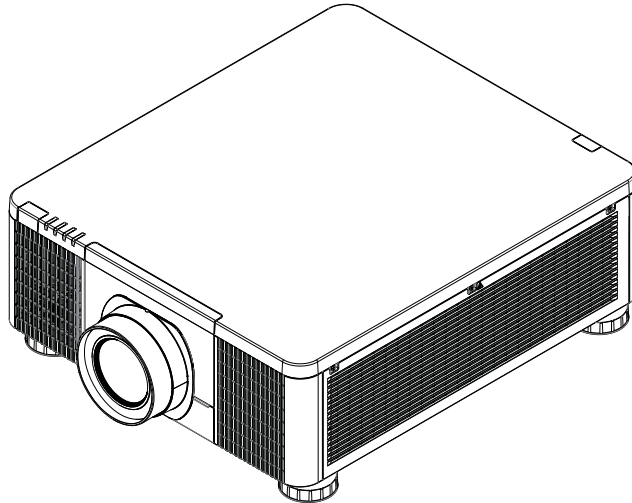


# ***DUKANE***

## **User's Manual DLP<sup>®</sup> Projector 9100WUSS**



Thank you for purchasing this product.  
Read this manual before you use your projector.  
Keep the manual for future reference.

**Note:** The Dukane model described in this document is manufactured by Hitachi and uses the same firmware, software programs, control code, and accessory parts. The equivalent Dukane to Hitachi model is 9100WUSS (LP-WU9100B).

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## Warning, Notices, and Safety Instructions

# Warning, Notices, and Safety Instructions

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### Notice

This product is intended for the adults who have the ability to operate this machine.

Write down your projector model number and serial number to keep the information for maintenance purposes in the future. If the projector is lost or stolen, the information could also be used for the police report.

Model number:

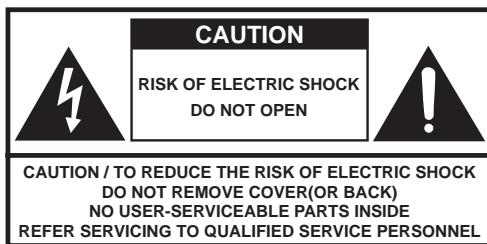
Serial number:

### Contents of package

Check the following accessories that come with the projector. If you find any missing accessory, contact your dealer immediately.

- |                       |                           |                       |
|-----------------------|---------------------------|-----------------------|
| 1. AC Power Cord      | 4. AA battery (x2)        | 7. RS232 cable(cross) |
| 2. Wired Remote Cable | 5. CD-ROM (User's Manual) | 8. RGB cable          |
| 3. Remote control     | 6. Printed Manual         | 9. Mount cap          |

### Do not open



The lightning flash with an arrowhead within a triangle is intended to tell the user that inside this product may cause risk of electrical shock to persons.



The exclamation point within a triangle is intended to tell the user that important operating and/or servicing instructions are included in the technical documentation for this equipment.

### About Electro-Magnetic Interference

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

### In Canada

CAN ICES-3(A) / NMB-3(A)

### Description pertaining to FCC Rules Part 15

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.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

## Warning, Notices, and Safety Instructions

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### CAUTION:

Changes or modifications not expressly approved by the manufacturer void the user's authority to operate the equipment.

## Disposal of Old Equipment and Batteries Only for European Union and countries with recycling systems



The above mark is in compliance with the Waste Electrical and Electronic Equipment Directive 2012/19/EU (WEEE). The mark indicates the requirement NOT to dispose the equipment including any spent or discarded batteries as unsorted municipal waste, but use the return and collection systems available. If the batteries or accumulators included with this equipment display the chemical symbol Hg, Cd, or Pb, then it means that the battery has a heavy metal content of more than 0.0005% Mercury, or more than 0.002% Cadmium or more than 0.004% Lead.



**Note for the battery symbol (bottom symbol):** This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

## Sunlight Warning

Do not use this projector in direct sunlight.

Sunlight may cause serious damage to the digital mirror device (DMD™) at the back of the projector lens.

## Never look into the projector light source directly

When turning on the projector, make sure that the projection light does not get into someone's eye.

Never look into the projector light source directly.

As with any bright source, do not stare into the direct beam, RG2 IEC 62471-5:2015



## Keep any object away from concentrated projection light beam

Blocking the beam by something causes high temperature and could result in fire or smoke.



## Electric shock

Do not turn on the projector during thunderstorm, and unplug it from the outlet. This will prevent the projector from being damaged by sudden electrical surges due to the thunderbolt.

## Warning, Notices, and Safety Instructions

### Do not overload outlets/extension cords

Pay attention to the current load of the outlet and cord you are using to prevent fire or electrical shock.

### Cleaning

When cleaning the projector, be sure to unplug it from the outlet to prevent electric shock.

Do not use liquid or aerosol cleaners. Use a dry/damp cloth with excessive moisture removed for cleaning. Be sure to use cleaning cloth designed to clean monitors for the projector to prevent damages to the projector cabinet due to abrasion.

### Dampness, smoke, steam, dust, high temperature and direct exposure to sunlight

Do not operate the projector in environments where it could be exposed to dampness, smoke, steam, dust, high temperature or direct sunlight. For example: bathroom, kitchen, around a washing machine, damp basement rooms, electric heaters or similar environments. Keeping or operating the projector in the above-mentioned environment could lead to discoloration, mold growth, adhesion of oil, or damages to the projector.

Do not place the projector where any oils, such as cooking or machine oil, are used. Oil may harm the product, resulting in malfunction, or falling from the mounted position. Do not use adhesive such as threadlocker, lubricant and so on.

### Ventilation

The projector cabinet is designed with slots and openings to remove the heat inside the projector so that it will not overheat and damage the components. Be sure to operate the projector in an environment with ideal ventilation and do not operate it on a sofa, rug or other closed-in environments that could obstruct ventilation.

Do not touch around the exhaust vents during use or just after use, since it is too hot.

### Intrusion of foreign objects

Be sure to keep all foreign objects away from entering the projector because it could be exposed to hazardous voltages and cause parts to short circuit. This could lead to fire hazard or electric shock. Examples of foreign objects include: cockroach, screws, liquid and so forth.

In addition, never spill liquid into the projector.

### Cooling fluid

When the projector is damaged, cooling fluid may come out of internal radiator or the tank. Never touch or drink it. When you swallow it or it gets into the eye, consult a physician immediately for emergency treatment.

### Carrying the projector

The projector net weight is 28kg (without the lens). When carrying the projector on a cart, be sure to handle the cart with care. The projector may fall due to abrupt stops, excessive jolts, or uneven ground.



# Warning, Notices, and Safety Instructions

## Install the projector on an even and stable surface

Do not put the projector on unstable cart, tripod, table and so forth to prevent it from falling, being damaged, or causing injuries.

## Servicing

If you have a problem with the projector, contact your local dealer or qualified service personnel. Do not repair the projector by yourself so that you cannot be exposed to high voltage or other potential hazards.



No servicing is allowed except by authorized personnel.

If you experience any of the following situation, unplug your projector from the outlet and contact a qualified service personnel for assistance:

- Damaged power cord or power plug.
- If a foreign object has fallen into the projector or if you have spilled water or other liquid into the projector.
- If the projector has been dropped accidentally or damaged.
- If you experience noticeably poor performance or malfunction of the projector despite having followed instructions for normal operation.

## Replacing parts

If any part of the projector is damaged, be sure to ask the service personnel to repair or replace with the genuine parts and perform safety inspections to ensure that the projector operates normally. Using non-certified parts cannot guarantee the reliability of the projector and may result in damages to the projector or hazards such as fire or electric shock.



No maintenance is allowed by users. Do not open the cabinet.

No parts inside are repairable by users.

## Power cord

Do not place the projector where the cord can be stepped on. This may result in fraying or damage to the power cord, especially at the plug and the point of connection between the power cord and the projector.

Incomplete power cord connection will cause sparks or fire.

Use the power cord bundled with the projector or the type of power cord specified for the projector (refer to the rating descriptions printed on the power cord). If you are not sure of the power available at the region you are in, consult your local power company. Using a wrong power cord has a potential of fire hazards due to current overload.

Depending on the country and region you are in, the voltage and type of socket of the outlet may be different from the projector. If you are unable to fit the power plug into the outlet, contact your local dealer. Do not remove the extra pin on the power plug to forcibly fit it to the socket at the risk of your own safety.

Connect the ground terminal for the AC inlet of this unit to the ground terminal of the building using an appropriate power cord (bundled); otherwise it could cause fire or electric shock.

Install the projector where you can access the power outlet easily.

## Warning, Notices, and Safety Instructions

### Notices you should read prior to the installation of the projector

#### Installation environment for the projector

Do not install the projector at place with excessive dampness, dust or smoke. If installation in such environment is unavoidable, be sure to clean the interior of the projector routinely to prolong the projector's lifecycle. The projector's interior should be cleaned only by qualified service personnel, dispatched by your local dealer so do not clean the inside of the projector by yourself.

If other light source is directly projected onto the projector screen, the color of the picture from the projector will appear to be pale and the picture quality will be lower. In addition, your eyes would be more prone to fatigue. Therefore, it is recommended that the projector be installed in places without direct exposure to sunlight or other strong light source.

The ideal operating temperature range : 0°C ~ 45°C (32°F ~ 113°F)

The ideal storage temperature range : -10°C~ 60°C (14°F ~ 140°F)

#### Configurations for projector operation at high altitudes

When operating the projector at higher altitudes, be sure to set the fan mode manually to “HIGH-1”, “HIGH-2”, or “HIGH-3”. Otherwise, it could shorten the life of the optical system in the projector. High altitude is defined as places at 1219 meters (4000 feet) high or higher.

For details, see User's Manual - Operating Guide.

#### Protect the projector with care

When placing the projector at a high position, be sure to secure the projector firmly so that it would not fall and cause injuries. Take care to protect the projector's lens from collision, abrasion or other damages. Be sure to close the lens cover or cover the projector with a dust cover if you need to store the projector or if it will not be used for a long time.

