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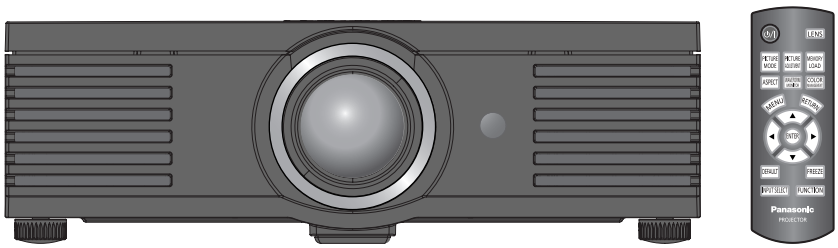
The following projector manual has not been modified or altered in any way.

Panasonic®

# Operating Instructions

## LCD Projector

Model No. **PT-AE3000U**




HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

Before operating this product, please read the instructions carefully and save this manual for future use.

TQBJ0277-1

ENGLISH

# Important Safety Notice

## Dear Panasonic Customer:

The following information should be read and understood as it provides details, which will enable you to operate the projector in a manner which is both safe to you and your environment, and conforms to legal requirements regarding the use of projectors. Before connecting, operating or adjusting this projector, please read these instructions completely and save this booklet with the projector for future reference. We hope it will help you to get the most out of your new product, and that you will be pleased with your Panasonic LCD projector.
The serial number of your product may be found on its bottom. You should note it in the space provided below and retain this booklet in case service is required.

Model number: **PT-AE3000U**

Serial number:

**WARNING:** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DONOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

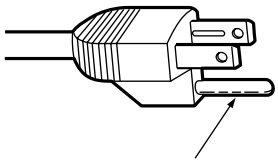
**Power Supply:** This LCD Projector is designed to operate on 100 V - 240 V, 50 Hz/60 Hz AC, house current only.

**CAUTION:** The AC power cord which is supplied with the projector as an accessory can only be used for power supplies up to 125 V, 7 A. If you need to use higher voltages or currents than this, you will need to obtain a separate 250 V power cord. If you use the accessory cord in such situations, fire may result.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

**CAUTION:** This equipment is equipped with a three-pin grounding-type power plug. Do not remove the grounding pin on the power plug. This plug will only fit a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician. Do not defeat the purpose of the grounding plug.




**NOTICE:** This product has a High Intensity Discharge (HID) lamp that contains mercury. Disposal may be regulated in your community due to environmental considerations. For disposal or recycling information, please contact your local authorities, or the Electronic Industries Alliance: http://www.eiae.org

**WARNING:**
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC CAUTION:** To assure continued compliance, use only shielded interface cables when connecting to computers or peripheral devices. Any unauthorized changes or modifications to this equipment will void the users authority to operate.

Pursuant to at the directive 2004/108/EC, article 9(2)
Panasonic Testing Center
Panasonic Service Europe, a division of Panasonic Marketing Europe GmbH
Winsbergring 15, 22525 Hamburg, F.R. Germany

**WARNING:** Not for use in a computer room as defined in the Standard for the Protection of Electronic Computer/Data Processing Equipment, ANSI/NFPA 75.

**Declaration of Conformity**

| | |
|---|---|
| Model Number: | PT-AE3000U |
| Trade Name: | **Panasonic** |
| Responsible party: | Panasonic Corporation of North America |
| Address: | One Panasonic Way, Secaucus, New Jersey 07094 |
| Telephone number: | (888) 411 - 1996 |

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.

## Information on Disposal in other Countries outside the European Union

These symbols are only valid in the European Union.
If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

EU

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**1. Set up your projector**
See “Setting up” on page 14.

**2. Connect with other devices**
See “Connections” on page 18.

**3. Prepare the remote control**
See “Remote control” on page 11.

**4. Start projecting**
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**5. Adjust the image**
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# Precautions with regard to safety

## WARNINGS

**If you notice smoke, strange smells or noise coming from the projector, disconnect the power plug from the wall outlet.**
- Do not continue to use the projector in such cases, otherwise fire or electric shocks could result.
- Check that no more smoke is coming out, and then contact an Authorized Service Center for repairs.
- Do not attempt to repair the projector yourself, as this can be dangerous.

**Do not install this projector in a place which is not strong enough to take the full weight of the projector.**
- If the installation location is not strong enough, it may fall down or tip over, and severe injury or damage could result.

**Installation work (such as ceiling suspension) should only be carried out by a qualified technician.**
- If installation is not carried out correctly, there is the danger that injury or electric shocks may occur.
- Do not use other than an authorized ceiling mount bracket.

**If foreign objects or water get inside the projector, or if the projector is dropped or the cabinet is broken, disconnect the power plug from the wall outlet.**
- Continued use of the projector in this condition may result in fire or electric shocks.
- Contact an Authorized Service Center for repairs.

**The wall outlet shall be installed near the equipment and shall be easily accessible.**
- Unplug the power plug from the wall outlet immediately when problem occurred.

**Do not overload the wall outlet.**
- If the power supply is overloaded (for example, by using too many adapters), overheating may occur and fire may result.

**Never attempt to modify or disassemble the projector.**
- High voltages can cause fire or electric shocks.
- For any inspection, adjustment and repair work, please contact an Authorized Service Center.

**Clean the power plug regularly to prevent it from becoming covered in dust.**
- If dust builds up on the power plug, the resulting humidity can damage the insulation, which could result in fire. Pull the power plug out from the wall outlet and wipe it with a dry cloth.
- If not using the projector for an extended period of time, pull the power plug out from the wall outlet.

**Do not handle the power plug with wet hands.**
- Failure to observe this may result in electric shocks.

**Insert the power plug securely into the wall outlet.**
- If the plug is not inserted correctly, electric shocks or overheating could result.
- Do not use damaged plugs or loose wall outlet.

**Do not place the projector on top of surfaces which are unstable.**
- If the projector is placed on top of a surface which is sloped or unstable, it may fall down or tip over, and injury or damage could result.

**Do not place the projector into water or let it become wet.**
- Failure to observe this may result in fire or electric shocks.

**Do not do anything that might damage the power cord or the power plug.**
- Do not damage the power cord, make any modifications to it, place it near any hot objects, bend it excessively, twist it, pull it, place heavy objects on top of it or wrap it into a bundle.
- If the power cord is used while damaged, electric shocks, short-circuits or fire may result.
- Ask an Authorized Service Center to carry out any repairs to the power cord that might be necessary.

**Do not place the projector on soft materials such as carpets or sponge mats.**
- Doing so may cause the projector to overheat, which can cause burns, fire or damage to the projector.

**Do not place liquid containers on top of the projector.**
- If water spills onto the projector or gets inside it, fire or electric shocks could result.
- If any water gets inside the projector, contact an Authorized Service Center.

**Do not insert any foreign objects into the projector.**
- Do not insert any metal objects or flammable objects into the projector or drop them onto the projector, as doing so can result in fire or electric shocks.

**Do not allow the + and - terminals of the batteries to come into contact with metallic objects such as necklaces or hairpins.**
- Failure to observe this may cause the batteries to leak, overheat, explode or catch fire.
- Store the batteries in a plastic bag and keep them away from metallic objects.

**Do not touch the leaked liquid from the batteries.**
- If you touch the leaked liquid, it may hurt your skin. Immediately wash away the liquid with water and seek medical advice.
- If you get the leaked liquid in your eye, it may cause blindness or damage. Never rub your eye, and immediately wash away the liquid with water and seek medical advice.

**During a thunderstorm, do not touch the projector or the cable.**
- Electric shocks can result.

**Do not use the projector in a bath or shower.**
- Fire or electric shocks can result.

**Do not place your skin into the light beam while the projector is being used.**
- Strong light is emitted from the projector's lens. If you place directly into this light, it can hurt or damage your skin.

**Do not look into the lens while the projector is being used.**
- Strong light is emitted from the projector's lens. If you look directly into this light, it can hurt and damage your eyes.
- Be especially careful not to let young children look into the lens. In addition, turn off the power and disconnect the power plug when you are away from the projector.

**Do not place your hands or other objects close to the air exhaust port.**
- Heated air comes out of the air exhaust port. Do not place your hands or face, or objects which cannot withstand heat close to this port [allow at least 50 cm (20") of space], otherwise burns or damage could result.

**Replacement of the lamp is recommended to be carried out by a qualified technician.**
- The lamp has high internal pressure. If improperly handled, explosion might result.
- The lamp can easily become damaged if struck against hard objects or dropped, and injury or malfunctions may result.

**When replacing the lamp, allow it to cool for at least one hour before handling it.**
- The lamp cover gets very hot, and touching it can cause burns.

**Before replacing the lamp, be sure to disconnect the power plug from the wall outlet.**
- Electric shocks or explosions can result if this is not done.

**Do not allow infants or pets to touch the remote control unit.**
- Keep the remote control unit out of the reach of infants and pets after using it.

## CAUTIONS

**Do not cover the air intake port or the air exhaust port.**
- Doing so may cause the projector to overheat, which can cause fire or damage to the projector.
- Do not place the projector in narrow, badly ventilated places such as closets or bookshelves.
- Do not place the projector on cloth or papers, as these materials could be drawn into the air intake port.

**Do not set up the projector in humid or dusty places or in places where the projector may come into contact with oily smoke or steam.**
- Using the projector under such conditions may result in fire, electric shocks or plastic deterioration. The plastic deterioration may cause the falling down of the projector which is mounted on the ceiling.

**Do not set up the projector in a high temperature environment, such as near a heater or in direct sunlight.**
- Failure to observe this may result in fire, malfunction or plastic deterioration.

**Do not set up the projector outdoors.**
- The projector is designed for indoor use only.

**When disconnecting the power cord, hold the plug, not the cord.**
- If the power cord itself is pulled, the cord will become damaged, and fire, short-circuits or serious electric shocks may result.

**Always disconnect all cables before moving the projector.**
- Moving the projector with cables still attached can damage the cables, which could cause fire or electric shocks to occur.

**Do not place any heavy objects on top of the projector.**
- Failure to observe this may cause the projector to become unbalanced and fall, which could result in damage or injury.

## Precautions with regard to safety

**Do not short-circuit, heat or disassemble the batteries or place them into water or fire.**
- Failure to observe this may cause the batteries to overheat, leak, explode or catch fire, and burns or other injury may result.

**When inserting the batteries, make sure the polarities (+ and -) are correct.**
- If the batteries are inserted incorrectly, they may explode or leak, and fire, injury or contamination of the battery compartment and surrounding area may result.

**Use only the specified batteries.**
- If incorrect or different kinds of batteries are used, they may explode or leak, and fire, injury or contamination of the battery compartment and surrounding area may result.

**Do not mix old and new batteries.**
- If the batteries are used mixing old and new, they may explode or leak, and fire, injury or contamination of the battery compartment and surrounding area may result.

**Remove the used batteries from the remote control promptly.**
- If you leave used batteries in the remote control for an extended period of time, it may cause liquid leaking, abnormal internal temperature rising or explosion.

**If not using the projector for an extended period of time, disconnect the power plug from the wall outlet and remove the batteries from the remote control.**
- If dust builds up on the power plug, the resulting humidity may damage the insulation, which could result in fire.
- Keeping or leaving the remote control with batteries inside may cause insulation deterioration, electrical leakage or explosion which could result in fire.

**Do not put your weight on this projector.**
- You could fall or the projector could break, and injury may result.
- Be especially careful not to let young children stand or sit on the projector.

**Disconnect the power plug from the wall outlet as a safety precaution before carrying out any cleaning.**
- Electric shocks can result if this is not done.

**If the lamp has broken, ventilate the room immediately. Do not touch or bring your face close to the broken pieces.**
- Failure to observe this may cause the user to absorb the gas which was released when the lamp broke and which contains nearly the same amount of mercury as fluorescent lamps, and the broken pieces may cause injury.
- If you believe that you have absorbed the gas or that the gas has got into your eyes or mouth, seek medical advice immediately.
- Ask your dealer about the replacement of the lamp unit and check the inside of the projector.

**Ask an Authorized Service Center to clean inside the projector at least once a year.**
- If dust is left to build up inside the projector without being cleaned out, it can result in fire or problems with operation.
- It is a good idea to clean the inside of the projector before the season for humid weather arrives. Ask your nearest Authorized Service Center to clean the projector when required. Please discuss with the Authorized Service Center regarding cleaning costs.

**We are constantly making efforts to preserve and maintain a clean environment. Please take non repairable units back to your dealer or a recycling company.**

## Cautions when transporting

**Do not subject the projector to excessive vibration or shocks.**
- The projector lens needs to be handled with care.
- Cover the lens with the lens cover when transporting the projector.

**When transporting the projector, hold the body at the bottom securely.**
- Do not hold the front leg adjusters or the top cover to move the projector, as this may damage the projector.

## Cautions when installing

**Avoid setting up in places which are subject to vibration or shocks.**
- The internal parts can be damaged, which may cause malfunctions or accidents.

**Avoid setting up in places which are subject to sudden temperature changes, such as near an air conditioner or lighting equipment.**
- The life of the lamp may be shortened or the projector may be turned off. See “TEMP indicator” on page 45.

**Do not set up the projector near high-voltage power lines or near motors.**
- The projector may be subject to electromagnetic interference.

**If installing the projector to the ceiling, ask a qualified technician or an Authorized Service Center to carry out all installation work.**
- You will need to purchase the separate installation kit (Model No. ET-PKE2000, ET-PKE1000S). Furthermore, all installation work should only be carried out by a qualified technician.
- See “Ceiling mount bracket safeguards” on page 56 for the safety cable installation.

**If using this projector at high elevations 1 400 - 2 700 m (4 593 - 8 858 ft) sea level, set the HIGH ALTITUDE MODE to ON. See “HIGH ALTITUDE MODE” on page 44.**
- Failure to observe this may result in malfunctions or the life of the lamp or the other components may be shortened.

## Cautions on use

**In order to get the best picture quality**
- Draw curtains or blinds over any windows and turn off any lights near the screen to prevent outside light or light from indoor lamps from shining onto the screen.

**Do not touch the surfaces of the lens with your bare hands.**
- If the surface of the lens becomes dirty from fingerprints or anything else, this will be magnified and projected onto the screen. Moreover, when not using the projector, attach the lens cover.

**Liquid crystal panel**
- Do not project the same image for long periods of time, as this may remain as an afterimage on the liquid crystal panel. Display the white screen test pattern for more than an hour to remove it. See “ZOOM/FOCUS” on page 40.
- The liquid crystal panel of the projector is built with very high precision technology to provide fine picture details. Occasionally, a few stuck pixels may appear on the screen as fixed points of blue, green or red. It is recommended to switch off the projector once and try after 1 hour later again. Please note that this does not affect the performance of your LCD.

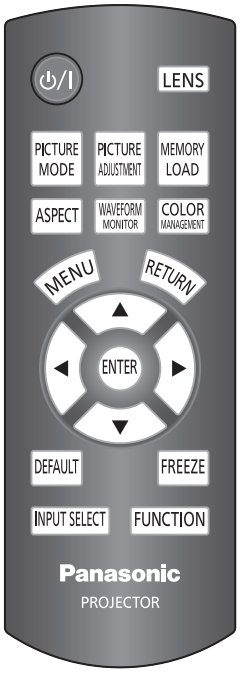
**The projector has a high pressure mercury lamp and that is characterized as follows.**
- The brightness of the lamp depends on the duration of use.
- The lamp may explode or shorten the lamp life by shocks or chipping damage.
- The lamp may explode only occasionally after using the projector.
- The lamp may explode if using the projector after the instructed lamp replacement timing.
- When the lamp exploded, it emits the internal smoke-like gas.
- The lamp life depends on individual lamp characteristics, usage condition and the installation environment. Especially the consecutive use of the projector for more than 10 hours, or the frequent switching on or off may greatly affect on the lamp life.

**Optical components**
- If you use the projector consecutively 6 hours every day, the optical components may need to be replaced in less than 1 year.

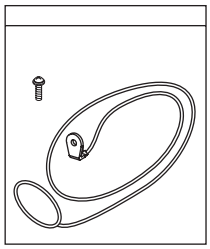
## Accessories

Make sure the following accessories are provided with your projector.

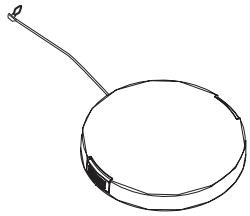
**Remote control** for
PT-AE3000U (x1)
N2QAYB000316



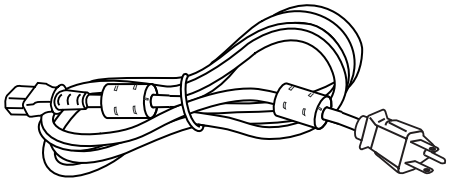

**Safety cable**
TTRA0141
Attachment screw (x1)
Safety cable (x1)



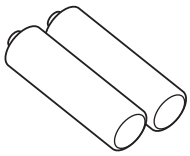
**Lens cover** (x1)
TXFKK01VKF5
(Attached to the projector by default.)



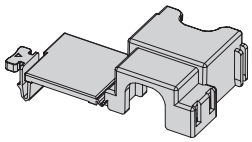
**Power cord** (x1)
K2CG3FH00017
3 m (9'10")



**AA batteries** for remote control (x2)



**Power cord secure lock** (x1)
TTRA0184



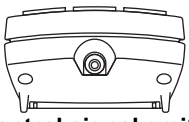
* The protectors for enclosed products, such as a plug cover or foam cartons, must be treated properly.

* Contact to an Authorized Service Center for lost accessories.

# About Your Projector

## Remote control

Power button
While the **MAIN POWER** button is on, switch between standby mode and projection mode. (page 21)



**Remote control signal emitter**
Emit remote control signal. (page 23)

**Button backlight**
When any button is pressed, the button backlight is lit. Without any operation, it gets darker after 5 seconds and goes off after next 5 seconds.

Display the **PICTURE** menu or **ADVANCED MENU**. (page 23) — PICTURE ADJUSTMENT

Switch to cycle through the **PICTURE MODE**. (page 23) — PICTURE MODE

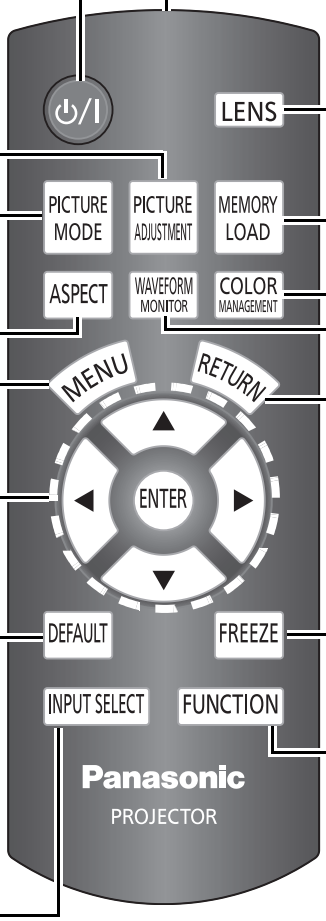
Switch to cycle through the aspect ratio. (page 24) — ASPECT

Display the main menu or return to the previous menu. (page 29) — MENU

Navigate through the menus with ▲▼◀▶, and activate the menu item with the **ENTER** button. (page 29) — ENTER

Reset some of the settings to the factory default. (page 28) — DEFAULT

Switch to cycle through the input method. (page 28) — INPUT SELECT




LENS — Display the **LENS CONTROL** menu. (page 23)

MEMORY LOAD — Display the **MEMORY LOAD** menu. (page 24)

COLOR MANAGEMENT — Display the **COLOR MANAGEMENT** menu. (page 26)

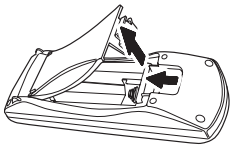
WAVEFORM MONITOR — Display the input waveform. (page 24)

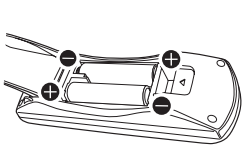
RETURN — Return to the previous menu. (page 29)

FREEZE — Capture the projected image as a still image. (page 28)

FUNCTION — Activate the assigned function from the menu options for shortcut. (page 42)

**Battery compartment**
1. Press the tab and lift up the cover.
2. Insert the batteries according to the polarity diagram indicated inside.

