



UNITEDSIGN GROUP
ARCHITECTURAL | ENGINEERING | DIGITAL

March II

Outdoor LED Displays

Product Installation Manual



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1. General Overview

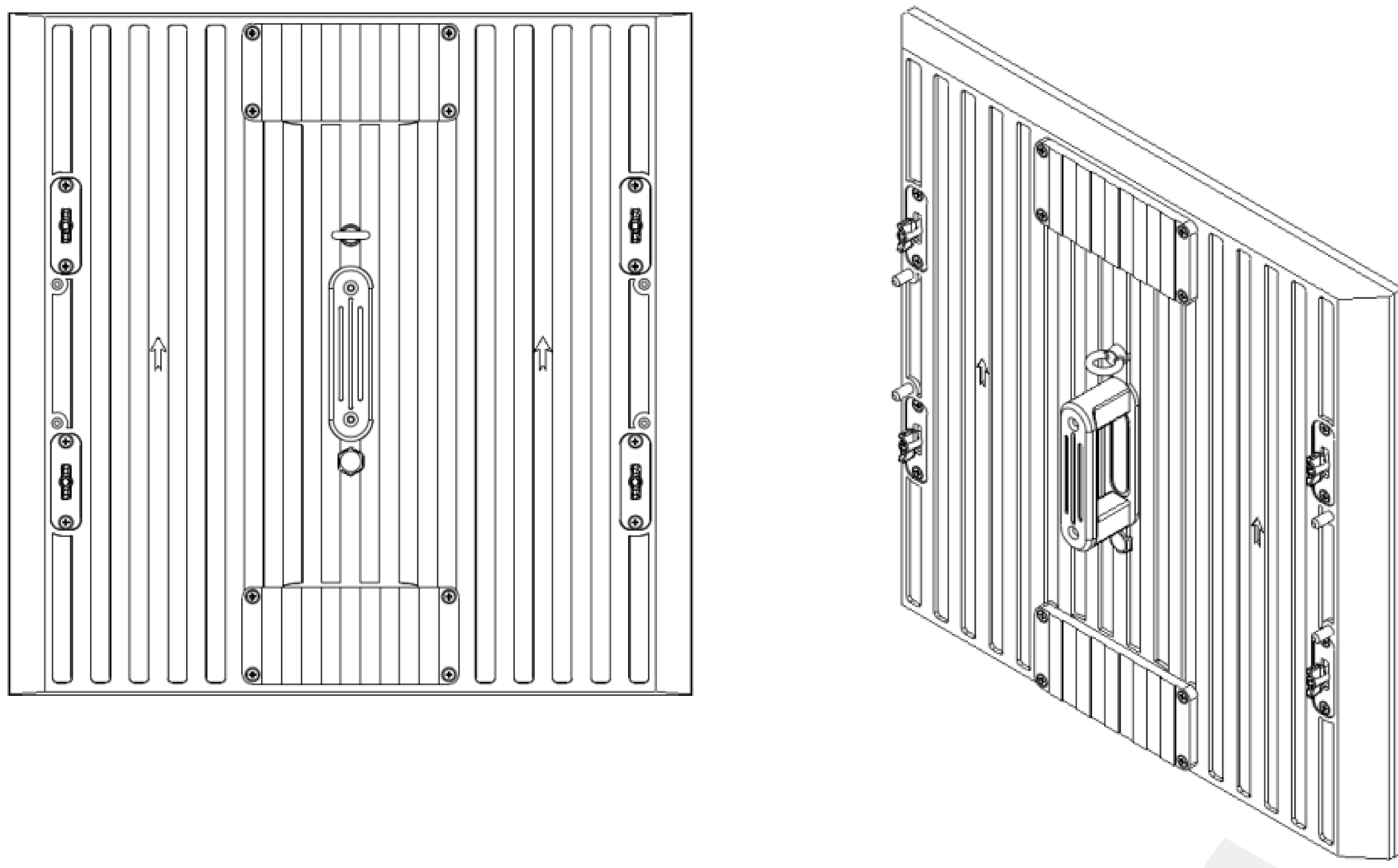
1.1 Product Introduction

The March II Series consists of modular display units made up of LED modules, a power control box, and an aluminum frame. Each unit connects to the next through IP68-rated aviation connectors and is equipped with magnetic cable covers. The design is intuitive, installation is convenient, and operation is reliable.

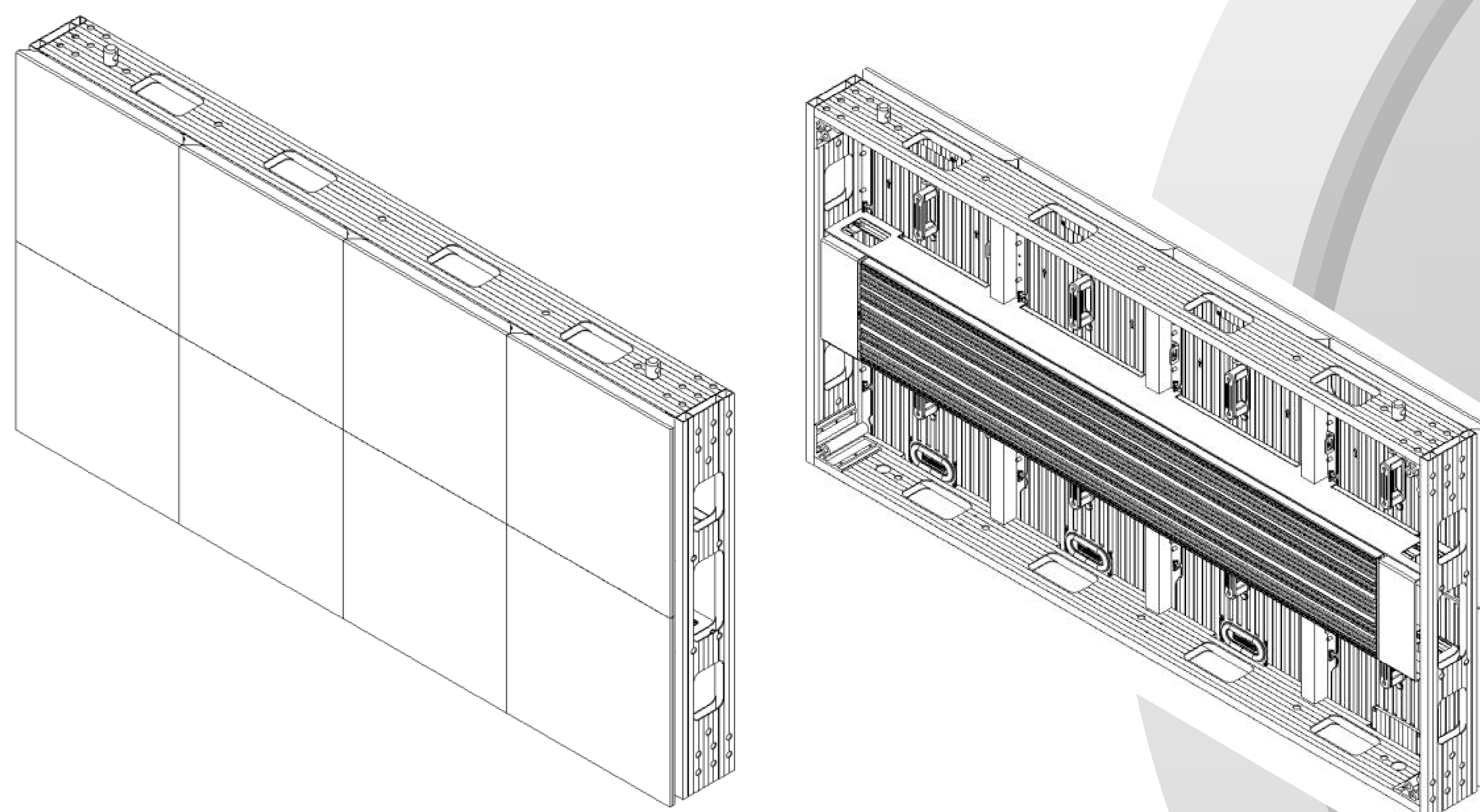
It can be widely used in various outdoor fixed installation scenarios, especially for large-scale outdoor billboards and sports video scoreboards.

