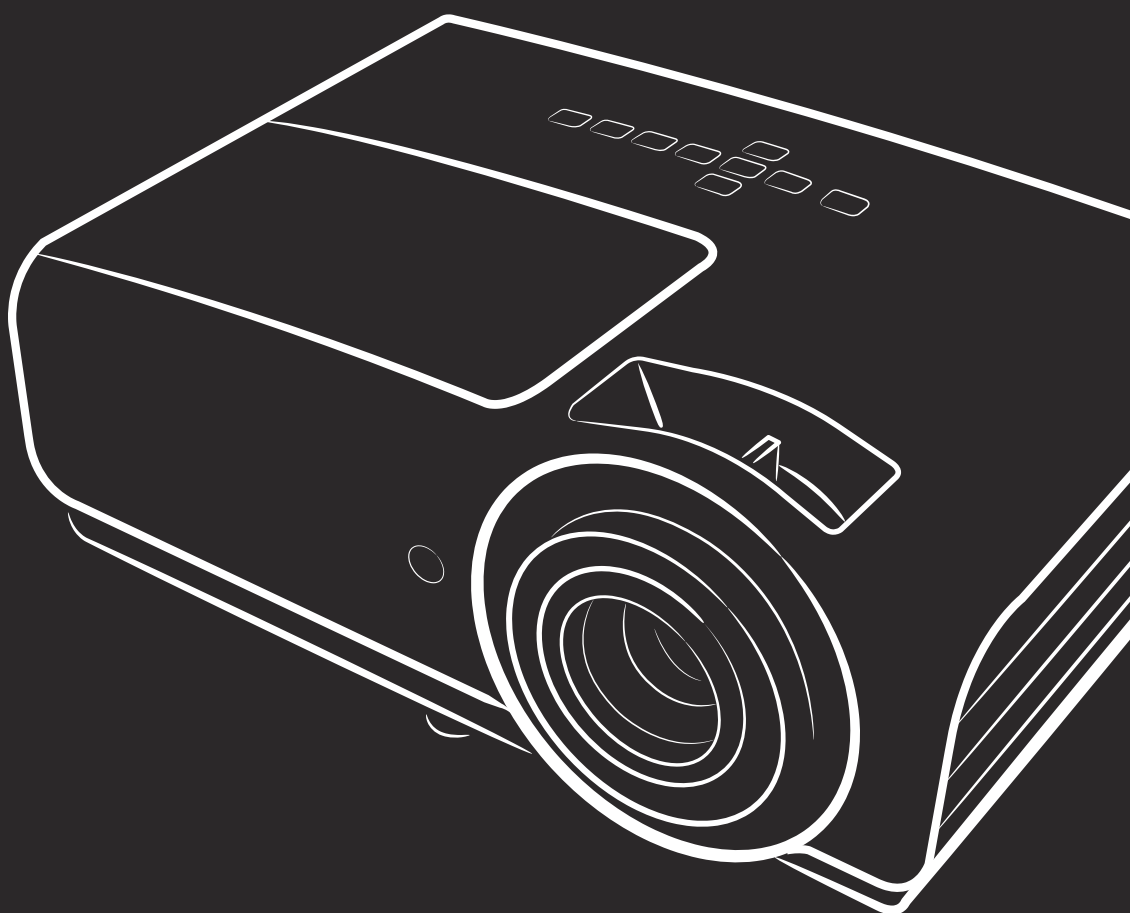




User Manual

**DU857
DH856
DW855
DX853
DH858N
Series**



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Important Safety Information



Important:

It is strongly recommended that you read this section carefully before using the projector. These safety and usage instructions will ensure that you enjoy many years of safe use of the projector. Keep this manual for future reference.

Symbols Used

Warning symbols are used on the unit and in this manual to alert you of hazardous situations.

The following styles are used in this manual to alert you to important information.

Note:

Provides additional information on the topic at hand.



Important:

Provides additional information that should not be overlooked.



Caution:

Alerts you to situations that may damage the unit.



Warning:

Alerts you to situations that may damage the unit, create a hazardous environment, or cause personal injury.

Throughout this manual, component parts and items in the OSD menus are denoted in bold font as in this example:

“Push the **Menu** button on the remote control to open the **Main** menu.”

General Safety Information

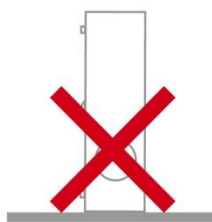
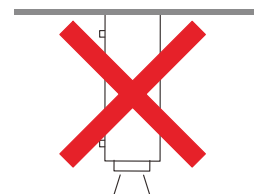
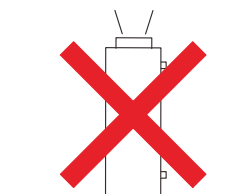
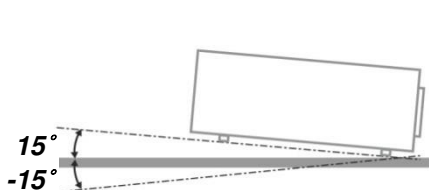
- Do not open the unit case. Aside from the projection lamp, there are no user-serviceable parts in the unit. For servicing, contact qualified service personnel.
- Follow all warnings and cautions in this manual and on the unit case.
- The projection lamp is extremely bright by design. To avoid damage to eyes, do not look into the lens when the lamp is on.
- Do not place the unit on an unstable surface, cart, or stand.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- Do not place heavy objects such as books or bags on the unit.

Note:

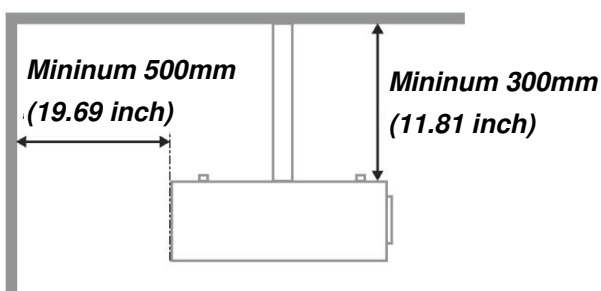
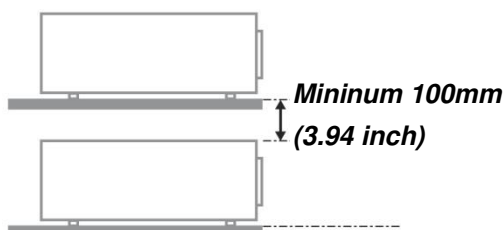
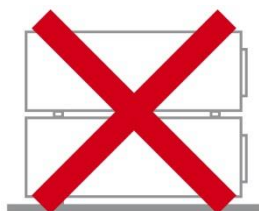
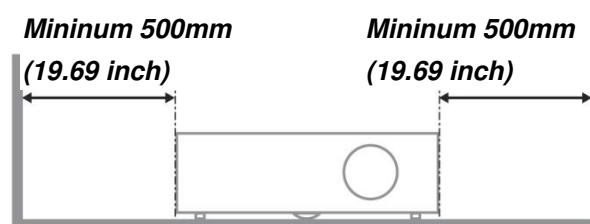
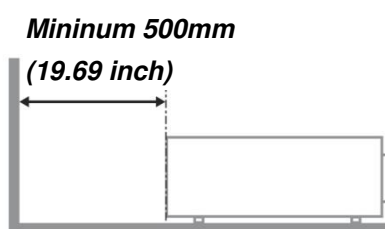
As with any bright light source, do not stare into the beam, RG2 IEC 62471-5:2015

Projector Installation Notice

- Place the projector in a horizontal position
The tilt angle of the projector should not exceed 15 degrees, nor should the projector be installed in any way other than the desktop and ceiling mount, otherwise lamp life could decrease dramatically, and may lead to other **unpredictable damages**.



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



- Ensure that the intake vents do not recycle hot air from the exhaust vent.
- When operating the projector in an enclosed space, ensure that the surrounding air temperature within the enclosure does not exceed operation temperature while the projector is running, and the air intake and exhaust vents are unobstructed.
- All enclosures should pass a certified thermal evaluation to ensure that the projector does not recycle exhaust air, as this may cause the device to shutdown even if the enclosure temperature is within the acceptable operation temperature range.

Verify Installation Location

- To supply power, the 3-blade (with earthing lead) socket should be used to ensure proper grounding and equalized ground potential for all of the equipment in the Projector System.
- The power code provided with the Projector should be used. In case of any missing item, other qualified 3-blade (with earthing lead) power cord can be used as substitution; however, do not use 2-blade power cord.
- Verify if the voltage is stable, grounded properly and there is no electricity leakage.
- Measure total power consumption which should not higher the safety capacity and avoid safety issue and short circuit.
- Turn on Altitude Mode when located in high altitude areas
- The projector can only be installed upright or inverted.
- When installation the bracket, make sure the weight limit is not exceed and firmly secured.
- Avoid installing near air conditioner duct or subwoofer.
- Avoid installing at high temperature, insufficient cooling and heavy dust locations.
- Keep your product away from fluorescent lamps (> 1 meter) to avoid malfunction caused by IR interference
- The VGA IN connector should be connected to the VGA IN port. Note that it should be inserted tightly, with the screws on both sides securely fastened to ensure proper connection of the signal wire for achieving optimal display effect.
- The AUDIO IN connector should be connected to the AUDIO IN port and CANNOT be connected to AUDIO OUT or other ports like BNC, RCA; otherwise, it will lead to mute output and even DAMAGE the port.
- Install the projector above 200cm to avoid damage.
- The power cord and signal cable should be connected before power on the projector. During the projector starting and operating process, DO NOT insert or remove the signal cable or the power cord to avoid damaging the projector.

Cooling notes

Air outlet

- Make sure the air outlet is 50cm clear of any obstruction to ensure proper cooling.
- Air outlet location should not be in front of the lens of other projector to avoid causing illusions.
- Keep the outlet at least 100cm away from the inlets of other projectors
- The projector generates a massive amount of heat during use. The internal fan dissipates the heat of the projector when shutting down, and such process may continue for a certain period. After the project enters STANDBY MODE status, press the AC power button to turn off the projector and remove the power cord. DO NOT remove the power cord during the shutdown process, as it may cause damage to the projector. In the meantime, the delayed heat radiating will also affect the service life of the projector. The shutdown process may vary depending on the model used. Whatever the case may be, be sure to disconnect the power cord till after the projector enters the STANDBY status.

Air inlet

- Make sure there is no object blocking air input within 30 cm.
- Keep the inlet away from other heat sources
- Avoided heavy dust area

Power Safety

- Only use the supplied power cord.
- Do not place anything on the power cord. Place the power cord where it will not be in the way of foot traffic.
- Remove the batteries from the remote control when storing or not in use for a prolonged period.

Replacing the Lamp

Replacing the lamp can be hazardous if done incorrectly. See [Replacing the Projection Lamp](#) on page 34 for clear and safe instructions for this procedure. Before replacing the lamp:

- Unplug the power cord.
- Allow the lamp to cool for about one hour.



Caution:

In rare cases the lamp bulb may burn out during normal operation and cause glass dust or shards to be discharged outward from the rear exhaust vent.

Do not inhale or do not touch glass dust or shards. Doing so could result in injury.

Always keep your face away from the exhaust vent so that you do not suffer from the gas and broken shards of the lamp.

Cleaning the Projector

- Unplug the power cord before cleaning. See [Cleaning the Projector](#) on page 38.
- Allow the lamp to cool for about one hour.

Regulatory Warnings

Before installing and using the projector, read the regulatory notices in the [Regulatory Compliance](#) on page 53.

Important Recycle Instructions:



Lamp(s) inside this product contain mercury. This product may contain other electronic waste that can be hazardous if not disposed of properly. Recycle or dispose in accordance with local, state, or federal Laws. For more information, contact the Electronic Industries Alliance at WWW.EIAE.ORG. For lamp specific disposal information check WWW.LAMPRECYCLE.ORG.

Symbol Explanations



DISPOSAL: Do not use household or municipal waste collection services for disposal of electrical and electronic equipment. EU countries require the use of separate recycling collection services.

Special Care for Laser Beams!

Special care should be considered when DLP projectors and high power laser equipment are used in the same room as.

Direct or indirect hit of a laser beam on to the projector lens can severely damage the Digital Mirror Devices (DMD™).

Sun light Warning

Avoid using in direct sun light.

Sun light on the projector lens can severely damage the Digital Mirror Devices (DMD™).

Main Features

- *Lightweight unit, easy to pack away and transport.*
- *Compatible with all major video standards including NTSC, PAL, and SECAM.*
- *A high brightness rating allows for presentations in daylight or in lit rooms.*
- *Supports resolutions up to UXGA at 16.7 million colors to deliver crisp, clear images.*
- *Flexible setup allows for front, rear projections.*
- *Line-of-vision projections remain square, with advanced keystone correction for angled projections.*
- *Input source automatically detected.*

About this Manual

This manual is intended for end users and describes how to install and operate the DLP projector. Wherever possible, relevant information—such as an illustration and its description—has been kept on one page. This printer-friendly format is both for your convenience and to help save paper, thereby protecting the environment. It is suggested that you only print sections that are relevant to your needs.

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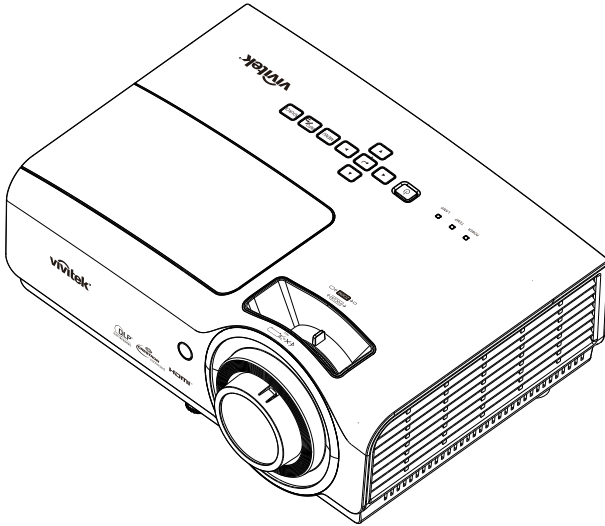
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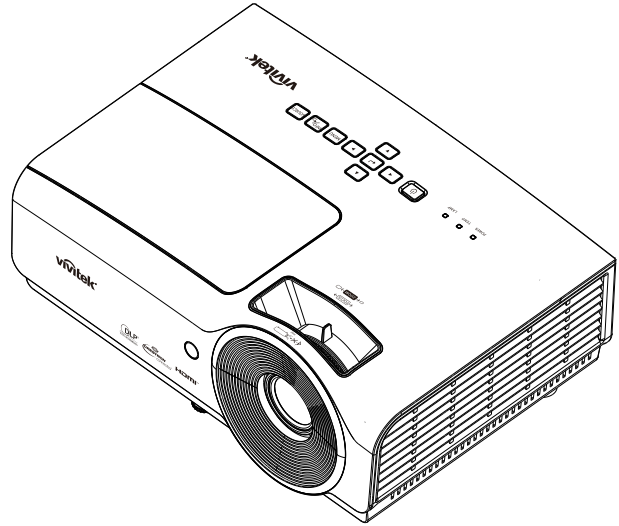
GETTING STARTED

Packing Checklist

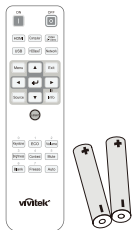
Carefully unpack the projector and check that the following items are included:



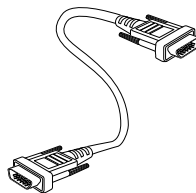
*DLP PROJECTOR
(DH858N / DH856 / DU857)*



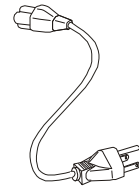
*DLP PROJECTOR
(DW855 / DX853)*



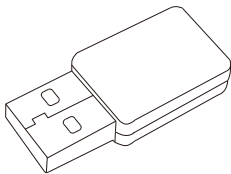
*REMOTE CONTROL
(WITH TWO AAA BATTERIES)*



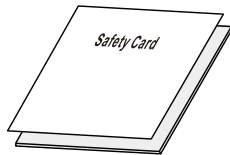
RGB CABLE



POWER CORD



*USB WIRELESS DONGLE
(AVAILABLE IN DH858N)*



SAFETY CARD



QUICK START GUIDE



WARRANTY CARD

Contact your dealer immediately if any items are missing, appear damaged, or if the unit does not work. It is recommended that you keep the original packing material should you ever need to return the equipment for warranty service.



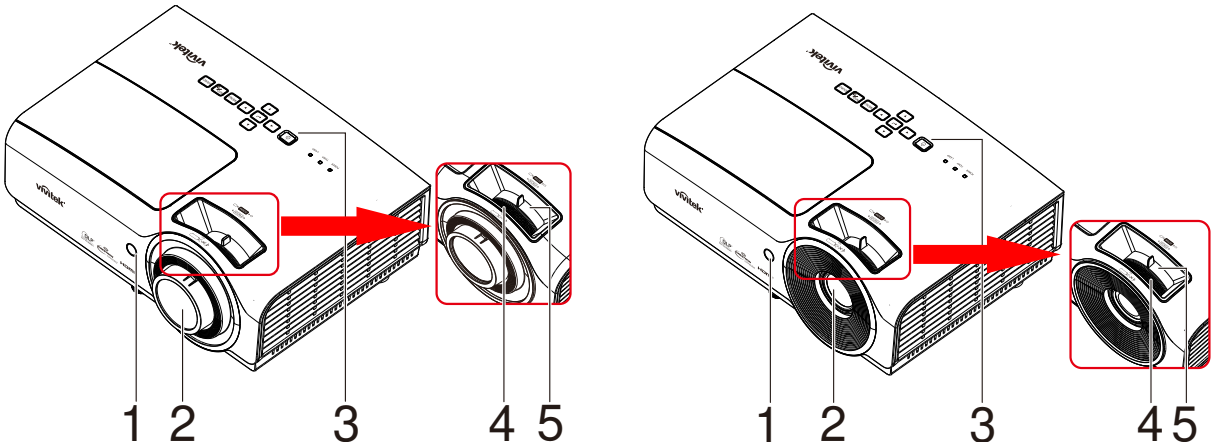
Caution:
Avoid using the projector in dusty environments.

