

Projector

**PA1004UL-W/PA1004UL-B
PA804UL-W/PA804UL-B**

Installation Manual

Model No.

NP-PA1004UL-W/NP-PA1004UL-B/NP-PA804UL-W/NP-PA804UL-B

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Introduction

This manual describes the procedures for installation and connections for the NEC PA1004UL-W/PA1004UL-B/PA804UL-W/PA804UL-B projector. For safe and correct installation and maintenance of the projector, carefully read this document before considering the layout of the unit and installation. Please keep this document under care by the company who installed or adjusted the projector. This document is intended the readers who have basic knowledge about projector installation. Refer to the user's manual of an applicable projector for basic operation and remarks.

NOTE:

- When you use this projector in the United States, please refer to the user's manual for the United States on our website.
https://www.sharp-nec-displays.com/dl/en/pj_manual/pa1004ul.html
-

- Illustrations and screens shown in this manual may differ slightly from the actual ones.

NOTES

- (1) The contents of this user's manual may not be reprinted in part or whole without permission.
- (2) The contents of this user's manual are subject to change without notice.
- (3) Great care has been taken in the preparation of this user's manual; however, should you notice any questionable points, errors or omissions, please contact us.
- (4) Notwithstanding article (3), NEC will not be responsible for any claims on loss of profit or other matters deemed to result from using the Projector.

Important Information

About the symbols

To ensure safe and proper use of the product, this manual uses a number of symbols to prevent injury to you and others as well as damage to property.

The symbols and their meanings are described below. Be sure to understand them thoroughly before reading this manual.

 WARNING	Failing to heed this symbol and handling the product erroneously could result in accidents leading to death or major injury.
 CAUTION	Failing to heed this symbol and handling the product erroneously could result in personal injury or damage to surrounding property.

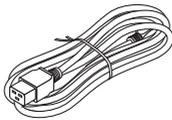
Examples of symbols

	This symbol indicates you should be careful of electric shocks.
	This symbol indicates you should be careful of high temperatures.
	This symbol indicates something that must be prohibited.
	This symbol indicates something that must not be got wet.
	This symbol indicates you should not touch with wet hands.
	This symbol indicates something that must not be disassembled.
	This symbol indicates things you must do.
	This symbol indicates that the power cord should be unplugged from the power outlet.

Safety Cautions

WARNING

 <p>BE SURE TO DO</p>	<p>Installing the projector</p> <ul style="list-style-type: none"> This projector is an RG3 product. The projector is for professional use and must be installed in location where safety is assured. For this reason, be sure to consult your dealer as installation and attachment/detachment of the lens unit must be performed by a professional service personnel. Never try to install the projector by yourself. This may result in visual impairment etc.
 <p>BE SURE TO DO</p>  <p>PROHIBITION</p>  <p>HAZARDOUS VOLTAGE</p>	<p>Handling the power cord</p> <ul style="list-style-type: none"> Please use the power cord supplied with this projector. If the supplied power cord does not satisfy requirements of your country's safety standard, and voltage and current for your region, make sure to use the power cord that conforms to and satisfies them. <ul style="list-style-type: none"> The power cord you use must be approved by and comply with the safety standards of your country. Please refer to the page 184 (User's Manual) about the power cord specification. For selecting an appropriate power cord, please check rated voltage for your region by yourself. The power cord included with this projector is exclusively for use with this projector. For safety, do not use it with other devices. Handle the power cord with care. Damaging the cord could lead to fire or electric shock. <ul style="list-style-type: none"> Do not place heavy objects on the cord. Do not place the cord under the projector. Do not cover the cord with a rug, etc. Do not scratch or modify the cord. Do not bend, twist or pull the cord with excessive force. Do not apply heat to the cord. <p>Should the cord be damaged (exposed core wires, broken wires, etc.), ask your dealer to replace it.</p> <ul style="list-style-type: none"> Do not touch the power plug should you hear thunder. Doing so could result in electric shock.



 **WARNING**

Installing the Projector



BE SURE TO DO

- This projector is designed to be used with a 100–240 V AC, 50/60 Hz power supply. Before using the projector, check that the power supply to which the projector is to be connected meets these requirements.
- Use a power outlet as the projector’s power supply. Do not connect the projector directly to electrical light wiring. Doing so is dangerous.
- When installing the projector at an angle, the separately sold option cover may be required for safety depending on the installation angle of the projector. (→ page 24)



PROHIBITION

- Do not use in places such as those described below. Doing so could lead to fire or electric shock.
 - Shaky tables, inclined surfaces or other unstable places
 - Near heating appliances or places with heavy vibrations
 - Outdoors or humid or dusty places
 - Places exposed to oil smoke or steam
 - Near cooking appliances, humidifiers, etc.



DO NOT WET

- Do not use in places such as those described below where the projector could get wet. Doing so could lead to fire or electric shock.
 - Do not use in the rain or snow, on a seashore or waterfront, etc.
 - Do not use in a bathroom or shower room.
 - Do not place vases or potted plants on the projector.
 - Do not place cups, cosmetics or medicines on the projector.
 Should water, etc. get inside the projector, first turn off the projector’s power, then unplug the power cord from the power outlet and contact your dealer.



UNPLUG THE POWER CORD

- Do not insert or drop metal or combustible objects or other foreign materials into the projector from the vents. Doing so could lead to fire or electric shock. Be particularly careful if there are children in the home. Should a foreign object get inside the projector, first turn off the projector’s power, then unplug the power cord from the power outlet and contact your dealer.



UNPLUG THE POWER CORD

Unplug the power cord if the projector malfunctions.

- Should the projector emit smoke or strange odors or sounds, or if the projector has been dropped or the cabinet broken, turn off the projector’s power, then unplug the power cord from the power outlet. It may cause not only fire or electric shock but also serious damage to your eyesight or burns. Contact your dealer for repairs.
Never try to repair the projector on your own. Doing so is dangerous.

 **WARNING**

 <p>DO NOT DISASSEMBLE</p>	<p>Do not disassemble the projector.</p> <ul style="list-style-type: none"> Do not remove or open the projector's cabinet. Also, do not modify the projector. There are high voltage areas in the projector. It may cause fire, electric shock, or laser light leakage, resulting in serious damage to your eyesight or burns. Have qualified service personnel perform inspection, adjustments and repairs of the interior.
 <p>CAUTION</p>	<p>Installing suspended from the ceiling</p> <ul style="list-style-type: none"> When installed suspended from the ceiling, etc. do not hang from the projector. The projector could drop and cause injury. When installing suspended from the ceiling, use a power outlet that is within reach so the power cord can be easily plugged and unplugged.
 <p>PROHIBITION</p>  <p>CAUTION FOR HIGH TEMPERATURE</p>	<p>Do not place objects in front of the lens while the projector is operating.</p> <ul style="list-style-type: none"> Do not leave the lens cap on the lens while the projector is operating. The lens cap could get hot and be warped. Do not place objects in front of the lens that obstruct the light while the projector is operating. The object could get hot and be broken or catch fire. The below pictogram indicated on the cabinet means the precaution for avoiding to place objects in front of the projector lens. 

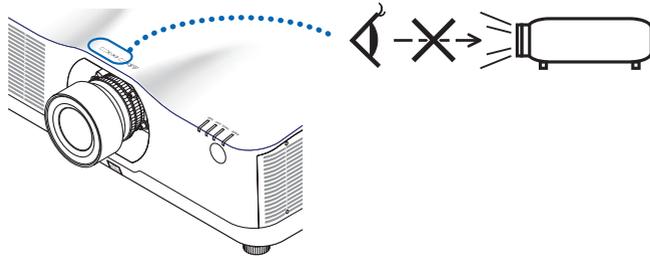
⚠ WARNING



PROHIBITION

About the projector's light source

- No direct exposure to the beam shall be permitted, RG3 IEC/EN 62471-5:2015. Operators shall control access to the beam within the hazard distance and install the product at the height that will prevent exposures of spectators' eyes within the hazard distance.
- Do not look into the projector's lens. Strong light that could damage your eyes is projected when the projector is operating. Be especially careful when children are around.
- Do not look at the projected light using optical devices (magnifying glasses, reflectors, etc.). Doing so could result in vision impairment.
- When turning on the power, operate from the side or rear of the projector (outside the hazard zone). Also, when turning on the power, make sure no one within the projection range is looking at the lens.
- Do not allow children to operate the projector alone. When a child is operating the projector an adult should always be present and watch the child carefully.
- The following graphic symbol indicating that looking into the projector is prohibited is displayed on top of the projector above the lens mounting unit.