1.2 Product Appearance

Module Appearance:



Cabinet Unit Appearance:





1.3 Main Features

- Supports both front and rear installation and maintenance.
- Front/rear protection level up to IP65.
- Aluminum power control box provides excellent heat dissipation.
- 45° beveled module design supports right-angle and curved splicing.

1.4 Product Specifications

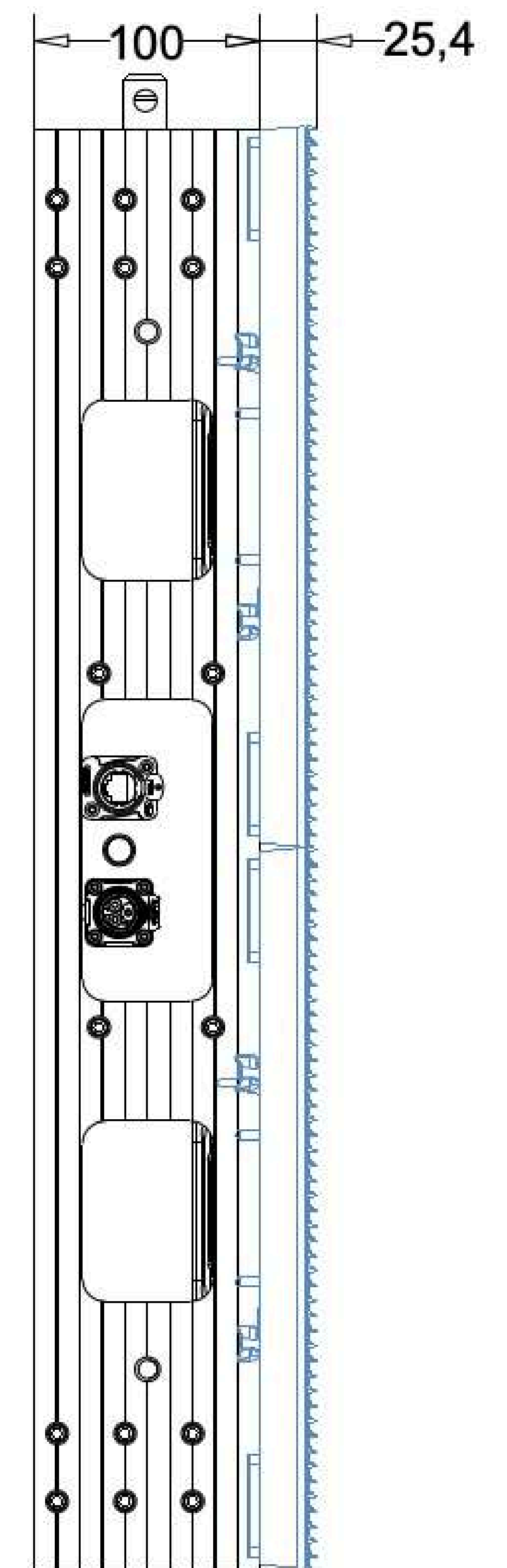
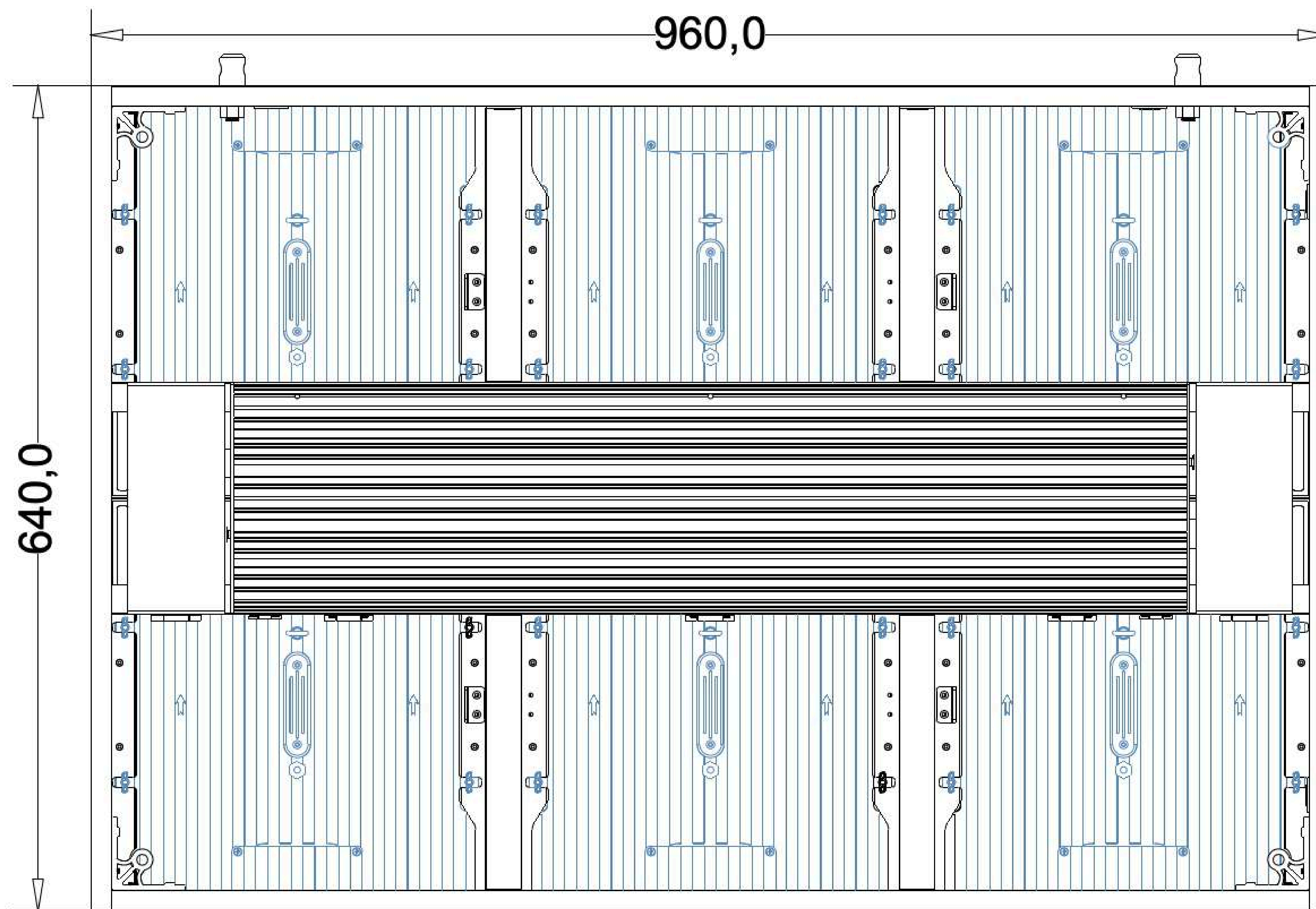
Pixel Pitch (Resolution)	4 mm	6.67 mm	10 mm	10mm
LED Package Type	SMD+Lens	SMD+Lens	SMD+Lens	Oval Molding
Pixels/m ² (Density)	62,500	22,500	10,000	10,000
Module Dimensions	12.6"x12.6" (320mmx320mm)	12.6"x12.6" (320mmx320mm)	12.6"x12.6" (320mmx320mm)	12.6"x12.6" (320mmx320mm)
Module Matrix	80x80	48x48	32x32	32x32
Module Weight	3.3LB (1.5KG)	3.3LB (1.5KG)	3.3LB (1.5KG)	3.3LB (1.5KG)
Driving Method	1/10 constant current	1/6 constant current	1/2 constant current	1/2 constant current
Refresh Rate	≥3,840 Hz	≥3,840 Hz	≥3,840 Hz	≥3,840 Hz
Video Frame Rate	60 frames/second	60 frames/second	60 frames/second	60 frames/second
Grayscale	65,536 (281 trillion colors)	65,536 (281 trillion colors)	65,536 (281 trillion colors)	65,536 (281 trillion colors)
Color Depth	16 bit	16 bit	16 bit	16 bit
