

8964WUSS/8964WSS

User's Manual (concise)



Thank you for purchasing this projector.

Please read through this manual before using this product, in order to use safely and utilize well the product.

- △WARNING** ▶ Before using this product, be sure to read all manuals for this product. After reading them, store them in a safe place for future reference.
- ▶ Heed all the warnings and cautions in the manuals or on the product.
 - ▶ Follow all the instructions in the manuals or on the product.

NOTE • In this manual, unless any comments are accompanied, “the manuals” means all the documents provided with this product, and “the product” means this projector and all the accessories came with the projector.

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First of all

Entries and graphical symbols explanation

The following entries and graphical symbols are used for the manuals and the product as follows, for safety purpose. Please know their meanings beforehand, and heed them.

- ⚠WARNING This entry warns of a risk of serious personal injury or even death.
- ⚠CAUTION This entry warns of a risk of personal injury or physical damage.
- NOTICE This entry notices of fear of causing trouble.

Important safety instruction

The followings are important instructions for safely using the product. Be sure to follow them always when handling the product. The manufacturer assumes no responsibility for any damage caused by mishandling that is beyond normal usage defined in these manuals of this projector.

- ⚠WARNING ▶ Never use the product in or after an abnormality (ex. giving off smoke, smelling strange, took a liquid or an object inside, broken, etc.) If an abnormality should occur, unplug the projector urgently.
 - ▶ Situate the product away from children and pets.
 - ▶ Keep small parts away from children and pets. If swallowed, consult a physician immediately for emergency treatment.
 - ▶ Do not use the product when there is fear of a thunderbolt.
 - ▶ Unplug the projector from the power outlet if the projector is not used for the time being.
 - ▶ Do not open or remove any portion of the product, unless the manuals direct it. For internal maintenance, leave it to your dealer or their service personnel.
 - ▶ Use only the accessories specified or recommended by the manufacturer.
 - ▶ Do not modify the projector or accessories.
 - ▶ Do not let any things or any liquids enter to the inside of the product.
 - ▶ Do not wet the product.
 - ▶ 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 apply a shock or pressure to this product.
 - Do not place the product on an unstable place such as the uneven surface or the leaned table.
 - Do not place the product unstably. Place the projector so that it does not protrude from the surface where the projector is placed on.
 - Place your hands on the grip on the bottom of the projector when carrying the projector.
 - Remove all the attachments including the power cord and cables, from the projector when carrying the projector.
 - ▶ Do not look into the lens and the openings on the projector, while the light source is on, since the projection ray may cause a trouble on your eyes.
 - ▶ Do not approach the exhaust vents, while the light source is on. Also after the light source goes out, do not approach them for a while, since too hot.

Regulatory notices

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).

In the US and places where the FCC regulations are applicable

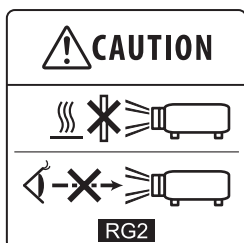
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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. 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.

INSTRUCTIONS TO USERS: Some cables have to be used with the core set. Use the accessory cable or a designated type cable for the connection. For cables that have a core only at one end, connect the core to the projector.

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



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

Regulatory notices (continued)

About Waste Electrical and Electronic Equipment



The mark is in compliance with the Waste Electrical and Electronic Equipment Directive 2002/96/EC (WEEE).

The mark indicates the requirement NOT to dispose the equipment including any spent or discarded batteries or accumulators 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.

Contents of package

Your projector should come with the items shown below. Check that all the items are included. Require of your dealer immediately if any items are missing.

Refer to figure **F-6** at the back of this manual.

- (1) Remote control with the two AA batteries
- (2) Power cord (x2)
- (3) Computer cable
- (4) Lens cover
- (5) Information Sheet
- (6) Security label
- (7) Information Sheet
- (8) Adapter cover
- (9) Terminal cover A
- (10) Terminal cover B
- (11) HDMI cable holder (x1)
- (12) Cable tie - large (x1)
- (13) Cable tie - medium (x1)
- (14) Cable tie - small (x3)
- (15) HDMI Cap (x2)
- (16) HDBase-T Cap (x1)

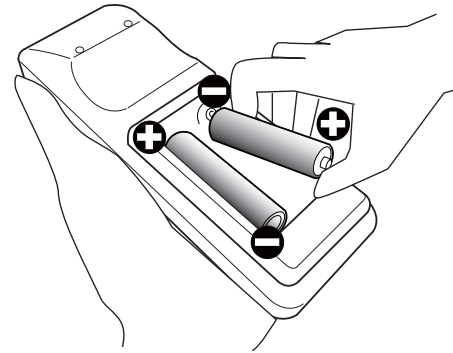
△WARNING ► Keep small parts away from children and pets. Take care not to put in the mouth. If swallowed, consult a physician immediately for emergency treatment.

NOTE • Keep the original packing materials for future reshipment. Be sure to use the original packing materials when moving the projector.

Preparing for the remote control

Please insert the batteries into the remote control before using it. If the remote control starts to malfunction, try to replace the batteries. If you will not use the remote control for long period, remove the batteries from the remote control and store them in a safe place.

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.

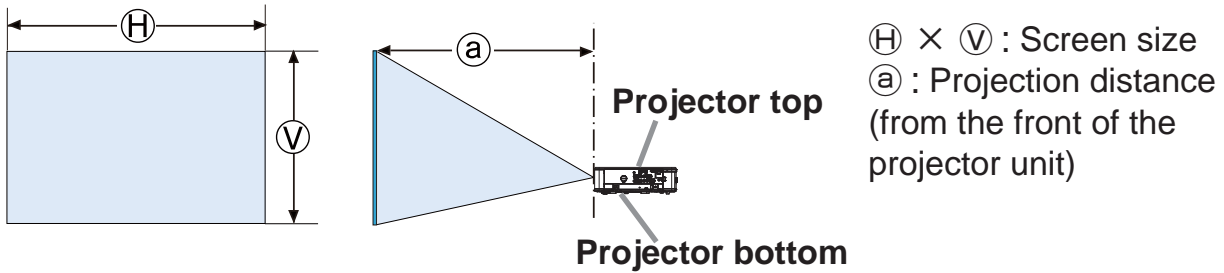


⚠WARNING ► Always handle the batteries with care and use them only as directed. Improper use may result in battery explosion, cracking or leakage, which could result in fire, injury and/or pollution of the surrounding environment.

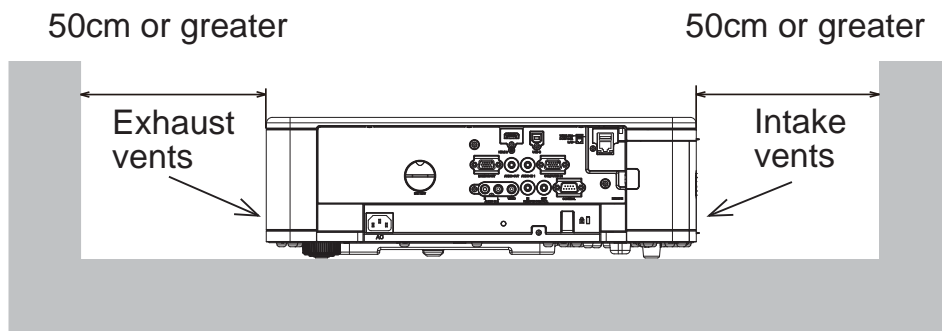
- When replacing the batteries, replace both of the batteries with new batteries of the same type. Do not use a new battery with a used battery.
- Be sure to use only the batteries specified. Do not use batteries of different types at the same time. Do not mix a new battery with used one.
- Make sure the plus and minus terminals are correctly aligned when loading a battery.
- Keep a battery away from children and pets.
- Do not recharge, short circuit, solder or disassemble a battery.
- Do not place a battery in a fire or water. Keep batteries in a dark, cool and dry place.
- If you observe battery leakage, wipe out the leakage and then replace a battery. If the leakage adheres to your body or clothes, rinse well with water immediately.
- Obey the local laws on disposing the battery.

Arrangement

Refer to tables **T-1** to **T-2** at the back of this manual as well as the following to determine the screen size and projection distance. The values shown in the table are calculated for a full size screen.