PROHIBITION

When cleaning the projector

- Do not use flammable gas sprays to remove dust from the lens, cabinet, etc. Doing so could lead to fire.



BE SURE TO DO



PROHIBITION

About option cover (separately sold)

- Be sure to tighten the screws after attaching the option cover. Failure to do so may cause the cable cover to come off and fall, resulting in injury or damage to the cable cover.
- Do not put bundled cables in the option cover. Doing so may damage the power cord, resulting in a fire.
- Do not hold the option cover while moving the projector or do not apply excessive force to the option cover. Doing so may damage the option cover, resulting in injury.

 CAUTION	
 BE SURE TO DO	<p>Connecting the power cord to earth</p> <ul style="list-style-type: none"> This equipment is designed to be used in the condition of the power cord connected to earth. If the power cord is not connected to the earth, it may cause electric shock. Please make sure the power cord is earthed properly. Do not use a 2-core plug converter adapter.
 BE SURE TO DO  DO NOT TOUCH WITH WET HANDS  UNPLUG THE POWER CORD	<p>Handling the power cord</p> <ul style="list-style-type: none"> When connecting the power cord to the projector's AC IN terminal, make sure the connector is fully and firmly inserted. Be sure to fix the power cord using the power cord stopper. Loose connection of the power cord could lead to fire or electric shock. Do not connect or disconnect the power cord with wet hands. Doing so could result in electric shock. When cleaning the projector, for safety purposes unplug the power cord from the power outlet beforehand. When moving the projector, first be sure to turn off the power, unplug the power cord from the power outlet and check that all connection cables connecting the projector to other devices have been disconnected. When planning not to use the projector for long periods of time, always unplug the power cord from the power outlet.
 PROHIBITION	<p>Do not use on networks subject to overvoltage.</p> <ul style="list-style-type: none"> Connect the projector's Ethernet/HDBaseT port and LAN port to a network for which there is no risk of overvoltage being applied. Overvoltage applied to the Ethernet/HDBaseT or LAN port could result in electric shock.
 BE SURE TO DO	<p>Lens shift, focus and zoom operations</p> <ul style="list-style-type: none"> When shifting the lens or adjusting the focus or zoom, do so from either behind or to the side of the projector. If adjustments are performed from the front, your eyes could be exposed to strong light and get injured. Keep your hands away from the lens area when performing the lens shift operation. If not, your fingers could get caught in the gap between the cabinet and the lens.

 CAUTION	
 PROHIBITION	<p>Handling batteries</p> <ul style="list-style-type: none"> • Handle batteries with caution. Failure to do so could lead to fire, injury or contamination of the surroundings. <ul style="list-style-type: none"> - Do not short-circuit or take apart batteries or dispose of them in flames. - Do not use batteries other than those specified. - Do not use new batteries together with old ones. - When inserting batteries, pay attention to the polarities (+ and – directions), and be sure to insert them as indicated. • Contact your dealer or local authorities when disposing of batteries.
 PROHIBITION  CAUTION FOR HIGH TEMPERATURE	<p>About the vents</p> <ul style="list-style-type: none"> • Do not obstruct the projector’s vents. Also, do not place such soft objects as paper or cloths underneath the projector. Doing so could lead to fire. Leave sufficient space between the place where the projector is installed and its surroundings. (→ page 27) • Do not touch the exhaust vent area while projecting or immediately after projecting images. The exhaust vent area may be hot at this time and touching it could cause burns.
 PROHIBITION	<p>Moving the projector</p> <ul style="list-style-type: none"> • For moving the projector, make sure you have at least two people. Attempting to move the projector alone could result in back pain or other injuries. • When moving the projector, do not hold the lens section. The focus ring could turn, causing the projector to drop and resulting in injury. Also, if you put your hand on the gap between the cabinet and the lens, the projector may be damaged, falling and causing injury. • When carrying the projector with the lens unit removed, do not touch the mounting area of the lens with your hands. Also, do not put your hand into the recess of the connection terminal. The projector could be damaged or fall down, resulting in injuries. • When moving the projector with the option cover attached, do not hold it by the option cover. The option cover could come lose and the main unit could fall down, causing injuries.
 BE SURE TO DO	<p>Inspecting the projector and cleaning the inside</p> <ul style="list-style-type: none"> • Consult with your dealer about once per year for cleaning of the inside of the projector. Dust could accumulate inside of the projector if it is not cleaned for extended periods of time, leading to fires or malfunction.

 **CAUTION**

 BE SURE TO DO	<p>Attaching/detaching the lens</p> <ul style="list-style-type: none"> • Turn off the projector before attaching or detaching the lens unit. Failure to do so could result in visual impairment. Request your dealer to attach and detach the lens unit in the no entry area (HD).
 BE SURE TO DO	<p>Securing the lens unit with the fall prevention wire</p> <ul style="list-style-type: none"> • If the projector is going to be suspended from a ceiling or another high place, secure the lens unit using the fall prevention wire (sold separately). If the lens unit is not secured, it may fall down if it comes lose.
 BE SURE TO DO	<p>About viewing 3D pictures</p> <ul style="list-style-type: none"> • Before viewing, be sure to read health care precautions that may be found in the user's manual included with your 3D eyeglasses or your 3D compatible content such as Blu-ray Discs, video games, computer's video files and the like. • To avoid any adverse symptoms, heed the following: <ul style="list-style-type: none"> - Do not use 3D eyeglasses for viewing any material other than 3D images. - Allow a distance of 2 m/7 feet or greater between the screen and a user. Viewing 3D images from too close a distance can strain your eyes. - Avoid viewing 3D images for a prolonged period of time. Take a break of 15 minutes or longer after every hour of viewing. - If you or any member of your family has a history of light-sensitive seizures, consult a doctor before viewing 3D images. - While viewing 3D images, if you get sick such as nausea, dizziness, queasiness, headache, eyestrain, blurry vision, convulsions, and numbness, stop viewing them. If symptoms still persist, consult a doctor. • View 3D images from the front of the screen. Viewing from an angle may cause fatigue or eyestrain.

Laser Safety Caution **WARNING**

CLASS 1 LASER PRODUCT OF IEC 60825-1 THIRD EDITION

- The laser module is equipped in this product. Use of controls or adjustments of procedures other than those specified herein may result in hazardous radiation exposure.

 **WARNING**

RG3 PRODUCT OF IEC/EN 62471-5 FIRST EDITION

- No direct exposure to the beam shall be permitted, RG3 IEC/EN 62471-5:2015.
 - Operators shall control access to the beam within the hazard distance and install the product at the height that will prevent exposures of spectators' eyes within the hazard distance.
- This product is classified as Class 1 of IEC 60825-1 Third edition 2014-05 and RG3 of IEC/EN 62471-5 First edition.
Obey the laws and regulations of your country in relation to the installation and management of the device.
 - Outline of laser emitted from the built-in light module:
 - Wave length: 455 nm
 - Maximum power: 257 W (PA1004UL-W/PA1004UL-B), 229 W (PA804UL-W/PA804UL-B)
 - Radiation pattern from the protective housing:
 - Wave length: 455 nm
 - Maximum laser radiation output: 333 mW

Light Module

- A light module containing multiple laser diodes is equipped in the product as the light source.
- These laser diodes are sealed in the light module. No maintenance or service is required for the performance of the light module.
- End user is not allowed to replace the light module.
- Contact qualified distributor for light module replacement and further information.

Label Information

The caution and the explanatory labels are stuck on the below indicated positions.

