

User's Manual

LED Module

[Models for indoor use]

LED-Q028i2

LED-Q039i2

[Models for outdoor use]

LED-Q028e2

LED-Q039e2

LED-Q048e2

LED-Q059e2

LED-Q078e2

MODELS: LED-Q028i2, LED-Q039i2, LED-Q028e2, LED-Q039e2, LED-Q048e2, LED-Q059e2,
LED-Q078e2

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Declaration Of Conformity

- CE
- FCC
- RoHS
- EEE Yönetmeliğine Uygundur
- Electromagnetic Compatibility Directive (EMC) 2014/30/EU
- Low Voltage Directive 2014/35/EU
- ETL

CE Information



WARNING!

This equipment is compliant with Class A of CISPR 32.
In a residential environment this equipment may cause radio interference.

FCC Information (for USA only)

WARNING!

- The Federal Communications Commission does not allow any modification or changes to the unit EXCEPT those specified by NEC Display Solutions of America, Inc. in this manual.
Failure to comply with this government regulation could void your right to operate this equipment.
- This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Supplier's Declaration of Conformity (for USA only)

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

U.S. Responsible Party: NEC Display Solutions of America, Inc.

Address: 3250 Lacey Rd, Ste 500
Downers Grove, IL 60515

Telephone Number: 630-467-3000

Type of Product LED MODULE

Equipment Classification: Class A Peripheral

Model Number: LED-Q028i2 LED-Q039i2
LED-Q028e2 LED-Q039e2 LED-Q048e2
LED-Q059e2 LED-Q078e2



If necessary, the user should contact the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet, prepared by the Federal Communications Commission, helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-0034.

Important Information

Safety Precautions and Maintenance

FOR OPTIMUM PERFORMANCE, PLEASE NOTE
THE FOLLOWING WHEN SETTING UP AND
USING THE LED DISPLAY SYSTEM:

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

Examples of symbols

	⚠ Indicates a warning or caution. This symbol indicates you should be careful of electric shocks.
	⊘ Indicates a prohibited action. This symbol indicates something that must be prohibited.
	● Indicates a mandatory action. This symbol indicates that the power cord should be unplugged from the power outlet.

- Be sure to read the following before using the product to use it correctly and safely.



WARNING



Do not apply vibrations or shocks to the product.



Do not install the product to unstable locations or locations subject to vibrations.



Always ask a technician to perform the installation.



Do not connect the cables with wet hands. Otherwise, it may cause an injury or an electrical shock.



Do not repair or modify the product yourself. Otherwise, it may cause an injury, a fire or an electrical shock.



In case of thunder, do not touch the power cord. Otherwise, it may cause an electrical shock.



Connect the product to the correct voltage. If the product is connected to a voltage other than the specified voltage, it may lead to a fire or an electrical shock.



In case of a malfunction (nothing is displayed on the screen, etc.) or if smoke, abnormal heat, or a strange sound or odor is generated, turn the power off and immediately ask a technician or your retailer for repair.



Install the product so that the vents are not obstructed.



Make sure there are enough people available to ensure safety (at least two people) when installing or moving the product. Otherwise, it may lead to an injury.



Be sure to ground the product. If the product is not grounded, there is a risk of electrical shock in case a malfunction occurs.



Use the supplied cables for the power connection between the LED modules.



In case foreign matter has entered into the product, immediately disconnect the power supply and stop using the product.



After the installation, if a problem such as loose screws occurs, immediately ask a technician or your retailer for repair.



Do not put objects into the product. Otherwise, it may cause a fire or an electrical shock.

CAUTION

-  Do not damage the power cord. Do not put heavy objects on it, place it near heaters, pull it with excessive strength, or apply a strong force on it while it is bent. A damaged power cord may cause a fire or an electrical shock.
-  Do not install the product in narrow places where heat tends to build up.
-  Do not use the product in an environment with low heat dissipation. Otherwise, it may cause a malfunction.
-  The RJ-45 port of the product is for use with the product only. Do not connect it to a network. Connecting this port to a network that may receive over-voltage current may cause damage to the product or an electrical shock.
-  Do not use the product in a vehicle or another means of transportation.
-  Do not use or store the product in the following places.
 - Near heaters
 - Places with lots of humidity or dust, or places subject to oily smoke
 - Places where water or oil may splash
 - Places with lots of corrosive gases, such as near hot springs
 - Places where the product may freeze
 - Do not place the product on its side, face down, or upside down.
 - Places with lots of vibrations
-  If you will not be using the product for a long time, disconnect it from the power distributor for safety purposes.
-  Disconnect the power supply when performing the maintenance.
-  Install the product in accordance with the local laws and regulations.

This product can only be serviced in the country where it was purchased.

Models for indoor use [LED-Q028i2 / LED-Q039i2]

WARNING

-  In case the product is in contact with water or another liquid, immediately disconnect the power supply and stop using the product. If you continue using the product in that state, it may lead to a malfunction, a fire, or an electrical shock.

CAUTION

-  Do not place the product under direct sunlight or near heaters.
-  This product is designed to be used indoors. Do not use it outdoors. Otherwise, it may cause a malfunction.

**Models for outdoor use [LED-Q028e2 / LED-Q039e2 / LED-Q048e2 /
LED-Q059e2 / LED-Q078e2]**



WARNING



The product has been designed to be used outdoors and can withstand rain. However, the product is not designed to be immersed.



CAUTION



Do not install the product in places subject to strong wind. Otherwise, the product may fall.
Ask a technician for the installation.

Precautions when using the product in seashore environment.

The product is not perfectly resistant to corrosion and rust. Pay attention to the following when doing setup and maintenance.



- Ask a technician or your retailer to install the product in a location where it is directly subject to seawater droplets and salty breeze.
- Parts that have been damaged during the setup or maintenance must be repaired or replaced.
- Salt and other matter may adhere to the surface of the LED display. Therefore, it is recommended to clean it regularly with water.
- Inspect regularly the state of the product and perform maintenance thoroughly.
Remove the salt and rust that may adhere to the product, and replace the parts as necessary.
- Ask a technician or your retailer for more details.

About the LED lamps

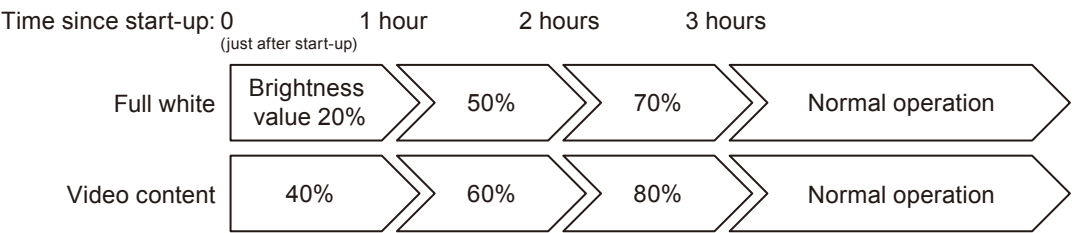
- 

LED lamps are sensitive to static electricity and surge voltage, which may damage their components and decrease their reliability.
Take measures against static electricity during the installation. Do not touch the LED display areas.
- 

The LED lamps may absorb and hold moisture during the LED module installation or if not used for a long time. Therefore, in such cases, the brightness must be increased gradually during a break-in period before setting the normal brightness.
If the LED lamps are lit with 100% brightness while moisture is retained, the temperature will rise very quickly and the water inside the lamps will evaporate and expand. This will cause the encapsulating resin to expand, which may lead to separation of the boundary surface inside the LED lamps. This separation can cause the LED lamps not to light up properly.

Lamp break-in

Configure the brightness settings as shown below with a video displayed on the LED module. After a break-in period of approximately 3 hours, the LED module can be used under normal conditions.

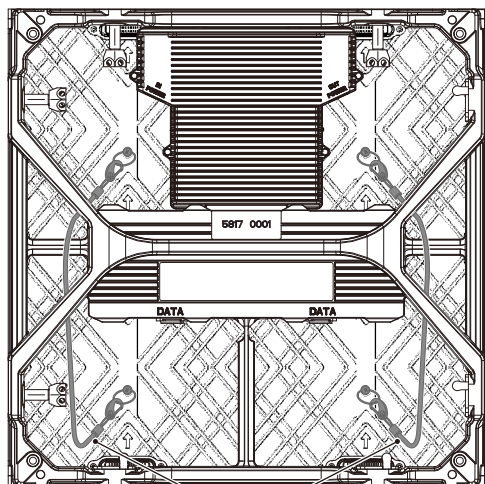


Contents

The supplied parts are as follows.

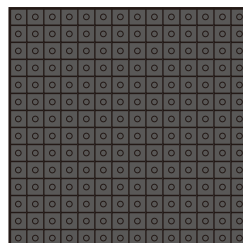
In case one of these parts is missing or damaged, contact the retailer.

[Cabinet]



[Safety wire]

[Pixel card]

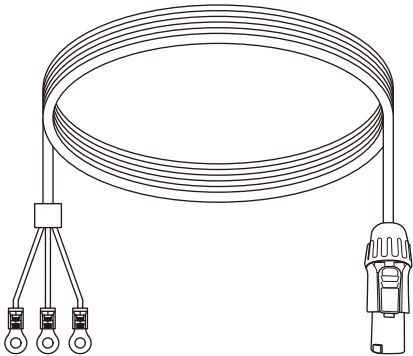


4 cards per cabinet

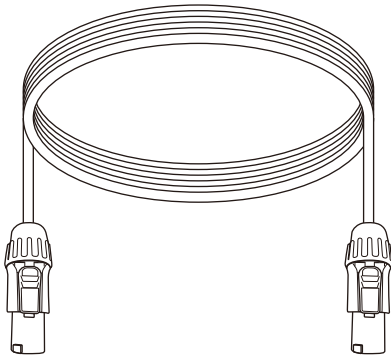
Related Items for Installation (Sold separately)

The items required when installing the system are shown below.
Contact your retailer for more details.

[Power cord]

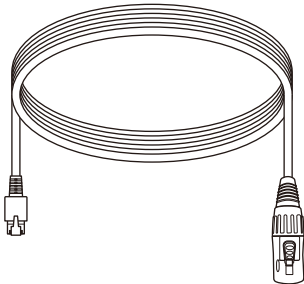


To connect the LED module to the power distributor

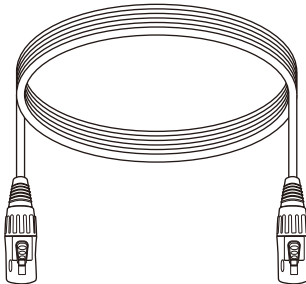


To connect two LED modules together

[LAN cable]

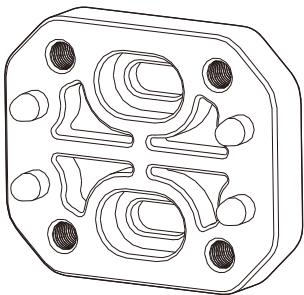


To connect the LED module to the LED controller



To connect two LED modules together

[Front bracket]

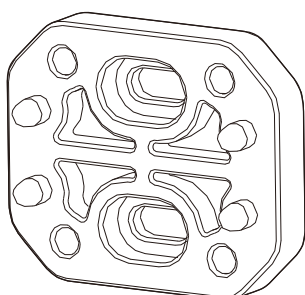


[Connection screw for front bracket]



(M6 40 mm)

[Rear bracket]

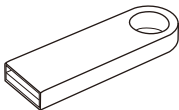


[Connection screw for rear bracket]



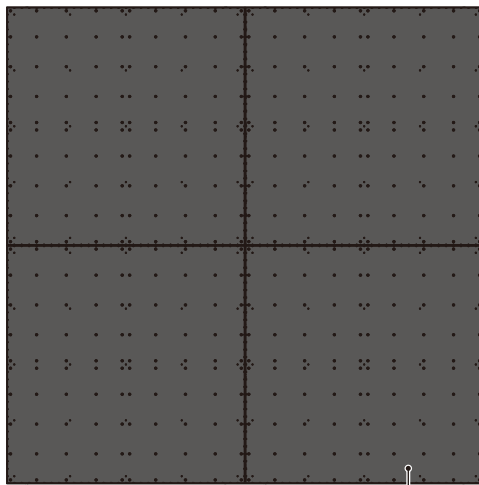
M8 25 mm

[USB drive]

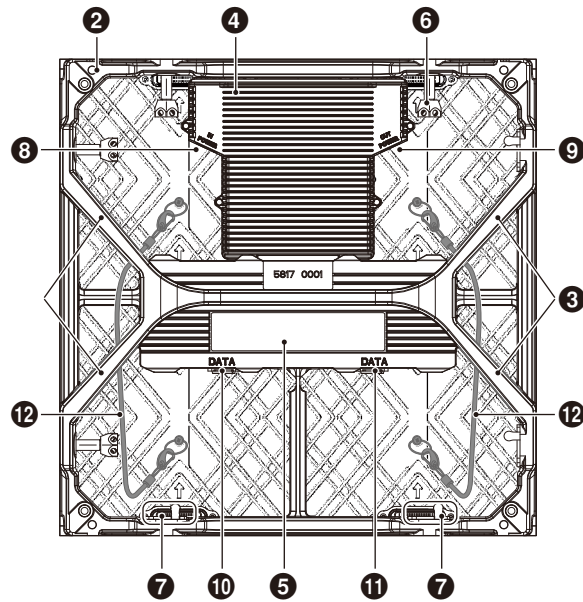


Contains the data, the user’s manual (this document), and the control software for the product you have purchased.

Parts Name



①



- ① Pixel card
- ② Cabinet
- ③ Handle
- ④ Power box
- ⑤ Signal box
- ⑥ Clamper
- ⑦ Clamper holder
- ⑧ Power cord input
- ⑨ Power cord output
- ⑩ LAN cable input/output 1
- ⑪ LAN cable input/output 2
- ⑫ Safety wire

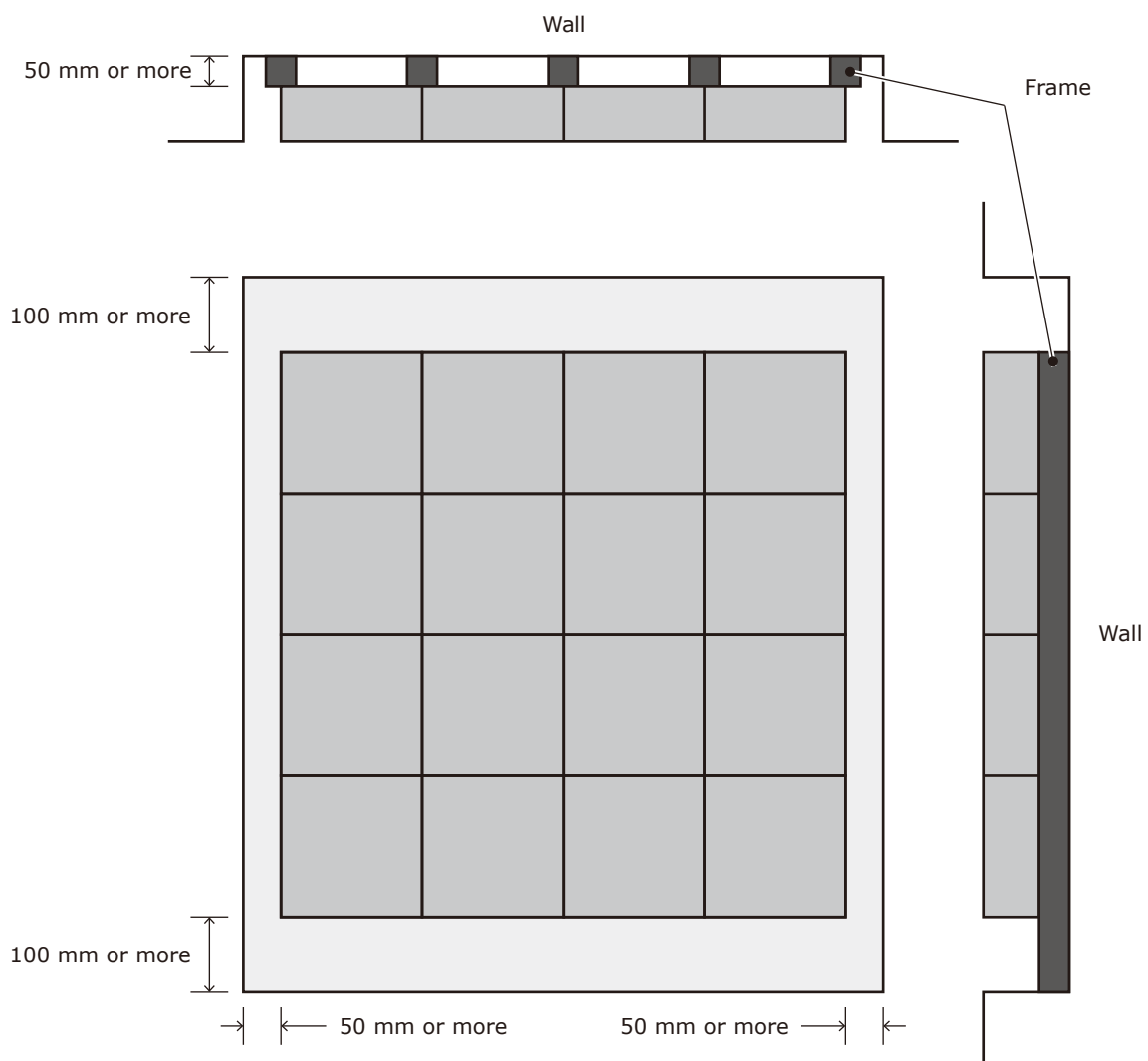
Installation Example

Before the installation, be sure to review the following safety precautions to ensure proper and safe installation.