#### Keep obstacles away from the projector's ventilation inlets and outlets

Pay attention to the direction of air flow at the designated spot of installation. Do not let the hot air released from the outlet flow back to the inlet because it will prevent proper cooling and lead to damage of the projector's internal structure.

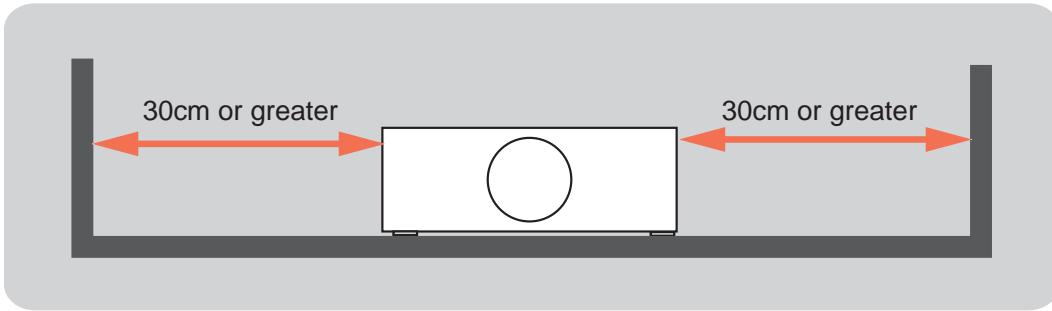
In the event of high temperature due to malfunctioning of the internal cooling fan caused by clogging at the ventilation inlets and outlets, the projector will activate its automatic protection mode and shutdown. When this happens, it does not necessarily mean that the equipment is malfunctioning. Unplug the power cord from the outlet and wait approximately 15 minutes before operating the projector again (remember to remove the objects that have caused poor ventilation so that the projector will not go into the protection mode again).

Description: Temperature inside the projector is automatically adjusted by cooling fans. Therefore, it does not mean that a problem has occurred in the projector even if you hear the sound of cooling fan and its operating speed change.

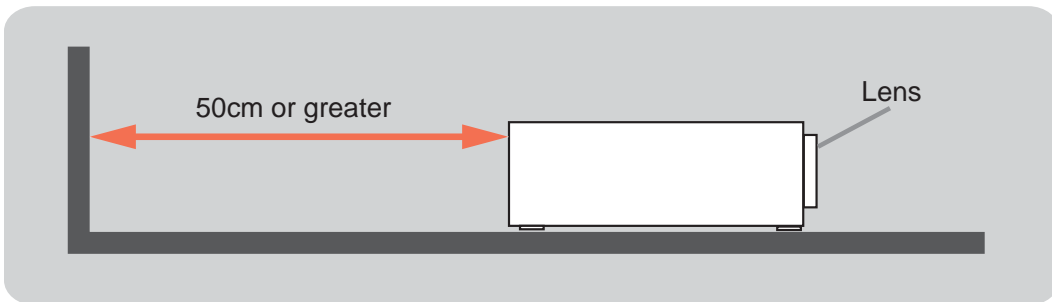


## Warning, Notices, and Safety Instructions

When there are the obstacles on both sides of the projector.



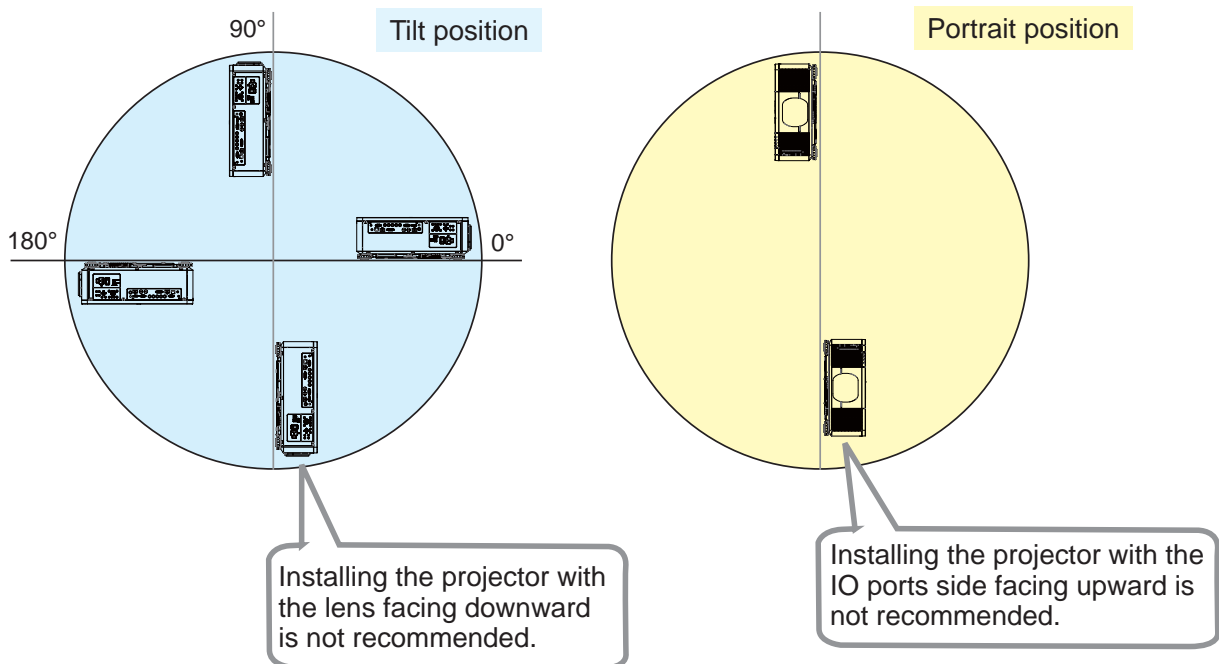
When there are the obstacles behind the projector.



### Positioning Precautions

Although this projector can be installed in 360° range (including Portrait), life of optical parts will be shortened in the following situation:

1. If the projector is installed with the lens facing downward.
2. If the projector is installed with the IO ports side facing upward at the Portrait situation.



## Warning, Notices, and Safety Instructions

### Take frequent breaks to rest your eyes

Viewing the projected screen for a long time could strain your eyes. Be sure to rest your eyes adequately.

### Caution for 3D

- Do not let children view in 3D when they are not accompanied by adults.
- Refrain from 3D viewing for children under the age of six due to the possibility of vision impairment. Be sure to check the health of children viewing in 3D because they may not express that they are feeling unwell.
- When viewing in 3D, be sure that you are at an appropriate distance from the front of the screen. It is recommended to keep a distance of at least three times of the screen height.
- Check that the settings are correct and the 3D effect is correctly applied. If the image is inverted and images seen by the right and the left eye are swapped, the 3D effect is not working and it may cause eyestrain or make you feel unwell.

Viewing in 3D is not appropriate for the following people because it may make their medical conditions worse.

- People with a history of photosensitive epilepsy
- People with heart disease
- Pregnant women
- People with serious illness
- People with a history of epileptic seizures

It is recommended to stop viewing in 3D if any of the following conditions occur.

- When you feel unwell, tired, sleep-deprived, fatigued, or drunken.
- The 3D image seems doubled or not clear.
- Some people may feel like they are moving by themselves and get a symptom like "sea sickness" when they view in 3D that rotates, rolls, or shakes.
- Be sure to take a rest at regular intervals to avoid eyestrain when viewing in 3D for a long time.

## LASER WARNING



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

## CLASS 3R LASER PRODUCT



This Laser Product is designated as Class 3R during all procedures of operation.

**LASER LIGHT - AVOID DIRECT EYE EXPOSURE.**

Do not point laser or allow laser light to be directed or reflected toward other people or reflective objects.

Direct or scattered light can be hazardous to eyes and skin.

There is a potential hazard of eye exposure to laser radiation if the described instructions are not followed.

Caution – Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.

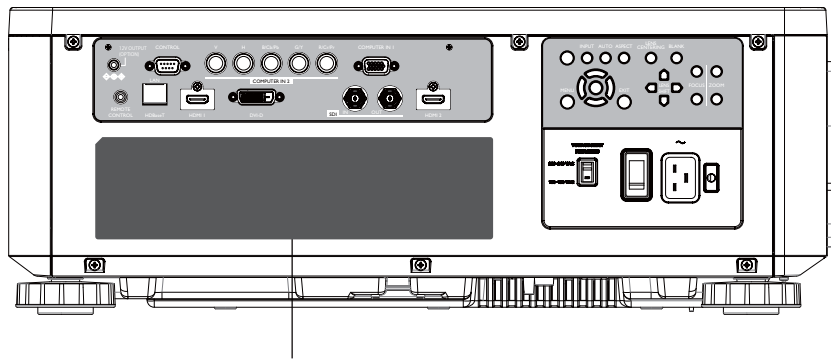
## Laser Parameters

Wavelength	450nm - 460nm (Blue)
Mode of operation	Pulsed, due to frame rate
Pulse width	0.5ms
Pulse repetition rate	240Hz
Maximum laser energy	0.253mJ
Total internal power	>100W
Apparent light source size	>10mm (When the lens is stopping.)
Divergence	>100 Milliradian

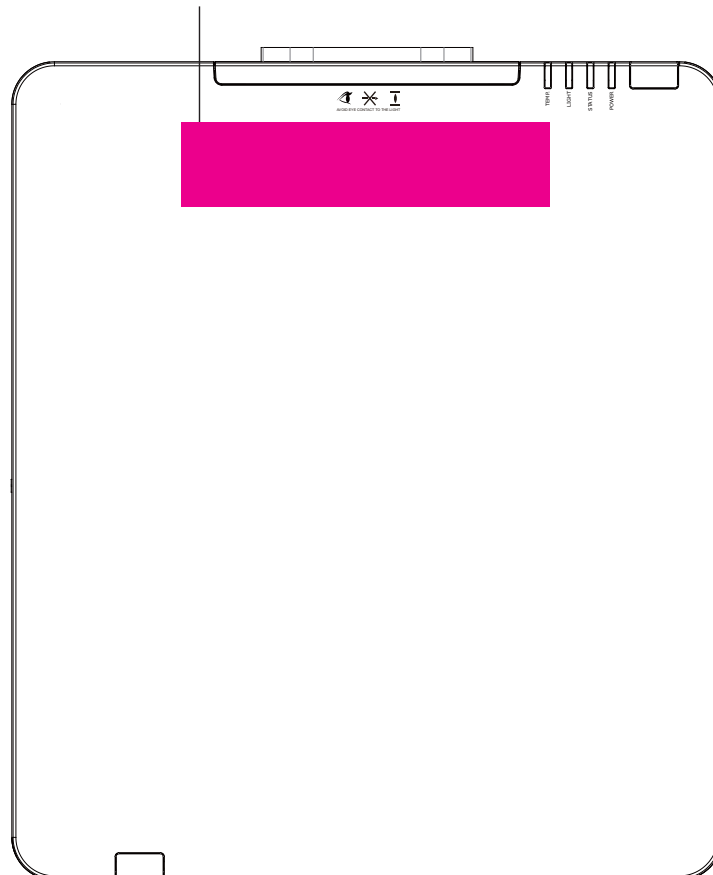
# Warning, Notices, and Safety Instructions

## Product labels

The position of the labels is shown in the drawing below.