For Canada / South America

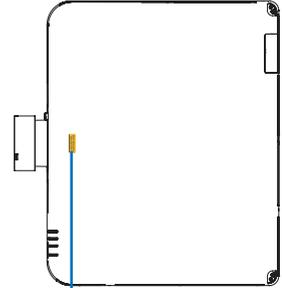
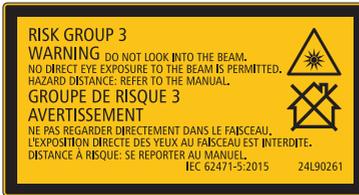
Label 1



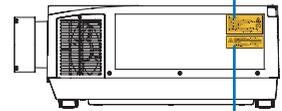
Label 2



Label 3



Label 2



Label 3

Label 1

For other regions

Label 1



Label 2



Label 1

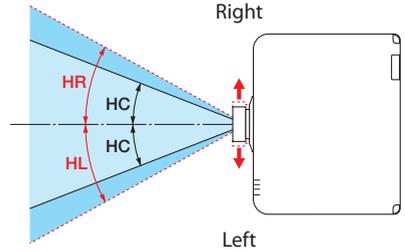
Label 2

Laser light radiation range

The figure below shows the maximum radiation range of the laser light.

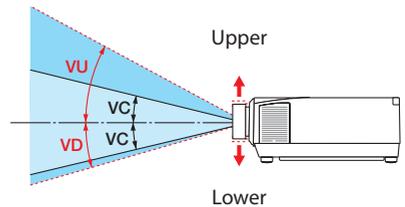
Horizontal angle (unit: degree)

Lens unit	Zoom	Lens position		
		Right most	Center (Reference value)	Left most
		HR	HC	HL
NP11FL		31.8	31.8	31.8
NP12ZL	Tele	27.4	18.0	27.4
	Wide	34.0	22.9	34.0
NP13ZL	Tele	15.1	9.6	15.1
	Wide	28.3	18.6	28.3
NP14ZL	Tele	9.6	6.0	9.6
	Wide	15.1	9.6	15.1
NP15ZL	Tele	6.4	4.0	6.4
	Wide	9.7	6.1	9.7
NP40ZL	Tele	31.7	23.8	31.7
	Wide	41.0	31.8	41.0
NP41ZL	Tele	13.0	9.4	13.0
	Wide	27.9	20.7	27.9
NP43ZL	Tele	6.8	4.9	6.8
	Wide	13.4	9.7	13.4



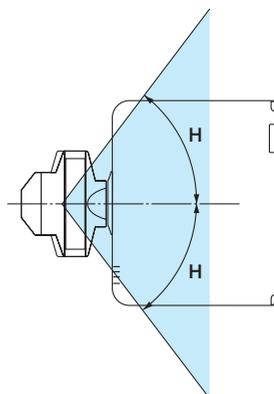
Vertical angle (unit: degree)

Lens unit	Zoom	Lens position		
		Upper most	Center (Reference value)	Lower most
		VU	VC	VD
NP11FL		21.2	21.2	21.2
NP12ZL	Tele	24.0	11.5	13.7
	Wide	30.1	14.8	17.6
NP13ZL	Tele	13.0	6.0	7.2
	Wide	24.8	11.9	14.1
NP14ZL	Tele	8.3	3.8	4.5
	Wide	13.1	6.0	7.2
NP15ZL	Tele	5.5	2.5	3.0
	Wide	8.4	3.8	4.6
NP40ZL	Tele	28.9	15.4	18.3
	Wide	37.8	21.2	24.9
NP41ZL	Tele	11.6	5.9	7.0
	Wide	25.3	13.3	15.8
NP43ZL	Tele	6.1	3.0	3.7
	Wide	12.0	6.1	7.3



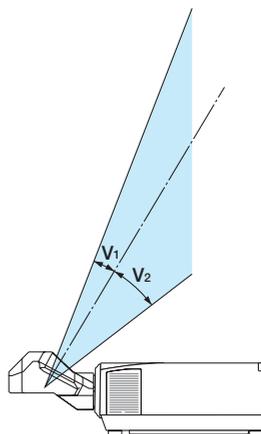
Horizontal angle (unit: degree)

Lens unit	Zoom	
	Tele	Wide
NP44ML	—	55.8



Vertical angle (unit: degree)

Lens unit	Zoom		
	Tele	V1	V2
NP44ML	—	10.7	24.6



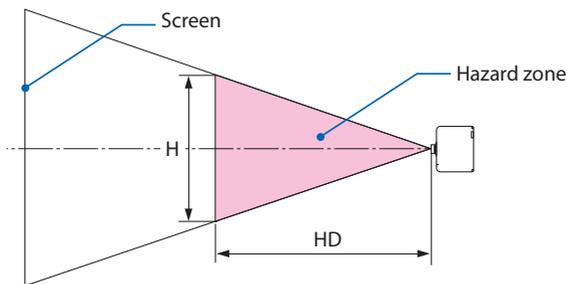
Hazard zone



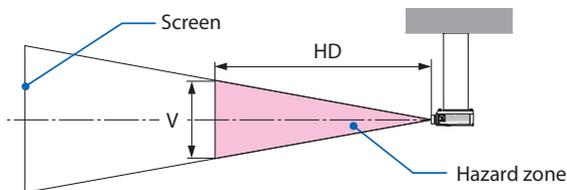
- The below figure describes the radiation zone (hazard zone) of light emitted by the projector that is classified as Risk Group 3 (RG3) of IEC/EN 62471-5 First edition 2015.
- Observe the following precautions when installing the projector.
 - Install the projector to prevent the eyes of the spectators from being exposed to light in the hazard zone.
By providing a precautionary zone or physical barriers, it is possible to prevent human eyes from entering the hazard zone.
 - The manager of the projector (operator) must prevent spectators from entering the hazard zone.

About the hazard zone

Overhead view



Side view



About the precautionary zone

When the manager of the projector (operator) cannot prevent spectators from entering the hazard zone such as in public facilities, it is recommended to secure a space of 1 m or more from the hazard zone as “the precautionary zone” for the safety of the spectators. When installing the projector overhead, it is recommended that the distance between the floor and the hazard zone be at least 3 m in the vertical direction.

**Applicable lens: NP11FL/NP12ZL/NP13ZL/NP14ZL/NP15ZL/NP40ZL/NP41ZL/
NP43ZL**

PA1004UL-W/PA1004UL-B

Lens		Hazard zone (m)		
		HD	H	V
NP11FL		0.3	0.41	0.26
NP12ZL	Wide	0.4	0.38	0.23
	Tele	0.5	0.35	0.22
NP13ZL	Wide	0.5	0.37	0.23
	Tele	1.5	0.52	0.33
NP14ZL	Wide	1.4	0.51	0.32
	Tele	2.5	0.55	0.35
NP15ZL	Wide	2.2	0.51	0.32
	Tele	3.1	0.46	0.29
NP40ZL	Wide	0.3	0.42	0.26
	Tele	0.5	0.48	0.30
NP41ZL	Wide	0.4	0.34	0.21
	Tele	1.5	0.51	0.32
NP43ZL	Wide	1.6	0.51	0.32
	Tele	2.9	0.47	0.30

PA804UL-W/PA804UL-B

Lens		Hazard zone (m)		
		HD	H	V
NP11FL		0.2	0.29	0.18
NP12ZL	Wide	0.2	0.21	0.13
	Tele	0.3	0.22	0.14
NP13ZL	Wide	0.3	0.24	0.15
	Tele	1.3	0.45	0.28
NP14ZL	Wide	1.1	0.41	0.26
	Tele	2.1	0.47	0.29
NP15ZL	Wide	1.8	0.43	0.27
	Tele	2.5	0.38	0.24
NP40ZL	Wide	0.2	0.30	0.19
	Tele	0.4	0.39	0.24
NP41ZL	Wide	0.3	0.26	0.16
	Tele	1.2	0.41	0.26
NP43ZL	Wide	1.3	0.43	0.27
	Tele	2.4	0.39	0.24