CAUTION

- Ask a technician to perform the installation.
- Make sure the product is moved and installed by enough people to ensure safety.
- Make sure that the beams or the other structures to which the product is installed have enough strength to support the weight of the product, and make sure that the product is securely fixed.
- Do not install directly the product to a surface that has not enough strength.
- When installing the product in a narrow place (in a wall, etc.), leave gaps around the LED screens as shown in the figure below to prevent an increase in the temperature. The figure below is only an example. Pay particular attention to the installation environment (heat from the external environment, direct sunlight, heat generated by the number of displays) in order to facilitate cooling of the LED modules. If cooling is not sufficient, take measures, such as increasing the distance from the walls or installing a forced-air cooling system. Ask a technician or your retailer for more details.
- The power cords, LAN cables, and installation materials (hanging bars, etc.) are sold separately.

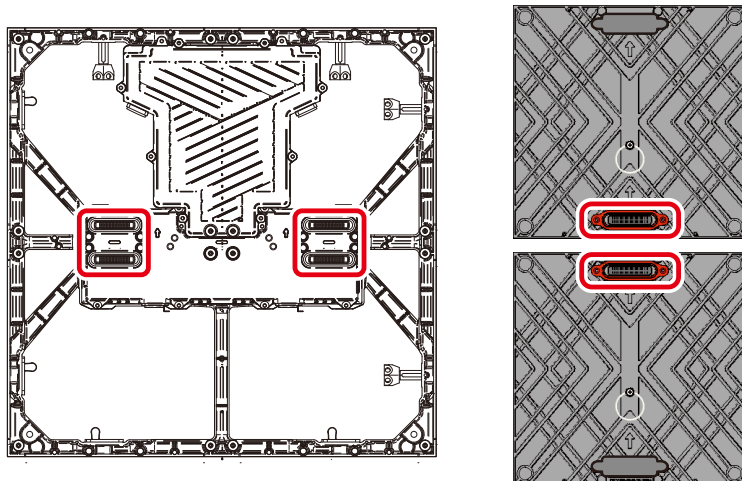
1-1. Front installation example



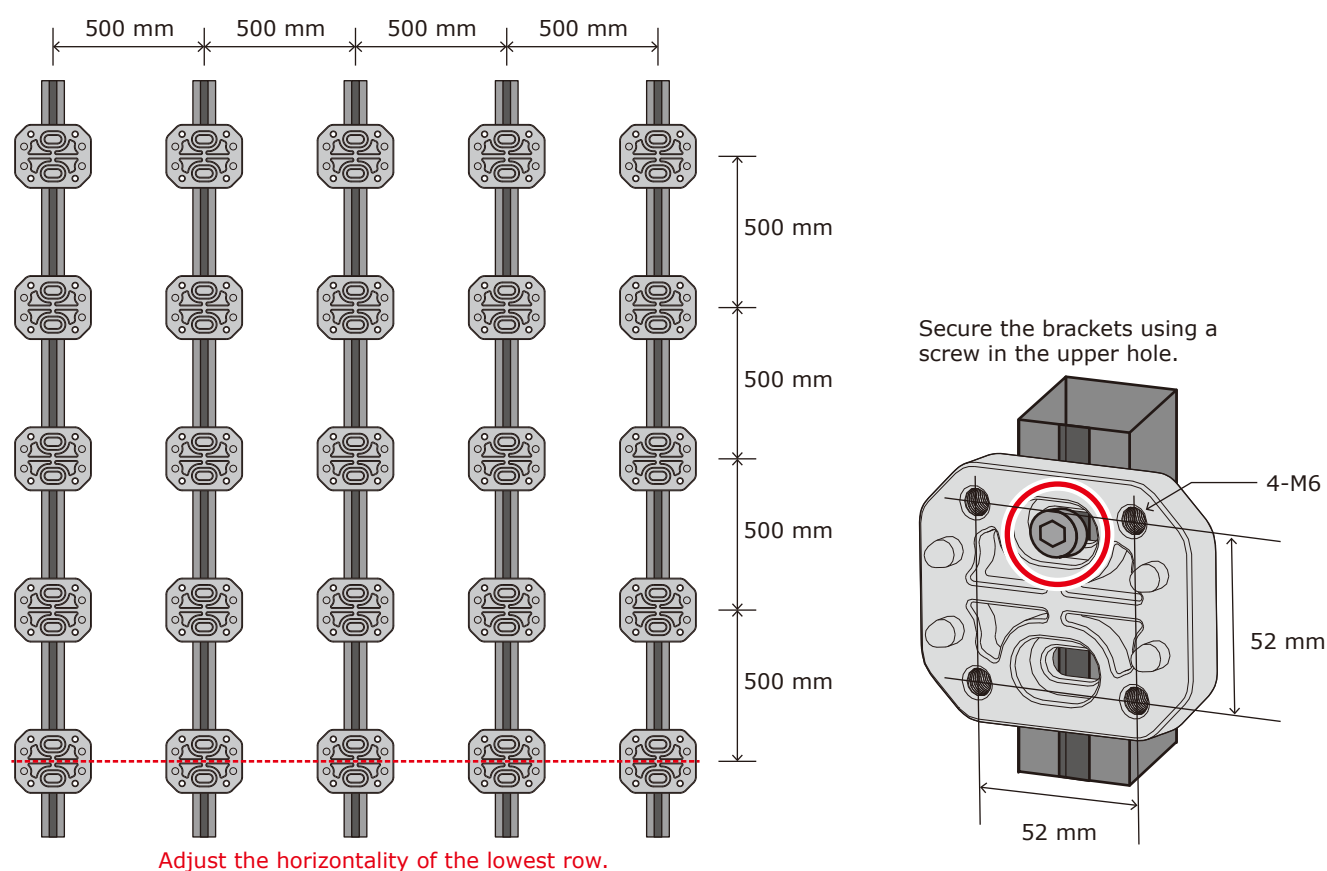
A recommended example of installation when using the brackets is shown below. Ask a technician or your retailer for the installation procedure when not using the brackets.

⚠ CAUTION

- The pixel cards are installed to the cabinets in this product at the time of purchase. For front installation, remove the pixel cards from the cabinets before installing the product. For details on how to remove the pixel card, see "Maintenance", p.33.
- Waterproof performance of the product is not guaranteed when the pixel cards have been removed. During installation, do not splash water on the pixel card connectors of the cabinets or the pixel cards. (Models for outdoor use)



Install the front brackets to the frame as shown in the figure below.

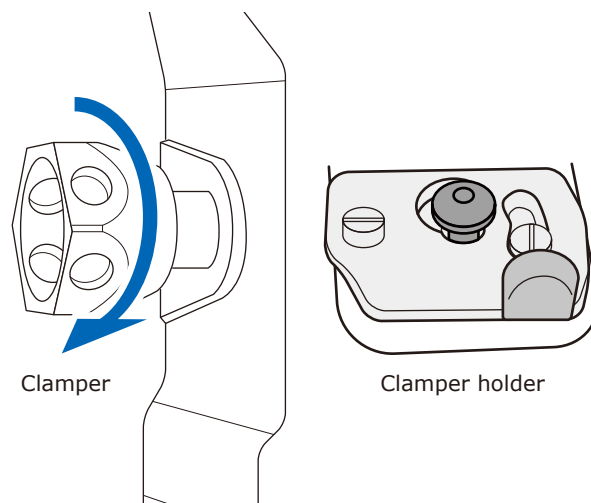
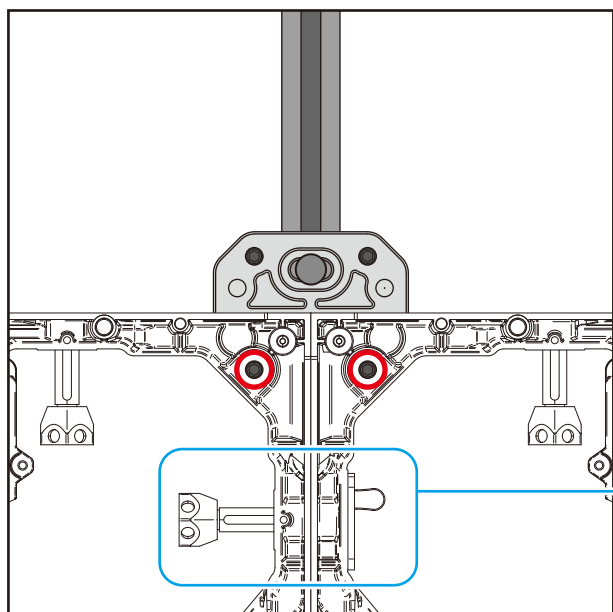


Install the LED cabinets starting from the bottom row.

First, secure the cabinets using the screws.

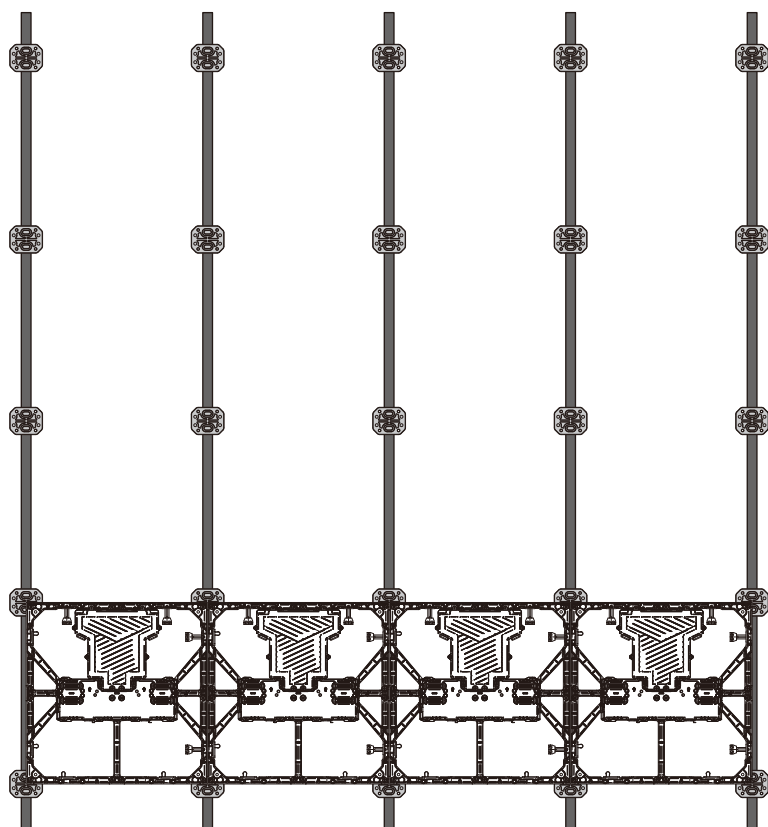
The tightening torque for the screws securing the cabinets is 6 to 6.5 kgf·cm.

Next, secure the LED cabinets together using the clampers.



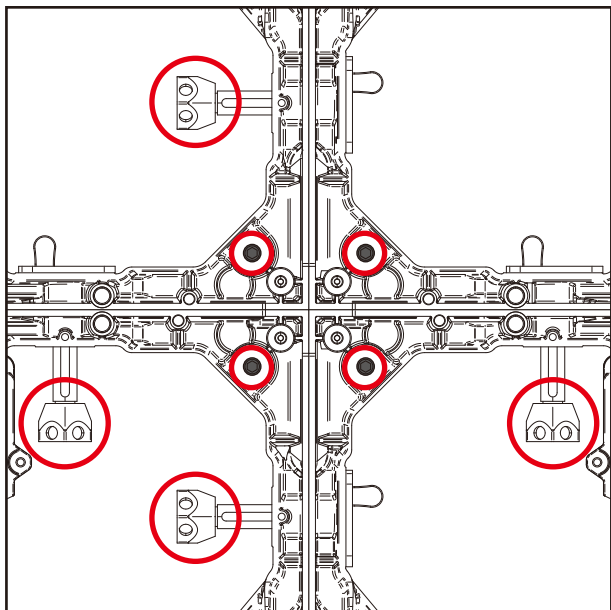
Fix the clampers to the clamer holders.

While securing the cabinets, check that they are parallel vertically and horizontally, and that they form an even surface.

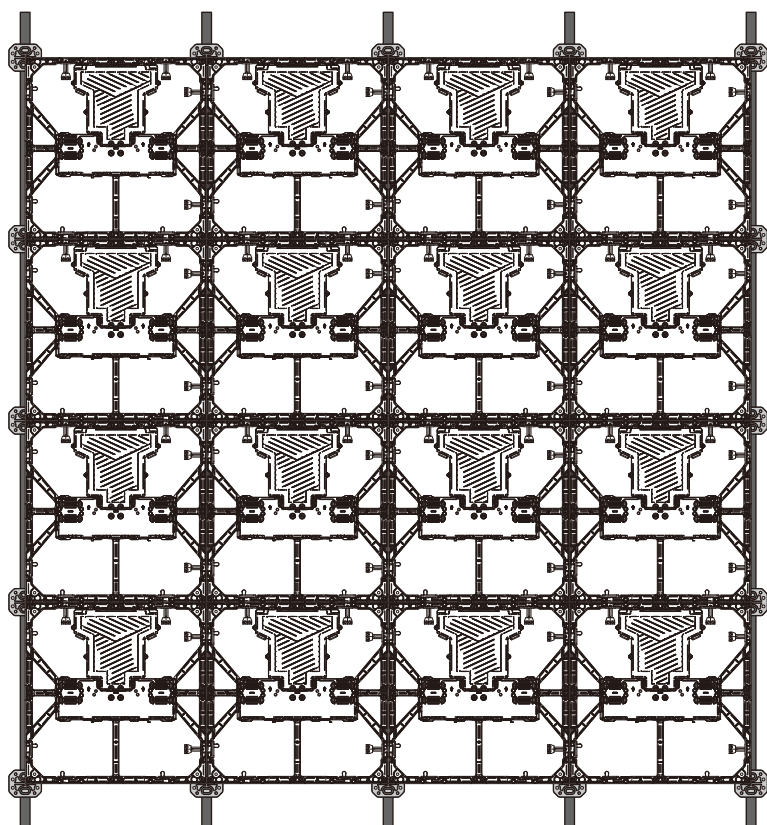


Repeat this procedure to secure all the cabinets to the frame.

While securing the cabinets, check that they are parallel vertically and horizontally, and that they form an even surface.



The installation of the cabinets is complete.