Views of Projector Parts

Front-right View

DH858N / DH856 / DU857

DW855 / DX853

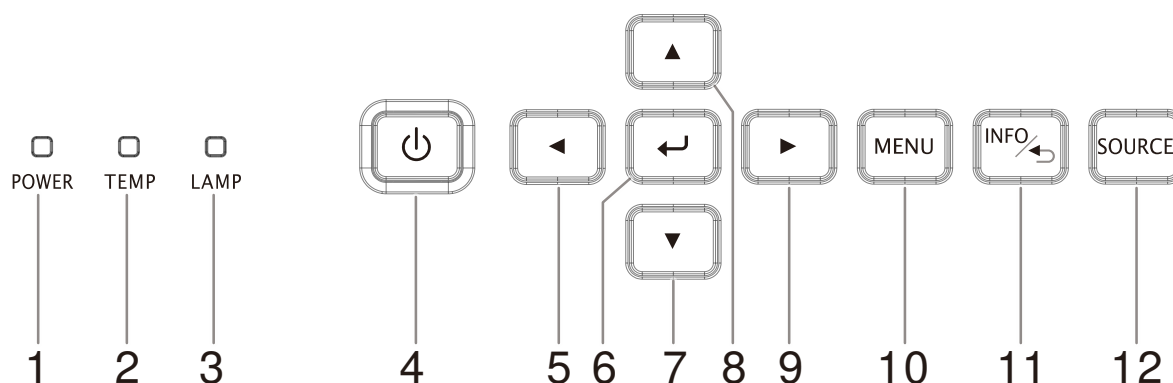


ITEM	LABEL	DESCRIPTION	SEE PAGE
1.	IR receiver	Receive IR signal from remote control.	
2.	Lens	Projection Lens.	
3.	Function keys	See Top view—On-screen Display (OSD) buttons and LEDs.	3
4.	Focus ring	Focuses the projected image.	13
5.	Zoom ring	Enlarges the projected image.	



Important:

Ventilation openings on the projector allow for good air circulation, which keeps the projector lamp cool. Do not obstruct any of the ventilation openings.

Top view—On-screen Display (OSD) buttons and LEDs

ITEM	LABEL	DESCRIPTION	SEE PAGE
1.	POWER LED	Display the power on/off sequence status	41
2.	TEMP LED	Display the thermal status	
3.	LAMP LED	Display the light status	
4.	⏻ (Power button)	Turns the projector On or Off.	15
5.	⬅ (Left cursor)	Navigates and changes settings in the OSD	
6.	↵ (Enter)	Enter or confirm highlighted OSD menu item	
7.	▼ (Down cursor)	Navigates and changes settings in the OSD	15
8.	▲ (Up cursor)	Navigates and changes settings in the OSD	
9.	➡ (Right cursor)	Navigates and changes settings in the OSD	
10.	MENU	Opens and exits OSD menus	
11.	INFO/↶	To start Info OSD	
12.	SOURCE	Navigates and changes settings in the OSD Enter the Source menu	15

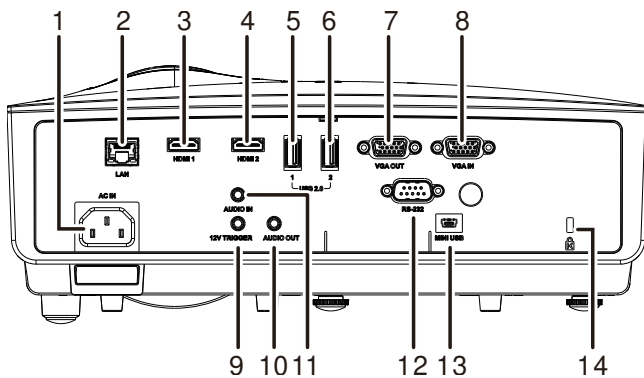
Rear view



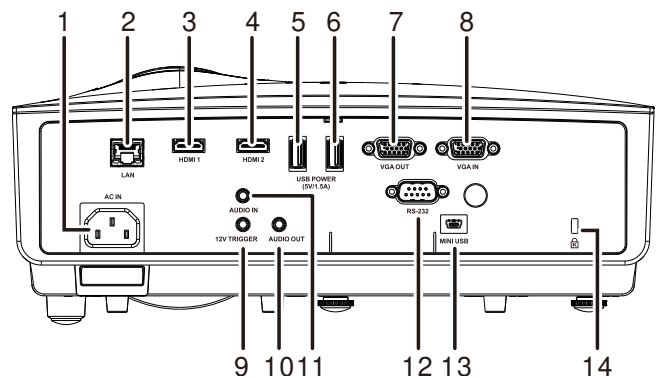
Warning:

As a safety precaution, disconnect all power to the projector and connecting devices before making connections.

DH858N



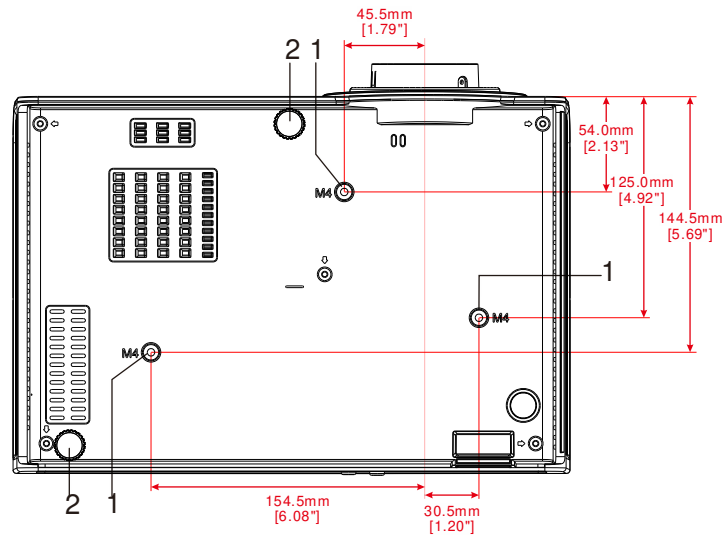
DU857 / DH856 / DW855 / DX853



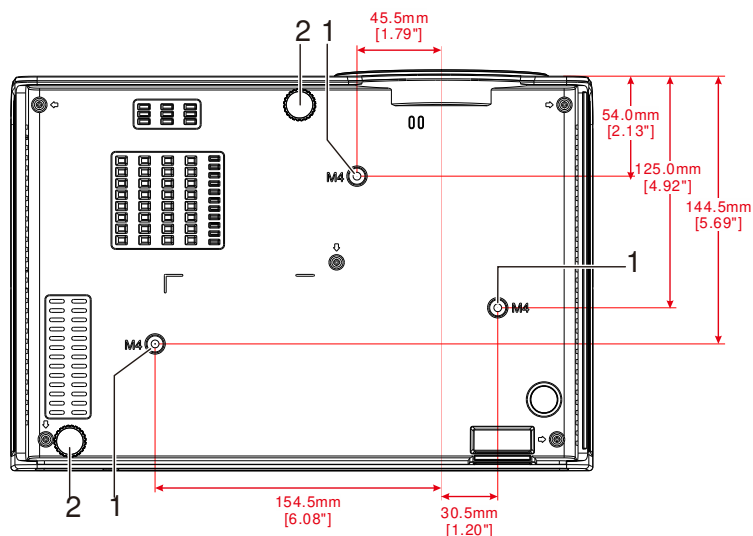
ITEM	LABEL	DESCRIPTION	SEE PAGE
1.	AC IN	Connect the POWER cable	10
2.	LAN	Connect a LAN cable from Ethernet	
3.	HDMI 1	Connect the HDMI cable from a HDMI device	
4.	HDMI 2	Connect the HDMI cable from a HDMI device.	
5.	USB 2.0 (1)	Connect USB Storage Device , Wireless Dongle and USB Mouse/Keyboard in NovoConnect (Available in DH858N)	
	USB POWER (5V/1.5A)	Connect the USB cable for power supply.	
6.	USB 2.0 (2)	Connect USB Storage Device , Wireless Dongle and USB Mouse/Keyboard in NovoConnect (Available in DH858N)	
	USB POWER (5V/1.5A)	Connect the USB cable for power supply.	
7.	VGA OUT	Connect the RGB cable from a computer	
8.	VGA IN	Connect the RGB cable from a computer or components device	
9.	12V TRIGGER	Connect the 12V OUT (Screen Trigger-- For screen controllers used)	
10.	AUDIO OUT	Connect an AUDIO cable to audio amplifier	
11.	AUDIO IN	Connect an AUDIO cable from the audio device	
12.	RS-232C	Connect RS-232 serial port cable for remote control	
13.	MINI USB	Connect the USB cable from a computer (For service only)	
14.	Kensington Lock	Secure to permanent object with a Kensington Lock system	39

Bottom view

DH858N / DH856 / DU857



DW855 / DX853



ITEM	LABEL	DESCRIPTION	SEE PAGE
1.	Ceiling support holes	Contact your dealer for information on mounting the projector on a ceiling	
2.	Tilt adjustor	Rotate adjuster lever to adjust angle position.	12

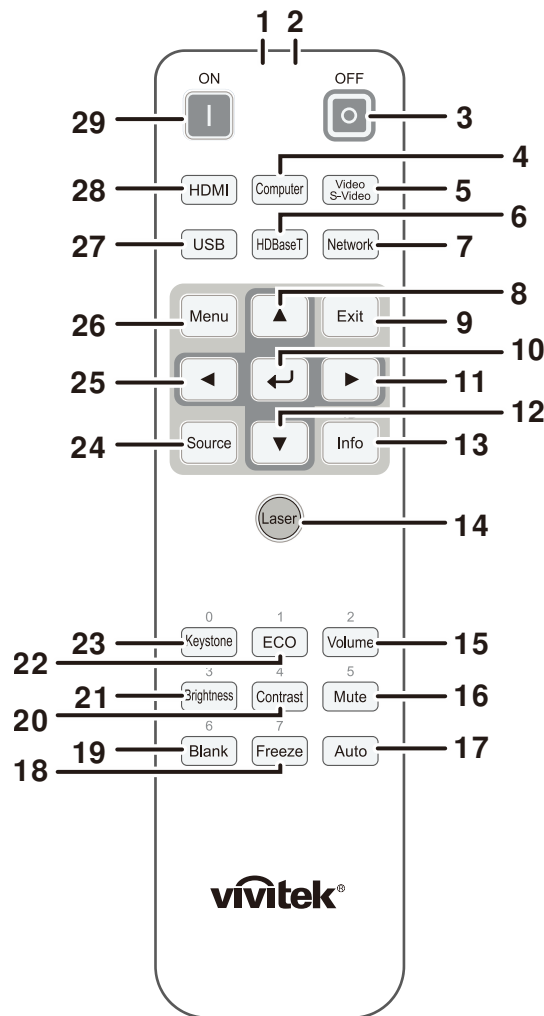
Note:

When installing, ensure that you use only UL Listed ceiling mounts.

For ceiling installations, use approved mounting hardware and M4 screws with a maximum screw depth of 6 mm (0.24 inch).

The construction of the ceiling mount must be of a suitable shape and strength. The ceiling mount load capacity must exceed the weight of the installed equipment, and as an additional precaution be capable of withstanding three times the weight of the equipment over a period of 60 seconds.

Remote Control Parts



Important:

1. Avoid using the projector with bright fluorescent lighting turned on. Certain high-frequency fluorescent lights can disrupt remote control operation.

2. Be sure nothing obstructs the path between the remote control and the projector. If the path between the remote control and the projector is obstructed, you can bounce the signal off certain reflective surfaces such as projector screens.

3. The buttons and keys on the projector have the same functions as the corresponding buttons on the remote control. This user's manual describes the functions based on the remote control.

Note:

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

ITEM	LABEL	DESCRIPTION	SEE PAGE
1.	IR Transmitter	Transmits signals to projector.	
2.	Laser Pointer	Use as on-screen pointer. DO NOT POINT IN EYES.	
3.	OFF	Press twice for projector off	
4.	Computer	Connected the VGA input sources	
5.	Video/S-Video	NA	
6.	HDBaseT	NA	
7.	Network	Select to Network OSD for display	
8.	▲	Navigates and changes settings in the OSD	15
9.	EXIT	Exits the OSD menu	
10.	↩	Enters and confirms settings in the OSD	15
11.	▶	Navigates and changes settings in the OSD Volume up	
12.	▼	Navigates and changes settings in the OSD	
13.	Info (ID)	Displays the Info Menu Hold down ID and use numeric keys to select projector to control	
14.		Presses to emit the on-screen pointer.	
15.	Volume	Displays the volume setting bar	14
16.	Mute	Toggles the built-in speaker between on and off	
17.	Auto	Auto adjustment for frequency, phase, and position	
18.	Freeze	Freeze/unfreezes the on-screen picture	
19.	Blank	Toggles the screen between blank and normal	
20.	Contrast	Displays the contrast setting bar	
21.	Brightness	Displays the brightness setting bar	
22.	ECO	Displays the ECO Settings Menu	
23.	Keystone	Displays the keystone setting Menu	
24.	Source	Displays the source selection Menu	
25.	◀	Navigates and changes settings in the OSD Volume down	15
26.	Menu	Opens the OSD	
27.	USB	NA	
28.	HDMI	Toggles the input sources for display between HDMI sources	
29.	ON	Turns the projector on	



Caution:

Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Remote Control Operating Range

The remote control uses infrared transmission to control the projector. It is not necessary to point the remote directly at the projector. Provided you are not holding the remote perpendicular to the sides or the rear of the projector, the remote will function well within a radius of about 7 meters (23 feet) and 15 degrees above or below the projector level. If the projector does not respond to the remote control, move a little closer.

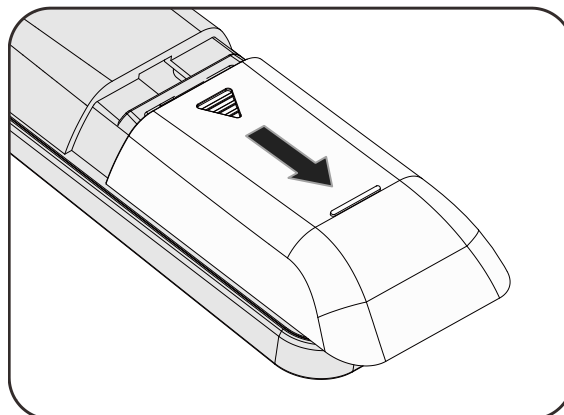
Projector and Remote Control Buttons

The projector can be operated using the remote control or the buttons on the top of the projector. All operations can be carried out with the remote control; however, the buttons on the projector are limited in use.

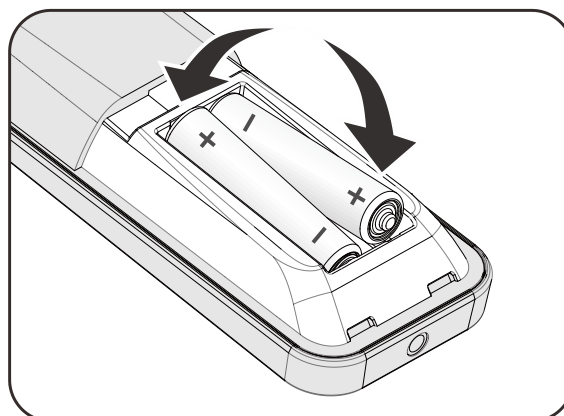
SETUP AND OPERATION

Inserting the Remote Control Batteries

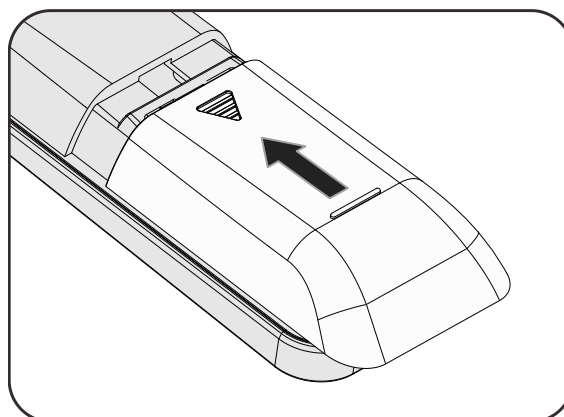
1. Remove the battery compartment cover by sliding the cover in the direction of the arrow.



2. Insert the battery with the positive side facing up.



3. Replace the cover.

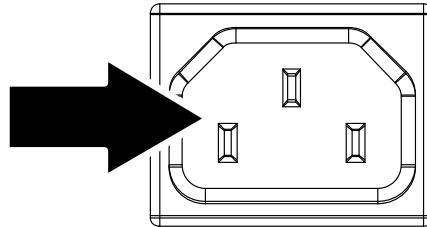


Caution:

1. Only use AAA batteries (Alkaline batteries are recommended).
2. Dispose of used batteries according to local ordinance regulations.
3. Remove the batteries when not using the projector for prolonged periods.

Starting and Shutting down the Projector

1. Connect the power cord to the projector. Connect the other end to a wall outlet.
The  **POWER** LED on the projector light.



