

SAMSUNG

Outdoor Installation Guide

OHN

OH85N/(LH85OHNSKGB/**)

OH85N-D(K)/(LH85OHNDKGB/**)

OH85N/(LH85OHNSLGB/**)

Follow the instructions provided in this guide when installing the product.

Samsung will not provide warranty coverage for problems that may arise as a result of failure to follow the guide.

The color and shape of the product may vary. In addition, instructions in the installation guide may change without prior notice when necessary to improve the product.

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OH85N/(LH85OHNSKGB/**)

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**OH85N/
(LH850HNSKGB/***)**

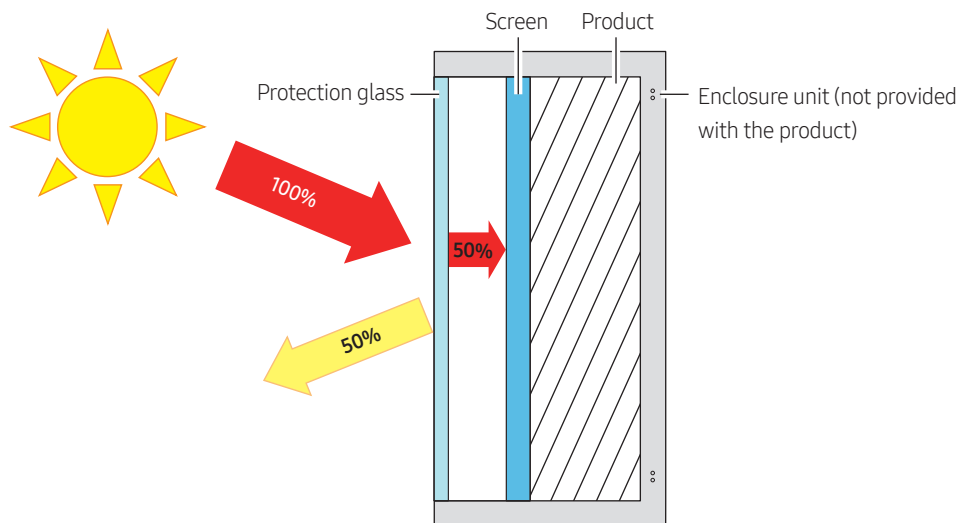
01 Prior to Installation

- Please contact our Tech Consulting team for support through your local Presales team before installing the Kit Model.
- This model does not support double-sided display.

Protection glass: specifications and installation guide

This product does not have a protection glass on the panel front. Add a protection glass to the front side of the enclosure unit before use.

Specification of the protection glass



- Use a protection glass that can block off at least 50 % of the solar heat the unit receives.

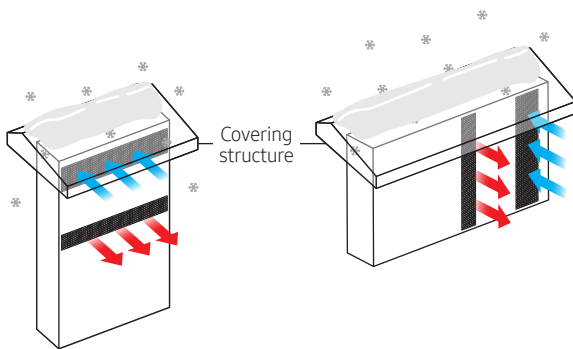
Installing the protection glass

Samsung guarantees the product's water and dust resistance performance (IP56). This guarantee, however, does not cover any issues resulted from the choice of non-recommended protection glass or installation method. (Examples: Issues caused by the ingress of dust or humidity from outside or due to insufficient insulation against solar heat, e.g., dust, dirt, wetness inside the protection glass)

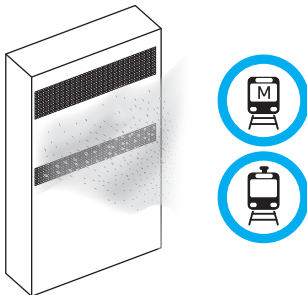
- Maintain 9.5 mm - 17 mm of clearance between the protection glass and LCD panel surface.
- Contact Samsung for additional technical support.

- The guide for OH85N/(LH85OHNSKGB/**) only applies when the product is used with an enclosure unit that has a protective glass added to the front side.

Surrounding environment



- The airway into and out of the product can be blocked when the inlet (or outlet) is covered by a pile of frozen snow, dust, or tree leaves. Install a covering structure to avoid matters piling directly onto the inlet. Blocked ventilation due to snow or dust covering the inlet or outlet may cause a malfunction.



- The product can be used in a train or subway station.
The product is designed to keep out iron dust.

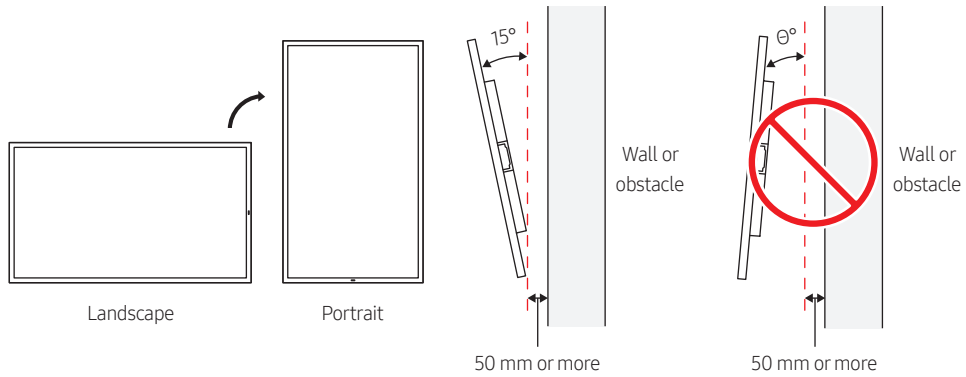


- When installed in beach area, make sure the display is placed where seawater cannot reach.
- Ensure the display unit installed location is within safe distance from the possible contact from rising seawater due to strong winds due to storm or other natural phenomenon.

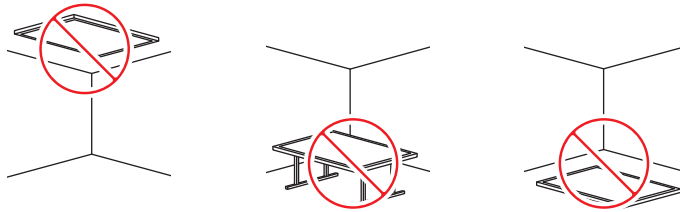
- The guide for OH85N/(LH85OHNSKGB/**) only applies when the product is used with an enclosure unit that has a protective glass added to the front side.

Rotation and tilt angle

- This product can be installed in Landscape or Portrait orientations.
- This product can be installed in a tilted position on a vertical wall or an obstacle, up to 15°.
- Contact Samsung Customer Service Center for further details.



- Do not use this model installed on a ceiling, floor, or table.



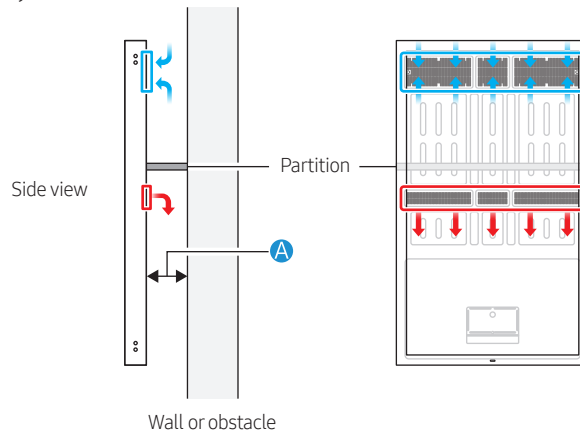
- The guide for OH85N/(LH85OHNSKGB/**) only applies when the product is used with an enclosure unit that has a protective glass added to the front side.

Clearance for installation

Clearance for installing the product alone

When installing the product close to the wall, maintain the clearance (A) in order to secure air flow.

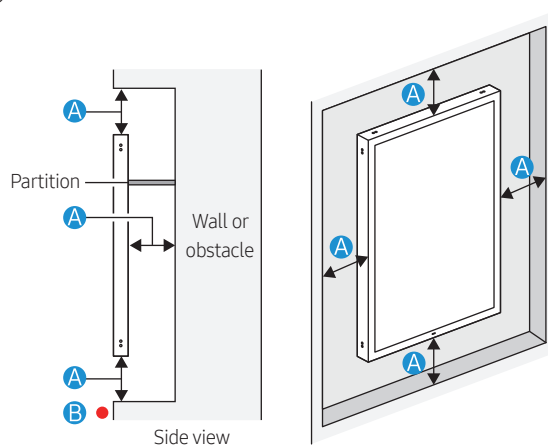
- Clearance from the wall (A)
 - Example 1) Atmospheric temperatures under 35 °C without direct sunlight: 60 mm or more
 - Example 2) Exposure to direct sunlight: 200 mm or more
- Remove any obstacles near the inlet and outlet that may affect air flow.
- Add partitions between the product and walls and make sure there is no gap between them to prevent discharged air from flowing back into the inlet.
- If the unit is subjected to excess heat due to an insufficient gap, this may cause a malfunction, which will not be covered by the warranty.



Clearance for built-in installation

When installing built-in to the wall, maintain the clearance (A) from the back, top, bottom, and sides of the product in order to secure air flow.

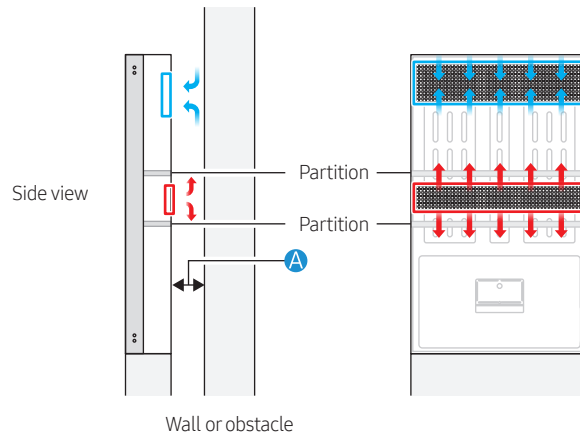
- Clearance from the wall (A)
 - Example 1) Atmospheric temperatures (B) under 35 °C without direct sunlight: 60 mm or more
 - Example 2) Exposure to direct sunlight: 200 mm or more
- Add partitions between the product and walls and make sure there is no gap between them to prevent discharged air from flowing back into the inlet.
- If the unit is subjected to excess heat due to an insufficient gap, this may cause a malfunction, which will not be covered by the warranty.



Clearance for installing with the enclosure unit

When installing an enclosure unit close to the wall, maintain the clearance in order to secure air flow. Consult your provider for detailed requirements before installing the product. Excessive heat due to the use of the enclosure unit with an obstacle or a wall may cause a malfunction or a problem with the product.

- Clearance (A): 200 mm or more
- Remove any obstacles near the inlet and outlet that may affect air flow.
- If the unit is subjected to excess heat due to an insufficient gap, this may cause a malfunction, which will not be covered by the warranty.

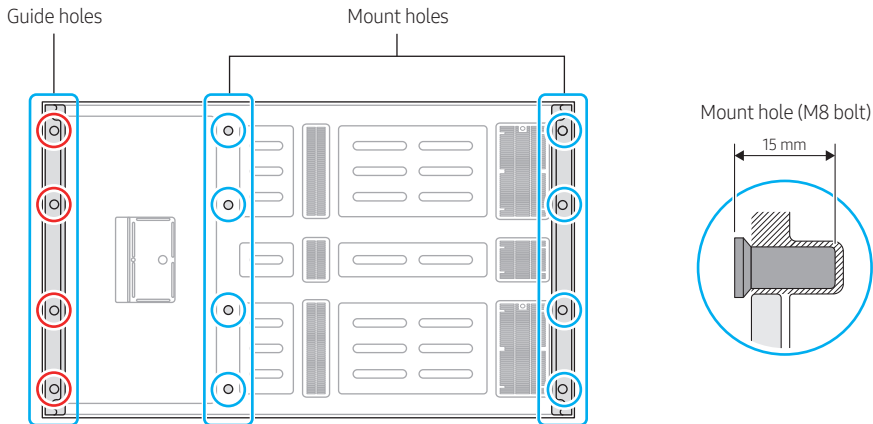


- The guide for OH85N/(LH85OHNSKGB/**) only applies when the product is used with an enclosure unit that has a protective glass added to the front side.