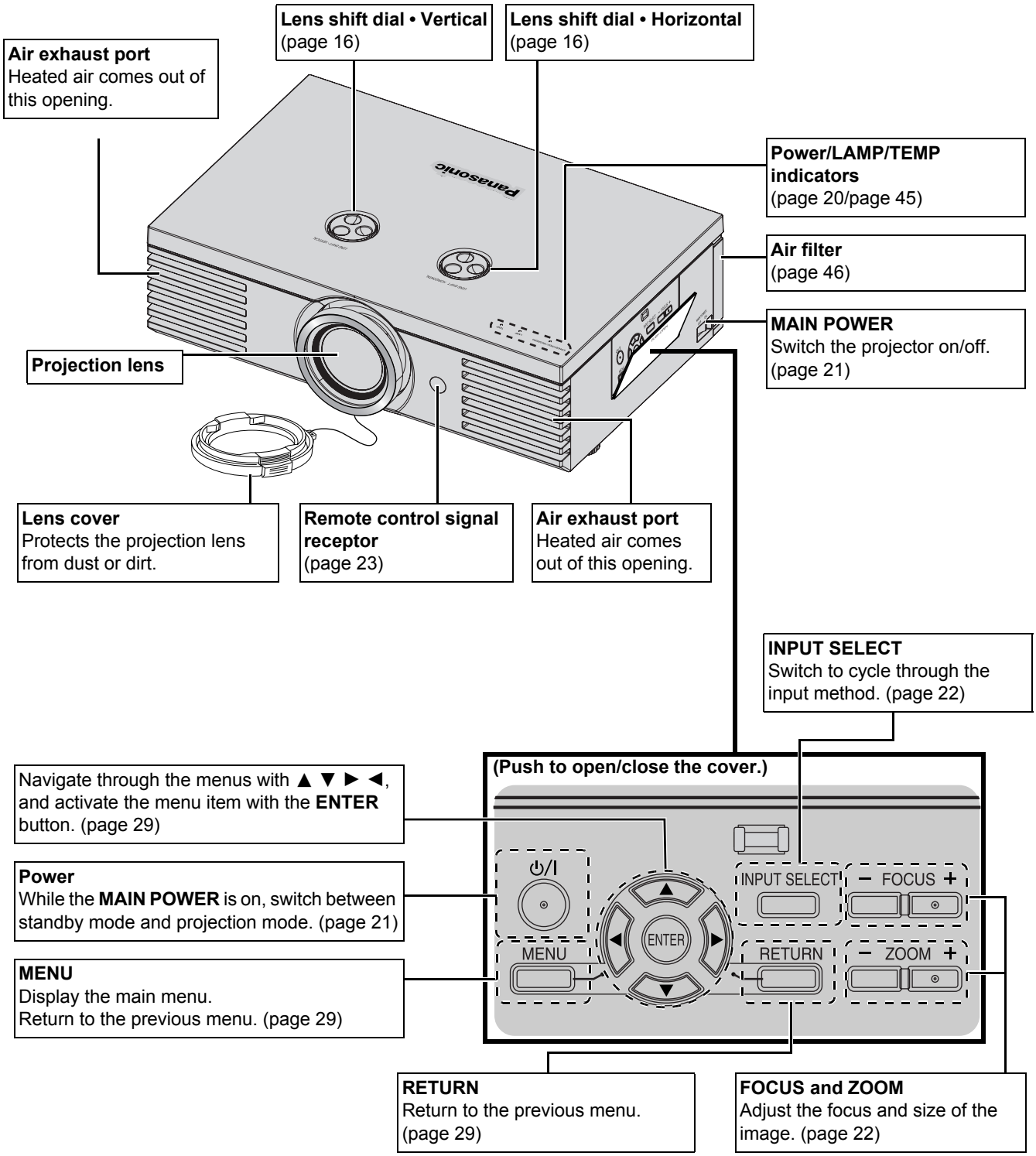




**NOTE:**
- Do not drop the remote control.
- Avoid contact with liquids or moisture.
- Use manganese batteries or alkaline batteries with the remote control.
- Do not attempt to modify or disassemble the remote control. Contact an Authorized Service Center for repairs.
- Do not keep pressing the remote control buttons as this may shorten battery life.
- See “Remote control operation” on page 23.

# Projector body

## Top and front view




**NOTE:**

- Do not cover the ventilation openings or place anything within 50 cm (20") of them as this may cause damage or injury.
- While the projector is not in use, keep the lens cover attached to protect the lens.

## Back and bottom view

**Air intake port**

**Security lock**
Attach the commercial shackle lock which is provided with the projector. Compatible with the Kensington MicroSaver Security System.

**Top cover**
Hold the top cover at the back corner and slightly push up to open. (page 47)

**Air intake port**

**AC IN**
Connect the power cord to supply electronic power to the projector. (page 19)

**Safety cable attachment point**
Attach the safety cable when mounted on the ceiling. (page 56)

**Front leg adjusters**
Screw up/down to adjust the projection angle. (page 15)

**Front leg adjusters**
Screw up/down to adjust the projection angle. (page 15)

**Lens cover attachment hole**

**COMPUTER IN**
Connect an RGB signal cable from your PC.

**COMPONENT IN**
Connect YPBPR signal cables.

**S-VIDEO IN**
Connect a S-VIDEO signal cable.

**VIDEO IN**
Connect an RCA composite video cable.

**Connecting terminals (page 18)**

**HDMI IN**
Connect HDMI signal cables.

**SERIAL**
Connect a compatible cable for controlling the projector remotely via your computer. (page 51)

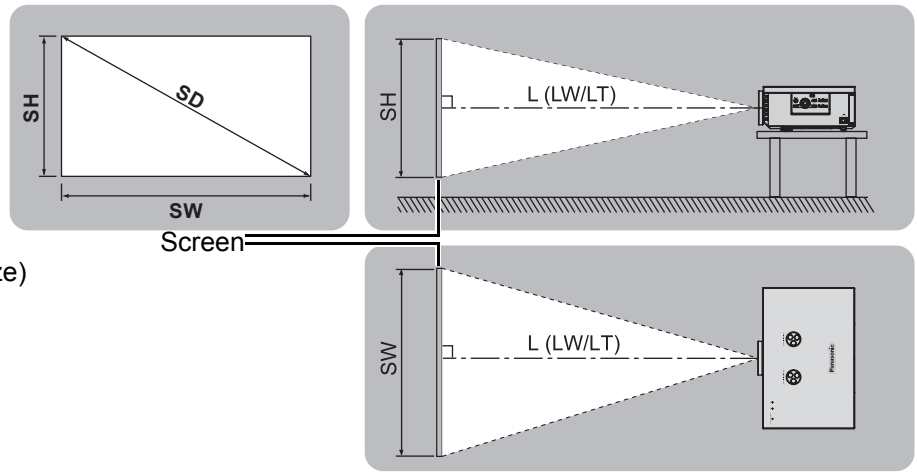
**NOTE:**

- Do not cover the ventilation openings or place anything within 50 cm (20") of them as this may cause damage or injury.
- The projector should only be used with the attached power cord to ensure optimum performance and avoid damage to the projector.
- Do not open the top cover other than replacing the lamp unit.

# Setting up

## Screen size and throw distance

You can adjust the projection size with 2.0x zoom lens. Calculate and define the throw distance as follows.




All measurements and the calculation results bellow are approximate and may differ from the actual measurements.

| | Throw distance (16 : 9) | | Throw distance (2.35 : 1) | |
|---|---|---|---|---|
| Screen Diagonal (SD) | Minimum distance (LW) | Maximum distance (LT) | Minimum distance (LW) | Maximum distance (LT) |
| 1.02 m (40") | 1.2 m (3'11") | 2.3 m (7'6") | 1.3 m (4'3") | |
| 1.27 m (50") | 1.5 m (4'11") | 2.9 m (9'6") | 1.6 m (5'2") | 2.3 m (7'6") |
| 1.52 m (60") | 1.8 m (5'10") | 3.5 m (11'5") | 1.9 m (6'2") | 2.8 m (9'2") |
| 1.78 m (70") | 2.1 m (6'10") | 4.1 m (13'5") | 2.2 m (7'2") | 3.3 m (10'9") |
| 2.03 m (80") | 2.4 m (7'10") | 4.7 m (15'5") | 2.6 m (8'6") | 3.8 m (12'5") |
| 2.29 m (90") | 2.7 m (8'10") | 5.3 m (17'4") | 2.9 m (9'6") | 4.2 m (13'9") |
| 2.54 m (100") | 3.0 m (9'10") | 5.9 m (19'4") | 3.2 m (10'5") | 4.7 m (15'5") |
| 3.05 m (120") | 3.6 m (11'9") | 7.2 m (23'7") | 3.8 m (12'5") | 5.7 m (18'8") |
| 3.81 m (150") | 4.5 m (14'9") | 9.0 m (29'6") | 4.8 m (15'8") | 7.1 m (23'3") |
| 5.08 m (200") | 6.0 m (19'8") | 12.0 m (39'4") | 6.4 m (20'11") | 9.6 m (31'5") |

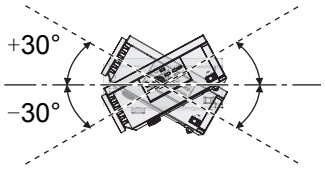
### Calculation methods for screen dimensions

You can calculate more detailed screen dimension from the screen diagonal.

- 16 : 9 size
  Screen width (SW) and screen height (SH)
  SW (m)= SD (m) x 0.872 SH (m) = SD (m) x 0.490
  Minimum distance (LW) and maximum distance (LT)
  LW (m) = SD (m) x 1.189 - 0.04 LT (m) = SD (m) x 2.378 - 0.05
- 2.35 : 1 size
  Screen width (SW) and screen height (SH)
  SW (m)= SD (m) x 0.920 SH (m) = SD (m) x 0.392
  Minimum distance (LW) and maximum distance (LT)
  LW (m) = SD (m) x 1.256 - 0.04 LT (m) = SD (m) x 1.899 - 0.05

**NOTE:**

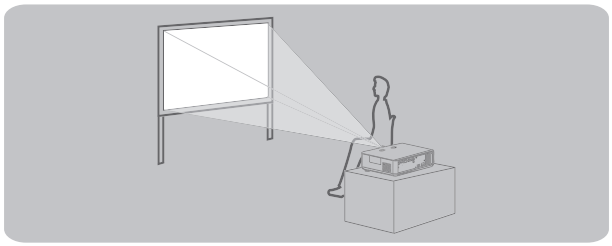
- Do not use the projector at a raised or a horizontally tilted position as it may cause malfunction of the projector.
- Make sure the projector lens surface is parallel with the screen. You can tilt the projector body less than approximately ± 30° vertically. Overtilting may result in shortening the component's life.
- For the best quality of the projection image, install a screen where sun light or room light does not shine directly onto the screen. Close window shades or curtains to block the lights.



# Projection method

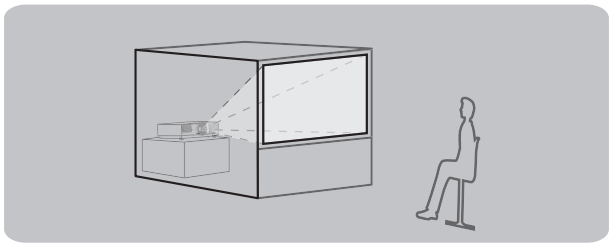
You can use the projector with any of the following 4 projection methods. To set the desired method in the projector, See “INSTALLATION” on page 44.

## Setting on a desk/floor and projecting from front



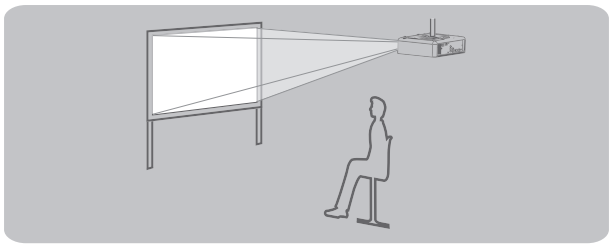
**INSTALLATION**: FRONT/DESK

## Setting on a desk/floor and projecting from rear



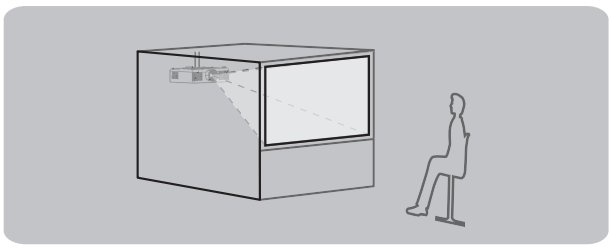
**INSTALLATION**: REAR/DESK

## Mounting on the ceiling and projecting from front



**INSTALLATION**: FRONT/CEILING

## Mounting on the ceiling and projecting from rear

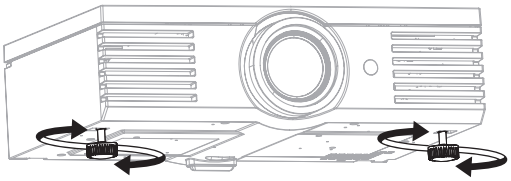


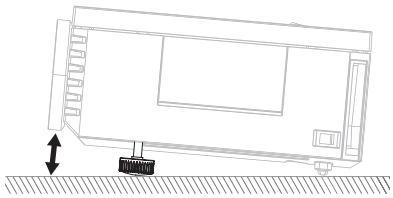
**INSTALLATION**: REAR/CEILING

**NOTE:**
- A translucent screen is required for rear projection.
- When mounting the projector on the ceiling, the optional ceiling mount bracket (ET-PKE2000, ET-PKE1000S) is required.
- See “Ceiling mount bracket safeguards” on page 56.

# Front leg adjusters and throwing angle

You can screw up/down the front leg adjusters to control the angle of the projector for adjusting the throwing angle. See “Positioning the image” on page 22.





**NOTE:**
- Heated air comes out of the air exhaust port. Do not touch the air exhaust port directly.
- If keystone distortion occurs, see “KEYSTONE” on page 39.
- Screw up the front leg adjusters, and an audible click will be heard as the limit.

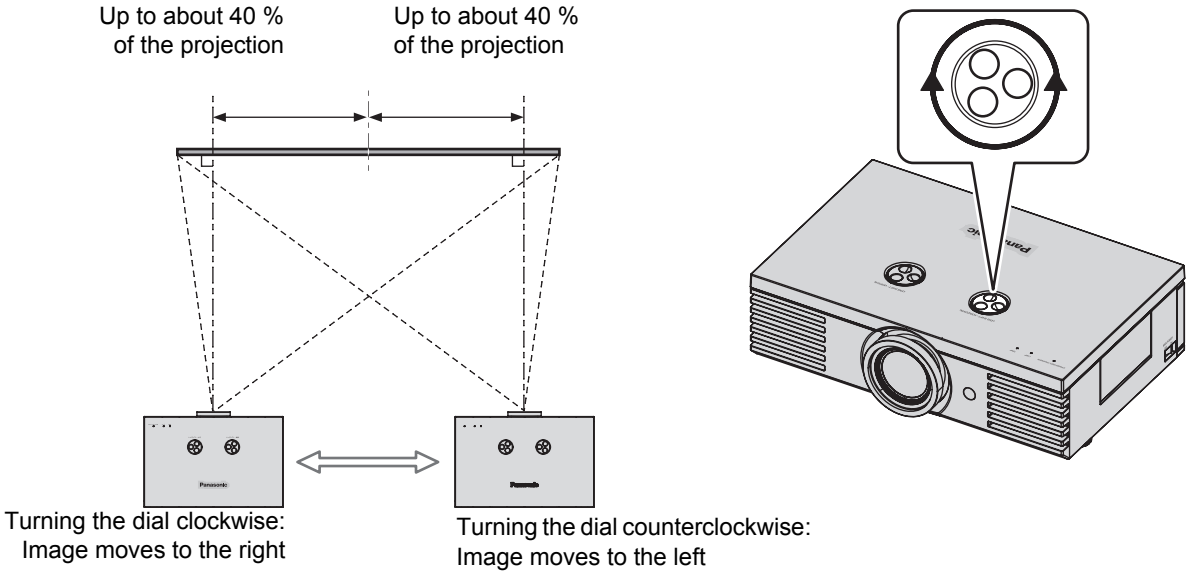
# Lens shift and positioning

If the projector is not positioned right in front of the center of the screen, you can adjust the projected image position by moving the lens shift dials within the shift range of the lens.

## Adjusting the lens shift dials

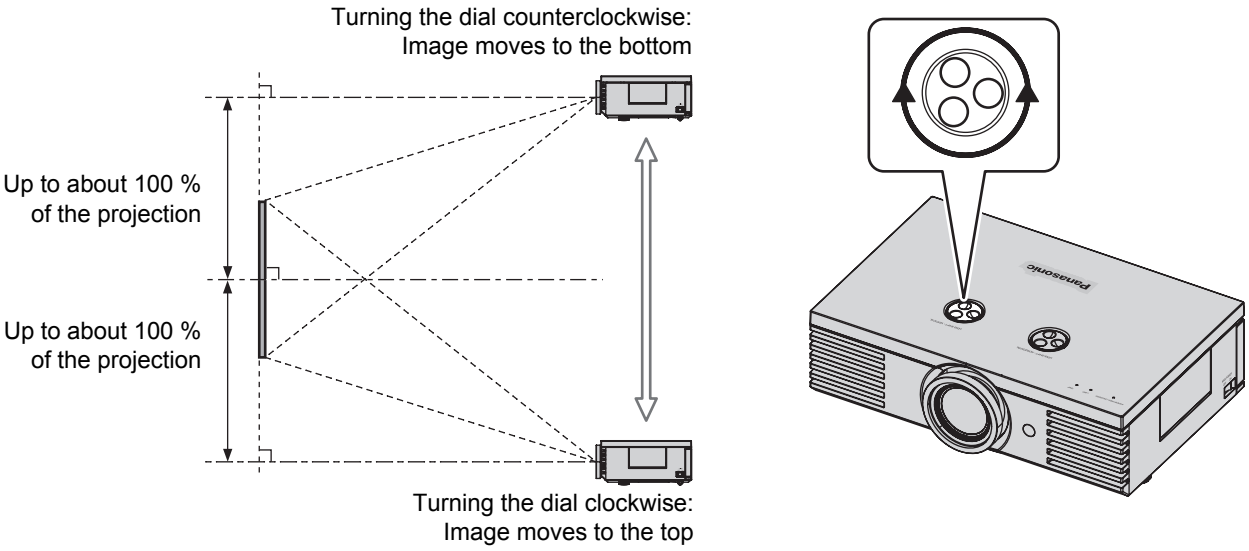
### Horizontal shift

You can place the projector where the projector lens is up to 40% horizontally off-center from the screen and then adjust the image position with the **Lens shift dial • Horizontal**.




### Vertical shift

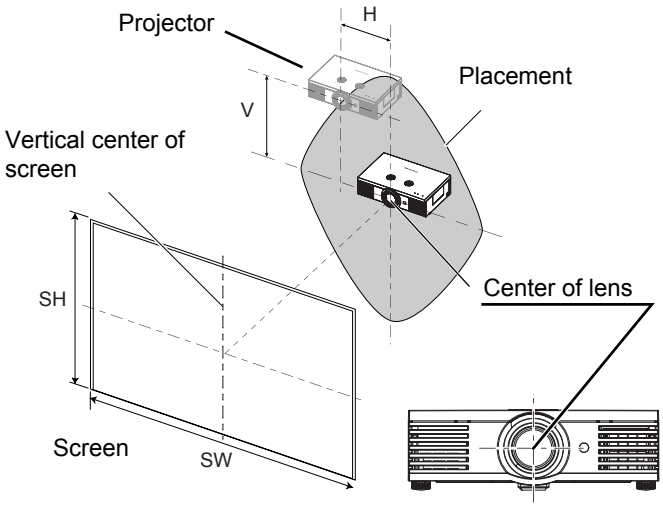
You can place the projector where the projector lens is up to 100% vertically off-center from the screen and then adjust the image position with the **Lens shift dial • Vertical**.



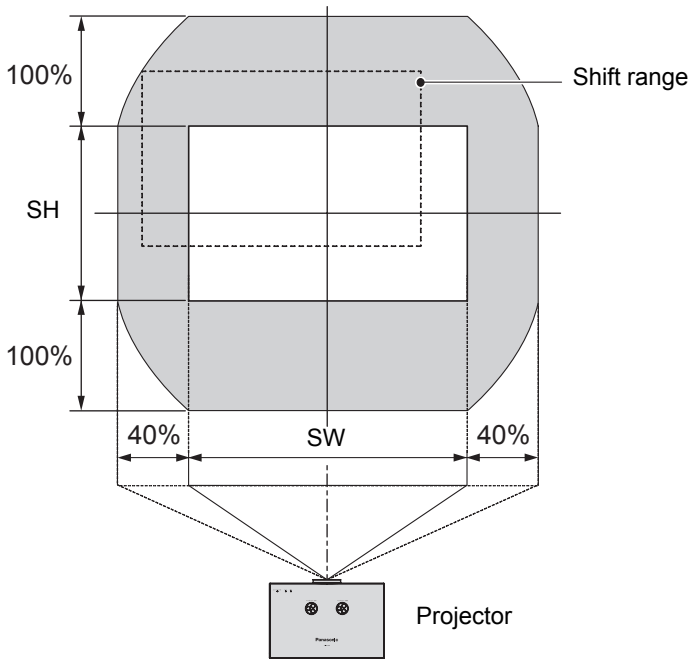
## Projector location range

You can determine where to locate the screen and the projector by considering the lens shift possibilities.