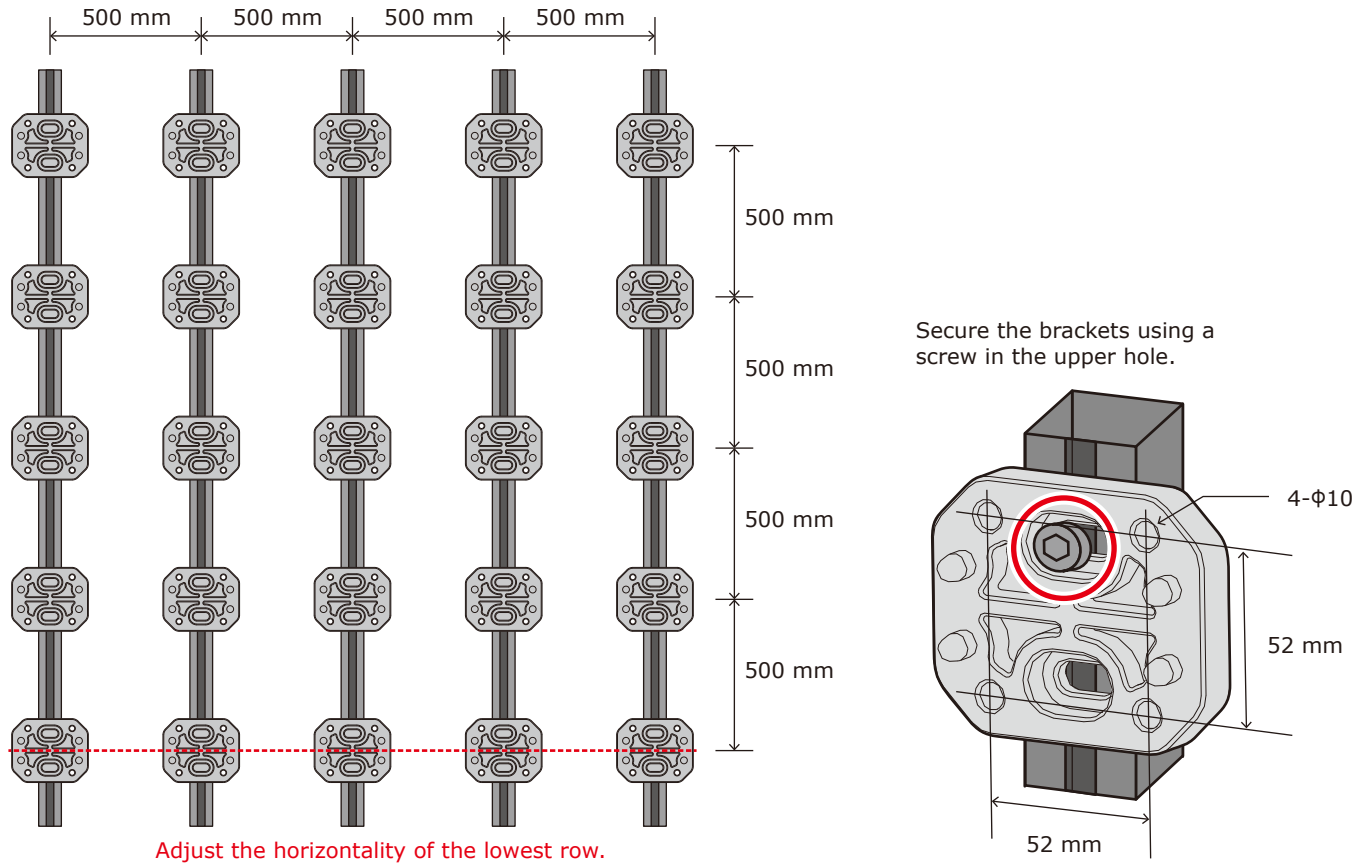


1-2. Rear installation example

CAUTION

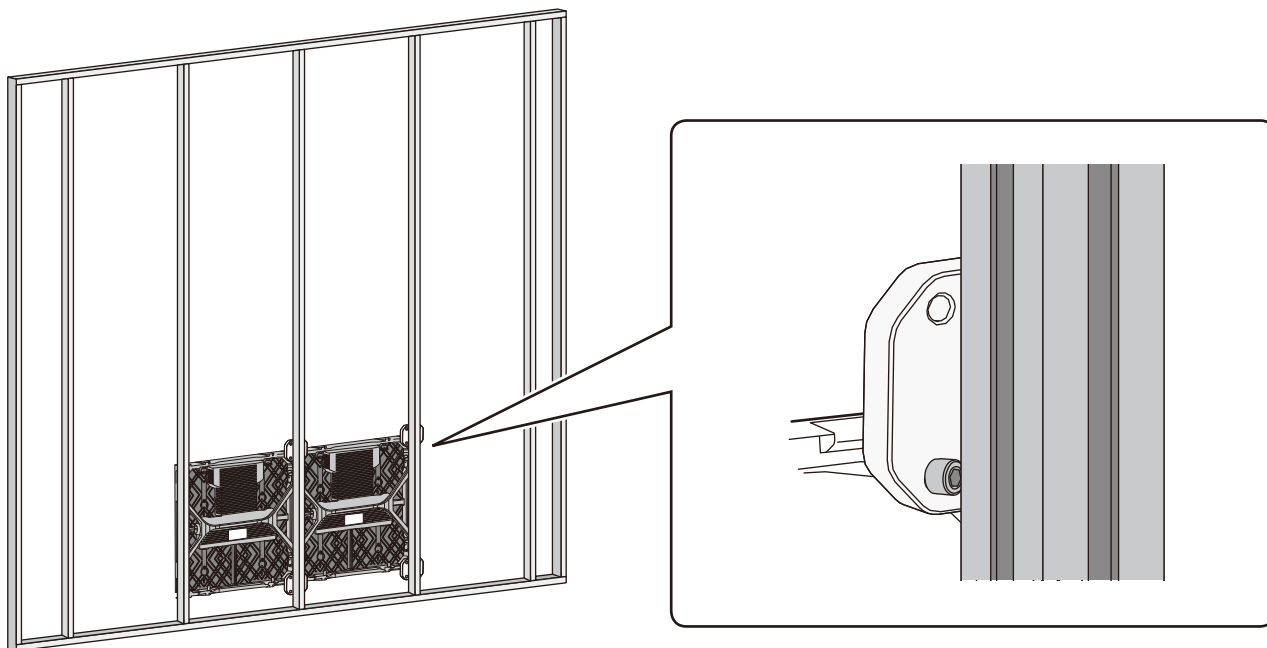
It is not necessary to remove the pixel cards with rear installation.

Install the rear brackets to the frame as shown in the figure below.



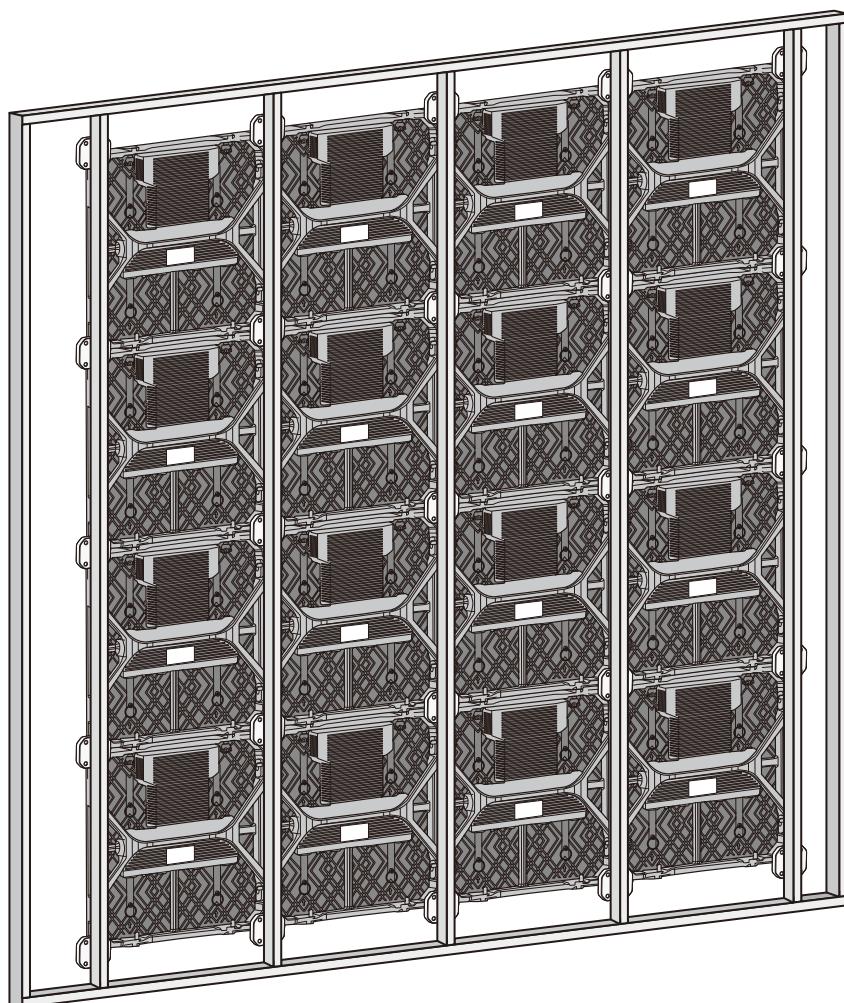
Next, install the cabinets to the brackets.

The tightening torque for the screws securing the cabinets is 8 to 8.5 kgf·cm.



While referring to the front installation example, secure the cabinets together using the clampers. While securing the cabinets, check that they are parallel vertically and horizontally, and that they form an even surface.

The installation of the cabinets is complete.

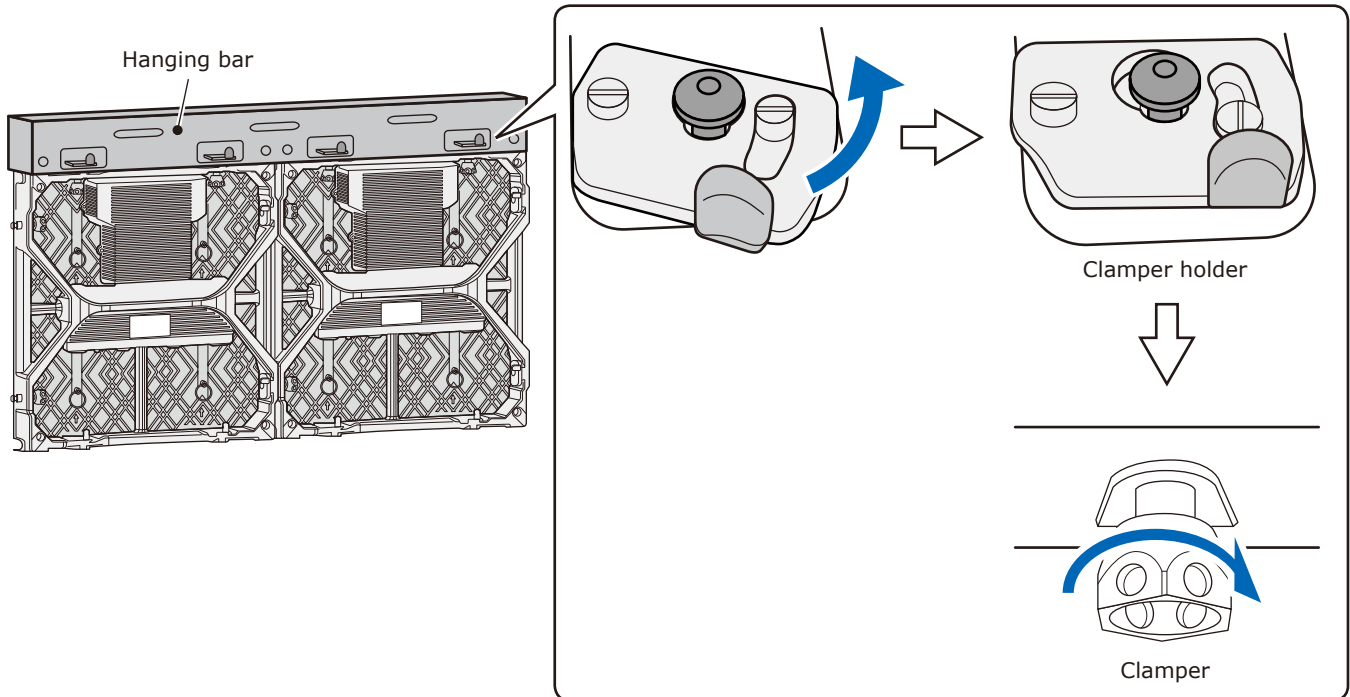


1-3. Hanging installation example

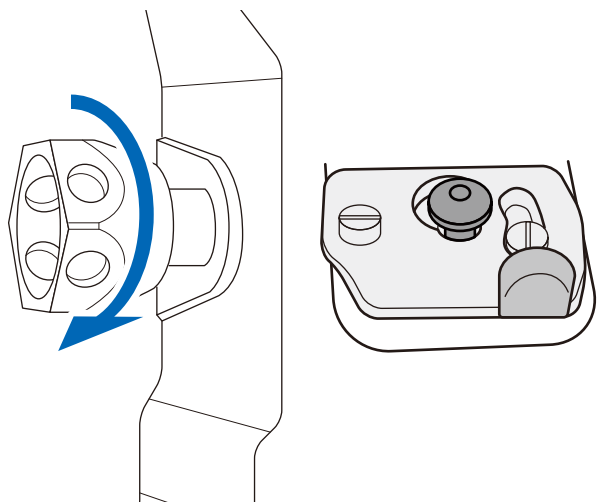
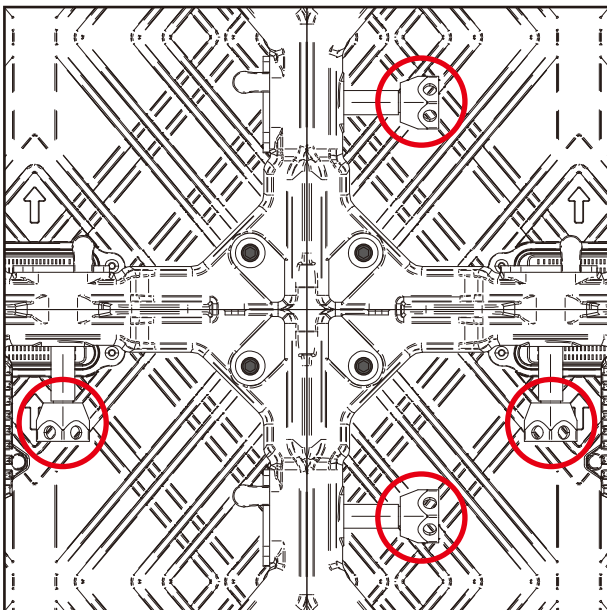
CAUTION

- Up to 15 cabinets can be hung to a single LED module in the lengthwise direction.
Ask a technician or your retailer for more details.
- It is not necessary to remove the pixel cards with hanging installation.

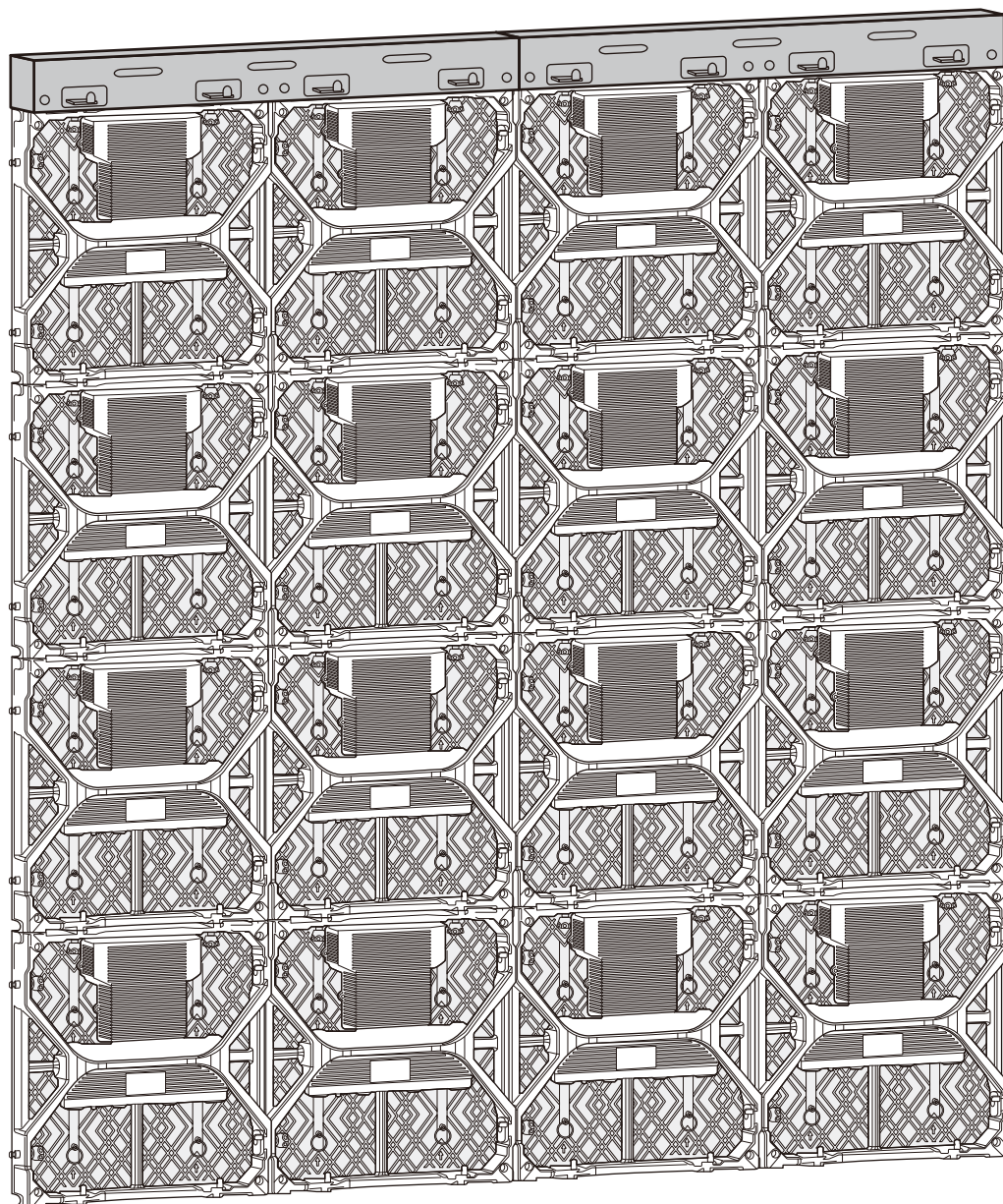
Fix the cabinet to the hanging bar using the clampers as shown in the figure below.



Fix the top, bottom, right, and left clampers to the clamber holders. While securing the cabinets, check that they are parallel vertically and horizontally, and that they form an even surface.



Fix all the cabinets using the clampers.
The installation of the cabinets is complete.



2. Wiring

(1) Maximum number of signal connections

The maximum number of connections per LAN cable is shown below.

Product name	Maximum number of connections
LED-Q028i2	20 modules
LED-Q039i2	39 modules
LED-Q028e2	20 modules
LED-Q039e2	39 modules
LED-Q048e2	60 modules
LED-Q059e2	92 modules
LED-Q078e2	158 modules

CAUTION

The maximum number of connections may differ depending on the connected LED controller. Therefore, check the specifications of the LED controller you are using.
Ask a technician or your retailer for more details.

