LED Display
Installation Manual

P 1.2
P 1.5
P 1.9

1. Product Concept

1. LED Display of high-brightness for Indoors

- Product's lineup consist of 1.2mm ,1.5mm and 1.83mm pixel pitch.

- Various sizes of screen configuration

   : Users can configure multiple size of screen by LED cabinet unit

1. Product Concept

2. Modular Controller for Picture Quality Enhancement and various video input

- Support various modes

- Able to adjust picture quality (Brightness, Contrast, etc.,)

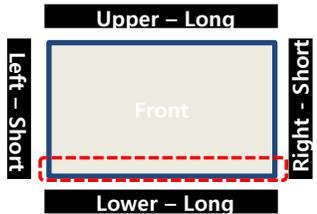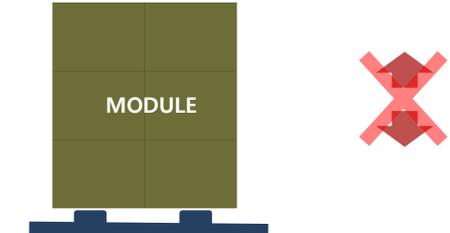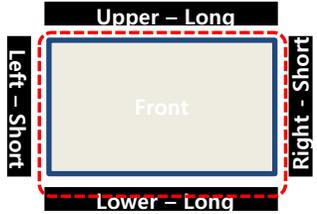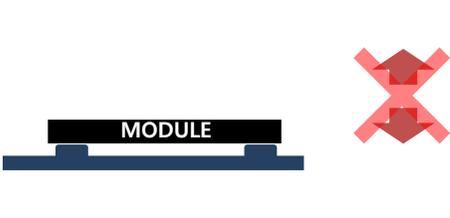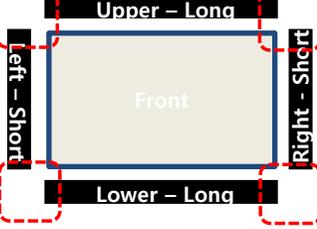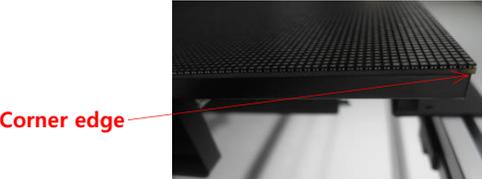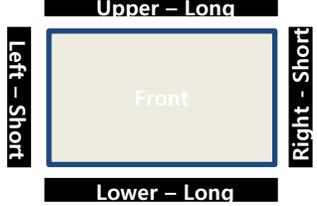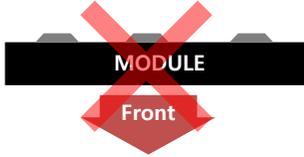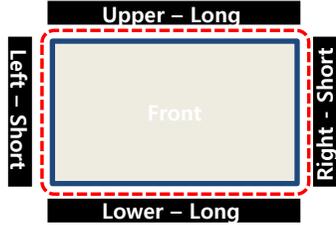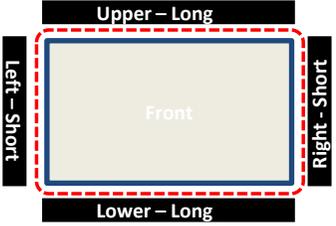- Various input port : DP, HDMI, DVI, USB, RJ45
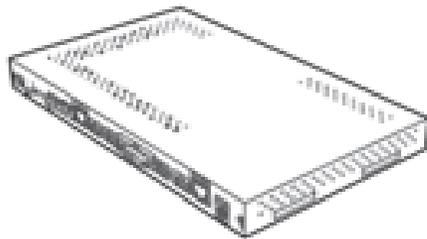
Controller

LED Display

2. How to Install

How to Handle (Warning / Caution)

Location	Picture	Cautions	Estimated Failure Issue
Upper – Long / Left – Short / Front / Right - Short / Lower – Long	MODULE	[No Vibration, Shock or Drop] ▶ Do not give shocks to the LED side or drop the SET after uncovering the protection from the product before .	LED cracked
Upper – Long / Left – Short / Front / Right – Short / Lower – Long	MODULE	▶Beware not to lay the product over a vibrating subject or drop the set on the back side of the product.	LED cracked
Upper – Long / Left – Short / Front / Right - Short / Lower – Long	Corner edge	[Caution for Corner Damage] ▶Beware of corner damage on the LED module particularly, due to contacts on the exterior.	LED cracked
Upper – Long / Left – Short / Front / Right - Short / Lower – Long	MODULE / Front	[Do not let panel face down] ▶ Do not lay the product having the LED side as the bottom side after uncovering the protection from the product before	LED cracked

2. How to install

How to Handle (Warning / Caution)

Location	Picture	Cautions	Estimated Failure Issue
		[Beware of LED Damage due to Static] ▶ Do not work on the LED surface with hands not wearing antistatic glove	LED cracked
	 Metal Dust	[Beware of LED Damage due to Attachment of Metal Substances] ▶ There is magnetic on the front side of LED. Beware not to have any metal substances be attached to the surface. ▶ When any metal substances are attached, use air gun or magnetic to remove them. When you use magnetic to remove the substances, the module may be unlocked. So determine whether to remove after separating it or having it attached depending on the attachment status.	LED damage in the shape of magnetic goods that were used during the damage

2. How to install

How to Handle (Cleaning metal dust)

1. If LED display area is under construction, you should cover the LED surface with protection sheet to prevent dust (metal dust) stick to LED surface.