Contrast Ratio	26,000 : 1	26,000 : 1	26,000 : 1	26,000 : 1
Brightness	≥10,000 NITS	≥10,000 NITS	≥10,000 NITS	≥10,000 NITS
Brightness Control	256 levels	256 levels	256 levels	256 levels
Ideal Viewing Range	16' or greater	18' or greater	28' or greater	28' or greater
Ideal Viewing Angle	120°(H) / 100°(V)	120°(H) / 100°(V)	120°(H) / 100°(V)	120°(H) / 100°(V)
Max. Power Consumption	54W/ft ² (580W/m ²)	54W/ft ² (580W/m ²)	54W/ft ² (580W/m ²)	35W/ft ² (380W/m ²)
Avg. Power Consumption	18W/ft ² (195W/m ²)	18W/ft ² (195W/m ²)	18W/ft ² (195W/m ²)	12W/ft ² (127W/m ²)
Input Voltage	90 - 264VAC	90 - 264VAC	90 - 264VAC	90 - 264VAC
Ingress Protection	IP65	IP65	IP65	IP65
Operating Temperature	40°F --+ 140°F (-40°C --+ 60°C)	40°F --+ 140°F (-40°C --+ 60°C)	40°F --+ 140°F (-40°C --+ 60°C)	40°F --+ 140°F (-40°C --+ 60°C)
MTBF	>5,000 hours	>5,000 hours	>5,000 hours	>5,000 hours
LED Life - Span	100,000 hours	100,000 hours	100,000 hours	100,000 hours
Cabinet Weight	7.2LB/ft ² (35KG/m ²)	7.2LB/ft ² (35KG/m ²)	7.2LB/ft ² (35KG/m ²)	7.2LB/ft ² (35KG/m ²)
Cabinet Material	Aluminum Extrusion	Aluminum Extrusion	Aluminum Extrusion	Aluminum Extrusion
Cabinet Size (HxWxD)	640x960x125mm; 640x1280x125mm; 960x960x125mm; 960x1280x125mm			