(2) Maximum number of power connections

CAUTION

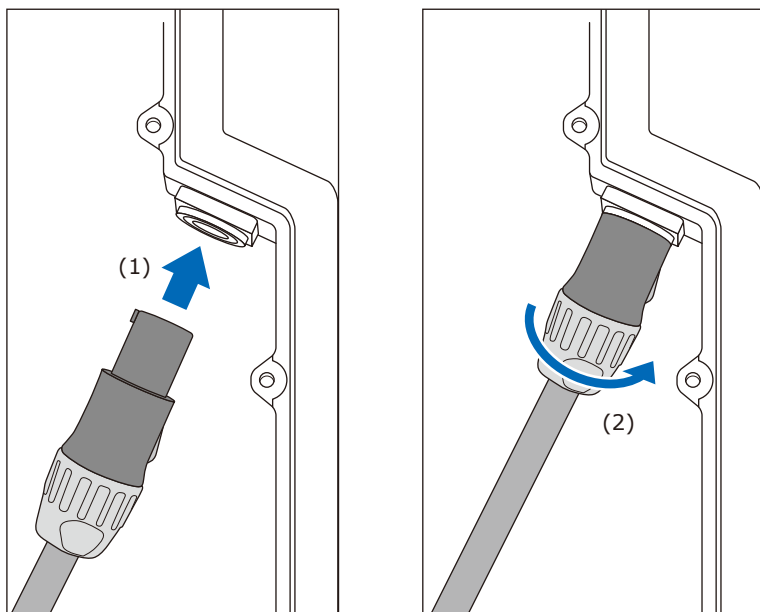
Exceeding the maximum capacity may generate smoke or cause a fire.
Check the voltage used and do not exceed the connection limits shown below.

	LED-Q028i2	LED-Q039i2	LED-Q028e2	LED-Q039e2
100 - 120 V AC	8 modules	8 modules	8 modules	8 modules
200 - 240 V AC	12 modules *1	12 modules *1	12 modules *1	12 modules *1
	LED-Q048e2	LED-Q059e2	LED-Q078e2	
100 - 120 V AC	8 modules	8 modules	8 modules	
200 - 240 V AC	12 modules *1	12 modules *1	12 modules *1	

*1: The values shown are when using 16 A D-type circuit breakers.

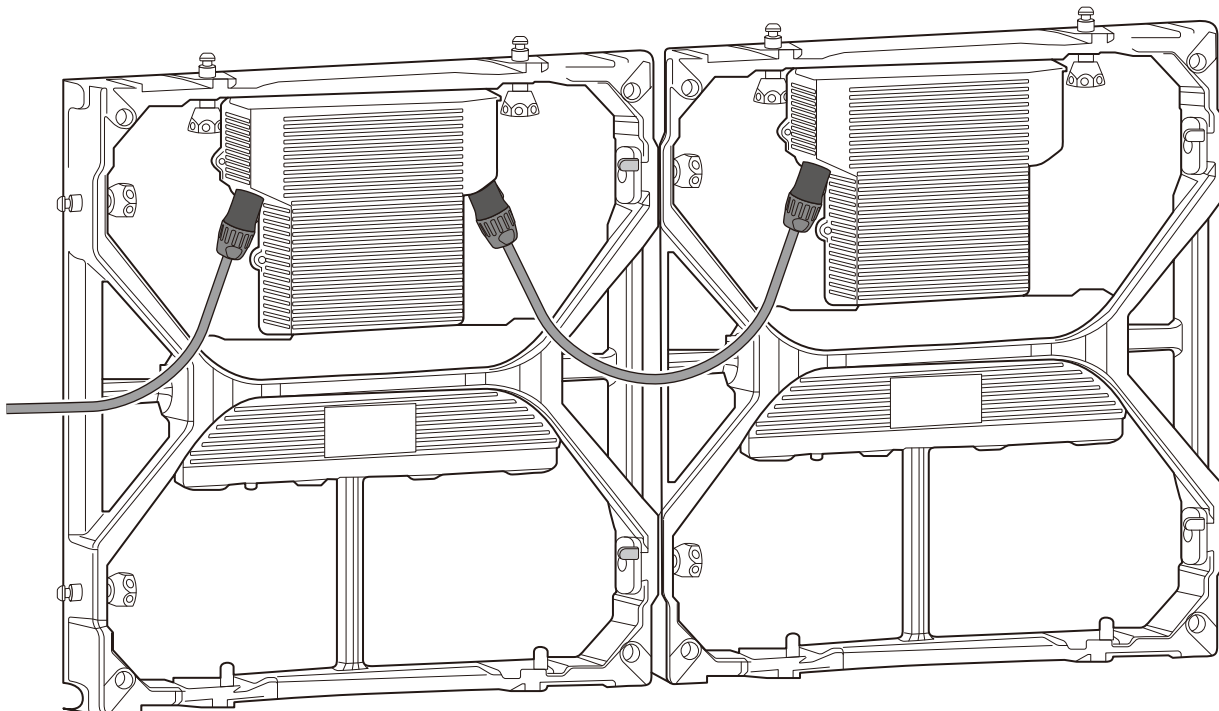
(3) Power cord connection

Connect the power cords to the LED modules on the first row.

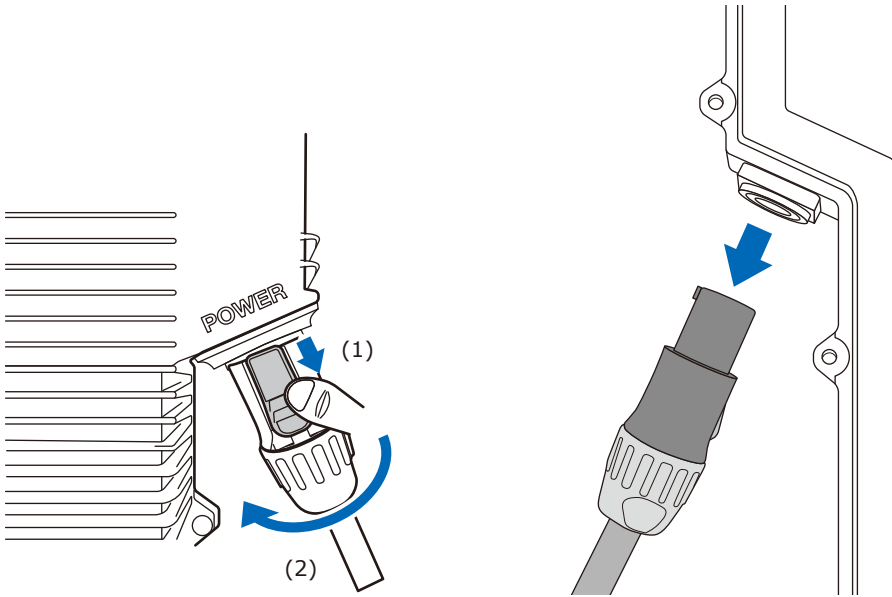


Connect the power cord in direction (1) and tighten it in direction (2) until you hear a click.

Connect the power cords between the LED modules.



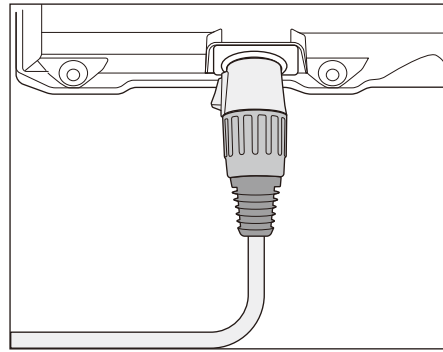
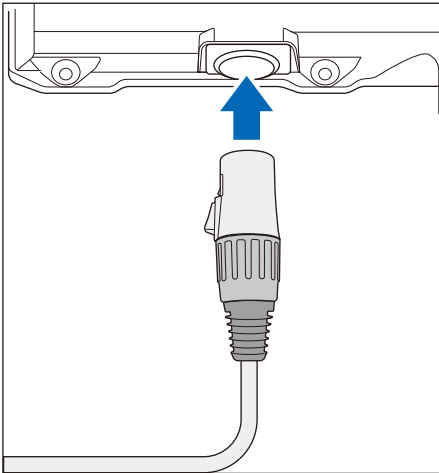
How to disconnect the power cord



Keep the button (1) pressed and rotate in direction (2) to disconnect the power cord.

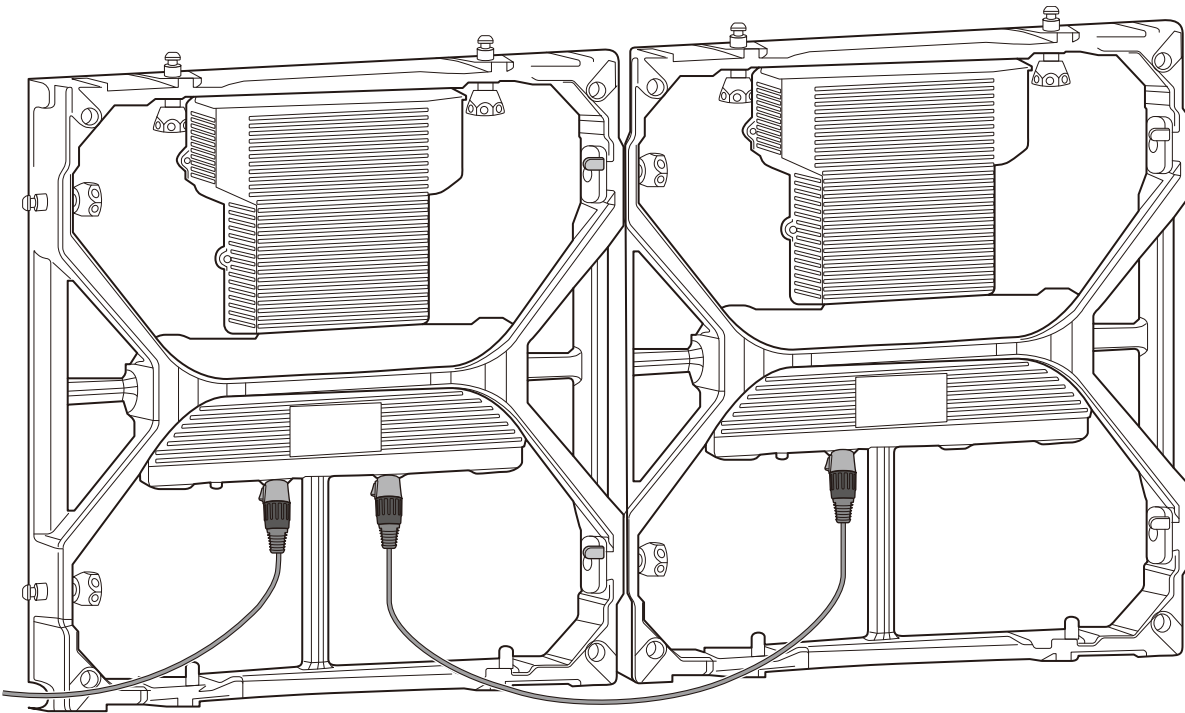
(4) LAN cable connection

Connect the LAN cables to the LED modules on the first row.



Insert the cable until you hear a click.

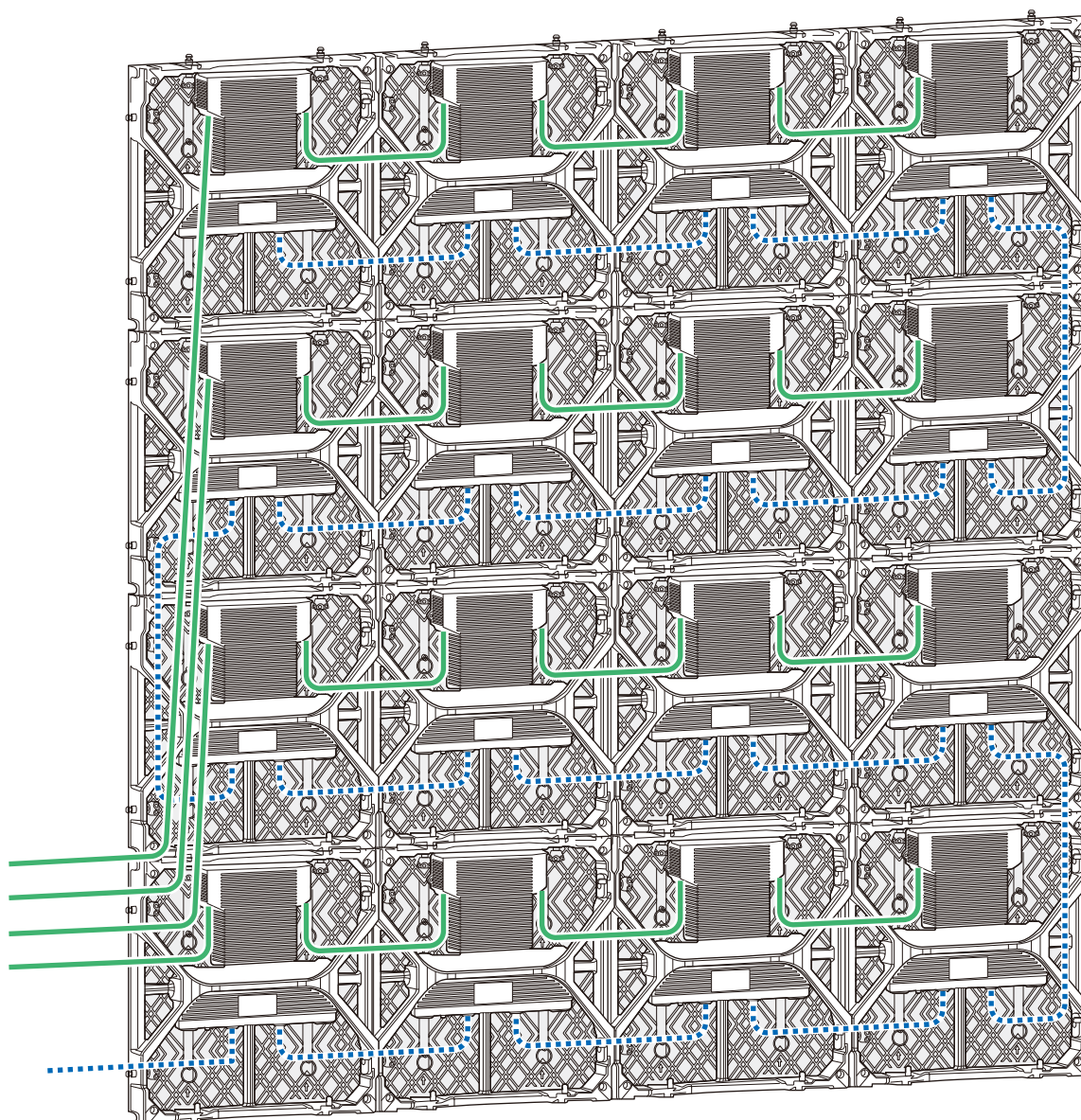
Connect the LAN cables between the LED modules.



Complete wiring diagram

CAUTION

The wiring depends on the system. Ask your retailer for more details.



..... Dotted line: LAN cable

——— Solid line: Power cable

3. Installing the pixel card

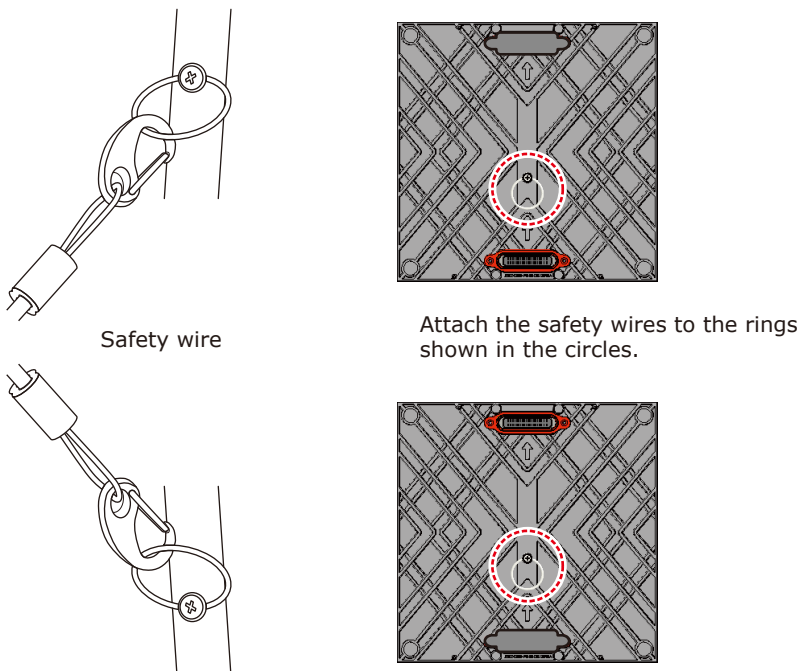
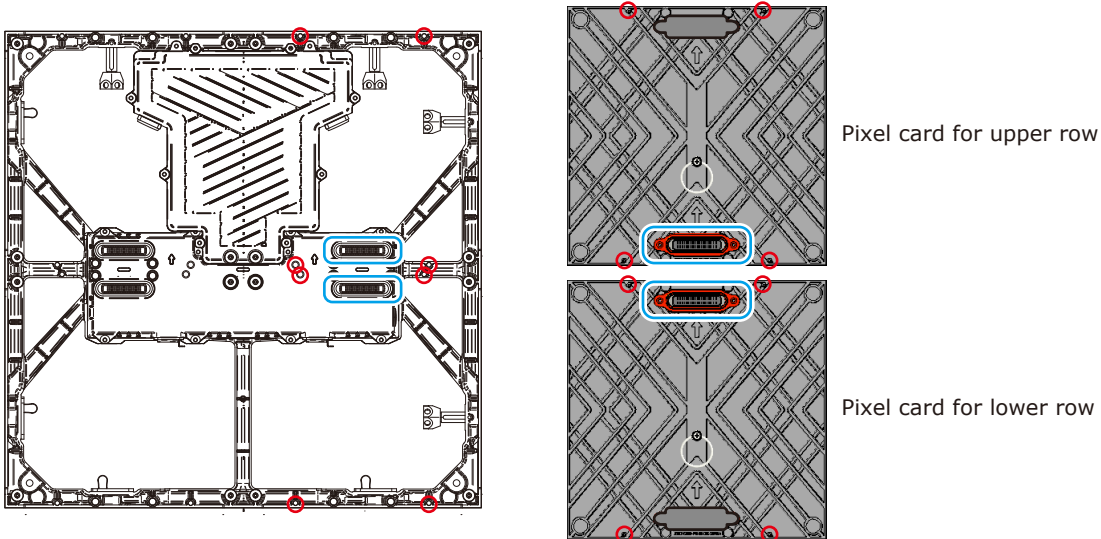
Install the pixel cards that have been removed during front installation.