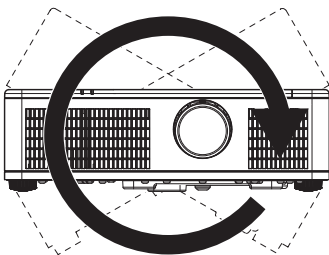
Secure a clearance of 50cm or greater between the exhaust vents and walls, and a clearance of 50cm or greater between the intake vents and walls. Assume that there is enough clearance in the both sides and top of the projector in the figure below.



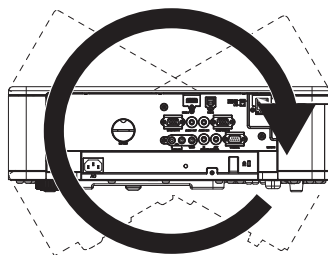
Installation position, picture mode, altitude, and operating environment may affect the brightness of the display.

This projector will perform in a free tilt angle, as shown in the figures below.

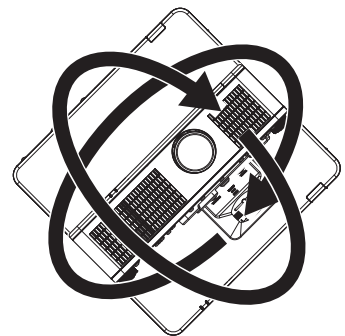
Horizontal 360°



Vertical 360°



Tilt 360°
(combination of horizontal and vertical)



(continued on next page)

Arrangement (continued)

⚠WARNING ▶ Install the projector where you can access the power outlet easily.

- ▶ Install the projector in a stable horizontal position.
- Do not use any mounting accessories except the accessories specified by the manufacturer. Read and keep the manuals of the accessories used.
- For special installation such as ceiling mounting, be sure to consult your dealer beforehand. Specific mounting accessories and services may be required.
- Do not put the projector on its side, front or rear position.
- Do not attach nor place anything on the projector unless otherwise specified in the manual.
- ▶ Do not install the projector near thermally conductive or flammable things.
- ▶ Do not place the projector where any oils, such as cooking or machine oil, are used.
- ▶ Do not place the projector in a place where it may get wet.
- ▶ Do not block the intake vents and exhaust vents of the projector. If the intake vents and exhaust vents of the projector are blocked, the accumulated inside heat may cause fire.

⚠CAUTION ▶ Place the projector in a cool place with sufficient ventilation.

- Do not stop up, block nor cover the projector's vent holes.
- Do not place the projector at places that are exposed to magnetic fields, doing so can cause the cooling fans inside the projector to malfunction.
- ▶ Avoid placing the projector in smoky, humid or dusty place.
- Do not place the projector near humidifiers.

NOTICE ▶ Position the projector to prevent light from directly hitting the projector's remote sensor.

- ▶ Do not place the product in a place where radio interference may be caused.
- ▶ Set the ALTITUDE of the SERVICE item in the OPTION menu correctly. If the projector is used with a wrong setting, it may cause damage to the projector itself or the parts inside. For details, see **User's Manual - Operating Guide**.

NOTE • When the temperature inside the projector rises high, it may cause the high rotation of the fan for cooling temporarily.

Connecting with your devices

Before connecting the projector to a device, consult the manual of the device to confirm that the device is suitable for connecting with this projector and prepare the required accessories, such as a cable in accord with the signal of the device. Consult your dealer when the required accessory did not come with the product or the accessory is damaged.

After making sure that the projector and the devices are turned off, perform the connection, according to the following instructions. Refer to figures **F-1** to **F-4** at the back of this manual.

For details, see **User's Manual - Operating Guide**. Before connecting the projector to a network system, be sure to read **User's Manual - Network Guide** too.

⚠WARNING ▶ Use only the appropriate accessories. Otherwise it could cause a fire or damage the projector and devices.

- Use only the accessories specified or recommended by the projector's manufacturer. It may be regulated under some standard.
- Neither disassemble nor modify the projector and the accessories.
- Do not use the damaged accessory. Be careful not to damage the accessories. Route a cable so that it is neither stepped on nor pinched out.
 - ▶ Heat may build up in the USB wireless adapter, to avoid possible burns disconnect the projector power cord for 10 minutes before touching the adapter.
- When using the USB wireless adapter, use the supplied adapter cover or terminal cover.

⚠CAUTION ▶ For a cable with a core at only one end, connect the end with the core to the projector. That may be required by EMI regulations.

- ▶ Before connecting the projector to a network system be sure to obtain the consent of the administrator of the network.
- ▶ Do not connect the **LAN** port to any network that might have the excessive voltage.
- ▶ The designated USB wireless adapter that is sold as an option is required to use the wireless network function of this projector. Before connecting the USB wireless adapter, turn off the power of the projector and disconnect the power cord.

NOTE • Do not turn on or off the projector while connected to a device in operation, unless that is directed in the manual of the device.

- Some input ports are selectable in the use. For details, see **User's Manual - Operating Guide**.
- Be careful not to mistakenly connect a connector to a wrong port.

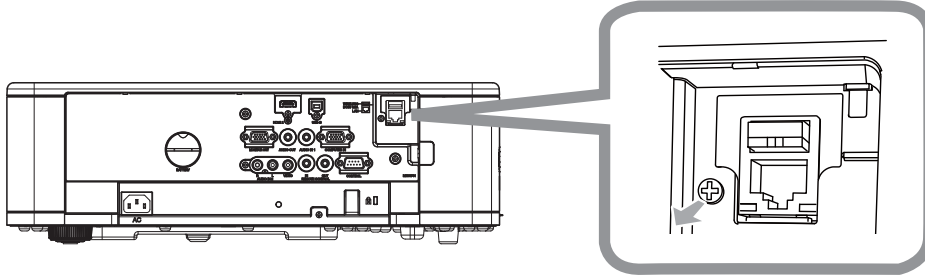
Fastening the adapter cover

When using the USB wireless adapter, use the supplied adapter cover for theft prevention.

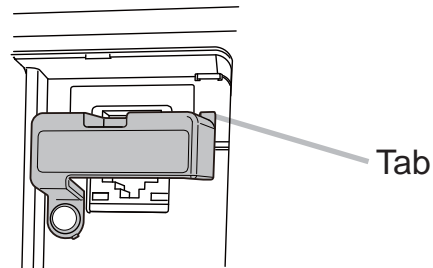
USB wireless adapter: USB-WL-11N

Temperature range: 0 ~ 40°C(operating)

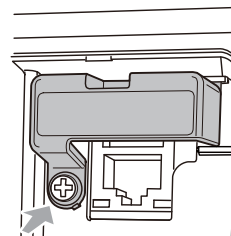
1. Loosen the screw on the bottom left of the **WIRELESS** port.



2. Insert the tab of the cover into the hole at the upper right of the **WIRELESS** port in the direction of the arrow.



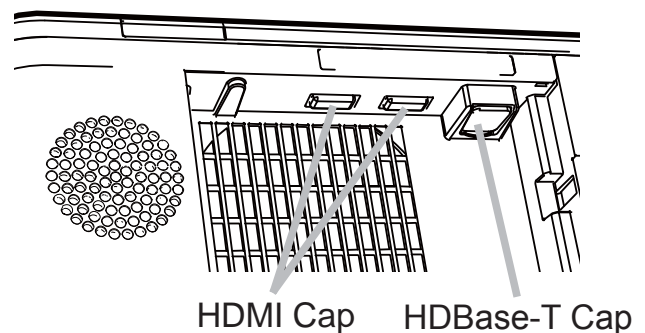
3. Align the screw holes on the projector and the cover. Then insert the screw removed from the projector into the hole and tighten the screw.



⚠WARNING ▶ Keep small parts away from children and pets. Take care not to put in the mouth.
▶ Heat may build up in the USB wireless adapter, to avoid possible burns disconnect the projector power cord for 10 minutes before touching the adapter.