LED surface must be cover if display area is under construction

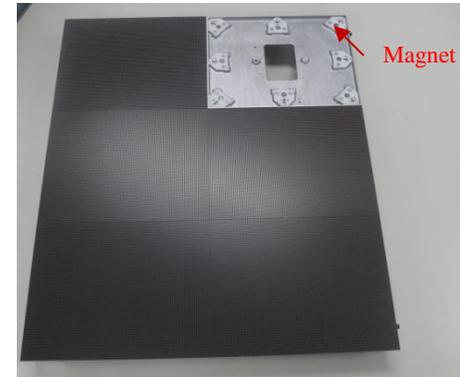2. Clean dust on the LED surface with Cleaner machine (must use a soft brush head)
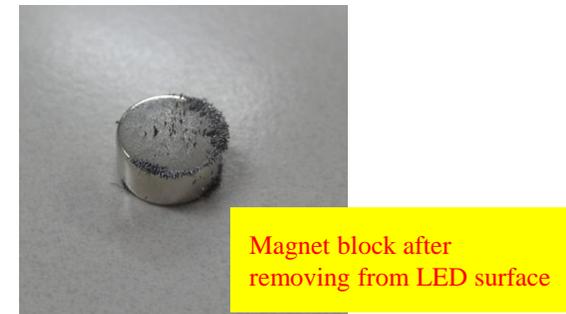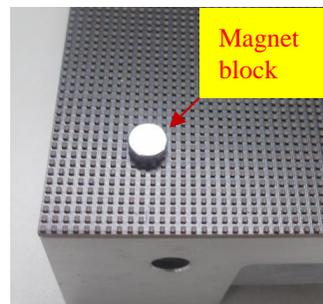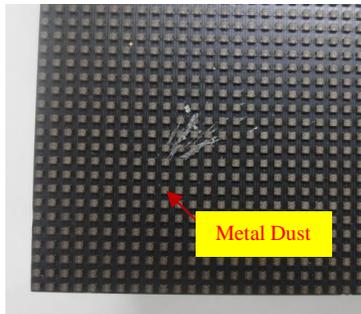

Soft brush

2. How to install

2-1 How to Handle (Cleaning metal dust)

3. Each LED Module have 8 magnet positions (picture 1)
   So depend on environment , the metal dust may stick to LED surface.
   So have to check the LED surface again at Magnet position.
   Incase of Metal Dust stick to LED surface, we can remove it by

   - Remove LED module with metal dust
   - Putting a magnet clock on LED surface
   - Slowly move it around the metal dust area.
   - Metal Dust will stick to Magnet Block.
   - Remove Magnet Block and clean it for next times using.

Magnet

[Picture 1]