2. Turn on the connected devices.

3. Ensure the POWER LED not a flashing. Then press the  **POWER** button to turn on the projector.

The projector splash screen displays and connected devices are detected.

See [Security Lock](#) on page 32 if security lock is enabled.



4. If more than one input device is connected, press the **SOURCE** button and use **▲ ▼** to scroll among devices.
(Component is supported through the RGB to COMPONENT ADAPTER.)



- HDMI 1: High-Definition Multimedia Interface 1
- HDMI 2: High-Definition Multimedia Interface 2
- NovoConnect (Available in DH858N)
- Computer: Analog RGB

Note:

Please visit <http://vivitekcorp.com/> for the NovoProjector User Manual download before using NovoConnect function.

5. When the “Power Off? /Press **Power** again” message appears, press the **POWER** button. The projector turns off.



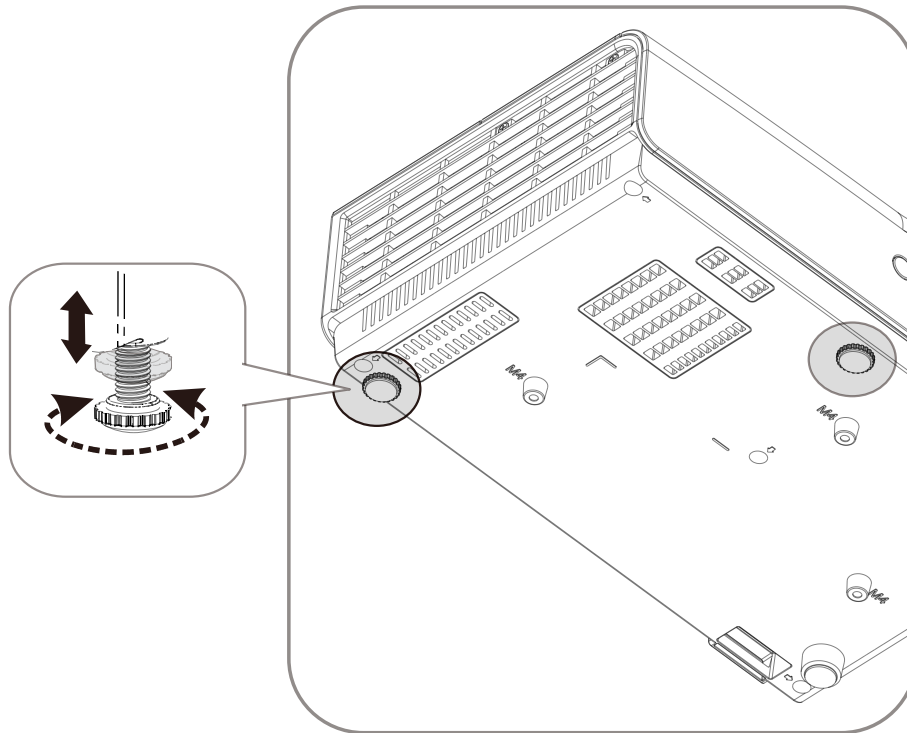
Caution:

Do not unplug the power cord until the POWER LED stops flashing—indicating the projector has cooled down.

Adjusting the Projector Level

Take note of the following when setting up the projector:

- *The projector table or stand should be level and sturdy.*
- *Position the projector so that it is perpendicular to the screen.*
- *Ensure the cables are in a safe location. You could trip over them.*

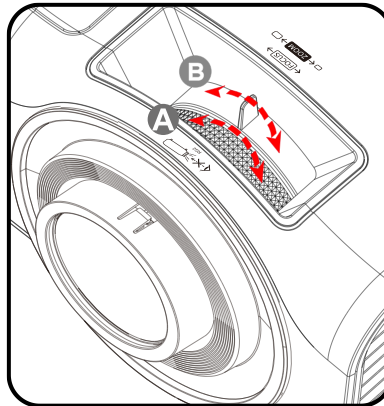


To adjust the angle of the picture, turn the tilt-adjuster right or left until the desired angle has been achieved.

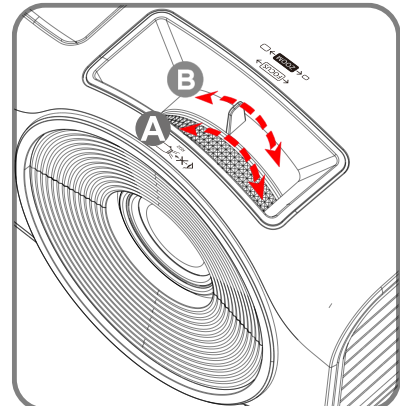
Adjusting the Focus and Keystone

1. Use the **Image-zoom** control (on the projector only) to resize the projected image and screen size **B**.

DH858N / DH856 / DU857

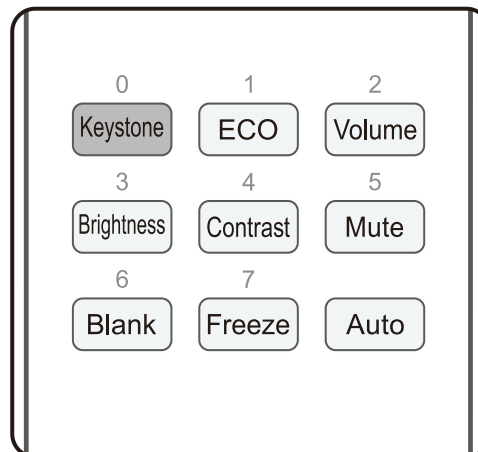


DW855 / DX853

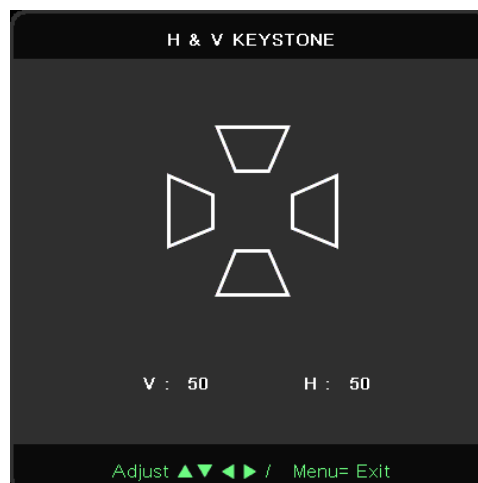


2. Use the **Image-focus** control (on the projector only) to sharpen the projected image **A**.

3. Use the **KEYSTONE** buttons on the remote control to correct image-trapezoid (wider top or bottom) effect.

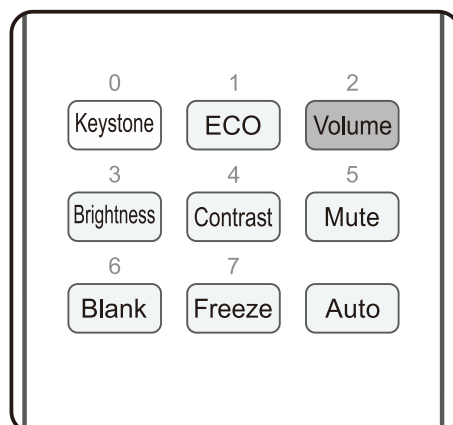


4. The keystone control appears on the display.



Adjusting the Volume

1. Press the **Volume** buttons on the remote control.
The volume control appears on the display.



2. Press the **MUTE** button to turn off the volume.
(This feature is available only on the remote).



ON-SCREEN DISPLAY (OSD) MENU SETTINGS

OSD Menu Controls

The On-Screen Display (OSD) lets you make image adjustments, change various settings and check the projector's current status.

Navigating the OSD

You can use the remote control or the control buttons on the projector to navigate and make changes to the OSD.



- To enter the OSD, press the MENU button.
- There are six top menus icons. Press ◀ / ▶ buttons to select menus.
- Press ▼ / ▲ buttons to scroll through the submenus.
- Press ◀ / ▶ buttons to change the submenus settings.
- Press ↵ to enter the advanced submenus settings
- Press the MENU button to return to the previous menu or leave a submenu.
- Press the EXIT button to close the OSD.

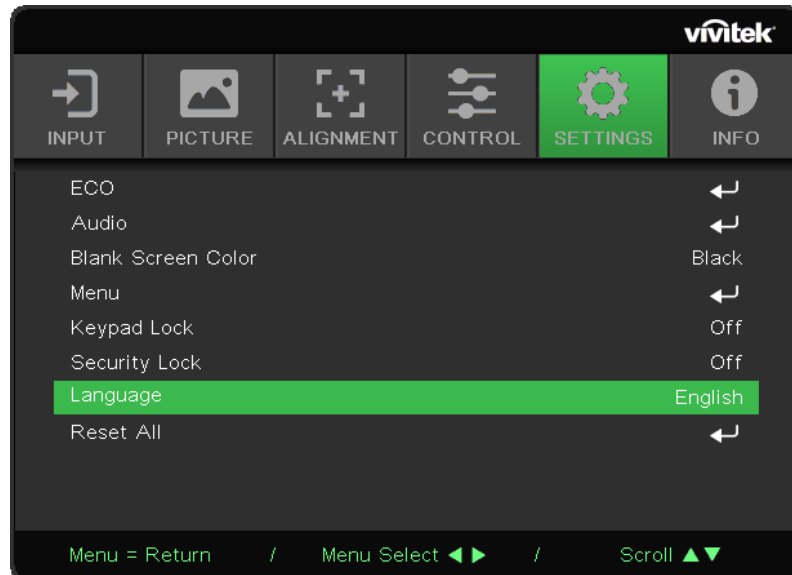
Note:

Depending on the video source, not all items in the OSD are available. For example, the Horizontal/Vertical Position items in the Computer menu can only be modified when connected to a PC. Items that are not available cannot be accessed and are grayed out.

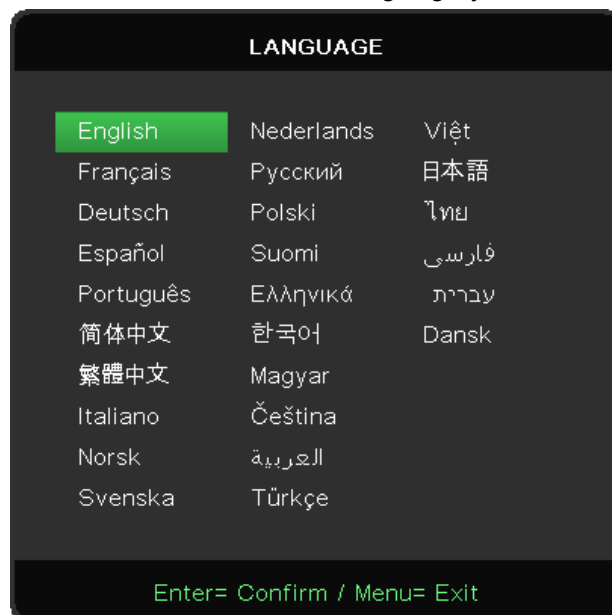
Setting the OSD Language

Set the OSD language to your preference before continuing.

1. Press the **MENU** button. Press the cursor ◀▶ button to navigate to **SETTINGS**. Press the cursor ▲▼ button to move to the **Language** menu.



2. Press ◀ to enter the **Language** sub menu.
3. Press the ▲▼◀▶ cursor button until the language you want is highlighted.



4. Press the **MENU** button three times to close the OSD.

INPUT Menu

Auto Source	On/Off
HDMI	HDMI Color Space: Auto, RGB, YUV
	HDMI Range: Auto, Full, Limited
	Instant Motion: On/Off
Analog	H Position
	V Position
	Phase
	Clock
	Auto Sync: On/Off
3D	3D: Off, DLP-Link, IR
	3D Sync Invert: On/Off
	3D Format: Frame Sequential, Top/Bottom, Side by Side, Frame Packing
Signal Power on	On/Off



Auto Source

Press and use to set Off/ On.

- Off: Select the input signal manually.
- On: Lets projector searching for the input signal automatically..

HDMI

Press and use to scroll through submenus

- HDMI Color Space: set HDMI color space.
Auto: According to HDMI Info Frame to detect color space automatically. RGB: Force to select RGB color space.
YUV: Force to select YUV color space.
- HDMI Range: Use to set Auto/ Full/ Limited.
Auto: According to HDMI Info Frame to detect range automatically. Full: Force to select Full Range(0~255).
Limited: Force to select Limited Range(16~235).
- Instant Motion:
Off: Disable the function and using normal alignment parameters. On: Enable the function and alignment parameters return to default.

Analog

Press  and use / to scroll through submenus

- H Position: Use / to adjust the display position in horizontal direction.
- V Position: Use / to adjust the display position in vertical direction.
- Phase: Use / to adjust the frequency to reduce analog RGB image distortion.
- Clock: Use / to adjust the horizontal width of the analog RGB image.
- Auto Sync: use / to select on/off to lock image sync

3D

Press  and use / to set 3D source, sync method and 3D format.

Before performing 3D setting, make sure that the input signal with 3D sync is connected.

- 3D: Use / to enable or disable 3D functions.
Off: disable 3D function.
DLP-Link: enable internal 3D sync. IR: enable external 3D sync.
- 3D Sync Invert: Use / to swap the 3D signal L/R or R/L.
On: enable inverse signal.
Off: follow received signal sync.
- 3D Format: Use / to select 3D format type :
Frame Sequential, Top/Bottom, Side By Side, Frame Packing.



Important:

People with the following conditions should view 3D image with great care:

Children under six years in age

People who are sensitive to light or allergic to light, unhealthy and have a history of cardiovascular diseases.

People who are tired or lack of sleep

People who are under the impact of drugs or alcohol

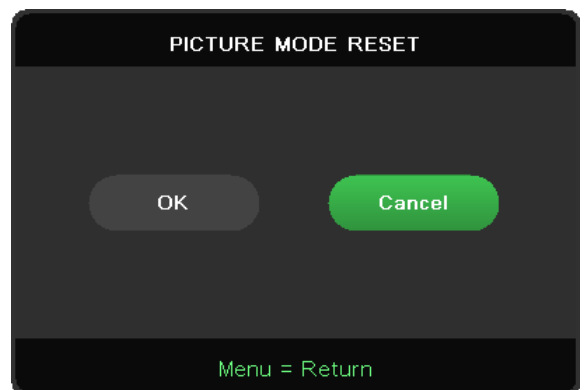
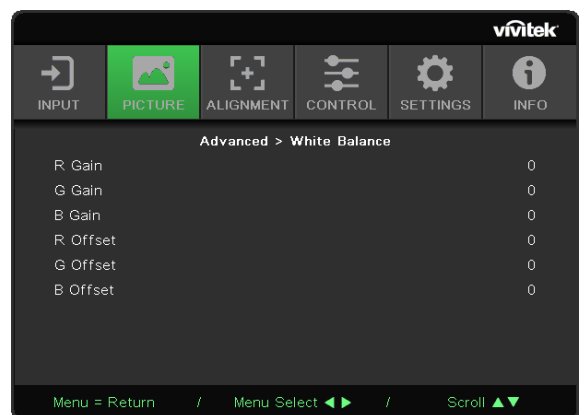
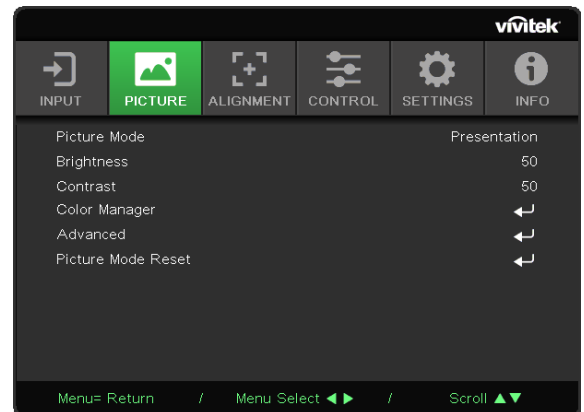
Normally, it is safe to watch 3D images. However, some people might feel uncomfortable. Refer to the guidelines that were revised and released by the 3D League on December 10, 2008. It states that those who watch 3D images, need to take a break for at least 5 to 15 minutes every thirty minutes or one hour.

Signal Power on

Use / to set On/ Off to enable or disable auto Power On by input signal.

PICTURE Menu

Picture Mode	Presentation
	Bright
	Movie
	Game
	sRGB
	DICOM
	User (Presentation)
Brightness	0~100
Contrast	0~100
Color Manager	Color: R / G / B / C / M / Y / W
	Hue: 0~100
	Saturation: 0~100
	Gain: 0~100
Advanced	Brilliant Color: 0~10
	Sharpness: 0~31
	Gamma: 1.8, 2.0, 2.2, 2.4, B&W, Linear
	Color Temperature: Warm, Normal, Cold
	White Balance: R/G/B Gain: 0~200 R/G/B Offset: -100~100
Picture Mode reset	OK/Cancel



Picture Mode

Use ◀/▶ to select a mode according to personal preference.

- Presentation: Suggest to use. The best projection effect for presentation.
- Bright: The mode is suitable for the application environment where is needed with highest brightness output .
- Movie: To provide good balance of color saturation, contrast and brightness. Suggest to use in a dark environment.
- Game: Using for video game.
- sRGB: Optimization RGB colors to reach true-to-life images with limited brightness setting.
- DICOM: To use for Digital Imaging and Communications in Medicine
- User: Personalization with preference of Brightness, Contrast, Color.

Brightness

Press $\leftarrow$ and use $\blacktriangleleft/\blacktriangleright$ to increase or decrease the brightness level of the image.

Contrast

Press $\leftarrow$ and use $\blacktriangleleft/\blacktriangleright$ to adjust the contrast level of the image..