### When the screen position is fixed




### When the projector position is fixed




**NOTE:**

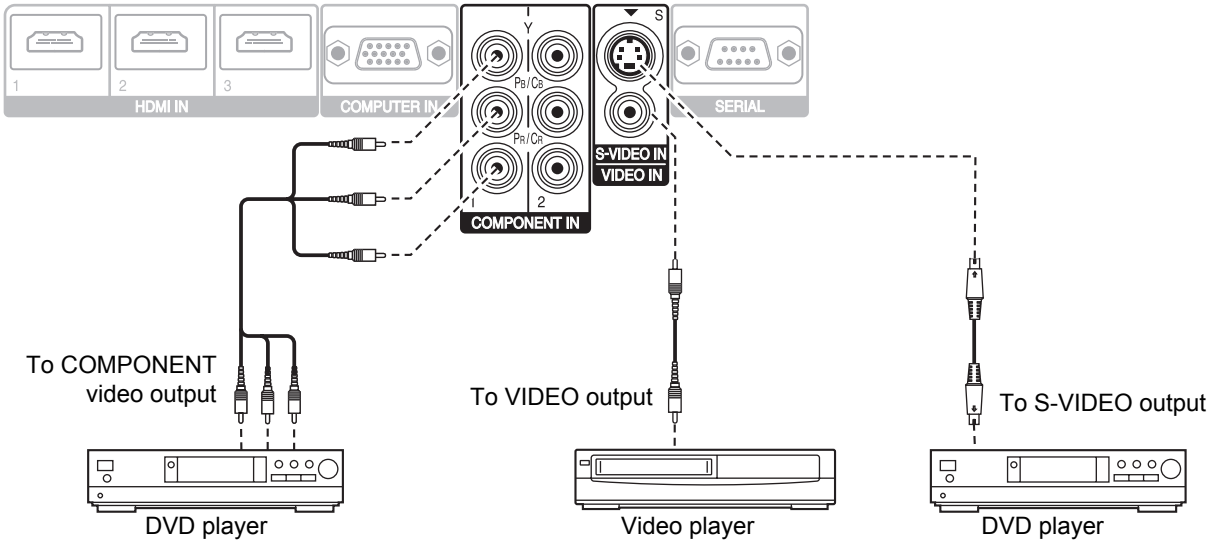
- When the projector is located right in front of the center of the screen and the lens shift dials is centered, you will get the best quality of the projection image.
- When the **Lens shift dial • Vertical** is at the vertical limit of the shift range, you cannot turn the dial to the horizontal limit, likewise when the **Lens shift dial • Horizontal** is at the horizontal limit of the shift range, you cannot turn the dial to the vertical limit.
- When the projector is tilted and adjusting **KEYSTONE**, the center of the screen and the lens need to be realigned.
- Do not force the lens shift dials to turn as this may damage the projector. Turning the dials maximum limit is 4 or 5 times from the default position.

# Connections

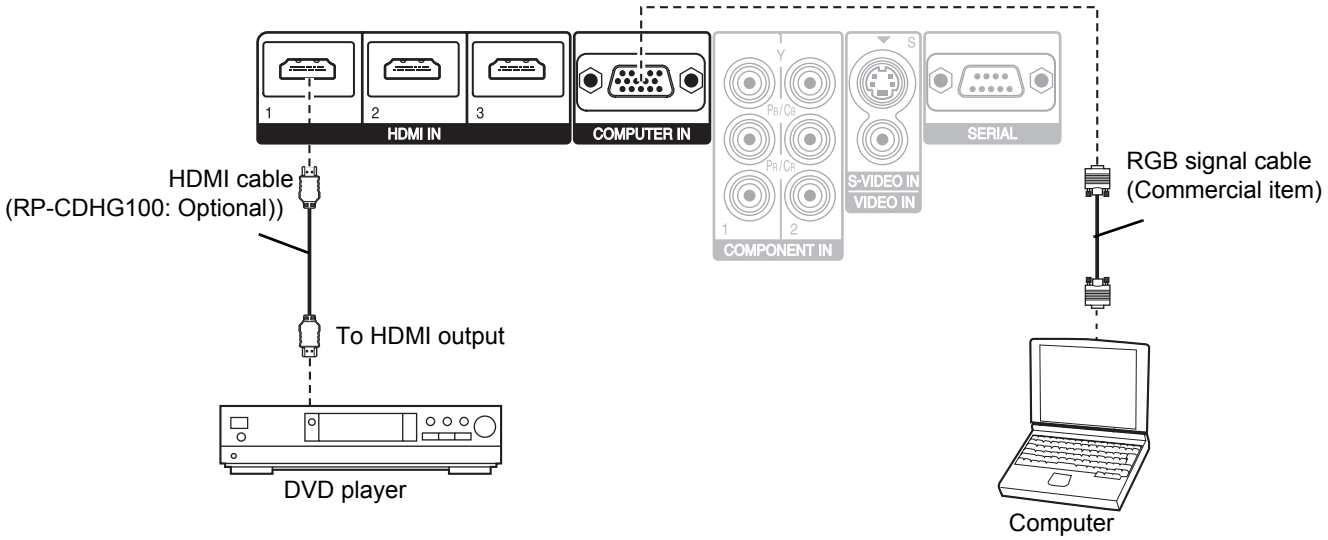
## Before connecting to the projector

- Read and follow the operating and connecting instructions of each peripheral device.
- The peripheral devices must be turned off.
- Use cables that match each peripheral device to be connected.
- Confirm the type of video signals. See “List of compatible signals” on page 50.
- Audio cables must be connected from each peripheral device directly to the audio reproduction system.

## Connecting example: COMPONENT IN/S-VIDEO IN/ VIDEO IN




## Connecting example: HDMI IN/COMPUTER IN




**NOTE:**

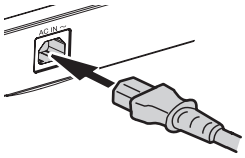
- Make sure the HDMI cable is adapted to your HDMI device for proper performance.
- A compatible cable is required for an HDMI 1 080p signal.
- It is possible to connect with DVI devices via a HDMI/DVI conversion adapter, but some equipment may not project the image properly or other problems could be encountered. See “Serial terminal” on page 51.

# Switching the projector on/off

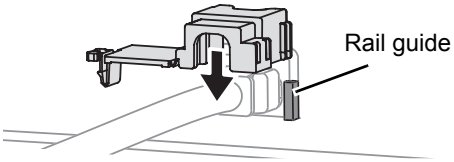
## Power cord

### Connecting

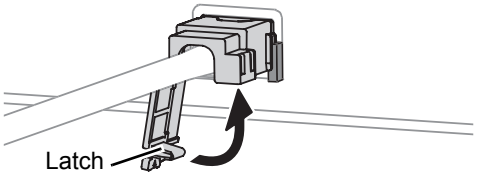
1. Make sure the shape of the power plug and the **AC IN** terminal on the back of the projector match, then push the plug all the way in.




2. Align the side of the power cord secure lock with the side guide rail of the **AC IN** terminal of the projector and slide it in.



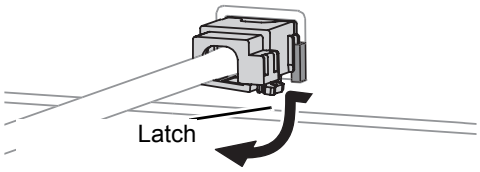

3. Place the latch to the latch catcher and press until it clicks.



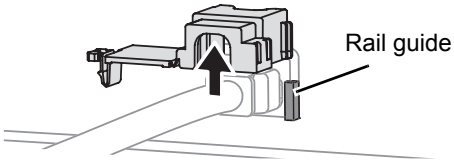

4. Connect the power cord to a wall outlet.

### Disconnecting

1. Unplug the power cord from the wall outlet.
2. Depress the latch and slide the cover off.




3. Slide the power cord secure lock up along the side guide rail and remove.




4. Hold the plug and unplug the power cord from the **AC IN** terminal on the back of the projector.

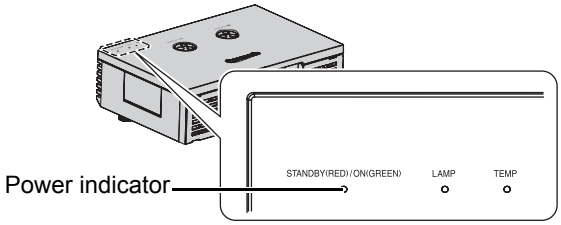
**NOTE:**

- Do not use other than the provided power cord.
- Ensure all the input devices are connected and turned off before connecting the power cord.
- Do not force the connector as this may damage the projector and/or the power cord.
- Dirt or dust build-up around plugs may cause fire or electrical hazards.
- Switch off the power to the projector when not in use.

# Power indicator

Power indicator informs you the status of the power.

- When the **TEMP** indicator is flashing, the power indicator will not light.

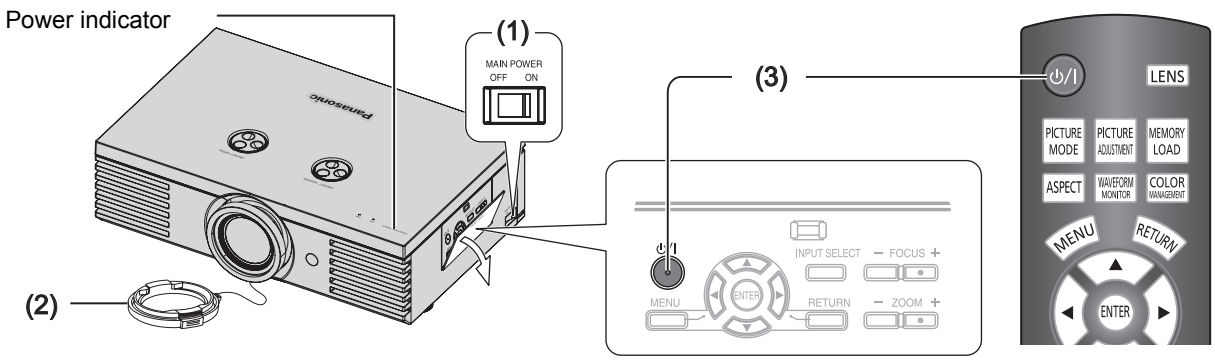



| Indicator status | | Status |
|---|---|---|
| **No illumination or flashing** | | The **MAIN POWER** button is switched off. |
| **Red** | **Lit** | The **MAIN POWER** button is switched on and the projector is in standby mode. |
| **Green** | **Flashing** | The power button is switched on and the projector is getting ready to project. |
| | **Lit** | Projecting. |
| **Orange** | **Lit** | The power button is switched off and the projector is cooling the lamp. |
| | **Flashing** | The power button is switched on again when cooling the lamp and recovering to projection mode. Recovery may take a while. |

**NOTE:**

- See “TEMP indicator” on page 45.
- While the projector is cooling the lamp, do not switch the **MAIN POWER** button off or unplug the power cord.
- The electric consumption in standby mode is 0.08 W.

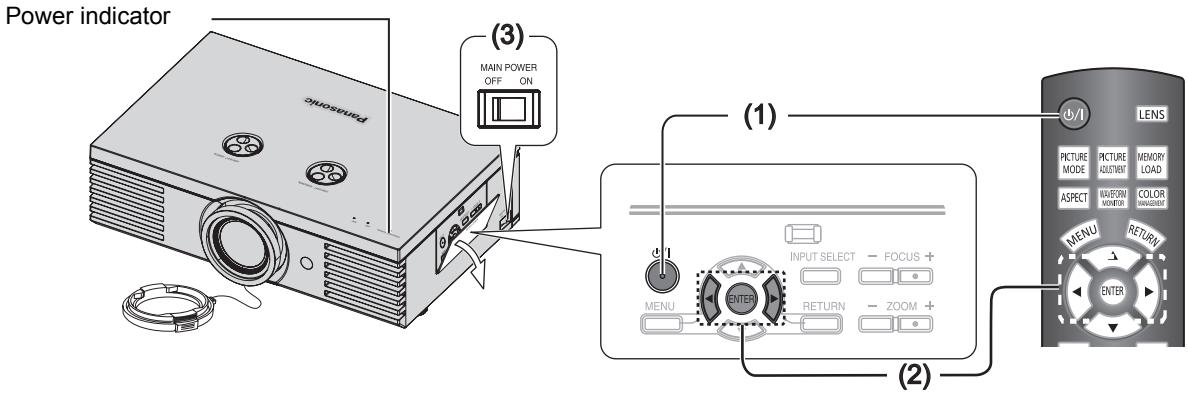
## Switching on the projector




1. Remove the lens cover from the lens.
2. Switch the **MAIN POWER** button on.
   - The power indicator lights up in red.
3. Press the power button.
   - The power indicator lights up in green after flashing for a while.
   - The **STARTUP LOGO** is displayed on the screen. See “STARTUP LOGO” on page 43.

**NOTE:**
- When the internal cooling fan is operating, some operational sound may be heard. The loudness of the operational sound depends on the external temperature.
- You can reduce the operational sound by setting the **LAMP POWER** in **OPTION** menu to the **ECO-MODE**. See “LAMP POWER” on page 44.
- When starting up the projector, some small rattling or tinkling sound may be heard, or the display may flicker for the characteristics of the lamp. Those are normal and will not affect the performance of the projector.
- Do not attempt to modify the lens cover which may cause burns, fire or damage to the projector.

## Switching off the projector




1. Press the power button.
   - The confirmation screen is displayed.
   - To return to the projection, press any button except the power button.
2. Press the power or **ENTER** button.
   - The power indicator lights up in orange while cooling the lamp, then illuminates red when it is ready to switch off the **MAIN POWER** button.
3. Switch off the **MAIN POWER** button on the left side of the projector.
4. Attach the lens cover.

**NOTE:**
- Press the power button twice or for a long duration to switch the power off.

# Projecting an image

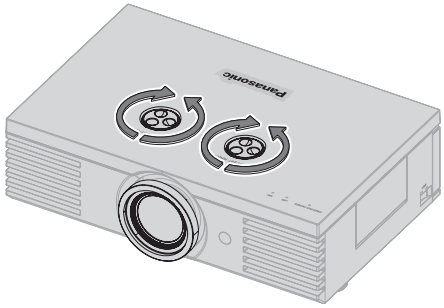
## Selecting the input signal

1. Switch on the connected devices.
   - Press the play button of the required device.
2. Press the **INPUT SELECT** button to select the required input method if needed. See “Switching the input signal” on page 28.
   - The image will be projected on the screen.

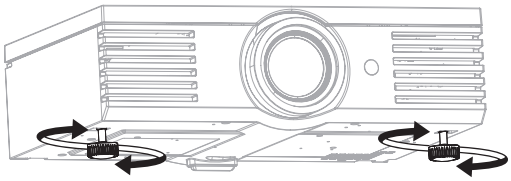
**NOTE:**
- **AUTO SEARCH** is **ON** as default and the signal from the connected devices is detected automatically. See “AUTO SEARCH” on page 43.

## Positioning the image

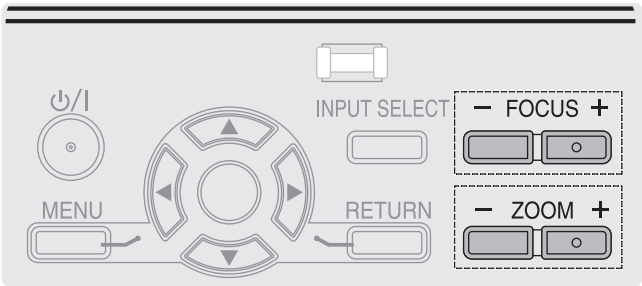
1. Press the **ASPECT** button to select the required aspect mode. See “Switching the aspect ratio” on page 24.
2. Adjust the projected image with the lens shift dials. See “Lens shift and positioning” on page 16.




3. Adjust the angle of the projector.
   - Screw down the front leg adjusters and adjust the angle vertically.
   - See “Front leg adjusters and throwing angle” on page 15.



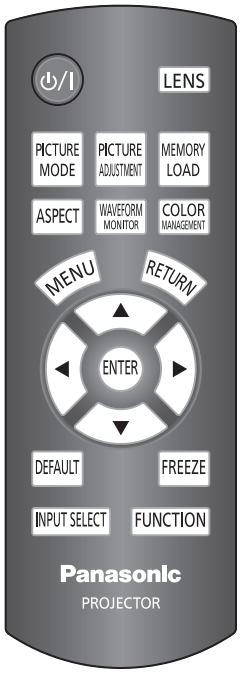
4. Adjust the focus and the projected image size.
   - Press +/- of the **FOCUS** and **ZOOM** buttons to adjust.
   - Press the **LENS** button to adjust the focus and zoom by the remote control. See “LENS CONTROL” on page 40.




**NOTE:**
- Do not touch the air exhaust port as this may cause burns or injury.
- If keystone distortion occurs, see “KEYSTONE” on page 39.
- If you adjust the focus, you may need to adjust the size of the image by pressing the **ZOOM** button again.

# Remote control operation

## Operating range




You can operate the projector with the remote control within the remote range 7 m (22'11").

### Facing to the projector

Ensure the remote control emitter is facing to the remote control signal receptor on front/back of the projector and press the required buttons to operate.

### Facing to the screen

Ensure the remote control emitter is facing to the screen and press the required buttons to operate the projector. The signal will be reflected off the screen. The operating range may differ due to the screen material. This function may not be effective with a translucent screen.

**NOTE:**
- Do not let strong light shine onto the signal receptor. The remote control may malfunction under strong light such as fluorescent.
- If there are any obstacles between the remote control and the remote control signal receptor, the remote control may not operate correctly.

## Managing the lens control settings

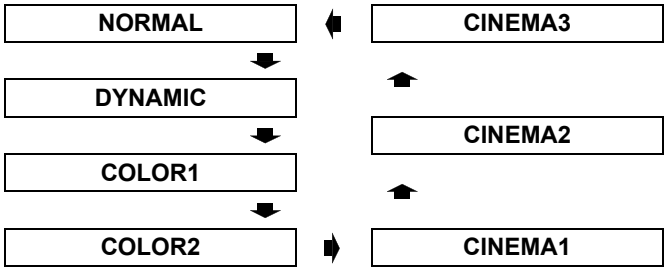
LENS

You can adjust the focus and zoom of the projected image, and save the settings. Press the **LENS** button to display the **LENS CONTROL** menu. See “LENS CONTROL” on page 40.

## Switching the picture mode

PICTURE MODE

You can switch the preset picture mode settings by pressing the **PICTURE MODE** button. Press the button until the required setting is selected. See “PICTURE MODE” on page 32.




## Adjusting the image

PICTURE ADJUSTMENT

You can display the **PICTURE** and **ADVANCED MENU** menu items in called up style by pressing the **PICTURE ADJUSTMENT** button. Press the button to switch between **PICTURE** and **ADVANCED MENU** menu. Press ▲ ▼ to select the required menu item and ◄ ► to adjust.

### PICTURE menu items

**PICTURE MODE**, **CONTRAST**, **BRIGHTNESS**, **COLOR**, **TINT**, **SHARPNESS**, **COLOR TEMPERATURE** and **DYNAMIC IRIS**

### ADVANCED MENU items

**GAMMA**, **CONTRAST**, **BRIGHTNESS**, **COLOR MANAGEMENT**, **x.v.Color**, **FRAME CREATION**, **DETAIL CLARITY**, **NR**, **MPEG NR**, **CINEMA REALITY** and **TV-SYSTEM**

**NOTE:**
- For each menu item description, see “PICTURE menu” on page 32.
- The screen will be cleared after 7 seconds without any operation.

# Loading a saved setting

MEMORY LOAD

You can access saved settings instantly. See “MEMORY LOAD” on page 36.

1. Select the required setting from **MEMORY1 - 16**.
   - Undefined setting will not be displayed.
2. Press the **ENTER** button to activate the selected setting.