1.5 Display Unit Dimensions

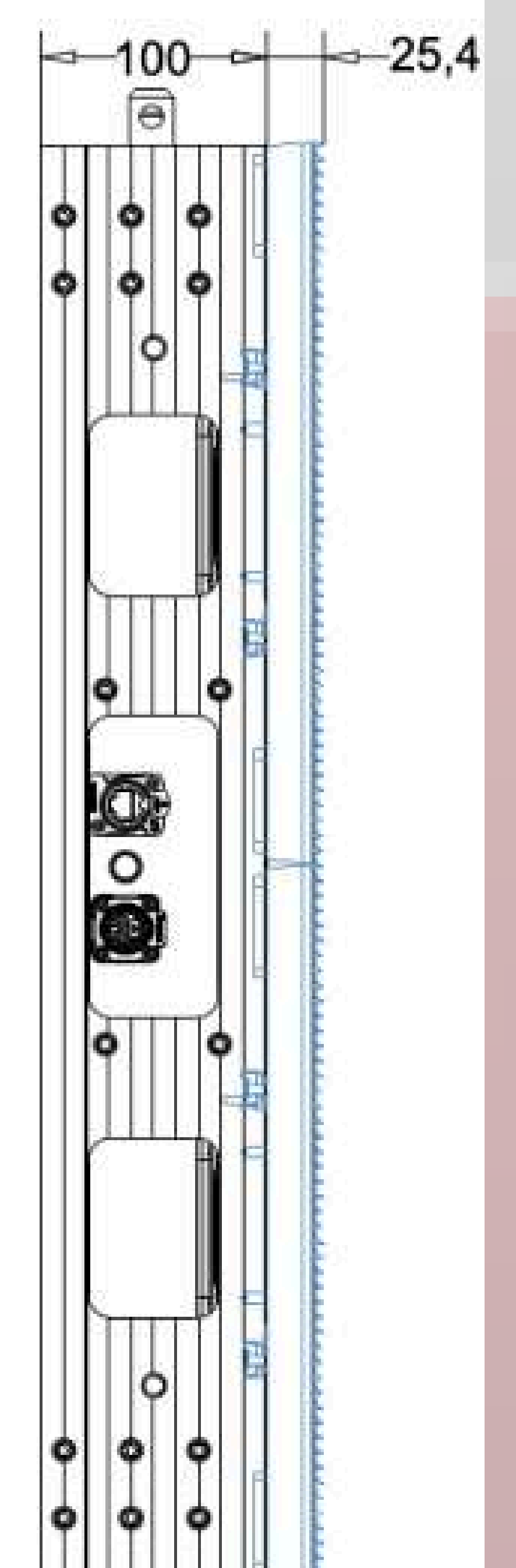
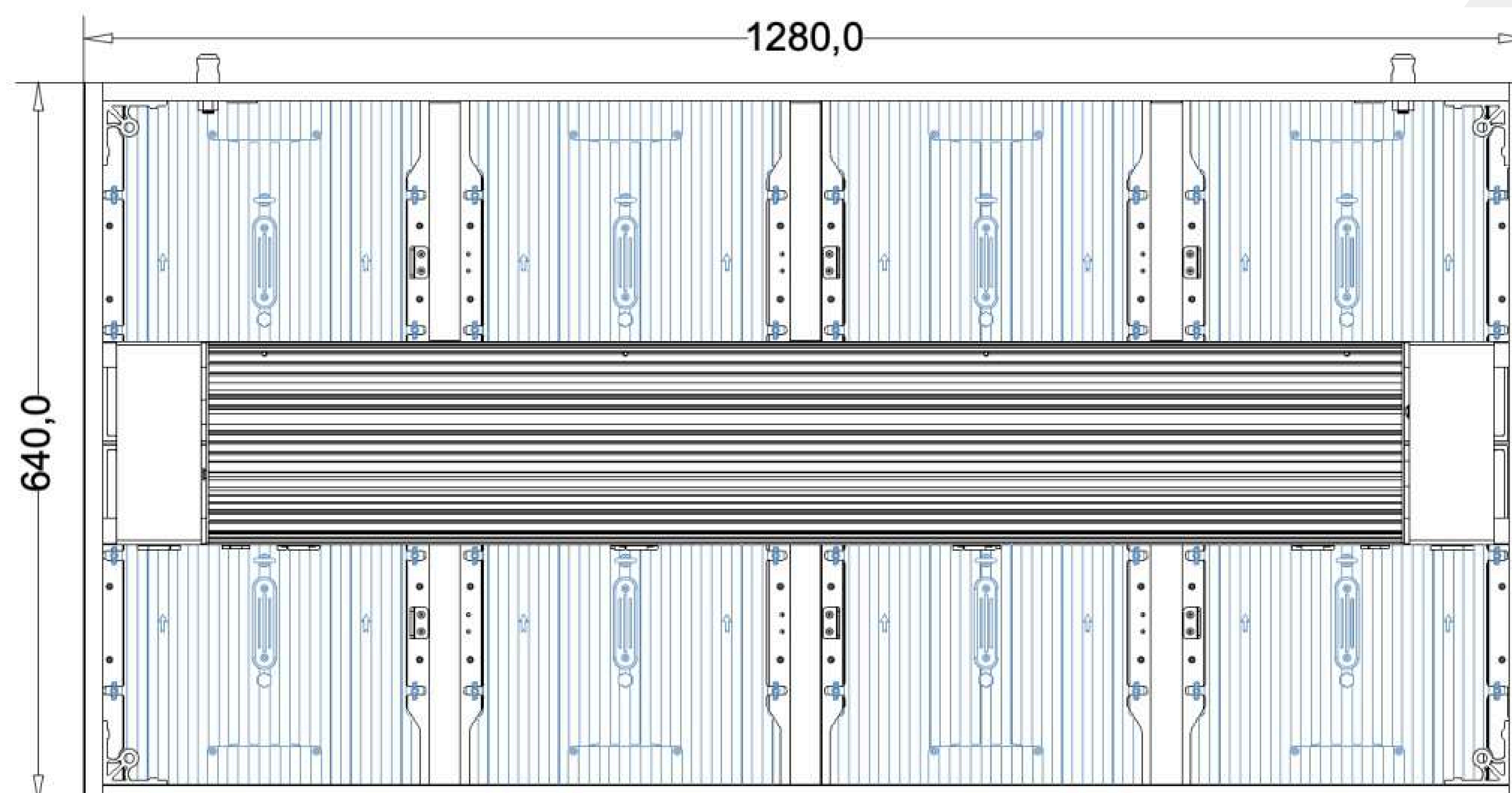
960 * 640 Cabinet (W X H):

Unit: (mm)



1280 * 640 Cabinet (W X H):