Color Manager

Press $\leftarrow$ and use $\blacktriangledown/\blacktriangle$ to scroll through submenus

- Color: to select and adjust the color (Red, Green, Blue, Cyan, Magenta, Yellow, White).
- Hue: Use $\blacktriangleleft/\blacktriangleright$ to adjust the Color Hue value
- Saturation: Use $\blacktriangleleft/\blacktriangleright$ to adjust the Color Saturation value
- Gain: Use $\blacktriangleleft/\blacktriangleright$ to adjust the Color Gain value

These three options are used to adjust the range of color input for the entire image. If minimal amount of red, green or blue appears in the gray areas, lower the gain of the corresponding color accordingly. As gain increases, the contrast of the image will become lower.

Advanced

Press $\leftarrow$ and use $\blacktriangledown/\blacktriangle$ to scroll through submenus

- Brilliant Color: Use $\blacktriangleleft/\blacktriangleright$ to adjust the brilliant color of image
- Sharpness: Use $\blacktriangleleft/\blacktriangleright$ to adjust the sharpness of image
- Gamma: Use $\blacktriangleleft/\blacktriangleright$ to select the different chrominance of image.

When the ambient light is so bright that may affect the projection image in the dim area, you can change the gamma to adjust the chrominance. The available options are 1.8, 2.0, 2.2, 2.4, B&W, Linear.

- Color Temperature: Use $\blacktriangleleft/\blacktriangleright$ to select the color temperature

Warm : make image reddish white.

Normal : Normal colorings of white.

Cold : make image bluish white.

- White Balance: Press $\leftarrow$ and use $\blacktriangledown/\blacktriangle$ to scroll through submenus

Use $\blacktriangleleft/\blacktriangleright$ to adjust Gain and Offset values of Red, Green, Blue color for white balance.

Gain: Adjust the brightness level of Red, Green, Blue.

Offset: Adjust the contrast level of Red, Green, Blue.

Picture Mode Reset

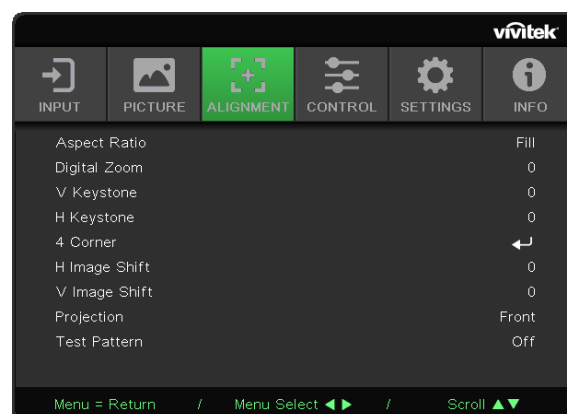
This function will reset all Picture Mode to the default settings

Note:

"Picture Mode Reset" is only reset according to input signal.

ALIGNMENT Menu

Aspect Ratio	Fill / 4:3 / 16:9 (16:10) / Letter Box / 2.35:1
Digital Zoom	-10 ~ +10
V Keystone	-30 ~ +30
H Keystone	-30 ~ +30
4 Corner	Corner: Top-Left / Top-Right / Bottom-Left / Bottom-Right H: 0~60 V: 0~60
H Image Shift	-50 ~ +50
V Image Shift	-50 ~ +50
Projection	Front / Rear / Front+Ceiling / Rear+Ceiling
Test Pattern	Off / Grid



Aspect Ratio

Use ◀/▶ to select the image aspect ration (Fill ,4:3 ,16:9 or 16:10 , Letter Box ,2.35:1)

Digital Zoom

Use ◀/▶ to enlarge the projected image.

V Keystone

Use ◀/▶ to adjust the value to correct the image Vertical distortion. The adjustable value is ± 30

H Keystone

Use ◀/▶ to adjust the Horizontal distortion of image. The adjustable value is ± 30

4 Corner

This function is used to correct the image distortion that may occur in a corner due to installation or projected surface.

Press ↵ and use ▼/▲ to scroll through submenus

- Corner: use ◀/▶ to select a corner (Top Left, Top Right, Bottom Left, Bottom Right)
- H: use ◀/▶ to increase or decrease the Horizontal value
- V: use ◀/▶ to increase or decrease the Vertical value

H Image Shift

Use ◀/▶ to Shift the image Horizontally (left / right)
The maximum horizontal shift range can be up to 50%

V Image Shift

Use ◀/▶ to Shift the image Vertically (up / down)
The maximum vertical shift range can be up to 50%

Projection

Use ◀/▶ to select the Projection position

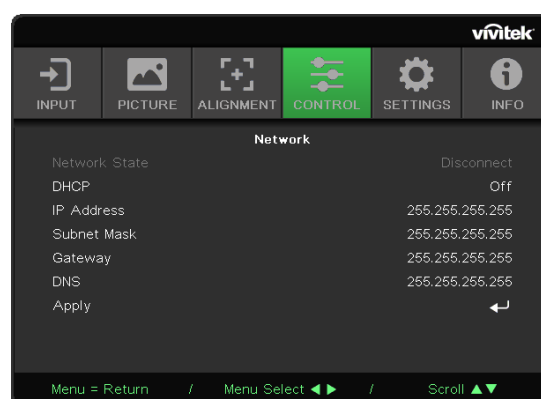
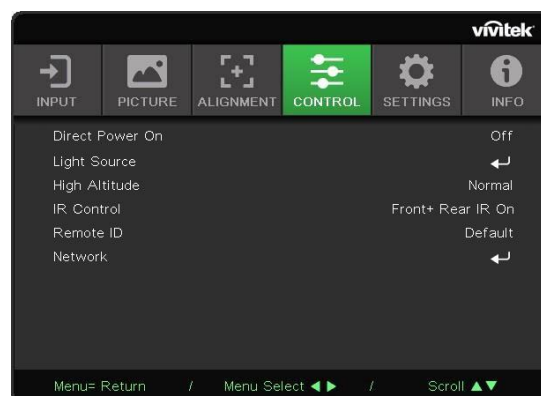
- Front Desktop: Install the projector on the desktop and project the image forward.
- Rear Desktop: Install the projector on the desktop and project the image from the rear of the screen.
- Front Ceiling: Mount the projector on the ceiling and project the image forward.
- Rear Ceiling: Mount the projector on the ceiling and project the image from the rear of the screen.

Test Pattern

Use ◀/▶ to select Off / Grid , enable the test pattern image. the test pattern image

CONTROL Menu

Direct Power On	On/Off
Light Source	Light Mode: Normal, ECO, Dynamic ECO Light Hours Reset
High Altitude	Normal / High
IR Control	Front+Rear IR On/Front IR On/ Rear IR On
Remote ID	Default(0)/ 1/ 2/ 3/ 4/ 5/ 6/ 7
Network	Network State: Connect, Disconnect DHCP: On/Off IP Address: 0~255,0~255,0~255,0~255 Subnet Mask: 0~255,0~255,0~255,0~255 Gateway: 0~255,0~255,0~255,0~255 DNS: 0~255,0~255,0~255,0~255 Apply: OK/Cancel



Direct Power On

Use ◀/▶ to switch ON/OFF

This function is set to OFF by default. When it is set to ON, the projector will turn on automatically when the AC power is turned on the next time. You can use this function and the power switch (instead of the remote control) to turn on the projector.

Light Source

Press ↵ and use ▼/▲ to scroll through submenus

- Light Mode: use ◀/▶ to select (Normal, ECO, Dynamic ECO)
- Light Hours Reset: After replacing the lamp, this item should be reset. See page 37 for more information on [Light Hours Reset](#).

High Altitude

Use ◀/▶ to adjust cooling fan speed (Normal, High)

IR Control

Use ◀/▶ to select the preferred IR control location (Both IR On Front IR on, Rear IR On)

This function let you select which IR remote controller receiver is active.

Remote ID

Display current projector ID and remote control ID number. To set a unique ID for the projector and control independently.

Network

Use this function to configure the network settings, so that you can control the projector via the network.

Press  and use / to scroll through submenus

- Network State: Connect / Disconnect the network automatically.
- DHCP: use / to Set DHCP to ON/OFF.

When DHCP is set to ON, the DHCP server of the domain will assign an IP address to the projector. The IP address will appear on the IP address window without applying any input. If the domain cannot assign any IP address, 0.0.0.0 will be shown on the IP address window.

- IP Address: Press  to show the IP address input window.
Use / to select the number in the address to change
Use / to increase or decrease the number in the IP address.
(Example :Network IP Address 172. xxx. xxx. xxx.)

- Subnet Mask: Set the subnet mask. The input method is the same as the setting for IP address.
- Gateway: Set the gateway. The input method is the same as the setting for IP address.
- DNS: Set the DNS. The input method is the same as the setting for IP address.
- Apply: Press  and use / to scroll through submenus

Wired LAN Terminal functionalities

Remote control and monitoring of a projector from a PC (or Laptop) via wired LAN is also possible. Compatibility with Crestron / AMX (Device Discovery) / Extron control boxes enables not only collective projector management on a network but also management from a control panel on a PC (or Laptop) browser screen.

- Crestron is a registered trademark of Crestron Electronics, Inc. of the United States.
- Extron is a registered trademark of Extron Electronics, Inc. of the United States.
- AMX is a registered trademark of AMX LLC of the United States.
- PJLink applied for trademark and logo registration in Japan, the United States of America, and other countries by JBMIA.

Supported External Devices

This projector is supported by the specified commands of the Crestron Electronics controller and related software (ex, RoomView ®).

<http://www.crestron.com/>

This projector is supported by AMX (Device Discovery).

<http://www.amx.com/>

This projector is compliant to support Extron device(s) for reference.

<http://www.extron.com/>

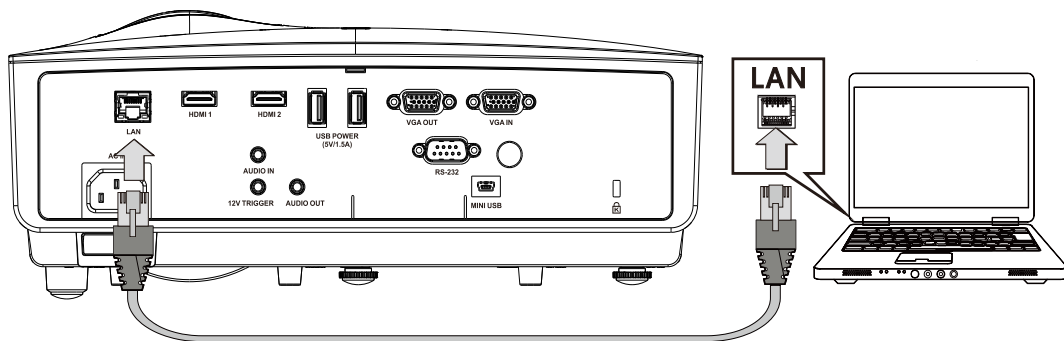
This projector supports all commands of PJLink Class1 (Version 1.00).

<http://pjlink.jbmia.or.jp/english/>

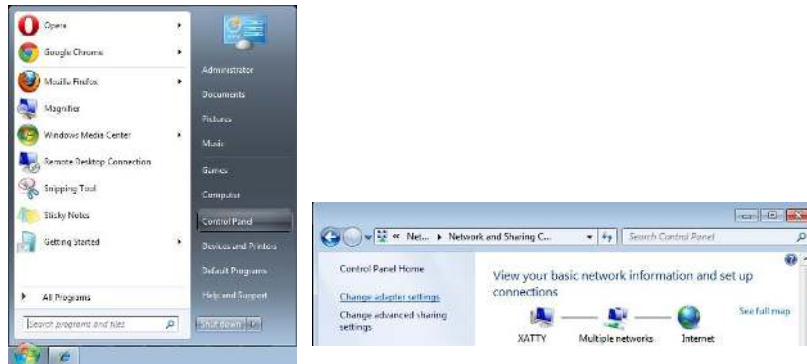
For more detail of information about the diverse types of external devices which can be connected to the LAN/RJ45 port and remote/control the projector, as well as the related control commands supporting for each external device, kindly please get contact with the Support-Service team directly.

Connecting with LAN

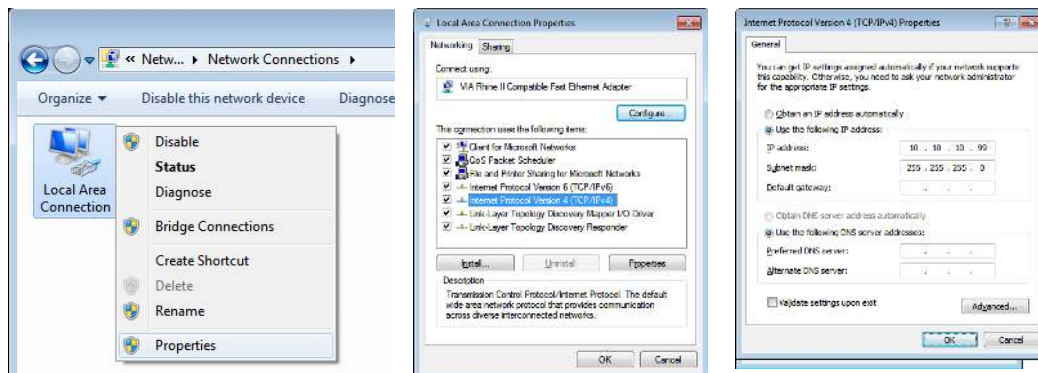
1. Connect an RJ45 cable to RJ45 ports on the projector and the PC (Laptop).



2. On the PC (Laptop), select Start → Control Panel → Network and Internet.



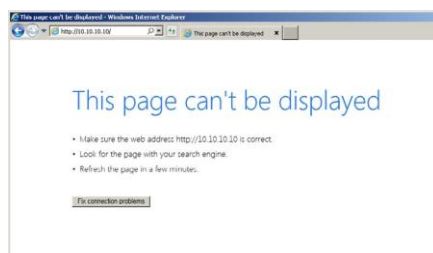
3. Right-click on Local Area Connection, and select Properties.
4. In the Properties window, select the Networking tab, and select Internet Protocol (TCP/IP).
5. Click Properties.
6. Click Use the following IP address and fill in the IP address and Subnet mask, then click OK.



7. Press the Menu button on the projector.
8. Select CONTROL→Network
9. After getting into Network, input the following:
 - DHCP: Off
 - IP Address: 10.10.10.10
 - Subnet Mask: 255.255.255.0
 - Gateway: 0.0.0.0
 - DNS Server: 0.0.0.0
10. Press (Enter) / ► to confirm settings.

Open a web browser

(for example, Microsoft Internet Explorer with Adobe Flash Player 9.0 or higher).



11. In the Address bar, input the IP address: 10.10.10.10.

12. Press (Enter) / ►.

The projector is setup for remote management. The LAN/RJ45 function displays as follows.



CATEGORY	ITEM	INPUT-LENGTH
Crestron Control	IP Address	15
	IP ID	3
	Port	5
Projector	Projector Name	10
	Location	10
	Assigned To	10
Network Configuration	DHCP (Enabled)	(N/A)
	IP Address	15
	Subnet Mask	15
	Default Gateway	15
	DNS Server	15
User Password	Enabled	(N/A)
	New Password	10
	Confirm	10
Admin Password	Enabled	(N/A)
	New Password	10
	Confirm	10

For more information, please visit <http://www.crestron.com>.

Preparing Email Alerts

1. Make sure that user can access the homepage of LAN RJ45 function by web browser (for example, Microsoft Internet Explorer v6.01/v8.0).
2. From the Homepage of LAN/RJ45, click Alert Mail Settings.
3. By default, these input boxes in Alert Mail Settings are blank.

The left screenshot shows the 'Projector Info' sidebar with 'Alert Mail Settings' highlighted. The main content area displays system information:

System	
System Status	Power On
Display Source	Composite Video
Lamp Hours	27
Display Mode	Movie
Error Status	No Error

LAN Status	
IP address	10.10.10.10
Subnet mask	255.255.255.0
Default gateway	172.16.7.254
DNS Server	172.16.0.1
MAC address	00:18:23:2C:C3:41

Version	
LAN Version	MHD01_UL
F/W Version	E02

The right screenshot shows the 'Send E-Mail' configuration page. It includes fields for SMTP Server, User Name, Password, From, To, and CC. There are also checkboxes for 'E-mail Alert Options' (Fan Inck, Over_Heat, Case Open, Lamp Fail, Lamp Hours Over, Filter Hours Over) and a 'Weekly Report' checkbox. Buttons for 'Mail Server Apply', 'Mail Address Apply', 'Alert Option Apply', and 'Send Test Mail' are present.

4. For Sending alert mail, input the following:

- The SMTP field is the mail server for sending out email (SMTP protocol). This is a required field.
- The To field is the recipient's email address (for example, the projector administrator). This is a required field.
- The Cc field sends a carbon copy of the alert to the specified email address. This is an optional field (for example, the projector administrator's assistant).
- The From field is the sender's email address (for example, the projector administrator). This is a required field.
- Select the alert conditions by checking the desired boxes.

The 'Send E-Mail' configuration page is shown with the following example data:

- SMTP Server: mail.com.com
- User Name: Servers
- Password: *****
- From: send@mail.com.com
- To: recvr@mail.com.com
- CC: recvr@mail.com.com
- E-mail Alert Options: Fan Inck (checked), Over_Heat (checked), Case Open (checked), Lamp Fail (checked), Lamp Hours Over (checked), Filter Hours Over (checked), Weekly Report (unchecked)

Buttons for 'Mail Server Apply', 'Mail Address Apply', 'Alert Option Apply', and 'Send Test Mail' are visible.