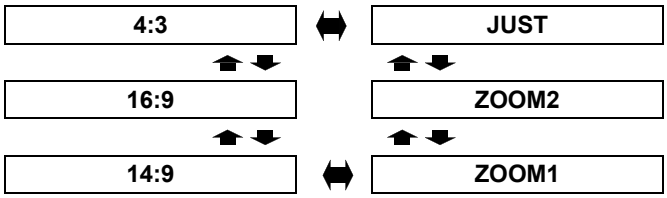
**NOTE:**
- If you have not saved any settings, **MEMORY1 - 16** will not be displayed.

# Switching the aspect ratio

ASPECT

The aspect ratio will be selected automatically, or you can switch it manually by pressing the **ASPECT** button. Press the button several times to cycle through the different aspect type as follows. See “ASPECT” on page 37.

## VIDEO/S-VIDEO/COMPONENT (YPBPR)




## COMPUTER (RGB)

## HDMI

**NOTE:**
- If you project an image with an unmatched aspect ratio, the image may distort or some portions may be cropped. Select an aspect ratio which preserves the intention of the image creator.
- The order of aspect type is defined not only by the input method but also by the input signals. See “List of compatible signals” on page 50.
- If you project a copyrighted image enlarged or distorted by using **ASPECT** function in commercial use in a public place, such as a restaurant or hotel, you might infringe on the copyright of the creator which is protected by copyright law.

# Adjusting the signal condition with a waveform

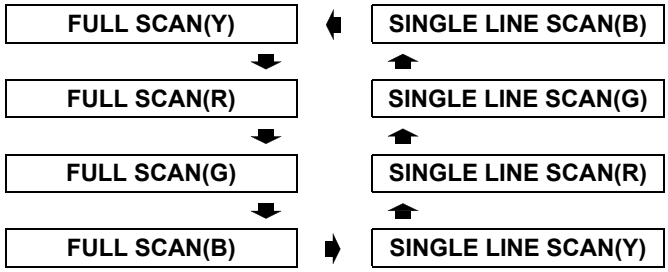
WAVEFORM MONITOR

You can display the image brightness and contrast level of the input signal with a waveform. See “WAVEFORM MONITOR” on page 33.

| | |
|---|---|
| **FULL SCAN** | Monitoring the waveform of brightness and contrast of the whole image. |
| **SINGLE LINE SCAN** | Monitoring the waveform of brightness and contrast in each horizontal line of the image. |

## Displaying the waveform

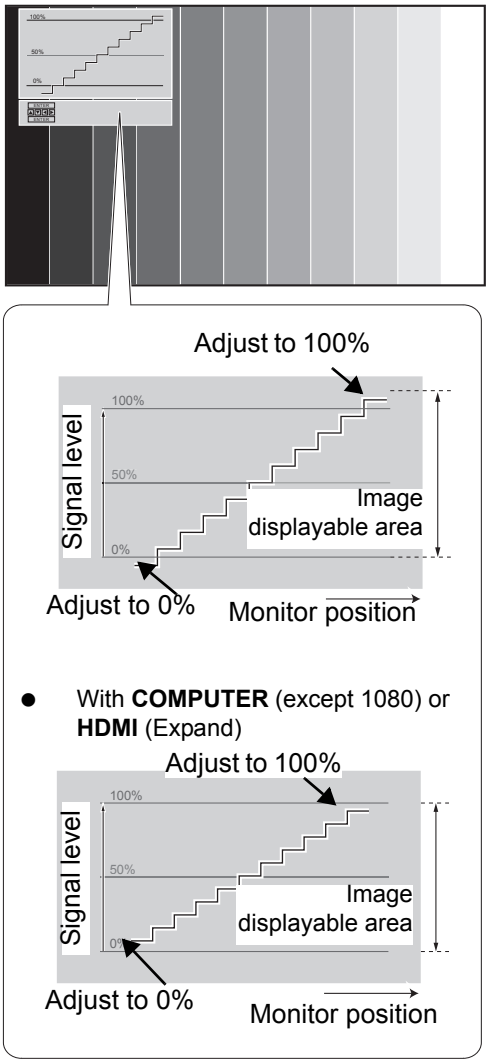
1. Press the **WAVEFORM** button and display the waveform monitor.
   - Press the **WAVEFORM** button again to escape from the waveform mode.
2. Press **ENTER** button until the required waveform option is displayed.
   - In **FULL SCAN** mode, press ▲ ▼ ◄ ► to change the waveform position.
   - In **SINGLE LINE SCAN** mode, press ▲ ▼ to select the required line position.




**NOTE:**
- In **SINGLE LINE SCAN** mode, the position of the waveform monitor depends on the position of the selected line.
- You can display the main menu by pressing the **MENU** button and adjust the menu items.
- The called up menu items displayed position depends on the position of the waveform monitor.
- You can activate **AUTO ADJUST** of the **WAVEFORM** menu by pressing the **DEFAULT** button.
- The signal which is lower than 0% in the waveform will be displayed as same as 0% on the projected image.
- While the waveform is displayed, the image is displayed without the **COLOR MANAGEMENT** adjustment.
- When adjusting the **KEYSTONE** of the **POSITION** menu while the waveform is displayed, **x.v.Color** will be deactivated.

## Adjustment example

Project a commercial test signal for picture adjustment on the screen and press the **WAVEFORM** button.




### Adjusting with luminance options

1. Press the **ENTER** button several times to display **FULL SCAN(Y)/SINGLE LINE SCAN(Y)**.
   - In **SINGLE LINE SCAN** mode, select the required adjusting point by pressing ▲ ▼.
2. Press the **PICTURE ADJUSTMENT** button and display the **BRIGHTNESS** by pressing ▲ ▼.
   - When **ADVANCED MENU** is displayed, press the button again to switch to the **PICTURE** menu.
3. Adjust by pressing ◄ ►.
   - Adjust the bottom line of the waveform to 0 % (0 or 7.5 IRE).
   - Setting range: -32 to +32
4. Press ▲ ▼ to display the **CONTRAST**.
5. Adjust by pressing ◄ ►.
   - Adjust the up line of the waveform to 100 % (100 IRE).
   - Setting range: -64 to +64

| FULL SCAN(Y)/SINGLE LINE SCAN(Y) | |
|---|---|
| **BRIGHTNESS** | Adjust the bottom line of the waveform to 0 % (0 or 7.5 IRE) |
| **CONTRAST** | Adjust the top line of the waveform to 100 % (100 IRE) |

### Adjusting with RGB options

1. Press the **ENTER** button several times to display the required R/G/B waveform option.
   - In **SINGLE LINE SCAN** mode, select the required adjusting point by pressing ▲ ▼.
2. Press the **PICTURE ADJUSTMENT** button and display the **BRIGHTNESS R**/**BRIGHTNESS G**/ **BRIGHTNESS B** by pressing ▲ ▼.
   - When **PICTURE** menu is displayed, press the button again to switch to the **ADVANCED MENU**.
3. Adjust by pressing ◄ ►.
   - Adjust the bottom line of the waveform to 0 % (0 or 7.5 IRE).
   - Setting range: -16 to +16
4. Press ▲ ▼ to display the **CONTRAST R**/ **CONTRAST G**/**CONTRAST B**.
5. Adjust by pressing ◄ ►.
   - Adjust the up line of the waveform to 100 % (100 IRE).
   - Setting range: -32 to +32

| FULL SCAN(R)/SINGLE LINE SCAN(R) | |
|---|---|
| **BRIGHTNESS R** | Adjust the bottom line of the waveform to 0 % (0 or 7.5 IRE) |
| **CONTRAST R** | Adjust the top line of the waveform to 100 % (100 IRE) |
| **FULL SCAN(G)/SINGLE LINE SCAN(G)** | |
| **BRIGHTNESS G** | Adjust the bottom line of the waveform to 0 % (0 or 7.5 IRE) |
| **CONTRAST G** | Adjust the top line of the waveform to 100 % (100 IRE) |
| **FULL SCAN(B)/SINGLE LINE SCAN(B)** | |
| **BRIGHTNESS B** | Adjust the bottom line of the waveform to 0 % (0 or 7.5 IRE) |
| **CONTRAST B** | Adjust the top line of the waveform to 100 % (100 IRE) |

# Setting your own color profile

COLOR MANAGEMENT

You can adjust a selected color individually and save and retrieve under the **PICTURE MODE** setting. Press the **COLOR MANAGEMENT** button to open the menu. See “COLOR MANAGEMENT” on page 35.

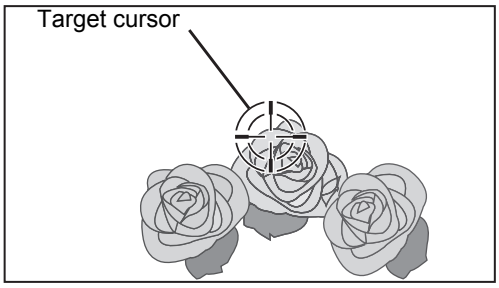
| | |
|---|---|
| PROFILE | ◀ NORMAL ▶ |
| CURSOR | |
| LOG | |
| PROFILE SAVE | |
| PROFILE DELETE | |
| PROFILE NAME CHANGE | |

## Create a new profile

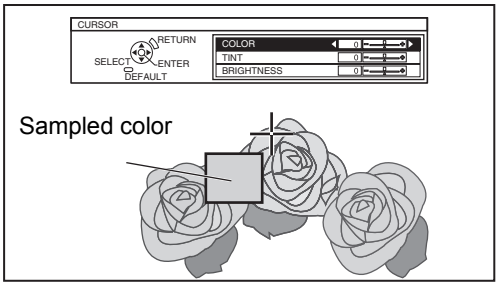
### Adjusting the selected color

Select a color and adjust **COLOR**, **TINT** and **BRIGHTNESS**.

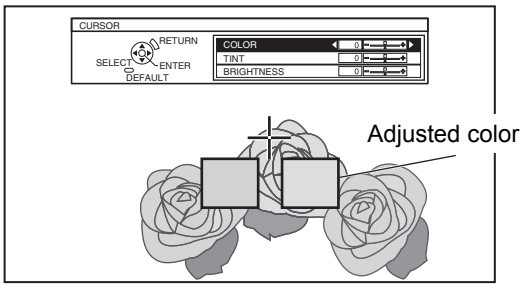
1. Select the **CURSOR** menu and press **ENTER**.
   - The projected image is captured, and the target cursor is displayed.
   - When the **LOG** is fully stored, the target cursor will not be displayed.




2. Move the cursor with ▲ ▼ ◀ ▶ to the required place to select a color and press **ENTER**.
   - The color at the center of the target cursor is sampled and the sample box is displayed on the left of the cursor. The menu items are displayed on the upper part of the screen.
   - You may fail to adjust when the very edge point of the projection area is selected as sample.




3. Select a menu item and the ◀ ▶ to adjust each item level.
   - The result box is displayed on the right of the cursor and shows the adjusted color.




| | |
|---|---|
| **COLOR** | Adjust the vividness of the color.<br>Setting range: -30 to +30 |
| **TINT** | Adjust the color tone.<br>Setting range: -30 to +30 |
| **BRIGHTNESS** | Adjust the brightness of the color.<br>Setting range: -20 to +20 |

4. Press **ENTER** to store the adjusted result.
   - “**PROCESSING**” is displayed for a few seconds and the result is stored in **LOG**.
   - You can store up to 8 logs under **LOG** for each **PICTURE MODE** setting.
5. Press **MENU** or **RETURN** to return to the previous menu.
   - Repeat the steps above to store more adjustment.

### Managing stored logs

You can edit or delete the stored logs of the selected **PICTURE MODE**.

1. Select **LOG** and press **ENTER**.
   - The **LOG** menu is displayed.

PICTURE MODE : CINEMA1

| | | | |
|---|---|---|---|
| POINT1 | 0 | 0 | +2 |
| POINT2 | -1 | 0 | -2 |
| POINT3 | 0 | +10 | 0 |
| POINT4 | -10 | +10 | -10 |
| POINT5 | -6 | +5 | +7 |
| POINT6 | +3 | -3 | +1 |
| POINT7 | 0 | +7 | +9 |
| POINT8 | -1 | +14 | -4 |
| ALL DELETE | | | |

Sampled color — Adjusted color

2. Select the required log from 1 - 8 or **ALL DELETE**, and press **ENTER**.
   - Select **CHANGE** to edit the log.
     The cursor menu is displayed and you can readjust the color.
   - Select **DELETE** to delete the log.
     The confirmation screen will be displayed. Select **OK** to delete.
   - When you select **ALL DELETE**, the **"DELETE ALL LOG."** screen is displayed. Select **OK** to delete all logs. The **PROFILE** setting will be set to **NORMAL**.

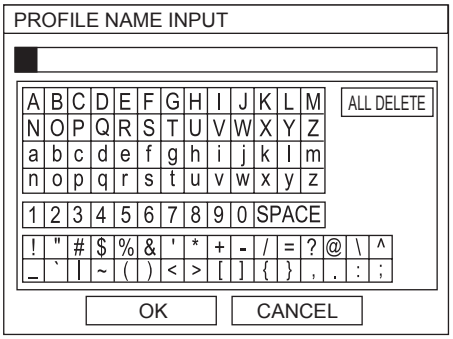
## Saving a log setting as a profile

Return to the **COLOR MANAGEMENT** menu and save the stored log as a profile. Make sure that the **PICTURE MODE** is not switched.

1. Select the **PROFILE SAVE** menu and press the **ENTER** button.
   - The **PROFILE SAVE** menu is displayed. You can save the profile as **USER1**, **USER2** and **USER3**.

| |
|---|
| USER1 |
| USER2 |
| USER3 |

2. Press the **ENTER** button to save the profile.
   - The confirmation screen is displayed. Press **ENTER** again to save.
3. Name the profile.
   - Use ▲ ▼ ◄ ► to specify the location of the required character to enter and press the **ENTER** button.
   - You can enter up to 14 characters.




4. Repeat step 3 until you finish the text line.
   - Move cursor to **ALL DELETE** and press the **ENTER** button to delete all the entered text line.
   - Press the **DEFAULT** button to delete the last entered character or indicated with cursor in the text box.
   - To insert a character in the entered text line, move the cursor to the text box to select the required place and press ▼ then perform step 3.
5. Select **OK** and press the **ENTER** button to set the entered text as a name.
   - Press the **ENTER** button without entering any text to keep the default name.

## Deleting the saved profiles

You can delete the profiles from **PROFILE DELETE** menu.

1. Select **PROFILE DELETE** and press the **ENTER** button.
2. Select the required profile or **ALL DELETE** and press the **ENTER** button.
   - The confirmation screen will be displayed and select **OK**.
3. Press the **ENTER** button.

## Changing the profile names

You can change the name of the profiles from the **PROFILE NAME CHANGE** menu.

1. Select **PROFILE NAME CHANGE** and press the **ENTER** button.
2. Select the required profile and press the **ENTER** button.
3. Rename the profile.
   - Use ▲ ▼ ◄ ► to specify the location of the required character to enter and press the **ENTER** button.
4. Select **OK** and press the **ENTER** button to set the entered text as a name.

## Loading saved profiles

When profiles are loaded under the **PICTURE MODE** setting, you can keep them as you defined until the **PROFILE** is set to **NORMAL**.

1. Select the required **PICTURE MODE** and press the **ENTER** button.
2. Press the **COLOR MANAGEMENT** button and select the **PROFILE** menu.
   - The profile settings of the selected **PICTURE MODE** will be displayed.
3. Select the required profile and press the **ENTER** button.

| | |
|---|---|
| **NORMAL** | Return to the default setting of the **PICTURE MODE** menu. |
| **USER1** | Defined profile settings. |
| **USER2** | |
| **USER3** | |

**NOTE:**

- **LOG** and **PROFILE SAVE** are not displayed before you apply **COLOR MANAGEMENT**.
- When the **LOG** is fully stored, the **CURSOR** will not be displayed.
- If you load a profile with a different attribute mode of the profile, the **CURSOR** and **PROFILE SAVE** menus will not be displayed.
- The approximate colors will be adjusted at the same time. If you adjust the exact same color differently, both colors will affect each other and you might get unexpected results.
- White, Black and Grey are not adjustable.
- If you escape the **COLOR MANAGEMENT** menu or attempt to perform another menu action before you save the adjusted profile, the confirmation screen will be displayed.
- If you switch the input signal before you save the profile, the setting will be cancelled without notice.
- When HDMI signal is selected, **COLOR MANAGEMENT** is not available with the **COLOR1** setting of the **PICTURE MODE**.

## Resetting to the factory default settings

DEFAULT

You can reset most of the customized settings to the factory defaults by pressing **DEFAULT** button of the remote control. Display the required sub-menu or the menu items and press the button again.

**NOTE:**
- Some menu items are not available to reset by pressing the **DEFAULT** button. Adjust each menu item manually.

## Capturing an image

FREEZE

Press the **FREEZE** button to capture the image, and you can see it as a still picture while the AV equipment are continuing. Press the **FREEZE** button again to escape and return to the continuing image.

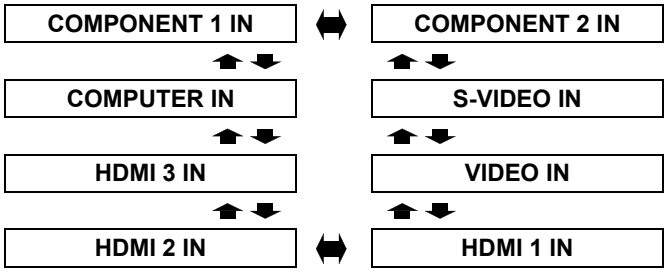
While displaying the frozen image, you can enter the **AREA SELECT** mode of the **SPLIT ADJUST** menu by pressing the **ENTER** button. See “SPLIT ADJUST” on page 33.

## Switching the input signal

INPUT SELECT

You can switch the input method manually by pressing the **INPUT SELECT** button. Press the button several times or press ◄ ► to cycle through the input methods as follows. The actual projected image will be changed in a while.

- The graphical guidance will be displayed on the upper right of the projected image and you can confirm the selected input method which is highlighted in yellow. See “INPUT GUIDE” on page 43.




| | |
|---|---|
| **COMPONENT 1 IN** | **COMPONENT** (YPBPR) signals from the equipment connected to **COMPONENT IN 1**/ **COMPONENT IN 2**. |
| **COMPONENT 2 IN** | |
| **S-VIDEO IN** | **S-VIDEO** signal from the equipment connected to **S-VIDEO IN**. |
| **VIDEO IN** | **VIDEO** signal from the equipment connected to **VIDEO IN**. |
| **HDMI 1 IN** | **HDMI** signal from the equipment connected to **HDMI IN 1**/**HDMI IN 2**/ **HDMI IN 3**. |
| **HDMI 2 IN** | |
| **HDMI 3 IN** | |
| **COMPUTER IN** | **COMPUTER** (RGB) signal from the equipment connected to **COMPUTER IN**. |

**NOTE:**
- If you select an unplugged input method, the guidance will blink on and off several times.
- See “List of compatible signals” on page 50.
- See “Connections” on page 18.

## Using the assigned function as shortcut

You can access the assigned function in **FUNCTION BUTTON** menu as shortcut. See “FUNCTION BUTTON” on page 42.

| | |
|---|---|
| **HDMI 1 IN** | page 28 |
| **HDMI 2 IN** | |
| **HDMI 3 IN** | |
| **COMPUTER IN** | |
| **COMPONENT 1 IN** | |
| **COMPONENT 2 IN** | |
| **S-VIDEO IN** | |
| **VIDEO IN** | |
| **BLANK** | page 42 |
| **AUTO SETUP** | page 39 |
| **CONTRAST** | page 32 |
| **CONTRAST R** | page 34 |
| **CONTRAST G** | |
| **CONTRAST B** | |

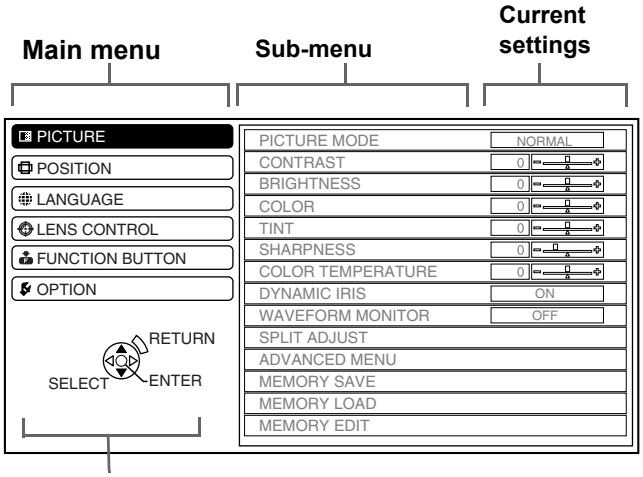
| | |
|---|---|
| **NORMAL** | page 32 |
| **DYNAMIC** | |
| **COLOR1** | |
| **COLOR2** | |
| **CINEMA1** | |
| **CINEMA2** | |
| **CINEMA3** | |
| **SPLIT ADJUST** | page 33 |
| **WAVEFORM AUTO ADJUST** | |
| **LENS MEMORY LOAD** | page 40 |
| **BRIGHTNESS** | page 32 |
| **BRIGHTNESS R** | page 34 |
| **BRIGHTNESS G** | |
| **BRIGHTNESS B** | |

# Menu Navigation

## Navigating through the MENU

### Displaying the main menu

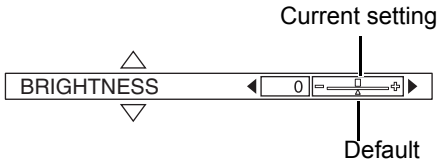
Press the **MENU** button to display the main menu and the operating guidance.