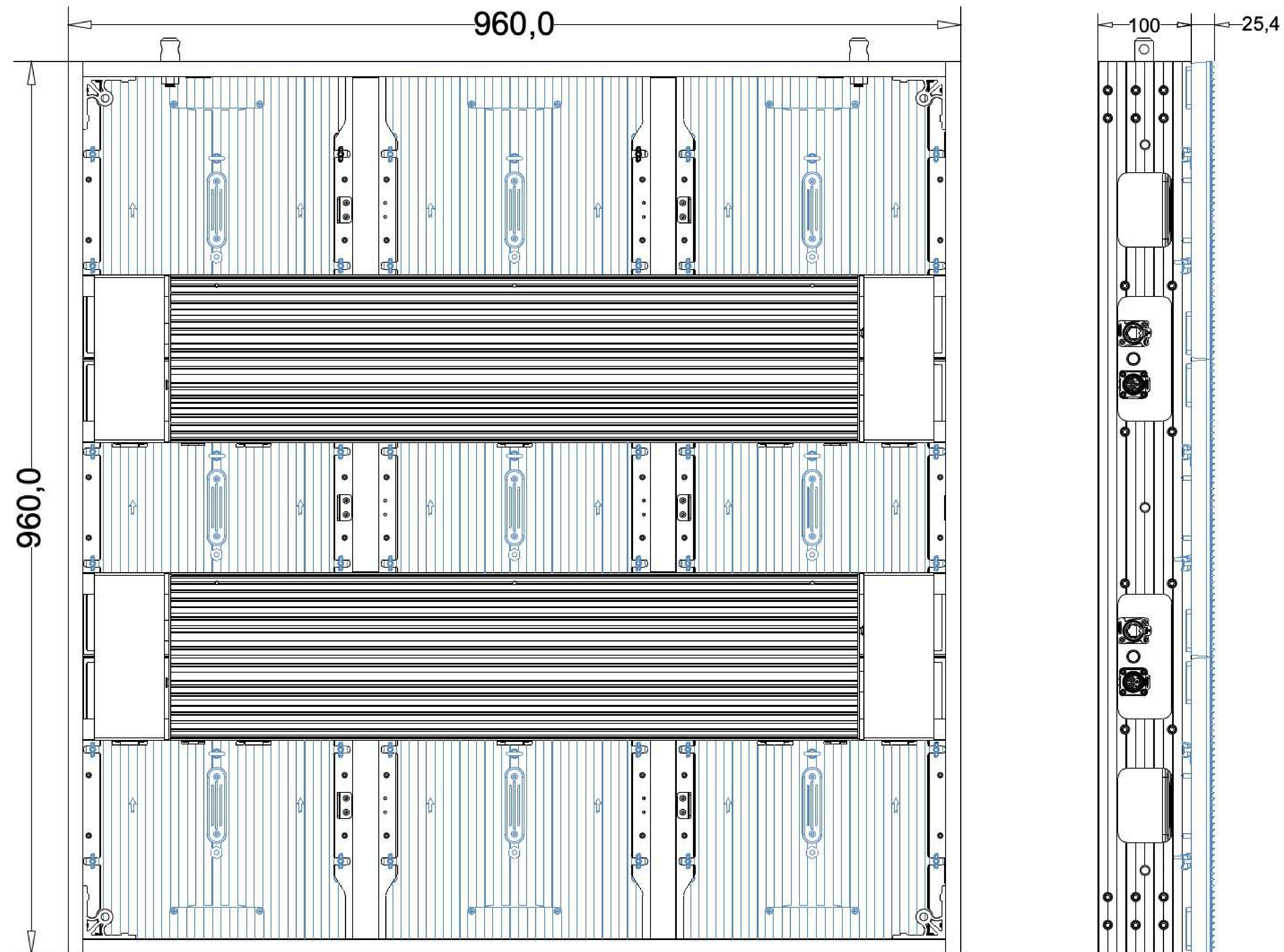
Unit: (mm)





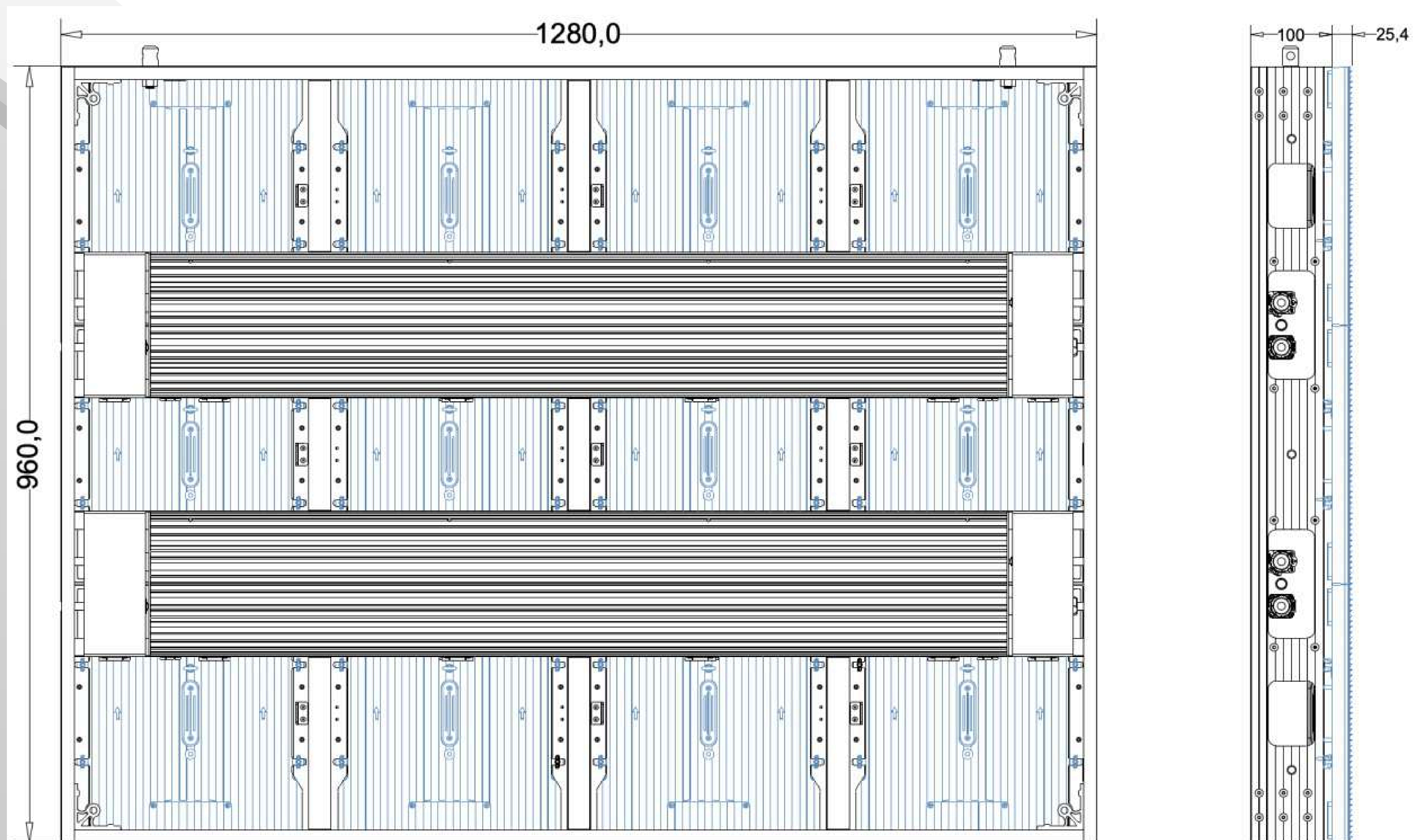
960 * 960 Cabinet (W X H):

Unit: (mm)



1280 * 960 Cabinet (W X H):

Unit: (mm)