- ❶ Manufacturer's ID
- ❷ Serial No.
- ❸ Hazard Warning for Aperture, Certification Statement and Explanation



# Warning, Notices, and Safety Instructions

- a. Hazard Warning Symbol
- b. Aperture Warning
- c. Certification Statement
- d. Explanation

d

a

b


3

**LASER RADIATION**  
 AVOID DIRECT EYE EXPOSURE  
 CLASS 3R LASER PRODUCT  
 Wavelength : 450-460 nm  
 Max. Pulse energy: 0.253 mJ, Pulse duration: 0.5 ms  
 IEC/EN 60825-1:2007

**RAYONNEMENT LASER**  
 EVITER D'EXPOSER DIRECTEMENT LENS YEUX  
 PRODUIT LASER DE CLASSE 3R  
 Longueur D'onde : 450-460nm  
 Energie D'impulsion Max. : 0.253 mJ, Durée de L'impulsion : 0.5 ms  
 IEC/EN 60825-1:2007

**LASERSTRAHLUNG**  
 DIREKTE EXPOSITION DER AUGEN VERMEIDEN  
 LASERPRODUKT DER KLASSE 3R  
 Wellenlänge : 450-460 nm  
 Max. Pulseenergie: 0.253 mJ, Pulsdauer: 0.5 ms  
 IEC/EN 60825-1:2007

**雷射輻射**  
 避免讓眼睛直接暴露在光源下  
 3R級雷射產品  
 波長 : 450-460nm  
 最大脈衝能量: 0.253mJ, 脈衝持續時間 : 0.5ms  
 IEC / EN 60825-1 : 2007




**LASER APERTURE**  
**OUVERTURE LASER**  
**LASERÖFFNUNG**  
**雷射輻射之孔徑**

**RISK GROUP 2**  
**CAUTION**  
 Possibly hazardous optical radiation emitted from this product.  
 Do not stare at operating lamp. May be harmful to the eyes.




**GRUPE DE RISQUE 2**  
**ATTENTION**  
 Rayonnements optiques potentiellement dangereux émis par ce produit.  
 Ne regardez pas la lampe en fonctionnement. Peut être nocif pour les yeux.

**RISIKOGRUPPE 2**  
**ACHTUNG**  
 Dieses Gerät gibt möglicherweise gefährliche optische Strahlung aus.  
 Bei Betrieb nicht direkt in die Lampe blicken. Dies könnte Augenschäden verursachen.

  
RG2

Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

CLASS 1 LASER PRODUCT  
 IEC/EN 60825-1:2014  
 PRODUIT LASER DE CLASSE 1  
 IEC/EN 60825-1:2014  
 LASERPRODUKT DER KLASSE 1  
 IEC/EN 60825-1:2014

 **CAUTION**  

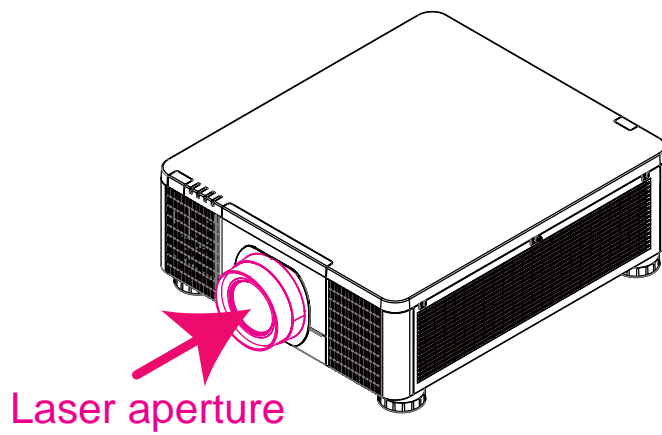
c

d

## Warning, Notices, and Safety Instructions

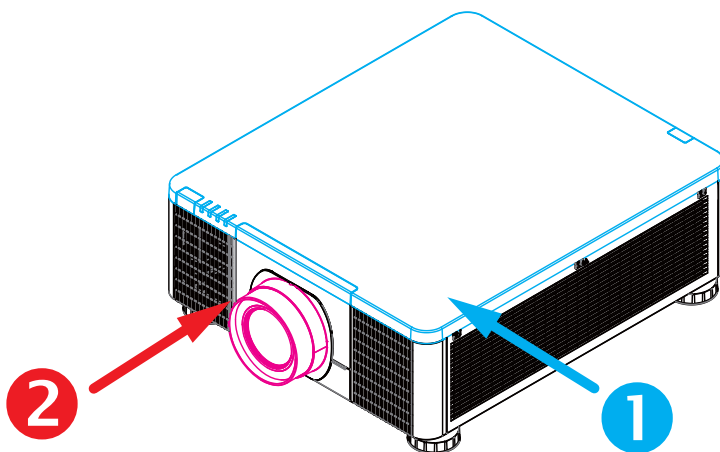
### Location of laser aperture

The following is the laser aperture location. Be careful not to see the light directly.



### Interlock switches

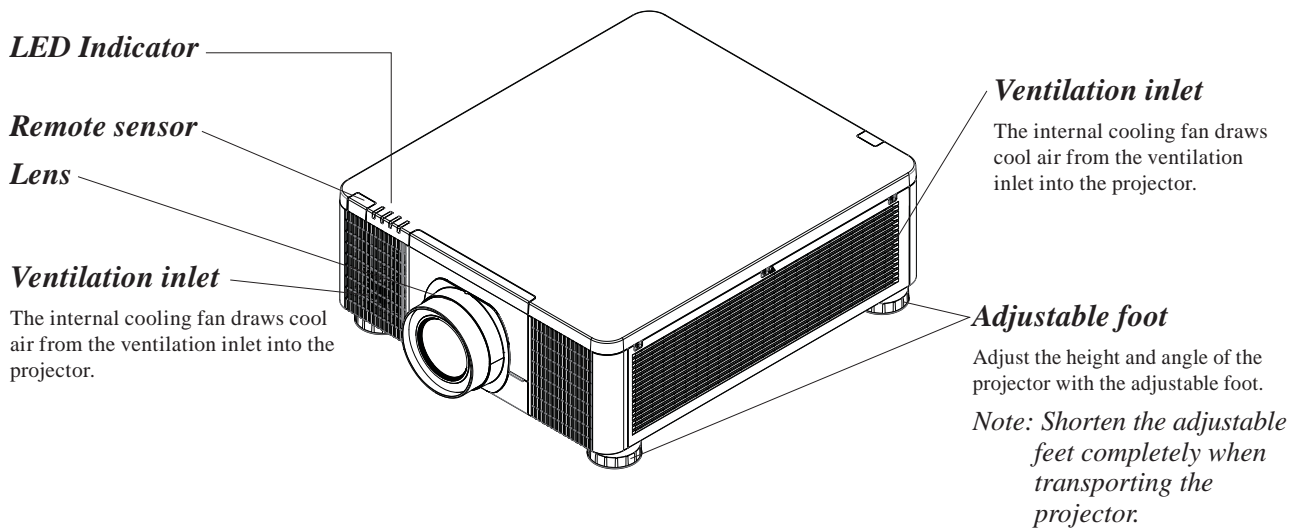
This projector has interlock switches to prevent the laser light leakage.



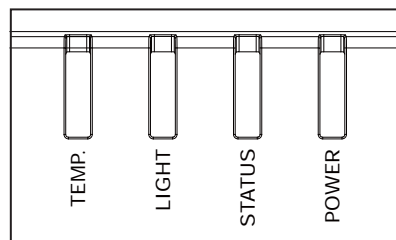
- ①The switch will power off the system when the top cover is opened.
- ②The switch will power off the system when the lens is removed or not installed correctly.

# Projector parts and functions

## Front view



## LED indicator



### **POWER**

Shows the power status.

Lights in red when the projector is in standby state.

Blinks when the projector is warming up or cooling down.

Lights in green when the projector is ON.

### **STATUS**

Shows the system error status.