Applicable lens: NP44ML

PA1004UL-W/PA1004UL-B

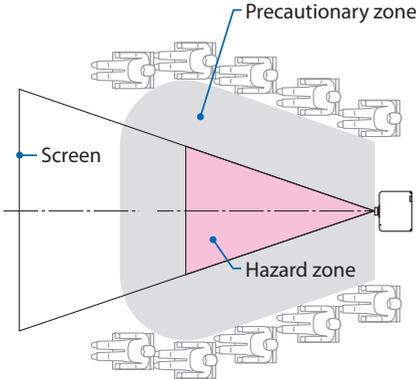
Lens	Hazard zone (m)		
	HD	H	V
NP44ML	0.2	0.69	0.43

PA804UL-W/PA804UL-B

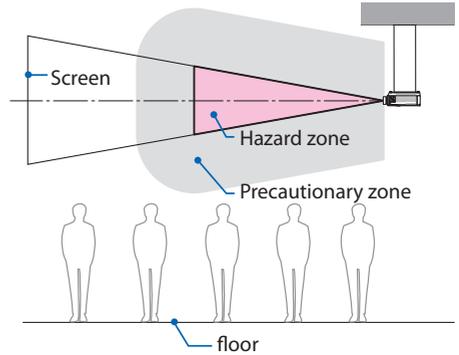
Lens	Hazard zone (m)		
	HD	H	V
NP44ML	0.2	0.69	0.43

**Installation example considering the precautionary zone
(For lens units other than NP44ML)**

① Floor or desktop installation example

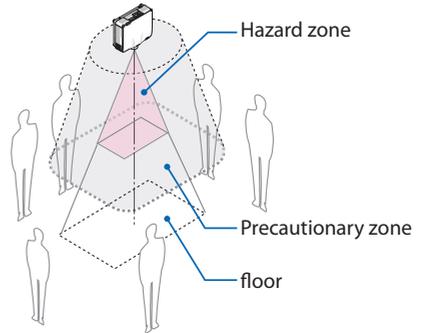
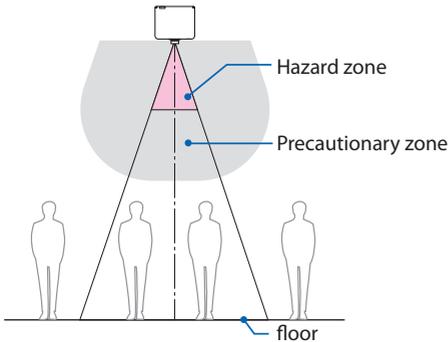


② Ceiling installation example



 CAUTION	<p>If it is expected that spectators will intrude into the hazard zone when installed on the ceiling (for example, if the distance between the floor and the precautionary zone is 2 m or less), it is necessary to prevent spectators from entering that area.</p>
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③ Example of downward projection installed on the ceiling

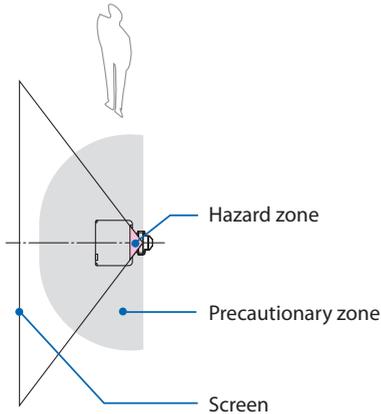


 CAUTION	<p>If the precautionary zone between the floor and the hazard zone cannot be secured, it is necessary to prevent spectators from entering the area around the screen as shown in the figure on the right.</p>
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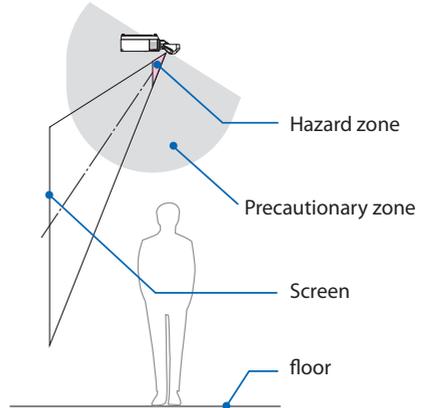
* If using lens shift, please consider the shift of projected image according to the volume of lens shift. Installation example considering the precautionary zone (For lens units other than NP44ML)

**Installation example considering the precautionary zone
(For NP44ML)**

① Floor or desktop installation example



② Ceiling installation example



CAUTION

When installing the NP44ML, there is a risk of intrusion into the hazard zone and the precautionary zone when operating the buttons on the projector. For safety, it is recommended to use the remote control.



CAUTION

If the precautionary zone cannot be secured between the floor and the hazard zone, spectators must be restricted from entering the space between the projector and screen.

* The above figure is an example of a typical installation. It is also necessary to secure the precautionary zone when installing the projector at an angle.



Please follow all safety precautions.

Installing the projector

- This projector is an RG3 product. The projector is for professional use and must be installed in a location where safety is assured. For this reason, be sure to consult your dealer as installation and attachment/detachment of the lens unit must be performed by a professional service personnel. Never try to install the projector by yourself. This may result in visual impairment, etc.
- When planning the layout of the projector, make sure to follow the safety measures listed in the installation manual.
- In order to avoid danger, either install the device within easy reach of a wall outlet or provide a device like a breaker to disconnect power to the projector in emergency.
- Take safety measures to prevent human eyes from entering the hazard zone.
- Select an appropriate lens for the installation location and secure the safety zone set for each lens.

Ensure that appropriate safety measures have been taken when operating the projector, adjusting the light, etc.

- Check whether the appropriate safety zone for the installed lens has been adequately secured. Periodically check the zone and maintain a record of verifications.
- Educate the manager of the projector (operator) about safety before operating the projector.

Using the projector

- Instruct the manager of the projector (operator) to perform inspections (Including safety checks on light emitted by the projector) before powering the projector on.
- Instruct the manager of the projector (operator) to be able to control the projector whenever the projector is powered on in case of an emergency.
- Instruct the manager of the projector (operator) to keep the installation manual, user's manual and inspection records in an easy-to-reach place.
- Instruct them to determine whether the projector conforms to the standards of each country and region.

Cable information

Use shielded cables or cables attached ferrite cores so as not to interfere with radio and television reception.

For details, please refer to User's Manual.

Notice Concerning Electromagnetic Interference (EMI)

WARNING:

Operation of this equipment in a residential environment could cause radio interference.

Disposing of your used product



In the European Union

EU-wide legislation as implemented in each Member State requires that used electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes projectors and their electrical accessories. When you dispose of such products, please follow the guidance of your local authority and/or ask the shop where you purchased the product.

After collecting the used products, they are reused and recycled in a proper way. This effort will help us reduce the wastes as well as the negative impact to the human health and the environment at the minimum level.

The mark on the electrical and electronic products only applies to the current European Union Member States.

Outside the European Union

If you wish to dispose of used electrical and electronic products outside the European union, please contact your local authority and ask for the correct method of disposal.



For EU: The crossed-out wheeled bin implies that used batteries should not be put to the general household waste! There is a separate collection system for used batteries, to allow proper treatment and recycling in accordance with legislation.

According the EU directive 2006/66/EC, the battery can't be disposed improperly. The battery shall be separated to collect by local service.

(for Germany only)

Machine Noise Information Regulation - 3. GPSGV,

The highest sound pressure level is less than 70 dB (A) in accordance with EN ISO 7779.

Information of the AUDIO OUT mini jack

The AUDIO OUT mini jack does not support earphone/headphone terminal.