⚠ CAUTION

- The pixel cards contain powerful magnets. If magnetic cards come close to the pixel cards, the data contained within may be damaged. Therefore, do not carry any magnetic card when installing the pixel cards.
- When installing the pixel cards, pay attention not to damage them against the pixel cards already installed or other objects. Otherwise, the video may not be displayed properly.

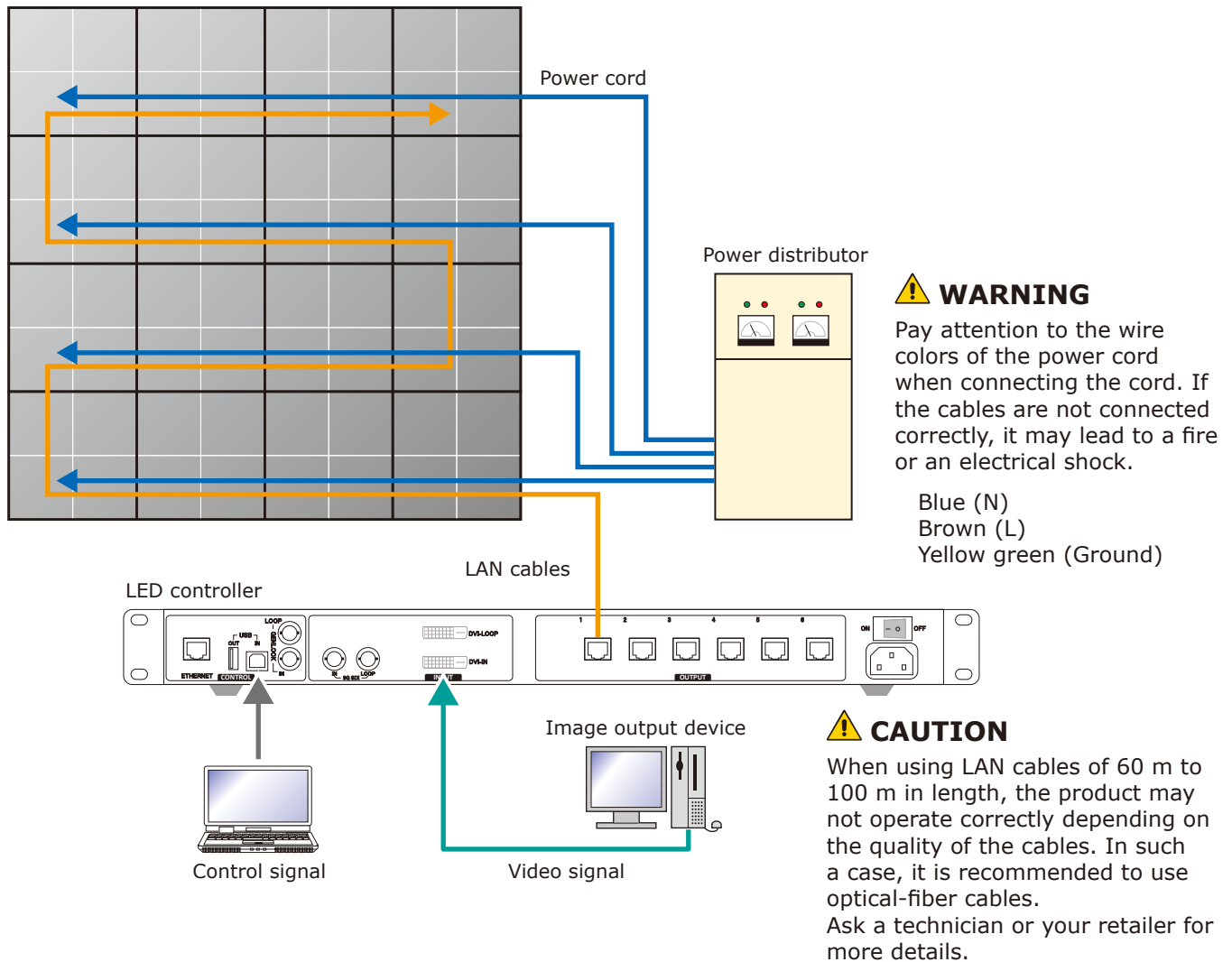
The arrows (↑) at the back of the pixel cards indicate the upper side.

Align the four guide pins of the pixel cards with the four guide holes of the cabinet, and the pixel card connector (for upper row or lower row installation) with a connector on the cabinet.



Screen Configuration

Check that all the connections are completed, and then turn on the LED modules and the LED controller.



Setting the screen configuration

Perform the setting using the LCT-Mars control software by Novastar.

Log in with the administrator privileges.

Display the login screen as follows: User(U) → Advanced Synchronous System UserLogin(A).

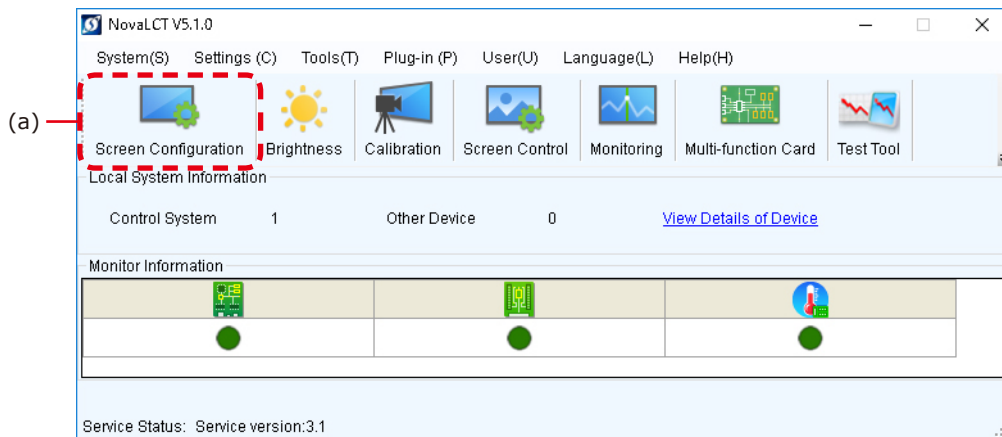
Enter the password ("admin" by default) to log in with the administrator privileges.

To change the password, go to User(U) → Change Password(U) with the administrator privileges.

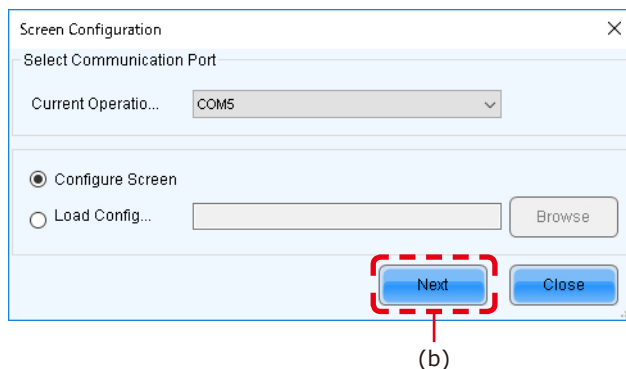
CAUTION

Do not forget the new password after it has been changed.

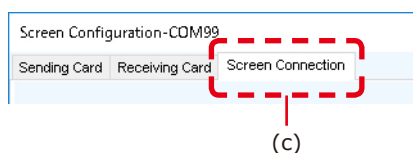
Click "Screen Configuration" (a).



Check the port in "Select Communication Port", and then click the "Next" button (b).



In the Screen Configuration screen that is displayed, select the "Screen Connection" tab (c).



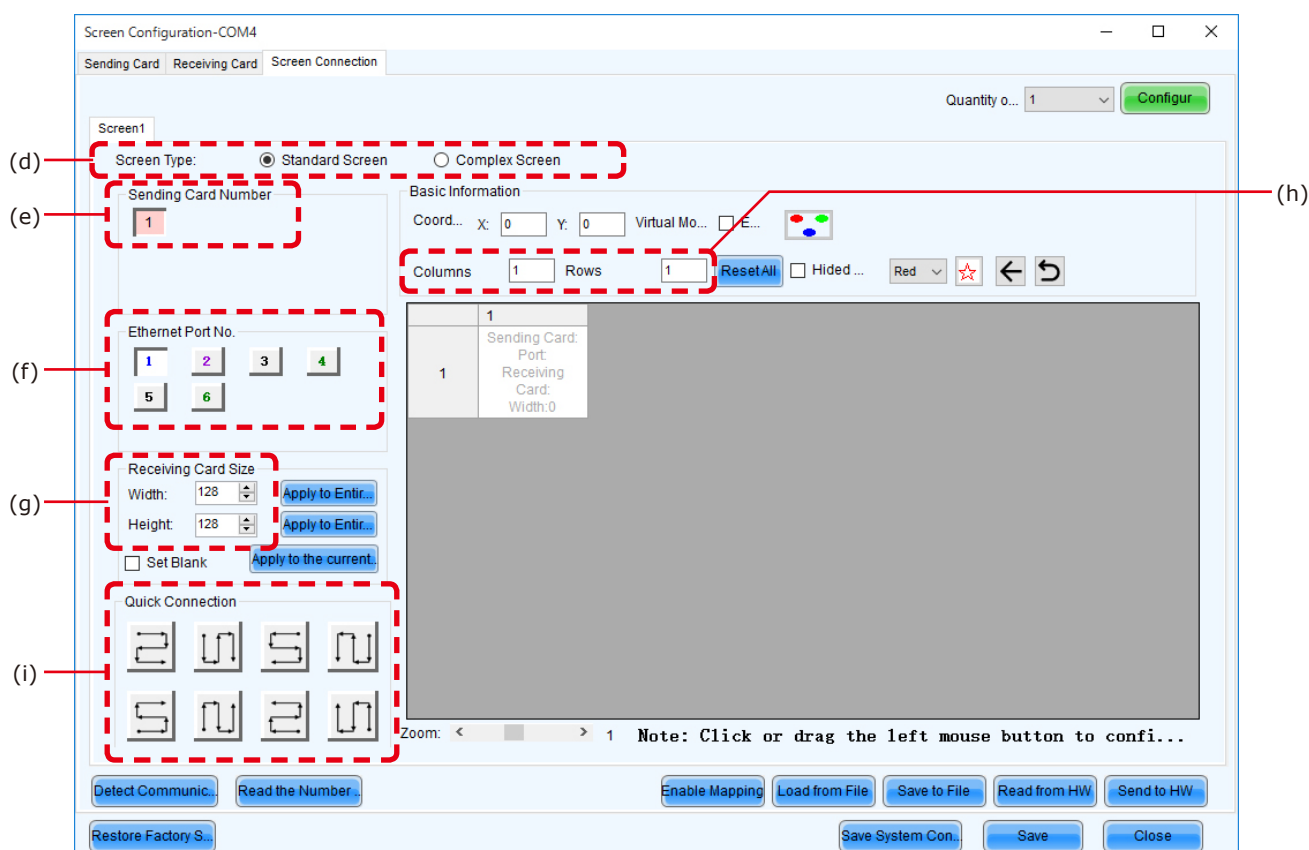
CAUTION

Do not change the settings in the "Receiving Card" tab.

Otherwise, the video may not be displayed properly.

Select "Standard Screen" under "Screen Type" (d).

The settings in "Sending Card Number" (e) and "Ethernet Port No." (f) vary depending on the connected LED controller.



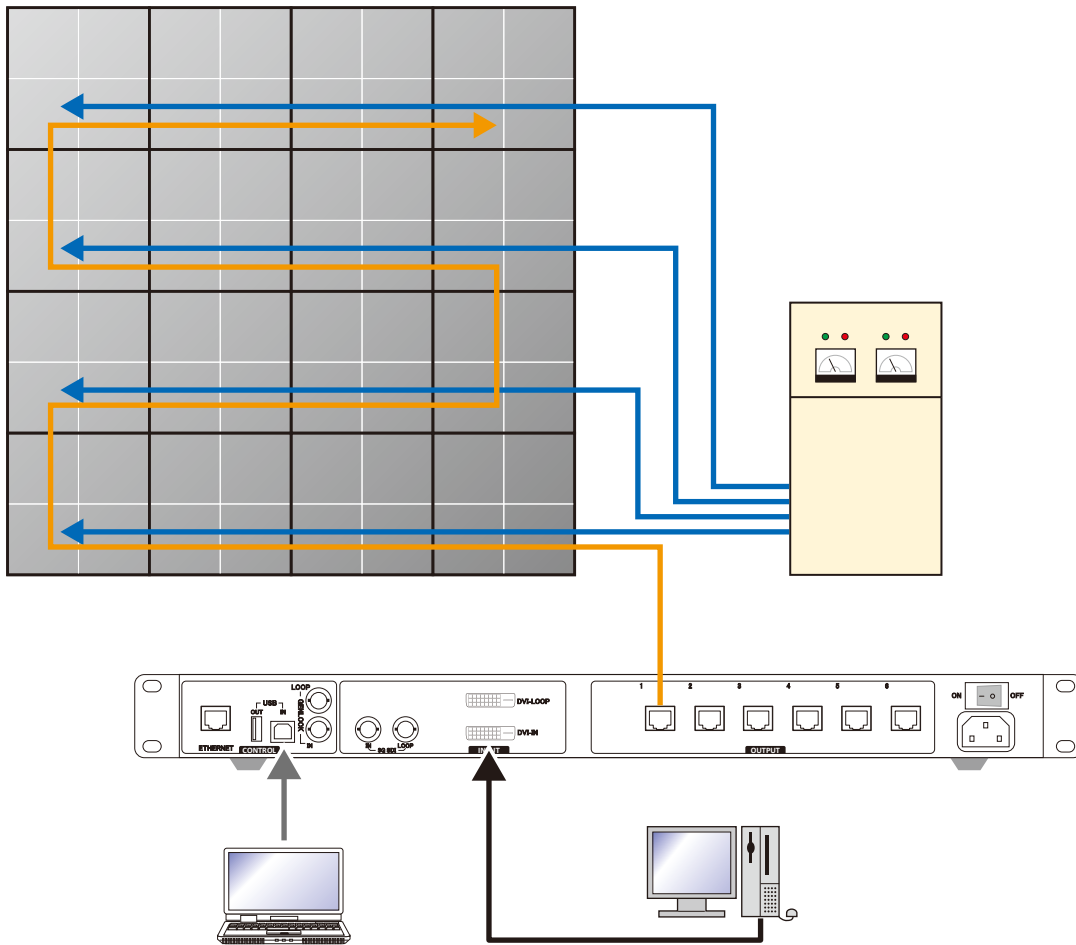
Enter the value in the table below under "Receiving Card Size" (g).

Product name	LED-Q028i2	LED-Q039i2	LED-Q028e2	LED-Q039e2	LED-Q048e2	LED-Q059e2	LED-Q078e2
Pixel pitch	2.84 mm	3.91 mm	2.84 mm	3.91 mm	4.81 mm	5.95 mm	7.81 mm
Number of displayed pixels (resolution/module)	176 × 176	128 × 128	176 × 176	128 × 128	104 × 104	84 × 84	64 × 64

[Columns/Rows] Enter the number of installed screens under "Columns/Rows" (h) (the number of vertically installed screens in Columns, and the number of horizontally installed screens in Rows).

[Configuration example]

The setting values are given for the following example where 16 LED-Q028i2 modules (pixel pitch of 2.84 mm) are installed in a 4 (columns) x 4 (rows) configuration.



- (1) With a pixel pitch of 2.84 mm, enter Width=176 and Height=176 under "Receiving Card Size" (g). Do not use the buttons located next to the values.

(g) Receiving Card Size

Width: 176 Apply to Entire...

Height: 176 Apply to Entire...

☐ Set Blank Apply to the current...

- (2) Since the configuration is 4 (columns) x 4 (rows), enter Columns=4 and Rows=4. A 4 (columns) x 4 (rows) screen configuration is displayed.