### **LIGHT**

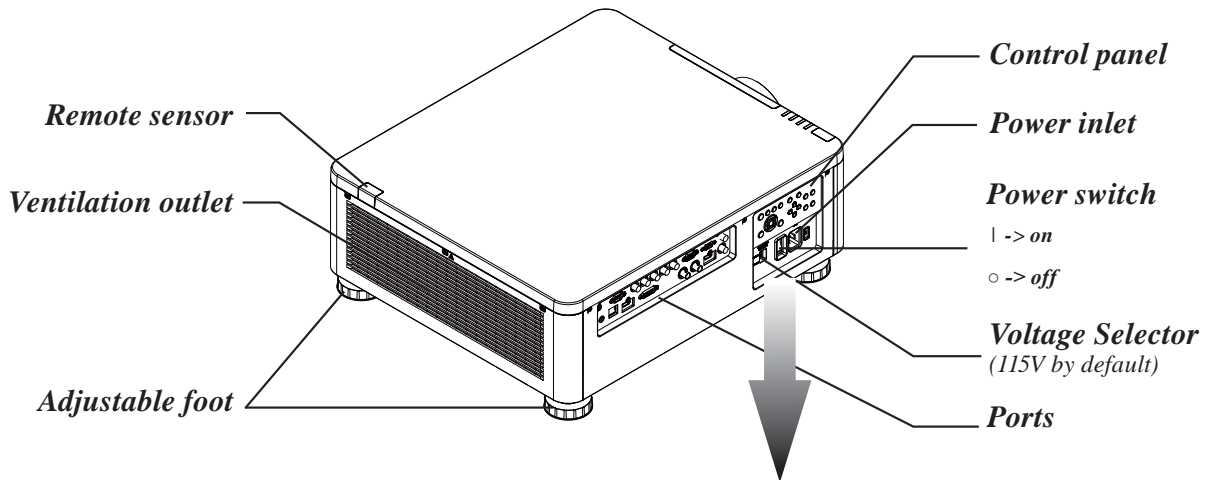
Shows the light source status.

### **TEMP.**

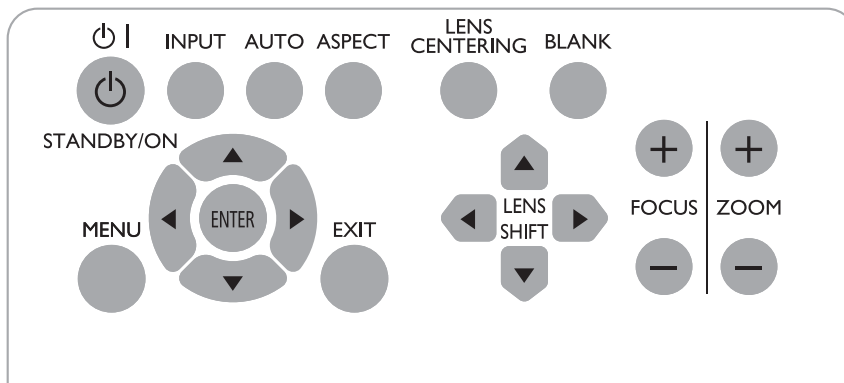
Shows the thermal error message.

# Projector parts and functions

## Rear view



## Control panel



### **STANDBY/ON**

Starts up or shuts down the projector.

### **INPUT**

Switches input signal source.

### **AUTO**

Adjusts the signal synchronization automatically.

### **ASPECT**

Adjusts the aspect ratio. For details, see User's Manual - Operating Guide.

### **LENS CENTERING**

Sets the lens to the center and calibrates the parameter of lens shift for focusing and zooming.

### **BLANK**

Displays the blank image.

### **MENU**

Displays or hides the menu.

### **▲▼▶◀** **BUTTONS**

Scrolls, configures or adjusts items on the menu or switches pictures.

### **ENTER**

Applies the changed settings.

### **EXIT**

Exits the menu or returns to previous OSD layer.

### **LENS SHIFT**

Adjusts the projected image position.

### **FOCUS**

Adjusts the focus of a projected image.

### **ZOOM**

Zooms in or zooms out the projected image.



Ports

**COMPUTER IN 2**

Connects to BNC inputs for RGB (R/B/G/H/V) or component (YPbPr) source.

**CONTROL**

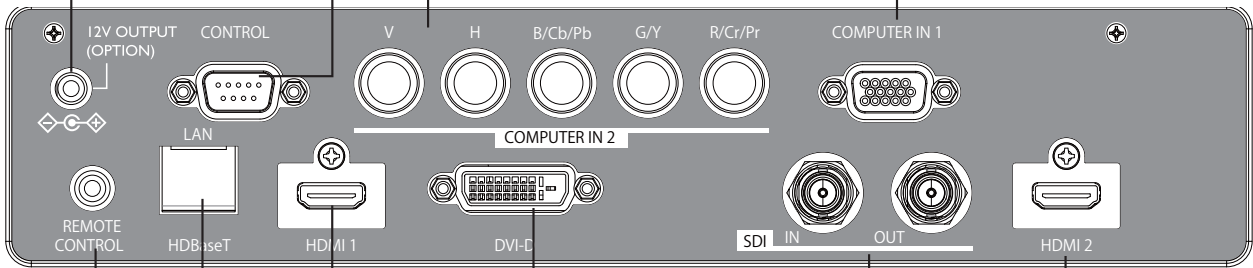
9-pin D-sub socket. Connects to your PC or automatic home theater /control system.

**12V OUTPUT (OPTION)**

Power terminal only for an optional lens. Use this port when you need power supply for the optional lens. Do not connect other device to this port. Put the cover when it is not used. Refer to the manual of the optional lens for details.

**COMPUTER IN 1**

Standard 15-pin VGA connection socket to connect to RGB, high-definition component input or PC. The projector will automatically detect the resolution of the input signal.



**REMOTE CONTROL**

Usable wired-remote-control with accessory cable. Available for Niles or Xantech IR repeater systems.

**HDBaseT / LAN (RJ-45 jack)**

Connects to HDBaseT source via LAN cable.

**SDI IN/OUT**

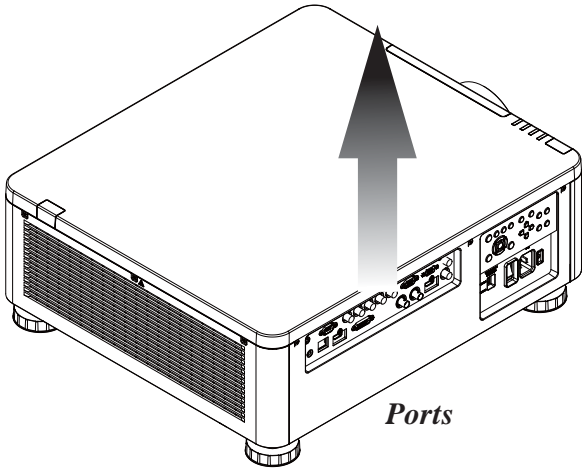
Serial digital interface, use BNC connects input or output the picture.

**HDMI 1 & 2 (Digital audio/video connector)**

Connects to HDMI or DVI source.

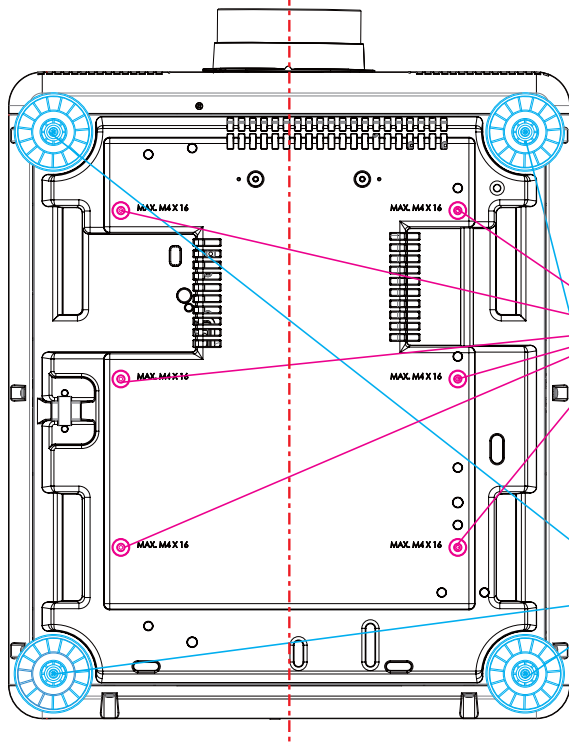
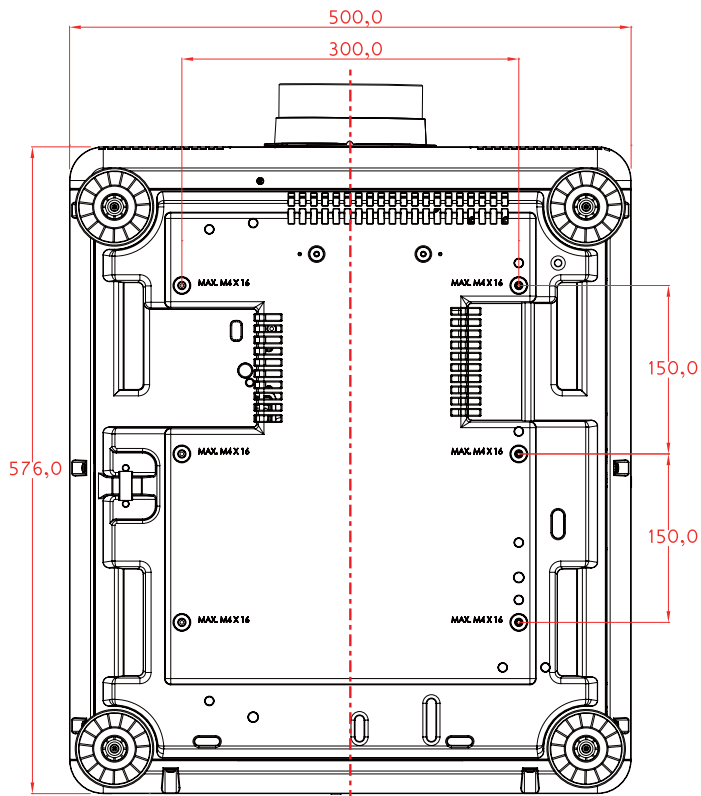
**DVI-D**

Connects to DVI-D source.



# Projector parts and functions

## Bottom view

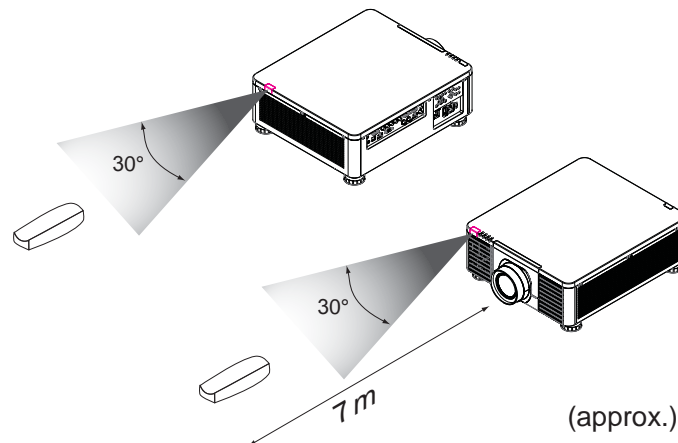


*Screw hole for Mounting bracket*  
Used to mount the projector to its designated mounting bracket using 6 M4x16 screws.