Note: Fill in all fields as specified. User can click Send Test Mail to test what setting is correct. For successful sending an e-mail alert, you must select alert conditions and enter a correct e-mail address.

RS232 by Telnet Function

Besides projector connected to RS232 interface with “Hyper-Terminal” communication by dedicated RS232 command control, there is alternative RS232 command control way, so called “RS232 by TELNET” for LAN/RJ45 interface.

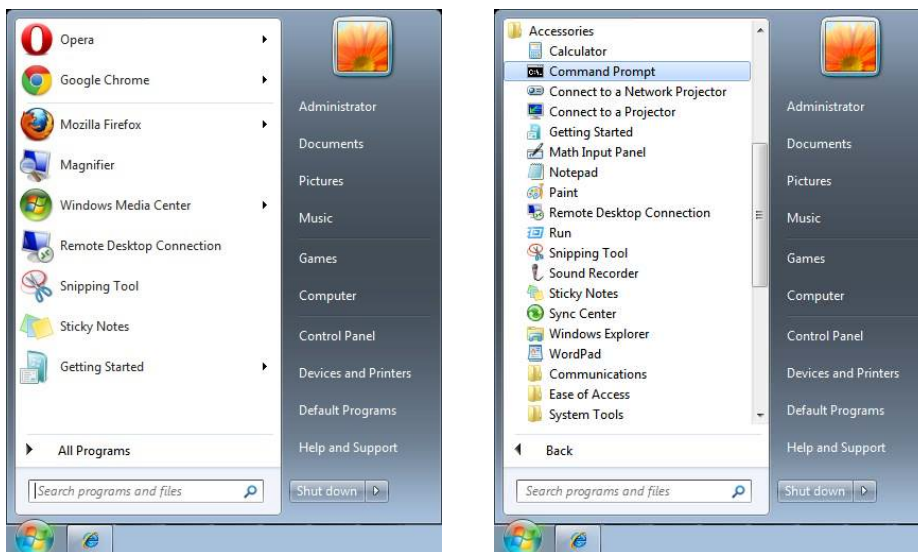
Quick Start-Guide for “RS232 by TELNET”

Check and get the IP-Address on OSD of the projector.

Make sure that laptop/PC can access the web-page of the projector.

Make sure that “Windows Firewall” setting to be disabled in case of “TELNET” function filtering out by laptop/PC.

Start => All Programs => Accessories => Command Prompt



Input the command format like the below:

telnet tt.ttt.xxx.yyy.zzz 23 (“Enter” key pressed) (tt.ttt.xxx.yyy.zzz: IP-Address of the projector)

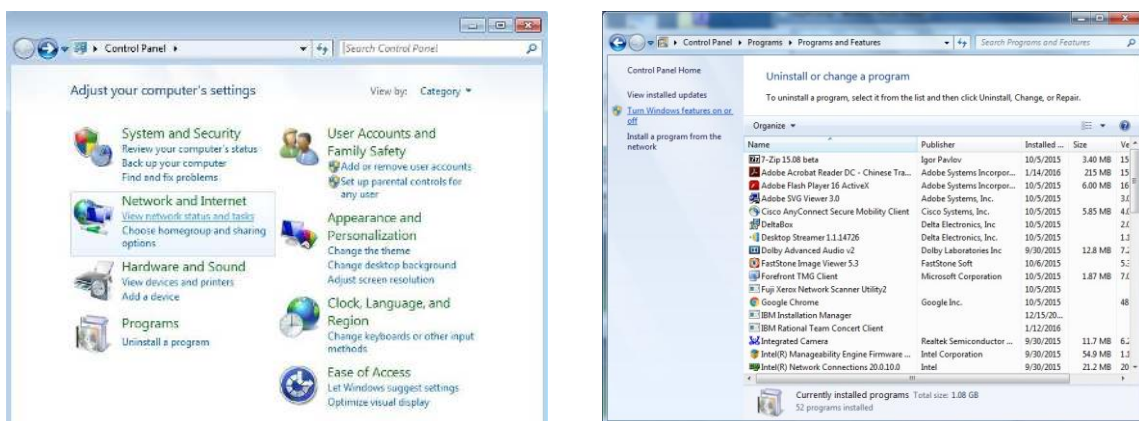
If Telnet-Connection ready, and user can have RS232 command input, then “Enter” key pressed, the RS232 command will be workable.

How to have TELNET enabled in Windows 7 / 8 / 10

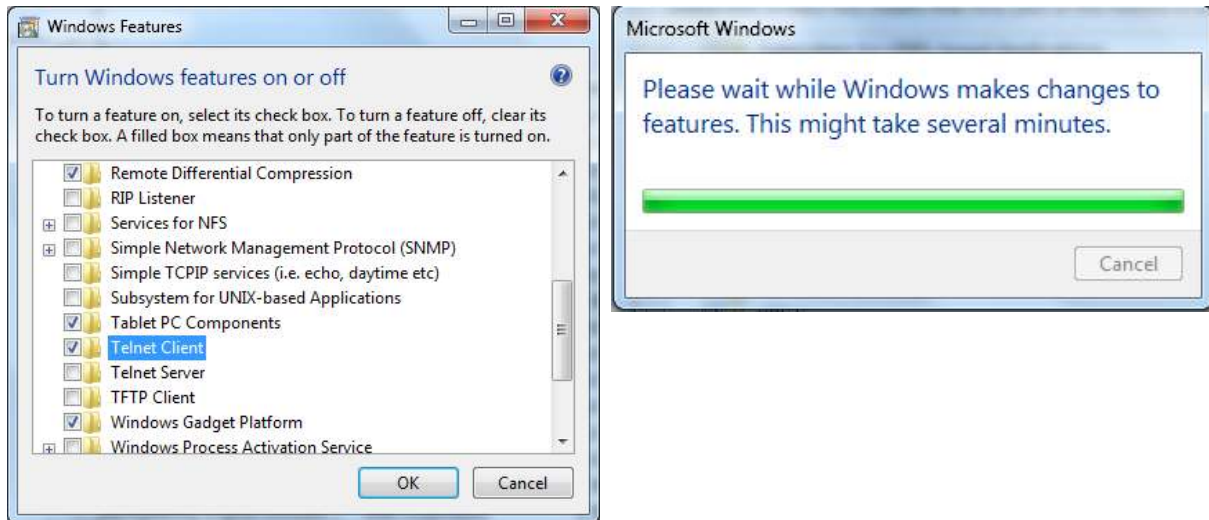
By default installation for Windows, “TELNET” function is not included. But end-user can have it by way of “Turn Windows features On or Off” to be enabled.

Open “Control Panel” in Windows

Open “Programs”



Select “Turn Windows features on or off” to open
Have “Telnet Client” option checked, then press “OK” button.

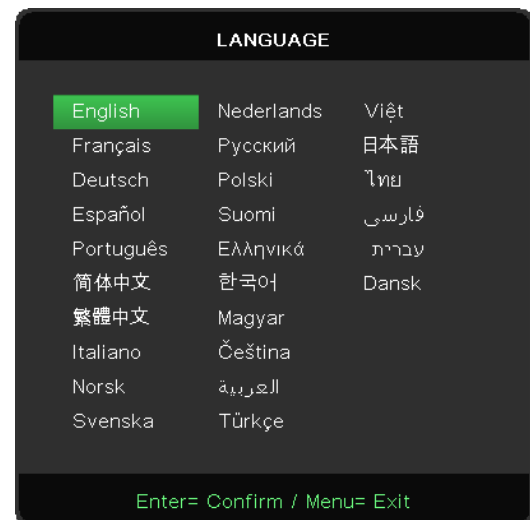
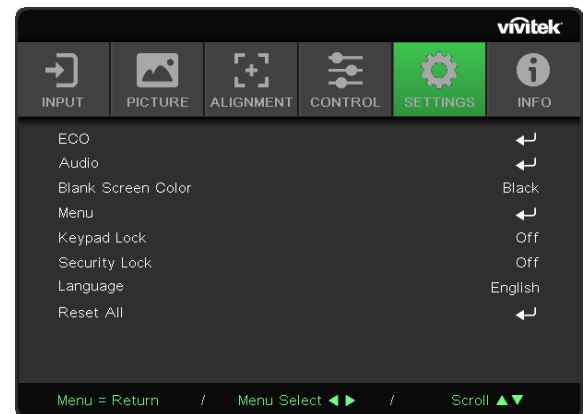


Specsheet for “RS232 by TELNET” :

1. Telnet: TCP
 2. Telnet port: 23
(for more detail, kindly please get contact with the service agent or team)
 3. Telnet utility: Windows “TELNET.exe” (console mode)
 4. Disconnection for RS232-by-Telnet control normally: Close Windows Telnet utility directly after TELNET connection ready
 5. Limitation 1 for Telnet-Control: there is less than 50 bytes for successive network payload for Telnet-Control application.
Limitation 2 for Telnet-Control: there is less than 26 bytes for one complete RS232 command for Telnet-Control.
Limitation 3 for Telnet-Control: Minimum delay for next RS232 command must be more than 200 (ms).
- (*, In Windows built-in “TELNET.exe” utility, “Enter” key pressed will have “Carriage-Return” and “New-Line” code.)

SETTINGS Menu

ECO	Standby Power: Normal / ECO / On By Lan
	No Signal Power Off (min): 0~180
	Sleep Timer (min): 0~600
Audio	Volume: 0~10
Blank Screen Color	Black, Red, Green, Blue, White
	Mic: Off/On
Menu	Logo: On/Off
	Message: On/Off
	Menu Position: Center, Up, Down, Left, Right
	Menu Timer: Off / 20sec. / 40 sec. / 60 sec.
	Menu Translucent: Off, 50%, 100%
Keypad Lock	On/Off
Security Lock	On/Off
Language	Current Language
	Select Language Screen
Reset All	OK/Cancel



ECO

Press and use / to scroll through submenus

- Standby Power: use / to switch Normal / ECO / On By Lan
- No Signal Power Off (mins): use / to increase or decrease time lapse before automatic
- Power Off mode to count down under no signal before turning off projector automatically.
- Sleep Timer (mins): use / to increase or decrease time lapse before automatic sleep mode

Audio

Press and use / to scroll through submenus

- Volume: use / to increase or decrease the projector sound volume
- Mic: use / to switch ON/OFF the built in microphone of projector.

Blank Screen Color

Use / to select screen background color (Black, Red, Green, Blue, White)

Menu

Press  and use / to scroll through submenus

- Logo: use / to switch ON/OFF
- Message: use / to switch ON/OFF
- Menu Position: use / to select the menu position (Center,Up,Down,Left,Right)
- Menu Timer: use / to switch time : Off / 20sec. / 40sec. / 60sec. to pop off Menu.
- Menu Translucent: use / to switch Off / 50% /100% for Menu transparency.

Keypad Lock

Use / to switch On/Off for Keypad lock.

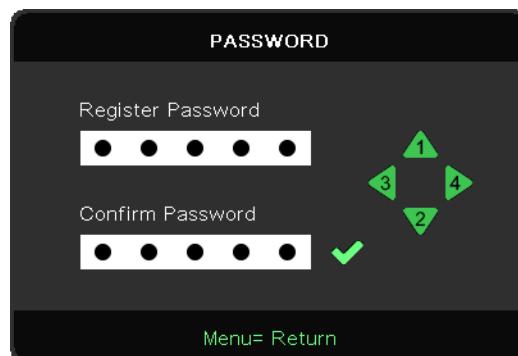
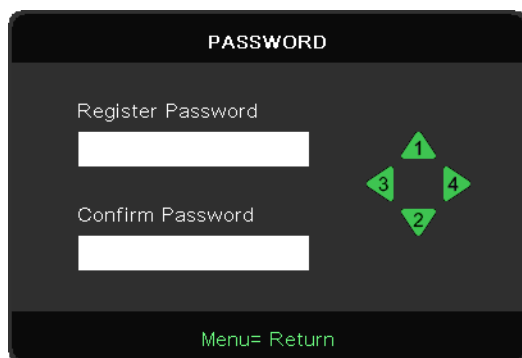
Note:

To unlock by keypad, please press “” for 5 sec and then pop-out “keypad unlock” .

Security Lock

Use / to switch ON/OFF

Password



- Press the MENU button. Press  /  button to navigate to SETTINGS.
- Press / button to scroll to the Password submenu.
- Press  to enter the advanced settings screen.
- Press / button to scroll and highlight your language.
- Press the MENU button to exit the advanced

Note:

Every time will show "password check" to key in when startup. If wrong over 5 times ,please contact with local service center.

Language

Press the MENU button. Press  /  button to navigate to SETTINGS.

Press / button to scroll to the Language submenu.

Press  to enter the advanced settings screen.

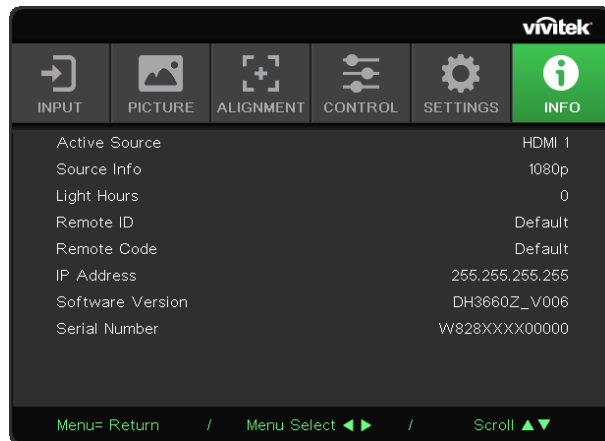
Press / button to scroll and highlight your language.

Press the MENU button to exit the advanced Setting Language

Reset All

Press  and use / to reset all settings to default values.

INFO Screen



This screen displays the projector current status information to be used for technical support.

MAINTENANCE AND SECURITY

Replacing the Projection Lamp

The projection lamp should be replaced when it burns out. It should only be replaced with a certified replacement part, which you can order from your local dealer.



Important:

- a. The projection lamp used in this product contains a small amount of mercury.*
- b. Do not dispose this product with general household waste.*
- c. Disposal of this product must be carried out in accordance with the regulations of your local authority.*



Warning:

Be sure to turn off and unplug the projector about one hour before replacing the lamp. Failure to do so could result in a severe burn.



Caution:

In rare cases the lamp bulb may burn out during normal operation and cause glass dust or shards to be discharged outward from the rear exhaust vent.

Do not inhale or do not touch glass dust or shards. Doing so could result in injury.

Always keep your face away from the exhaust vent so that you do not suffer from the gas and broken shards of the lamp.

When removing the lamp from a ceiling-mounted projector, make sure that no one is under the projector. Glass fragments could fall if the lamp has been burned out.



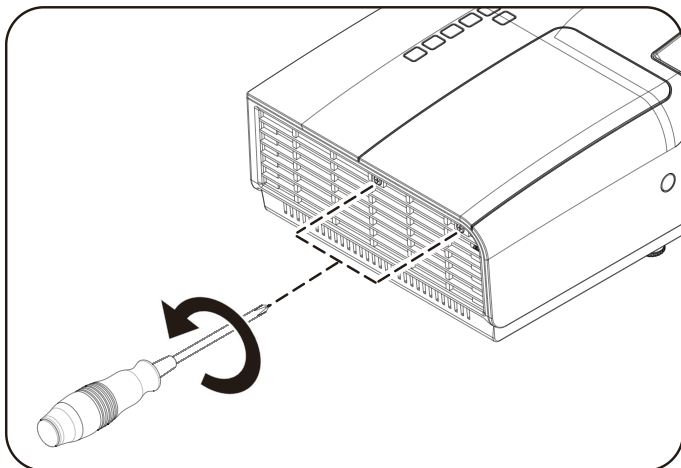
IF A LAMP EXPLODES

If a lamp explodes, the gas and broken shards may scatter inside the projector and they may come out of the exhaust vent. The gas contains toxic mercury.

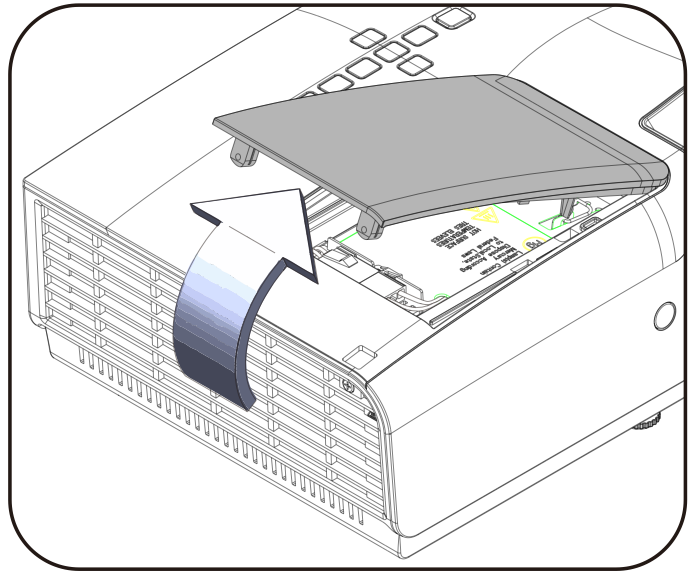
Open windows and doors for ventilation.

If you inhale the gas or the shards of the broken lamp enter your eyes or mouth, consult the doctor immediately.