Installing the wall-mount

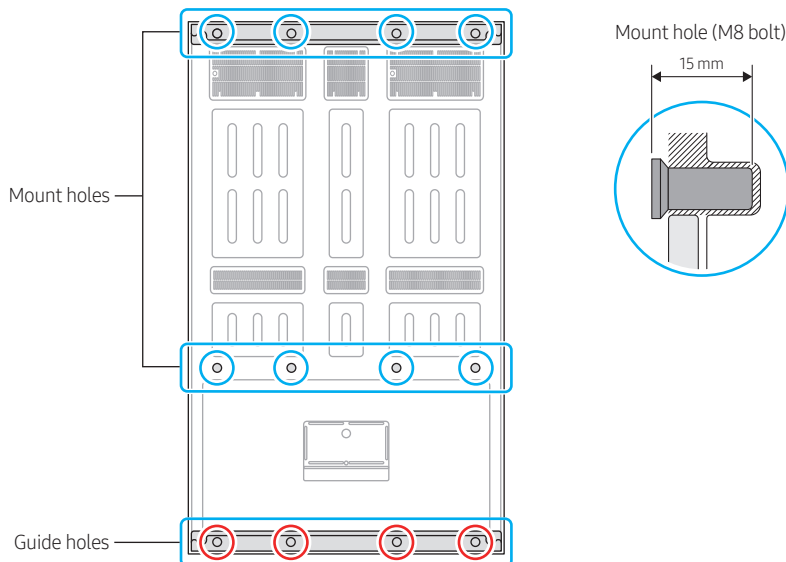
Landscape installation

- Do not use the 4 holes on the left as they are NOT mount holes.
- Use M8 bolts in the 8 holes for mounting, 4 in the center and 4 on the right.
Choose the length based on the mount thickness. The mount hole depth for this product is 15 mm (except the mount).
Use the M8 bolts that can be fastened into at least 10 mm out of the 15 mm holes after passing through the mount.
- M8 bolts are not included.



Portrait installation

- Do not use the 4 holes at the bottom as they are NOT mount holes.
- Use M8 bolts in the 8 holes for mounting, 4 at the top and 4 in the center.
Choose the length based on the mount thickness. The mount hole depth for this product is 15 mm (except the mount).
Use the M8 bolts that can be fastened into at least 10 mm out of the 15 mm holes after passing through the mount.
- M8 bolts are not included.



- The guide for OH85N/(LH85OHNSKGB/**) only applies when the product is used with an enclosure unit that has a protective glass added to the front side.

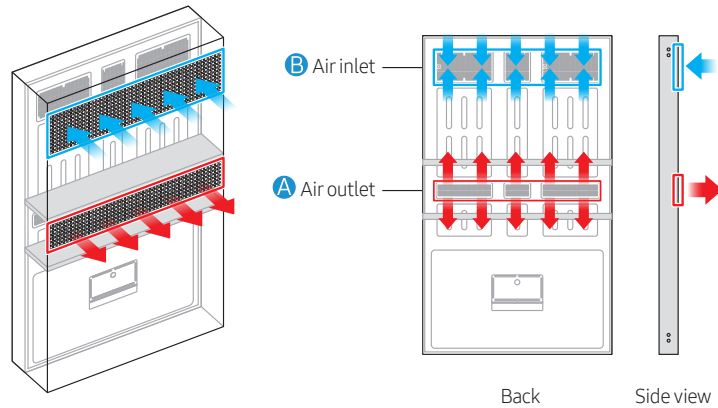
02 Enclosure unit design guide

- Contact our Tech Consulting team for support when you wish to use the product with an enclosure unit. The following provides a basic guide and information for designing an enclosure unit.

Airflow direction

This product uses cooling fans to take in outside air to lower the internal temperature and discharge the hot air.

- When installing the product, remove any obstacles near the air inlet and outlet that may affect airflow.

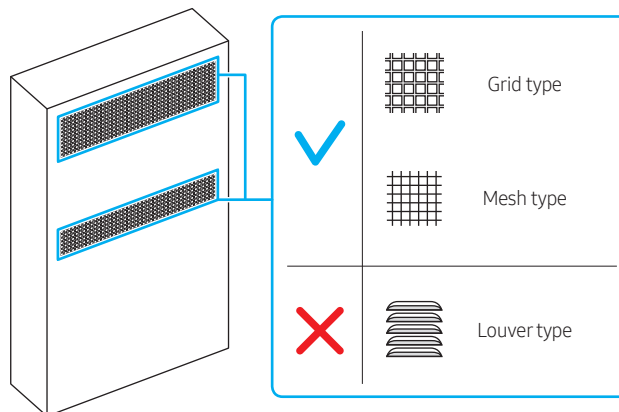


Inlet and outlet types

Ventilation opening ratio for air inlet and outlet should be minimum 70%

Air inlet and outlet should be grid or mesh types.

- Do not use the louver type as it has a limited intake size.

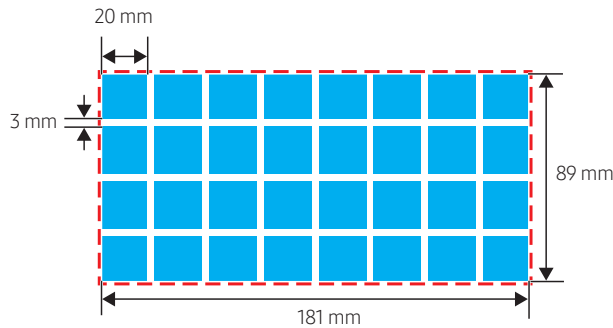


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Total open area of the ventilation holes and ratio

Follow the guide when combining the product with the enclosure unit.

- If the instructions provided in this guide are not observed, the cooling system may not work properly and may cause a malfunction, which will not be covered by warranty.
- Calculating Total open area of the ventilation and Ventilation opening ratio



 Total Area of the Ventilation: $181 \times 89 = 16,109 \text{ mm}^2$

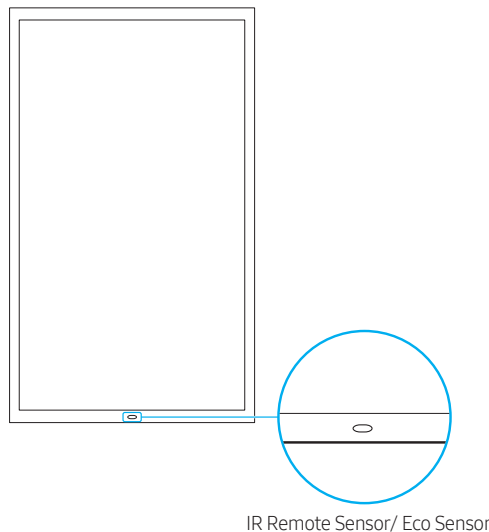
 Total open area of Ventilation holes : $20 \times 20 \times 32 = 12,800 \text{ mm}^2$

$$\text{Ventilation opening ratio: } \frac{\text{Total open area of Ventilation holes}}{\text{Total Area of the Ventilation}} = \frac{12,800 \text{ mm}^2}{16,109 \text{ mm}^2} \times 100 = 79 \%$$

Precautions for enclosure unit designing

Consider the location of the IR Remote and Eco Sensor on your product when designing an enclosure unit.

- The sensor may not work or cause the screen to darken if the sensor is sufficiently exposed.

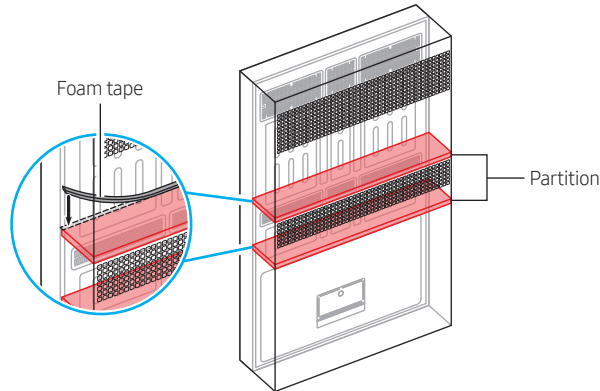


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Enclosure unit partition design

Partition design guide

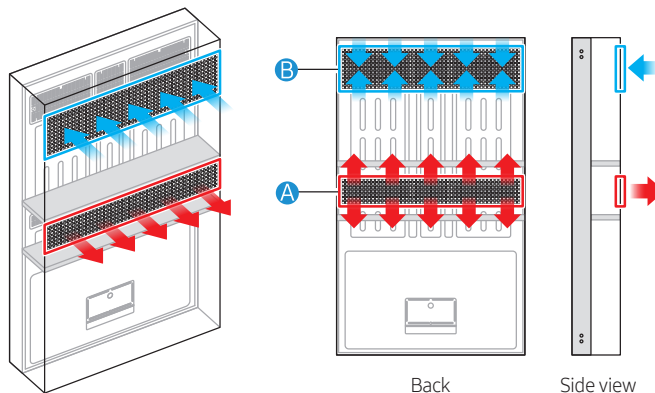
When using the product with an enclosure unit, add partitions between the inlet and outlet to keep air paths separated. Partitions should fit perfectly inside the enclosure unit, with no gap. If there is a gap, use a foam tape to fill it.



Single enclosure unit

Design the enclosure unit according to the following specifications to keep discharged hot air from flowing back into the inlet.

- Air inlet (B)
 - Total open area of the ventilation holes: 142000 mm² or more
 - Ventilation opening ratio (% of total opening): 70 % or more
- Air outlet (A)
 - Total open area of the ventilation holes: 63000 mm² or more
 - Ventilation opening ratio (% of total opening): 70 % or more
- Design the locations of the enclosure unit inlet and outlet to match the locations of the product inlet and outlet.

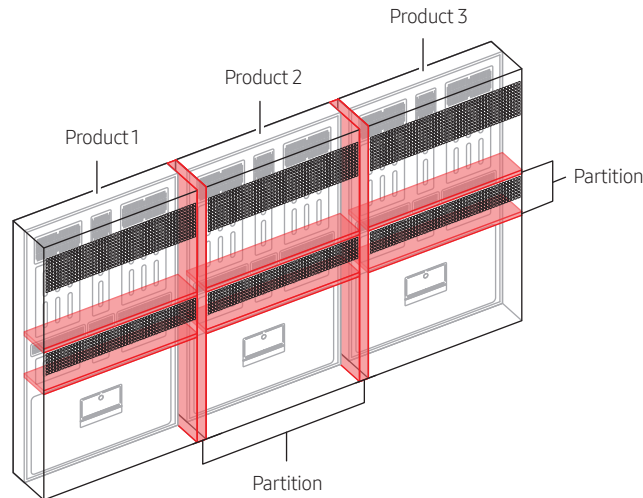


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1 x N one-side unit design

When designing the 1 x N one-side enclosure unit, add partitions between the products to keep the air paths separated.

- Refer to the 'Total open area of the ventilation holes and ratio'. (Page 13)
- Make sure there is no gap between the partitions and the enclosure unit.



Double-sided design

- Double-sided design is not supported.

To add devices such as a media player

If installing other devices such as a media player, use partitions to make sure they are installed separately from the product.

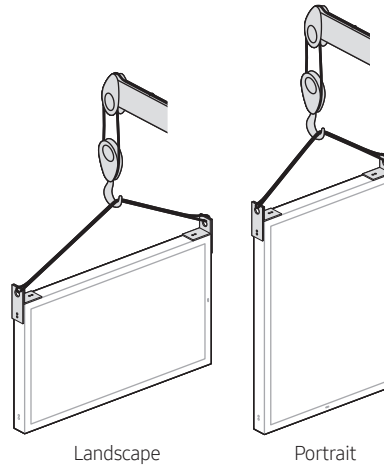
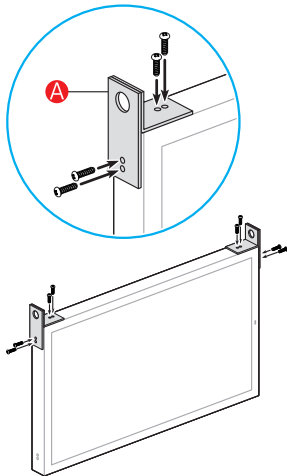
- Heat from other devices can increase the temperature inside the enclosure unit and cause a malfunction, which will not be covered by the warranty.
- Design to make sure there is no gap around the partitions due to cable connections.