*Adjustable foot*  
Adjusts the height and angle of the projector.  
*Note: Shorten the adjustable feet completely when transporting the projector.*

### Effective range of remote control signal

The illustration below shows effective range of remote control signal. (When new batteries are used.)



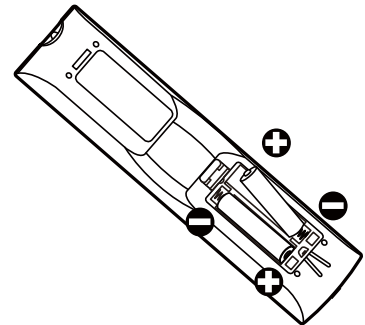
*Note: Do not put the remote control at places with high temperature or humidity as it could cause the remote control to malfunction.*

*Note: If the effective range of remote control signal reception decreases or if the remote control stops working, replace the batteries.*

*Note: If the remote sensor is exposed to fluorescent lamp or strong sunlight, the remote control may not operate normally.*

### Installing batteries in the remote control

1. Remove the battery cover.
2. Align and insert the two AA batteries according to their plus and minus terminals as indicated in the remote control. (Use the appropriate AA carbon-zinc or alkaline batteries (non-rechargeable) in accordance with laws and regulations.)
3. Put the battery cover back to the former state.



*Note: Always handle the batteries with care and use them only as directed.*

*Improper use may result in battery explosion, cracking or leakage, which could result in fire, injury and/or pollution of the surrounding.*

*Note: Keep a battery away from children and pets.*

*Note: Do not recharge, short circuit, solder or disassemble a battery.*

*Note: Be sure to insert the batteries in the right direction according to the polarity.*

*Note: Do not mix new battery with used ones. Otherwise, it would shorten the life of new batteries or cause leakage.*

*Note: Use AA batteries as instructed; do not insert different types of batteries into the remote control.*

*Note: If you will not use the remote control for long periods of time, be sure to remove the batteries to prevent leakage, which could damage the remote control.*

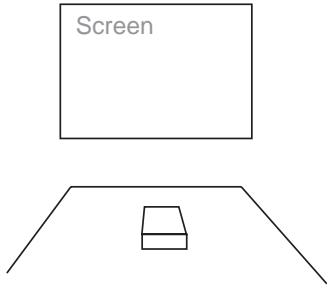
*Note: The liquid contents in the batteries is harmful to the skin; do not touch the leakage with your bare hands directly. When installing new batteries, be sure to clean up the leakage thoroughly.*

*Note: Refer to the regulations enforced by your local government on the disposal of used batteries; improper disposal could damage the environment.*

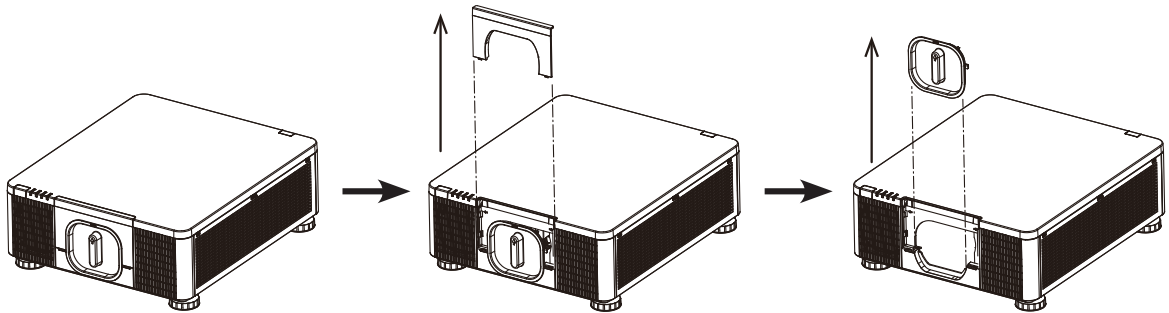
# Installation of the Projector

## Installation of the projector

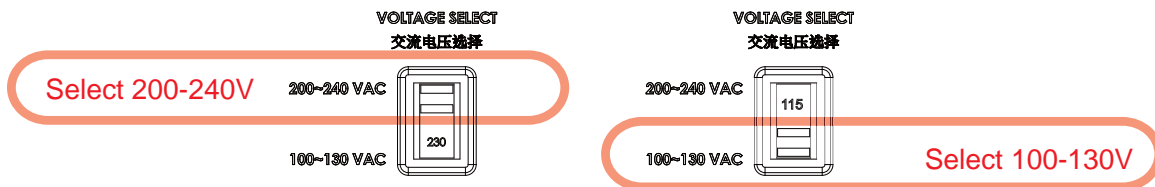
### 1. Installing the projector towards the screen



### 2. Removing the mount cap on the projector

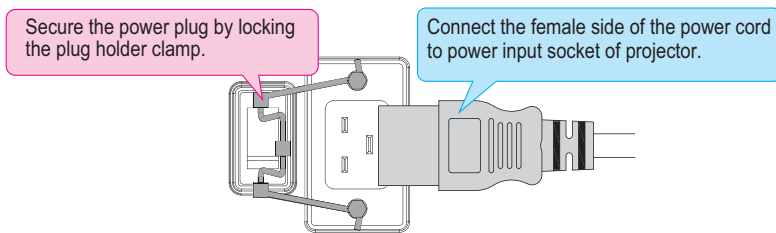


### 3. Selecting the correct input voltage depending on your area



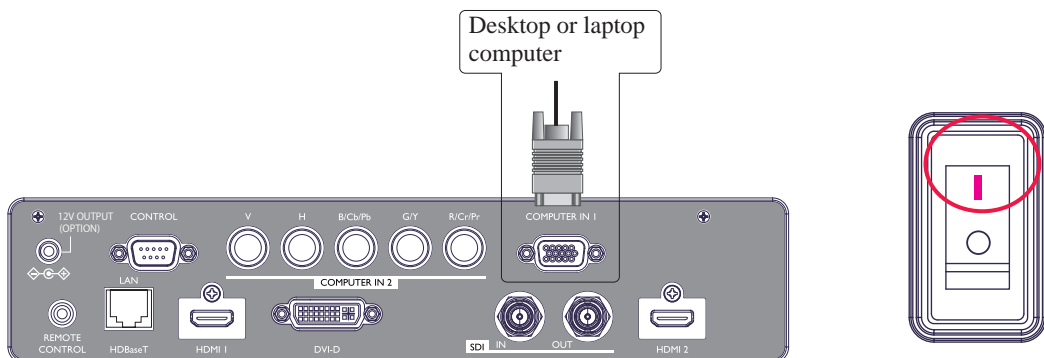
### 4. Connecting the power cord to the projector

Be sure that the power cord is not damaged and already connected to the power outlet properly.




### 5. Connecting the projector to your PC and switching to "I" to turn on the power

POWER indicator turns to red, which means the projector is in standby mode.

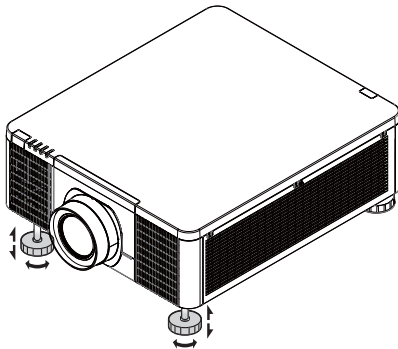


## 6. Starting up the projector

Make sure that the POWER indicator is lighting in steady red. Press the  button on the projector or the ON button on the remote control. The projector will be turned on and the POWER indicator will begin blinking in green. When the power is completely on, the POWER indicator will stop blinking and the light will become steady green. The LIGHT indicator will also become steady green.

## 7. Adjusting the projector's angle, Lens Shift, Zoom, Lens Centering, and Focus

- a. Use the adjustable feet to change the angle of the projector in order to achieve the most suitable angle for projection on the screen.









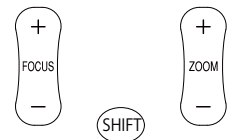
- b. Adjust the lens by horizontal and vertical lens shift, and adjust Zoom and Focus of lens.

Method 1: Using the Keypad on the projector.



Method 2: Using the button on the remote control.

Press the **SHIFT** button on the remote control to access Lens Shift. Use the     buttons to adjust the horizontal or vertical position of the lens. Press **FOCUS**, **ZOOM** button then use the   buttons to adjust the focus and zoom.



The Lens shift, Zoom or Focus dialog will appear when you press the buttons of SHIFT, ZOOM or FOCUS. Generally, better image can be got when the lens is set to the center.

Note : While the lens is moving to the center, the OSD will disappear and an hourglass icon will appear on the screen. CENTERING may take some time till the lens reaches to the center.

\*Perform CENTERING before the projector is turned off.

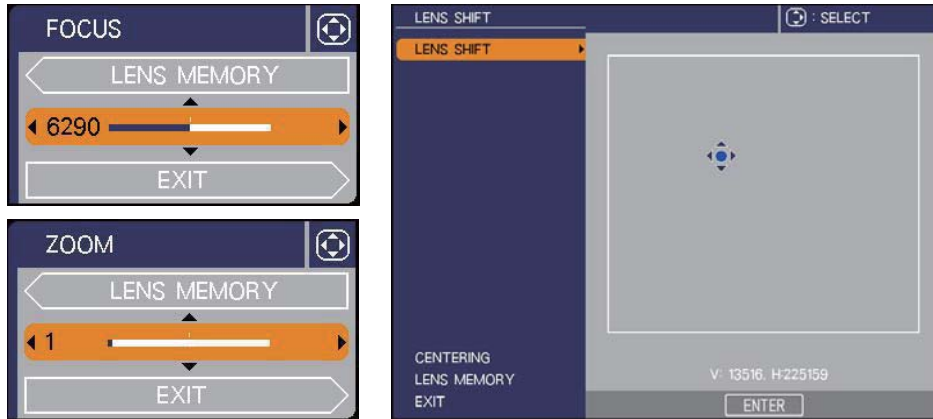
\*The adjustable range of LENS SHIFT varies depending on which lens is mounted on the projector. Therefore, LENS SHIFT adjustment may not reach the end of the indicator in the dialog. This is not a malfunction.