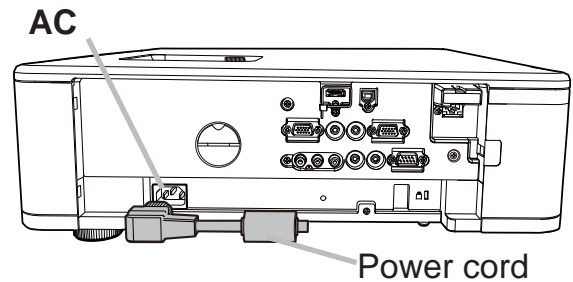
Attaching the cap

Attach the bundled cap to prevent contamination by dust or foreign matter when the cable is not connected.



Connecting power supply

1. Put the connector of the power cord into the **AC** (AC inlet) of the projector.
2. Firmly plug the power cord's plug into the outlet. In a couple of seconds after the power supply connection, the **POWER** indicator will light up in steady orange.



Please remember that when the DIRECT POWER ON function activated, the connection of the power supply make the projector turn on.

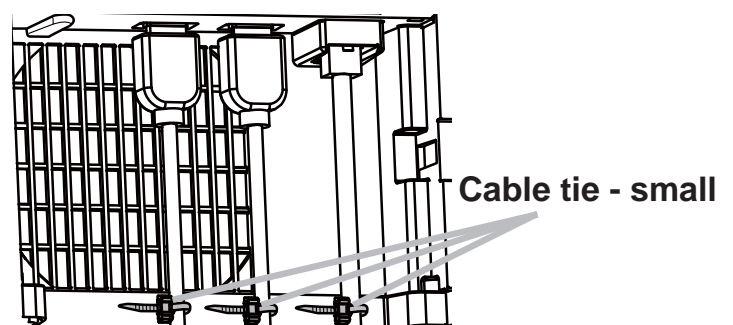
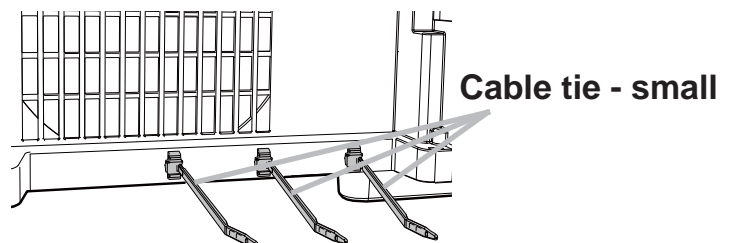
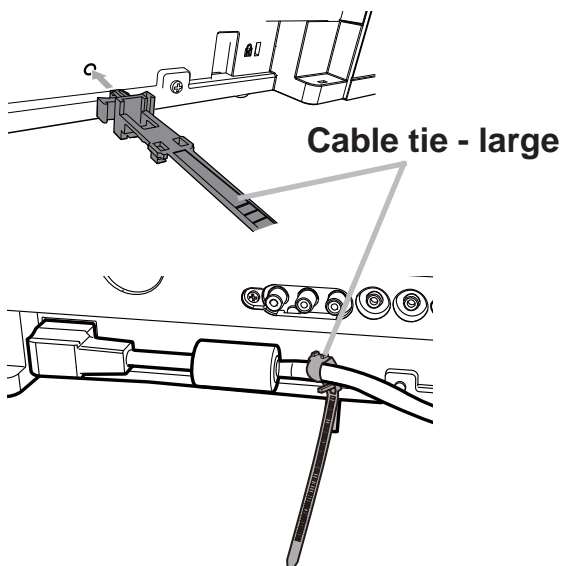
⚠WARNING ▶ Please use extra caution when connecting the power cord, as incorrect or faulty connections may result in fire and/or electrical shock.

- Do not touch the power cord with a wet hand.
- Only use the power cord that came with the projector. If it is damaged, consult your dealer to get a new one. Never modify the power cord.
- Only plug the power cord into an outlet whose voltage is matched to the power cord. The power outlet should be close to the projector and easily accessible. Remove the power cord for complete separation.
- Do not distribute the power supply to multiple devices. Doing so may overload the outlet and connectors, loosen the connection, or result in fire, electric shock or other accidents.
- Connect the ground terminal for the AC inlet of this unit to the ground terminal of the building using an appropriate power cord (bundled).

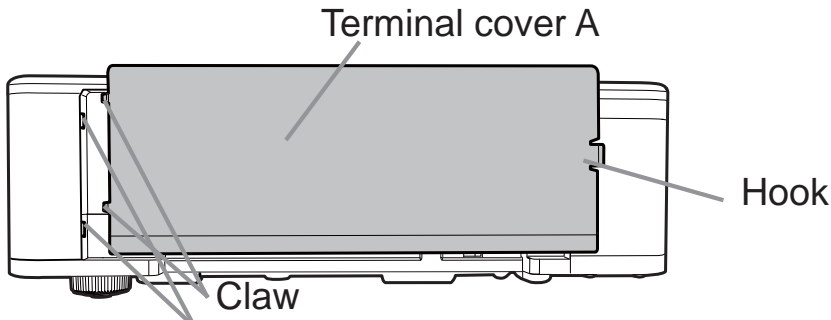
NOTICE ▶ This product is also designed for IT power systems with a phase-to-phase voltage of 220 to 240 V.

Fastening the cable

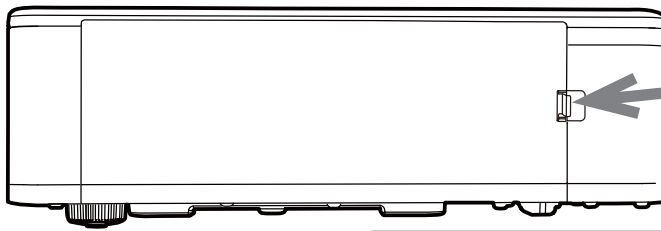
Use the supplied cable tie to fasten the cable.



Attaching the terminal cover

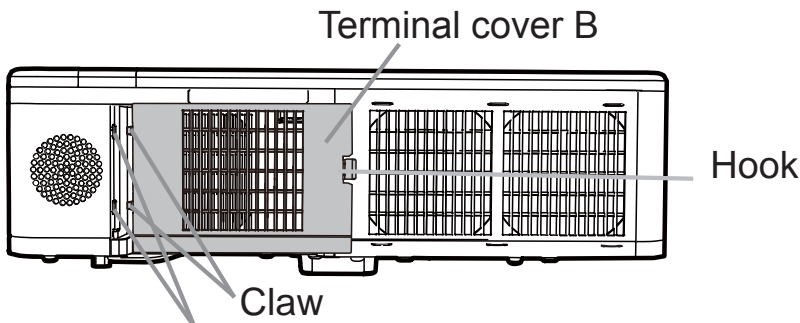


Insert the two claws of the Terminal cover into the hole of the case and confirm Hook is fitting into the case.

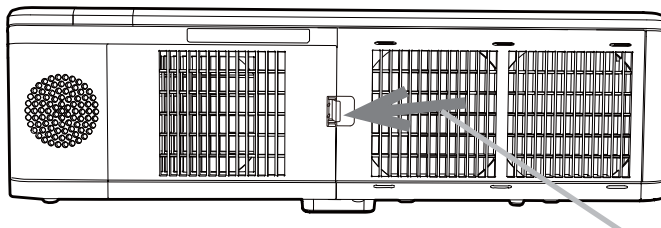


Do not hold the terminal cover when moving the projector.

When detaching the Terminal cover, push the Hook in the direction of the arrow and pull it forward.



Insert the two claws of the Terminal cover into the hole of the case and confirm Hook is fitting into the case.



Do not hold the terminal cover when moving the projector.

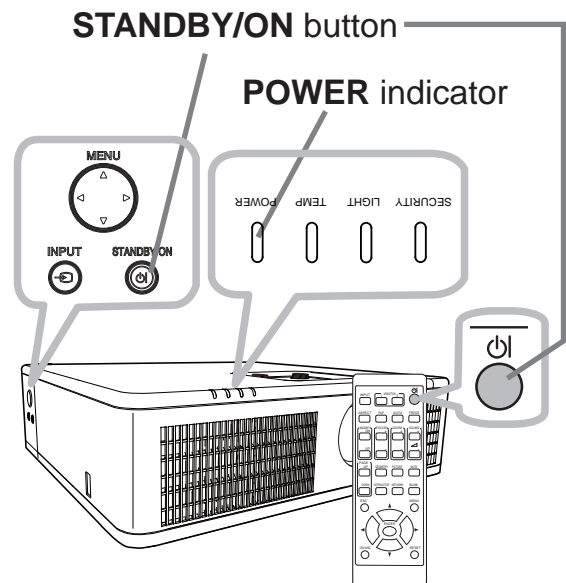
When detaching the Terminal cover, push the Hook in the direction of the arrow and pull it forward.