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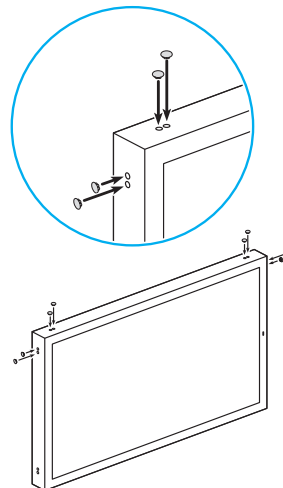
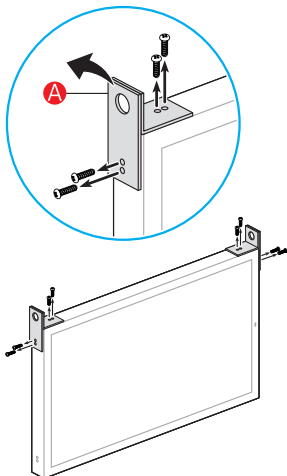
03 Handling guide

Moving by crane

- To use a crane, attach Bracket-Hang (A) to the top and the sides of the product, and fasten the bolts.
 - To purchase the Bracket-Hang (A) and bolts (M8 x L23), contact your provider or Samsung.
- Use the crane to move the product.



- When the product has been brought to the installation site, unfasten and remove the Bracket-Hang (A) and bolts.
- Place Cover-Caps in the holes on the top and sides.
 - Cover-Caps for your product are found enclosed in the package.



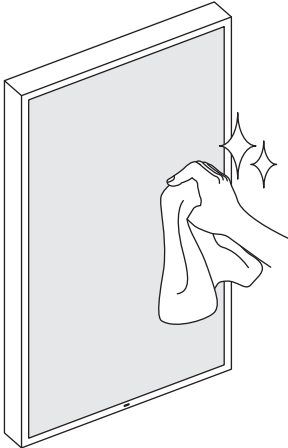
- The guide for OH85N/(LH85OHNSKGB/**) only applies when the product is used with an enclosure unit that has a protective glass added to the front side.

04 Cleaning and cautions

Cleaning

Cleaning the protection glass

- Consult the manufacturer of the protective glass for cleaning.

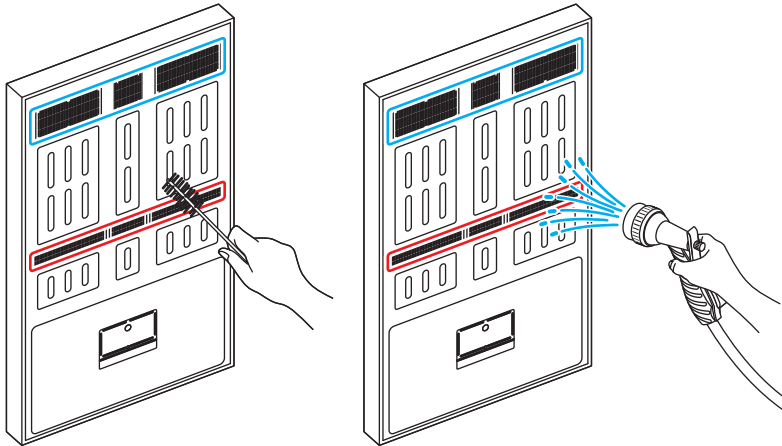


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Cleaning the inlet and outlet

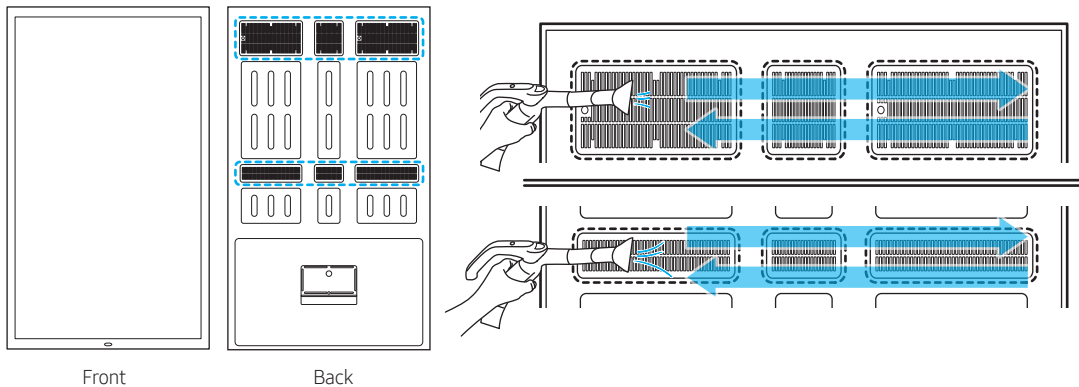
Use a brush to remove any debris from the inlet and outlet opening.

- To remove tough stains, wipe using a cloth with a small amount of ethanol based cleaner.
- If washing with water, keep the pressure below 0.5 bar.



Check once every 6 months and clean the inlet and outlet if they are covered/blocked by dust and other materials (more than 20 %).

- Remove power before cleaning. Use an industrial-grade vacuum cleaner (vacuum degree 2600 - 3000 mm H2O).

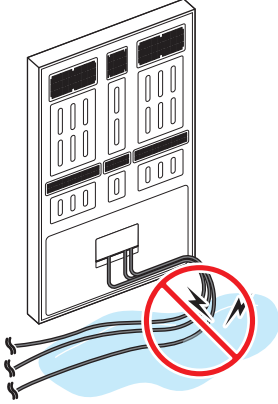


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Precautions

Cautions when routing cables

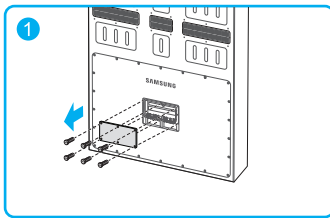
- Route cables connected to the product in a manner that keeps them away from water.



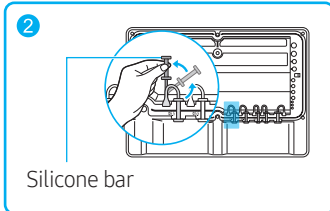
- The guide for OH85N/(LH85OHNSKGB/**) only applies when the product is used with an enclosure unit that has a protective glass added to the front side.

Before connecting cables

- The color and the appearance may differ depending on the product, and specifications are subject to change without prior notice to improve the performance.



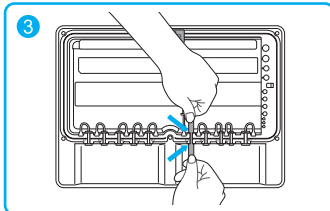
Unfasten the screws, then remove the cover.



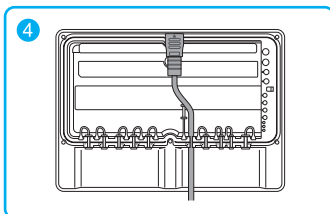
Remove the appropriate silicone bar for the thickness of the cable to connect.

Different hole sizes and corresponding cable thickness for each

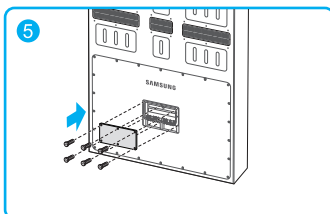
- 7 Ø x 1: Insert the 7 Ø cable
- 5.5 Ø x 6: Insert the 5.5 Ø cable
- 3 Ø x 2: Insert the 3 Ø cable
- 8.5 Ø x 1: Insert the 8.5 Ø cable



Insert the appropriate cable into the hole from which the silicone bar was removed.



The cable should be connected as shown.



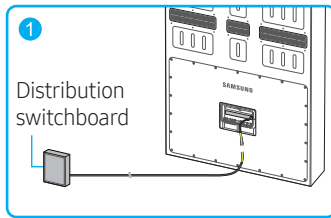
Close the cover, then fasten the screws.

- After all the cables are connected, make sure to close the cover and fasten the screws to ensure it is watertight.
- Recommended torque: 10 - 12 kgf.cm

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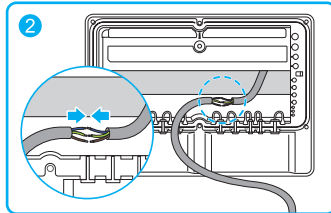
Connecting the power cable

- The color and the appearance may differ depending on the product, and specifications are subject to change without prior notice to improve the performance.

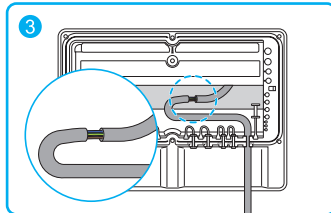


Make sure that you have a 8.5 mm diameter waterproof power cable that can withstand 1800 W or higher.

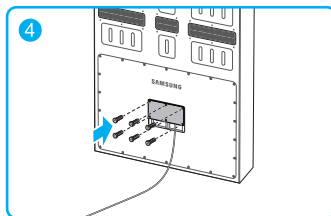
- The power cable must be connected to a 20 A or higher amperage circuit.



Connect the two power cables by soldering and insulate the area.



Place the soldered (connected) part of the cable inside the product.




















Place the back cover and fasten the screws.

Different power cable colors by country

When connecting an external power cable, be sure to match the colors of its wires with those of the 3 wires inside the product's power cable. The meaning (Neutral, Live or Ground) of each wire color of the external power cable may differ depending on the country.

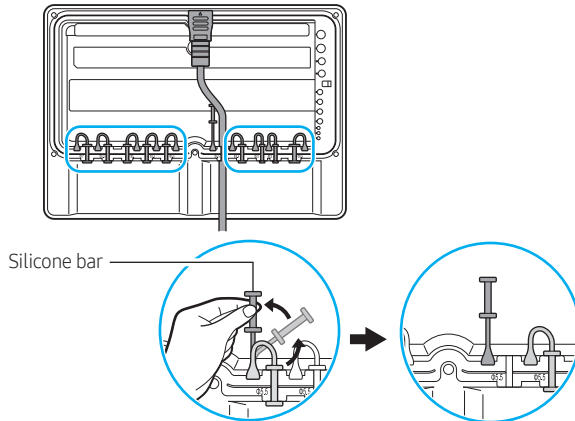
- Be sure to refer to the following table to correctly connect wires by the same meaning:

Neutral	Live	Ground	Region
Blue 	Brown 	Green/yellow 	Others
White 	Black 	Green  or green/yellow 	America
Blue 	Brown 	Green/yellow 	Europe
Black 	Red 	Green/yellow 	India
White 	Black 	Green  or green/yellow 	Taiwan & Japan

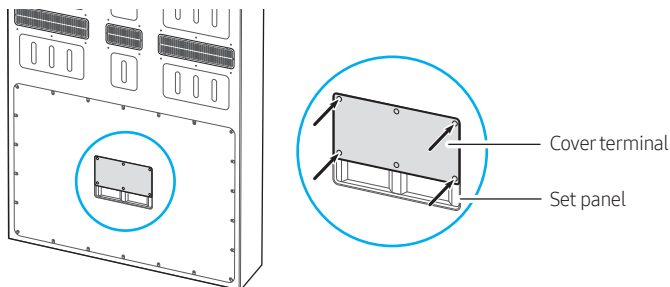
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Cautions when connecting cables

- Remove the appropriate silicon bar before connecting cables.
 - 7 Ø hole: For inserting 7-7.5 Ø cables
 - 5.5 Ø hole: For inserting 5.5-6 Ø cables
 - 3 Ø hole: For inserting 3-3.5 Ø cables
- Do not remove silicon bars where there is no cable connection. This will lessen the protection of your product against water and may result in a malfunction due to water damage, which will not be covered by the warranty.



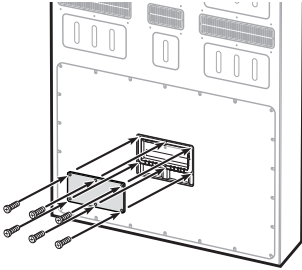
- After complete cabling, ensure that there is no gap between the set panel and the cover terminal.
- A gap may allow water damage and product malfunction.



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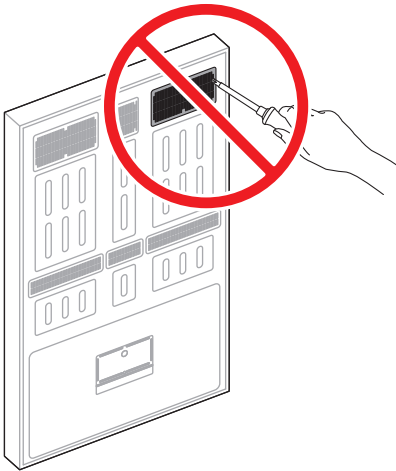
OH85N/(LH85OHNSKGB/**)

- After all the cables are connected, make sure to close the cover and fasten the screws to ensure it is watertight.



Cautions when replacing parts

- This product is designed to resist water and dust. Do not disassemble the product.
- If disassembly is necessary due to a malfunction, contact the service center.