(continued on next page)

# Installation of the Projector

## Note for adjusting the lens shift

1. Adjust the lens shift / zoom / focus 30 minutes after turning on the projector.
2. Slight changes in the image position and/or focus may occur within 30 minutes after turning on the projector. If the room temperature and humidity have changed after adjusting the lens shift / zoom / focus, readjust as necessary.
3. In anticipation of the changes after installation, set up the image size including the margin from the screen edge.
4. When adjusting the lens shift vertically, finish adjusting lens shift by moving the projected screen upward. If you finish adjusting the lens shift by moving the projected screen downward, the projected screen may be misaligned slightly downward over time.

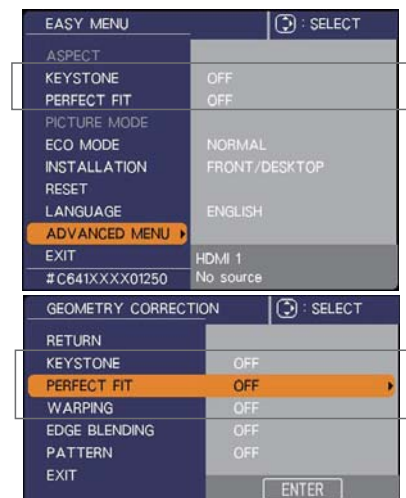


## 8. Correcting the distortion

Press **MENU** on the remote control or Keypad. You can use **KEYSTONE** or **PERFECT FIT** on OSD to correct the distortion of a projected screen.

- EASY MENU → KEYSTONE or PERFECT FIT

- ADVANCED MENU → SETUP → GEOMETRY CORRECTION → KEYSTONE or PERFECT FIT



### KEYSTONE

Adjusts the vertical and horizontal keystone.

*Note: When the horizontal lens shift is not set to the center, this function may not work correctly.*

### PERFECT FIT

Adjusts each of the screen corner and side to correct the distortion. For details, see User's Manual - Operating Guide.

### WARPING

Projects an image on several types of screen.

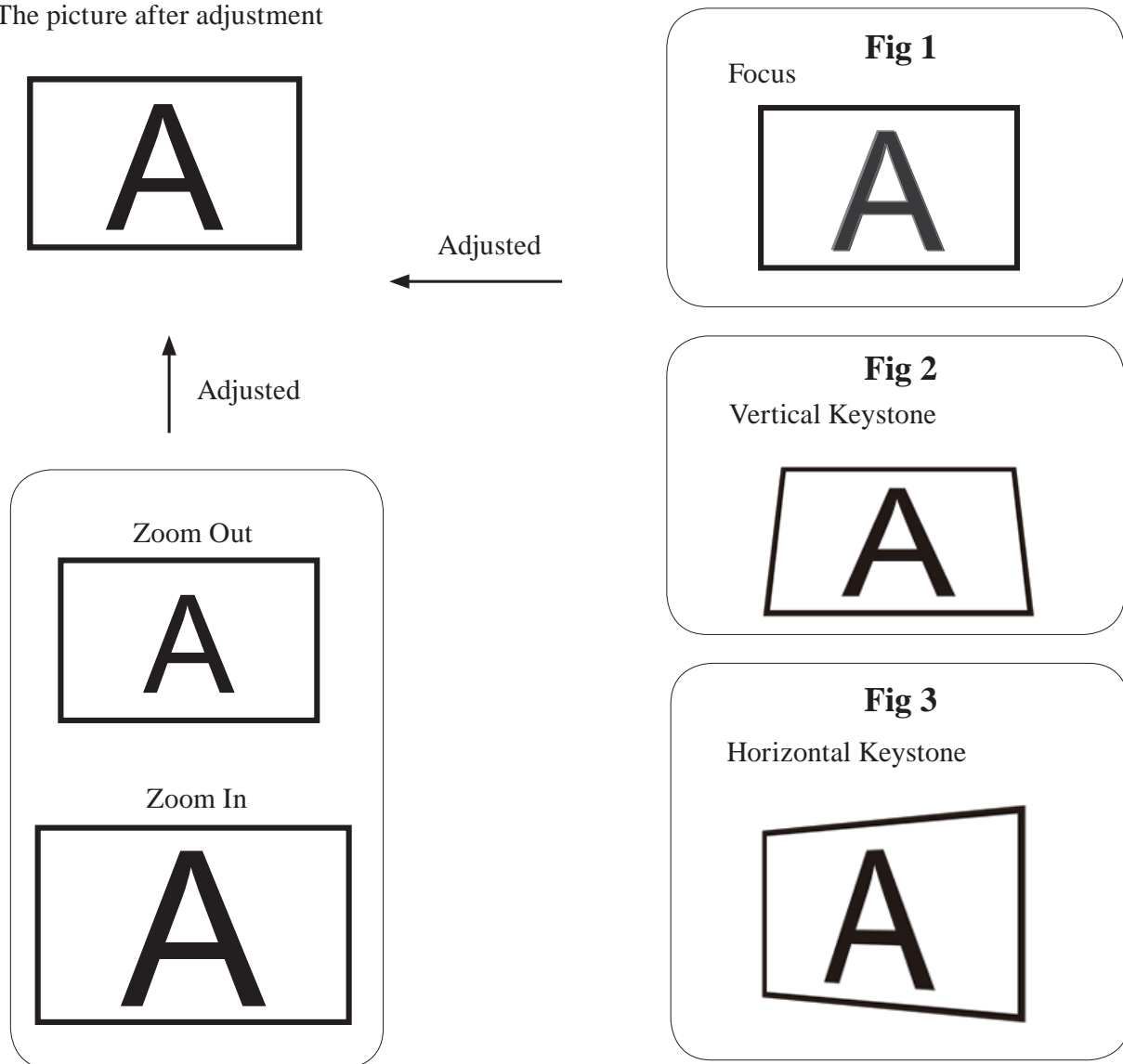
*Note: Press EXIT to exit, or wait several seconds until the OSD menu automatically disappears.*

*Note: When the zoom adjustment is set to the TELE (telephoto focus), this function may be excessive. This function should be used when the zoom adjustment is set to the full WIDE (wide-angle focus).*



- When the horizontal lens shift is not set to the center, this function may not work correctly.
- Select RETURN in the dialog with the ▲/▼ buttons and press the ◀ or ENTER button to return to the GEOMETRY CORRECTION menu.

## Installation of the Projector

The picture after adjustment



### 9. Turning off the projector

Press **STANDBY** button on the remote control or  button on the projector keypad to turn off the projector. The message will appear on the screen. Press **STANDBY** or  button again while the message appears. The projector laser light will go off, and the **POWER** indicator will begin blinking in red. The **POWER** indicator stops blinking and lights in steady red when the light source cooling is completed.

Do not touch around the exhaust vents during use or just after use, since it is too hot.

# Installation of the Projector

## Throw distance

Throw Distance (TD) = Screen Width (W) x Throw Ratio (TR)



Coupled with the available projection lenses, the projector offers the following throw ratios:

- FL-920 (0.38 : 1 100-350inch)
- SL-902 (1.1~1.7 : 1 50-600inch)
- SD-903 (1.6~2.4 : 1 50-600inch)
- ML-904 (2.4~3.6 : 1 50-600inch)
- LL-905 (3.5~5.6 : 1 50-600inch)
- UL-906 (5.5~8.8 : 1 50-600inch)

Note:

Projection lenses are optional accessories. Contact your local dealer to get the projection lens that is most appropriate for your use.

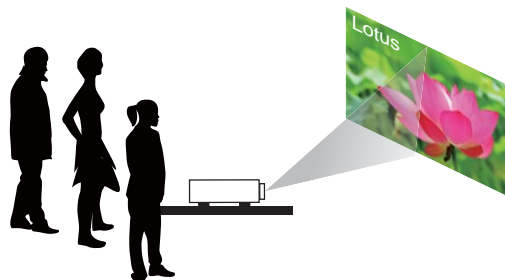
## Modes of installation

- Install the projector in an environment with less than 45°C (113°F). The projector should be kept distance from sources of heat and / or ventilation openings of air conditioner.
- The projector should be kept away from devices that emit electromagnetic energy, such as motors or transformers. Common devices that emit electromagnetic energy include slideshow system, speakers, power amplifiers and elevators.
- If the projector is going to be mounted on the ceiling, be sure to use the ceiling installation components which safety is assured. For details, contact your local dealer.

## Front/Desktop

Advantage: Easy to install, move, adjust, and operate.

Disadvantage: Occupies floor space and limits seating capacity.





# Installation of the Projector

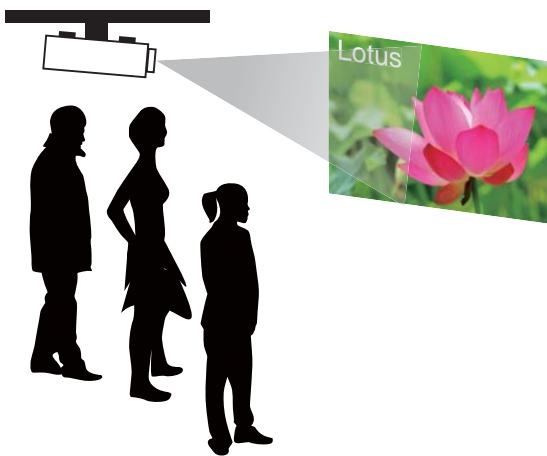
## Front/Ceiling

Refer to " Page 30 : Front/Ceiling "

**Advantage:** Does not occupy floor space and not draw attention to it.

Eliminates the possibility that someone would accidentally move the projector.