NOTE • This is a Class A product. When wiring a signal cable or a communication cable (for example, a LAN cable) close to this product, it may cause radio interference in which case the user may be required to take adequate measures.
• The Terminal cover cannot be attached depending on the cable you use.

Turning on the power

1. Make sure that the power cord is firmly and correctly connected to the projector and the outlet.
2. Make sure that the **POWER** indicator is lighted in steady orange. Then remove the lens cover.
3. Press the **STANDBY/ON** button on the projector or the remote control.

The projection light source will light up and the **POWER** indicator will begin blinking in green. When the power is completely on, the indicator will stop blinking and light in steady green.



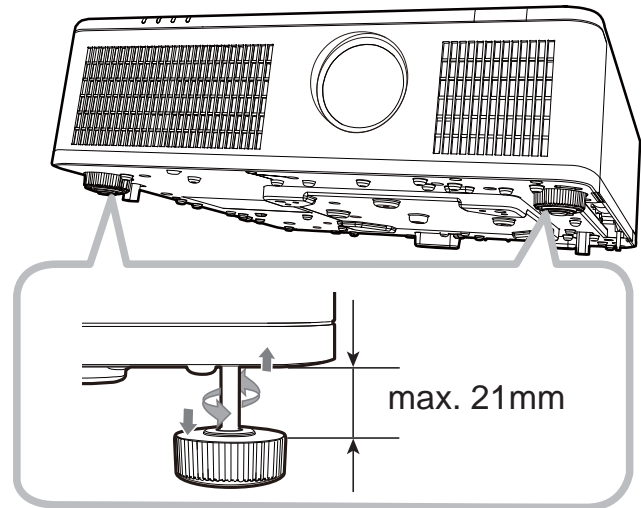
⚠WARNING ► A strong light is emitted when the projector's power is on. Do not look into the lens of the projector or look inside of the projector through any of the projector's openings, since the projection ray may cause a trouble on your eyes.

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

NOTE • Please power on the projector prior to the connected devices.
• The projector has the **DIRECT POWER ON** function, which can make the projector automatically turn on. For more information, please see **User's Manual - Operating Guide**.

Adjusting the projector's elevator

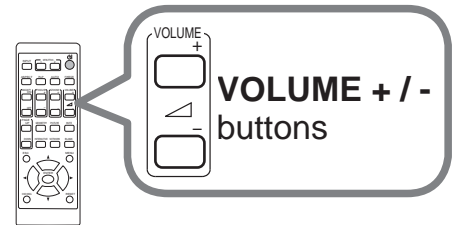
Lengthening or shortening the length of the elevator feet shifts the projection position and the projection angle. Turn the elevator feet each to adjust their length.



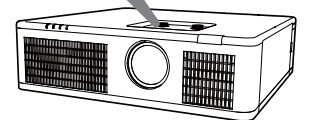
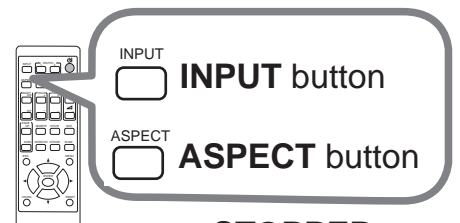
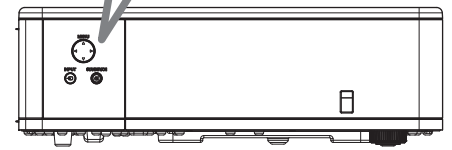
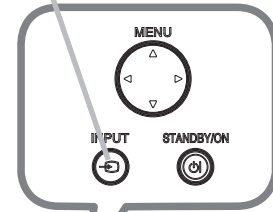
⚠WARNING ► Do not lengthen the elevator feet exceeding 21 mm. The foot lengthened exceeding the limit may come off and drop the projector down, and result in an injury or damaging the projector.

Displaying the picture

1. Activate your signal source. Turn the signal source on, and make it send the signal to the projector.
2. Use the **VOLUME + / -** buttons to adjust the volume.
3. Press **INPUT** button on the projector or the remote control. Select a desirable input referring to the displayed input list.
4. Press the **ASPECT** button on the remote control. Each time you press the button, the projector switches the mode for aspect ratio in turn.
5. Use the **ZOOM** ring to adjust the screen size.
6. Use the **FOCUS** ring to focus the picture.
7. Fasten the **ZOOM** ring by **STOPPER** so that it cannot loosen.
8. Turn the **VERTICAL** adjuster fully counterclockwise. Then turn it clockwise and adjust the vertical lens position upward.
9. Turn the **HORIZONTAL** adjuster clockwise or counterclockwise to adjust the horizontal lens position.

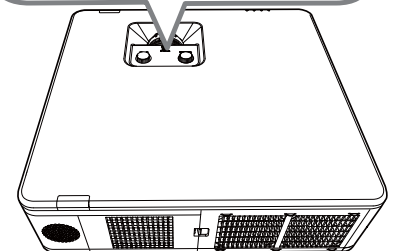
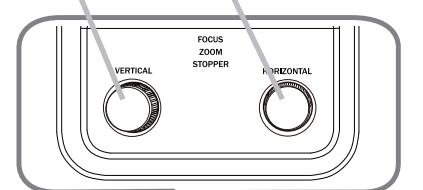


INPUT button



VERTICAL adjuster

HORIZONTAL adjuster

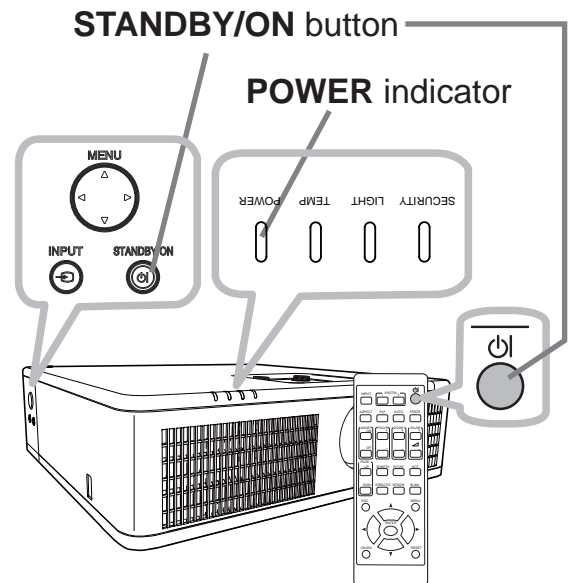


⚠ **CAUTION** ► If you wish to have a blank screen while the light source is on, use the **BLANK** function. Taking any other action may cause the damage on the projector.

NOTE • The **ASPECT** button does not work when no proper signal is inputted.
 • There may be some noise and/or the screen may flicker for a moment when an operation is made. This is not a malfunction.
 • For the details of how to adjust the picture, please see **User's Manual - Operating Guide**.

Turning off the power

1. Press the **STANDBY/ON** button on the projector or the remote control.
The message "Power off?" will appear on the screen for about 5 seconds.
2. Press the **STANDBY/ON** button again while the message appears.
The light source will go off, and the **POWER** indicator will begin blinking in orange. Then the **POWER** indicator will stop blinking and light in steady orange when the light source cooling is complete.
3. Attach the lens cover, after the **POWER** indicator turns to steady orange.



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

▶ Remove the power cord for complete separation. The power outlet should be close to the projector and easily accessible.

NOTE • Please power off the projector after any connected devices are powered off.

• This projector has the **AUTO POWER OFF** function that can make the projector turn off automatically. For more information, please see **User's Manual - Operating Guide**.

Cleaning the intake vents

It is recommended to check and clean the intake vents periodically for maintaining the ventilation inside of the projector and normal operation.

If a message prompts you to clean or check the intake vents, or if the **TEMP** indicator lights in red, clean the intake vents immediately.