**Operating guidance**
Contains the required buttons to adjust the settings.

### Adjusting with the bar scale items

The triangle mark under the bar indicates factory default setting and the square indicates the current setting.

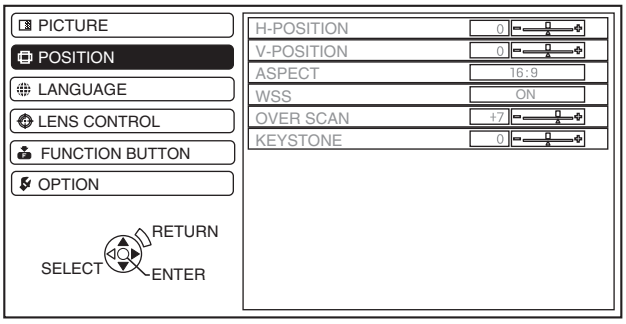



### Returning to the previous menu

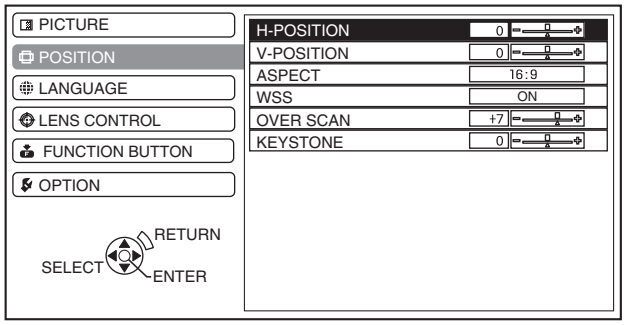
Press the **MENU** or **RETURN** button to return to the previous menu. Press repeatedly to escape from the menu mode and return to the projection.

### Operating procedure

1. Press ▲ ▼ to scroll to the required main menu item and press the **ENTER** button to select.
   - The selected item is highlighted in orange and the sub-menu is displayed on the right.
   - See “Main menu and sub-menu” on page 30.




2. Press ▲ ▼ to scroll to the required sub-menu item and press ◄ ► or the **ENTER** button to adjust.
   - The selected item is called up and the other menu items disappear from the screen. The Called up item will disappear after 5 seconds without any operation and return to the menu mode.
   - If there is a lower level, the next level will be displayed.




3. Press ◄ ► to adjust or set the selected item.
   - For items using a bar scale, the current settings are displayed on the left of the bar scale.
   - You can cycle through the options of an item by pressing ◄ ►.

4. Press the **MENU** or **RETURN** button to return to the previous menu.

**NOTE:**
- See “Resetting to the factory default settings” on page 28 to reset each menu item.

# Main menu and sub-menu

The menu options are structured and categorized. You can navigate through the menu with ▲ ▼ ► ◄ buttons. See “Menu Navigation” on page 29.

**NOTE:**
- The underlined items are factory default settings.
- Some default settings vary by the selected input signal.
- Sub-menu items vary according to the selected input signal.
- Some settings are adjustable without any signals.

## PICTURE

**PICTURE MODE** page 32
- NORMAL, DYNAMIC, COLOR1, COLOR2, CINEMA1, CINEMA2, CINEMA3

**CONTRAST** page 32
(Default: 0)

**BRIGHTNESS** page 32
(Default: 0)

**COLOR** page 32
(Default: 0)

**TINT** page 32
(Default: 0)

**SHARPNESS** page 32
(Default: 0)

**COLOR TEMPERATURE** page 33
(Default: 0)

**DYNAMIC IRIS** page 33
- ON, OFF

**WAVEFORM MONITOR** page 33
- OFF
- FULL SCAN(Y), FULL SCAN(R), FULL SCAN(G), FULL SCAN(B), SINGLE LINE SCAN(Y), SINGLE LINE SCAN(R), SINGLE LINE SCAN(G), SINGLE LINE SCAN(B), MONITOR POSITION, AUTO ADJUST

**SPLIT ADJUST** page 33
- AREA SELECT, SPLIT ADJUST MODE, NORMAL, REVERSE

**ADVANCED MENU** page 34

**GAMMA**
- GAMMA HIGH (Default: 0)
- GAMMA MID (Default: 0)
- GAMMA LOW (Default: 0)

**CONTRAST**
- CONTRAST R (Default: 0)
- CONTRAST G (Default: 0)
- CONTRAST B (Default: 0)

**BRIGHTNESS**
- BRIGHTNESS R (Default: 0)
- BRIGHTNESS G (Default: 0)
- BRIGHTNESS B (Default: 0)

▼

▲

**NR** (Noise Reduction)
(Default: 0)

**MPEG NR**
(Default: 0)

**FRAME CREATION**
- OFF, MODE1, MODE2

**COLOR MANAGEMENT**
- PROFILE, CURSOR, LOG, PROFILE SAVE, PROFILE DELETE, PROFILE NAME CHANGE

**x.v.Color**
- ON, OFF

**DETAIL CLARITY**
- ON, OFF

**CINEMA REALITY**
- ON, OFF

**TV-SYSTEM**
- AUTO, NTSC, NTSC 4.43, PAL, PAL-M, PAL-N, SECAM

**MEMORY SAVE** page 36
- MEMORY1 - 16

**MEMORY LOAD** page 36
- MEMORY1 - 16

**MEMORY EDIT** page 36
- MEMORY DELETE, MEMORY NAME CHANGE

**SIGNAL MODE** page 36

## POSITION

**H - POSITION** page 37
(Default: 0)

**V - POSITION** page 37
(Default: 0)

**DOT CLOCK** page 37
(Default: 0)

**CLOCK PHASE** page 37
(Default: 0)

**ASPECT** page 37
- 4:3, 16:9, 14:9, ZOOM1, ZOOM2, JUST

**WSS** page 39

▼

▲

| | |
|---|---|
| **OVER SCAN** | page 39 |
| **KEYSTONE** (Default: 0) | page 39 |
| **AUTO SETUP** | page 39 |

## LANGUAGE

| | |
|---|---|
| DEUTSCH | POLSKI |
| FRANÇAIS | ČEŠTINA |
| ESPAÑOL | MAGYAR |
| ITALIANO | РУССКИЙ |
| PORTUGUÊS | ไทย |
| SVENSKA | 한국어 |
| NORSK | ENGLISH |
| DANSK | 中文 |

## LENS CONTROL

| | |
|---|---|
| **ZOOM/FOCUS** | page 40 |
| **LENS MEMORY LOAD**<br>LENS MEMORY 1 - 3 | page 40 |
| **LENS MEMORY SAVE**<br>LENS MEMORY 1 - 3 | page 40 |
| **LENS MEMORY EDIT**<br>LENS MEMORY DELETE<br>LENS MEMORY NAME CHANGE | page 41 |
| **H-AREA POSITION** (Default: 0) | page 41 |
| **V-AREA POSITION** (Default: 0) | page 41 |

## FUNCTION BUTTON

**BUTTON** page 42

| | |
|---|---|
| HDMI 1 IN | HDMI 2 IN |
| HDMI 3 IN | COMPUTER IN |
| COMPONENT 1 IN | COMPONENT 2 IN |
| S-VIDEO IN | VIDEO IN |
| BLANK | AUTO SETUP |
| CONTRAST | CONTRAST R |
| CONTRAST G | CONTRAST B |
| NORMAL | DYNAMIC |
| COLOR1 | COLOR2 |
| CINEMA1 | CINEMA2 |
| CINEMA3 | SPLIT ADJUST |
| WAVEFORM AUTO ADJUST | |
| LENS MEMORY LOAD | |
| BRIGHTNESS | BRIGHTNESS R |
| BRIGHTNESS G | BRIGHTNESS B |

## OPTION

**INPUT GUIDE** page 43
DETAILED SIMPLE
OFF

**OSD DESIGN** page 43
TYPE1 TYPE2
TYPE3

**OSD POSITION** page 43
UPPER LEFT UPPER CENTER
UPPER RIGHT CENTER
LOWER LEFT LOWER CENTER
LOWER RIGHT

**BACK COLOR** page 43
BLUE BLACK

**STARTUP LOGO** page 43
ON OFF

**AUTO SEARCH** page 43
ON OFF

**HDMI SIGNAL LEVEL** page 43
NORMAL EXPAND

**FRAME RESPONSE** page 43
NORMAL FAST

**INSTALLATION** page 44
FRONT/DESK FRONT/CEILING
REAR/DESK REAR/CEILING

**SLEEP** page 44
OFF
15 MIN. 20 MIN. 25 MIN. 30 MIN.
35 MIN. 40 MIN. 45 MIN. 50 MIN.
55 MIN. 60 MIN.

**HIGH ALTITUDE MODE** page 44
OFF ON

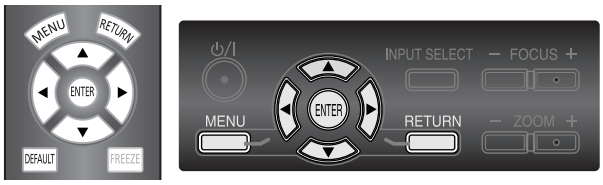
**LAMP POWER** page 44
NORMAL ECO-MODE

**LAMP RUNTIME** page 44

Settings

# PICTURE menu

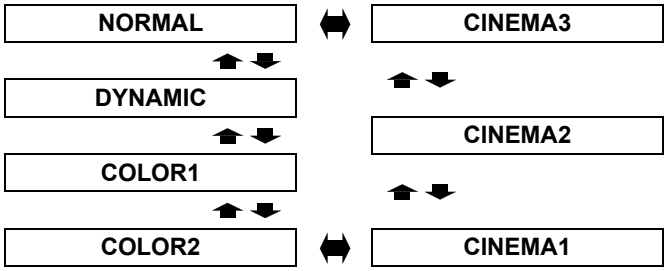
**Remote control** **Control panel**




- See “Navigating through the MENU” on page 29.
- See “Main menu and sub-menu” on page 30.

## PICTURE MODE

Depending on the projection environment, you can use these preset parameter settings to optimise image projection. Press ◀ ▶ to cycle through the options.




| | |
|---|---|
| **NORMAL** | Setting for a general image, such as sports programme or TV games |
| **DYNAMIC** | Bright and sharp setting |
| **COLOR1** | Setting for HDTV standard in ITU-R BT. 709 and color temperature 6 500 K at the default setting of the **PICTURE** menu items. |
| **COLOR2** | Setting for DCDM standard (SMPTE431-2) and color temperature 6 300 K at the default setting of the **PICTURE** menu items. |
| **CINEMA1** | Setting tuned by top Hollywood colorists |
| **CINEMA2** | Deeper and more rich color setting |
| **CINEMA3** | Vivid and crisp color setting |

**NOTE:**
- It may take for a while until the selected mode is stabilised.

## CONTRAST

You can adjust the contrast of the projected image. Adjust the **BRIGHTNESS** in advance if necessary.

**Lower** **Higher**

- Setting range: -64 to +64

## BRIGHTNESS

You can adjust the brightness of the projected image.

**Darker** **Brighter**

- Setting range: -32 to +32

## COLOR

You can adjust the color saturation of the projected image.

**Lighter** **Darker**

- Setting range: -32 to +32
- When **COMPUTER** signal is connected, only available with the following signals.
  1 125 (1 080)/60i 1 125 (1 080)/50i
  1 125 (1 080)/60p 1 125 (1 080)/50p

## TINT

You can adjust the skin tone in the projected image.

**More reddish** **More greenish**

- Setting range: -32 to +32
- When **COMPUTER** signal is connected, only available with the following signals.
  1 125 (1 080)/60i 1 125 (1 080)/50i
  1 125 (1 080)/60p 1 125 (1 080)/50p

## SHARPNESS

You can adjust the sharpness of the projected image.

**Less sharp** **More sharp**

- Setting range will vary according to the selected input signal.

Settings

# COLOR TEMPERATURE

You can adjust the white balance of the projected image.

**Less bluish** **More bluish**

- Setting range: -6 to +6

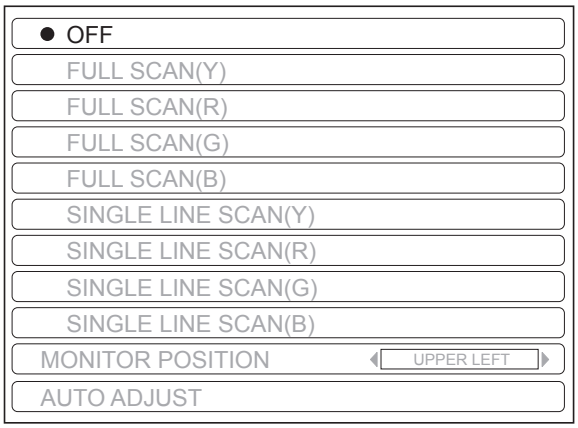
# DYNAMIC IRIS

You can switch automatic adjustment of the lamp and the lens iris on/off.

- **ON**: Automatic adjustment
- **OFF**: No adjustment

# WAVEFORM MONITOR

You can monitor whether or not the luminance level of the input signal is in the recommended range by displaying it in the waveform monitor. If the waveform is not in the range, adjust it for the best quality. See “Adjusting the signal condition with a waveform” on page 24.




1. Press ▲ ▼ to move to the required waveform style.
2. Press **ENTER** to select.
   - The **WAVEFORM MONITOR** will be displayed.
   - See “Adjusting the signal condition with a waveform” on page 24.

**NOTE:**

- When the **WAVEFORM MONITOR** is set to **OFF**, the **AUTO ADJUST** is not displayed.
- The waveform of the **WAVEFORM MONITOR** will not be displayed correctly with a noisy equipment or source.
- The **WAVEFORM MONITOR** adjusts the signal level based on the reference signal which consists of 0% and 100%. The over scanned reference signal which runs off the edge of the screen, below 0% or over 100% signal level will not be adjusted correctly.

## MONITOR POSITION

When the **FULL SCAN** is selected, press ▲ ▼ ◄ ► to adjust the position of the monitor.

- See “Adjusting the signal condition with a waveform” on page 24.

## AUTO ADJUST

You can switch on/off the automatic adjustment system in each items.

| | |
|---|---|
| **BLACK LEVEL ADJUST**<br>Adjust the black level of luminance (Y) to 0%. | **ON** |
| **WHITE LEVEL ADJUST**<br>Adjust the white level of luminance (Y) to 100%. | **ON** |
| **RGB ADJUST (BLACK)**<br>Adjust the black level of colors (R/G/B) to 0%. | **OFF** |
| **RGB ADJUST (WHITE)**<br>Adjust the white level of colors (R/G/B) to 100%. | **OFF** |

1. Press ▲ ▼ and select the required item.
2. Press ◄ ► and switch on/off.
3. Press ▲ ▼ and select **START AUTO ADJUST** and press the **ENTER** button.
   - The confirmation screen will be displayed.
4. Press ◄ ► and select **OK**.
5. Press the **ENTER** button.

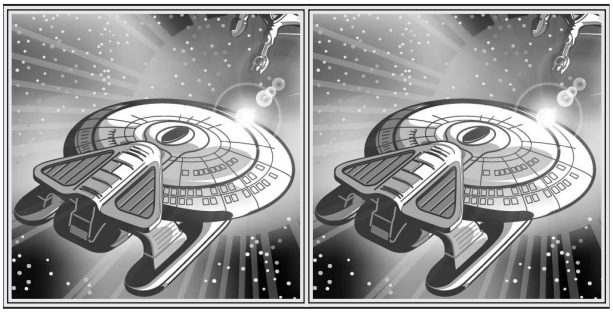
# SPLIT ADJUST

You can perform image adjustment for some **PICTURE** menu items while displaying a certain area of the frozen image in a split window.

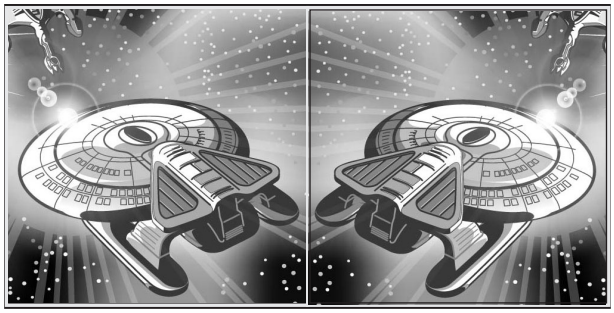
## SPLIT ADJUST MODE

Select the required split style from **NORMAL** and **REVERSE** in the **SPLIT ADJUST MODE** menu.

- **NORMAL**



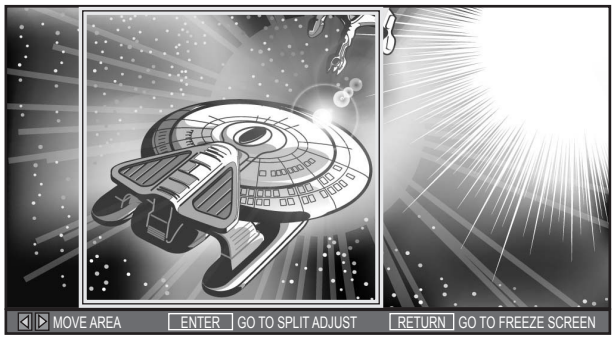
- **REVERSE**



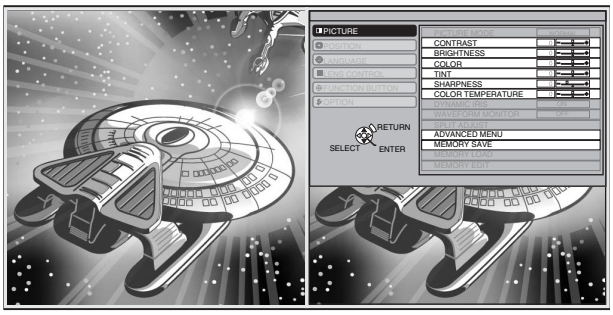
Settings

### Adjusting the image in a split window

1. Select **AREA SELECT** and press the **ENTER** button.
   - The image will be frozen and the area cursor will be displayed.




2. Press ◄ ► to move the area cursor to select the area of interest and press the **ENTER** button.
   - The selected frozen image will be displayed in a split window.
3. Press the **MENU** to display the **PICTURE** menu on the right.




4. Adjust the required **PICTURE** menu items.
   - Only the highlighted menu items are adjustable.
   - Sub-menu items vary according to the selected input signal. See “Main menu and sub-menu” on page 30.
5. Press the **MENU**/**RETURN** button several times to escape from the menu.
6. Press the **ENTER** button.
   - The confirmation screen will be displayed. Select **OK** to finish the adjustment.
7. Press the **ENTER** button.
   - Press the **ENTER** button again to return to the **AREA SELECT**.
   - Press the **RETURN** button to escape from the **SPLIT ADJUST** mode.

# ADVANCED MENU

You can perform more detailed image adjustment manually.

## GAMMA

You can adjust linear intensity at 3 levels. Press ◄ ► to increase/decrease 1 point.

| Levels | Default setting |
|---|---|
| GAMMA HIGH | 0 |
| GAMMA MID | 0 |
| GAMMA LOW | 0 |

- Setting range: -8 to +8

## CONTRAST

You can adjust the amount of contrast of individual RGB colors. Press ◄ ► to increase/decrease 1 point.

| RGB | Default setting |
|---|---|
| CONTRAST R | 0 |
| CONTRAST G | 0 |
| CONTRAST B | 0 |

- Setting range: -32 to +32

## BRIGHTNESS

You can adjust the brightness of individual RGB colors. Press ◄ ► to increase/decrease 1 point.

| RGB | Default setting |
|---|---|
| BRIGHTNESS R | 0 |
| BRIGHTNESS G | 0 |
| BRIGHTNESS B | 0 |

- Setting range: -16 to +16

## NR (Noise Reduction)

You can adjust the automatic noise reduction system level. Press ◄ ► to change the level.