Metal Dust

Magnet block

Magnet block after removing from LED surface

LED Display Installation

2. How to install

Installation Requirements (Mechanical)
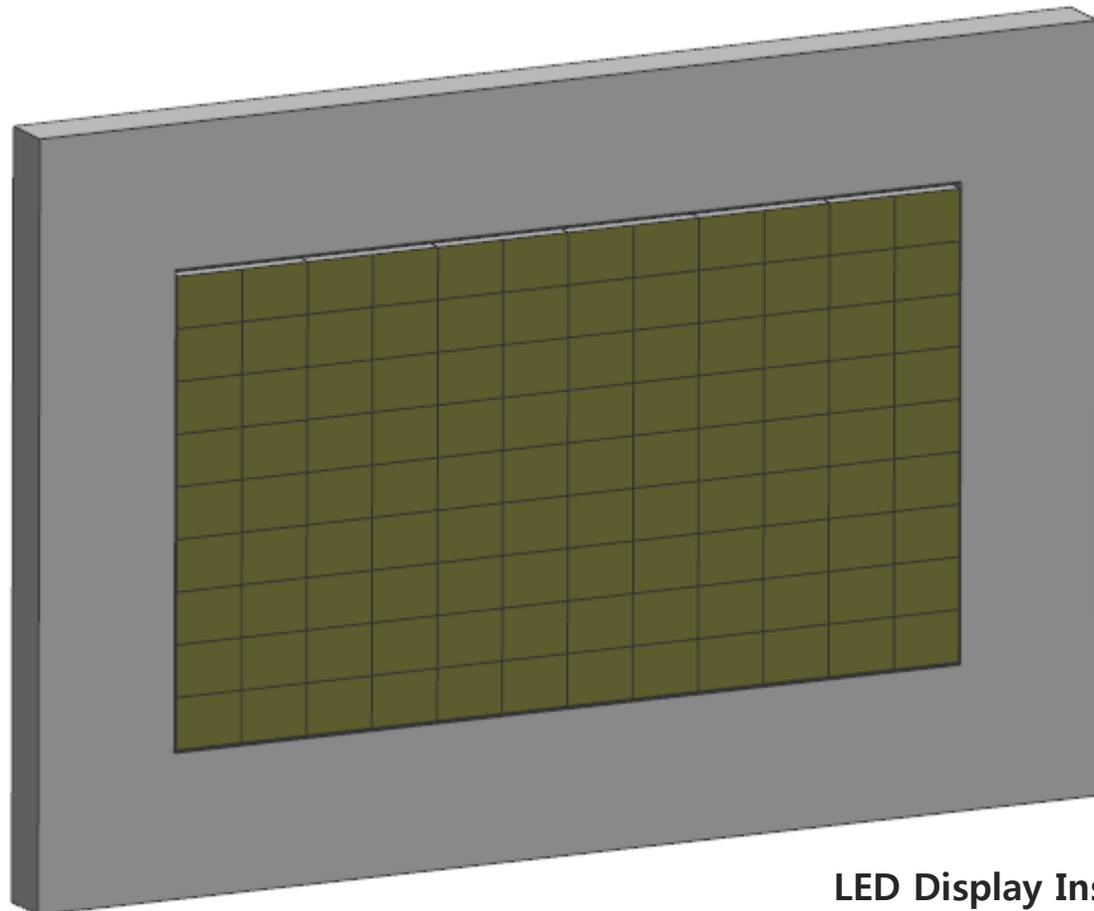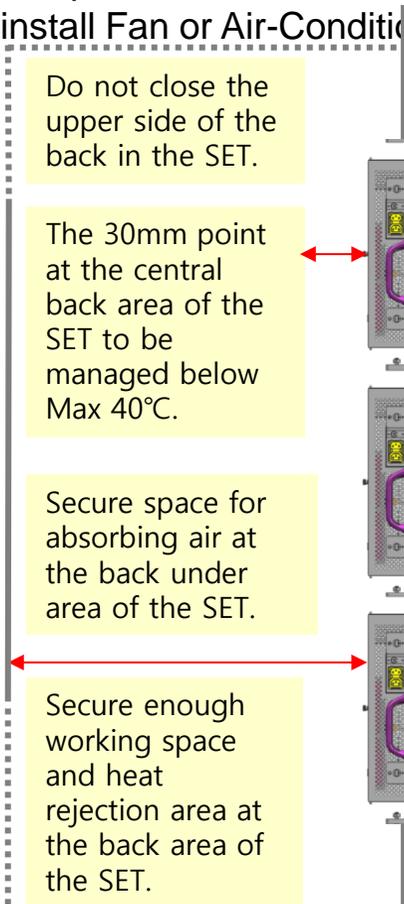
- Support structure for Product Installation

The types of support structure may vary, because it is determined differently according to the customers' taste and needs. Thus, spec all differs. Below items should be considered in detail before is carried out.

1. Weight tolerances : Check whether the SET structure gets to be supported by the floor or to be hung on a wall. Installation should be done considering the weight of the product.
2. Environmental conditions : If the level of humidity and temperatures are high in the surroundings, those conditions should be considered.
3. Locations : This product is for indoors, and should be located in a place where the product is not likely to be affected by direct sunlight.
4. Ground stability
5. Front clearances: Check whether there are enough space and viewing angle in front of the display to provide the most optimal impact to viewers.
6. Needs to secure enough space to a worker in all kinds of structure.
7. Local regulations should be considered for each type

2. How to install

Installation Requirements : Thermal condition

- Operation Ambient Temperature in the standard of one product unit : 0~40℃
- If less than three stores vertically in LED Cabinet, recommended external temperature below 35℃
  If exceed over three stores vertically in LED Cabinet, recommended external temperature below 30℃.
- If impossible to secure enough space for absorption/emission of air as recommended below,
  install Fan or Air-Conditioner and have the backside area of LED Cabinet not exceed 40℃ at maximum.

Do not close the upper side of the back in the SET.

The 30mm point at the central back area of the SET to be managed below Max 40℃.

Secure space for absorbing air at the back under area of the SET.

Secure enough working space and heat rejection area at the back area of the SET.