How to clean the intake vents

1. Turn the projector off and unplug the power cord. Allow the projector to cool down sufficiently.
2. Use a vacuum cleaner on and around the intake vents.

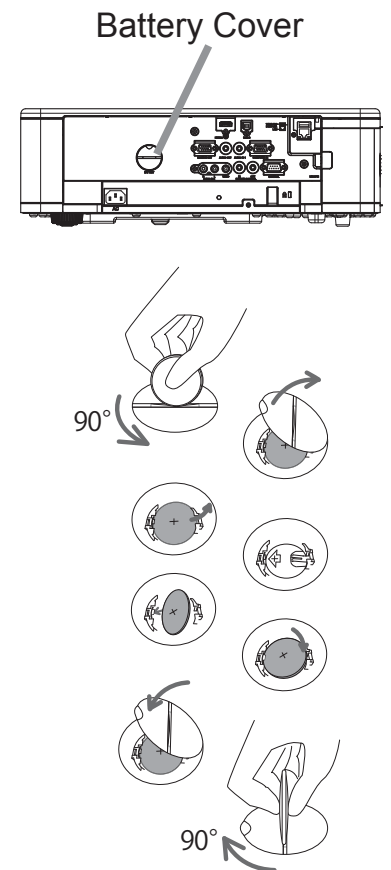
△WARNING ► Before taking care of the intake vents, make sure the power cable is not plugged in, then allow the projector to cool sufficiently. Before taking care of the intake vents, make sure to turn the projector off and to pull out the power cable, then allow the inside of the projector to cool sufficiently. If you take care of the projector with the power cord connected, it could cause a fire or an electrical shock. If you handle the projector in a high temperature state, it could cause a burn.

NOTE • If the message “CHECK THE AIR FLOW” is displayed, turn the power off and allow the inside of the projector to cool down.

Replacing the internal clock battery

Installing the battery is required in some cases. (📖Event Scheduling in the User's Manual - Network Guide) A battery is not contained at the time of factory shipment. Please replace a battery according to the following procedure.

1. Turn the projector off, and unplug the power cord. Allow the projector to cool sufficiently.
2. Turn the battery cover fully counterclockwise using a coin or the like, and pick the cover up to remove it.
3. Pry up the battery using a flathead screwdriver or the like to take it out. Do not use any metal tools. While prying it up, put a finger lightly on the battery since it may pop out of the holder.
4. Replace the battery with a new MAXELL, Part No.**CR2032** or **CR2032H**. Slide the battery in under the plastic claw, and push it into the holder until it clicks.
5. Replace the battery cover in place, then turn it clockwise using such as coins, to fix.



⚠️**WARNING** ▶ Always handle the batteries with care and use them only as directed. Battery may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

And also improper use may result in cracking or leakage, which could result in fire, injury and/or pollution of the surrounding environment.

- Be sure to use only the batteries specified.
- Make sure the plus and minus terminals are correctly aligned when loading a battery.
- Keep a battery away from children and pets. If swallowed consult a physician immediately for emergency treatment.
- Do not short circuit or solder a battery.
- Do not allow a battery in a fire or water. Keep batteries in a dark, cool and dry place.
- If you observe battery leakage, wipe out the leakage and then replace a battery. If the leakage adheres to your body or clothes, rinse well with water immediately.
- Obey the local laws on disposing a battery.

Manuals

The other manuals for this product are available on the Dukane website as downloads. Go to:

www.dukaneav.com and look at the specific model downloads or a direct link is;

<http://www.dukane-av.com/service/ProductDownload.asp?model=8964WUSS>

Also available at; <http://www.dukane-av.com/service/downloads.asp>

Note: The Dukane model described in this document is manufactured by Hitachi and use the same firmware, software programs, control code, and accessory parts. The equivalent Dukane to Hitachi models are; 8964WUSS (LP-WU3500) and 8964WSS (LP-WX3500).

Specifications

Item	Specification
Product name	DLP® projector
DMD	8964WSS: 1,024,000 pixels (1280 horizontal x 800 vertical) 8964WUSS: 2,304,000 pixels (1920 horizontal x 1200 vertical)
Light Source	LED
Speaker	16W x1
Power supply/ Rated current	AC100V-120V: 5.6A, AC220V-240V: 2.9A
Power consumption	AC100V-120V: 560W, AC220V-240V: 550W
Operating temperature range	Refer to the following table.
Size	471 (W) x 148 (H) x 455 (D) mm 471 (W) x 132 (H) x 452 (D) mm (Not including protruding parts.) Refer to figure F-5 at the back of this manual.
Weight (mass)	approx. 14.5 kg

	Altitude	LIGHT OUTPUT		Temperature that may cause light output to decrease
		HIGH	Other than HIGH	
Operating temperature range	0 ~ under 1,600m	0 ~ 40 °C		35 °C or more
	1,600m ~ 3,048m	0 ~ 35 °C		30 °C or more

(continued on next page)

Specifications (continued)

Item	Specification
Ports	COMPUTER IN D-sub 15 pin mini jack x1 HDMI 1 / MHL HDMI / MHL connector x1 HDMI 2 HDMI connector x1 HDMI OUT HDMI connector x1 HDBaseT RJ45 jack x1 MONITOR OUT D-sub 15 pin mini jack x1 VIDEO RCA jack x1 AUDIO IN1 3.5 mm (stereo) mini jack x1 AUDIO IN2 (L, R) RCA jack x2 AUDIO OUT 3.5 mm (stereo) mini jack x1 WIRELESS Wireless connector x1 USB-B USB type B connector x1 CONTROL D-sub 9 pin plug x1 LAN RJ45 jack x1 REMOTE CONTROL IN 3.5 mm (stereo) mini jack x1 REMOTE CONTROL OUT 3.5 mm (stereo) mini jack x1
Optional parts	USB wireless adapter: USB-WL-11N Remote control: RC-R104 For more information, please consult your dealer.

Manufacturing year and month

The manufacturing year and month of this projector is indicated as follows in the serial number of the rating label on the projector.

Example:

F 6 J 0 0 0 0 0 1

- └─ Manufacturing month: A = January, B = February, ... L = December.
- └─ Manufacturing year: 6 = 2016, 7 = 2017, ... 0 = 2020, 1 = 2021.

Troubleshooting - Warranty and after-service

If an abnormal operation (such as smoke, strange odor or excessive sound) should occur, stop using the projector immediately.

Otherwise if a problem occurs with the projector, first refer to “Troubleshooting” of **User’s Manual - Operating Guide** and **Network Guide**, and run through the suggested checks.

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

Please check the following web address where you may find the latest information for this projector.

DUKANE CORP AV SERVICE DEPT
 2900 Dukane Drive
 St Charles, IL 60174
 800-676-2487 / 630-762-
 Fax 630-584-5156
 avservice@dukane.com
 www.dukaneav.com

NOTE • The information in this manual is subject to change without notice.

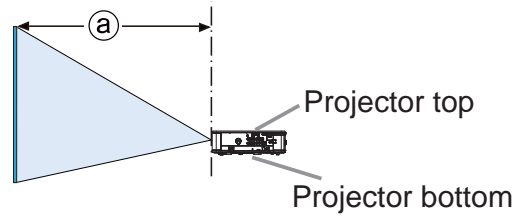
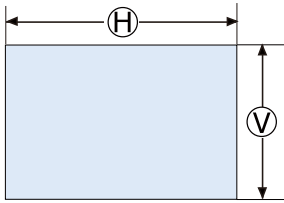
- The illustrations shown in this manual are one example for explanation. On your projector, there may be some differences from the illustrations.
- The manufacturer assumes no responsibility for any errors that may appear in this manual.
- The reproduction, transfer or copy of all or any part of this document is not permitted without express written consent.

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 - DLP® and the DLP logo are registered trademarks of Texas Instruments.
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End User License Agreement for the Projector Software

- Software in the projector consists of the plural number of independent software modules and there exist our copyright or/and third party copyrights for each of such software modules.