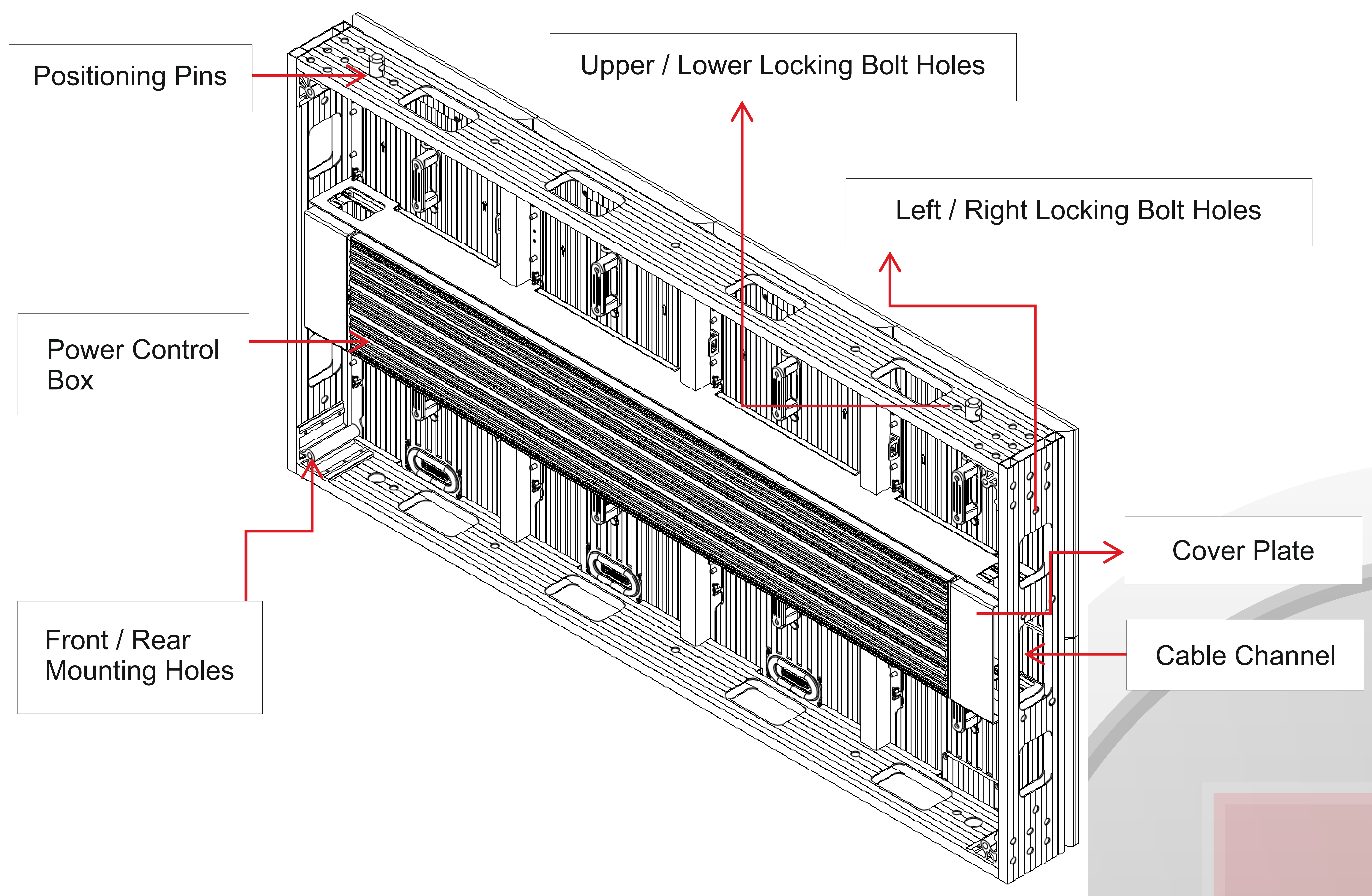




1.6 Product Structure Diagram

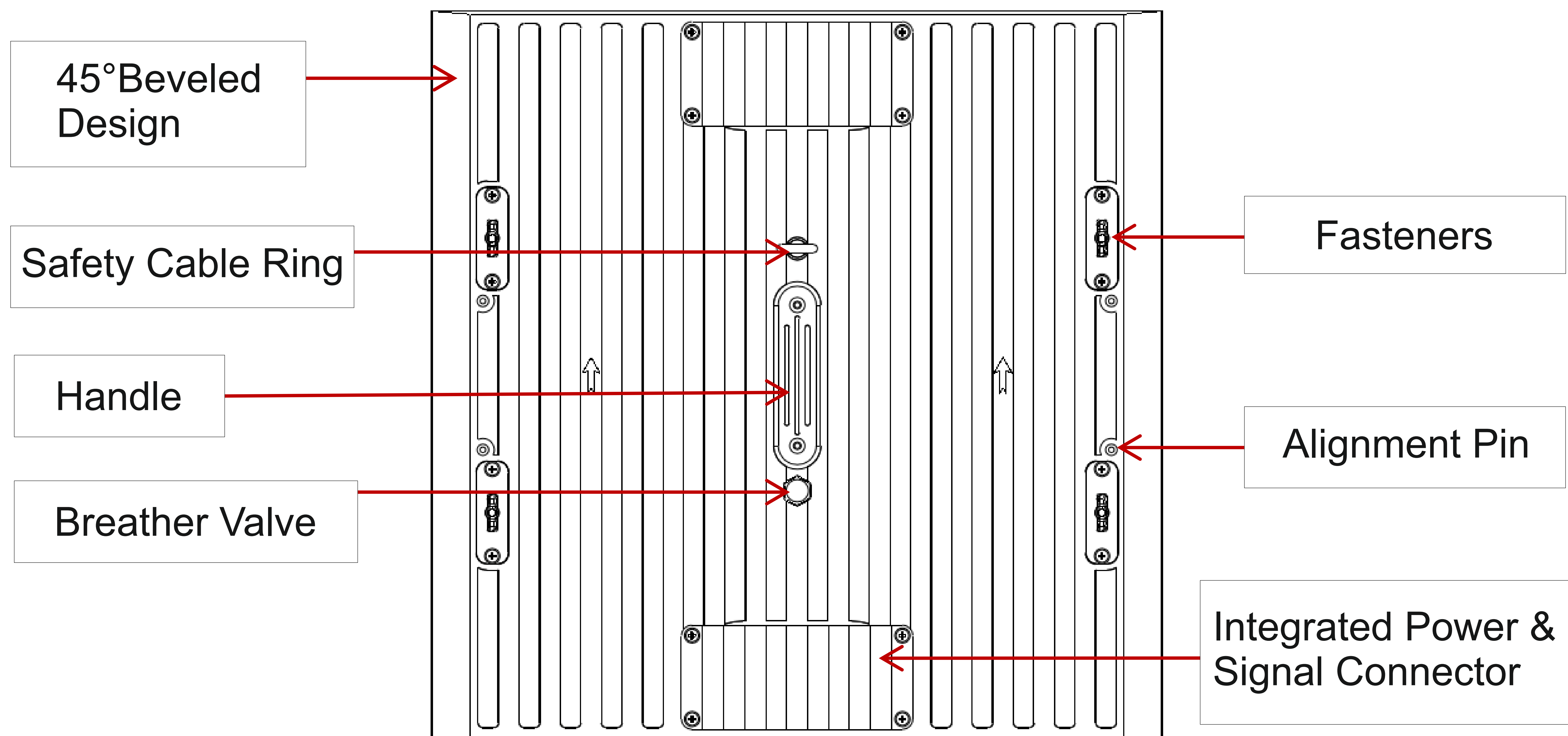
Example: 1280×640 mm cabinet (other sizes function the same).