- Setting range: 0 to +3

## MPEG NR

You can adjust the automatic noise reduction system level for MPEG format images. The system minimise block noise and mosquito noise to eliminate jagged edges, providing an overall smoother image. Press ◄ ► to change the level.

- Setting range: 0 to +3

**NOTE:**

- **MPEG NR** system is not available with **COMPUTER**/ **HDMI** (VGA60) signals.

## FRAME CREATION

You can activate the rendering system for fast motion frames with fewer afterimage. Press ◄ ► to select the required option.

- **OFF** Deactivate
- **MODE1** Setting for a standard image
- **MODE2** Setting for a moving image

**NOTE:**

- With some of the images, it might be difficult to see a difference in result.
- The image might look slower with the **MODE2** setting. When the result does not meet your requirement, select **MODE1** or deactivate the system.

## COLOR MANAGEMENT

You can manage your own defined color settings. See “Setting your own color profile” on page 26.

## x.v.Color

You can switch on/off the automatic adjustment system for signals which comply with International Standard xvYCC.

- **ON**: Active
- **OFF**: Deactive

**NOTE:**

- **x.v.Color** adjustment system is available only with **HDMI** signals in **COLOR1** of **PICTURE MODE** menu.

## DETAIL CLARITY

You can switch the automatic detail clarity system on/off.

- **ON**: Active
- **OFF**: Deactive

## CINEMA REALITY

You can switch the automatic image synchroniser on/off for 24 frames a second images, such as movies. Press ◄ ► to select the required setting.

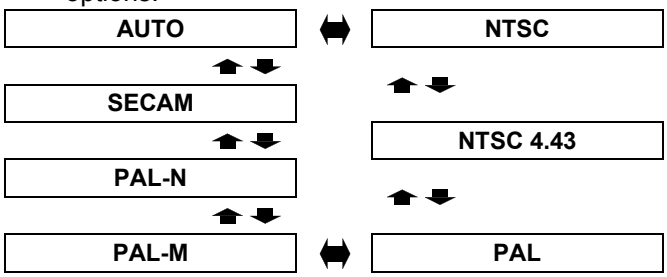
- **ON**: Active
- **OFF**: Deactive

**NOTE:**

- **CINEMA REALITY** is effective only with interlace signals.

## TV-SYSTEM

When the video signal is changed, the setting switches automatically.
You can switch the setting manually to match the video data. Press ◄ ► to cycle through the options.




**NOTE:**

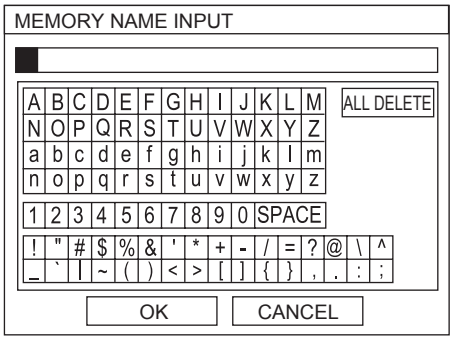
- **AUTO** setting will select from **NTSC**/**NTSC 4.43**/**PAL**/ **PAL60**/**PAL-M**/**PAL-N**/**SECAM**.

Settings

# MEMORY SAVE

You can save and name the adjusted **PICTURE** menu settings for instant access from **MEMORY LOAD** menu.

1. Adjust the items in **PICTURE** menu.
2. Select **MEMORY SAVE** and press the **ENTER** button.
3. Select the required memory setting and press the **ENTER** button.
   - The confirmation screen will be displayed. Select **OK** and press the **ENTER** button.
   - Indicated with ★ is in use, and ☆ is empty.
4. Name the memory setting.
   - Use ▲ ▼ ◄ ► to specify the location of the required character to enter and press the **ENTER** button.
   - You can enter up to 16 characters.




5. Repeat step 4 until you finish the text line.
   - Move the cursor to **ALL DELETE** and press the **ENTER** button to delete all the entered text line.
   - Press the **DEFAULT** button to delete the last entered character or indicated with cursor in the text box.
   - To insert a character in the entered text line, move the cursor to the text box to select the required place and press ▼ then perform step 4.
6. Select **OK** and press the **ENTER** button to set the entered text as a name.

**NOTE:**
- If you leave the text box empty and save, the default memory number will stay as a name.

# MEMORY LOAD

You can access the saved settings instantly. See “Loading a saved setting” on page 24.

1. Select a setting from **MEMORY1 - 16**.
   - Undefined settings will not be selectable.
2. Press **ENTER** to activate.

**NOTE:**
- If you have not saved any settings, **MEMORY1 - 16** will not be displayed.

# MEMORY EDIT

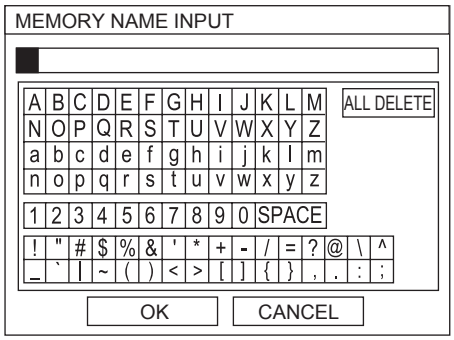
You can edit the named memory settings.

## Deleting a memory setting

1. Select **MEMORY DELETE** and press the **ENTER** button.
2. Select the required memory setting and press the **ENTER** button.
   - If you select **ALL DELETE**, you can delete all of the saved memory settings.
3. Select **OK** in the confirmation screen and press the **ENTER** button.

## Changing the name of the memory setting

1. Select **MEMORY NAME CHANGE** and press the **ENTER** button.
2. Select the required memory setting and press the **ENTER** button.
3. Rename the memory setting.
   - Use ▲ ▼ ◄ ► to specify the location of the required character to enter and press the **ENTER** button.
   - You can enter up to 16 characters.




4. Repeat step 2 until you finish the text line.
   - Move the cursor to **ALL DELETE** and press the **ENTER** button to delete all the entered text line.
   - Press the **DEFAULT** button to delete the last entered character or indicated with cursor in the text box.
   - To insert a character in the entered text line, move the cursor to the text box to select the required place and press ▼ then perform step 2.
5. Select **OK** and press the **ENTER** button to set the entered text as a name.

**NOTE:**
- If you have not saved any settings, **MEMORY1 - 16** will not be displayed.

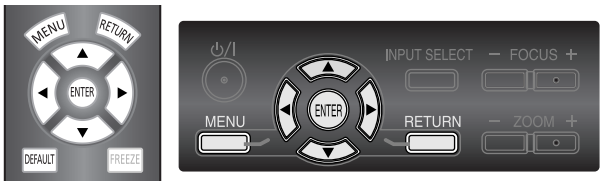
# SIGNAL MODE

The current selected signal will be displayed. This is available with signals from **COMPUTER IN**/ **COMPONENT IN**/**HDMI IN** only.

**NOTE:**
- See “List of compatible signals” on page 50.

# POSITION menu

Remote control | Control panel




- See “Navigating through the MENU” on page 29.
- See “Main menu and sub-menu” on page 30.

## H-POSITION

You can move the projected image horizontally for fine adjustment.

**Move left** **Move right**

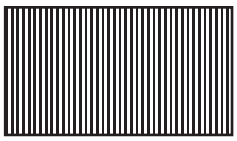
## V-POSITION

You can move the projected image vertically for fine adjustment.

**Move down** **Move up**

## DOT CLOCK

If you have interference patterns of the projected image, which is sometimes referred to as moire or noise, you can minimize it by pressing ◄ ► to adjust the clock frequency. (Available with signals from **COMPUTER IN** only)



**NOTE:**

- If the projecting signal’s dot clock frequency is higher than 150 MHz, the adjustment may not make a difference.
- **DOT CLOCK** needs to be adjusted before adjusting the **CLOCK PHASE**.

## CLOCK PHASE

If you require further adjustment for the same reason as the **DOT CLOCK** adjustment, you can fine adjust the timing of the clock. Press ◄ ► to adjust. (Available with signals from **COMPUTER IN**/**COMPONENT IN** only)

**NOTE:**

- If the projecting signal’s dot clock frequency is higher than 150 MHz, the adjustment may not make a difference.
- Available signals from **COMPONENT IN**:
  1 125 (1 080)/60i, 1 125 (1 080)/50i, 1 125 (1 080)/60p, 1 125 (1 080)/50p, 1 125 (1 080)/24p, 750 (720)/60p, 750 (720)/50p.

## ASPECT

You can switch the aspect ratio manually when needed.

### Aspect ratio depend on signals

Press ◄ ► to cycle through the aspect ratio options. The cycle pattern depends on the connected signals.

| | |
|---|---|
| **VIDEO/ S-VIDEO** | **4:3 ➡ 16:9 ➡ s16:9 ➡ JUST ➡ ZOOM ➡ AUTO**<br>**NTSC**, **NTSC 4.43**, **PAL-M**, **PAL60** signals<br>**4:3 ➡ 16:9 ➡ s16:9 ➡ 14:9 ➡ ZOOM1 ➡ ZOOM2 ➡ JUST**<br>**PAL**, **PAL-N**, **SECAM** signals |
| **COMPUTER (RGB)** | **4:3 ➡ 16:9**<br>VGA, SVGA, XGA, SXGA, MXGA signals<br>Not switchable with WIDE480/600/720/768/768-2/800/900 signals |
| **HDMI** | **4:3 ➡ 16:9 ➡ s16:9 ➡ H - FIT ➡ V - FIT ➡ ZOOM**<br>1 125 (1 080)/50i, 1 125 (1 080)/60i, 1 125 (1 080)/50p, 1 125 (1 080)/60p, 1 125 (1 080)/24p, 750 (720)/50p and 750 (720)/60p signals<br>**4:3 ➡ 16:9 ➡ s16:9 ➡ JUST ➡ ZOOM**<br>525i (480i), 625i (576i), 525p (480p) and 625p (576p) signals |
| **COMPONENT (YPBPR)** | **4:3 ➡ 16:9 ➡ s16:9 ➡ 14:9 ➡ ZOOM1 ➡ ZOOM2 ➡ JUST**<br>625i (576i), 625p (576p) signals<br>**AUTO ➡ 4:3 ➡ 16:9 ➡ s16:9 ➡ JUST ➡ ZOOM**<br>525i (480i), 525p (480p) signals<br>**4:3 ➡ 16:9 ➡ s16:9 ➡ H - FIT ➡ V - FIT ➡ ZOOM**<br>1 125 (1 080)/50i, 1 125 (1 080)/60i, 1 125 (1 080)/50p, 1 125 (1 080)/60p, 1 125 (1 080)/24p, 750 (720)/50p, 750 (720)/60p signals |

## Aspect ratio options and projection example

If you apply the aspect ratio options to the projected image, the result will be as follows. The result may differ due to the input signals. See “Switching the aspect ratio” on page 24.

### VIDEO/S-VIDEO/COMPONENT

Not available with 1 125 (1 080)/50i, 1 125 (1 080)/60i, 1 125 (1 080)/50p, 1 125 (1 080)/60p, 1 125 (1 080)/24p, 750 (720)/50p and 750 (720)/60p signals.

| Original size | | 4:3 | Squeeze signal | 16:9 Letter box | 14:9 Letter Box | 2.35:1 Cinescope |
|---|---|---|---|---|---|---|
| 4:3 | Projects at 4:3. | | | | | |
| 16:9 | Adjusts horizontally to 16:9. | | | | | |
| JUST | Adjusts horizontally to fit 16:9. Closer to edge, more enlarged. Not available with **COMPUTER** signals. | | | | | |
| ZOOM/ ZOOM1 | Adjusts to 16:9 size while preserving original ratio. Escape the menu mode and press ▲▼ to adjust vertically. | | | | | |
| ZOOM2 | Adjusts to cinescope size not including letter box. Escape the menu mode and press ▲▼ to adjust vertically. | | | | | |
| 14:9 | Adjusts to 14:9. | | | | | |

### COMPONENT signals

Available with 1 125 (1 080)/50i, 1 125 (1 080)/60i, 1 125 (1 080)/50p, 1 125 (1 080)/60p, 1 125 (1 080)/24p, 750 (720)/50p and 750 (720)/60p signals

| Original Size | | 4:3 | 16:9 | Cinescope |
|---|---|---|---|---|
| H - FIT | Adjusts horizontally to 16:9. | | | |
| V - FIT | Adjusts to 16:9 vertically. Escape and press ▲ ▼ to scroll the image to adjust the edge vertically. | | | |
| ZOOM | Adjusts to 16:9 size with preserving original ratio. Escape the menu mode and press ▲▼ to adjust vertically. | | | |

## WSS

**WSS** (Wide Screen Signalling) detects if a **PAL**/ 625p (576p)/625i (576i) signal is input and that signal has an identification signal, and switch the aspect ratio to required setting automatically. You can switch the system off manually.

## OVER SCAN

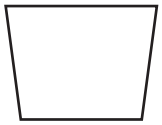
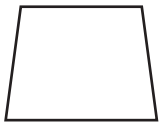
If the 4 edges of an image is partly dropped, you can use this function to adjust and project it properly.

- Setting range: 0 to +10
- **OVER SCAN** is not available with **COMPUTER** signals.

**Shrink** **Enlarge**

## KEYSTONE

If the projector is aligned non-perpendicularly to the screen, or if the projection screen has an angled surface, you can correct the keystone vertically.

| Image | Operation |
|---|---|
|  | |
|  | |

- Setting range: -32 to 32

**NOTE:**

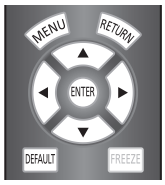
- You can correct the distortion ± 30 degrees from the vertical plane. For a better quality image, installing the projector with minimum distortion is recommended.
- Some distortion may be retained for the lens shift adjustment.
- The distortion of the main menu screen is not correctable.
- The result of the keystone correction will affect the aspect ratio and the size of the image.

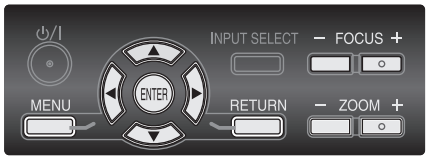
## AUTO SETUP

You can adjust **V - POSITION**, **H - POSITION**, **DOT CLOCK** and **CLOCK PHASE** automatically when connecting via **COMPUTER IN**. Press **ENTER** to adjust these at the same time.

# LENS CONTROL

**Remote control** **Control panel**



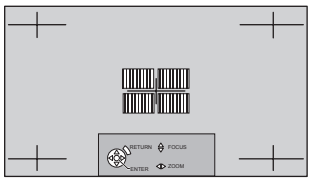

- See “Navigating through the MENU” on page 29.
- See “Main menu and sub-menu” on page 30.

**NOTE:**
- The saved lens memory adjustment accuracy is not guaranteed.
- If the memorized **ZOOM/FOCUS** adjustment is not accurate enough, adjust the **ZOOM/FOCUS** menu again.
- If the power supply is stopped while loading or saving the lens memory, saved adjusted settings may differ from the original after restart the projector. Adjust the **ZOOM/FOCUS** menu again.

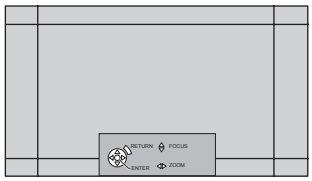
## ZOOM/FOCUS

You can use the 2 different test patterns to adjust the focus and zoom of the image. See “Lens shift and positioning” on page 16.

1. Press **ENTER** to display test pattern 1.
   - Press ▲ ▼ to adjust the focus and ◄ ► to adjust the zoom.



2. Press **ENTER** to display test pattern 2.
   - Press ▲ ▼ to adjust the focus and ◄ ► to adjust the zoom.



3. Press **ENTER** to display the projected image.
   - You can confirm the adjustment is fit to the projected image.
4. Press **MENU** or **RETURN** to return to the previous menu, or press repeatedly to escape the menu mode.

**NOTE:**
- When the projector and/or the screen is tilted, adjust the focus at the center of the image. The upper and lower edge might be out of focus.
- When the image is distorted in keystone, adjust the **KEYSTONE** in **POSITION** menu. See “KEYSTONE” on page 39.

## LENS MEMORY LOAD

You can access the saved lens control settings instantly.

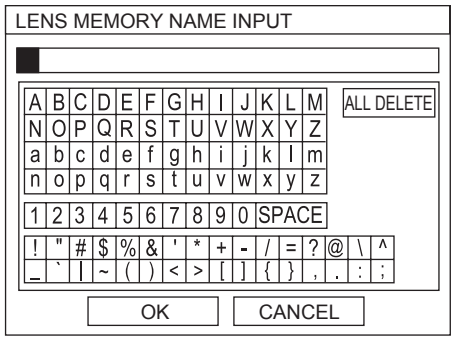
1. Select a setting from **LENS MEMORY 1 - 3**.
2. Press the **ENTER** button to activate.

**NOTE:**
- The option that contains no saved adjustment will not be displayed.
- If there is no saved setting, the **LENS MEMORY LOAD** menu will not be selectable.

## LENS MEMORY SAVE

You can save and name the adjusted **ZOOM/FOCUS**, **H-AREA POSITION** and **V-AREA POSITION** settings in memory.

1. Adjust **ZOOM/FOCUS**, **H-AREA POSITION** and **V-AREA POSITION**.
2. Select the **LENS MEMORY SAVE** and press the **ENTER** button.
3. Select the required memory setting and press the **ENTER** button.
4. The confirmation screen will be displayed. Select **OK** and press the **ENTER** button.
   - Indicated with ★ is in use, and ☆ is empty.
5. Name the lens memory setting.
   - Use ▲ ▼ ◄ ► to specify the location of the required character to enter and press the **ENTER** button.




6. Repeat step 5 until you finish the text line.
   - You can enter up to 16 characters.
   - Move the cursor to **ALL DELETE** and press the **ENTER** button to delete all the entered text line.
   - Press the **DEFAULT** button to delete the last entered character or indicted with the cursor in the text box.
   - To insert a character in the entered text line, move the cursor to the text box to select the required place and press ▼ then perform step 5.
7. Select **OK** and press the **ENTER** button to set the entered text as a name.

**NOTE:**
- If you leave the text box empty and save, the default memory number will stay as a name.

## LENS MEMORY EDIT

You can edit named lens memory settings.

### Deleting a memory setting

1. Select **LENS MEMORY DELETE** and press the **ENTER** button.
2. Select the required lens memory setting and press the **ENTER** button.
3. If you select **ALL DELETE**, you can delete all of the saved lens memory settings.
4. Select **OK** in the confirmation screen and press the **ENTER** button.

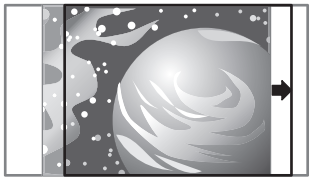
### Changing the name of the memory setting

1. Select **LENS MEMORY NAME CHANGE** and press the **ENTER** button.
2. Select the required lens memory setting and press the **ENTER** button.
3. Rename the lens memory setting.
   - Use ▲ ▼ ◄ ► to specify the location of the required character to enter and press the **ENTER** button.
4. Repeat step 2 until you finish the text line.
   - You can enter up to 16 characters.
   - Move the cursor to **ALL DELETE** and press the **ENTER** button to delete all the entered text line.
   - Press the **DEFAULT** button to delete the last entered character or indicted with the cursor in the text box.
   - To insert a character in the entered text line, move the cursor to the text box to select the required place and press ▼ then perform step 2.
5. Select **OK** and press the **ENTER** button to set the entered text as a name.

**NOTE:**
- The option that contains no saved adjustment will not be displayed
- If you leave the text box empty and save, the default memory name will stay as a name.

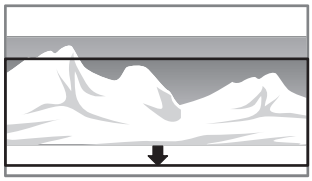
## H-AREA POSITION

You can move the frame area horizontally, such as aligning the right or left frame edge to the screen edge. Press ◄ ► to move the frame.



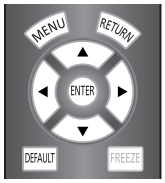
## V-AREA POSITION

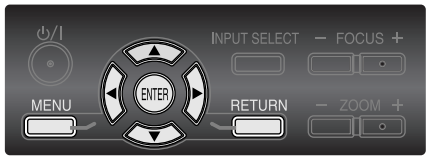
You can move the frame area vertically, such as aligning the up or bottom frame edge to the screen edge. Press ◄ ► to move the frame.