**Disadvantage:** Stricter installation requirements and conditions; care should be taken during the installation to ensure the projector has been securely mounted. Operation of the projector becomes inconvenient without a remote control.

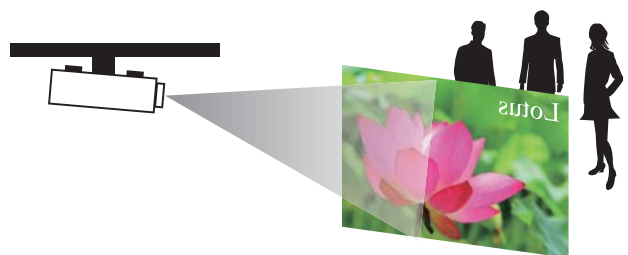


## Rear/Ceiling

Refer to " Page 31 : Rear/ceiling "

**Advantage:** The projector is completely hidden. This setup usually offers better reduction of ambient noise.

**Disadvantage:** Requires additional room for installation. Stricter installation requirements and conditions; care should be taken during the installation to ensure the projector has been securely mounted. Operation of the projector becomes inconvenient without a remote control.

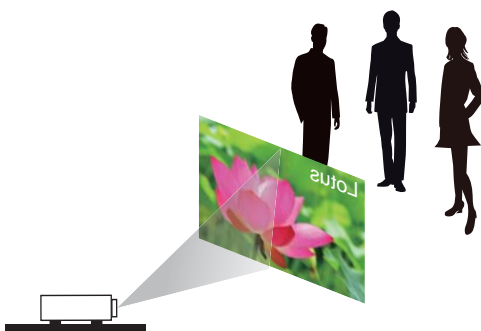


## Rear/Desktop

Refer to " Page 30 : Rear/Desktop "

**Advantage:** The projector is completely hidden and can be easily operated. This setup usually offers better reduction of ambient noise.

**Disadvantage:** Requires additional room and installation relatively higher costs for installation.



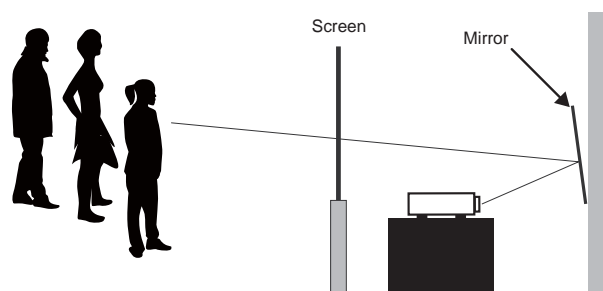
## Rear with a Mirror

If you want to have a rear projection setup with limited space to the rear of the projector, you can use a mirror to reflect the light path.

However, both the projector and the mirror have to be precisely located. If you are considering such installation, contact your dealer for assistance.

**Advantage:** The projector is completely hidden. This setup usually offers better reduction of ambient noise.

**Disadvantage:** Requires additional room and relatively higher costs for installation.



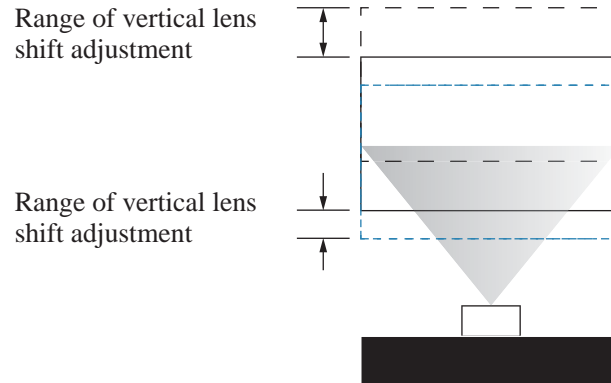
# Installation of the Projector

## Horizontal and vertical lens shift

In addition to using the adjustable feet to adjust projection angle, you can also use the Lens Shift function to adjust the projected picture.

### Moving the lens vertically

The distance of vertical lens shift is +60% or -22% of the screen height in both directions. For instance, if you are using a 2.15m × 1.35m(100") screen, you will be able to move the picture up to 81cm upwards or up to 29.7cm downwards.



*This illustration shows normal vertical lens shift without using special specification lens or projector.*

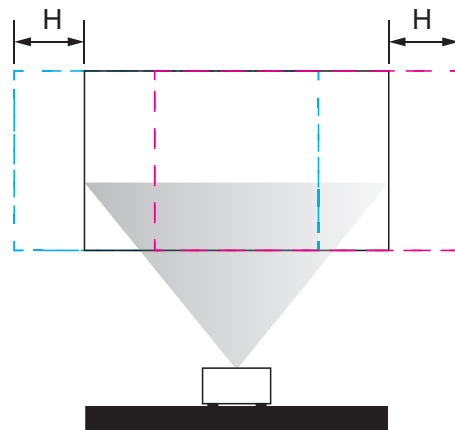
*Note: Make sure that the center of the lens is vertical to the center of the screen.*

*The above-described value is for SD-903 lens.*

### Moving the lens horizontally

The distance of horizontal lens shift is 10% of the screen width in both directions. For instance, if you are using a 2.15m × 1.35m(100") screen, you will be able to move the picture to the right or the left up to 21.5cm.

H: Range of Horizontal lens shift adjustment



*This illustration shows normal horizontal lens shift without using special specification lens or projector.*

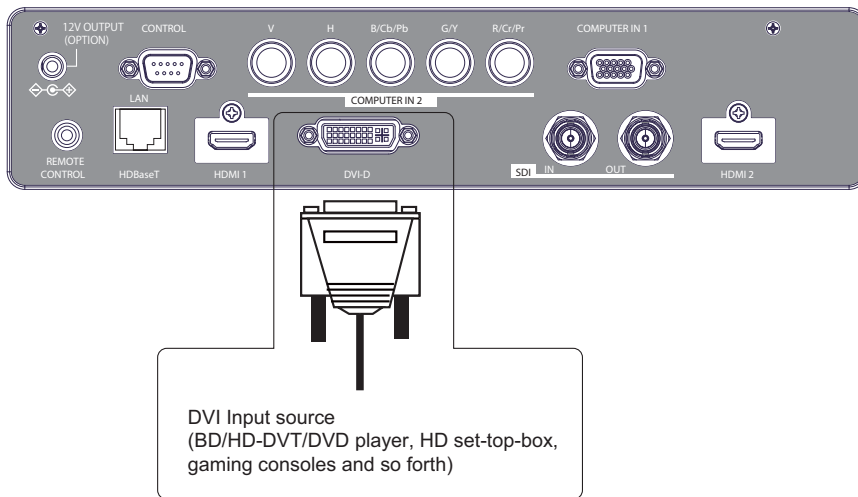
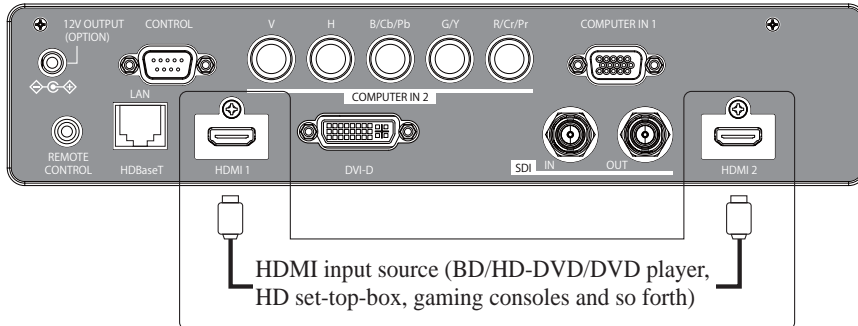
*Note: When the lens is in the neutral position (i.e. without horizontal or vertical shift), the center of the projection should be aligned with the center of the screen.*

*The above-described value is for SD-903 lens.*

## Connecting the projector to other devices

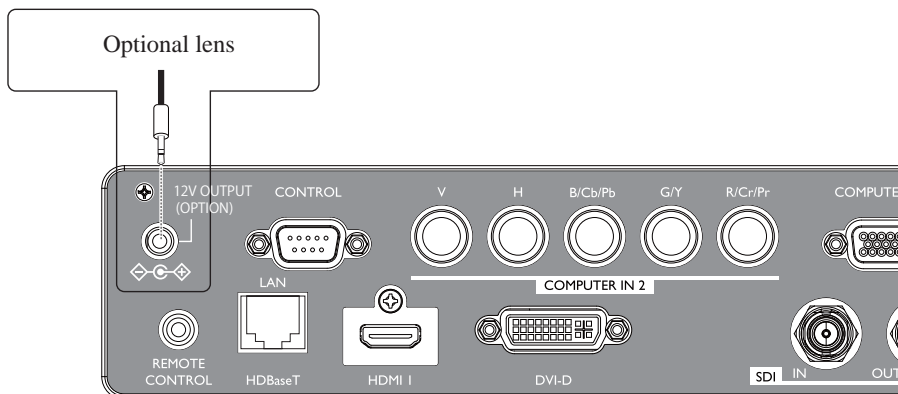
### HDMI / DVI connection

Signals from picture source offer the best projection picture quality when using HDMI/DVI. Therefore, try to use input devices with HDMI/DVI output as the source of picture.



### 12V OUTPUT connection

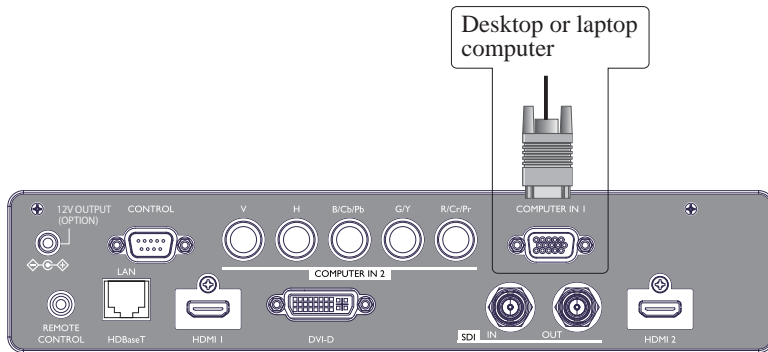
Power terminal only for an optional lens. Use this port when you need power supply for the optional lens. Do not connect other device to this port. Put the cover when it is not used. Refer to the manual of the optional lens for details.