Screen Configuration-COM4

Sending Card | Receiving Card | Screen Connection

Quantity o... 1 **Configur...**

Screen1

Screen Type: ☒ Standard Screen ☐ Complex Screen

Sending Card Number: 1

Ethernet Port No.: 1 2 3 4

Receiving Card Size: Width: 176 Height: 176 **Apply to Entire...** **Apply to the current...**

Quick Connection:

Basic Information: Coordinate: X: 0 Y: 0 Virtual Mo... ☐ E... ☐ Enabl... Screen Ar... 1366 x 768

Columns: 4 Rows: 4 **Reset All** ☐ Hided ... Red

	1	2	3	4
1	Sending Card: Port: 1 Receiving Card: Width:0	Sending Card: Port: 2 Receiving Card: Width:0	Sending Card: Port: 3 Receiving Card: Width:0	Sending Card: Port: 4 Receiving Card: Width:0
2	Sending Card: Port: 1 Receiving Card: Width:0	Sending Card: Port: 2 Receiving Card: Width:0	Sending Card: Port: 3 Receiving Card: Width:0	Sending Card: Port: 4 Receiving Card: Width:0
3	Sending Card: Port: 1 Receiving Card: Width:0	Sending Card: Port: 2 Receiving Card: Width:0	Sending Card: Port: 3 Receiving Card: Width:0	Sending Card: Port: 4 Receiving Card: Width:0
4	Sending Card: Port: 1 Receiving Card: Width:0	Sending Card: Port: 2 Receiving Card: Width:0	Sending Card: Port: 3 Receiving Card: Width:0	Sending Card: Port: 4 Receiving Card: Width:0

Zoom: 1 **Note: Click or drag the left mouse button t...**

Detect Communic... **Read the Number...** **Enable Mapping** **Load from File** **Save to File** **Read from HW** **Send to HW**

Restore Factor... **Save System Co...** **Back Up Termi...** **Save** **Close**

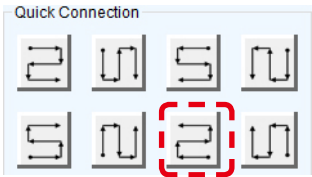
- (3) If multiple LED controllers are used, select the number of the connected LED controllers.
 Since only one controller is used in this example, it is not necessary to set "Sending Card Number" (e).
- (4) Configure the connection.

The system is connected to port 1 of the LED controller.

Select "1" (port 1) under "Ethernet Port No." (f).



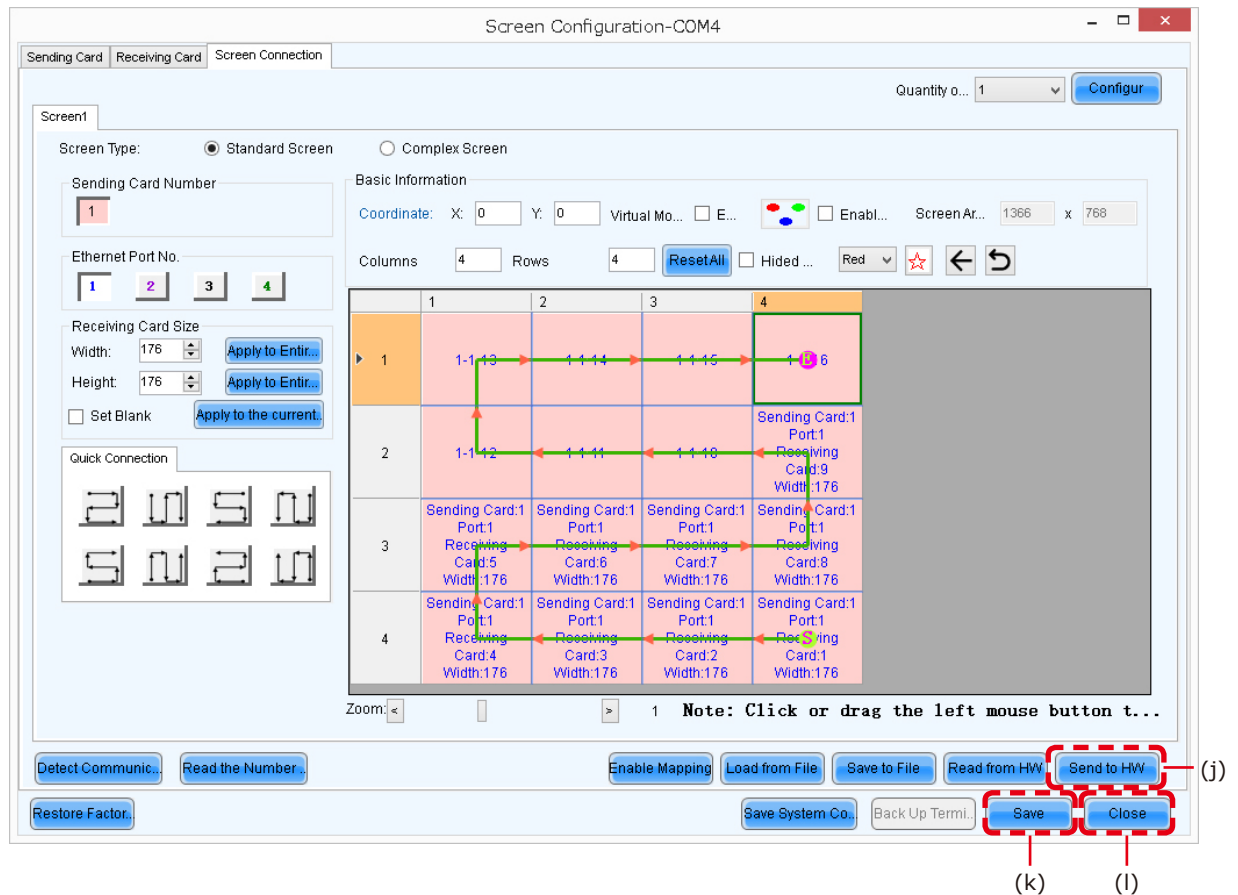
Click (select) the connection pattern under "Quick Connection" (i). Since in the example, the modules are connected from the bottom right to the bottom left, select the second pattern at the bottom from the right.



Select the cabinet at the bottom right with the mouse, and then select the other cabinets toward the left edge as shown in the figure below.

	1	2	3	4
1	Sending Card: Port: Receiving Card: Width:0	Sending Card: Port: Receiving Card: Width:0	Sending Card: Port: Receiving Card: Width:0	Sending Card: Port: Receiving Card: Width:0
2	Sending Card: Port: Receiving Card: Width:0	Sending Card: Port: Receiving Card: Width:0	Sending Card: Port: Receiving Card: Width:0	Sending Card: Port: Receiving Card: Width:0
3	Sending Card: Port: Receiving Card: Width:0	Sending Card: Port: Receiving Card: Width:0	Sending Card: Port: Receiving Card: Width:0	Sending Card: Port: Receiving Card: Width:0
▶ 4	Sending Card:1 Port:1 Receiving Card:4 Width:176	Sending Card:1 Port:1 Receiving Card:3 Width:176	Sending Card:1 Port:1 Receiving Card:2 Width:176	Sending Card:1 Port:1 Receiving Card:1 Width:176

After selecting the cabinet to the left on the upper row, the selection will continue automatically as shown on the screen below.



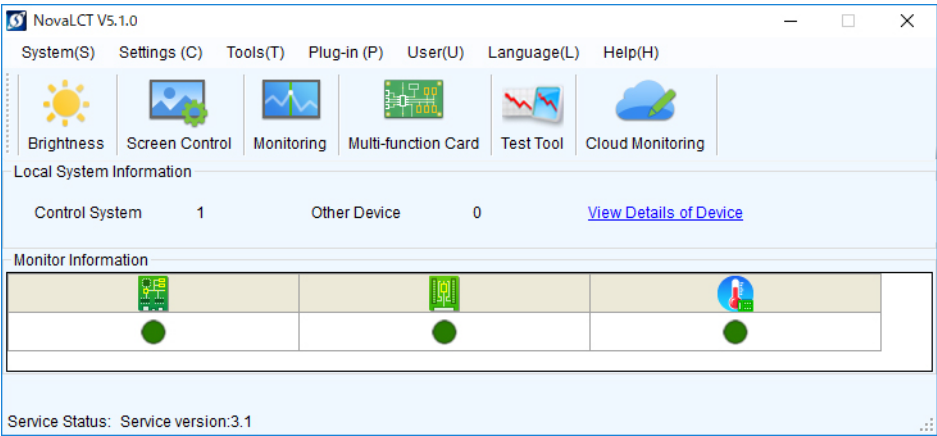
(5) Save the settings.

- Click the "Send to HW" button (j). When the dialog box indicating that the process finished successfully is displayed, click OK.
- Check that the image is correctly displayed, and then click the "Save" button (k). When the screen indicating that the process finished successfully is displayed, click OK.

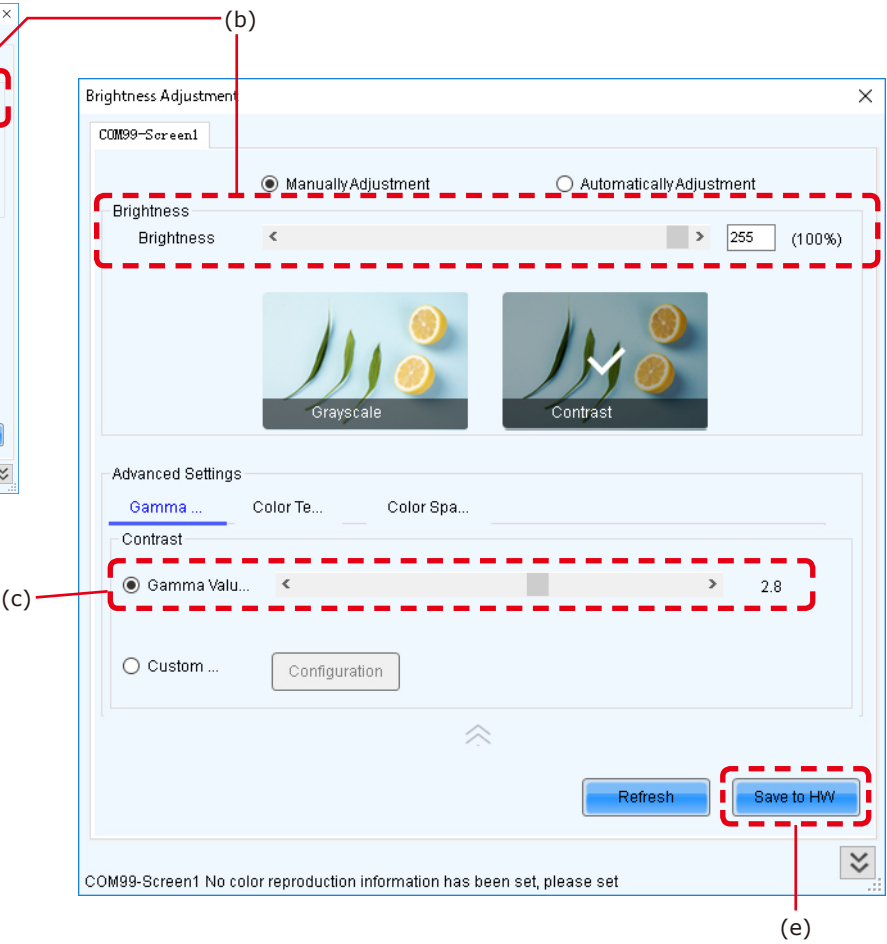
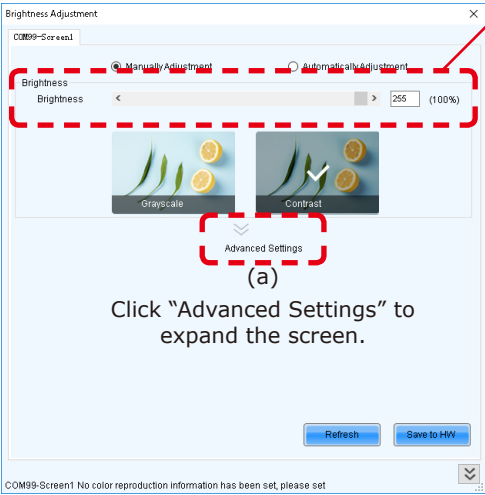
The setting of the screen configuration is complete. Click the "Close" button (l) to close the Screen Configuration screen.

Image Setting

You can adjust the brightness, the gamma correction value, and the color temperature.



Click “Brightness” on the top screen to display the following window.



Click "Advanced Settings" (☒) (a) to expand the setting screen.

(1) Brightness

Set the brightness of the screen using the slider (b).

Increasing the value increases the brightness.

(2) Gamma correction

Set the gamma correction value using the slider (c).

Increasing the value makes the dark parts of the screen darker.

(3) Color temperature

Set the color temperature using the slider (d).

Increasing the value makes the colors more bluish, while reducing the value makes the colors more reddish.

When the setting is complete, click the "Save to HW" button to save the settings.

Maintenance

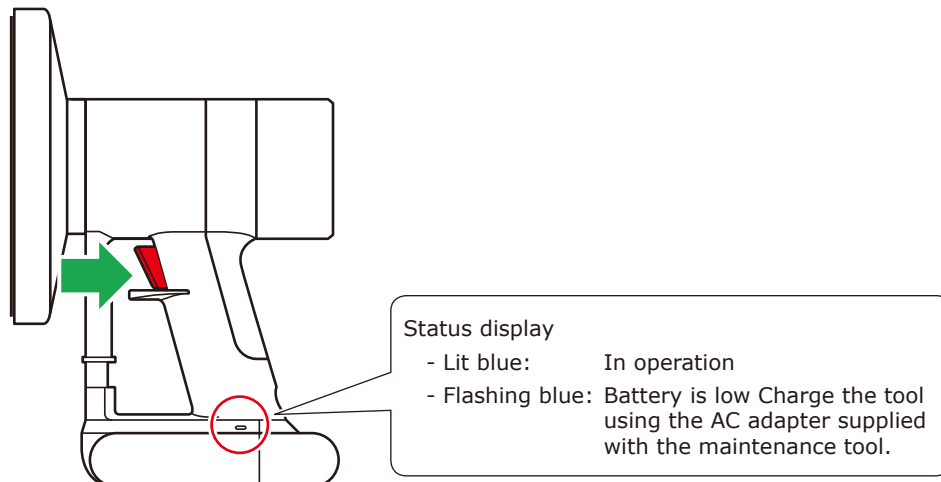
CAUTION

Disconnect the power supply to the LED modules when performing the maintenance.

Removing a pixel card (in case of front installation)

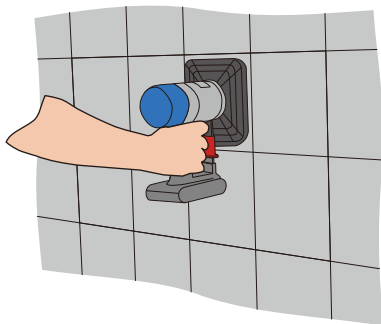
Remove the pixel card using the maintenance tool (for Q2 series).

Pull the trigger of the handle to activate the suction function. Release the trigger to stop the suction function.

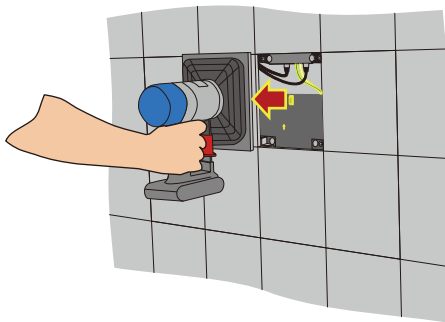


CAUTION:

Check that the battery of the tool is fully charged before starting the work. Pixel card falls if the battery runs out. Hold the pixel card with your hand to support in case it falls.



(1) Push the tool against the pixel card without turning it on.



(2) Turn the tool on, and then pull it straight toward you to remove the pixel card. Keep the tool turned on.

(3) Hold the pixel card, and then turn the tool off.

CAUTION:

Do not turn the tool off until you hold the pixel card. Otherwise, the pixel card may fall and break.

*To install the pixel card, use the tool and follow the removal procedure in the reverse order.

Removing a pixel card (in case of rear installation)

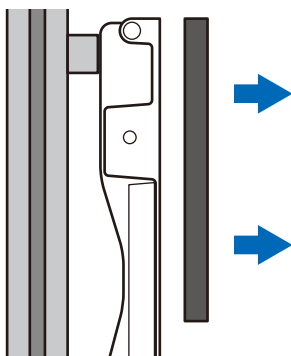
In the case of rear installation, remove the pixel cards by pushing them from the rear of the LED modules.

CAUTION

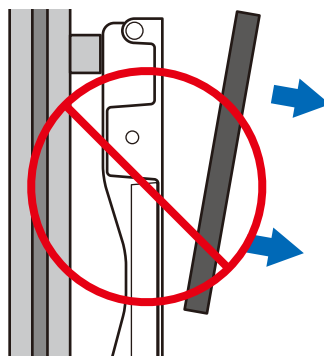
- To replace the upper pixel cards, do it after removing the lower pixel cards.
- The pixel cards contain powerful magnets. If magnetic cards come close to the pixel cards, the data contained within may be damaged. Therefore, do not carry any magnetic card when installing the pixel cards.
- When installing or removing the pixel cards, pay attention not to damage them against the pixel cards already installed or other objects. Otherwise, the video may not be displayed properly.
- Check that the safety wire is connected before removing the pixel card.