# FUNCTION BUTTON

Remote control | Control panel





- See “Navigating through the MENU” on page 29.
- See “Main menu and sub-menu” on page 30.


## BUTTON

You can assign certain menu option to the **FUNCTION** button as shortcut. Press ▲ ▼ ◄ ► to select the required menu options and press the **ENTER** button.

### BLANK function

You can stop the projection temporarily for electrical power save while the input source is stopped. Press any button to escape from the blank mode.

### Assignable functions

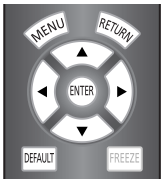
| Functions | Refer |
|---|---|
| HDMI 1 IN*1 | page 28 |
| HDMI 2 IN | |
| HDMI 3 IN | |
| COMPUTER IN | |
| COMPONENT 1 IN | |
| COMPONENT 2 IN | |
| S-VIDEO IN | |
| VIDEO IN | |
| BLANK | - |
| AUTO SETUP | page 39 |
| CONTRAST | page 32 |
| CONTRAST R | page 34 |
| CONTRAST G | |
| CONTRAST B | |
| NORMAL | page 32 |
| DYNAMIC | |
| COLOR1 | |
| COLOR2 | |
| CINEMA1 | |
| CINEMA2 | |
| CINEMA3 | |
| SPLIT ADJUST | page 33 |
| WAVEFORM AUTO ADJUST | |
| LENS MEMORY LOAD | page 40 |
| BRIGHTNESS | page 32 |
| BRIGHTNESS R | page 34 |
| BRIGHTNESS G | |
| BRIGHTNESS B | |

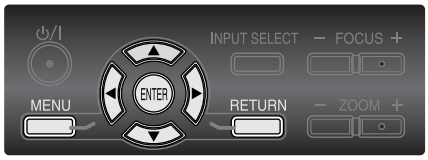
*1.The underlined item is factory default setting.

Settings

# OPTION menu

Remote control | Control panel





- See “Navigating through the MENU” on page 29.
- See “Main menu and sub-menu” on page 30.


## INPUT GUIDE

When you change the input method, the guidance appears in the upper right corner of the screen. The following display methods are available. Press ◄ ► to cycle through the options.

| Options | Function |
|---|---|
| **DETAILED** | Display the input method graphically. The **INPUT GUIDE** will go out after 3 seconds without any operation. |
| **SIMPLE** | Display the input method by text. The **INPUT GUIDE** will disappear after 3 seconds without any operation. |
| **OFF** | Turn off the guidance. |

## OSD DESIGN

You can change the background color of the menu. Press ◄ ► to cycle through the options.

- **TYPE1** Semi transparent black
- **TYPE2** Solid blue
- **TYPE3** Semi transparent dark blue

## OSD POSITION

You can change the displaying position of the menu. Press ◄ ► to cycle through the options.

| | | |
|---|---|---|
| **UPPER LEFT** | **UPPER CENTER** | **UPPER RIGHT** |
| | **CENTER** | |
| **LOWER LEFT** | **LOWER CENTER** | **LOWER RIGHT** |

## BACK COLOR

You can choose a screen color from **BLUE** or **BLACK** for when the projector is in idle. Press ◄ ► to select.

## STARTUP LOGO

You can switch the logo on/off that is displayed when starting up the projector. Press ◄ ► to select the required option. **STARTUP LOGO** will be displayed for 15 seconds.

- **ON** Active
- **OFF** Deactive

## AUTO SEARCH

When the projector is turned on, the input terminals are detected and an input signal is selected automatically. You can switch the system on/off. Press ◄ ► to cycle through the options.

- **ON** Active
- **OFF** Deactive

**NOTE:**
- When no signal is detected, the last used input will be selected.

## HDMI SIGNAL LEVEL

When an **HDMI IN** is selected, you can switch the **HDMI** signal **NORMAL** or **EXPAND** to display the image. Press ◄ ► to select an option.

- **NORMAL** For general HDMI equipment
- **EXPAND** For HDMI equipment with expanded signals.

**NOTE:**
- **HDMI SIGNAL LEVEL** is not available with some equipment.

## FRAME RESPONSE

You can minimise the time delay of image displayed for the progressive signals.

- **NORMAL** Prioritise the image quality
- **FAST** Prioritise the frame response

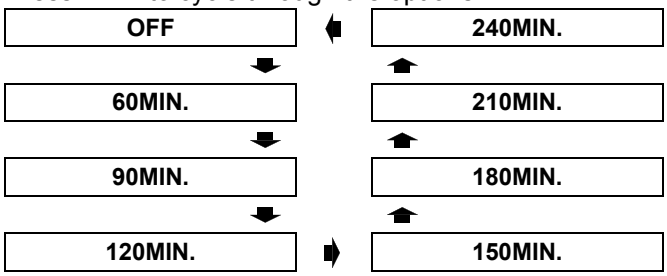
## INSTALLATION

When installing the projector, select the projection method according to the projector position. Press ◄ ► to cycle through the options. See “Projection method” on page 15.

| | |
|---|---|
| **FRONT/DESK** | Setting on a desk/floor and projecting from front |
| **FRONT/CEILING** | Mounting on the ceiling and projecting from front |
| **REAR/DESK** | Setting on a desk/floor and projecting from rear |
| **REAR/CEILING** | Mounting on the ceiling and projecting from rear |

## SLEEP

You can select the required duration of time and set the off timer to turn off the power of the projector automatically. 3 minutes before turn-off, the countdown of minutes will be displayed in the lower right corner. Press ◄ ► to cycle through the options.




## HIGH ALTITUDE MODE

If you use the projector at high elevation, the **HIGH ALTITUDE MODE** setting need to be **ON** to set the fan speed high. Press ◄ ► to select the required option.

- **OFF** The fan speed is low.
- **ON** The fan speed is high.

**NOTE:**
- At 1 400 - 2 700 m (4 593 - 8 858 ft) above sea level, the setting must be **ON**.
- The loudness of fan noise depends on the **HIGH ALTITUDE MODE** setting.

## LAMP POWER

You can adjust the power of the lamp to save on electricity, prolong the lamp life and reduce the noise.

| Options | Function |
|---|---|
| **NORMAL** | When higher luminance is required. |
| **ECO-MODE** | When lower luminance is sufficient. |

**NOTE:**
- When no input signal is detected, the function is disabled.

## LAMP RUNTIME

You can check how long the lamp has been used.

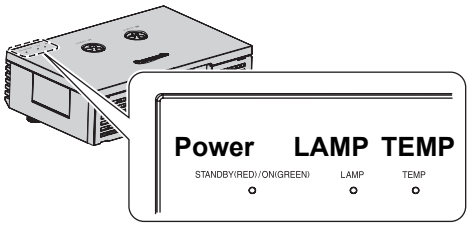
**NOTE:**
- **LAMP RUNTIME** is a relevant matter for lamp replacement timing. See “Replacing the lamp unit” on page 47.

# TEMP and LAMP Indicators

## Managing the indicated problems

If a problem should occur with the projector, the **LAMP** and/or **TEMP** indicators will inform you. Manage the indicated problems as follows.

1. Confirm the status of all indicators and projector, and switch off the projector in proper way.
2. Find out the cause of the problem by status of the **LAMP** and/or **TEMP** indicators.
3. Follow the following instruction for each indication and solve the problem.
4. Turn on the projector in the correct way and confirm the indicator is not indicating a problem any longer.




### LAMP indicator

| Indicator | Illuminating red | Flashing red | | |
|---|---|---|---|---|
| Problem | **LAMP RUNTIME** has reached 1 800 hours. | Lamp circuit failure, abnormal function or lamp unit is damaged. | | |
| Cause | The lamp unit will run out soon and needs to be replaced. | The **MAIN POWER** is switched on again before the lamp unit is cooled enough. | Lamp circuit failure, abnormal function. | The lamp unit is damaged. |
| Remedy | See “Replacing the lamp unit” on page 47. | Let the lamp unit cool down and turn on the **MAIN POWER** after 90 seconds. | Contact an Authorized Service Center. | See “Replacing the lamp unit” on page 47. |

### TEMP indicator

| Indicator | ● Illuminating red while projecting and the alert will be displayed.<br>● Flashing red and the power button is turned off. | | | |
|---|---|---|---|---|
| Problem | The temperature inside and/or outside the projector is abnormally high. | | | |
| Cause | The ventilation openings are covered. | The room temperature is too high. | The air filter is excessively dirty and the ventilation is poor. | The projector is located at high elevations (above 1 400 - 2 700 m). |
| Remedy | Remove the object(s) from the ventilation openings or clear around the projector. | Reinstall the projector in a temperature controlled place. See page 54. | Replace the air filter in the proper method. See page 46. | Turn on the projector and set the **HIGH ALTITUDE MODE** to **ON**. See page 44. |

**NOTE:**

- If no problem is found or the problem remains, do not turn on the projector. Instead contact an Authorized Service Center.

# Care and Replacement

## Cleaning the projector

### Before cleaning the projector

- Switch off the **MAIN POWER** switch in proper way and disconnect the power plug from the wall outlet.
- Unplug all the cables from the projector.

### Cleaning the outer surface of the projector

Wipe off dirt and dust gently with a soft cloth.

- If it is difficult to remove the dirt, soak a cloth in water, wring the cloth well and then wipe the projector. Dry off the projector with dry cloth.
- Do not use petroleum benzine, thinner, any alcoholic solvent, kitchen detergents or chemical clothes. Failure to observe these may result in altered or damaged surface of the projector.

### Cleaning the lens surface

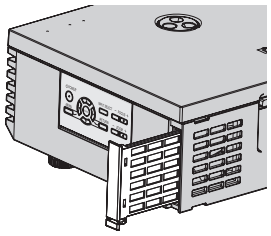
Wipe off dirt and dust gently with a lint-free cloth.

- Make sure no dirt or dust remains on the surface of the lens. It will be enlarged and projected onto a screen.

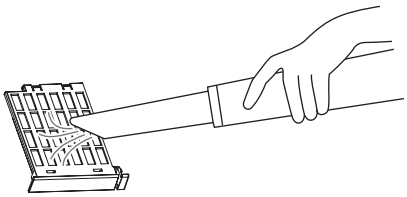
### Cleaning the air filter

If the air filter is excessively dirty, the internal temperature of the projector increases and may cause malfunction. Clean the air filter regularly every 100 hours of usage.

1. Place a finger at the bottom of the air filter.
2. Slightly push up and pull out the air filter to remove.



3. Vacuum dirt and dust from the air filter.



   - Do not wash the air filter.
4. Place and slightly slide in the air filter in the air intake port to attach.
   - Make sure the air filter clicks into the place.

**NOTE:**

- Do not use the projector without attaching the air filter.

### Replacing the air filter

The air filter should be replaced when cleaning is ineffective and when replacing the lamp unit. A replacement air filter (TXFKN01VKF5) is provided with a replacement lamp unit, ET-LAE1000. Contact an Authorized Service Center for the optional air filter.

# Replacing the lamp unit

## Before replacing the lamp unit

- Switch off the **MAIN POWER** button in proper way and disconnect the power plug from the wall outlet.
- Wait for more than 1 hour and make sure the lamp unit and the surroundings are cooled enough.
- Unplug all the cables from the projector.
- Prepare a Phillips-head screwdriver.
- Contact an Authorized Service Center to purchase a replacement lamp unit (ET-LAE1000).
- When the projector is mounted on the ceiling, do not work directly under the projector or put your face closer to the projector.

**NOTE:**
- Prior to replacing the lamp unit, allow it to cool down to prevent the risk of burns, damage and other hazards.
- Do not attempt replacement with an unauthorized lamp unit.

## When to replace the lamp unit

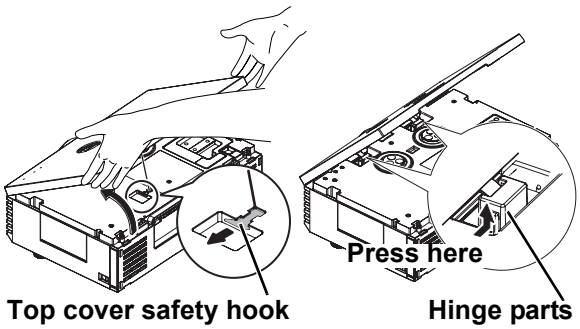
The lamp unit is consumable and the brightness decreases by duration of usage. The **LAMP** indicator will inform you of the replacement timing at 1 800 hours, and at 2 000 hours, the projector will be turned off. Those figures are rough guidance and might be shortened by the usage conditions, characteristics of the lamp unit, environmental conditions, and so on. You can check the duration of usage time using **LAMP RUNTIME** in the **OPTION** menu.

| | On screen | **LAMP** indicator |
|---|---|---|
| **Indication** | REPLACE LAMP | LAMP |
| **Over 1 800 hours** | "**REPLACE LAMP**" is displayed on the upper left of the screen for 30 seconds.<br>To clear the screen immediately, press any button. | Illuminates red. |
| **Over 2 000 hours** | "**REPLACE LAMP**" is displayed on the upper left of the screen, and it will stay until you respond.<br>To clear the screen, press any button. | |

**NOTE:**
- The guide times, 1 800 and 2 000 hours, are rough estimates based on certain conditions and are not guaranteed time. The estimated condition is: **LAMP POWER** in **OPTION** menu set to **NORMAL**.
- To prolong the lamp life, set the **LAMP POWER** in **OPTION** menu to **ECO-MODE**. See "LAMP POWER" on page 44.
- For more information about the lamp unit, such as guaranteed time, see the instructions which is provided with the lamp unit.

## Opening the top cover

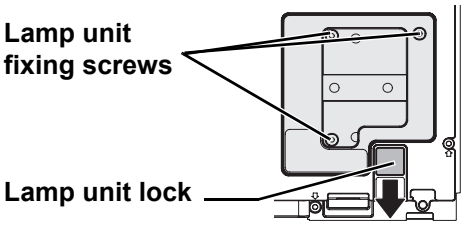
1. Hold at the back corner of the top cover and slightly push up to open.
2. Unhook the top cover safety hook from the projector.
3. Hold the top cover up and press the sides of each hinge parts to remove.
   - When the projector is mounted on the ceiling, removing the hinge parts is not required.
4. Remove the top cover aside.



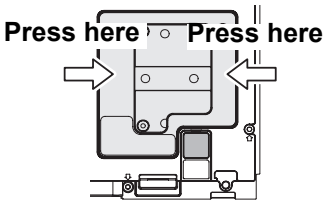

**NOTE: When the projector is mounted on the ceiling:**
- Place yourself at back side of the projector, then open and close the top cover.
- Do not work directly under the projector or put your face closer to the projector.

## Removing and replacing the lamp unit

1. Use a Phillips screwdriver to loosen the 3 lamp unit fixing screws until the screws turn freely.



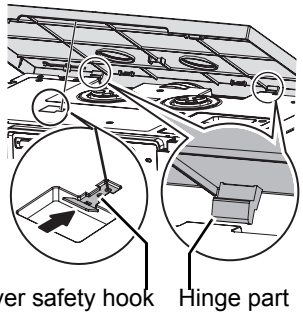

2. Hold the handle of the lamp unit and release the lamp unit lock.
3. Pull out the lamp unit gently from the projector.
4. Replace the new lamp unit while making sure that the direction of insertion is correct.
   - Press the top of the lamp unit and make sure the unit is installed securely.




5. Tighten the lamp unit fixing screws securely with a Phillips screwdriver.

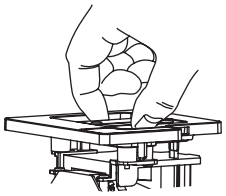
## Attaching the top cover

1. Attach the hinge parts of the top cover to the projector and press slightly until it clicks.
   - When the projector is mounted on the ceiling, attaching the hinge parts is not required.
2. Hook the top cover safety hook to the projector.
3. Hooking the tabs of the top cover to the front of the projector and lift down slowly.
4. Press the back corner of the top cover gently until it clicks.
   - Make sure to hook the top cover safety hook to the body.




**NOTE:**

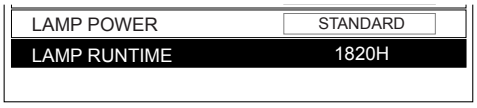
- Be sure to install the lamp unit and the top cover of the projector securely. If they are not securely installed, it may cause the protection circuit to operate so that the power cannot be turned on.
- Grip the handle and keep the lamp unit paralleled when you remove the lamp unit.
- Do not switch the power on while the top cover is opened.
- When the projector is mounted on the ceiling, keep the lamp unit paralleled up and remove.



## Resetting the LAMP RUNTIME

If the lamp usage time has passed 2 000 hours (when **LAMP POWER** has been set to **NORMAL**), the projector will switch to standby mode after approximately 10 minutes of operation. The resetting procedure should thus be completed within 10 minutes.

1. Connect the power cord to the projector and a wall outlet, and switch the **MAIN POWER** on.
2. Switch the power button.
3. Press the **MENU** button to display the menu.
4. Press ▲ ▼ to select **OPTION** and press **ENTER**.
5. Press ▲ ▼ to select **LAMP RUNTIME**.




6. Press and hold the **ENTER** button for approximately 3 seconds.
7. The confirmation screen will be displayed and select **OK**.
8. Switch off the power button to reset the duration of the **LAMP RUNTIME**.
9. Confirm the duration of time in **LAMP RUNTIME** is reset to "0".

# Troubleshooting

Should any problem persist, contact your dealer.

| Problem | Cause | Reference page |
|---|---|---|
| **Power does not turn on.** | ● The power cord may not be connected.<br>● The **MAIN POWER** switch is turned off.<br>● No electric supply is at the wall outlet.<br>● **TEMP** indicator is lit or flashes.<br>● **LAMP** indicator is lit or flashes.<br>● The lamp unit cover has not been securely installed.<br>● The circuit breakers have tripped. | 19<br>21<br>19<br>45<br>45<br>47<br>- |
| **No picture appears.** | ● The video signal input source may not be connected to a terminal properly.<br>● The input selection setting may not be correct.<br>● The **BRIGHTNESS** adjustment setting may be at the minimum setting.<br>● The **SHUTTER** function may be in use.<br>● The lens cover may still be attached to the lens. | 18<br>28<br>32<br>42<br>12 |
| **The picture is fuzzy.** | ● The lens focus may not have been set correctly.<br>● The projector may not be at the correct distance from the screen.<br>● The lens may be dirty.<br>● The projector may be tilted too much. | 22<br>14<br>46<br>16 |
| **The color is pale or grayish.** | ● **COLOR** or **TINT** adjustment may be incorrect.<br>● The equipment which is connected to the projector may not be adjusted correctly. | 32<br>- |
| **The Remote control does not operate.** | ● The batteries may be weak.<br>● The batteries may not have been inserted correctly.<br>● The remote control signal receptor on the projector may be obstructed.<br>● The remote control unit may be out of the operation range. | -<br>11<br>23<br>23 |
| **The picture does not display correctly.** | ● The signal format (**TV-SYSTEM**) may not have been set correctly.<br>● There may be a problem with the VCR or other signal source.<br>● A signal which is not compatible with the projector is being input. | 35<br>-<br>50 |
| **Picture from a computer does not appear.** | ● The cable may be longer than the optional cable.<br>● The external video output from a laptop computer may not be correct. (You may be able to change the external output settings by pressing the [Fn] + [F3] or [Fn] + [F10] keys simultaneously. The actual method varies depending on the type of computer; refer to the documentation provided with your computer for further details.) | -<br>- |