Cautions for ensuring the projector's performance

- Do not install in places subject to vibrations or shocks.
If installed in places where the vibrations from power sources and the like are conveyed, or in vehicles or on vessels, etc. the projector could be affected by vibrations or shocks that may damage internal parts and lead to malfunction.
Install in a place not subject to vibrations or shocks.
- Do not install near high voltage power lines or power sources.
The projector may be affected by interference if it is installed near a high voltage power line or a power source.
- Do not install or store in such places as those described below. Doing so could lead to malfunction.
 - Places where strong magnetic fields are generated
 - Places where corrosive gases are generated
- If intense light like laser beams enters from the lens, it could lead to malfunction.
- Consult your dealer before using in places where much cigarette smoke or dust is present.
- Select [HIGH] in [FAN MODE] if you continue to use the projector for consecutive days.
- When the same still image is projected for a long period of time with a computer, etc. the pattern of the image may remain on the screen after the projection is stopped, but it will disappear after a while. This happens due to the properties of liquid crystal panels, and is not a malfunction. We recommend using a screensaver on the computer side.
- When using the projector at altitudes of about 5500 feet/1700 meters or higher, be sure to set the [FAN MODE] to [HIGH ALTITUDE]. If not, the inside of the projector may get hot, leading to malfunction.
- When the projector is used at high altitudes (places where the atmospheric pressure is low), it may be necessary to replace the optical parts sooner than usual.
- About moving the projector
 - Request your dealer to detach the lens unit once, and be sure to attach the lens cap so as not to scratch the lens. Also, attach a dust protective cap to the projector.
 - Do not subject the projector to vibrations or strong shocks.
The projector could be damaged otherwise.
- Do not use the tilt feet for purposes other than adjusting the projector's tilt.
Improper handling, such as carrying the projector by the tilt feet or using it leaned against a wall, could lead to malfunction.
- Do not touch the surface of the projection lens with bare hands.
Fingerprints or dirt on the surface of the projection lens will be enlarged and projected on the screen. Do not touch the surface of the projection lens.
- Do not unplug the power cord from the projector or the power outlet while projecting. Doing so could cause deterioration of the projector's AC IN terminal or power plug contact. To interrupt the AC power supply while images are being projected, use a power strip switch, a breaker, etc.
- About handling of the remote control
 - The remote control will not work if the projector's remote signal sensor or the remote control's signal transmitter is exposed to strong light or if there are obstacles between them that obstruct the signals.
 - Operate the remote control from within 20 meters from the projector, pointing it at the projector's remote signal sensor.
 - Do not drop the remote control or handle it improperly.

- Do not let water or other liquids get on the remote control. Should the remote control get wet, wipe it off immediately.
- Avoid using in hot and humid places as far as possible.
- When planning not to use the remote control for long periods of time, remove both batteries.
- Take measures to prevent external light from shining on the screen. Make sure only the light from the projector shines on the screen. The less external light on the screen, the higher the contrast and the more beautiful the images.
- About screens
Images will not be clear if there is dirt, scratches, discoloration, etc. on your screen. Handle the screen with care, protecting it from volatile substances, scratches and dirt.

Precautions when installing the projector at an angle

This projector can be installed universally in every angle. When installing the projector at the angles shown below, the separately sold option cover is required to be attached to the projector. Be sure to ask your dealer to attach the option cover.

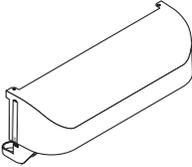
WARNING

- For safety reasons, be sure to attach the option cover.
- Be sure to attach the option cover to the projector when the projector's power is turned on. This may result in fire.

Model name of option cover

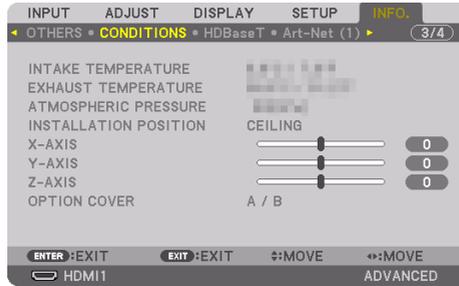
NP13CV-W for PA1004UL-W/PA804UL-W
NP13CV-B for PA1004UL-B/PA804UL-B

Two covers are packaged with the option cover NP13CV-W and NP13CV-B.

Option cover A: for attaching to the connection terminal area	
Option cover B: for attaching to the exhaust vent	

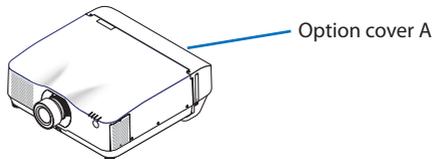
The drawings below show the installation angle required to attach the option cover A and B respectively.

- Both option cover A and B may need to be attached depending on the installation position of the projector.
- Whether the option cover needs to be attached in the current installation position can be checked on the [INFO.] screen of the on-screen menu.

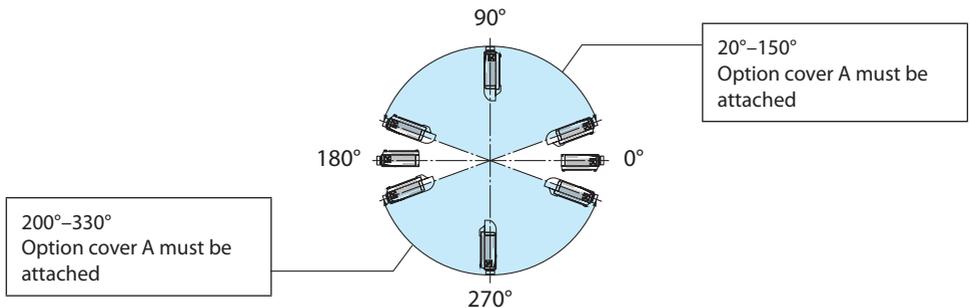


OPTION COVER	- / -	Option cover is not required
	A / -	Only option cover A needs to be attached
	- / B	Only option cover B needs to be attached
	A / B	Both of option covers A and B need to be attached

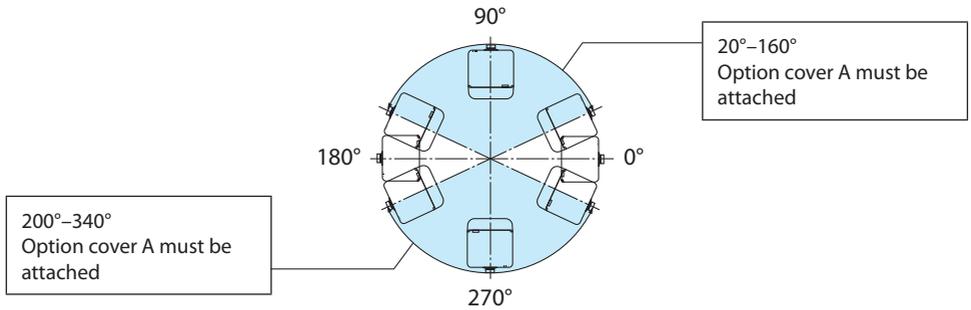
Installation angles required to attach the option cover A



In the direction of back and forth



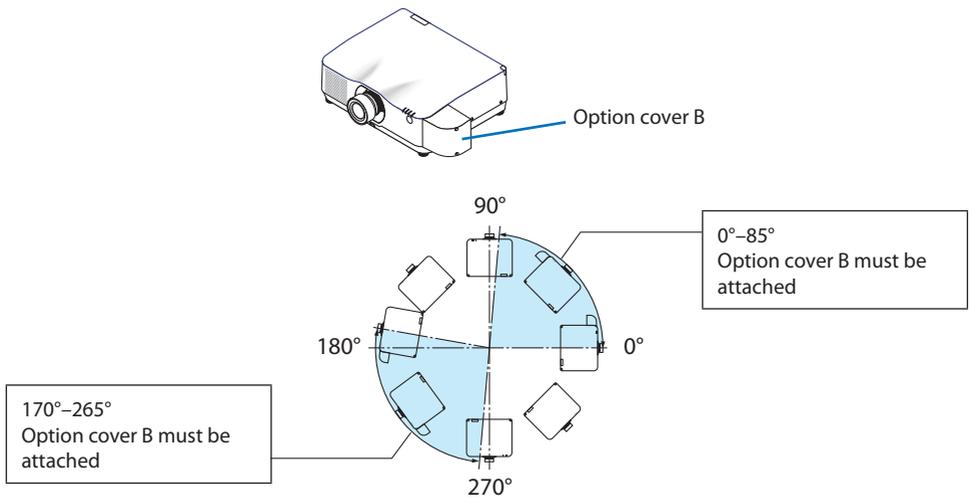
In the direction of left and right



NOTE:

- The drawings show the image of installation angle as a reference. They are slightly from the actual one.