CAUTION

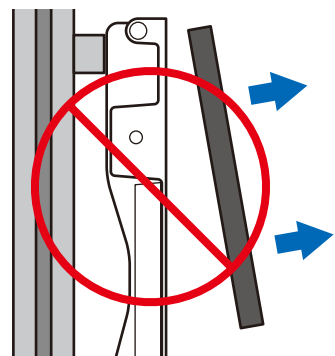
If a pixel card is pushed at an angle, the part where the pixel contacts the cabinet may be damaged. Push the pixel card straight.



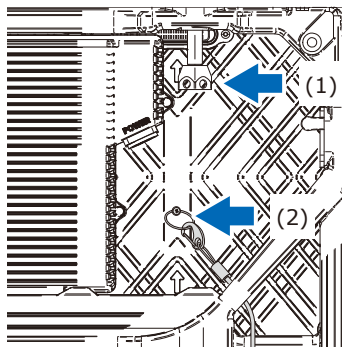
Correct removal



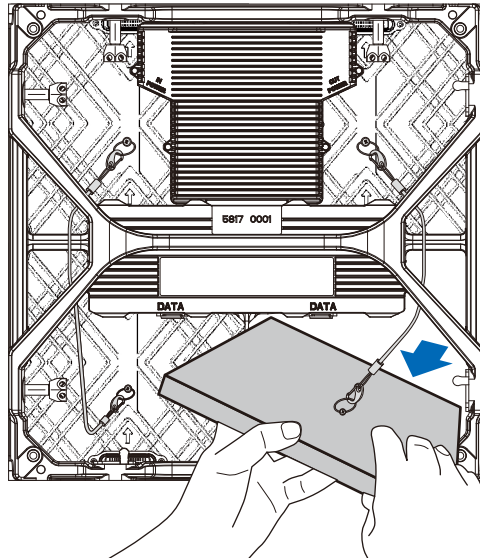
If pushed at an angle



To remove a pixel card, push gradually the locations (1) and (2) on the pixel card as shown in the figure below.

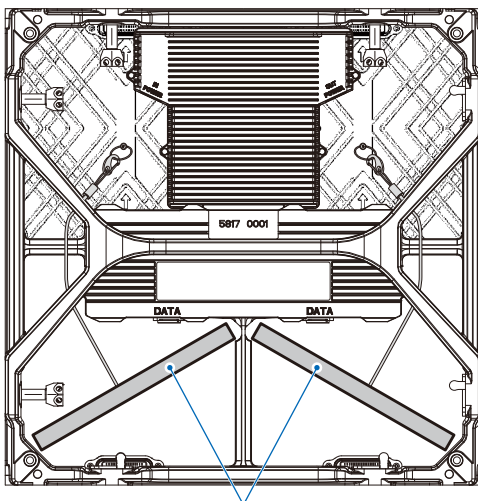


After removing the pixel card, take it out from the back as shown in the figure below.



⚠ CAUTION

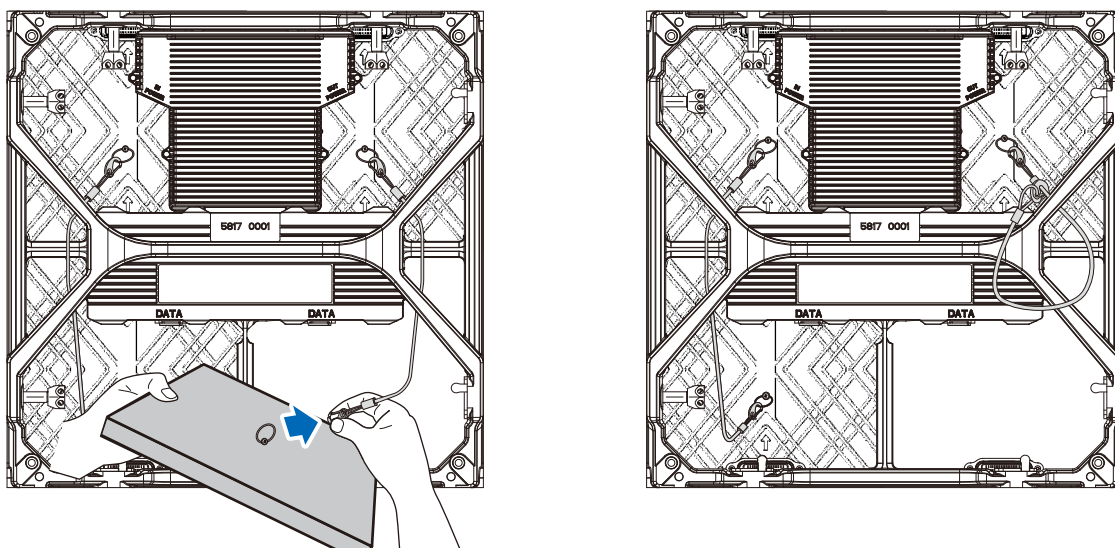
The two paths to take out the pixel cards are shown in the figure below. To replace the upper pixel cards, do it after removing the lower pixel cards.



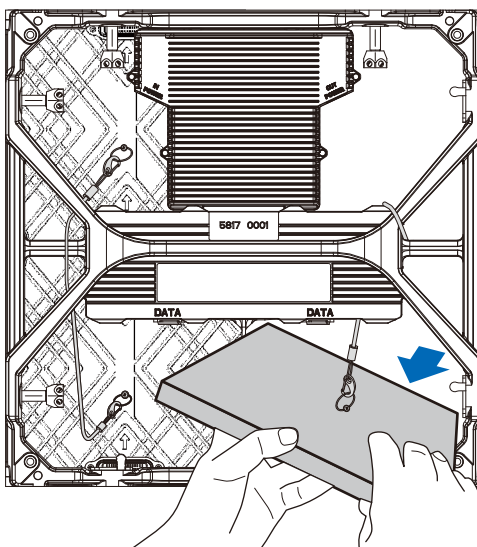
Pixel card

For example, to remove the pixel card at the top right as seen from behind, first remove the pixel card at the bottom right.

After taking out the pixel card from the back, remove the safety wire, and attach it to the upper safety wire to prevent it from falling, as shown in the figure below.



Remove the pixel card at the upper right and bring it to the bottom side before taking it out from the bottom right.



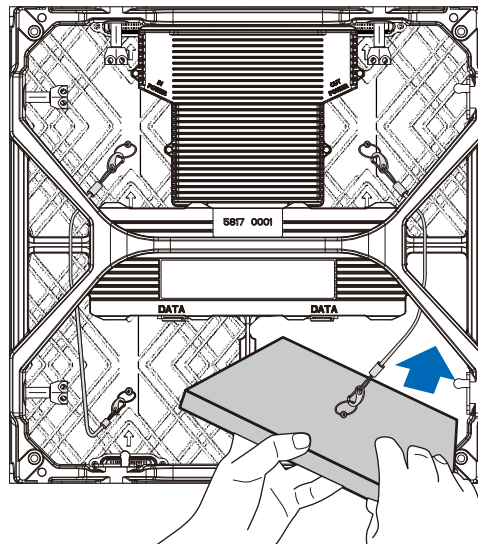
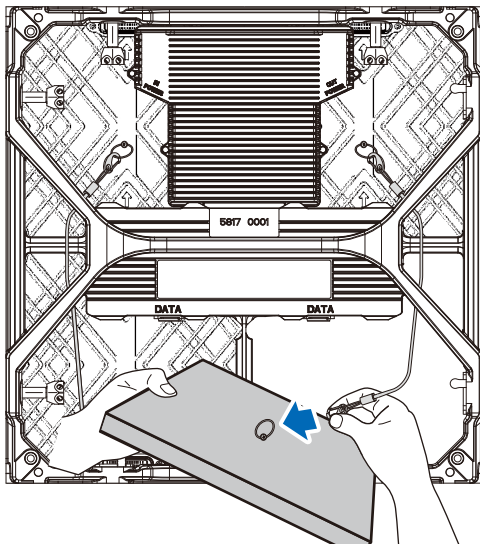
Installing a pixel card (in case of rear installation)

After the maintenance, install the pixel card.

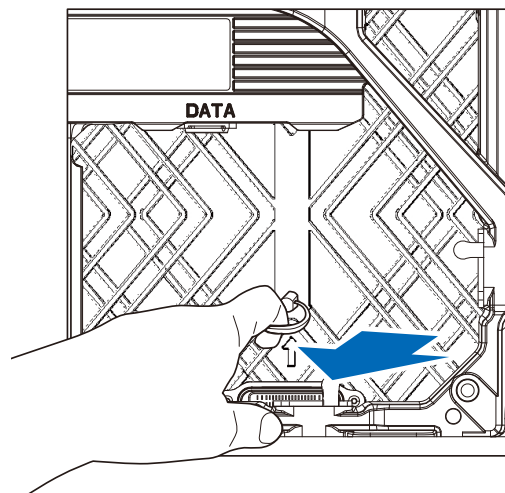
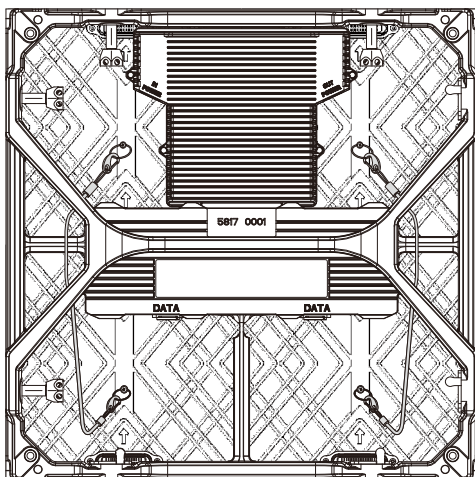
CAUTION

Install the pixel card after attaching the safety wire.

Bring the pixel card to the front after attaching the safety wire.



Pull the pixel card ring and install the pixel card to the cabinet.



Troubleshooting

1. Display problems

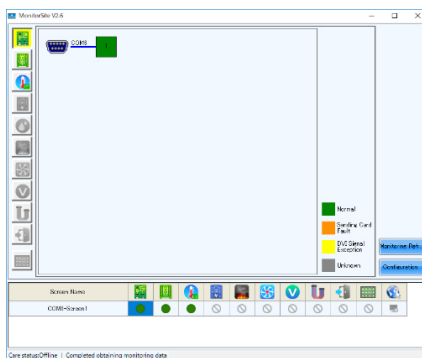
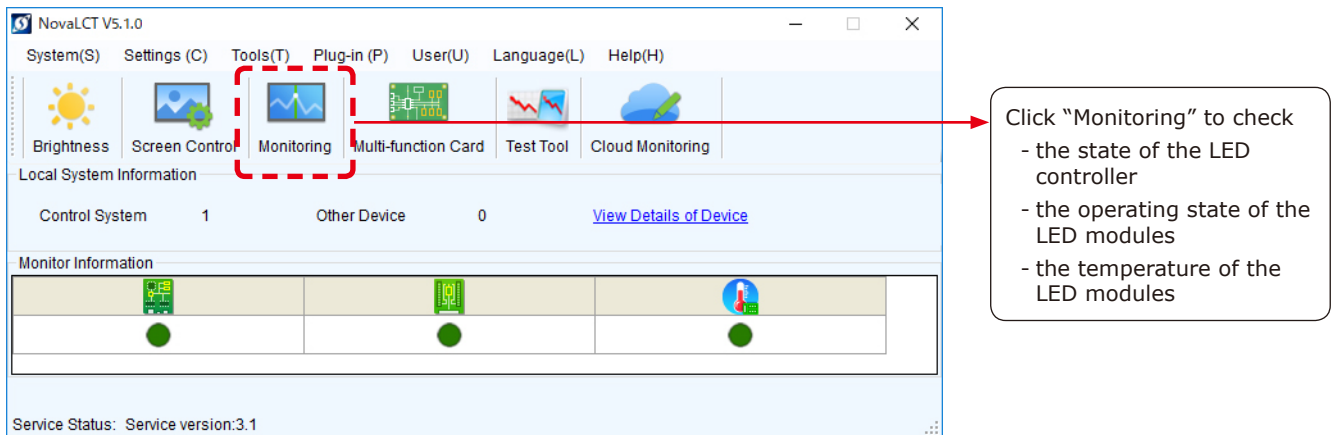
Problem	Solution
Nothing is displayed on all the LED modules.	Check that power is being supplied to the LED modules.
	Check that the LED controller is turned on.
	Check that a video signal is being input to the LED controller.
	Check that a LAN cable is correctly connected between the LED controller and the LED module.
	Check that the brightness is not set to 0% (= not lit).
Nothing is displayed on one LED module.	Check that a LAN cable is correctly connected between the LED controller and the LED module.
	The receiving card inside the LED module may be broken. → Check the status of the LED module by following the procedure in the next section "2 State monitoring using the software".
	The power unit inside the LED module may be broken. → Check the status of the LED module by following the procedure in the next section "2 State monitoring using the software".
No image is displayed on one pixel card.	Check that the contacts of the pixel card are correct (contacts of the hub board).
	The pixel card may be broken. Replace it with a spare pixel card.
Control (communication) is not possible.	Check that the communication cable is correctly connected between the computer and the LED controller.
	Check that the LED controller is turned on.
	If the communication cable is a USB cable, check that the device driver runs correctly.

2. State monitoring using the software

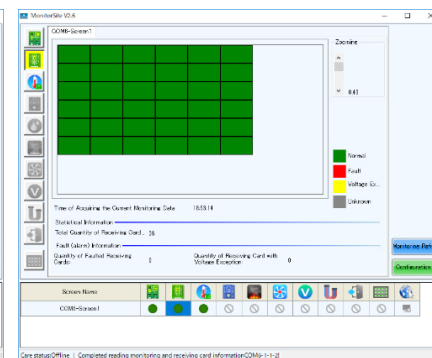
In case of a problem, you will be able to determine the location where it occurred by monitoring the state of the system.

2-1 Display under normal conditions

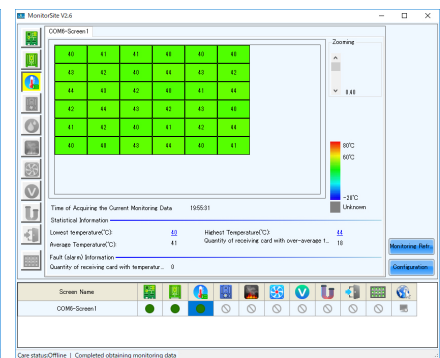
The display is green under normal conditions.