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**OH85N-D(K)/
(LH850HNDKGB/**)**

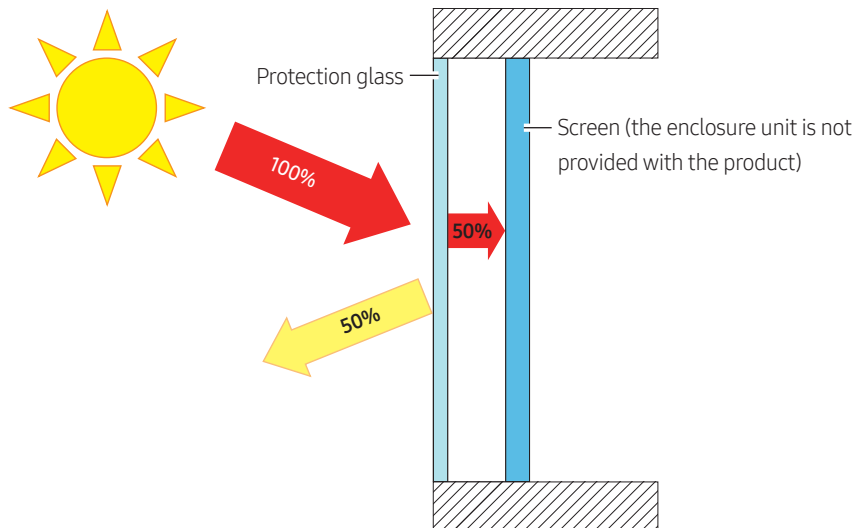
01 Prior to Installation

- Please contact our Tech Consulting team for support through your local Presales team before installing the Kit Model.
- This product can be installed in Portrait orientation, but not in Landscape.

Protection glass: specifications and installation guide

This product does not have a protection glass on the panel front. Add a protection glass to the front side of the enclosure unit before use.

Specification of the protection glass



- Use a protection glass that can block off at least 50 % of the solar heat the unit receives.

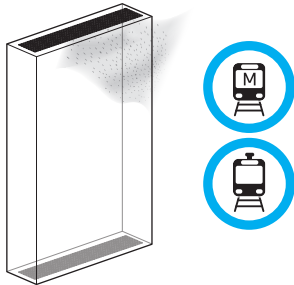
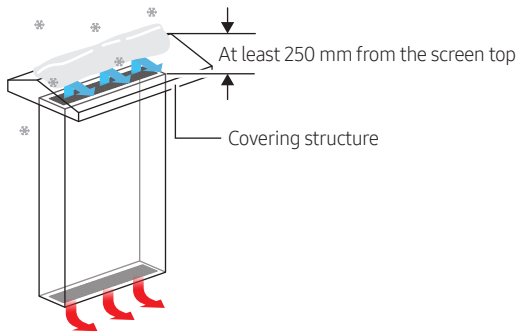
Installing the protection glass

Samsung guarantees the product's water and dust resistance performance (IP56). This guarantee, however, does not cover any issues resulted from the choice of non-recommended protection glass or installation method. (Examples: Issues caused by the ingress of dust or humidity from outside or due to insufficient insulation against solar heat, e.g., dust, dirt, wetness inside the protection glass)

- Maintain 9.5 mm - 17 mm of clearance between the protection glass and LCD panel surface.
- Contact Samsung for additional technical support.

- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

Surrounding environment



OH85N-D(K)/(LH850HNDKGB/**)

- The airway into and out of the product can be blocked when the inlet (or outlet) is covered by a pile of frozen snow, dust, or tree leaves. Install a covering structure to avoid matters piling directly onto the inlet. Blocked ventilation due to snow or dust covering the inlet or outlet may cause a malfunction.

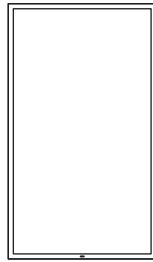
- The product can be used in a train or subway station.
The product is designed to keep out iron dust.

- When installed in beach area, make sure the display is placed where seawater cannot reach.
- Ensure the display unit installed location is within safe distance from the possible contact from rising seawater due to strong winds due to storm or other natural phenomenon.

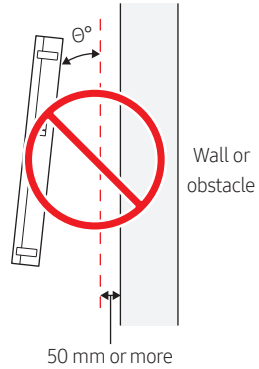
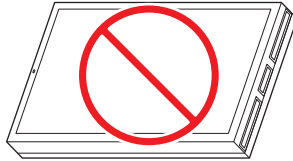
- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

Rotation and tilt angle

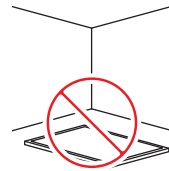
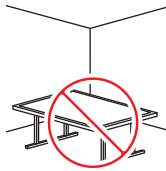
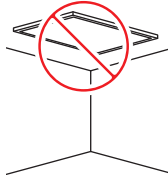
- This product can be installed in Portrait orientation, but not in Landscape.
- Contact Samsung Customer Service Center for further details.



Portrait



- Do not use this model installed on a ceiling, floor, or table.



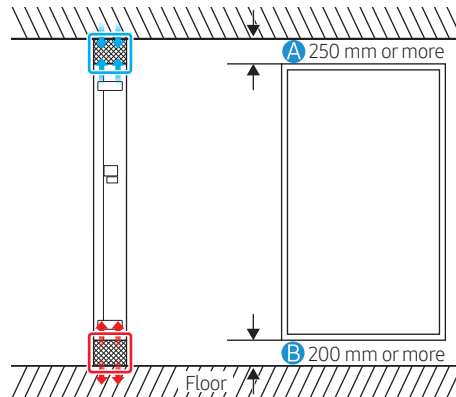
- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

Clearance for installation

Clearance for installing the product alone

When installing the product alone, maintain the clearances (A) and (B) in order to secure air flow.

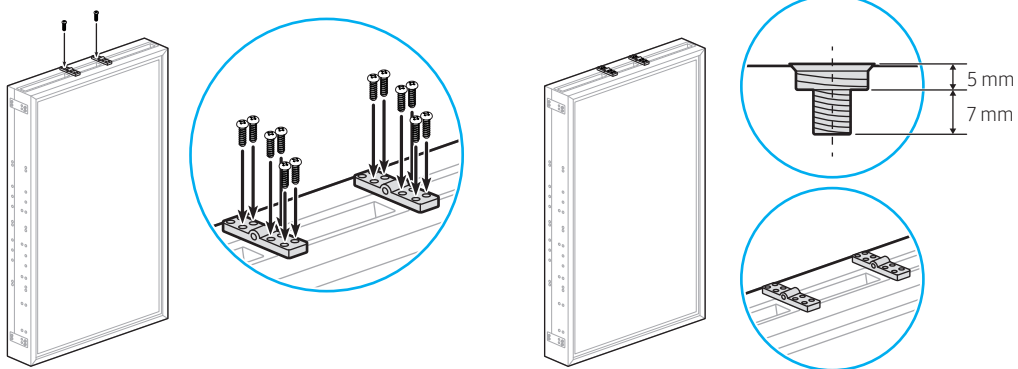
- Top clearance (A)
 - 250 mm or more
- Bottom clearance (B)
 - Clearance from the floor: 200 mm or more
- Remove any obstacles near the inlet and outlet that may affect air flow.
- If the unit is subjected to excess heat due to an insufficient gap, this may cause a malfunction, which will not be covered by the warranty.



Hinge installation guide

Refer to the image below when installing the Hinge.

- Use sets of 6 dedicated M8 bolts for Hinge installation.
- To purchase the Hinge and M8 bolts (M8 x L23), contact your provider or Samsung.



- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

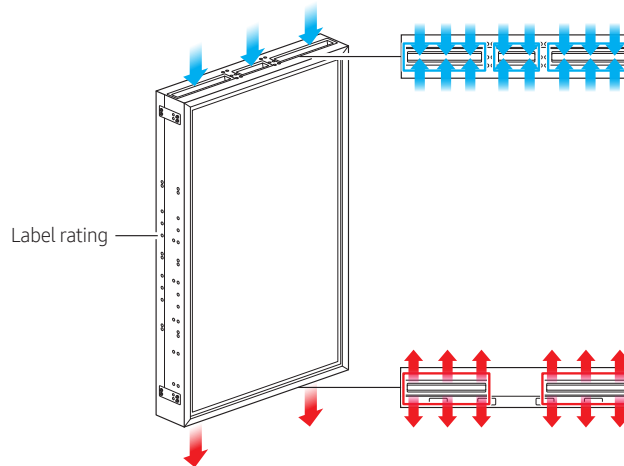
02 Enclosure unit design guide

- Contact our Tech Consulting team for support when you wish to use the product with an enclosure unit. The following provides a basic guide and information for designing an enclosure unit.

Airflow direction

This product uses cooling fans to take in outside air to lower the internal temperature and discharge the hot air.

- When installing the product, remove any obstacles near the air inlet and outlet that may affect airflow.

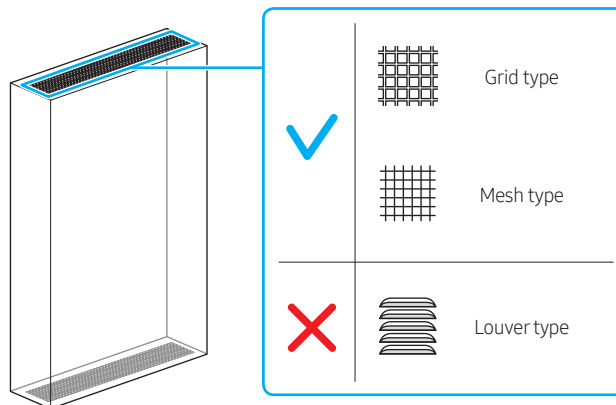


Inlet and outlet types

Ventilation opening ratio for air inlet and outlet should be minimum 70%

Air inlet and outlet should be grid or mesh types.

- Do not use the louver type as it has a limited intake size.

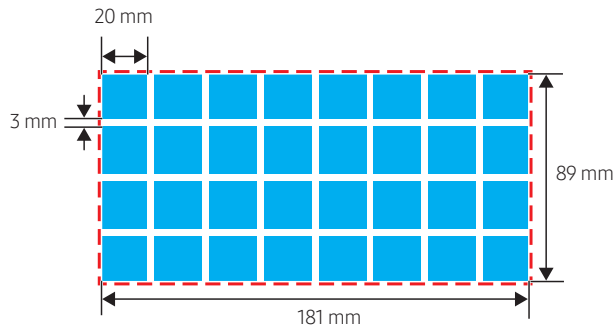


- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

Total open area of the ventilation holes and ratio

Follow the guide when combining the product with the enclosure unit.

- If the instructions provided in this guide are not observed, the cooling system may not work properly and may cause a malfunction, which will not be covered by warranty.
- Calculating Total open area of the ventilation and Ventilation opening ratio



 Total Area of the Ventilation: $181 \times 89 = 16,109 \text{ mm}^2$

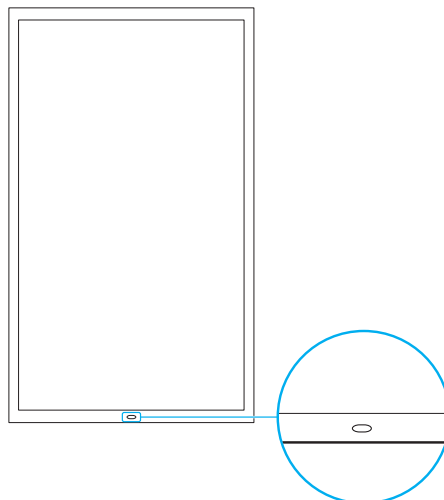
 Total open area of Ventilation holes : $20 \times 20 \times 32 = 12,800 \text{ mm}^2$

$$\text{Ventilation opening ratio: } \frac{\text{Total open area of Ventilation holes}}{\text{Total Area of the Ventilation}} = \frac{12,800 \text{ mm}^2}{16,109 \text{ mm}^2} \times 100 = 79 \%$$

Precautions for enclosure unit designing

Consider the location of the IR Remote and Eco Sensor on your product when designing an enclosure unit.

- The sensor may not work or cause the screen to darken if the sensor is sufficiently exposed.