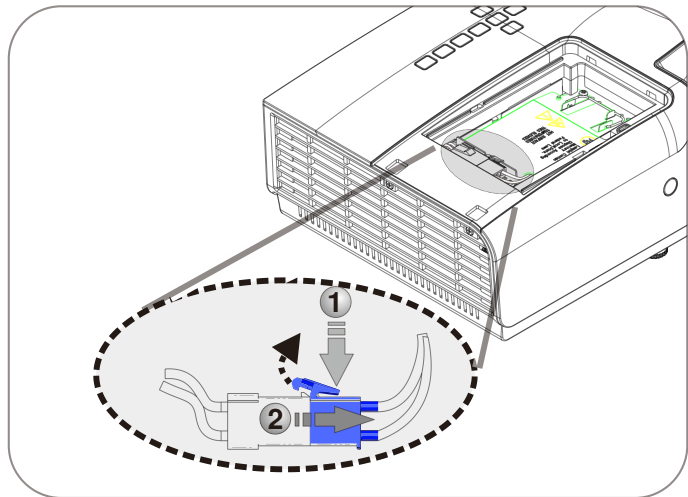
- 1.** Remove two screws on the lamp compartment cover.



- 2.** Remove the lamp compartment cover.



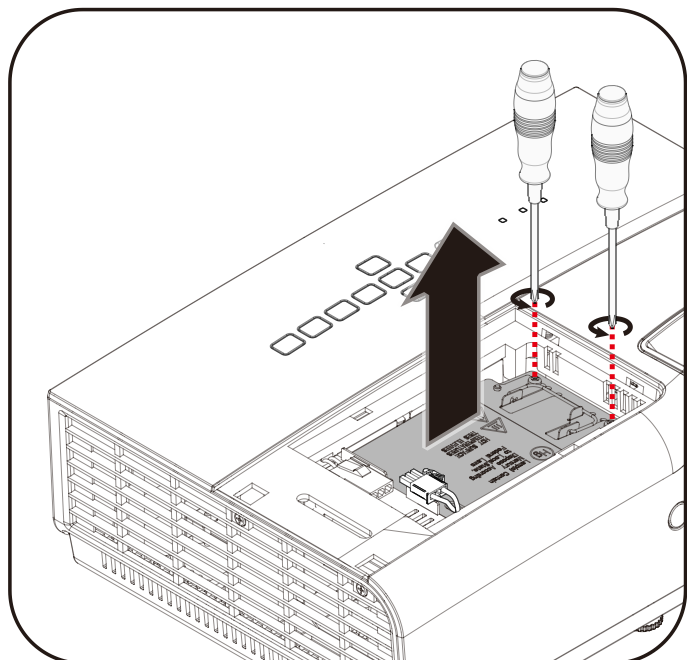
- 3.** Disconnect the lamp connector



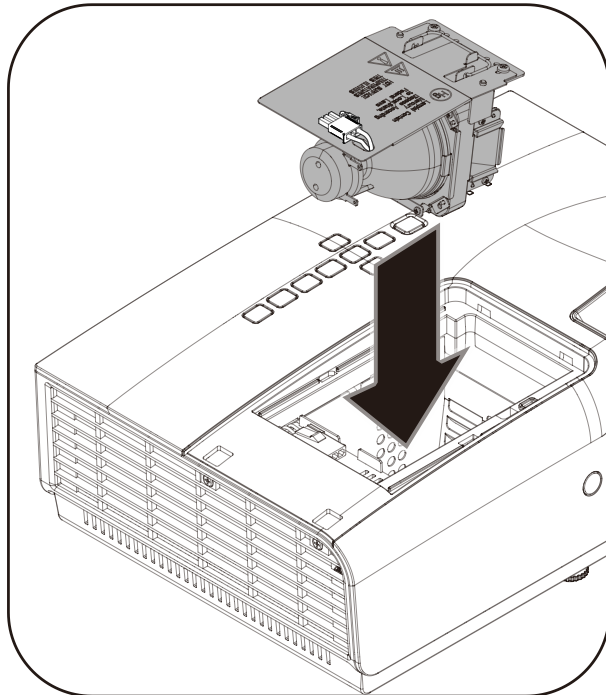
- 4.** Remove the two screws from the lamp module.

- 5.** Lift the module handle up.

- 6.** Pull firmly on the module handle to remove the lamp module.



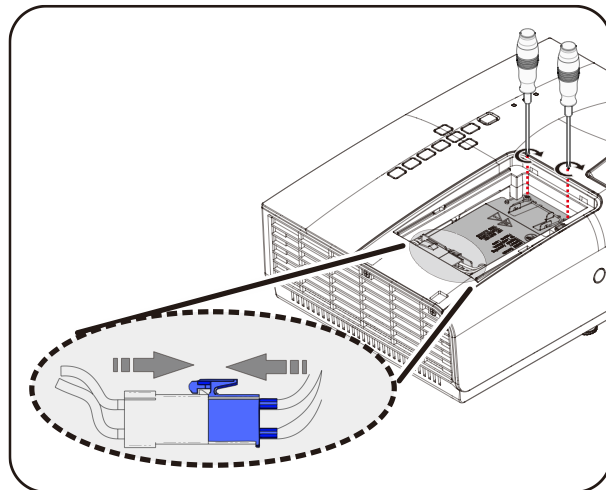
- 7.** Reverse steps 1 to 6 to install the new lamp module.
While installing, align the lamp module and ensure it is level to avoid damage.



Note:

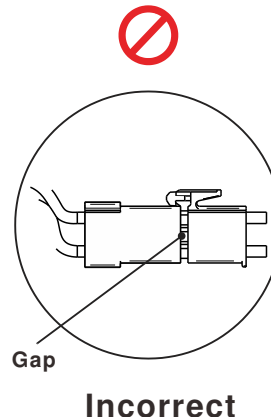
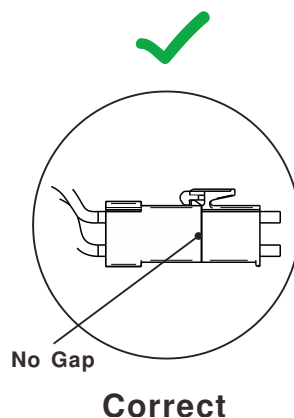
The lamp module must sit securely in place before tightening the screws.

The lamp connector must be connected properly and placed as drawing before Lamp compartment cover installation back.



Warning:

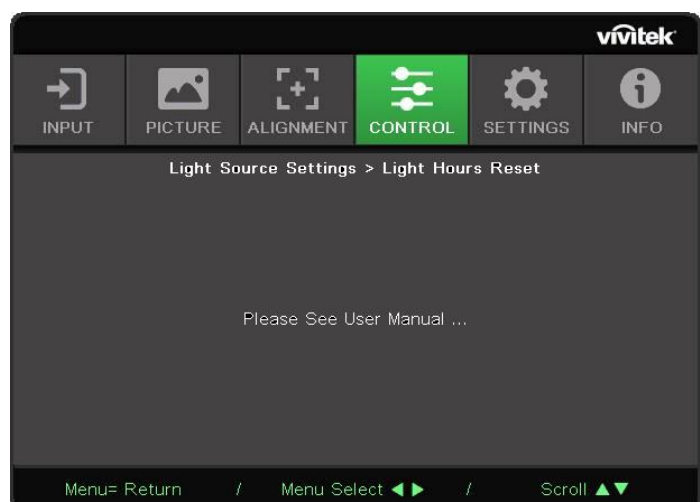
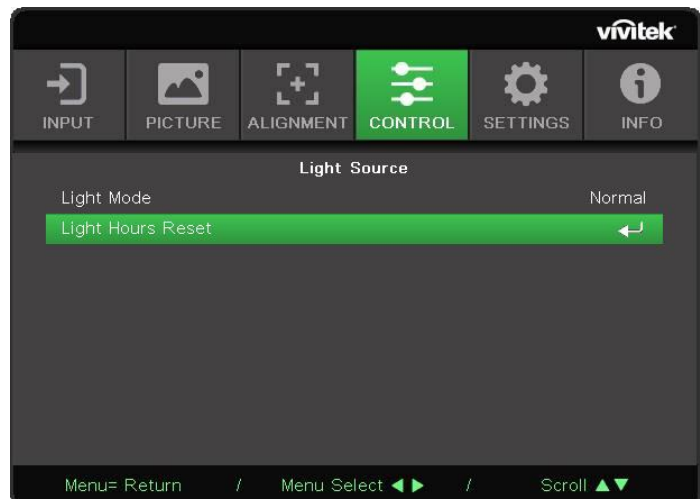
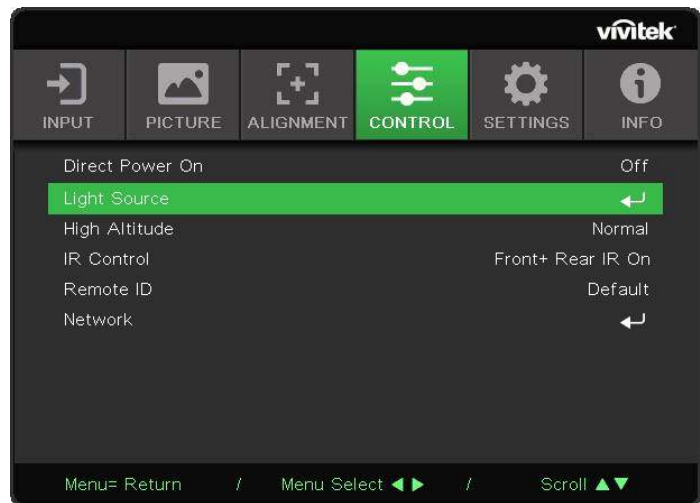
Lamp Connector must be installed flush with the connector base as shown in the image below. A gap between the Lamp Connector and the connector base will cause damage to the projector. The following images illustrate correct and incorrect Lamp Connector installations.



Light Hours Reset

After replacing the lamp, you should reset the lamp hour counter to zero. Refer to the following:

1. Press the **MENU** button to open the OSD menu.
2. Press the cursor ◀▶ button to move to the **CONTROL** menu. Press the cursor ▼▲ button to move down to **Light Source** and press enter.
3. Press the cursor ▼▲ button to move down to **Light Hours Reset**.
4. Press the cursor ↵ or Enter button.
A message screen appears.
5. Press ▼▲◀▶ buttons to reset the lamp hour.
6. Press the **MENU** button to get back to **CONTROL**.



Cleaning the Projector

Cleaning the projector to remove dust and grime will help ensure trouble-free operation.



Warning:

- 1. Be sure to turn off and unplug the projector about one hour before cleaning. Failure to do so could result in a severe burn.*
- 2. Use only a dampened cloth when cleaning. Do not allow water to enter the ventilation openings on the projector.*
- 3. If a little water gets into the projector interior while cleaning, leave unplugged in a well-ventilated room for several hours before using.*
- 4. If a lot of water gets into the projector interior when cleaning, have the projector serviced.*

Cleaning the Lens

You can purchase optic lens cleaner from most camera stores. Refer to the following to clean the projector lens.

1. Apply a little optic lens cleaner to a clean soft cloth. (Do not apply the cleaner directly to the lens.)
2. Lightly wipe the lens in a circular motion.



Caution:

- 1. Do not use abrasive cleaners or solvents.*
- 2. To prevent discoloration or fading, avoid getting cleaner on the projector case.*

Cleaning the Case

Refer to the following to clean the projector case.

1. Wipe off dust with a clean dampened cloth.
2. Moisten the cloth with warm water and mild detergent (such as used to wash dishes), and then wipe the case.
3. Rinse all detergent from the cloth and wipe the projector again.



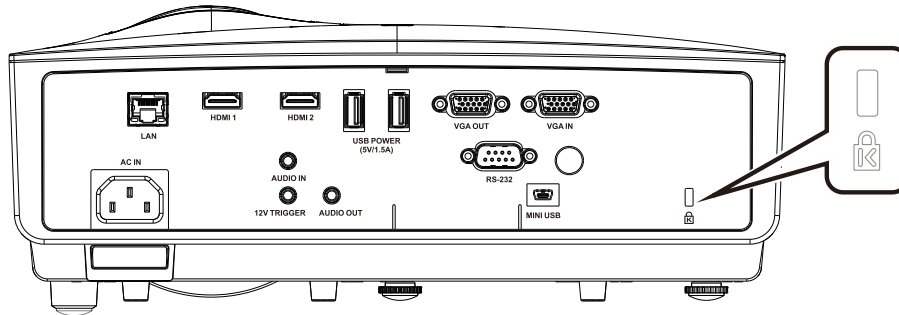
Caution:

To prevent discoloration or fading of the case, do not use abrasive alcohol-based cleaners.

Using the Kensington Lock

Using the Kensington Lock

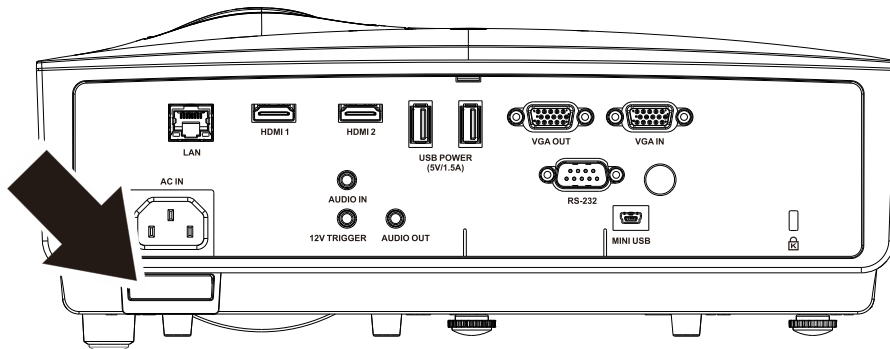
If you are concerned about security, attach the projector to a permanent object with the Kensington slot and a security cable.

**Note:**

Contact your vendor for details on purchasing a suitable Kensington security cable. The security lock corresponds to Kensington's MicroSaver Security System. If you have any comment, contact: Kensington, 2853 Campus Drive, San Mateo, CA 94403, U.S.A. Tel: 800-535-4242, <http://www.Kensington.com>.

Using the Security Bar

In addition to the password protection function and the Kensington lock, the Security Bar helps protect the projector from unauthorized removal. See the following picture.



TROUBLESHOOTING

Common problems and solutions

These guidelines provide tips to deal with problems you may encounter while using the projector. If the problem remains unsolved, contact your dealer for assistance.

Often after time spent troubleshooting, the problem is traced to something as simple as a loose connection. Check the following before proceeding to the problem-specific solutions.

- *Use some other electrical device to confirm that the electrical outlet is working.*
- *Ensure the projector is turned on.*
- *Ensure all connections are securely attached.*
- *Ensure the attached device is turned on.*
- *Ensure a connected PC is not in suspending mode.*
- *Ensure a connected notebook computer is configured for an external display.
(This is usually done by pressing an Fn-key combination on the notebook.)*

Tips for Troubleshooting

In each problem-specific section, try the steps in the order suggested. This may help you to solve the problem more quickly.

Try to pin point the problem and thus avoid replacing non-defective parts.

For example, if you replace batteries and the problem remains, put the original batteries back and go to the next step.

Keep a record of the steps you take when troubleshooting: The information may be useful when calling for technical support or for passing on to service personnel.

LED Error Messages

ERROR CODE MESSAGES	POWER LED GREEN	LIGHT LED ORANGE	TEMP LED RED
System Initial(MCU detects scaler no ack)	2 blinks	OFF	OFF
Ready to Power on (Standby)	ON	OFF	OFF
System Power on	Flashing	OFF	OFF
Light Lit , System stable	ON	OFF	OFF
Cooling	Flashing	OFF	OFF
Thermal Break Sensor error	4 blinks	OFF	OFF
Light Fail	5 blinks	OFF	OFF
Light Voltage	5 blinks	7 blinks	OFF
Fan-1 error	6 blinks	1 blinks	OFF
Fan-2 error	6 blinks	2 blinks	OFF
Fan-3 error	6 blinks	3 blinks	OFF
Fan-4 error	6 blinks	4 blinks	OFF
Case Open	7 blinks	OFF	OFF
DAD1000 error	8 blinks	OFF	OFF
Color wheel-1 error	9 blinks	OFF	OFF
T1 Over temp	OFF	1 blinks	ON

In the event of an error, please disconnect the AC power cord and wait for one (1) minute before restarting the projector. If the Power or Lamp LEDs are still blinking or any other situation that isn't listed in the chart above, please contact your service center.

Image Problems

Problem: No image appears on the screen

1. Verify the settings on your notebook or desktop PC.
2. Turn off all equipment and power up again in the correct order.

Problem: The image is blurred

1. Adjust the **Focus** on the projector.
2. Press the **Auto** button on the remote control.
3. Ensure the projector-to-screen distance is within the specified range.
4. Check that the projector lens is clean.

Problem: The image is wider at the top or bottom (trapezoid effect)

1. Position the projector so it is as perpendicular to the screen as possible.
2. Use the **Keystone** button on the remote control to correct the problem.

Problem: The image is reversed

Check the **Projection** setting on the **ALIGNMENT** menu of the OSD.

Problem: The image is streaked

1. Set the **Phase** and **Clock** settings on the **Input->Analog** menu of the OSD to the default settings.
2. To ensure the problem is not caused by a connected PC's video card, connect to another computer.

Problem: The image is flat with no contrast

Adjust the **Contrast** setting on the **PICTURE** menu of the OSD.

Problem: The color of the projected image does not match the source image.

Adjust the **Color Temperature** and **Gamma** settings on the **PICTURE->Advanced** menu of the OSD.

Lamp Problems

Problem: There is no light from the projector

1. Check that the power cable is securely connected.
2. Ensure the power source is good by testing with another electrical device.
3. Restart the projector in the correct order and check that the Power LED is on.
4. If you have replaced the lamp recently, try resetting the lamp connections.
5. Replace the lamp module.
6. Put the old lamp back in the projector and have the projector serviced.

