200 @120Hz"	1920X1200_120 (Reduce Blanking)	119.909	152.404	317	◎		
3840x2160	3840X2160_30 (Reduce Blanking)	29.97	65.66	257.404			
3840x2160	3840X2160_60 (Reduce Blanking)	59.94	133.187	522.092			
3840x2160	3840X2160_30	30	67.5	297			
3840x2160	3840X2160_60	60	135	594			

Support PC timing for PC input

Resolution	Mode	Refresh rate (Hz)	H-frequency (kHz)	Clock (MHz)	3D Frame Sequential	3D over-under	3D side-by-side
720 x 400	720x400_70	70.087	31.469	28.3221			
640 x 480	VGA_60	59.94	31.469	25.175	◎	◎	◎
	VGA_72	72.809	37.861	31.5			
	VGA_75	75	37.5	31.5			
	VGA_85	85.008	43.269	36			
800 x 600	SVGA_56	56.25	35.156	36			
	SVGA_60	60.317	37.879	40	◎	◎	◎
	SVGA_72	72.188	48.077	50			
	SVGA_75	75	46.875	49.5			
	SVGA_85	85.061	53.674	56.25			
	SVGA_120 (Reduce Blanking)	119.854	77.425	83	◎		
1024 x 768	XGA_60	60.004	48.363	65	◎	◎	◎
	XGA_70	70.069	56.476	75			
	XGA_75	75.029	60.023	78.75			
	XGA_85	84.997	68.667	94.5			
	XGA_120 (Reduce Blanking)	119.989	97.551	115.5	◎		
1152 x 864	1152 x 864_75	75	67.5	108			

Resolution	Mode	Refresh rate (Hz)	H-frequency (kHz)	Clock (MHz)	3D Frame Sequential	3D over-under	3D side-by-side
1024 x 576	BenQ NB Timing	60	35.82	46.966			
1024 x 600	BenQ NB Timing	64.995	41.467	51.419			
1280x720	1280 x 720_60	60	45	74.25	◎	◎	◎
1280 x 768	1280 x 768_60	59.87	47.776	79.5	◎	◎	◎
1280 x 800	WXGA_60	59.81	49.702	83.5	◎	◎	◎
	WXGA_75	74.934	62.795	106.5			
	WXGA_85	84.88	71.554	122.5			
	WXGA_120	119.909	101.563	146.25	◎		
1280 x 1024	SXGA_60	60.02	63.981	108		◎	◎
	SXGA_75	75.025	79.976	135			
	SXGA_85	85.024	91.146	157.5			
1280 x 960	1280 x 960_60	60	60	108		◎	◎
	1280 x 960_85	85.002	85.938	148.5			
1360 x 768	1360 x 768_60	60.015	47.712	85.5		◎	◎
1440 x 900	WXGA+_60	59.887	55.935	106.5		◎	◎
1400X1050	SXGA+_60	59.978	65.317	121.75		◎	◎
1600x1200	UXGA	60	75	162		◎	◎
1680 x 1050	1680x1050_60	59.954	65.29	146.25		◎	◎
640x480 @67Hz	MAC13	66.667	35	30.24			
832x624 @75Hz	MAC16	74.546	49.722	57.28			
1024x768 @75Hz	MAC19	74.93	60.241	80			
1152x870 @75Hz	MAC21	75.06	68.68	100			
1920x1080 @60HZ	1920X1080_60	60	67.5	148.5	◎	◎	◎
1920x1200 @60HZ	1920X1200_60	59.95	74.038	154	◎	◎	◎

📝 Note:

- There timing showing depend the EDID file and VGA graphic card limitation. It is possible that user cannot choose the above timings on VGA display card.

True 3D Video Compatibility table

Input Resolutions	HDMI 1.4a 3D Input	Input timing		
		1280 X 720P @ 50Hz	Top - and - Bottom	
		1280 X 720P @ 60Hz	Top - and - Bottom	
		1280 X 720P @ 50Hz	Frame packing	
		1280 X 720P @ 60Hz	Frame packing	
		1920 X 1080i @50 Hz	Side- by-Side (Half)	
		1920 X 1080i @60 Hz	Side- by-Side (Half)	
		1920 X 1080P @24 Hz	Top - and – Bottom	
		1920 X 1080P @24 Hz	Frame packing	
	HDMI 1.3	1920 x 1080i @ 50Hz	Side-by-Side(Half)	SBS mode is on
		1920 x1080i @ 60Hz		
		1280 x 720P @50Hz		
		1280 x 720P @60Hz		
		1920 x 1080i @ 50Hz	Top-and-Bottom	TAB mode is on
		1920 x1080i @ 60Hz		
		1280 x 720P @50Hz		
		1280 x 720P @60Hz		
		480i	HQFS	3D format is Frame sequential