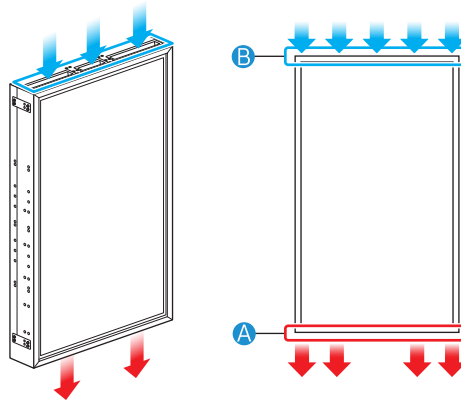
IR Remote Sensor/ Eco Sensor

- The guide for OH85N-D(K)/(LH85OHNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

Single enclosure unit

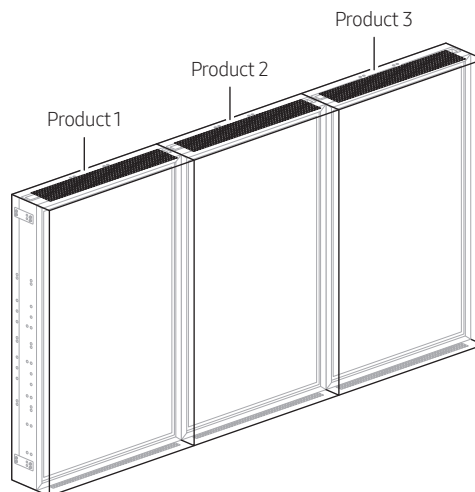
Design the enclosure unit according to the following specifications to keep discharged hot air from flowing back into the inlet.

- Air inlet (B)
 - Open area of Enclosure Ventilation holes: 100,000 mm² or more
 - Ventilation opening ratio (% of total opening): 70 % or more
 - Air outlet (A)
 - Open area of Enclosure Ventilation holes: 80,000 mm² or more
 - Ventilation opening ratio (% of total opening): 70 % or more
- Design the locations of the enclosure unit inlet and outlet to match the locations of the product inlet and outlet.



1 x N one-side unit design

- Refer to the 'Total open area of the ventilation holes and ratio'. (Page 30)

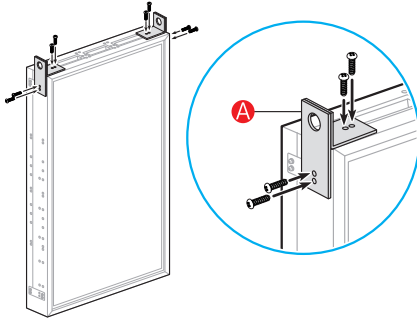


- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

03 Handling guide

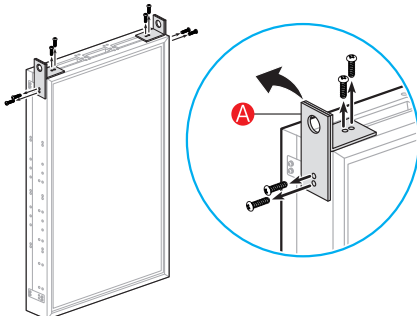
Moving by crane

1. To use a crane, attach Bracket-Hang (A) to the top and the sides of the product, and fasten the bolts.
 - To purchase the Bracket-Hang (A) and bolts (M8 x L23), contact your provider or Samsung.
2. Use the crane to move the product.



Portrait

3. When the product has been brought to the installation site, unfasten and remove the Bracket-Hang (A) and bolts.



- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

04 Cleaning and cautions

Cleaning

Cleaning the protection glass

- Consult the manufacturer of the protective glass for cleaning.

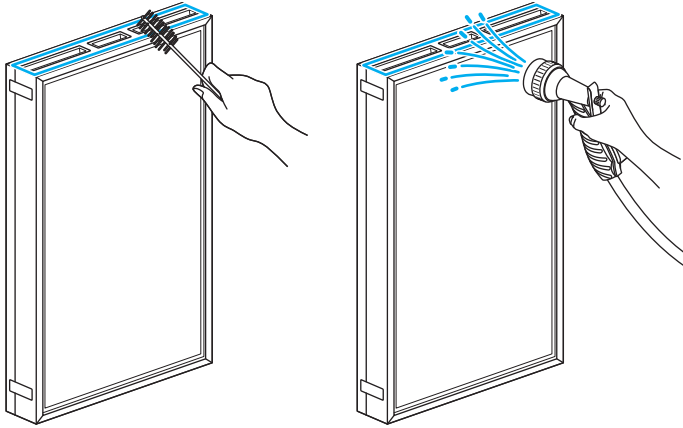


- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

Cleaning the inlet and outlet

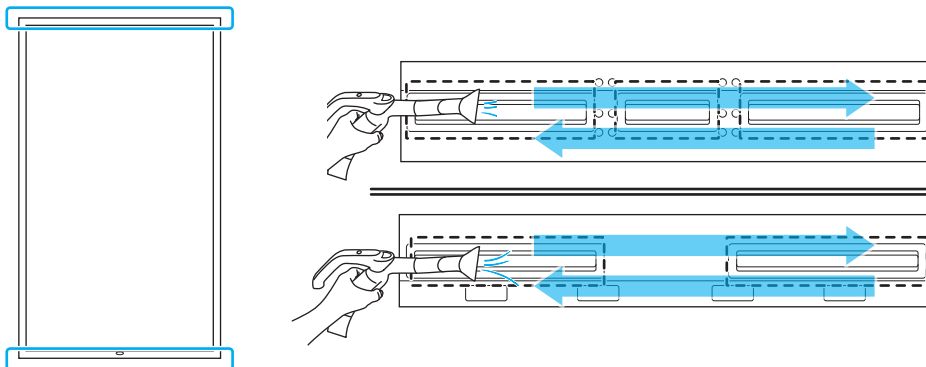
Use a brush to remove any debris from the inlet and outlet opening.

- To remove tough stains, wipe using a cloth with a small amount of ethanol based cleaner.
- If washing with water, keep the pressure below 0.5 bar.



Check once every 6 months and clean the inlet and outlet if they are covered/blocked by dust and other materials (more than 20 %).

- Remove power before cleaning. Use an industrial-grade vacuum cleaner (vacuum degree 2600 - 3000 mm H2O).

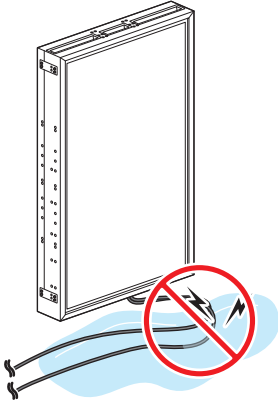


- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

Precautions

Cautions when routing cables

- Route cables connected to the product in a manner that keeps them away from water.

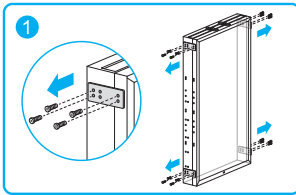


- Route cables away from the inlet and outlet.

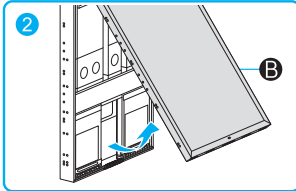
- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

Before connecting cables

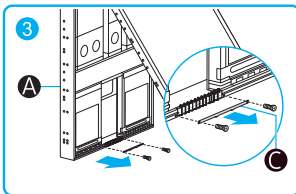
- The color and the appearance may differ depending on the product, and specifications are subject to change without prior notice to improve the performance.



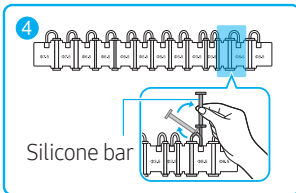
Remove screws from the brackets on both sides of the product.



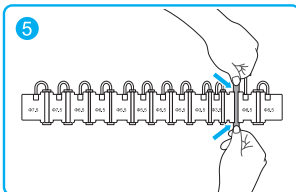
Open the auxiliary display (B).



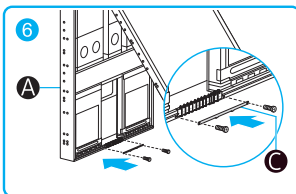
Remove the cable staple (C) at the bottom of the main display (A).



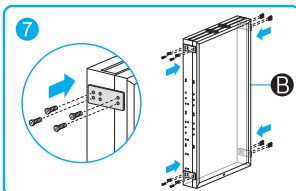
Remove the appropriate silicone bar for the thickness of the cable to connect.



Insert the appropriate cable into the hole from which the silicone bar was removed.



Once all cables are connected, place the cable staple (C) back to the bottom of the main display (A).

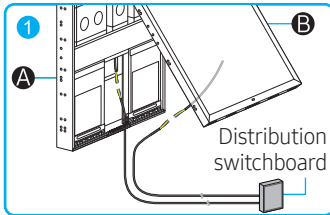


Close the auxiliary display (B) completely, then fasten the brackets on both sides of the product.

- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

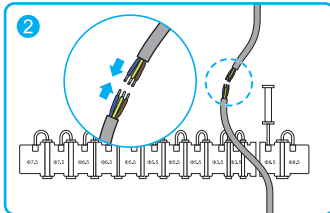
Connecting the power cable

- The color and the appearance may differ depending on the product, and specifications are subject to change without prior notice to improve the performance.

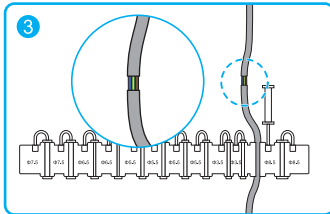


Make sure that you have a 8.5 mm diameter waterproof power cable that can withstand 1800 W or higher.

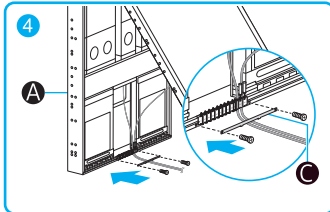
- The power cables from the main display (A) and the auxiliary display (B) should be connected to 40 A (20 A x 2) or higher amperage circuits.



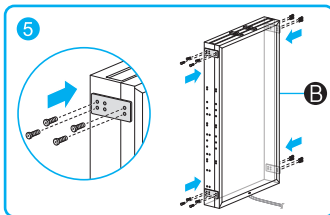
Connect the two power cables by soldering and insulate the area.



Place the soldered (connected) part of the cable inside the product.



Once all cables are connected, place the cable staple (C) back to the bottom of the main display (A).




















Close the auxiliary display (B) completely, then fasten the brackets on both sides of the product.

Different power cable colors by country

When connecting an external power cable, be sure to match the colors of its wires with those of the 3 wires inside the product's power cable. The meaning (Neutral, Live or Ground) of each wire color of the external power cable may differ depending on the country.

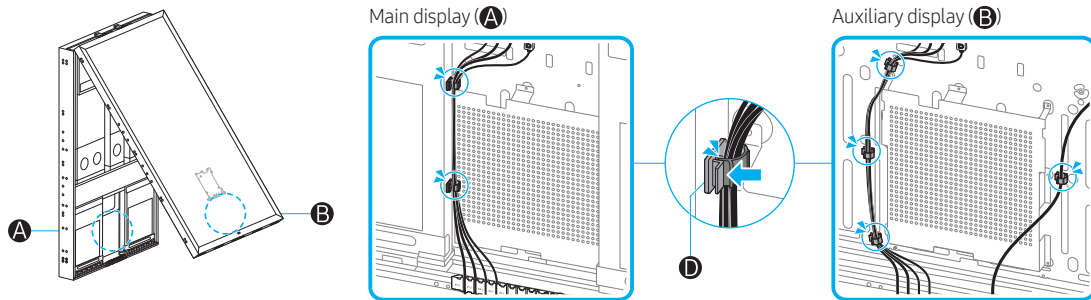
- Be sure to refer to the following table to correctly connect wires by the same meaning:

Neutral	Live	Ground	Region
Blue 	Brown 	Green/yellow 	Others
White 	Black 	Green  or green/yellow 	America
Blue 	Brown 	Green/yellow 	Europe
Black 	Red 	Green/yellow 	India
White 	Black 	Green  or green/yellow 	Taiwan & Japan

- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

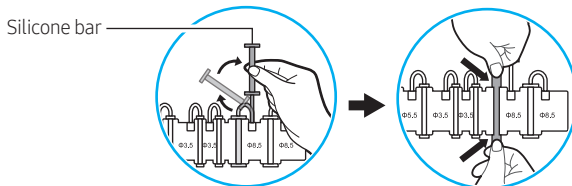
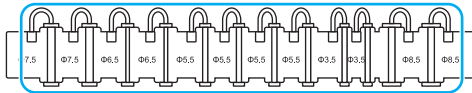
Wiring

- Use the enclosed clampers (D) to securely organize cables as shown in the below images.



Cautions when connecting cables

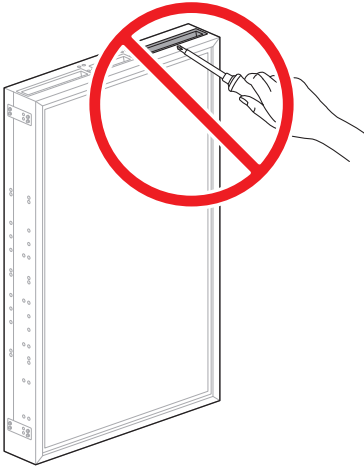
- Remove the appropriate silicon bar before connecting cables.
 - 7 Ø hole: For inserting 7-7.5 Ø cables
 - 5.5 Ø hole: For inserting 5.5-6 Ø cables
 - 3 Ø hole: For inserting 3-3.5 Ø cables
- Do not remove silicon bars where there is no cable connection. This will lessen the protection of your product against water and may result in a malfunction due to water damage, which will not be covered by the warranty.



- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

Cautions when replacing parts

- This product is designed to resist water and dust. Do not disassemble the product.
- If disassembly is necessary due to a malfunction, contact the service center.

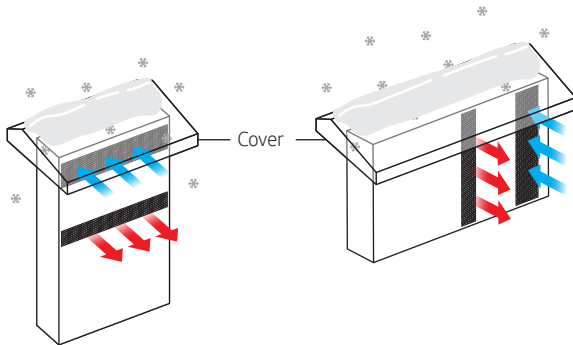


- The guide for OH85N-D(K)/(LH850HNDKGB/**) only applies when the product is used with an enclosure that has a protective glass added to the front side.

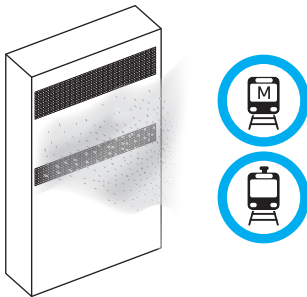
**OH85N/
(LH850HNSLGB/***)**

01 Prior to Installation

Surrounding environment



- The airway into and out of the product can be blocked when the inlet (or outlet) is covered by a pile of frozen snow, dust, or tree leaves. Install a cover to avoid snow piling directly onto the inlet. Blocked ventilation due to snow or dust covering the inlet or outlet may cause a malfunction.



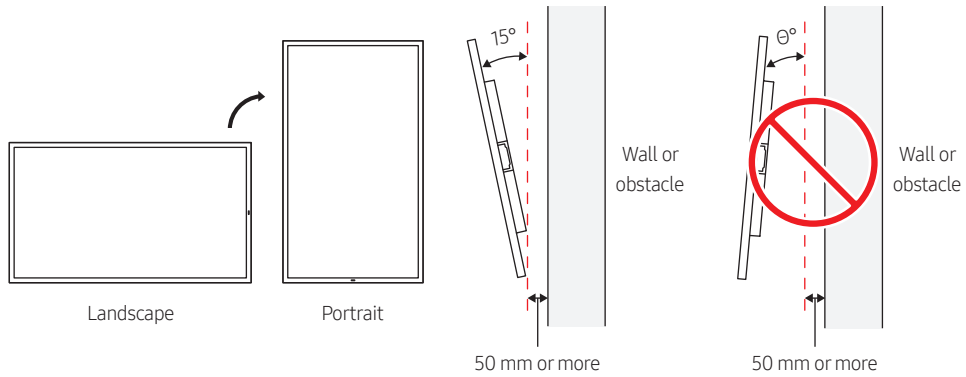
- The product can be used in a train or subway station.
The product is designed to keep out iron dust.



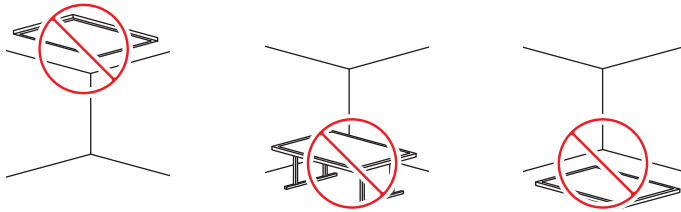
- When installed in beach area, make sure the display is placed where seawater cannot reach.
- Ensure the display unit installed location is within safe distance from the possible contact from rising seawater due to strong winds due to storm or other natural phenomenon.

Rotation and tilt angle

- This product can be installed in Landscape or Portrait orientations.
- This product can be installed in a tilted position on a vertical wall or an obstacle, up to 15°.
- Contact Samsung Customer Service Center for further details.



- Do not use this model installed on a ceiling, floor, or table.

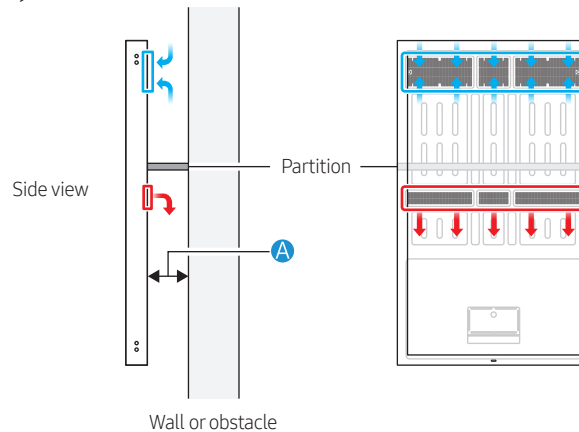


Clearance for installation

Clearance for installing the product alone

When installing the product close to the wall, maintain the clearance (A) in order to secure air flow.

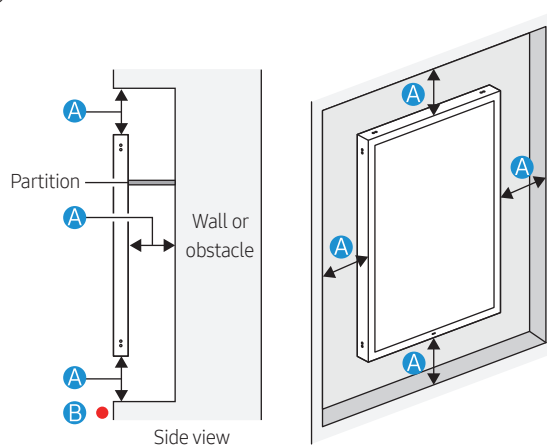
- Clearance from the wall (A)
 - Example 1) Atmospheric temperatures under 35 °C without direct sunlight: 60 mm or more
 - Example 2) Exposure to direct sunlight: 200 mm or more
- Remove any obstacles near the inlet and outlet that may affect air flow.
- Add partitions between the product and walls and make sure there is no gap between them to prevent discharged air from flowing back into the inlet.
- If the unit is subjected to excess heat due to an insufficient gap, this may cause a malfunction, which will not be covered by the warranty.



Clearance for built-in installation

When installing built-in to the wall, maintain the clearance (A) from the back, top, bottom, and sides of the product in order to secure air flow.

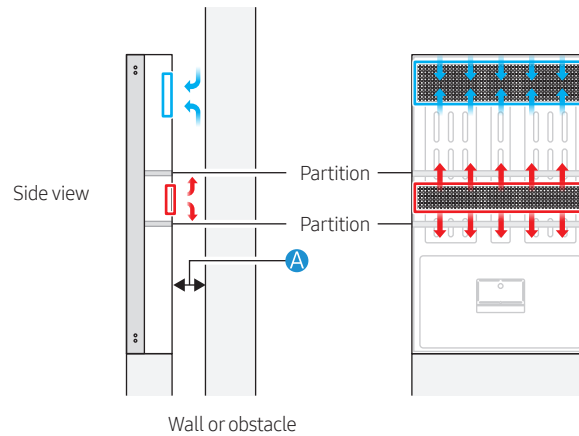
- Clearance from the wall (A)
 - Example 1) Atmospheric temperatures (B) under 35 °C without direct sunlight: 60 mm or more
 - Example 2) Exposure to direct sunlight: 200 mm or more
- Add partitions between the product and walls and make sure there is no gap between them to prevent discharged air from flowing back into the inlet.
- If the unit is subjected to excess heat due to an insufficient gap, this may cause a malfunction, which will not be covered by the warranty.



Clearance for installing with the enclosure unit

When installing an enclosure unit close to the wall, maintain the clearance in order to secure air flow. Consult your provider for detailed requirements before installing the product. Excessive heat due to the use of the enclosure unit with an obstacle or a wall may cause a malfunction or a problem with the product.

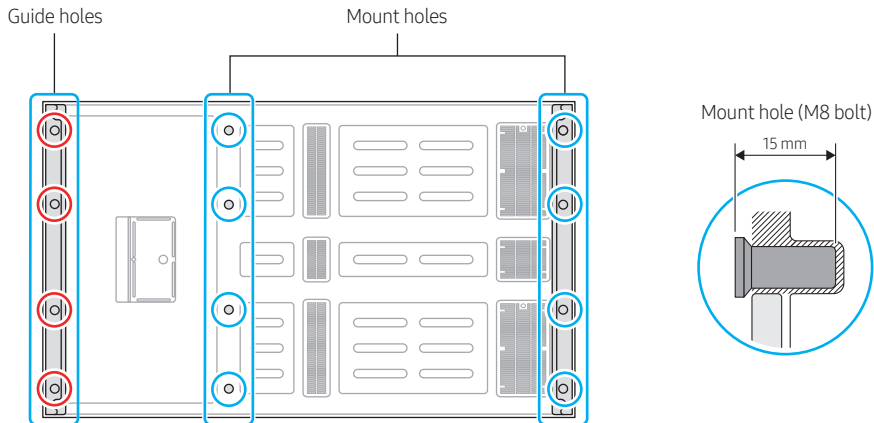
- Clearance (A): 200 mm or more
- Remove any obstacles near the inlet and outlet that may affect air flow.
- If the unit is subjected to excess heat due to an insufficient gap, this may cause a malfunction, which will not be covered by the warranty.



Installing the wall-mount

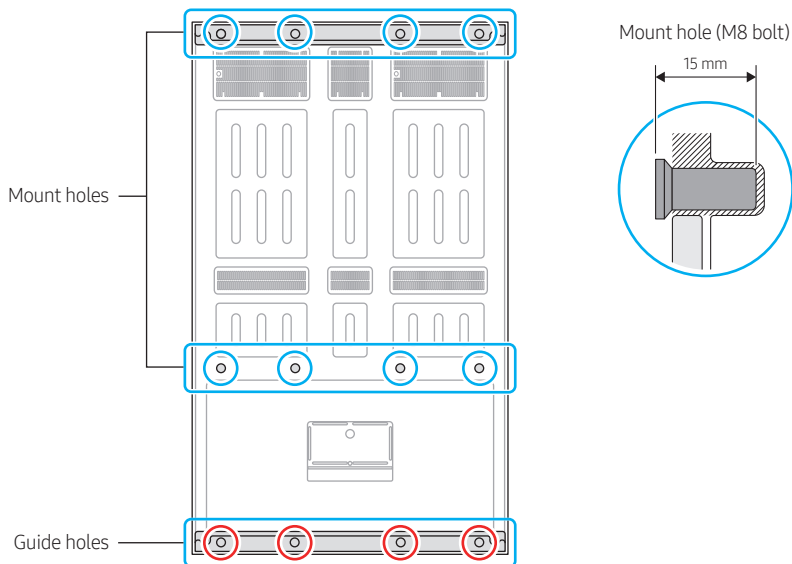
Landscape installation

- Do not use the 4 holes on the left as they are NOT mount holes.
 - Use M8 bolts in the 8 holes for mounting, 4 in the center and 4 on the right.
- Choose the length based on the mount thickness. The mount hole depth for this product is 15 mm (except the mount). Use the M8 bolts that can be fastened into at least 10 mm out of the 15 mm holes after passing through the mount.
- M8 bolts are not included.



Portrait installation

- Do not use the 4 holes at the bottom as they are NOT mount holes.
 - Use M8 bolts in the 8 holes for mounting, 4 at the top and 4 in the center.
- Choose the length based on the mount thickness. The mount hole depth for this product is 15 mm (except the mount). Use the M8 bolts that can be fastened into at least 10 mm out of the 15 mm holes after passing through the mount.
- M8 bolts are not included.



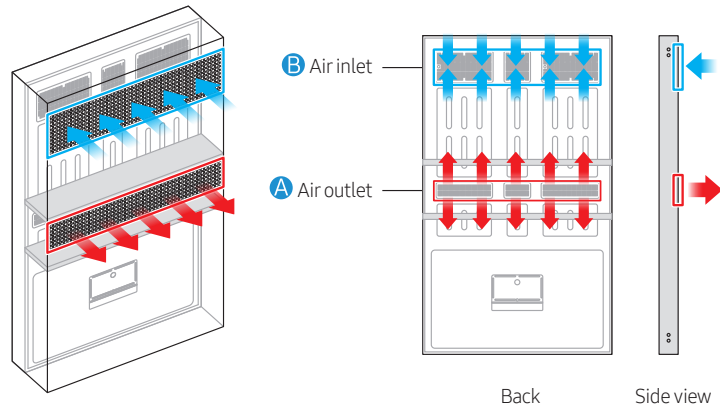
02 Enclosure unit design guide

- Contact our Tech Consulting team for support when you wish to use the product with an enclosure unit. The following provides a basic guide and information for designing an enclosure unit.