Problem: The lamp goes off

1. Power surges can cause the lamp to turn off. Re-plug power cord. When the Power LED is on, press the power button.
2. Replace the lamp module.
3. Put the old lamp back in the projector and have the projector serviced.

Remote Control Problems

Problem: The projector does not respond to the remote control

1. Direct the remote control towards remote sensor on the projector.
2. Ensure the path between remote and sensor is not obstructed.
3. Turn off any fluorescent lights in the room.
4. Check the battery polarity.
5. Replace the battery.
6. Turn off other Infrared-enabled devices in the vicinity.
7. Have the remote control serviced.

Audio Problems

Problem: There is no sound

1. Adjust the volume on the remote control.
2. Adjust the volume of the audio source.
3. Check the audio cable connection.
4. Test the source audio output with other speakers.
5. Have the projector serviced.

Problem: The sound is distorted

1. Check the audio cable connection.
2. Test the source audio output with other speakers.
3. Have the projector serviced.

Having the Projector Serviced

If you are unable to solve the problem, you should have the projector serviced. Pack the projector in the original carton. Include a description of the problem and a checklist of the steps you took when trying to fix the problem: The information may be useful to service personnel. For servicing, return the projector to the place you purchased it.

HDMI Q & A

Q. What is the difference between a “Standard” HDMI cable and a “High-Speed” HDMI cable?

Recently, HDMI Licensing, LLC announced that cables would be tested as Standard or High-Speed cables.

- Standard (or “category 1”) HDMI cables have been tested to perform at speeds of 75Mhz or up to 2.25Gbps, which is the equivalent of a 720p/1080i signal.
- High Speed (or “category 2”) HDMI cables have been tested to perform at speeds of 340Mhz or up to 10.2Gbps, which is the highest bandwidth currently available over an HDMI cable and can successfully handle 1080p signals including those at increased color depths and/or increased refresh rates from the Source. High-Speed cables are also able to accommodate higher resolution displays, such as WQXGA cinema monitors (resolution of 2560 x 1600).

Q. How do I run HDMI cables longer than 10 meters?

There are many HDMI Adapters working on HDMI solutions that extend a cable's effective distance from the typical 10 meter range to much longer lengths. These companies manufacture a variety of solutions that include active cables (active electronics built into cables that boost and extend the cable's signal), repeaters, amplifiers as well as CAT5/6 and fiber solutions.

Q. How can I tell if a cable is an HDMI certified cable?

All HDMI products are required to be certified by the manufacturer as part of the HDMI Compliance Test Specification. However, there may be instances where cables bearing the HDMI logo are available but have not been properly tested. HDMI Licensing, LLC actively investigates these instances to ensure that the HDMI trademark is properly used in the market. We recommend that consumers buy their cables from a reputable source and a company that is trusted.

For more detail information check <http://www.hdmi.org/learningcenter/faq.aspx#49>

SPECIFICATIONS

Specifications

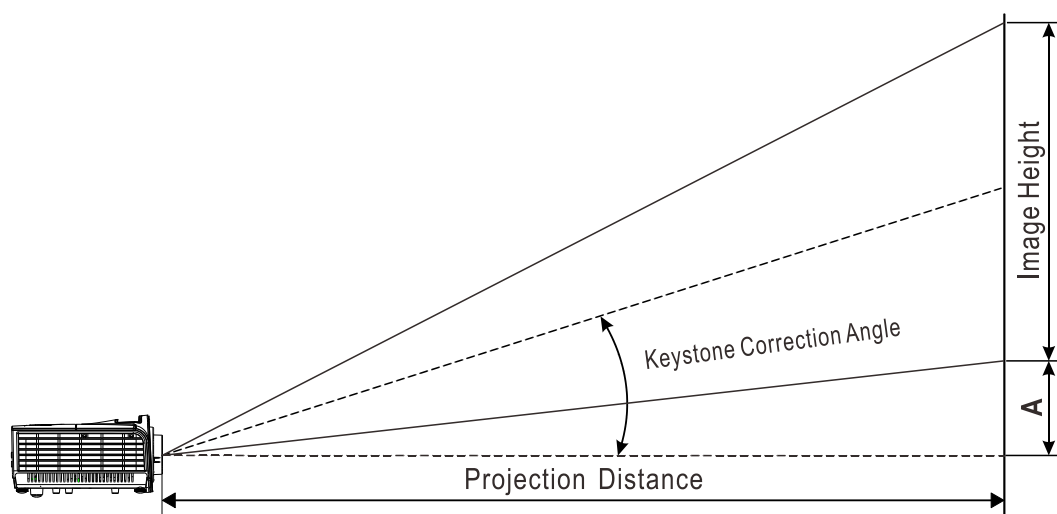
Model	DH858N	DH856/DH85FAA/DH85FAB	DU857/DU85GAA/DU85GAB
Display type	0.65" 1080P, S600		0.67" WUXGA, S600HB
Resolution	1080P, 1920x1080p		WUXGA, 1920x1200
Projection distance	1.2m~10m		
Projection screen size	25.3" ~ 317.99"		
Projection lens	Manual Focus/Manual Zoom		
Zoom ratio	1.5x		
Keystone correction	H: +/- 30 Degrees V: +/- 30 Degrees		
Projection methods	Front, Rear, Desktop/Ceiling (Rear, Front)		
Data compatibility	VGA, SVGA, XGA, SXGA, SXGA+, UXGA, WUXGA@60hz, Mac		
SDTV/EDTV/ HDTV	480i, 576i, 480p, 576p, 720p, 1080i, 1080p		
Video compatibility	NTSC, PAL, SECAM		
H-Sync	15, 31~91.4KHz		
V-Sync	24~30Hz, 47~120Hz		
Safety certification	FCC-B, cUL, UL, CCC, CECP, PSB, CU KC, CE, C-tick, CB, RoHS		
Environmental Operation Condition	5° ~ 40°C , 10~85%(No condensing)		
Environmental Storage Condition	-10° ~ 60°C, 5% to 95% (No condensation)		
Dimensions	314 mm (W) x 213 mm (D) x 126 mm (H)		
AC Input	AC Universal 100-240V		
Power consumption	410W (Normal), 320W (ECO), <0.5W (Standby), < 2W (on by Lan)		
Lamp	310W (Normal) / 245W (Eco)		
Audio speaker	10W(peak) x 1		
Input Terminals	VGA in x 1		
	HDMI x 2		
	Mini-jack stereo x 1		
Output Terminals	VGA out x 1		
	PC audio out (mini-jack) x 1		
Control Terminals	RJ45 (10/100Mbps) x 1		
	DC 12V trigger (3.5mm Jack) x 1		
	RS-232C x 1		
	USB Type A 2.0 x 2	USB type A power Only x 2	
	USB (Type mini B) x 1 - service only		
Security	Kensington lock		

Note: For questions regarding product specifications, please contact your local distributor.

Model	DW855/DW85EAA/DW85EAB	DX853/DX85CAA/DX85CAB
Display type	0.65 WXGA, S450	0.55 XGA , S450
Resolution	WXGA, 1280x800	XGA, 1024x768
Projection distance	1.2m~10m	
Projection screen size	25.3" ~ 317.99"	
Projection lens	Manual Focus/Manual Zoom	
Zoom ratio	1.2x	
Keystone correction	H: +/- 30 Degrees V: +/- 30 Degrees	
Projection methods	Front, Rear, Desktop/Ceiling (Rear, Front)	
Data compatibility	VGA, SVGA, XGA, SXGA, SXGA+, UXGA, WUXGA@60hz, Mac	
SDTV/EDTV/ HDTV	480i, 576i, 480p, 576p, 720p, 1080i, 1080p	
Video compatibility	NTSC, PAL, SECAM	
H-Sync	15, 31~91.4KHz	
V-Sync	24~30Hz, 47~120Hz	
Safety certification	FCC-B, cUL, UL, CCC, CECP, PSB, CU, KC, CE, C-tick, CB, RoHS	
Environmental Operation Condition	5° ~ 40°C , 10~85%(No condensing)	
Environmental Storage Condition	-10° ~ 60°C, 5% to 95% (No condensation)	
Dimensions	314 mm (W) x 213 mm (D) x 126 mm (H)	
AC Input	AC Universal 100-240V	
Power consumption	410W (Normal), 320W (ECO), <0.5W (Standby), < 2W (on by Lan)	
Lamp	310W (Normal) / 245W (Eco)	
Audio speaker	10W(peak) x 1	
Input Terminals	VGA in x 1	
	HDMI x 2	
	Mini-jack stereo x 1	
Output Terminals	VGA out x 1	
	PC audio out (mini-jack) x 1	
	RJ45 (10/100Mbps) x 1	
Control Terminals	DC 12V trigger (3.5mm Jack) x 1	
	RS-232C x 1	
	USB type A power Only x 2	
	USB (Type mini B) x 1 - service only	
Security	Kensington lock	

Note: For questions regarding product specifications, please contact your local distributor.

Projection Distance vs. Projection Size



Projection Distance and Size Table

1080P

DH858N / DH856									
Image Diagonal	Image Width		Image Height		Projection Distance (from)		Projection Distance (To)		Offset-A
inch	cm	inch	cm	inch	cm	inch	cm	inch	mm
40	88.6	34.9	49.8	19.6	123.1	48.5	185.1	72.9	74
60	132.8	52.3	74.7	29.4	184.6	72.7	277.6	109.3	111
100	221.4	87.2	124.5	49.0	307.7	121.1	462.7	182.2	186
150	332.1	130.7	186.8	73.5	461.6	181.7	694.0	273.2	278
200	442.8	174.3	249.1	98.1	615.4	242.3	925.4	364.3	371
250	553.5	217.9	311.3	122.6	769.3	302.9	1156.7	455.4	464
300	664.1	261.5	373.6	147.1	923.2	363.4	1388.1	546.5	557

WUXGA

DU857									
Image Diagonal	Image Width		Image Height		Projection Distance (from)		Projection Distance (To)		Offset-A
inch	cm	inch	cm	inch	cm	inch	cm	inch	mm
40	86.2	33.9	53.8	21.2	119.8	47.1	180.1	70.9	46
60	129.2	50.9	80.8	31.8	179.6	70.7	270.1	106.3	69
100	215.4	84.8	134.6	53.0	299.4	117.9	450.2	177.2	114
150	323.1	127.2	201.9	79.5	449.1	176.8	675.3	265.8	172
200	430.8	169.6	269.2	106.0	598.8	235.7	900.3	354.5	229
250	538.5	212.0	336.5	132.5	748.5	294.7	1125.4	443.1	286
300	646.2	254.4	403.9	159.0	898.2	353.6	1350.5	531.7	343

WXGA

DW855									
Image Diagonal	Image Width		Image Height		Projection Distance (from)		Projection Distance (To)		Offset-A
inch	cm	inch	cm	inch	cm	inch	cm	inch	mm
40	86.2	33.9	53.8	21.2	110.3	43.4	132.3	52.1	62
60	129.2	50.9	80.8	31.8	165.4	65.1	198.5	78.2	93
100	215.4	84.8	134.6	53.0	275.7	108.5	330.8	130.3	155
150	323.1	127.2	201.9	79.5	413.6	162.8	496.3	195.4	232
200	430.8	169.6	269.2	106.0	551.4	217.1	661.7	260.5	310
250	538.5	212.0	336.5	132.5	689.3	271.4	827.1	325.6	387
300	646.2	254.4	403.9	159.0	827.1	325.6	992.5	390.8	464

XGA

DX853									
Image Diagonal	Image Width		Image Height		Projection Distance (from)		Projection Distance (To)		Offset-A
inch	cm	inch	cm	inch	cm	inch	cm	inch	mm
40	81.3	32.0	61.0	24.0	130.0	51.2	156.1	61.4	85
60	121.9	48.0	91.4	36.0	195.1	76.8	234.1	92.2	128
100	203.2	80.0	152.4	60.0	325.1	128.0	390.1	153.6	213
150	304.8	120.0	228.6	90.0	487.7	192.0	585.2	230.4	320
200	406.4	160.0	304.8	120.0	650.2	256.0	780.3	307.2	427
250	508.0	200.0	381.0	150.0	812.8	320.0	975.4	384.0	533
300	609.6	240.0	457.2	180.0	975.4	384.0	1170.4	460.8	640

Timing Mode Table

SIGNAL	RESOLUTION	H-SYNC (KHz)	V-SYNC (Hz)	COMPOSITE / S-VIDEO	COMPONENT	RGB	DVI/HDMI
NTSC	—	15.734	60.0	O	—	—	—
PAL/SECAM	—	15.625	50.0	O	—	—	—
VESA	720 x 400	37.9	85.0	—	—	O	O
	640 x 480	31.5	60.0	—	—	O	O
	640 x 480	37.9	72.8	—	—	O	O
	640 x 480	37.5	75.0	—	—	O	O
	640 x 480	43.3	85.0	—	—	O	O
	800 x 600	35.2	56.3	—	—	O	O
	800 x 600	37.9	60.3	—	—	O	O
	800 x 600	46.9	75.0	—	—	O	O
	800 x 600	48.1	72.2	—	—	O	O
	800 x 600	53.7	85.1	—	—	O	O
	800 x 600	76.3	120.0	—	—	O	O
	1024 x 768	48.4	60.0	—	—	O	O
	1024 x 768	56.5	70.1	—	—	O	O
	1024 x 768	60.0	75.0	—	—	O	O
	1024 x 768	68.7	85.0	—	—	O	O
	1024 x 768	97.6	120.0	—	—	O	O
	1280 x 720	45.0	60.0	—	—	O	O
	1280 x 720	91.5	119.9	—	—	O	O
	1280 x 800	49.7	59.8	—	—	O	O
	1280 x 800	62.8	74.9	—	—	O	O
	1280 x 800	71.6	84.8	—	—	O	O
	1280 x 800	101.6	119.9	—	—	O	O
	1280 x 1024	64.0	60.0	—	—	O	O
	1280 x 1024	80.0	75.0	—	—	O	O
	1280 x 1024	91.1	85.0	—	—	O	O
	1280 x 960	60.0	60.0	—	—	O	O

SIGNAL	RESOLUTION	H-SYNC (KHz)	V-SYNC (Hz)	COMPOSITE / S-VIDEO	COMPONENT	RGB	DVI/ HDMI
	1280 x 960	85.9	85.0	—	—	O	O
	1400 x 1050	65.3	60.0	—	—	O	O
	1440 x 900	70.6	75.0	—	—	O	O
	1440 x 900	55.9	60.0	—	—	O	O
	1600 x1200	75.0	60	—	—	O	O
Apple Mac	640 x 480	35.0	66.7	—	—	O	O
	832 x 624	49.7	74.5	—	—	O	O
	1024 x 768	60.2	74.9	—	—	O	O
	1152 x 870	68.7	75.1	—	—	O	O
SDTV	480i	15.734	60.0	—	O	—	O
	576i	15.625	50.0	—	O	—	O
EDTV	576p	31.3	50.0	—	O	—	O
	480p	31.5	60.0	—	O	—	O
HDTV	720p	37.5	50.0	—	O	—	O
	720p	45.0	60.0	—	O	—	O
	1080i	33.8	60.0	—	O	—	O
	1080i	28.1	50.0	—	O	—	O
	1080p	67.5	60.0	—	O	—	O
	1080p	56.3	50.0	—	O	—	O
	1080p	27	24.0	—	O	—	O
	1080p	28	25.0	—	O	—	O
	1080p	33.7	30.0	—	O	—	O

O : Frequency supported

— : Frequency not supported

* : SVGA native resolution of the panel is 800 x 600

XGA native resolution of the panel is 1024 x 768

Resolution others than native resolution may be display with uneven size of text or line.