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LED Display Installation

2. How to install

Installation Requirements : Tool for Installation

Wrench 10.0mm

OR

socket ratchet

Phillips head crew driver

LED MODULE JIG

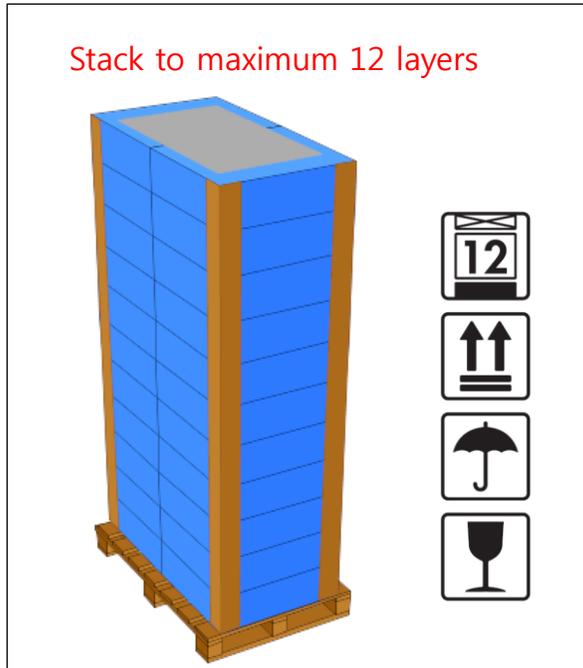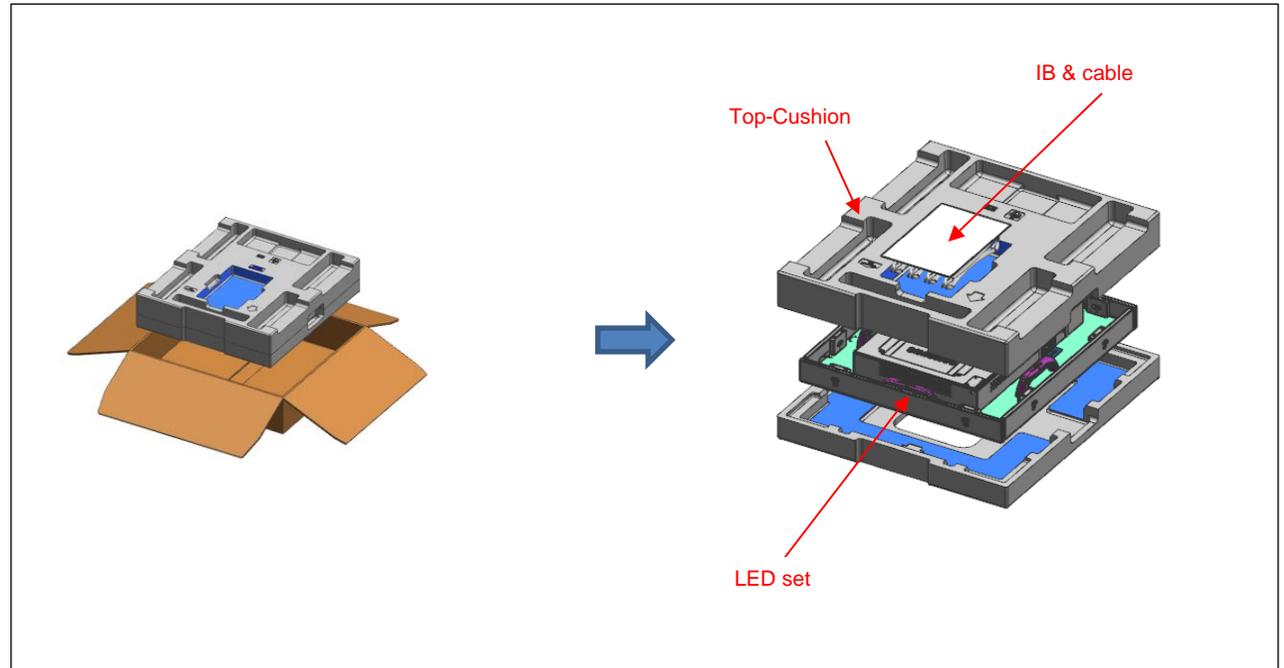Flat head crew driver

Pliers

Rubber hammer

Antistatic Glove

2. How to install

## 2-3 Physical Installation : Open Packaging

[Before Unpacking]

[Unpacking]

Stack to maximum 12 layers

IB & cable

Top-Cushion

LED set

1) Remove the tape from the upper side of the box, and then open up.
2) Remove the Top–Cushion
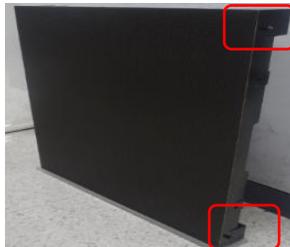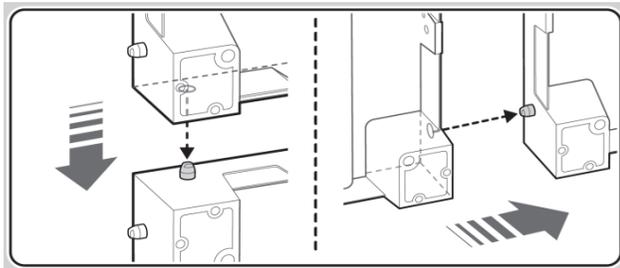3) Take out the set while holding the handle inside the PE-Bag, and then remove the PE-bag
 * Do not keep the LED display face down to ground

LED Display Installation

2. How to install

Physical Installation: Stud-Guide Introduction

Example: 3*3 cabinets
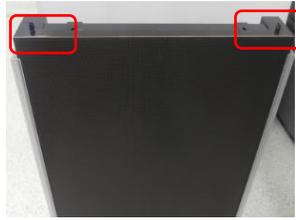
From 2nd row: Top use

Bottom row: side use

9	7	8
6	4	5
3	1	2
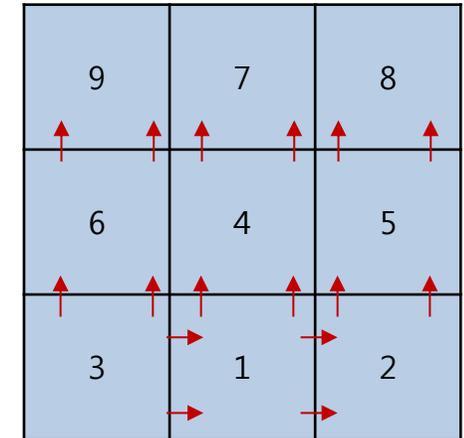
Stud guide used to guide position between 2 cabinets. (tolerance 0.2mm)