Airflow direction

This product uses cooling fans to take in outside air to lower the internal temperature and discharge the hot air.

- When installing the product, remove any obstacles near the air inlet and outlet that may affect air flow.

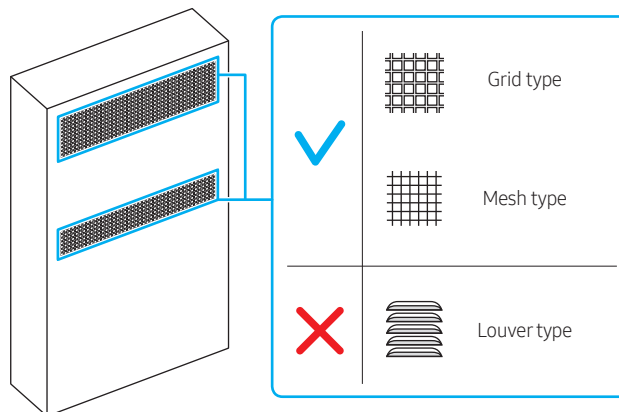


Inlet and outlet types

Ventilation opening ratio for air inlet and outlet should be minimum 70%

Air inlet and outlet should be grid or mesh types.

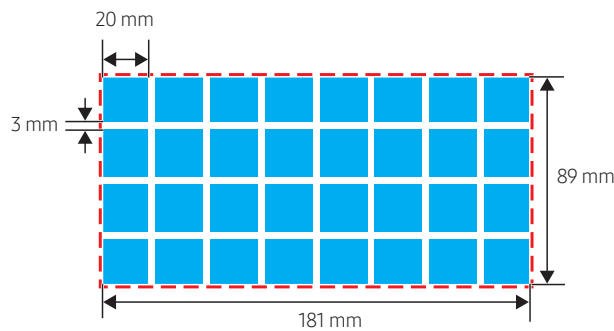
- Do not use the louver type as it has a limited intake size.



Total open area of the ventilation holes and ratio

Follow the guide when combining the product with the enclosure unit.

- If the instructions provided in this guide are not observed, the cooling system may not work properly and may cause a malfunction, which will not be covered by warranty.
- Calculating Total open area of the ventilation and Ventilation opening ratio



 Total Area of the Ventilation: $181 \times 89 = 16,109 \text{ mm}^2$

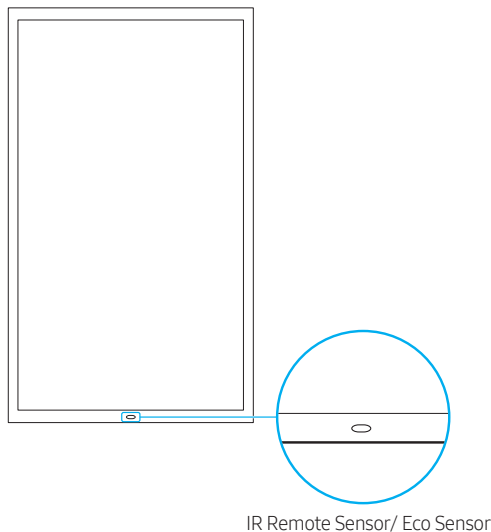
 Total open area of Ventilation holes : $20 \times 20 \times 32 = 12,800 \text{ mm}^2$

$$\text{Ventilation opening ratio: } \frac{\text{Total open area of Ventilation holes}}{\text{Total Area of the Ventilation}} = \frac{12,800 \text{ mm}^2}{16,109 \text{ mm}^2} \times 100 = 79 \%$$

Precautions for enclosure unit designing

Consider the location of the IR Remote and Eco Sensor on your product when designing an enclosure unit.

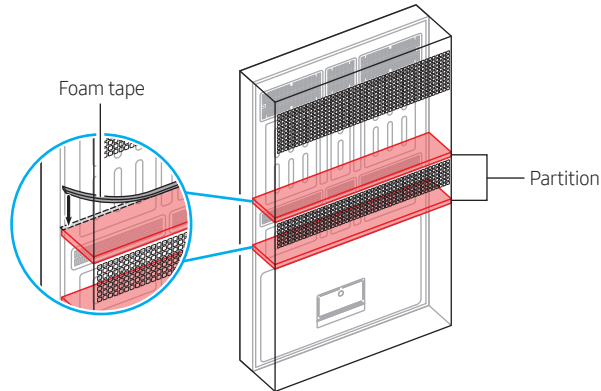
- The sensor may not work or cause the screen to darken if the sensor is sufficiently exposed.



Enclosure unit partition design

Partition design guide

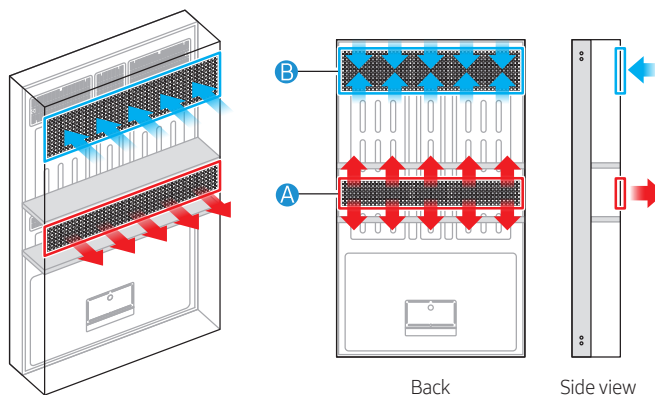
When using the product with an enclosure unit, add partitions between the inlet and outlet to keep air paths separated. Partitions should fit perfectly inside the enclosure unit, with no gap. If there is a gap, use a foam tape to fill it.



Single enclosure unit

Design the enclosure unit according to the following specifications to keep discharged hot air from flowing back into the inlet.

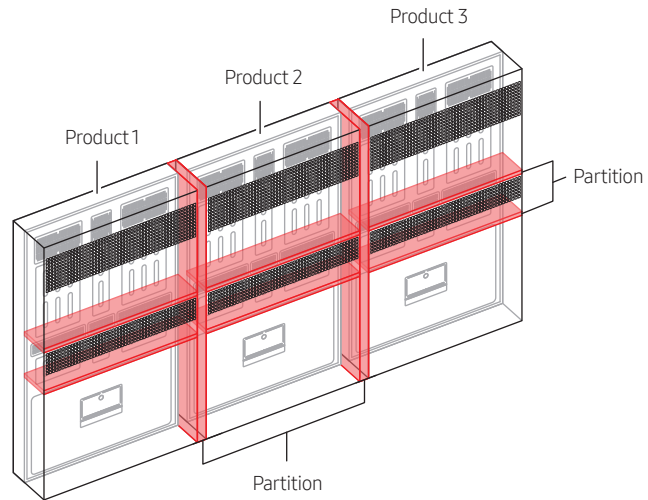
- Air inlet (B)
 - Total open area of the ventilation holes: 141000 mm² or more
 - Ventilation opening ratio (% of total opening): 70 % or more
 - Air outlet (A)
 - Total open area of the ventilation holes: 63000 mm² or more
 - Ventilation opening ratio (% of total opening): 70 % or more
- Design the locations of the enclosure unit inlet and outlet to match the locations of the product inlet and outlet.



1 x N one-side unit design

When designing the 1 x N one-side enclosure unit, add partitions between the products to keep the air paths separated.

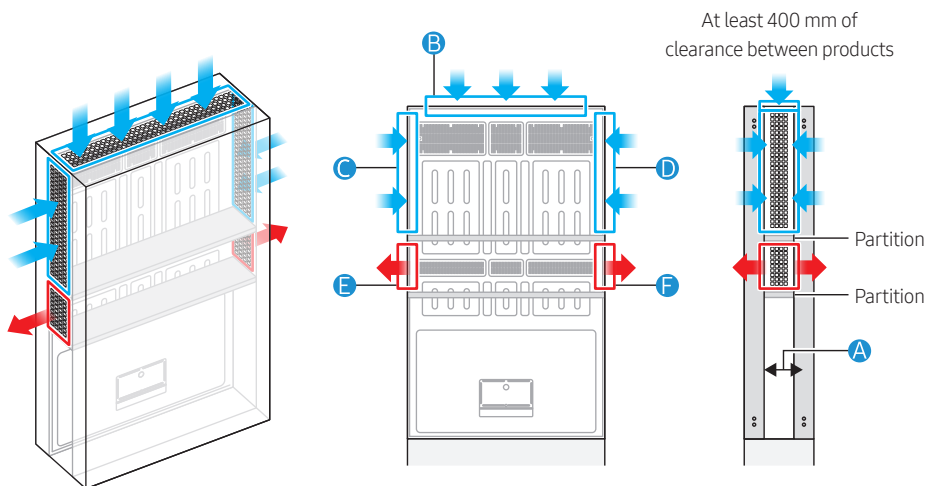
- Refer to the 'Total open area of the ventilation holes and ratio'. ([Page 47](#))
- Make sure there is no gap between the partitions and the enclosure unit.



Double-sided enclosure unit

Design the enclosure unit to keep discharged hot air from flowing back into the inlet.

- Clearance (A): 400 mm or more
- Air inlet (B + C + D)
 - Total open area of the ventilation holes: 284000 mm² or more
 - Ventilation opening ratio (% of total opening): 70 % or more
- Air outlet (E + F)
 - Total open area of the ventilation holes: 126000 mm² or more
 - Ventilation opening ratio (% of total opening): 70 % or more
- When designing double-sided enclosure units, position the inlet on the top or side.
- Outlets of the enclosure unit should be on the side.
- Add partitions without any gap (as shown in the image below) to completely separate the inlet and outlet.
- Secure at least 400 mm of clearance between two products.



To add devices such as a media player

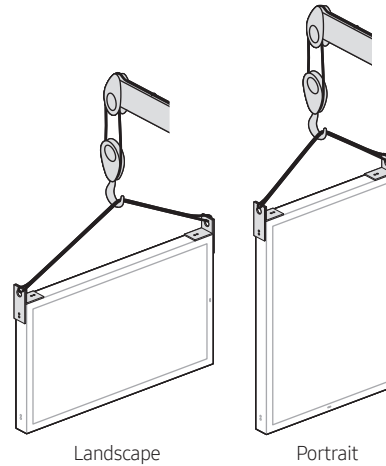
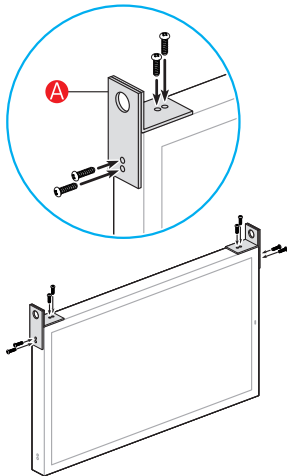
If installing other devices such as a media player, use partitions to make sure they are installed separately from the product.

- Heat from other devices can increase the temperature inside the enclosure unit and cause a malfunction, which will not be covered by the warranty.
- Design to make sure there is no gap around the partitions due to cable connections.

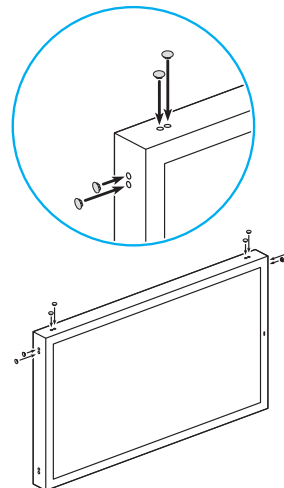
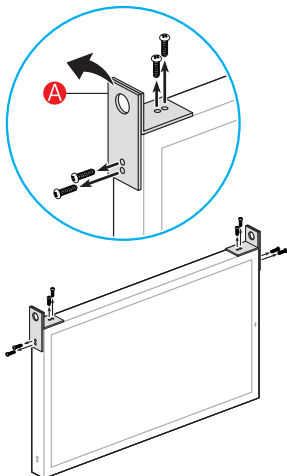
03 Handling guide

Moving by crane

- To use a crane, attach Bracket-Hang (A) to the top and the sides of the product, and fasten the bolts.
 - To purchase the Bracket-Hang (A) and bolts (M8 x L23), contact your provider or Samsung.
- Use the crane to move the product.