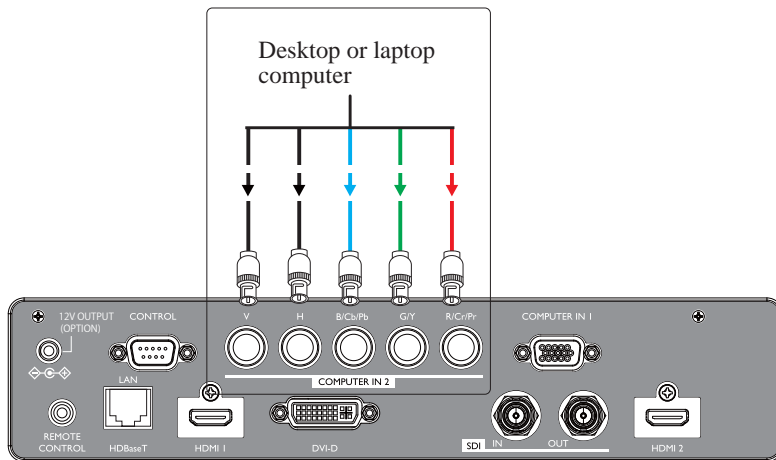
# Installation of the Projector

## RGB connection

Connect PC or other devices with RGB output to the **COMPUTER IN1** input.



Connect RGB (R/B/G/H/V) or component (YPbPr) source to **COMPUTER IN2** inputs.



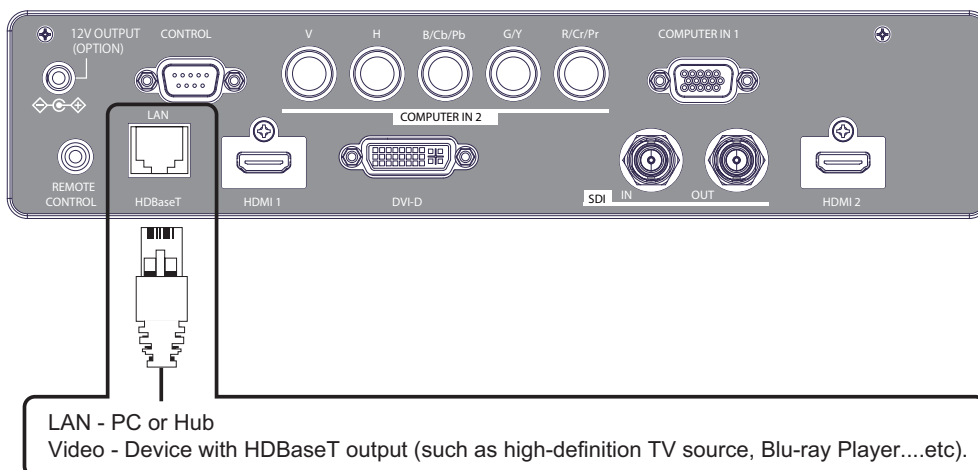
## HDBaseT / LAN connection

HDBaseT is a technology to transmit image signal using a LAN cable.

LAN Connection - When this connector to be the LAN (RJ-45) function only, connect it to computer or Hub. Enter the correct IP Address or the computer host name which is the same as the projector's host name. Then you can control the projector by remote through the Internet.

Video Signal - When this connector to be the video signal input, connect it to a device with HDBaseT output (such as high-definition TV source, Blu-ray Player....etc).

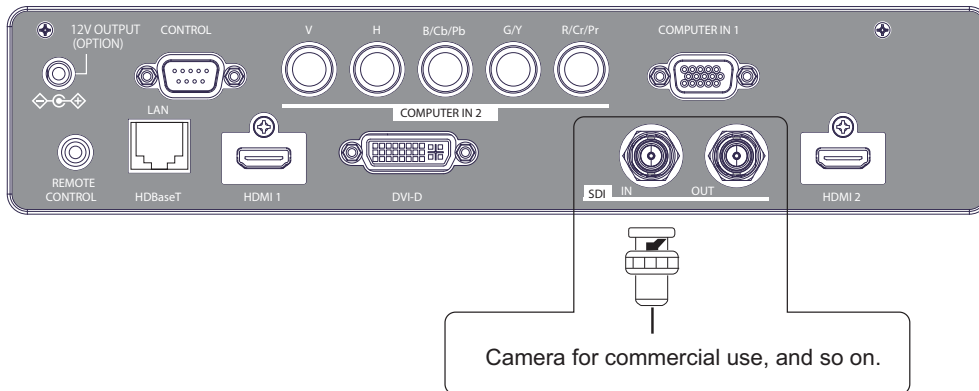
Use a LAN cable of up to 100m long. If the cable is longer than that, the image may be deteriorated and a failure of LAN transmission may occur.



## SDI connection

This projector can be connected with other device that has SDI connector, but the projector may not work properly with some devices.

Use a cable of 5CFB or greater (5CFB, 7CFB, and so on), or Belden 1694A or greater to transmit the image properly. Use a cable with a length of 100m or less.



## Turning on the projector

Refer to the procedure in “ Page 20 : Installation of the projector“.

## Changing OSD language

The OSD menu of the projector is displayed in English by factory default. If you wish to change the default language, select LANGUAGE to change the setting.

- **EASY MENU → LANGUAGE**
- **ADVANCED MENU → SCREEN → LANGUAGE**



# Installation of the Projector

## Adjusting screen position

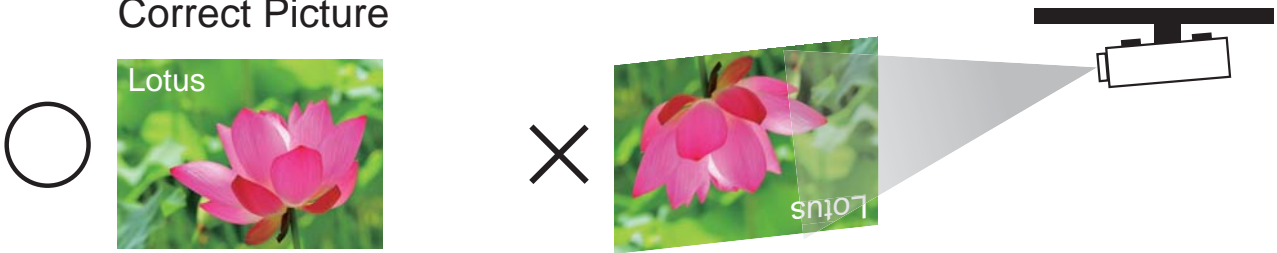
The projector is set to “Front/Desktop” by default. If you want to install your projector in other setups, be sure to adjust the screen installation to set the correct projection mode.

### Front/Ceiling

Select FRONT/CEILING in the OSD menu.

- EASY MENU → INSTALLATION → FRONT/CEILING
- ADVANCED MENU → SETUP → INSTALLATION → FRONT/CEILING

#### Correct Picture



### Rear/Desktop

Select REAR/DESKTOP in the OSD menu.

- EASY MENU → INSTALLATION → REAR/DESKTOP
- ADVANCED MENU → SETUP → INSTALLATION → REAR/DESKTOP

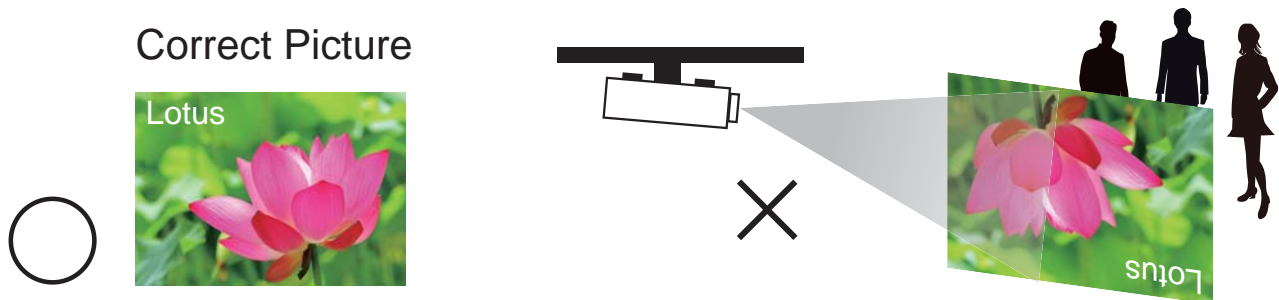
#### Correct Picture



## Rear/Ceiling

Select REAR/CEILING in the OSD menu.

- EASY MENU → INSTALLATION → REAR/CEILING
- ADVANCED MENU → SETUP → INSTALLATION → REAR/CEILING



## Adjusting the projector lens

Projector lens adjustment includes focus, zoom, horizontal/vertical picture shift, image corner adjust, and Warping. Refer to " Page 21 : 7. Adjusting the projector's angle, Lens Shift, Zoom, Lens Centering, and Focus " and " Page 22 : 8. Correcting the distortion " for detailed instructions.

### NOTE:

- The information in this manual is subject to change without notice.
- The illustrations in this manual are for illustrative purposes. They may differ slightly from your projector.
- The manufacturer assumes no responsibility for any errors that may appear in this manual.
- The reproduction, transfer or copy of all or any part of this document is not permitted without express written consent.

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## Warranty and after-service

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If an abnormal operation (such as smoke, strange odor or excessive sound) should occur, stop using the projector immediately. Then turn off the power, and contact the dealer or service company.

If a problem occurs with the projector, first refer to “Troubleshooting”, and run through the suggested checks.

If this does not resolve the problem, consult your dealer or service company. They will tell you what warranty condition is applied.

**Cooling fluid needs to be checked 3 years after the purchase. Consult the dealer or service company.**

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