 - For bottom row use them on side(Left-right)

 - From the second row use it on Top (refer example picture)

Tool : Plier

2. How to install

Physical Installation: Base Guide

It is more convenient to install from the bottom to the top side when the sets are
to be installed on a floor.
  - First row alignment is most important
  - Must use line lasers level tool to align Vertical / Horizontal
  - When rubber pad or a bracket is input between bottom of LED module and a cover-frame,
it can reduce a gap of module~module by preventing a sagging of LED module.
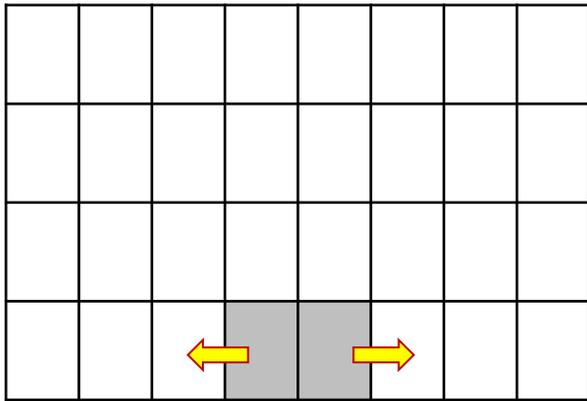

Base Guide side

line lasers

Rubber pad

line lasers level tool

LED Display Installation
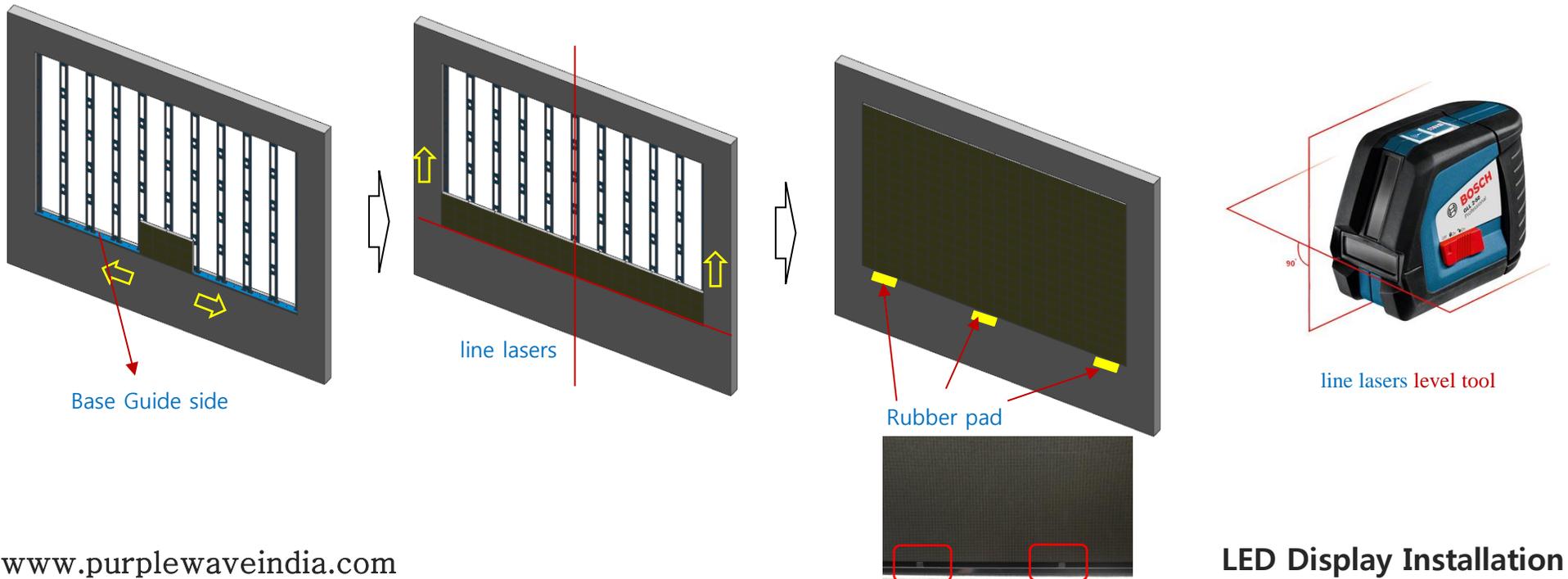
2. How to install
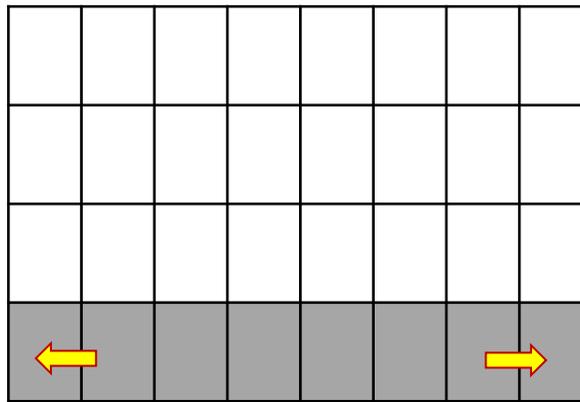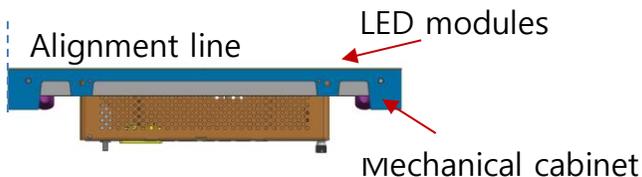
Physical Installation: Installation Baseline