State of the LED controller



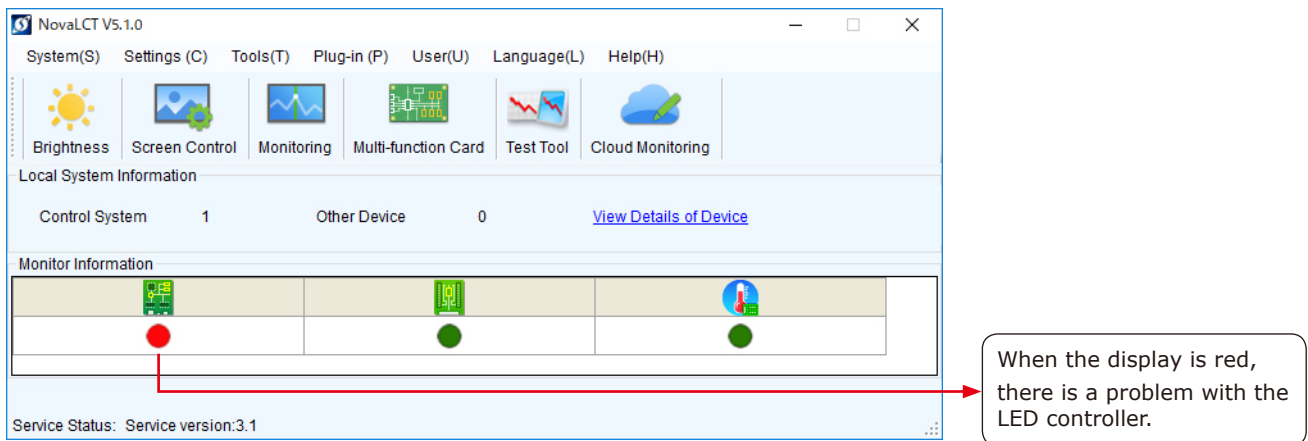
State of the LED modules



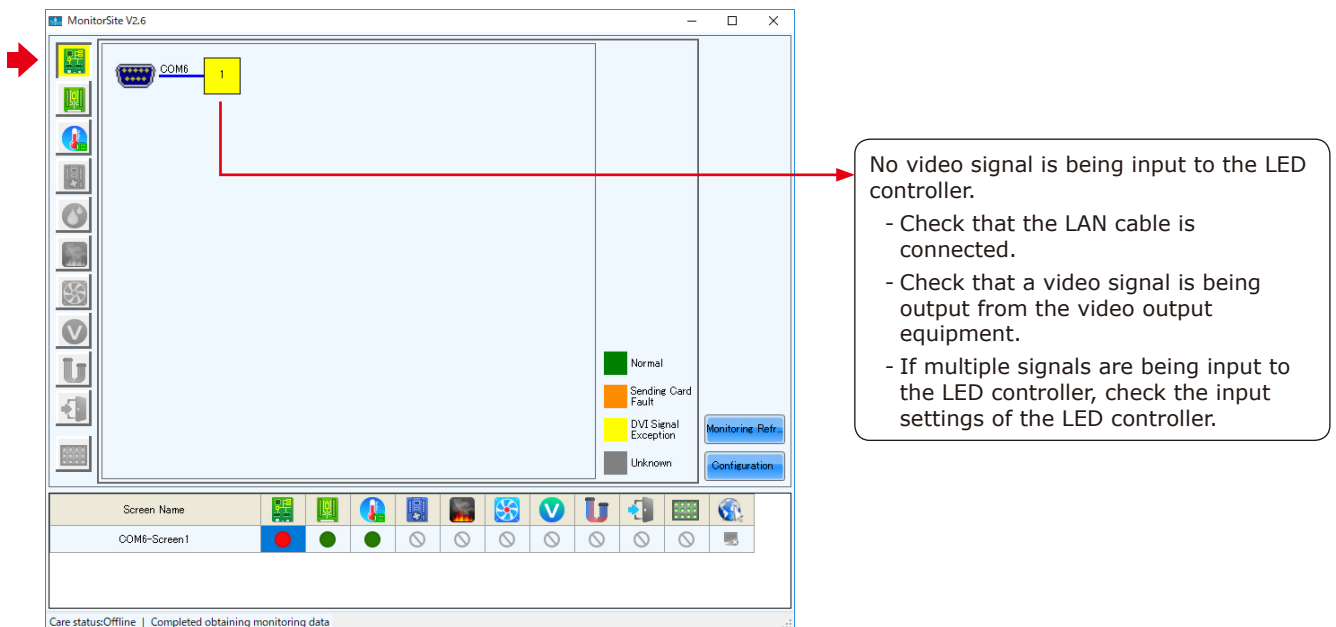
Temperature of the LED modules

2-2 Display under abnormal conditions

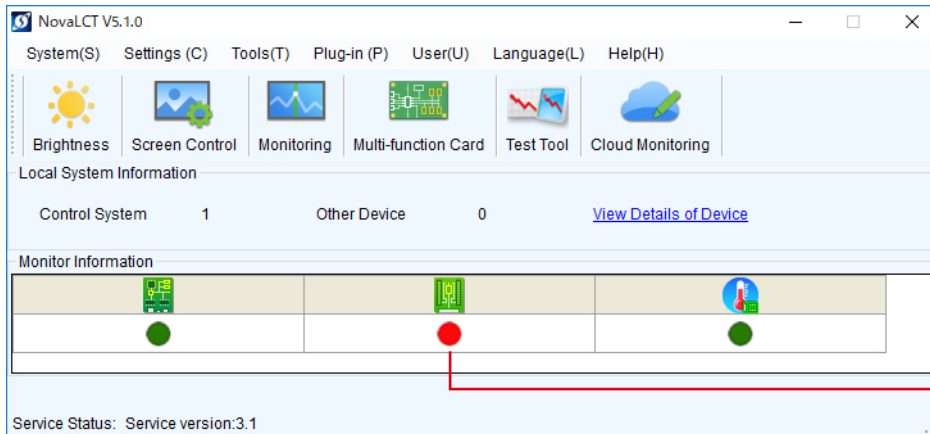
(1) Problem with the input signal to the LED controller



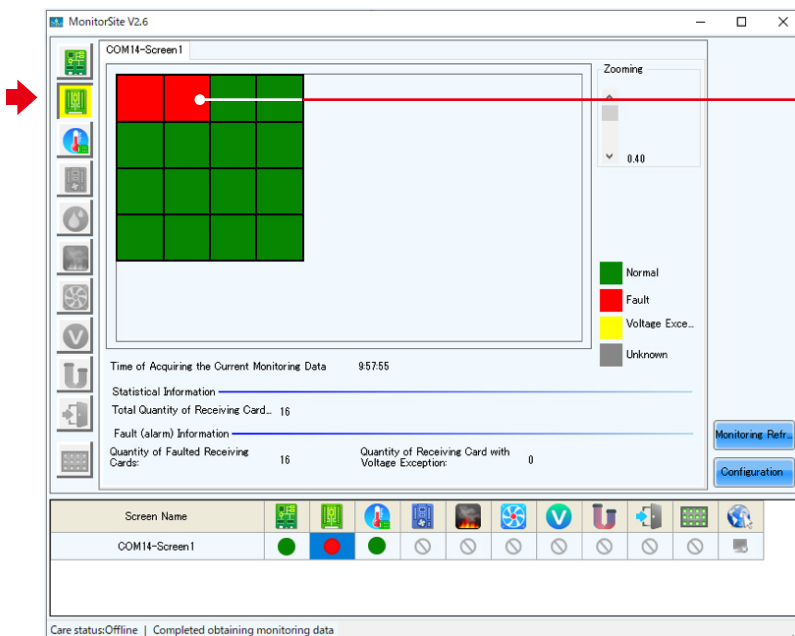
To display more details, click "Monitoring", and then click "Sending card" on the screen that is displayed.



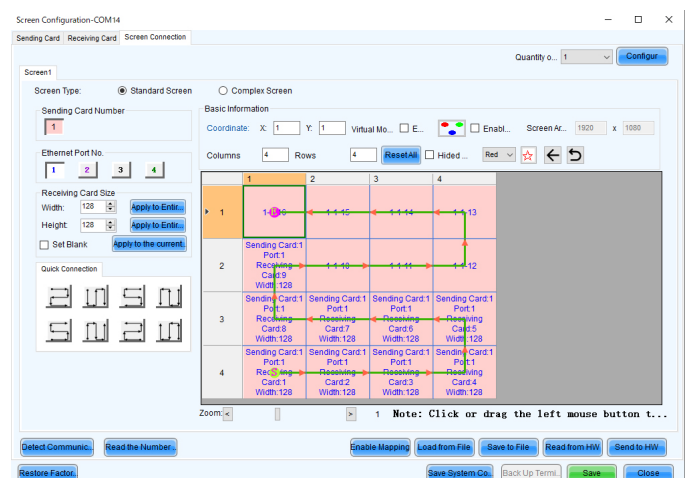
(2) Problem with the LED modules



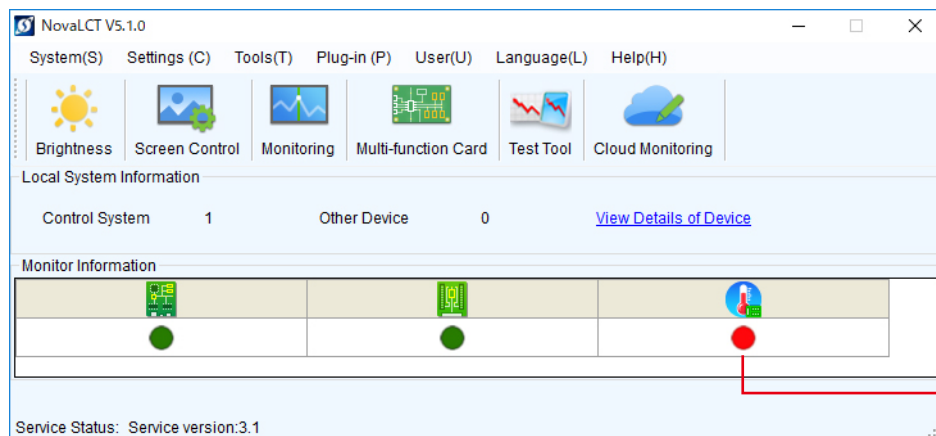
To display more details, click "Monitoring", and then click "Receiving card" on the screen that is displayed.



With the connection shown in the figure below.

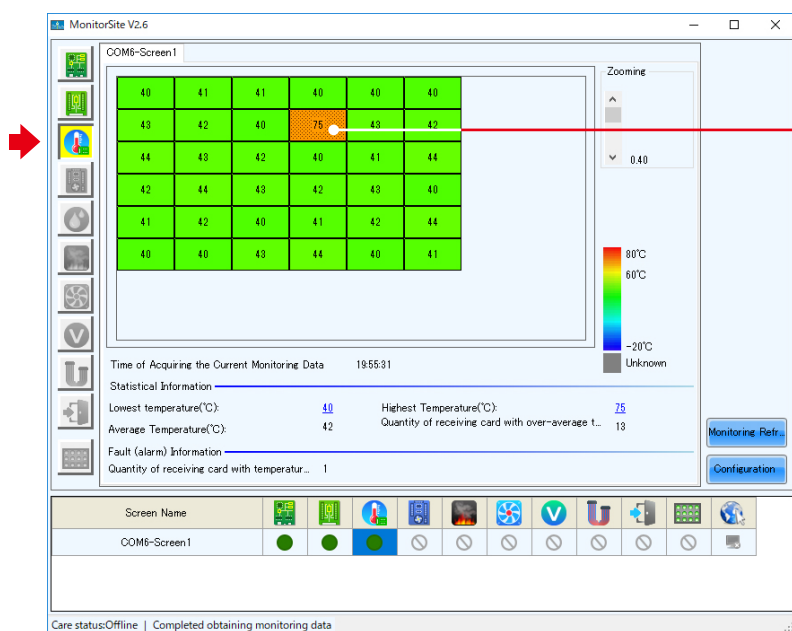


(3) Problem with the internal temperature of the LED modules



There is a problem with the LED module operation.

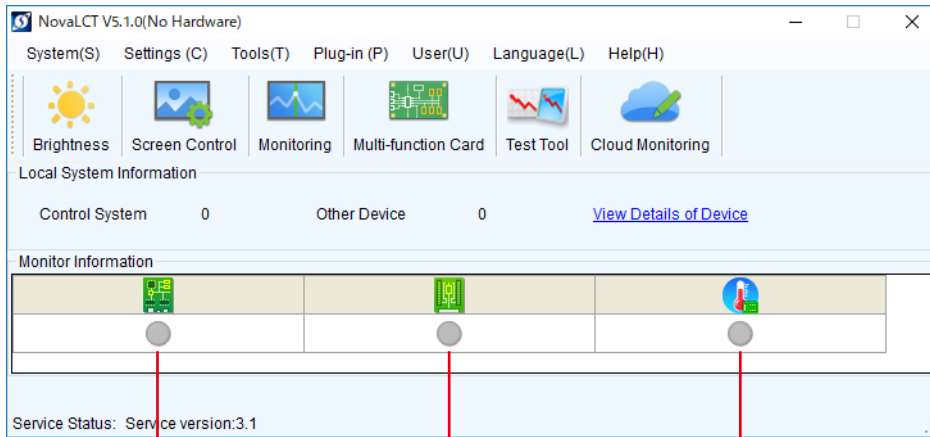
To display more details, click "Monitoring", and then click "Temperature" on the screen that is displayed.



The LED modules with a high temperature are displayed in warm colors.

Since the internal temperature is high, decrease the brightness setting.
If changing the brightness setting could not solve the problem, contact your retailer or the Customer Service.

(4) Communication problem



When the display is grey, the communication is not established.

- Check that the USB cable is connected.
- Check that the LED controller is turned on.

Specifications

Models for indoor use

		LED-Q028i2	LED-Q039i2
LED configuration		3-in-1 SMD	
Pixel pitch		2.84 mm	3.91 mm
Number of displayed pixels (resolution/module)		176 × 176	128 × 128
Brightness		1200 cd/m ²	
Contrast ratio		7000:1	
Brightness adjustment range		0 to 100% (256 increments)	
Gamma correction		1.0 to 4.0 (default setting: 2.8)	
Color temperature		3000 K to 9500 K (default setting: 6500 K)	
Viewing angle		Horizontally 160°/ Vertically 150°	
Signal interface	Signal input	1 × RJ-45	
	Signal output	1 × RJ-45	
Power supply		100 V AC to 240 V AC, 50 Hz/60 Hz	
Power consumption (all white, 100% brightness)		120 W	
Ingress protection		Front IP 20 / Back IP 20	
Maintenance		Front / Back	
Dimensions		500 × 500 × 70 mm	
Weight		8.3 kg	
Operating environment	Temperature	-20 to 40°C	
	Humidity	10% to 80% (without condensation)	
	Altitude	No more than 5000 m	
Storage environment	Temperature	-20 to 55°C	
	Humidity	10% to 85% (without condensation)	

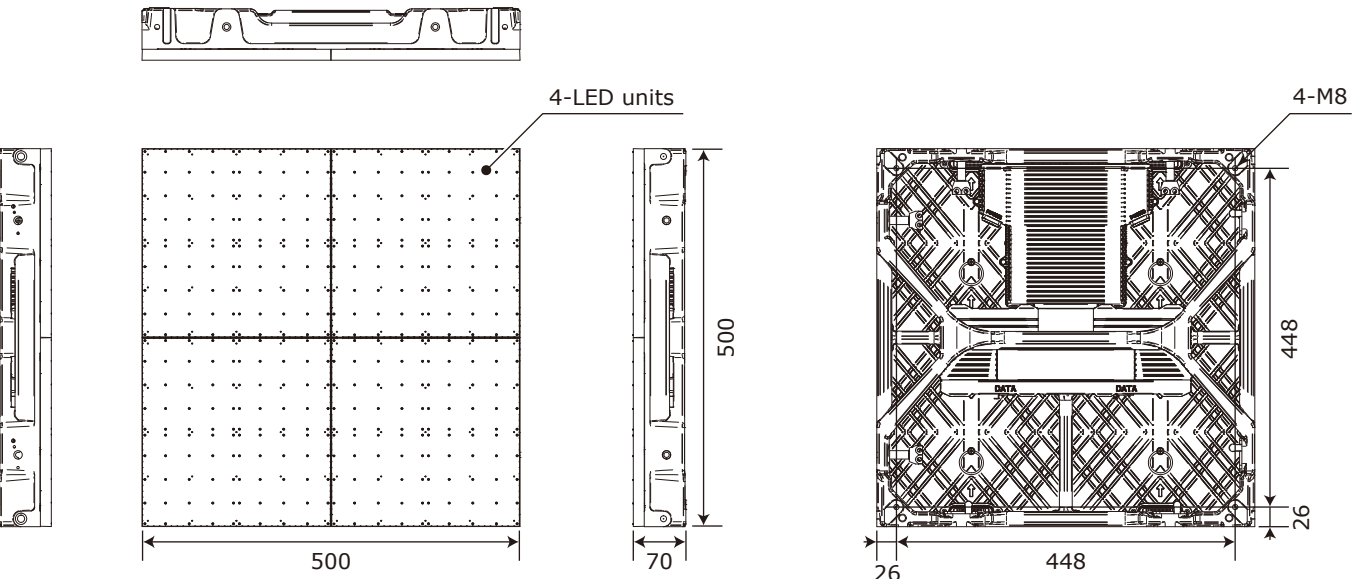
Models for outdoor use

		LED-Q028e2	LED-Q039e2	LED-Q048e2	LED-Q059e2	LED-Q078e2
LED configuration		3-in-1 SMD				
Pixel pitch		2.84 mm	3.91 mm	4.81 mm	5.95 mm	7.81 mm
Number of displayed pixels (resolution/module)		176 × 176	128 × 128	104 × 104	84 × 84	64 × 64
Brightness		4000 cd/m ²	5500 cd/m ²			
Contrast ratio		7000:1	6000: 1			
Brightness adjustment range		0 to 100% (256 increments)				
Gamma correction		1.0 to 4.0 (default setting: 2.8)				
Color Temperature		3000 K to 9500 K (default setting: 6500 K)				
Viewing angle (half of the brightness)		Horizontally 140°/ Vertically 120°				Horizontally 140°/ Vertically 105° (Up 45° / Down 60°)
Signal interface	Signal input	1 × RJ-45				
	Signal output	1 × RJ-45				
Power supply		100 V AC to 240 V AC, 50 Hz/60 Hz				
Power consumption (all white, 100% brightness)		180 W	160 W			
Ingress protection		Front IP 65 / Back IP 65				
Maintenance		Front / Back				
Dimensions		500 × 500 × 70 mm				
Weight		8.5 kg				
Operating environment	Temperature	-30 to 50°C				
	Humidity	10% to 90% (without condensation)				
	Altitude	No more than 5000 m				
Storage environment	Temperature	-20 to 55°C				
	Humidity	10% to 85% (without condensation)				

Specifications are subject to change without notice.

Diagram

LED-Q028i2 / LED-Q039i2 / LED-Q028e2 / LED-Q039e2 / LED-Q048e2 / LED-Q059e2 / LED-Q078e2



(Unit: mm)

WEEE Mark (European Directive 2012/19/EU and amendments)



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 LED Poster and electrical accessories, such as signal cables or power cords. When you dispose of such products, please follow the guidance of your local authority or ask the shop where you purchased the product, or if applicable, follow applicable legislation or agreement you may have. The mark on electrical and

electronic products may only apply 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 to EU directive 2006/66/EC and amendments, the battery can't be disposed improperly. The battery shall be separated to collect by local service.

Service & Support in Europe

Please contact:

NEC Display Solutions Europe GmbH.
Landshuter Allee 12-14, D-80637 München
Phone: + 49 (0) 89/99699-0
Fax: + 49 (0) 89/99699-500

For the latest information please see

<https://www.nec-display-solutions.com>

Data is subject to change without notice.

Sales Office List for Asia/Pacific

For the latest information please see

<https://www.nec-display.com/ap/contact/index.html#ap>