Installation angles required to attach the option cover B

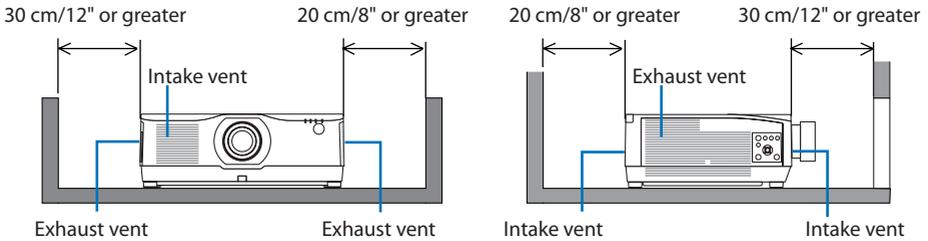


NOTE:

- The drawings show the image of installation angle as a reference. They are slightly from the actual one.

Clearance for Installing the Projector

- When installing the projector, keep sufficient space around it, as described below. If not, the hot exhaust emitted from the projector may be taken back in. Also, make sure no wind from an air-conditioner hits the projector. The projector's heat control system may detect an abnormality (temperature error) and automatically shut off the power.



NOTE:

- In the above figure, it is assumed that there is sufficient space above the projector.
- When using multiple projectors together for multi-screen projection, provide sufficient space around the projectors for air intake and exhaust. When the intake and exhaust vents are obstructed, the temperature inside the projector will rise and this may result in a malfunction.



Precautions for Ceiling Installation

Do not install the projector in the following places. Attached substances such as oil, chemicals and moisture may cause deformation or cracks of the cabinet, corrosion of the metal parts, or malfunction.

- Outdoors and places with humid or dust
- Places exposed to oil smoke or steam
- Places where corrosive gases are generated

About Copyright of original projected pictures:

Please note that using this projector for the purpose of commercial gain or the attraction of public attention in a venue such as a coffee shop or hotel and employing compression or expansion of the screen image with the following functions may raise concern about the infringement of copyrights which are protected by copyright law.

[ASPECT RATIO], [KEystone], Magnifying feature and other similar features.

[AUTO POWER OFF] Function

The factory default setting for [AUTO POWER OFF] is 15 minutes. If no input signal is received and no operation is performed on the projector during 15 minutes, the projector is automatically powered off for saving the power consumption. In order to control the projector by an external device, set the [AUTO POWER OFF] to [OFF].

1. Attachment/detachment of parts sold separately

1-1. Lens unit

Nine separate bayonet style lenses can be used with this projector. The descriptions here are for the NP41ZL lens. Mount other lenses in the same manner.

Important:

- After installing or replacing the lens unit, press the ZOOM/L-CALIB. button on the projector to carry out [LENS CALIBRATION]. By carrying out [LENS CALIBRATION], the adjustment range of the lens shift is calibrated.
- [LENS CALIBRATION] is not available for the lens unit NP44ML.

WARNING:

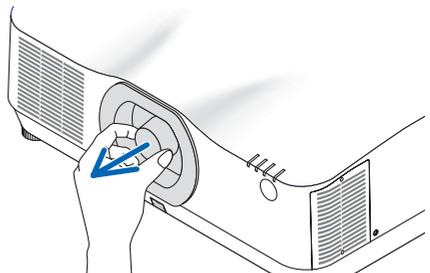
(1) Turn off the power and wait for the cooling fan to stop, (2) disconnect the power cord and wait for the unit to cool before mounting or removing the lens. Failure to do so can result in eye injury, electric shock, or burn injuries.

Important:

- The projector and lenses are made of precision parts. Do not subject them to shock or excessive forces.
- Remove the separately sold lens when moving the projector. If not, the lens could be subject to shock while the projector is being moved, damaging the lens and the lens shift mechanism.
- When dismantling the lens from the projector, return the lens position to the home position before turning off the power. Failure to do so may prevent the lens from being mounted or dismantled because of narrow space between the projector and the lens.
- Never touch the lens surface while the projector is operating.
- Be very careful not to let dirt, grease, etc., on the lens surface and not to scratch the lens surface.
- Perform these operations on a flat surface over a piece of cloth, etc., to prevent the lens from getting scratched.
- When leaving the lens off the projector for long periods of time, mount the dust cap on the projector to prevent dust or dirt from getting inside.
- After installing the lens unit NP44ML on the projector, be sure to secure it to the projector using the support kit (NP02LK) sold separately. For more details, see the handling instructions of the support kit.

Mounting

1. Remove the dust cap from the projector.

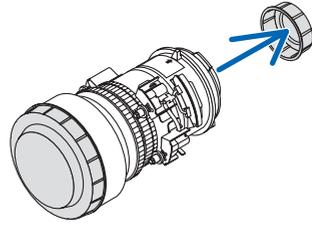


1. Attachment/detachment of parts sold separately

2. Remove the lens cap on the back of the lens.

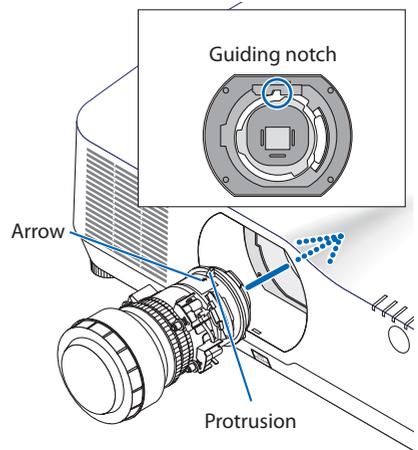
NOTE:

- Make sure to remove the lens cap at the unit back side. If the lens unit with the lens cap remaining on is installed on the projector, it may cause of malfunction.



3. Insert the lens onto the projector facing the arrow on the lens-label upward.

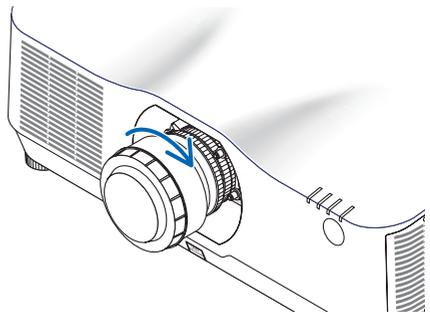
Insert the lens slowly all the way in.



4. Turn the lens clockwise.

Turn until a click is heard.

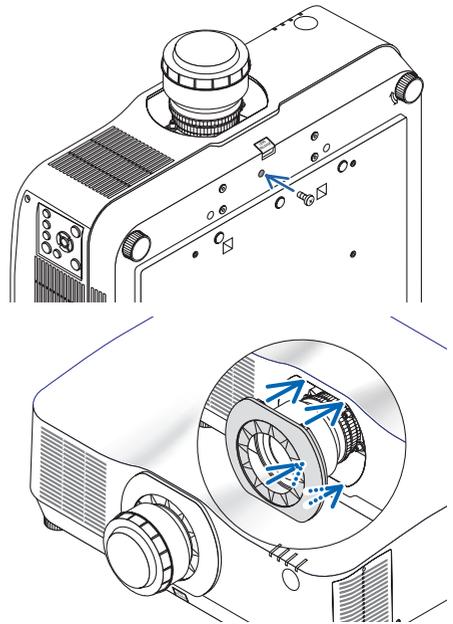
The lens is now fastened onto the projector.



1. Attachment/detachment of parts sold separately

TIP:

- Fasten the lens theft prevention screw included with the projector to the bottom of the projector so that the lens cannot be removed easily.
- Attach the enclosed lens mask if you want to hide the gap between the projector and lens.
- The lens mask cannot be attached when using the NP44ML lens unit.
- The lens mask may cover the zoom lever or zoom ring and hinder zoom adjustments when using NP12ZL/NP13ZL/NP14ZL/NP15ZL lens units.