The order of installation to minimize Seam, follow these rules:
- Install from bottom to top
- Install from center to side
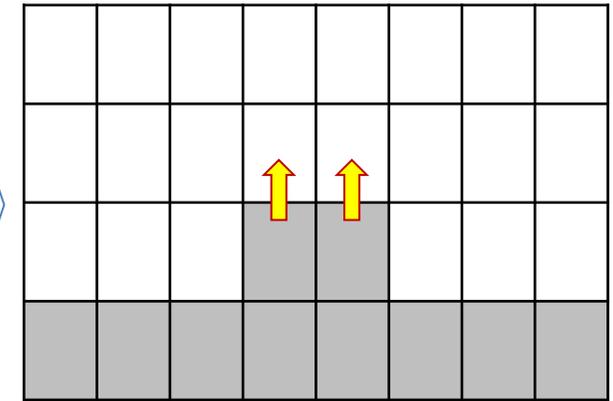- Must align all LED modules after install each cabinet

Install first cabinet from center

1st row, from center to side

2nd row, install from center

For first cabinet : Align LED module with mechanical cabinet

From 2nd cabinet : Align LED modules of new cabinet with around cabinets
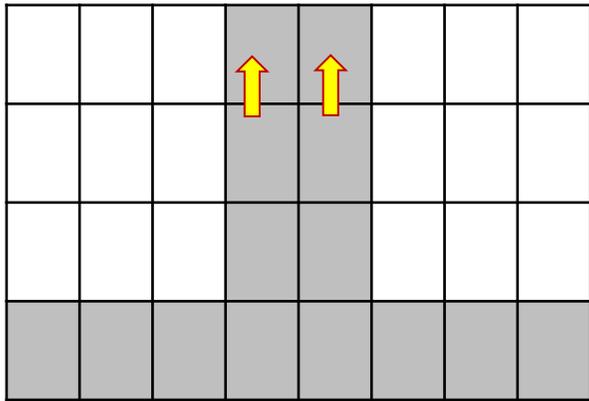
Alignment line

LED modules

Mechanical cabinet

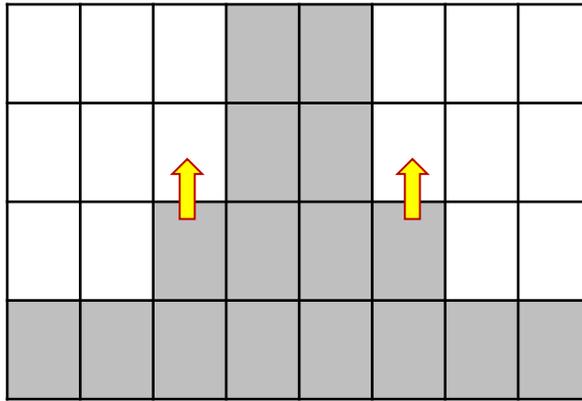**LED Display Installation**

2. How to install

Physical Installation: Installation Upper line

The order of installation to minimize Seam, follow these rules:
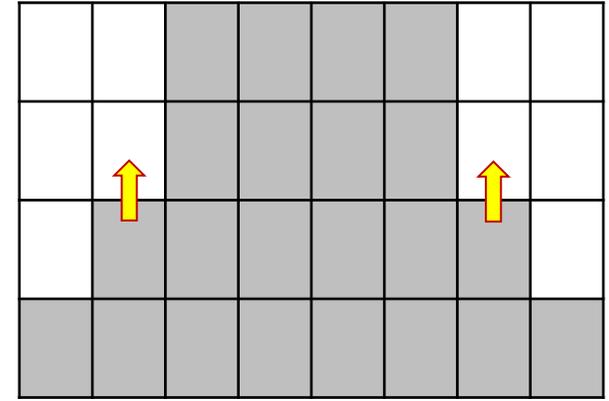- Install from bottom to top
- Install from center to side
- Must align all LED modules after install each cabinet

Center column from bottom to top   Next column from bottom to top   Next column from bottom to top
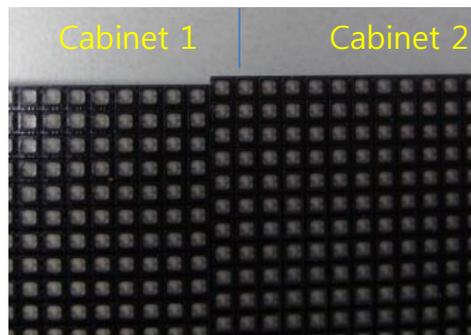
2. How to install

Physical Installation: Base row

Check 2nd cabinet position follow these rules

- LED (cabinet 1)–LED (cabinet 2) is **correctly alignment**

- **No black line** in full white condition *

- LED modules are **removable** with Module JIG

Ex: miss alignment case

Ex: Black line in full white condition case

LED module removable

Cabinet 1   Cabinet 2

*Internal white pattern : turn on Power, Push Source button 3 seconds and release, wait for display, push one more times.