Ⓜ x Ⓜ : Screen size
 Ⓜ : Projection distance
 (from the front of the projector unit)

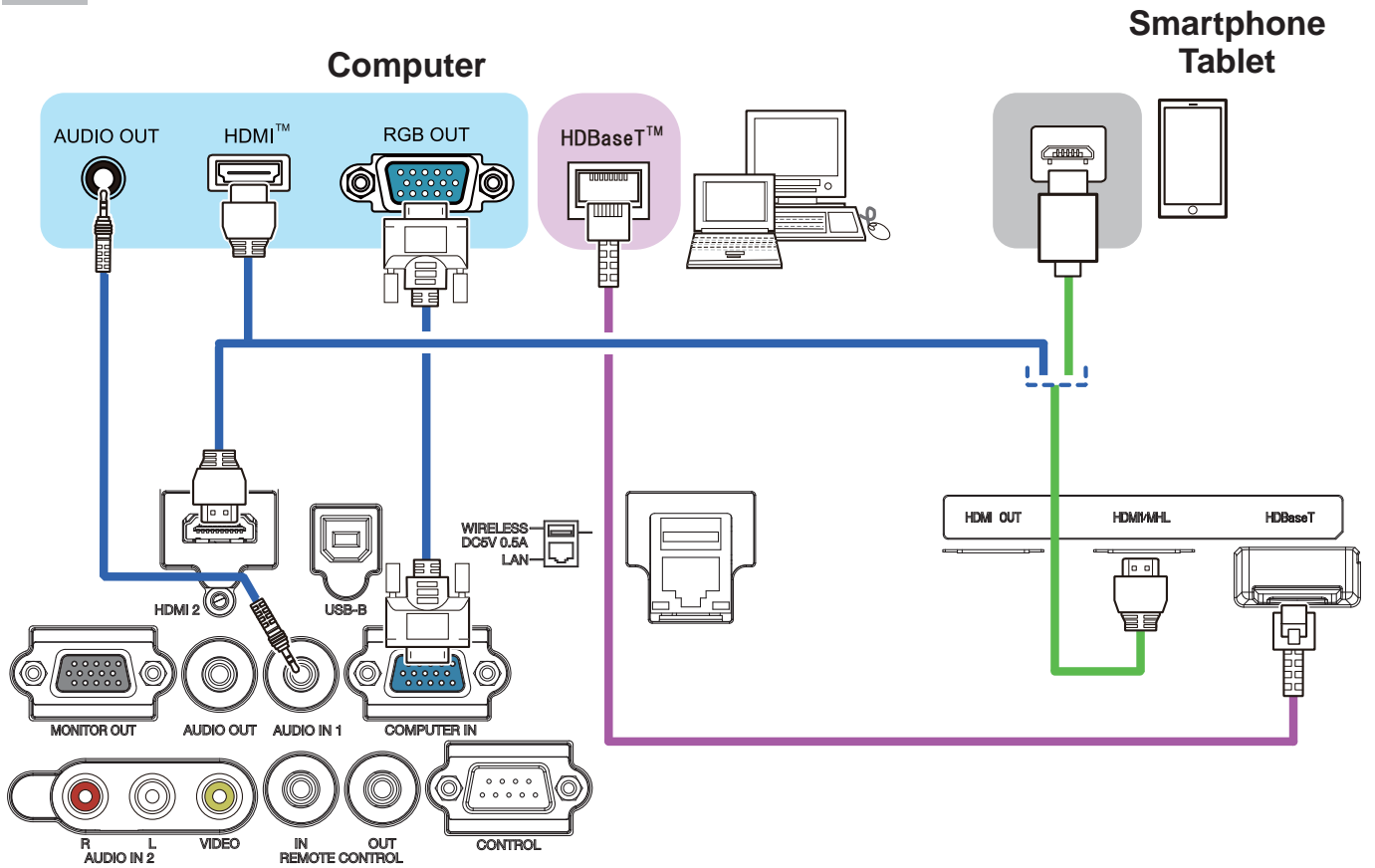
T-1 8964WSS

(1280 x 800, ±10%)

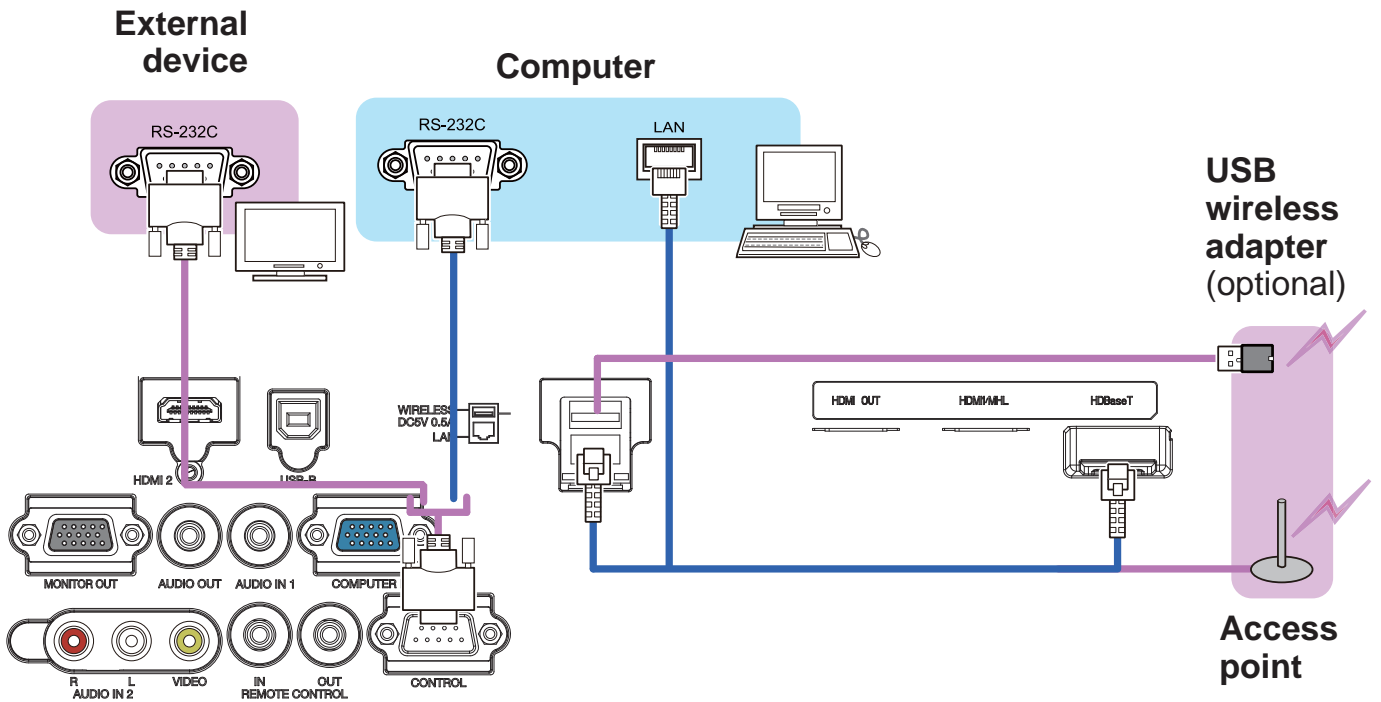
Screen type (inch)	16 : 10						16 : 9						4 : 3							
	Screen size		Projection distance				Screen size		Projection distance				Screen size		Projection distance					
	Ⓜ	Ⓜ	Ⓜ min.		Ⓜ max.		Ⓜ	Ⓜ	Ⓜ min.		Ⓜ max.		Ⓜ	Ⓜ	Ⓜ min.		Ⓜ max.			
	m	m	inch	m	inch	m	m	m	m	inch	m	inch	m	m	m	m	inch	m	inch	m
30	0.6	0.4	34	0.9	60	1.5	0.7	0.4	35	0.9	62	1.6	0.6	0.5	39	1.0	69	1.7		
40	0.9	0.5	47	1.2	81	2.1	0.9	0.5	48	1.2	83	2.1	0.8	0.6	53	1.3	92	2.3		
50	1.1	0.7	59	1.5	102	2.6	1.1	0.6	60	1.5	105	2.7	1.0	0.8	67	1.7	116	2.9		
60	1.3	0.8	71	1.8	123	3.1	1.3	0.7	73	1.9	126	3.2	1.2	0.9	81	2.0	139	3.5		
70	1.5	0.9	83	2.1	144	3.6	1.5	0.9	85	2.2	148	3.7	1.4	1.1	94	2.4	163	4.1		
80	1.7	1.1	95	2.4	164	4.2	1.8	1.0	98	2.5	169	4.3	1.6	1.2	108	2.7	186	4.7		
90	1.9	1.2	107	2.7	185	4.7	2.0	1.1	110	2.8	190	4.8	1.8	1.4	122	3.1	210	5.3		
100	2.2	1.3	120	3.0	206	5.2	2.2	1.2	123	3.1	212	5.4	2.0	1.5	136	3.4	234	5.9		
120	2.6	1.6	144	3.7	248	6.3	2.7	1.5	148	3.8	255	6.5	2.4	1.8	163	4.1	281	7.1		
150	3.2	2.0	180	4.6	310	7.9	3.3	1.9	185	4.7	319	8.1	3.0	2.3	204	5.2	351	8.9		
200	4.3	2.7	241	6.1	414	10.5	4.4	2.5	248	6.3	426	10.8	4.1	3.0	273	6.9	469	11.9		
250	5.4	3.4	302	7.7	518	13.2	5.5	3.1	310	7.9	533	13.5	5.1	3.8	342	8.7	587	14.9		
300	6.5	4.0	363	9.2	622	15.8	6.6	3.7	373	9.5	640	16.2	6.1	4.6	411	10.4	705	17.9		