*When testing 3D, please confirm that the glasses must support up to 144Hz

Support HDMI-1 / HDMI-2 timing for HDBaseT input

Timing Name	VHz	RGB						YCbCr420			YCbCr422			YCbCr444		
		Limit range			Full range			Limit range								
		8 Bit	10 Bit	12 Bit	8 Bit	10 Bit	12 Bit	8 Bit	10 Bit	12 Bit	8 Bit	10 Bit	12 Bit	8 Bit	10 Bit	12 Bit
3840p	23.98	◎			◎						◎	◎	◎	◎		
3840p	24	◎			◎						◎	◎	◎	◎		
3840p	25	◎			◎						◎	◎	◎	◎		
3840p	29.97	◎			◎						◎	◎	◎	◎		
3840p	30	◎			◎						◎	◎	◎	◎		
3840p	50							◎								
3840p	59.9							◎								
3840p	60							◎								

RS232 command control

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	COMPUTER 2/YPbPr2	<CR>*sour=RGB2#<CR>
	Write	DVI-D	<CR>*sour=dvid#<CR>
	Write	HDMI (MHL)	<CR>*sour=hdmi#<CR>
	Write	HDMI 2 (MHL2)	<CR>*sour=hdmi2#<CR>
	Write	Composite	<CR>*sour=vid#<CR>
	Write	HDBaseT	<CR>*sour=hdbaset#<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>
Audio Source Select	Write	Audio pass Through off	<CR>*audiosour=off#<CR>
	Write	Audio-Computer1	<CR>*audiosour=RGB#<CR>
	Write	Audio-Video/S-Video	<CR>*audiosour=vid#<CR>
	Write	Audio-HDMI	<CR>*audiosour=hdmi#<CR>
	Write	Audio-HDMI2	<CR>*audiosour=hdmi2#<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	Simulator	<CR>*appmod=simulator#<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>
	Write	Video	<CR>*appmod=video<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=5#<CR>
	Read	Contrast value	<CR>*con=?#<CR>
	Write	Brightness +	<CR>*bri=+#<CR>
	Write	Brightness -	<CR>*bri=-#<CR>
	Write	Set Brightness value	<CR>*bri=5#<CR>
	Read	Brightness value	<CR>*bri=?#<CR>
	Write	Color +	<CR>*color=+#<CR>
	Write	Color -	<CR>*color=-#<CR>
	Write	Set Color value	<CR>*color=5#<CR>
	Read	Color value	<CR>*color=?#<CR>
	Write	Sharpness +	<CR>*sharp=+#<CR>
	Write	Sharpness -	<CR>*sharp=-#<CR>
	Write	Set Sharpness value	<CR>*sharp=5#<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 2.35:1	<CR>*asp=2.35#<CR>
	Write	Aspect 16:10	<CR>*asp=16:10#<CR>
	Write	Aspect Auto	<CR>*asp=AUTO#<CR>
	Write	Aspect Real	<CR>*asp=REAL#<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>

Function	Type	Operation	ASCII
Picture Setting	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>
	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 on	\<CR>*BC=on#\<CR>
	Write	Brilliant color off	\<CR>*BC=off#\<CR>
	Read	Brilliant color status	\<CR>*BC=?#\<CR>
	Write	Auto(HDR)	\<CR>*hdr=auto#\<CR>
	Write	SDR	\<CR>*hdr=sdr#\<CR>
	Write	HDR10	\<CR>*hdr=hdr#\<CR>
	Write	HLG	\<CR>*hdr=hlg#\<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	Remote Receiver - front+rear	<CR>*rr=fr#<CR>
	Write	Remote Receiver - front	<CR>*rr=f#<CR>
	Write	Remote Receiver - rear	<CR>*rr=r#<CR>
	Read	Remote Receiver Status	<CR>*rr=?#<CR>

Function	Type	Operation	ASCII
Miscellaneous	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>
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>*hdibri=?#<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>

Function	Type	Operation	ASCII
Color Calibration	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>
	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	FAN 8 speed	<CR>*fan8=?#<CR>
	Read	FAN 9 speed	<CR>*fan9=?#<CR>
	Read	FAN 10 speed	<CR>*fan10=?#<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	Temperature 5	<CR>*tmp5=?#<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	Standby		
		1	Power on		
POWR?	Power supply status query	0	Standby		
		1	Power on		
INPT	Input selection	11	YPbPr		
INPT?	Input status query	31	HDMI1		
		32	HDMI2		
		33	DisplayPort		
		34	HDBaseT		
AVMT	Mute	11	Video mute On		
AVMT?	Mute query	10	Video mute Off		
		21	Audio mute On		
		20	Audio mute Off		
		31	Video & Audio mute On		
		30	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 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