- GAP must be adjusted when install each cabinet.
  After install all cabinets it's Hard to modify Gap.

- FLUSH can be modify later after installation

2. How to install

Physical Installation: Adjust gap between LED modules

Case2: partial GAP between 2 cabinet

Big partial gap

A
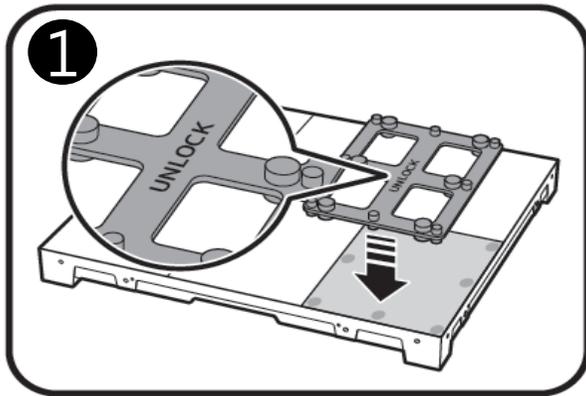
B

Small uniform gap
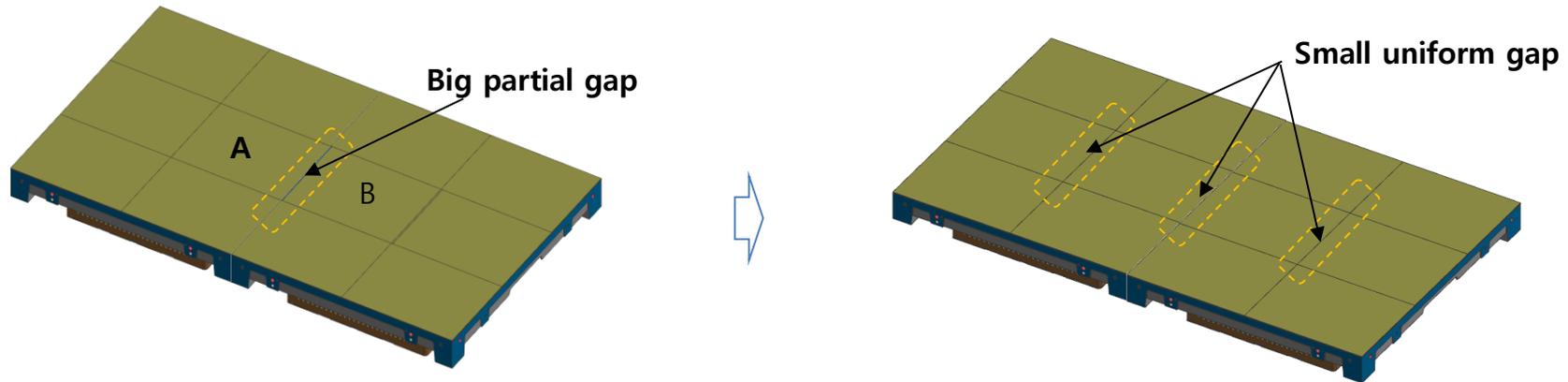
Solution : slightly move module A and B together to reduce the gap

By hand between them. Try to change from 1 big gap to 3 uniform small gap.