Screen type (inch)	16 : 10						16 : 9						4 : 3					
	Screen size		Projection distance				Screen size		Projection distance				Screen size		Projection distance			
	Ⓜ	Ⓜ	ⓐ min.		ⓐ max.		Ⓜ	Ⓜ	ⓐ min.		ⓐ max.		Ⓜ	Ⓜ	ⓐ min.		ⓐ max.	
	m	m	inch	m	inch	m	m	m	inch	m	inch	m	m	m	inch	m	inch	m
30	0.6	0.4	33	0.8	57	1.5	0.7	0.4	34	0.9	59	1.5	0.6	0.5	37	0.9	65	1.7
40	0.9	0.5	44	1.1	77	2.0	0.9	0.5	46	1.2	79	2.0	0.8	0.6	50	1.3	88	2.2
50	1.1	0.7	56	1.4	97	2.5	1.1	0.6	58	1.5	100	2.5	1.0	0.8	64	1.6	110	2.8
60	1.3	0.8	67	1.7	117	3.0	1.3	0.7	69	1.8	120	3.1	1.2	0.9	77	1.9	133	3.4
70	1.5	0.9	79	2.0	137	3.5	1.5	0.9	81	2.1	141	3.6	1.4	1.1	90	2.3	155	3.9
80	1.7	1.1	91	2.3	156	4.0	1.8	1.0	93	2.4	161	4.1	1.6	1.2	103	2.6	177	4.5
90	1.9	1.2	102	2.6	176	4.5	2.0	1.1	105	2.7	181	4.6	1.8	1.4	116	2.9	200	5.1
100	2.2	1.3	114	2.9	196	5.0	2.2	1.2	117	3.0	202	5.1	2.0	1.5	129	3.3	222	5.6
120	2.6	1.6	137	3.5	236	6.0	2.7	1.5	141	3.6	242	6.2	2.4	1.8	155	3.9	267	6.8
150	3.2	2.0	172	4.4	295	7.5	3.3	1.9	177	4.5	303	7.7	3.0	2.3	195	4.9	334	8.5
200	4.3	2.7	230	5.8	394	10.0	4.4	2.5	236	6.0	405	10.3	4.1	3.0	260	6.6	447	11.3
250	5.4	3.4	288	7.3	493	12.5	5.5	3.1	296	7.5	507	12.9	5.1	3.8	326	8.3	559	14.2
300	6.5	4.0	345	8.8	593	15.1	6.6	3.7	355	9.0	609	15.5	6.1	4.6	391	9.9	671	17.0