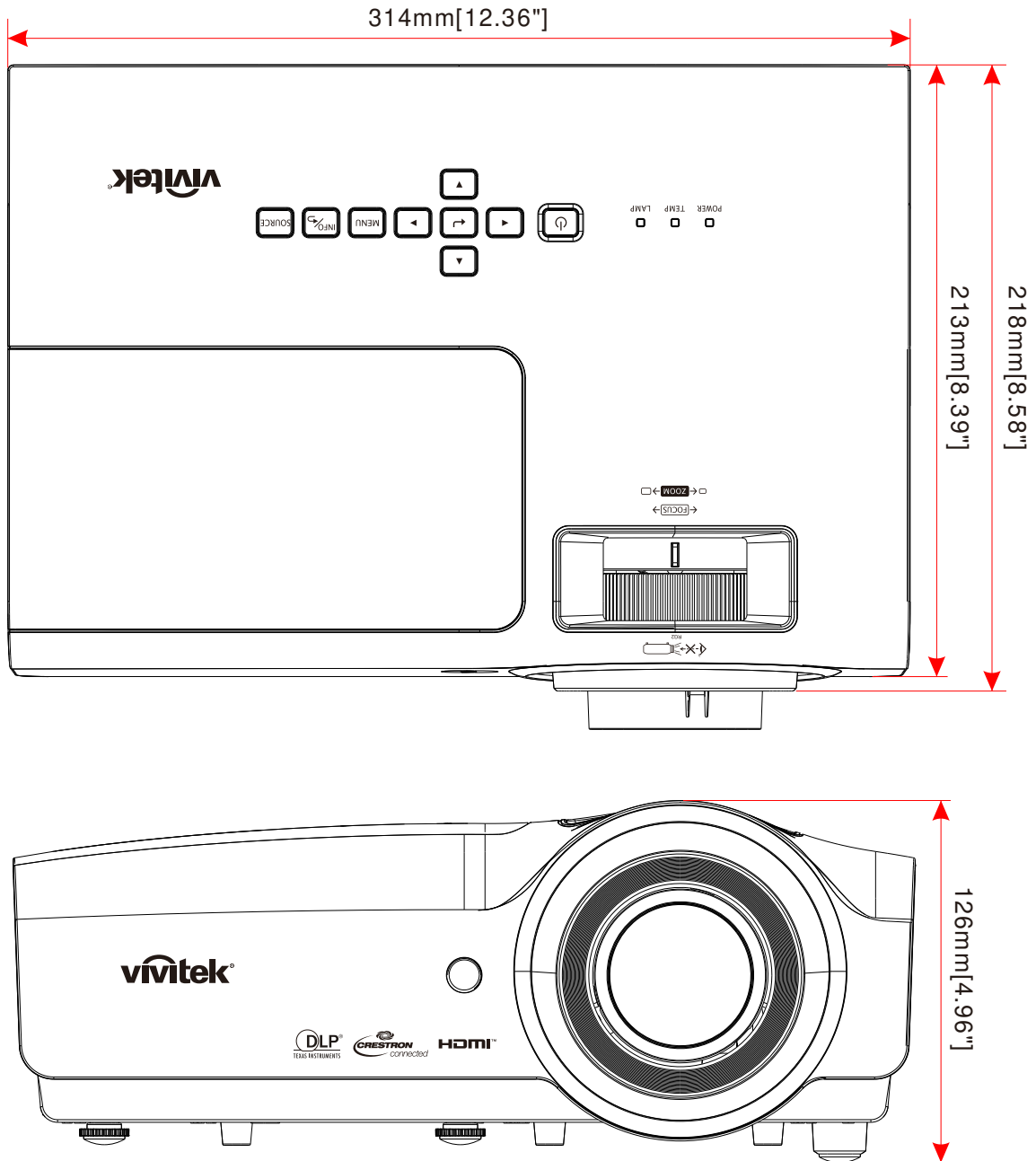
* : The color of mean Displayable only. (4:3 only)

* : The color of mean may have a little noise is acceptable

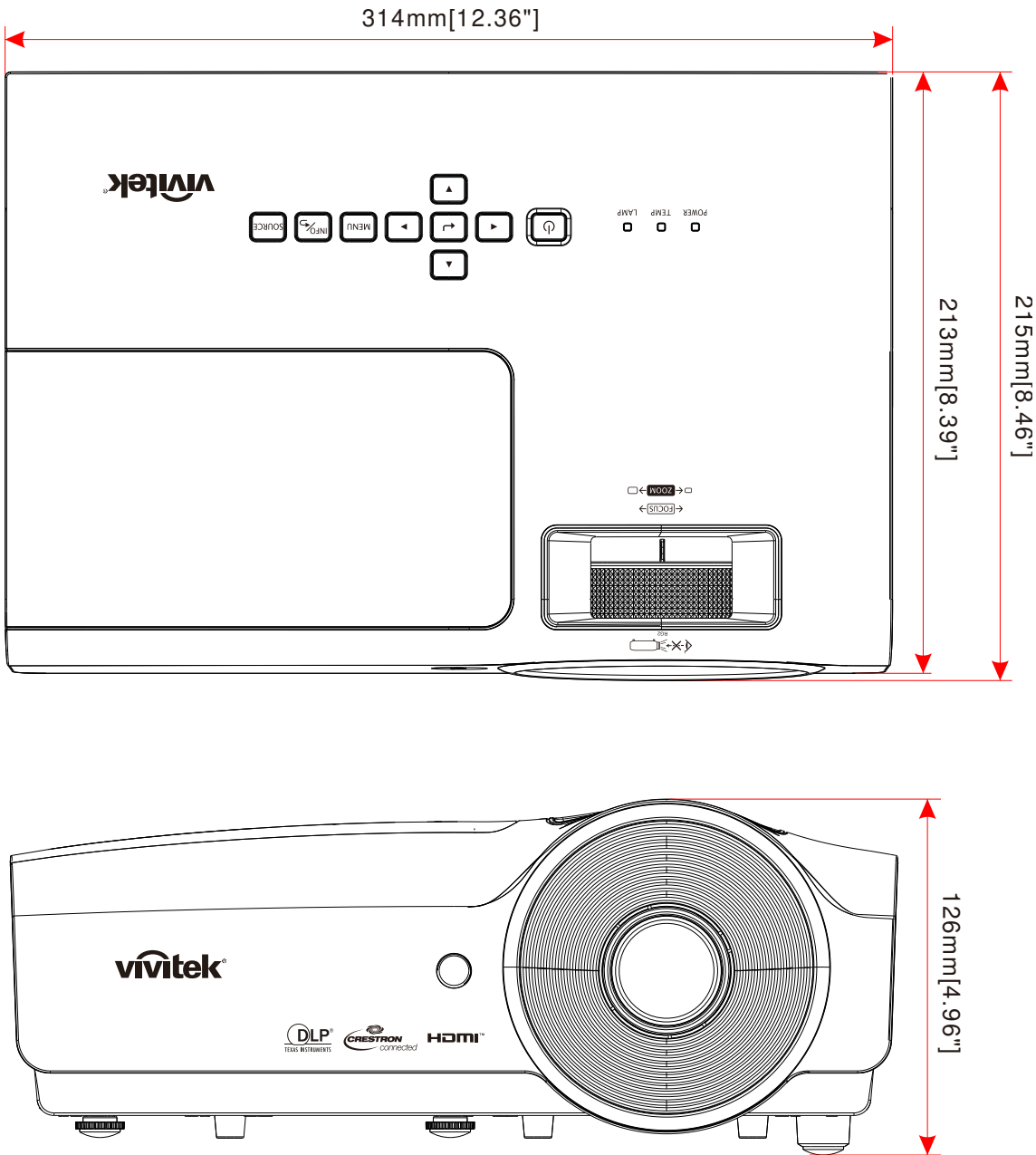
* : HDTV timing main check tool is DVD player, VG828 is secondary.

Projector Dimensions

DH858N / DH856 / DU857



DW855 / DX853



REGULATORY COMPLIANCE

FCC 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 when the equipment is operated in a commercial environment.

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/her own expense.

Changes or modifications not expressly approved by the parties responsible for compliance could void the user's authority to operate the equipment.

Canada

This class B digital apparatus complies with Canadian ICES-003.

Safety Certifications

FCC-B, cUL, UL, CCC, CECF, PSB, CU, KC, CE, C-tick, CB, RoHS

RS-232 Communication

Communication parameter setup

You can use the serial control command to input commands for projector control or retrieve its operational data through Windows client terminal software

Item	Parameter:
Bit per Second	9600 bps
Data Bit	8-bit
Parity	None
Stop Bit	1
Flow Control	None

Minimum delay for next command: **1ms**

Operation commands

Operation command syntax

An operation command is prefixed by character "op", followed by control commands and settings separated by space blank [SP], and ended by carriage return pair "CR" and "ASCII hex 0D". Syntax of serial control commands:

op[SP]<operation command>[SP]<Setting Value>[CR]

op A constant indicating this is an operation command.

[SP] Indicate one blank space.

[CR] Indicate the command ending carriage return pair "CR" and "ASCII hex 0D".

Setting value Settings of operation command

Types of setup strings	Characters of settings	Description
Query current setup	?	Question mark "?" indicates querying current setup
Setup	= <settings>	Syntax: Symbol "=" suffixed with setup values
Increase setup order of adjustment items	+	Some settings are changed in steps. Symbol "+" indicates changing one step up
Decrease setup order of adjustment items	-	Some settings are changed in steps. Symbol "-" indicates changing one step down
Execute operation command	None	Certain operation commands execute after input without further setting or regulators.

Examples:

Control items	Input command row	Projector return message
Query current brightness	op bright ?[CR]	OP BRIGHT = 50
Set up brightness	op bright = 100[CR]	OP BRIGHT = 100
Out of range or not support	op bright = 200[CR]	OP BRIGHT = NA
Illegal command	op abright = 100[CR]	*Illegal format#

Function	Operation	Set	Get	Inc	Dec	EXE	Values
Auto Source	auto.src	V	V				0 = Off 1 = On
HDMI Color Space	color.space	V	V				0 : Auto 1 : RGB 2 : YUV
HDMI Range	hdmi.range	V	V				0 : Auto 1 : Full 2 : Limited
Instant Motion	instant.motion	V	V				0 : Off 1 : On
H Position	h.pos	V	V	V	V		-5 ~ +5 -100 ~ +100(Auto Sync Off)
V Position	v.pos	V	V	V	V		-5 ~ +5 -100 ~ +100(Auto Sync Off)
Phase	phase	V	V	V	V		0 ~ 31
clock	clock	V	V	V	V		-5 ~ +5
Auto Sync	auto.sync	V	V				0 : Off 1 : On
3D	threed	V	V				0 : Off 1 : DLP-Link 2 : IR
3D Sync Invert	threed.syncinvert	V	V				0 = Off 1 = On
3D Format	threed.format	V	V				0 : Frame Sequential 1 : Top / Bottom 2 : Side by side 3 : Frame Packing
Signal Power On	signal.poweron	V	V				0 : Off 1 : On
Picture Mode	pic.mode	V	V				0:Presentation 1:Bright 2:Movie 3:Game 4:sRGB 5:DICOM 6:User
Brightness	bright	V	V	V	V		0 ~ 100
Contrast	contrast	V	V	V	V		0 ~ 100
HSG/Red Gain	hsg.r.gain	V	V	V	V		0 ~ 100
HSG/Green Gain	hsg.g.gain	V	V	V	V		0 ~ 100
HSG/Blue Gain	hsg.b.gain	V	V	V	V		0 ~ 100
HSG/Cyan Gain	hsg.c.gain	V	V	V	V		0 ~ 100
HSG/Magenta Gain	hsg.m.gain	V	V	V	V		0 ~ 100
HSG/Yellow Gain	hsg.y.gain	V	V	V	V		0 ~ 100
HSG/Red/Saturation	hsg.r.sat	V	V	V	V		0 ~ 100
HSG/Green/Saturation	hsg.g.sat	V	V	V	V		0 ~ 100
HSG/Blue/Saturation	hsg.b.sat	V	V	V	V		0 ~ 100
HSG/Cyan/Saturation	hsg.c.sat	V	V	V	V		0 ~ 100
HSG/Magenta/Saturation	hsg.m.sat	V	V	V	V		0 ~ 100
HSG/Yellow/Saturation	hsg.y.sat	V	V	V	V		0 ~ 100
HSG/Red/Hue	hsg.r.hue	V	V	V	V		0 ~ 100
HSG/Green/Hue	hsg.g.hue	V	V	V	V		0 ~ 100
HSG/Blue/Hue	hsg.b. hue	V	V	V	V		0 ~ 100

Function	Operation	Set	Get	Inc	Dec	EXE	Values
HSG/Cyan/Hue	hsg.c. hue	V	V	V	V		0 ~ 100
HSG/Magenta/Hue	hsg.m. hue	V	V	V	V		0 ~ 100
HSG/Yellow/Hue	hsg.y. hue	V	V	V	V		0 ~ 100
HSG/White/Red Gain	hsg.wr.gain	V	V	V	V		0 ~ 100
HSG/White/Green Gain	hsg.wg.gain	V	V	V	V		0 ~ 100
HSG/White/Blue Gain	hsg.wb.gain	V	V	V	V		0 ~ 100
Brilliant Color	bri.color	V	V	V	V		0 ~ 10
Sharpness	sharp	V	V	V	V		0 ~ 31
Gamma	gamma	V	V				0 = 1.8 1 = 2.0 2 = 2.2 3 = 2.4 4 = B&W 5 = Linear
Color Temperature	color.temp	V	V				0 = Warm 1 = Normal 2 = Cold
White Balance /Red Offset	red.offset	V	V	V	V		-100 ~ +100
White Balance /Green Offset	green.offset	V	V	V	V		-100 ~ +100
White Balance /Blue Offset	blue.offset	V	V	V	V		-100 ~ +100
White Balance /Red Gain	red.gain	V	V	V	V		0 ~ 200
White Balance /Green Gain	green.gain	V	V	V	V		0 ~ 200
White Balance /Blue Gain	blue.gain	V	V	V	V		0 ~ 200
Picture Mode Reset	pic.mode.reset					V	
Aspect Ratio	aspect	V	V				0 = Fill 1 = 4:3 2 = 16:9(16:10) 3 = LetterBox 4 = 2.35:1
Digital Zoom	zoom	V	V	V	V		-10 ~ +10
V Keystone	v.keystone	V	V	V	V		HV : -30 ~ +30 V only: -40 ~ +40
H Keystone	h.keystone	V	V	V	V		-30 ~ +30
4 Corner Top Left X	4corner.tlx	V	V	V	V		0 ~ +60
4 Corner Top Left Y	4corner.tly	V	V	V	V		0 ~ +60
4 Corner Top Right X	4corner.trx	V	V	V	V		0 ~ +60
4 Corner Top Right Y	4corner.try	V	V	V	V		0 ~ +60
4 Corner Bottom Left X	4corner.blx	V	V	V	V		0 ~ +60
4 Corner Bottom Left Y	4corner.bly	V	V	V	V		0 ~ +60
4 Corner Bottom Right X	4corner.brx	V	V	V	V		0 ~ +60
4 Corner Bottom Right y	4corner.bry	V	V	V	V		0 ~ +60
H Image Shift	img.hshift	V	V	V	V		-50 ~ +50
V Image Shift	img.vshift	V	V	V	V		-50 ~ +50
Projection	projection	V	V				0 = Front 1 = Rear 2 = Front + Ceiling 3 = Rear + Ceiling
Test Pattern	test.pattern	V	V				0 = Off 1 = Grid
Direct Power On	direct.poweron	V	V				0 : Off 1 : On

Function	Operation	Set	Get	Inc	Dec	EXE	Values
Light Mode	light.mode	V	V				0 : Normal (100%) 1 : ECO (80%) 2 : Dynamic ECO
Fan Speed	fanspeed	V	V				0 = Normal 1 = High
IR Control	ir.control	V	V				0 : Both IR On 1 : Front IR On 2 : Rear IR On
Remote ID	remote.id	V	V				0 : Default(ID0) 1 : ID1 2 : ID2 3 : ID3 4 : ID4 5 : ID5 6 : ID6 7 : ID7
NetWork Status	net.status		V				0 : Disconnect 1 : Connected
NetWork / DHCP	net.dhcp	V	V				0 = Off 1 = On
NetWork / IP Address	net.ipaddr	V	V				<string>
NetWork / Subnet	net.subnet	V	V				<string>
NetWork / Gateway	net.gateway	V	V				<string>
NetWork / DNS	net.dns	V	V				<string>
NetWork Apply	net.apply	V					0 : Cancel 1 : OK
Standby Power	standby.power	V	V				0 : Normal 1 : ECO (<0.5W) 2 : On By Lan (<2W)
No Signal Power Off	nosignal.poweroff	V	V				0 ~ 36
Sleep Timer	sleep.timer	V	V				0 ~ 120
Volume	volume	V	V	V	V		0 ~ 10
Blank Screen Color	blankscreen.color	V	V				0 = Black 1 = Red 2 = Green 3 = Blue 4 = White
Logo	logo	V	V				0 = Off 1 = On
Message	message	V	V				0 : Off 1 : On
MENU Position	menu.position	V	V				0 : Center 1 : Up 2 : Down 3 : Left 4 : Right
MENU Timer	menu.timer	V	V				0 : Off 1 : 20 2 : 40 3 : 60
MENU Translucent	menu.trans	V	V				0 : Off 1 : 50% 2 : 100%
Keypad Lock	keypad.lock	V	V				0 : Off 1 : On

Function	Operation	Set	Get	Inc	Dec	EXE	Values
Security Lock	security.lock	V	V				1 : Up 2 : Down 3 : Left 4 : Right
Security Unlock	security.unlock	V					1 : Up 2 : Down 3 : Left 4 : Right
Language	lang	V	V				0 = English 1 = French 2 = German 3 = Spanish 4 = Portugues 5 = Simplified Chinese 6 = Traditional Chinese 7 = Italian 8 = Norwegian 9 = Swedish 10 = Dutch 11 = Russian 12 = Polish 13 = Finnish 14 = Greek 15 = Korean 16 = Hungarian 17 = Czech 18 = Arabic 19 = Turkish 20 = Vietnamese 21 = Japanese 22 = Thai 23 = Farsi 24 = Hebrew 25 = Danish
Reset All	reset.all					V	
Source Info	source.info		V				<string>
Light Hours 1	light1.hours		V				<string>
Light Hours 1 Reset	light1.reset					V	
Remote Code	remote.code		V				<string>
Software Version	sw.ver		V				<string>
Serial Number	ser.no		V				<string>
Auto Image	auto.img					V	
Light 1 Status	light1.stat		V				0 = Off 1 = On
Model	model		V				<string>
Pixel Clock	pixel.clock		V				<string>
H Refresh Rate	h.refresh		V				<string>
V Refresh Rate	v.refresh		V				<string>
Blank	blank	V	V				0 = Off 1 = On

Function	Operation	Set	Get	Inc	Dec	EXE	Values
Power On	power.on					V	
Power Off	power.off					V	
Projector Status	status		V				0 : Reset 1 : Standby 2 : Active 3 : cooling 4: Warming 5: Power Up
Mute	mute	V	V				0 : Off 1 : On
Freeze	freeze	V	V				0 : Off 1 : On
Input Select	input.sel	V	V				1 :RGB 6: HDMI 1 9: HDMI 2 11: Multi Media(Novo)