Removing

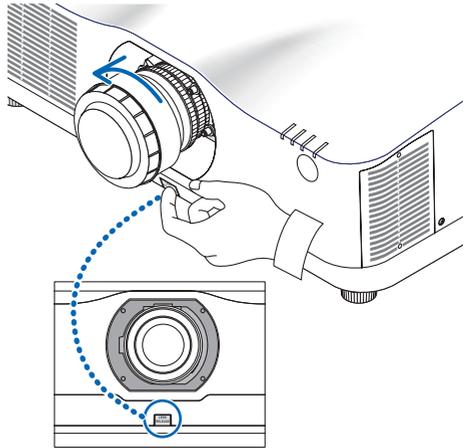
Preparations:

1. Turn on the projector and display an image.
 2. Press and hold the SHIFT/HOME POSITION button over 2 seconds. The lens position will be moved to the home position.
 3. Turn off the main power switch, and then unplug the power cord.
 4. Wait until the projector cabinet is cool enough to handle.
 5. If the lens theft prevention screw has been set on, remove it. In addition, remove the lens mask if one is fitted.
- 1. While pressing the lens release button at the bottom of lens mounting section on the projector's front panel fully in, turn the lens counterclockwise.**

The lens comes off.

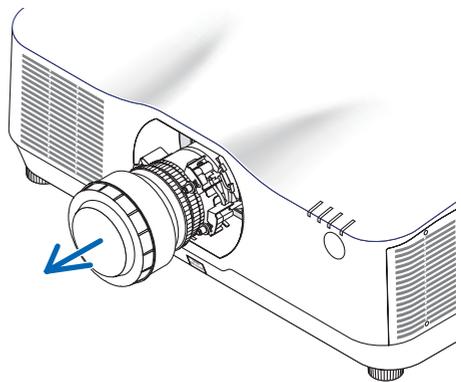
NOTE:

- Check the following areas if the lens unit cannot be removed even when the lens release button is pressed.
 1. The lens release button may be locked sometimes. In that case, turn the lens fully to the right. The lens release button lock will be released.



2. Slowly pull the lens off the projector.

- After removing the lens, mount the lens caps (front and back) included with the lens before storing the lens.
- If no lens is going to be mounted on the projector, mount the dust cap included with the projector.



1-2. Option cover

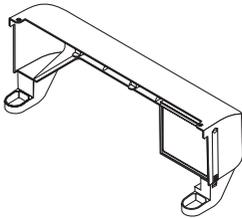
Model name of option cover

NP13CV-W for PA1004UL-W/PA804UL-W

NP13CV-B for PA1004UL-B/PA804UL-B

The option covers A and B are packaged with the option cover NP13CV-W and NP13CV-B.

For the following cases, attach the separately sold option cover to the projector.

<p>Option cover A</p> <ul style="list-style-type: none">• To make the appearance clean by covering the connected cables• To install the projector with its rear upward or downward	
<p>Option cover B</p> <ul style="list-style-type: none">• To install the projector with its exhaust vents upward or downward	

For installation angles required to attach the option cover, refer to page 24.

WARNING

- When installing the projector at an angle, be sure to attach the option cover for safety.
- Be sure to attach the option cover to the projector when the projector's power is turned on.

CAUTION

About option cover

- After attaching the option cover to the projector, be sure to tighten the screws. If you fail to do so, the option cover may come off and cause injury, or the option cover may fall and cause damage.
- Do not bundle the power cord and place it under the option cover. Doing so could lead to fire.
- Do not move the projector by holding the option cover or do not use excessive force to the option cover. Doing so can cause damage to the option cover, resulting in injury.

Preparations:

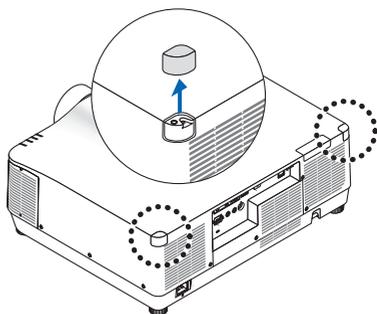
- Connect the cables to the projector (the connection cords are omitted from the diagrams). At this moment, do not connect the power cord.
- Prepare a Phillips screwdriver.
- Place the projector on a soft cloth so as not to scratch the cabinet surface.

• Option cover A

Mounting

1. Remove the two corner caps from the projector.

- Keep the removed corner caps for future use.



2. Turn over the projector.

CAUTION

- For moving the projector, make sure you have at least two people. Attempting to move the projector alone could result in back pain or other injuries.

3. Attach the option cover A to the projector.

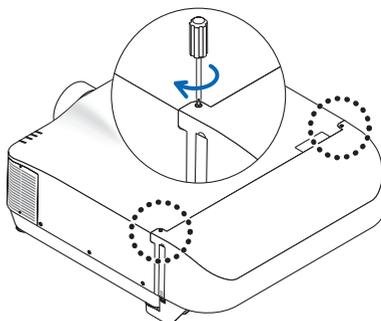
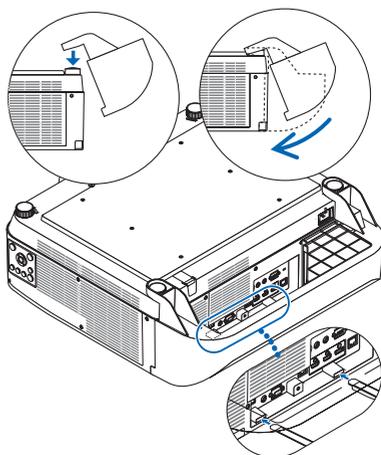
- ① Shorten the projector tilt foot to the minimum height.
- ② Hang the two hooks of the option cover A on the projector tilt foot.
- ③ Align the two screw fixing parts of the option cover A with the place of the corner caps that were removed at step 1.

At this time, the two hooks in the option cover will enter the grooves in the projector.

- If the hooks do not enter easily, check the positions of the grooves. Do not press the hooks in by force.
- Be careful not to let the cables get pinched by the option cover A.

4. Turn the two option cover A screws clockwise.

- Tighten the screws securely.



Removing

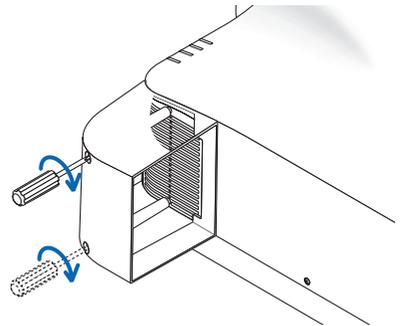
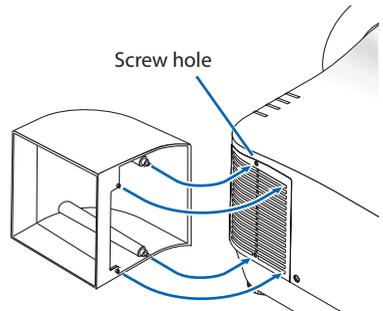
1. Turn the two option cover A screws counterclockwise until it turns loosely.
 - The screws are not removable.
2. Remove the option cover A.

Hold up the option cover A to release its two hooks from projector tilt foot.
3. Attach the two corner caps to the projector.

• Option cover B

Mounting

1. Press the two protrusions on option cover B against the slits in the projector's exhaust vent.
 - Line up the upper protrusion with the slit at the very top, the lower protrusion with the slit at the very bottom.
2. Supporting option cover B by hand, turn the two screws clockwise to tighten them.
 - Tighten the screws securely.



Removing

1. Supporting option cover B by hand, turn the two screws counterclockwise to loosen them until they turn freely.
 - The screws are not removable.
2. Remove the option cover B.