- When the product has been brought to the installation site, unfasten and remove the Bracket-Hang (A) and bolts.
 - Cover-Caps for your product are found enclosed in the package.
- Place Cover-Caps in the holes on the top and sides.
 - Cover-Caps for your product are found enclosed in the package.

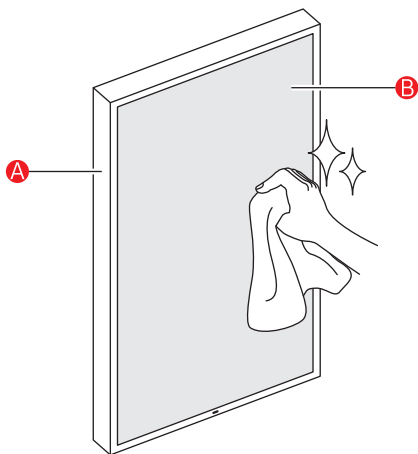


04 Cleaning and cautions

Cleaning

Cleaning the protection glass

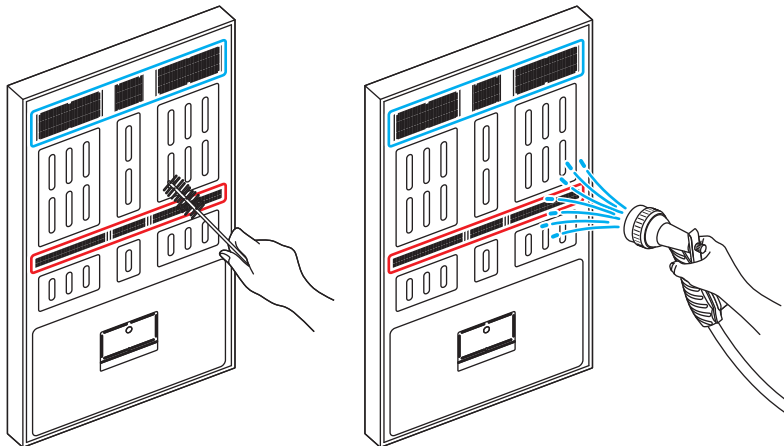
- **A** (areas except the Magic-Glass): Use a clean, soft cloth dampened with water to wipe off the surface.
- **B** (Magic-Glass): Wipe off the surface periodically with a clean, soft cloth dampened with water or glass cleaner (cleaning cycle: within 1 month). For dirt that cannot be removed, use an ethanol based cleaner. After a rain, use a clean, soft cloth to wipe off rain drops or dirt from the glass.



Cleaning the inlet and outlet

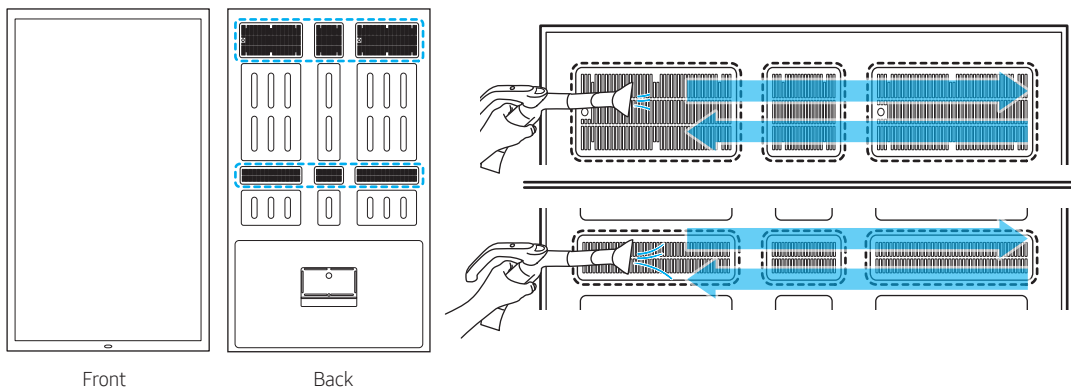
Use a brush to remove any debris from the inlet and outlet opening.

- To remove tough stains, wipe using a cloth with a small amount of ethanol based cleaner.
- If washing with water, keep the pressure below 0.5 bar.



Check once every 6 months and clean the inlet and outlet if they are covered/blocked by dust and other materials (more than 20 %).

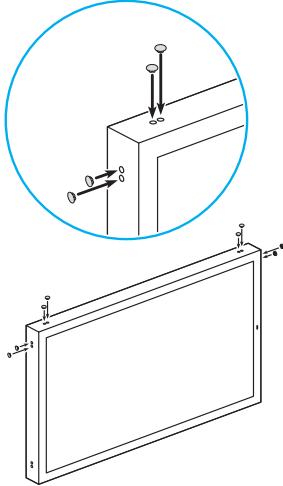
- Remove power before cleaning. Use an industrial-grade vacuum cleaner (vacuum degree 2600 - 3000 mm H2O).



Precautions

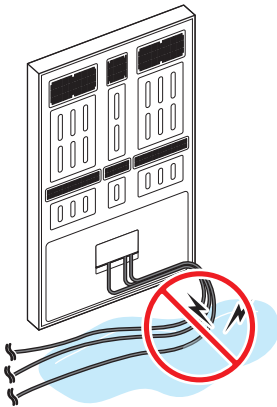
Precautions regarding the Cover-Cap

- Place Cover-Caps in the holes on the top and sides.
 - Cover-Caps for your product are found enclosed in the package.



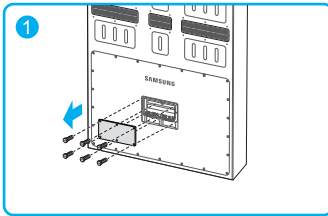
Cautions when routing cables

- Route cables connected to the product in a manner that keeps them away from water.

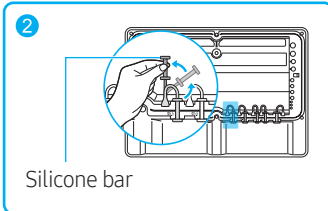


Before connecting cables

- The color and the appearance may differ depending on the product, and specifications are subject to change without prior notice to improve the performance.



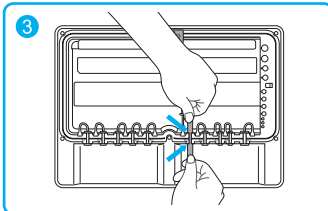
Unfasten the screws, then remove the cover.



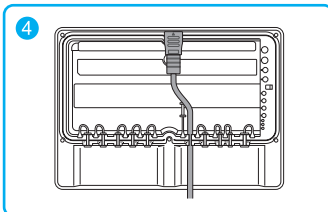
Remove the appropriate silicone bar for the thickness of the cable to connect.

Different hole sizes and corresponding cable thickness for each

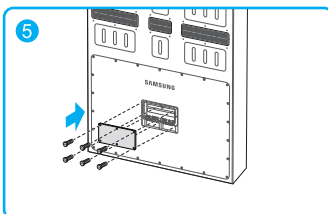
- 7 Ø x 1: Insert the 7 Ø cable
- 5.5 Ø x 6: Insert the 5.5 Ø cable
- 3 Ø x 2: Insert the 3 Ø cable
- 8.5 Ø x 1: Insert the 8.5 Ø cable



Insert the appropriate cable into the hole from which the silicone bar was removed.



The cable should be connected as shown.

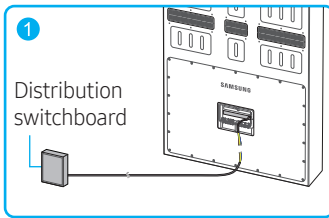


Close the cover, then fasten the screws.

- After all the cables are connected, make sure to close the cover and fasten the screws to ensure it is watertight.
- Recommended torque: 10 - 12 kgf.cm

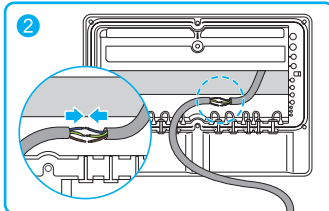
Connecting the power cable

- The color and the appearance may differ depending on the product, and specifications are subject to change without prior notice to improve the performance.

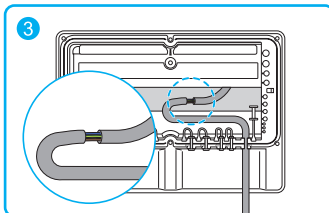


Make sure that you have a 8.5 mm diameter waterproof power cable that can withstand 1800 W or higher.

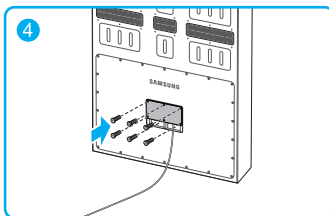
- The power cable must be connected to a 20 A or higher amperage circuit.



Connect the two power cables by soldering and insulate the area.



Place the soldered (connected) part of the cable inside the product.




















Place the back cover and fasten the screws.

Different power cable colors by country

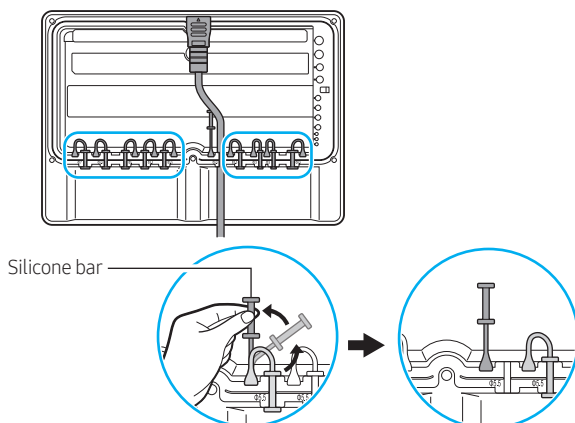
When connecting an external power cable, be sure to match the colors of its wires with those of the 3 wires inside the product's power cable. The meaning (Neutral, Live or Ground) of each wire color of the external power cable may differ depending on the country.

- Be sure to refer to the following table to correctly connect wires by the same meaning:

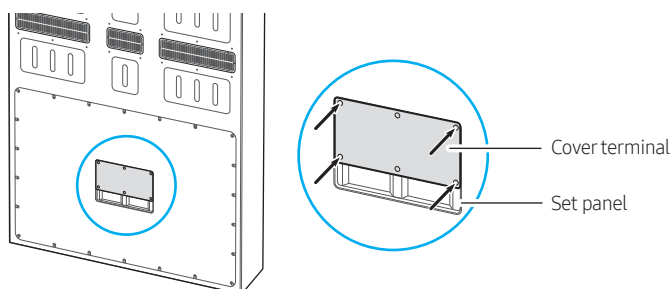
Neutral	Live	Ground	Region
Blue 	Brown 	Green/yellow 	Others
White 	Black 	Green  or green/yellow 	America
Blue 	Brown 	Green/yellow 	Europe
Black 	Red 	Green/yellow 	India
White 	Black 	Green  or green/yellow 	Taiwan & Japan

Cautions when connecting cables

- Remove the appropriate silicon bar before connecting cables.
 - 7 Ø hole: For inserting 7-7.5 Ø cables
 - 5.5 Ø hole: For inserting 5.5-6 Ø cables
 - 3 Ø hole: For inserting 3-3.5 Ø cables
- Do not remove silicon bars where there is no cable connection. This will lessen the protection of your product against water and may result in a malfunction due to water damage, which will not be covered by the warranty.

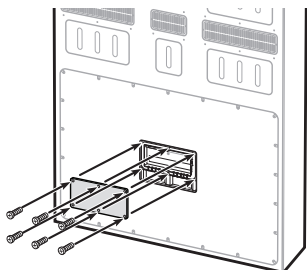


- After complete cabling, ensure that there is no gap between the set panel and the cover terminal.
- A gap may allow water damage and product malfunction.



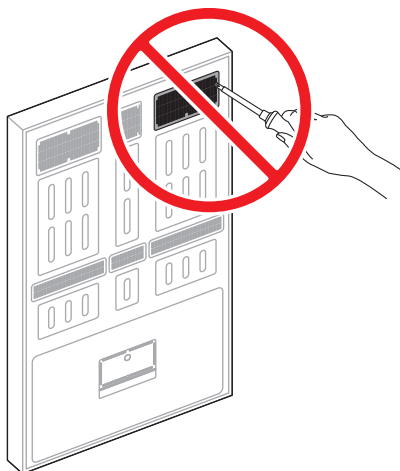
OH85N/(LH85OHNSLGB/**)

- After all the cables are connected, make sure to close the cover and fasten the screws to ensure it is watertight.



Cautions when replacing parts

- This product is designed to resist water and dust. Do not disassemble the product.
- If disassembly is necessary due to a malfunction, contact the service center.



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