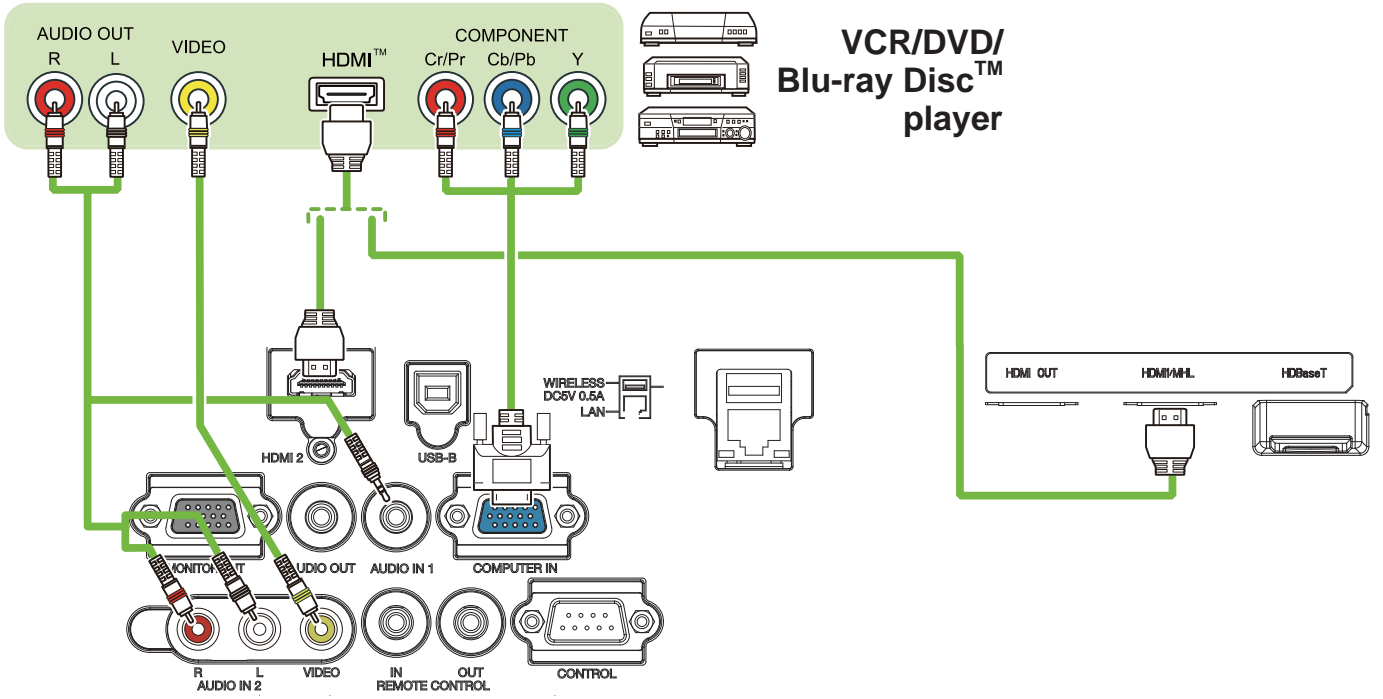
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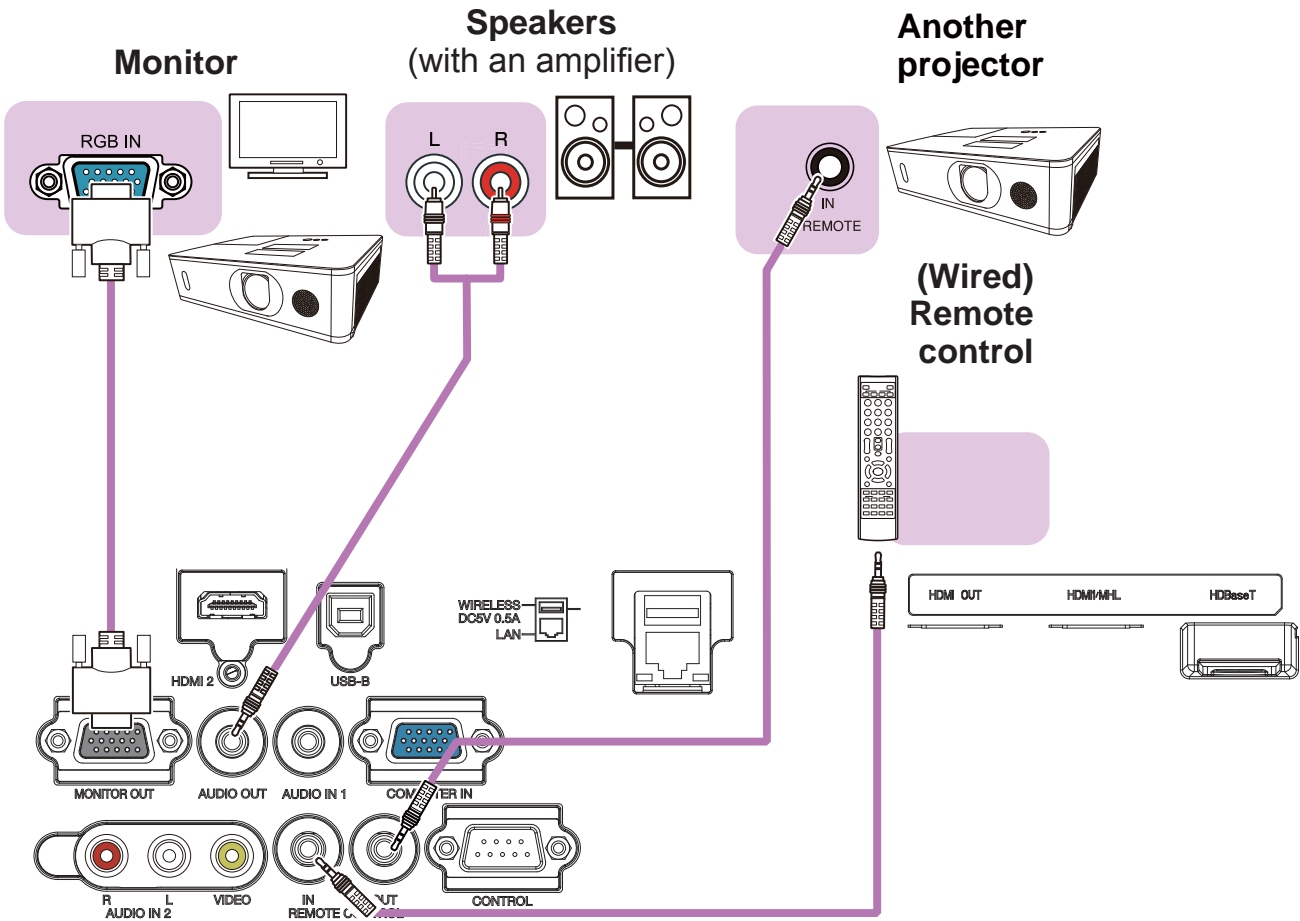
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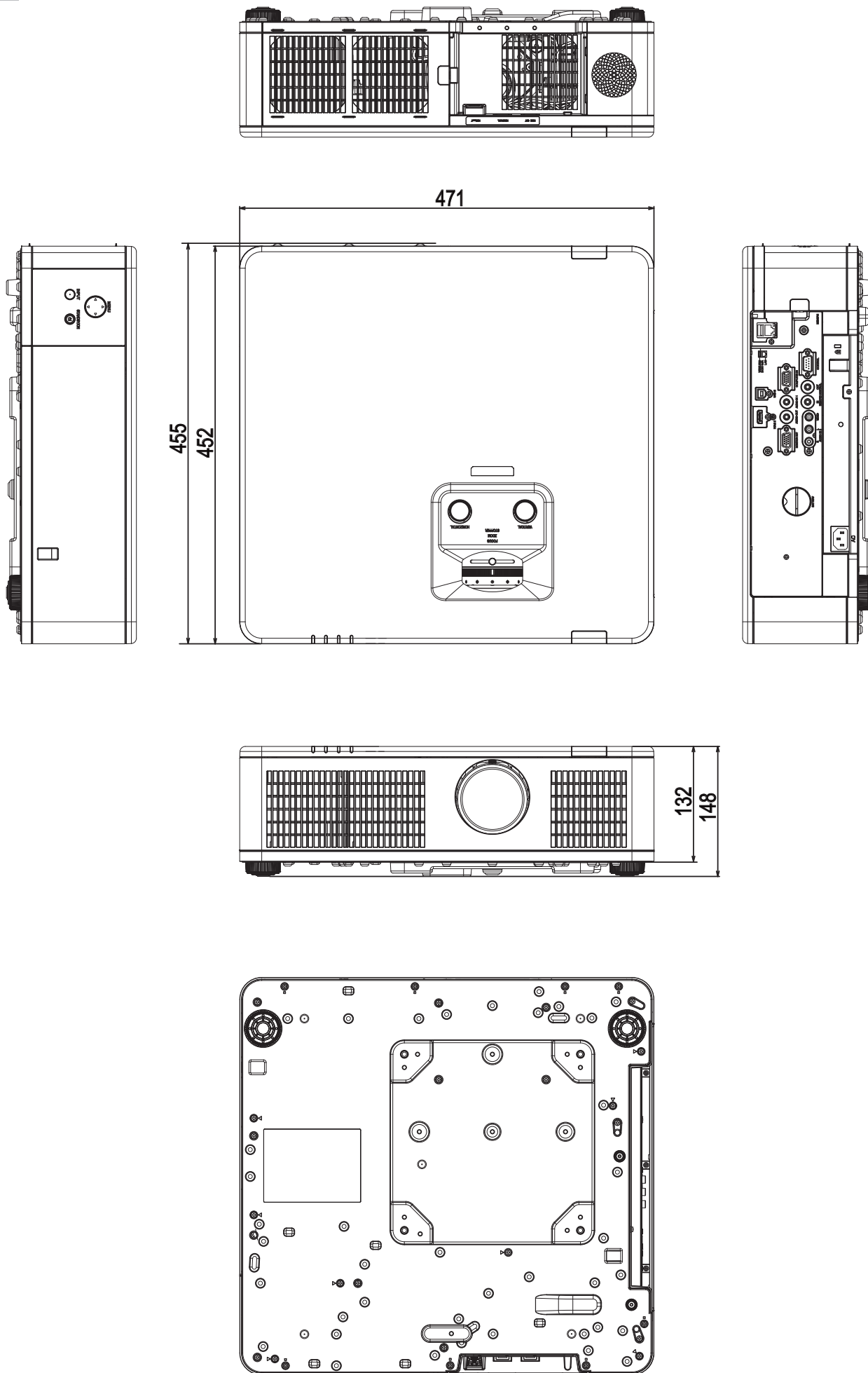


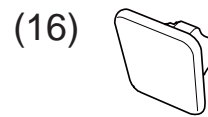
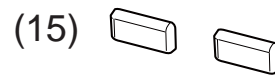
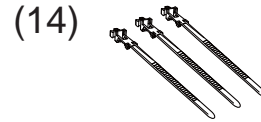
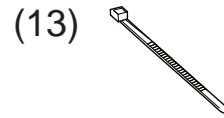
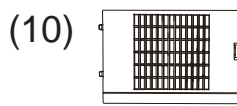
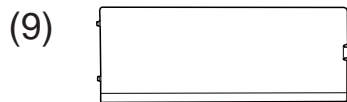
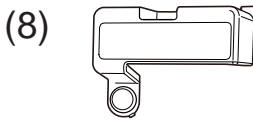
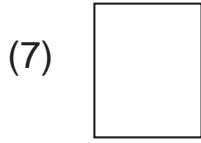
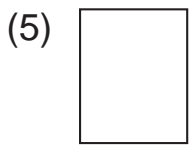
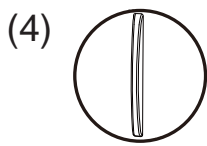
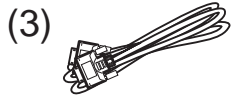
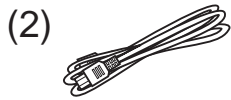
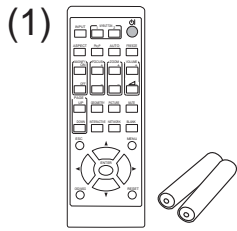
F-3



F-4







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