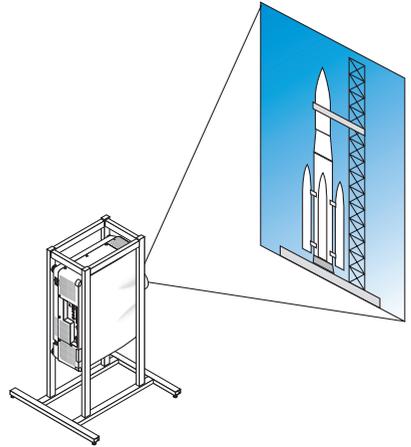
2. Special installation precautions

2-1. For ceiling installation

- Never try to install the projector yourself in such cases. The projector could drop and cause injury.
- When installing suspended from the ceiling, use a power outlet that is within reach so the power cord can be easily plugged and unplugged.
- Do not install the projector in the following places. Attached substances such as oil, chemicals and moisture may cause deformation or cracks of the cabinet, corrosion of the metal parts, or malfunction.
 - Outdoors and places with humid or dust
 - Places exposed to oil smoke or steam
 - Places where corrosive gases are generated
- Make sure if the projector is fixed on the surface that has enough durability to stand the whole projector weight (the projector weight, the lens unit weight, and the ceiling mount weight in total) for a long time.
- Use fall prevention wire ropes to prevent the projector from falling.
 - Use commercially available metal fittings to connect a sturdy part of the building or structure to the projector with the fall prevention wire ropes.
 - Use commercially available metal fittings and fall prevention wire ropes that have sufficient strength enough to withstand the combined weight of the projector, lens, and ceiling mount.
 - When installing the fall prevention wire ropes, do not apply any load on the projector. Tie your wire rope so that it is slightly slack.

2-2. For portrait projection (vertical orientation)

Portrait screens from a computer can be projected by installing the projector in a vertical orientation.



Precautions during installation

- Please do not install the projector in a vertical orientation on top of the floor or table on its own. If not, the projector may fall over, resulting in injury, damage or malfunction. Also, the exhaust vent may be obstructed, resulting in the projector getting warm and the possibility of fire and malfunction occurring.
- A stand for supporting the projector needs to be made for portrait projection and for installing the projector in universal angle. In this case, the stand must be designed such that the center of gravity of the projector is located well within the legs of the stand. If not, the projector may fall over and result in injury, damage and malfunction.

Design and manufacturing conditions for the stand

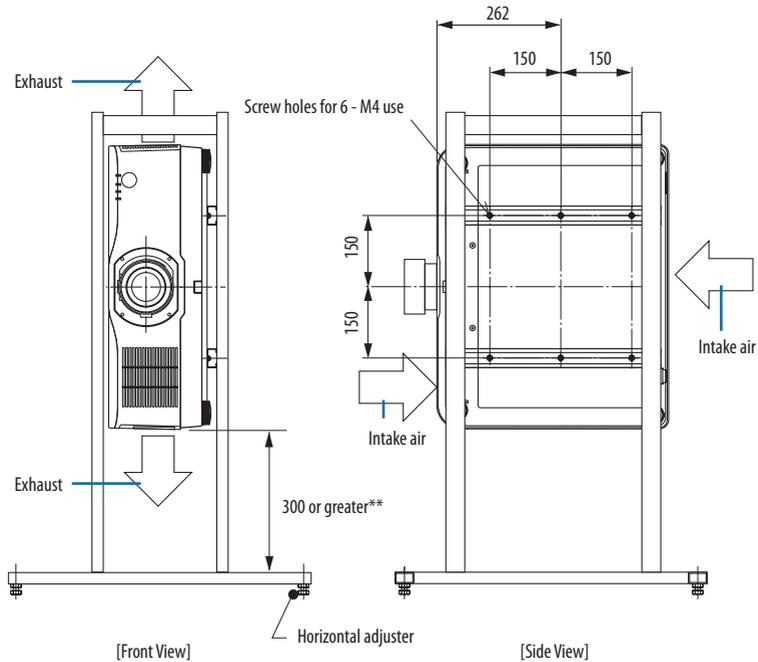
Please engage an installation service provider for the design and manufacture of the customized stand to be used for portrait projection. Please ensure that the following are complied with when designing the stand.

1. Secure sufficient space between the projector and the floor. (→ [next page](#))
2. Use the four screw holes at the back of the projector to secure it to the stand.
Screw hole center dimension: width 300 mm, lengthwise pitch 150 mm
Screw hole dimension on the projector: M4 with a maximum depth of 8 mm.
 - * Please design the stand such that the rear legs at the back of the projector do not contact the stand. The front legs can be turned and removed.
3. Horizontal adjustment mechanism (for example, bolts and nuts in four locations)
4. Please design the stand such that it does not topple over easily.

Reference drawings

* The drawing showing the dimensional requirements is not an actual stand design drawing.

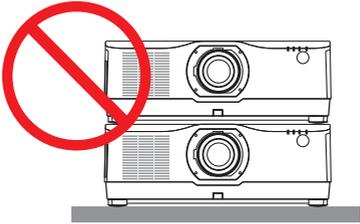
(Unit: mm)



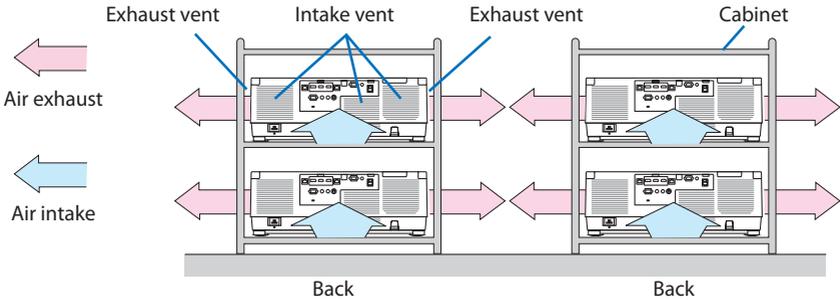
** The example shows the right side of the body (side where the control unit is located) facing downwards. To make the left side of the body (side where the label is pasted) face downwards, leave a space of 200 mm or more.

2-3. For multi-Screen projection

- The projector does not support stack installation. Do not stack projectors directly on top of each other. Failure to do so may cause damage or failure.



- When using multiple projectors together for multi-screen projection, provide sufficient space around the projectors for air intake and exhaust. When the intake and exhaust vents are obstructed, the temperature inside the projector will rise and this may result in a malfunction.



 **WARNING**

Please use a sturdy cabinet that can withstand the weight of the projector for the installation.

In Europe

Sharp NEC Display Solutions Europe GmbH
Address:
Landshuter Allee 12-14
D-80637 Munich, Germany
Telephone: +49 89 99699 0
Email: infomail@sharpnec-displays.eu

In North and South America

Sharp NEC Display Solutions of America, Inc.
Address:
3250 Lacey Rd, Ste 500
Downers Grove, IL 60515 U.S.A.
Telephone: +1 800-632-4662
Email: techsupport@sharpnec-displays.com

In Oceania

Australia, DrGroup Global
Address:
Unit 3, 277-281 Sir Donald Bradman Drive,
DOWANDILLA SPA 5033
CUSTOMER CALL CENTRE:
Telephone: 1300 632 435
Email: necsupport@thedrgroup.com.au

New Zealand, DrGroup ZN

Address:
28 Walls Road, Penrose,
Auckland, New Zealand
CUSTOMER CALL CENTRE:
Telephone: 0508 855 911
Email: necsupport@thedrgroup.co.nz

In Asia

Sharp NEC Display Solutions, Ltd.
Address:
686-1, Nishioji, Oi-Machi, Ashigarakami-Gun,
Kanagawa 258-0117, Japan
Telephone: +81 465 85 2369

NEC (China) Co., Ltd.

Address:
6F, Landmark diplomatic office building D2,
No. 19 East Road, Chaoyang District, Beijing
100600, R.P.C.
Telephone: 010-59342706

NEC Hong Kong Ltd.

Address:
25/F, The Metropolis Tower, 10 Metropolis
Drive, Hunghom, Kowloon, Hong Kong
Telephone: +852 2369 0335

NEC Taiwan Ltd.

Address:
7F, No. 167, SEC. 2, Nan King East Road,
Taipei, Taiwan, R.O.C.
Telephone: +886 2 8500 1710

NEC Asia Pacific Pte. Ltd.

Address:
80 Bendemeer Road,
#05-01/02 Hyflux Innovation Centre,
Singapore 339949
Telephone: +65 6799 6188

NEC Corporation of Malaysia Sdn Bhd

Address:
Suite 20-01, Level 20, The Gardens North
Tower, Mid Valley City, Lingkaran Syed Putra,
59200 Kuala Lumpur
Telephone: +603-2299 6322