# Technical Information

## List of compatible signals

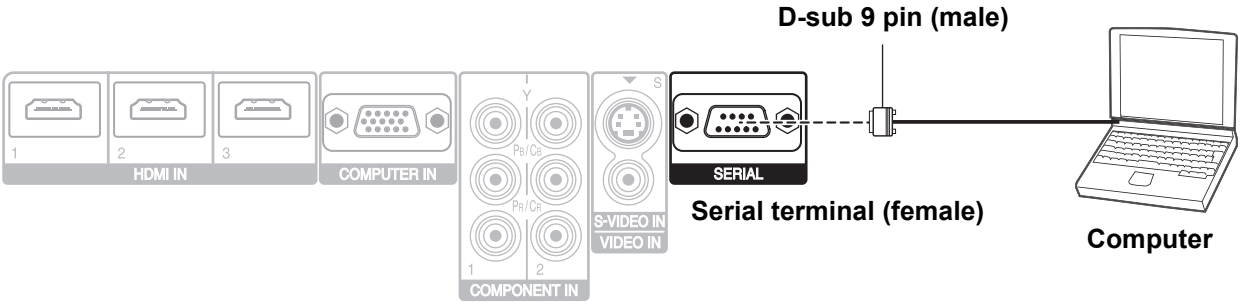
| Mode | Display | Display resolution (dots)*1 | Scanning frequency | | Dot clock frequency (MHz) | Picture quality*2 | Terminals |
|---|---|---|---|---|---|---|---|
| | | | H (kHz) | V (Hz) | | | |
| NTSC/NTSC 4.43/ PAL-M/PAL60 | - | 720 x 480i | 15.7 | 59.9 | - | A | VIDEO/S-VIDEO |
| PAL/PAL-N/SECAM | - | 720 x 576i | 15.6 | 50.0 | - | A | |
| 525i (480i) | 525i | 720 x 480i | 15.7 | 59.9 | 13.5 | A | COMPONENT |
| 625i (576i) | 625i | 720 x 576i | 15.6 | 50.0 | 13.5 | A | |
| 525p (480p) | 525p | 720 x 483 | 31.5 | 59.9 | 27.0 | A | COMPONENT/HDMI |
| 625p (576p) | 625p | 720 x 576 | 31.3 | 50.0 | 27.0 | A | |
| 1 125 (1 080)/60i | 1 125/60i | 1 920 x 1 080i | 33.8 | 60.0 | 74.3 | AA | COMPONENT/ HDMI/COMPUTER |
| 1 125 (1 080)/50i | 1 125/50i | 1 920 x 1 080i | 28.1 | 50.0 | 74.3 | AA | |
| 1 125 (1 080)/24p | 1 125/24p | 1 920 x 1 080 | 27.0 | 24.0 | 74.3 | AA | COMPONENT/HDMI |
| 1 125 (1 080)/60p | 1 125/60p | 1 920 x 1 080 | 67.5 | 60.0 | 148.5 | AA | COMPONENT/ HDMI/COMPUTER |
| 1 125 (1 080)/50p | 1 125/50p | 1 920 x 1 080 | 56.3 | 50.0 | 148.5 | AA | |
| 750 (720)/60p | 750/60p | 1 280 x 720 | 45.0 | 60.0 | 74.3 | AA | COMPONENT/HDMI |
| 750 (720)/50p | 750/50p | 1 280 x 720 | 37.5 | 50.0 | 74.3 | AA | |
| VGA480 | VGA60 | 640 x 480 | 31.5 | 59.9 | 25.2 | A | COMPUTER |
| | VGA75 | 640 x 480 | 37.5 | 75.0 | 31.5 | A | |
| | VGA85 | 640 x 480 | 43.3 | 85.0 | 36.0 | A | |
| | VGA138 | 640 x 480 | 72.1 | 138.0 | 62.3 | A | |
| SVGA | SVGA55 | 800 x 600 | 35.2 | 56.3 | 36.0 | A | |
| | SVGA60 | 800 x 600 | 37.9 | 60.3 | 40.0 | A | |
| | SVGA70 | 800 x 600 | 48.1 | 72.2 | 50.0 | A | |
| | SVGA75 | 800 x 600 | 46.9 | 75.0 | 49.5 | A | |
| | SVGA85 | 800 x 600 | 53.7 | 85.1 | 56.3 | A | |
| WIDE720 | WIDE720 | 1 280 x 720 | 45.1 | 60.1 | 76.5 | AA | |
| XGA | XGA60 | 1 024 x 768 | 48.4 | 60.0 | 65.0 | A | |
| | XGA70 | 1 024 x 768 | 56.5 | 70.1 | 75.0 | A | |
| | XGA75 | 1 024 x 768 | 60.0 | 75.0 | 78.8 | A | |
| | XGA85 | 1 024 x 768 | 68.7 | 85.0 | 94.5 | A | |
| | XGA89 | 1 024 x 768 | 72.1 | 89.0 | 99.2 | A | |
| WIDE768 | WIDE768 | 1 280 x 768 | 45.3 | 56.5 | 76.2 | A | |
| MXGA | MXGA70 | 1 152 x 864 | 64.0 | 71.2 | 94.2 | A | |
| | MXGA75 | 1 152 x 864 | 67.5 | 74.9 | 108.0 | A | |
| SXGA | SXGA60 | 1 280 x 1 024 | 64.0 | 60.0 | 108.0 | A | |
| SXGA60+ | SXGA60+ | 1 400 x 1 050 | 65.1 | 59.9 | 122.4 | A | |
| WIDE768-2 | WIDE768-2 | 1 360 x 768 | 48.8 | 59.8 | 74.3 | A | |
| WIDE800 | WIDE800 | 1 280 x 800 | 49.7 | 59.8 | 83.5 | A | |
| WIDE900 | WIDE900 | 1 440 x 900 | 55.9 | 59.8 | 106.5 | A | |
| WIDE1080/60 | WIDE1080/60 | 1 920 x 1 080 | 66.5 | 59.9 | 138.5 | AA | |
| WIDE1080/50 | WIDE1080/50 | 1 920 x 1 080 | 55.6 | 49.9 | 141.5 | AA | |

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

# Serial terminal

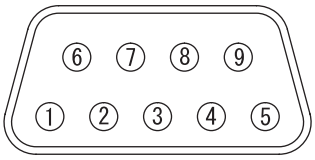
The serial connector which is on the connector panel of the projector conforms to the RS-232C interface specification, so that the projector can be controlled by a personal computer which is connected to this connecter.

## Connection




**NOTE:**
- You must use only an RS-232C Serial Interface Cable with a ferrite core, type ET-ADSER.

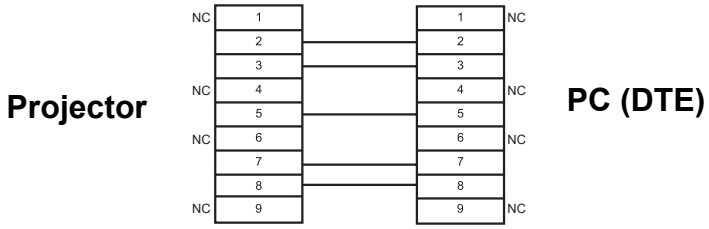
## Pin assignments and signal names




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

## Cable specifications

(When connected to a personal computer)




## Basic format

| STX | Command | : | Parameter | ETX |
|---|---|---|---|---|
| Start byte (02h) | 3 bytes | 1 byte | 1 byte - 4 bytes | End (03h) |

The data streaming from the computer will start with STX, and proceed to Command, Parameter and end with ETX. You can add the required parameter.

- The projector can not receive any command for 10 seconds after the lamp is switched on. Wait 10 seconds before sending the command.
- If sending multiple commands, check that a response has been received from the projector for one command before sending the next command.
- When a command which does not require parameters to be sent, the colon (:) is not required.
- If an incorrect command is sent from the personal computer, the ER401 command will be sent from the projector to the personal computer.

## Communication settings

| Signal level | RS-232C | Character length | 8 bits |
|---|---|---|---|
| Sync. method | Asynchronous | Stop bit | 1 bit |
| Baud rate | 9 600 bps | X parameter | None |
| Parity | None | S parameter | None |

## Control commands

| Command | Control contents | Remarks |
|---|---|---|
| **PON** | POWER ON | In standby mode, all commands other than the PON command are ignored.<br>The PON command is ignored during lamp ON control.<br>If a PON command is received while the cooling fan is operating after the lamp has switched off, the lamp is not turned back on again straight away in order to protect the lamp. |
| **POF** | POWER OFF | |
| **IIS** | INPUT | Parameter:<br>CP1 = COMPONENT1 IN CP2 = COMPONENT2 IN<br>SVD = S-VIDEO IN VID = VIDEO IN<br>HD1 = HDMI1 IN HD2 = HDMI2 IN<br>HD3 = HDMI3 IN RG1 = COMPUTER IN |
| **OMN** | MAIN | Displaying the main menu. |
| **OEN** | ENTER | Activating the selected items in the menu mode. |
| **OBK** | RETURN | Returning to the previous menu or escaping from the menu mode. |
| **OCU/OCD/ OCL/OCR** | Navigation buttons | OCU = ▲ button OCL = ◀ button<br>OCD = ▼ button OCR = ▶ button |
| **OLE** | LENS | Activating the LENS CONTROL menu. |
| **OST** | DEFAULT | Resetting to the factory default setting. (page 28) |
| **OFZ** | FREEZE | Freezing the projected screen.<br>Parameter:<br>0 = OFF 1 = ON |
| **FC1** | FUNCTION BUTTON | Activates the function that is assigned to the FUNCTION button of the remote control. |
| **OOT** | SLEEP | Setting the duration of time to turn off the power automatically. (See “SLEEP” on page 44.)<br>0 = OFF 1 = 60min. 2 = 90min. 3 = 120min. 4 = 150min.<br>5 = 180min. 6 = 210min. 7 = 240min. |
| **OSH** | BLANK | Turning off the projection temporarily.<br>Send the command to switch between ON and OFF.<br>Do not send the command consecutively. |
| **OVM** | PICTURE | Activating the PICTURE menu. Send the command to switch menu items. (page 23) |
| **OWM** | WAVEFORM | Activating the WAVEFORM. (page 24)<br>Parameter:<br>0 = OFF<br>1 = FULL SCAN (Y) 5 = SINGLE LINE SCAN (Y)<br>2 = FULL SCAN (R) 6 = SINGLE LINE SCAN (R)<br>3 = FULL SCAN (G) 7 = SINGLE LINE SCAN (G)<br>4 = FULL SCAN (B) 8 = SINGLE LINE SCAN (B) |
| **VS1** | ASPECT | Switching the aspect ratio. (page 24) |
| **VPM** | PICTURE MODE | Switching the PICTURE MODE. (page 23)<br>Parameter:<br>NOR = NORMAL DYN = DYNAMIC CL1 = COLOR1 CL2 = COLOR2<br>CN1 = CINEMA1 CN2 = CINEMA2 CN3 = CINEMA3 |

## Inquiry commands

| Command | Control contents | Parameter |
|---|---|---|
| **QPW** | Power status | 000 = OFF<br>001 = ON |
| **QFZ** | FREEZE status | 0 = OFF<br>1 = ON |
| **QIN** | INPUT signal status | CP1 = COMPONENT1 IN<br>CP2 = COMPONENT2 IN<br>SVD = S-VIDEO IN<br>VID = VIDEO IN<br>HD1 = HDMI1 IN<br>HD2 = HDMI2 IN<br>HD3 = HDMI3 IN<br>RG1 = COMPUTER IN |
| **QOT** | OFF TIMER status | 0 = OFF 1 = 60min. 2 = 90min. 3 = 120min. 4 = 150min.<br>5 = 180min. 6 = 210min. 7 = 240min. |
| **QPM** | PICTURE MODE status | NOR = NORMAL DYN = DYNAMIC CL1 = COLOR1 CL2 = COLOR2<br>CN1 = CINEMA1 CN2 = CINEMA2 CN3 = CINEMA3 |
| **QSH** | BLANK status | 0 = OFF<br>1 = ON |
| **QWM** | WAVEFORM status | Parameter:<br>0 = OFF<br>1 = FULL SCAN (Y)<br>5 = SINGLE LINE SCAN (Y)<br>2 = FULL SCAN (R)<br>6 = SINGLE LINE SCAN (R)<br>3 = FULL SCAN (G)<br>7 = SINGLE LINE SCAN (G)<br>4 = FULL SCAN (B)<br>8 = SINGLE LINE SCAN (B) |

# Specifications

| | | |
|---|---|---|
| **Power supply** | | AC 100 - 240 V 50 Hz/60 Hz |
| **Power consumption** | | Less than 240 W<br>During standby (when fan is stopped): 0.08 W (at 220 V) |
| **Amps** | | 3.0 A - 1.6 A |
| **LCD panel** | **Panel size (diagonal)** | 0.74 type (17.78 mm) |
| | **Aspect ratio** | 16 : 9 |
| | **Display method** | 3 transparent LCD panels (RGB) |
| | **Drive method** | Active matrix method |
| | **Pixels** | 2 073 600 (1 920 x 1 080) x 3 panels |
| **Lens** | | Motorized zoom (2x)/Motorized focus<br>F 1.9 - 3.1, f 22.4 mm - 44.8 mm |
| **Lamp** | | UHM lamp (165 W) |
| **Luminosity**[*1] | | 1 600 lm |
| **Operating environment** | | Temperature: 0 °C - 40 °C (32 °F - 104 °F)<br>When the HIGH ALTITUDE MODE (page 44) is set to ON: 0 °C - 35 °C (32 °F - 95 °F)<br>Humidity: 20% - 80% (no condensation) |
| **Scanning frequency**[*2] **(for RGB signal)** | **Horizontal scanning frequency** | 30 kHz - 70 kHz |
| | **Vertical scanning frequency** | 50 Hz - 87 Hz |
| | **Dot clock frequency** | Less than 150 MHz |
| **COMPONENT (YPBPR) signals** | | 525i (480i), 525p (480p), 625i (576i), 625p (576p), 750 (720)/60p, 750 (720)/50p, 1 125 (1 080)/60i, 1 125 (1 080)/50i, 1 125 (1 080)/60p, 1 125 (1 080)/50p, 1 125 (1 080)/24p |
| **Color system** | | 7 (NTSC/NTSC 4.43/PAL/PAL-M/PAL-N/PAL60/SECAM) |
| **Projection size** | | 40" - 200" (1 016 mm - 5 080 mm) |
| **Throw distance** | | 1.2 m - 12 m (3'11" - 39'4") |
| **Screen aspect ratio** | | 16 : 9 |
| **Installation** | | FRONT/DESK, FRONT/CEILING, REAR/DESK, REAR/CEILING<br>(Menu selection method) |

*1. Measurement, measuring conditions and method of notation all comply with ISO 21118 international standards.
*2. See “List of compatible signals” on page 50 for available signals.

| | | | |
|---|---|---|---|
| Terminals | S-VIDEO IN | Single - line, Mini DIN 4p Y: 1.0 V [p-p], C: 0.286 V [p-p], 75 Ω | |
| | VIDEO IN | Single - line, RCA pin jack1.0 V [p-p], 75Ω | |
| | COMPUTER IN | Single - line, D - sub HD 15-pin (female)<br>Selectable for input and output by menu operation. | |
| | | R.G.B. | 0.7 V [p-p], 75 Ω |
| | | G.SYNC | 1.0 V [p-p], 75 Ω |
| | | HD/SYNC | TTL high impedance, automatic positive/negative polarity compatible |
| | | VD | TTL high impedance, automatic positive/negative polarity compatible |
| | COMPONENT IN | Y, PB/CB, PR/CR | Dual - line, RCA pin jack x 3 |
| | | Y: | 1.0 V [p-p] (including sync), 75 Ω |
| | | PB/CB, PR/CR | 0.7 V [p-p], 75 Ω |
| | HDMI IN | Triple - line, 19-pin HDMI connector (HDCP compliant) | |
| | SERIAL | D-sub 9-pin RS-232C compatible | |
| Cabinet | | Moulded plastic (PC+ABS) | |
| Dimensions | | Width | 460 mm (18 -3/32") |
| | | Height | 130 mm (5 -3/32") |
| | | Length | 300 mm (11 -25/32") |
| Weight | | Approx. 7.3 kg (16.09 lbs.)*1 | |
| Certifications | | UL60950-1<br>FCC Class B | C-UL<br>ICES-003 |
| Remote control | Power supply | 3 V DC (AA battery x 2) | |
| | Operating range | Approx. 7 m (23') (when operated directly in front of signal receptor) | |
| | Weight | 125 g (4.4 ozs.) (including batteries) | |
| | Dimensions | Width | 48 mm (1 -7/8") |
| | | Length | 138 mm (5 -13/32") |
| | | Height | 28.35 mm (1 -3/32") (not including surface projection parts) |
| Options | Cable cover | ET-PCE2000 | |
| | Ceiling bracket | ET-PKE2000/ET-PKE1000S | |

*1. Average value. Each product has an individual variability in weight.

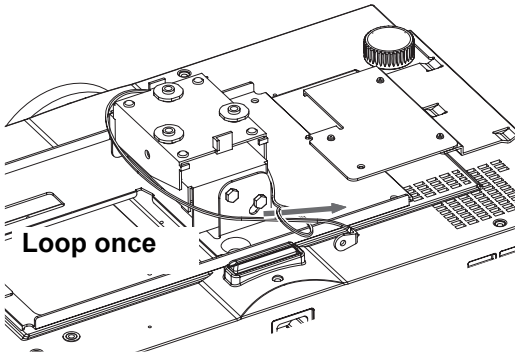
# Ceiling mount bracket safeguards

The projector and the ceiling mount bracket are designed for sufficiently safety however, make sure the safety cable provided with the projector is installed and attached to the bottom of the projector when mounting on the ceiling for safety and security.

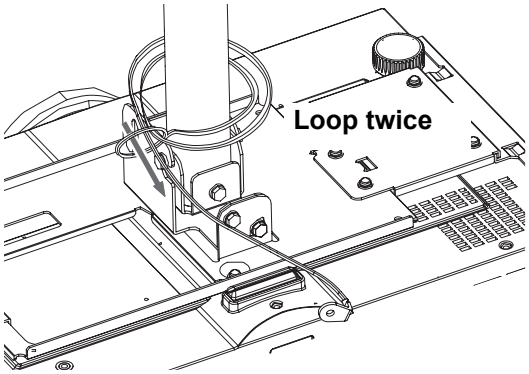
**NOTE:**
- Even if it is during guarantee period, the manufacturer is not responsible for any hazard or damage caused by using a ceiling mount bracket which is not purchased from an authorized distributors, or environmental conditions.
- Make sure to use a torque driver and do not use an electrical screwdriver or an impact screwdriver.
- Installation work of the ceiling mount bracket should only be carried by a qualified technician.
- Remove an unused ceiling mount bracket promptly.

## Installing the safety cable

1. Install the ceiling mount bracket according to the Installation Instructions.
2. Loop the security cable around the ceiling mount bracket with less slack.
   - Lace the cable of the end with a latch through the loop on the other end of the cable.

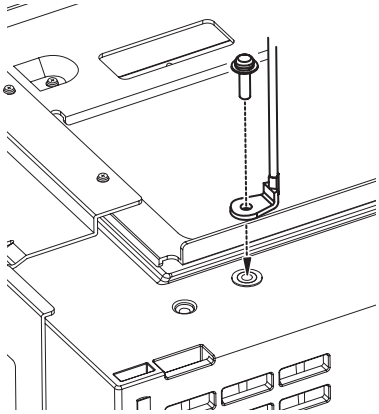



* Indicated above is ET-PKE1000S.

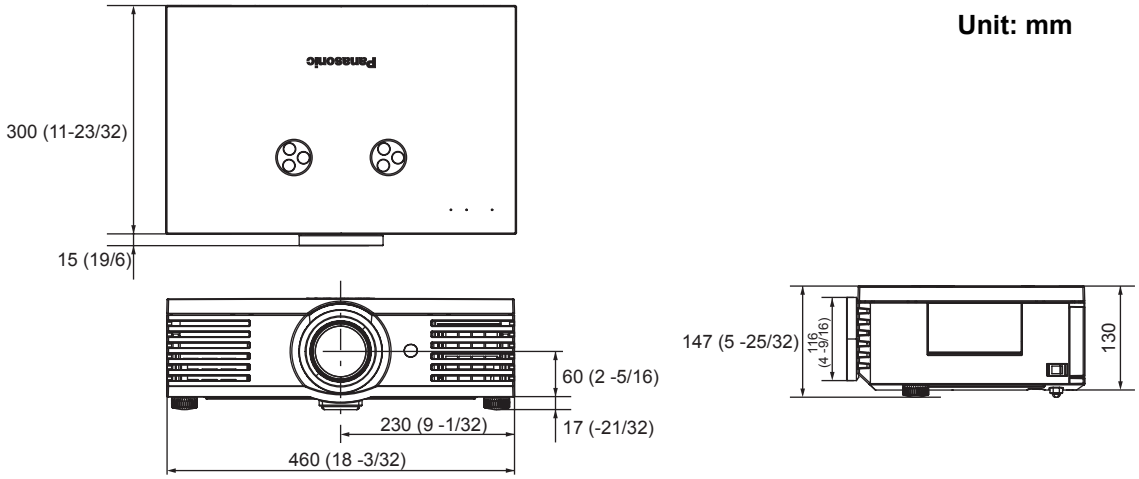



* Indicated above is ET-PKE2000

3. Attach the latch on to the bottom of the projector with a provided screw.
   - Torque: 1.25±0.2 N·m



# Dimensions

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