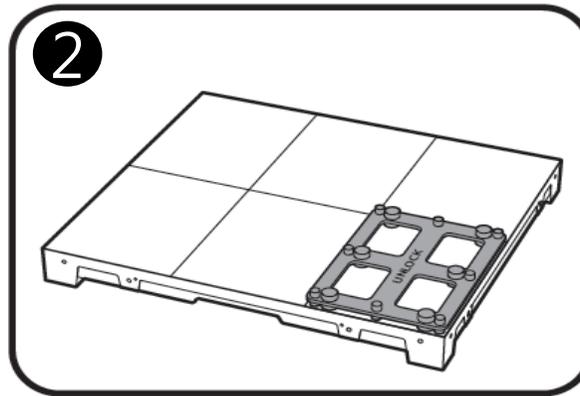# 2. How to install

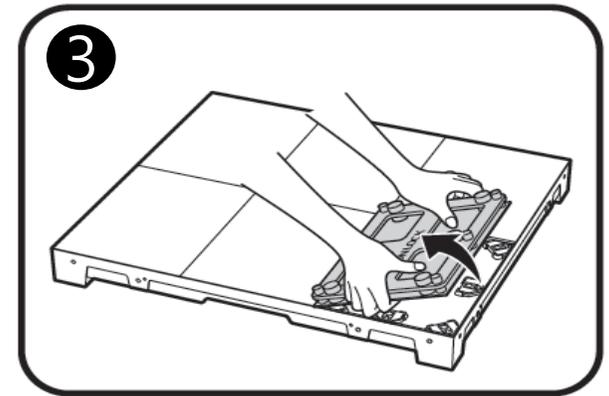## Physical Installation: Module JIG User Guide (replace Module)
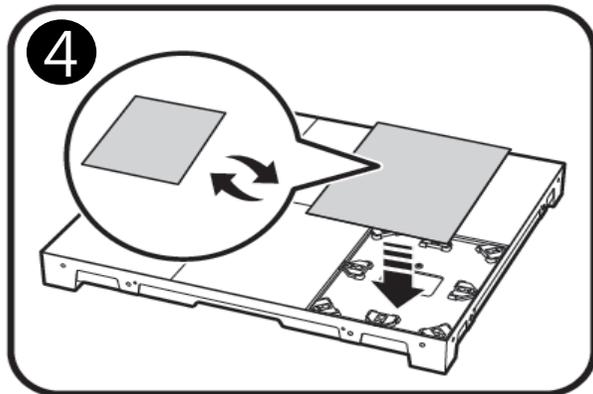
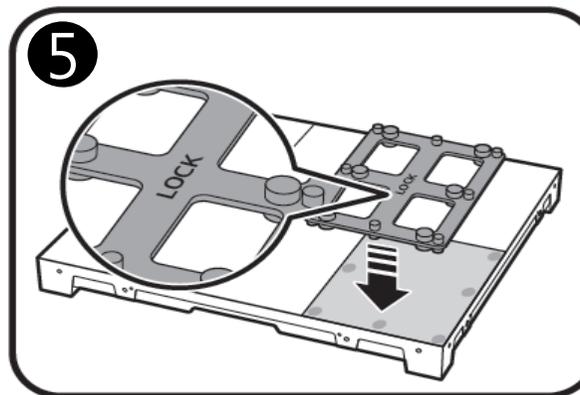**Unlock face up for remove Module**

❶

Put JIG on LED Module

❷

Remove JIG together with Module

❸

Put the module back with Unlock JIG

❹

Turn Jig to Lock mode

❺

Remove JIG after lock Module

❻

LED Display Installation
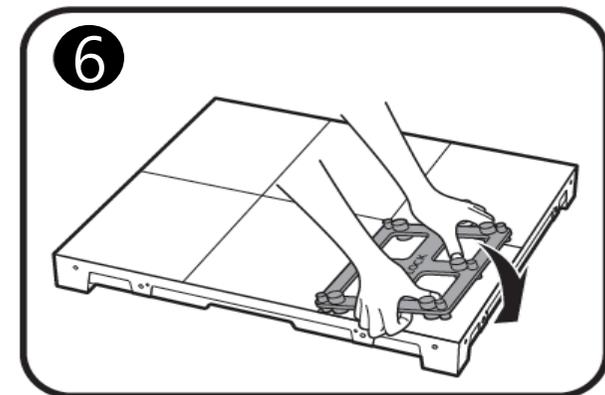
2. How to install

Physical Installation: LED module replacement

1. If LED Module needs to be replaced, use jig exclusively for the purpose. Have the letter that says "Unlock" marked on the jig to be shown, and then put it on the LED surface. Pull the jig and then the LED will be disassembled.
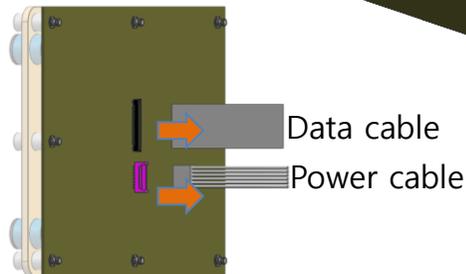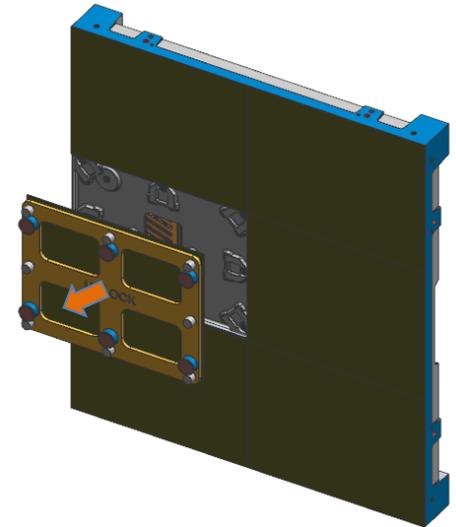2. Disassemble the data cable and power cable that are connected to each other.

Put on Lock Jig on Module

Remove Module, disassemble cable

Remove Module with Unlock JIG

Data cable

Power cable

LED module with JIG

LED Display Installation

2. How to install

Physical Installation: LED module replacement

1. When combining LED module, connect to cable and then put on the LED side so that the word "Unlock" can be shown, and then flip it and put on the LED side again to have the word "Lock" be shown.
2. When flipping the jig, support with finger so that LED module may not fall out.

Assemble the cables   Put LED with Unlock JIG   Flip JIG from Unlock to Lock   Remove Lock JIG

Data cable
Power cable

LED module with JIG

Unlock   Lock