Cabinet Structure Diagram:



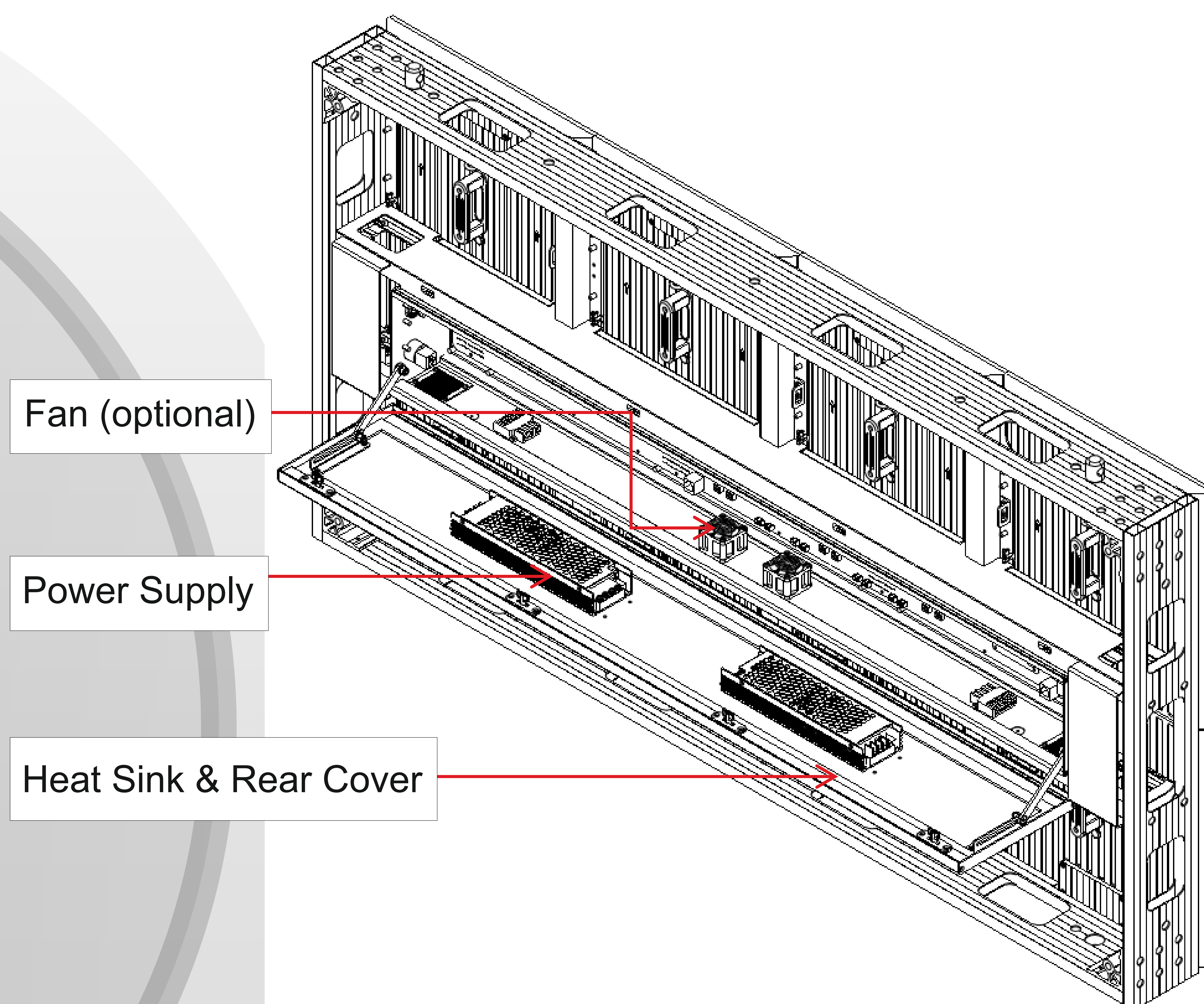


Module Structure Diagram:



Note: The modules are interchangeable between upper and lower positions by switching the cover plate on connectors.

Power Box Diagram:

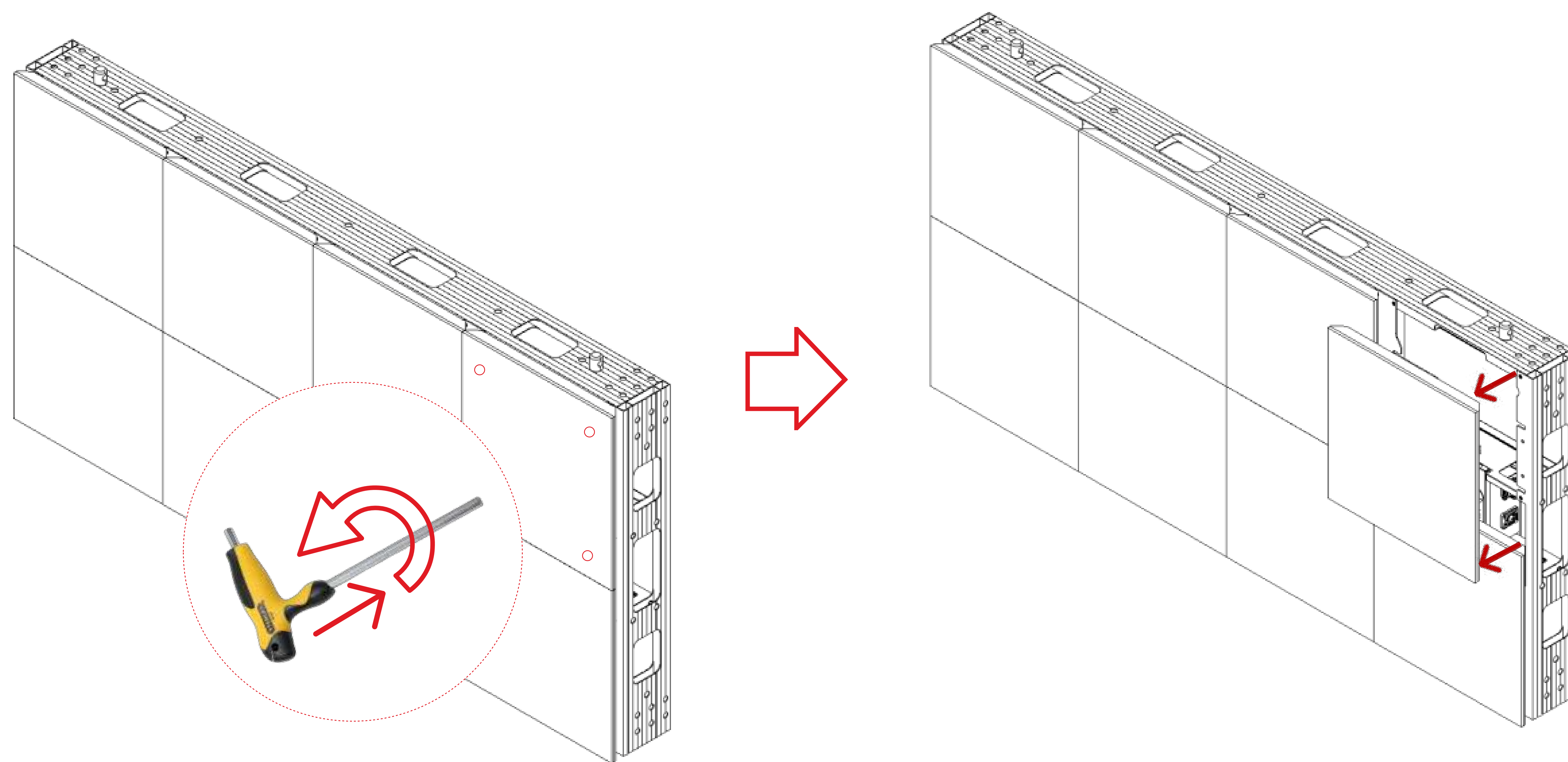


1.7 Maintenance Overview

The March II series supports both front and rear maintenance, as described below.

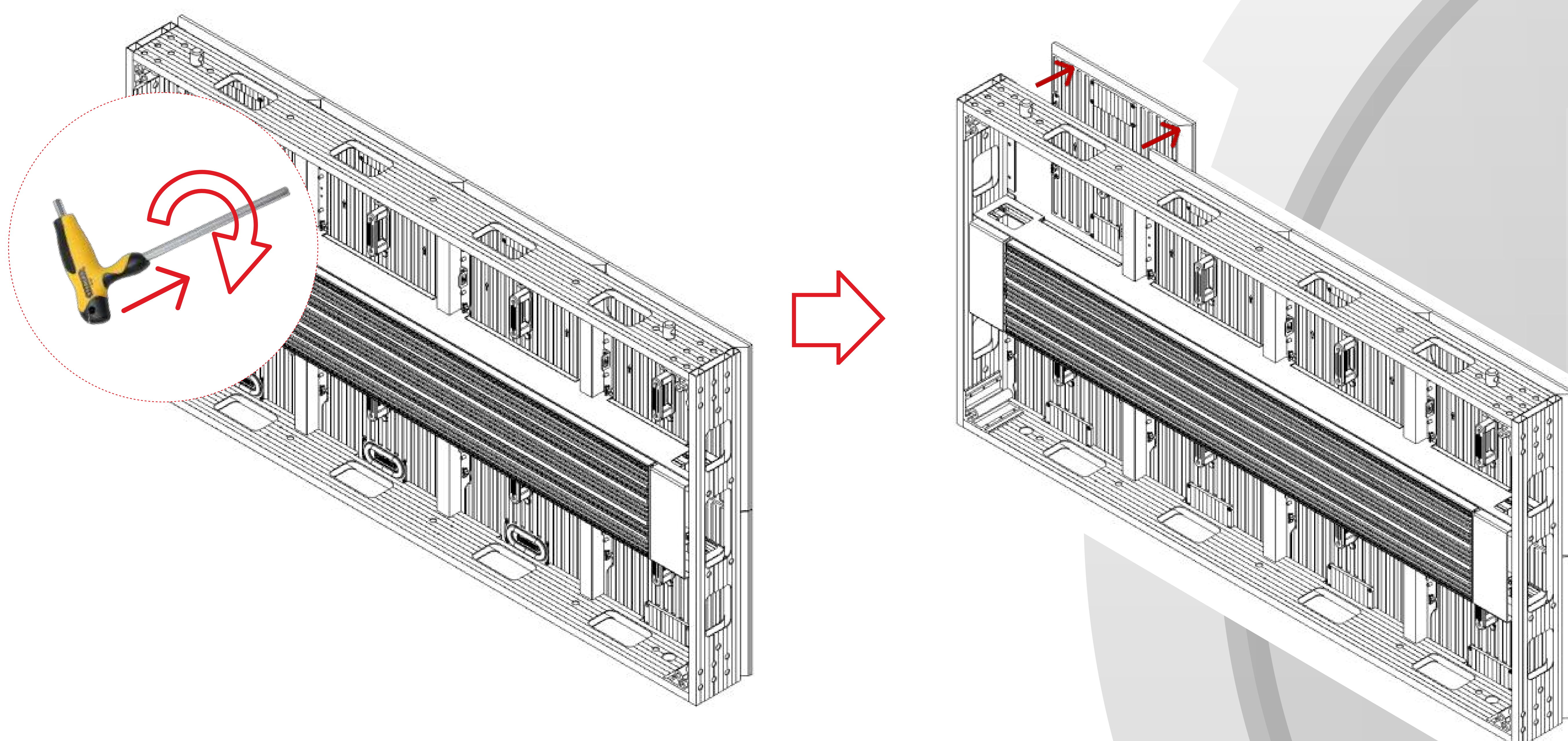
Module Front Maintenance:

1. Use an M3 (M2 for P4) hex wrench and insert it into the four front holes of the module. Rotate counterclockwise 45° to release and pull out the module.



Module Rear Maintenance:

1. Insert the M3 hex wrench into the four back fixing holes of the module and rotate clockwise 45° to loosen, then hold the handle and push forward to remove the module.

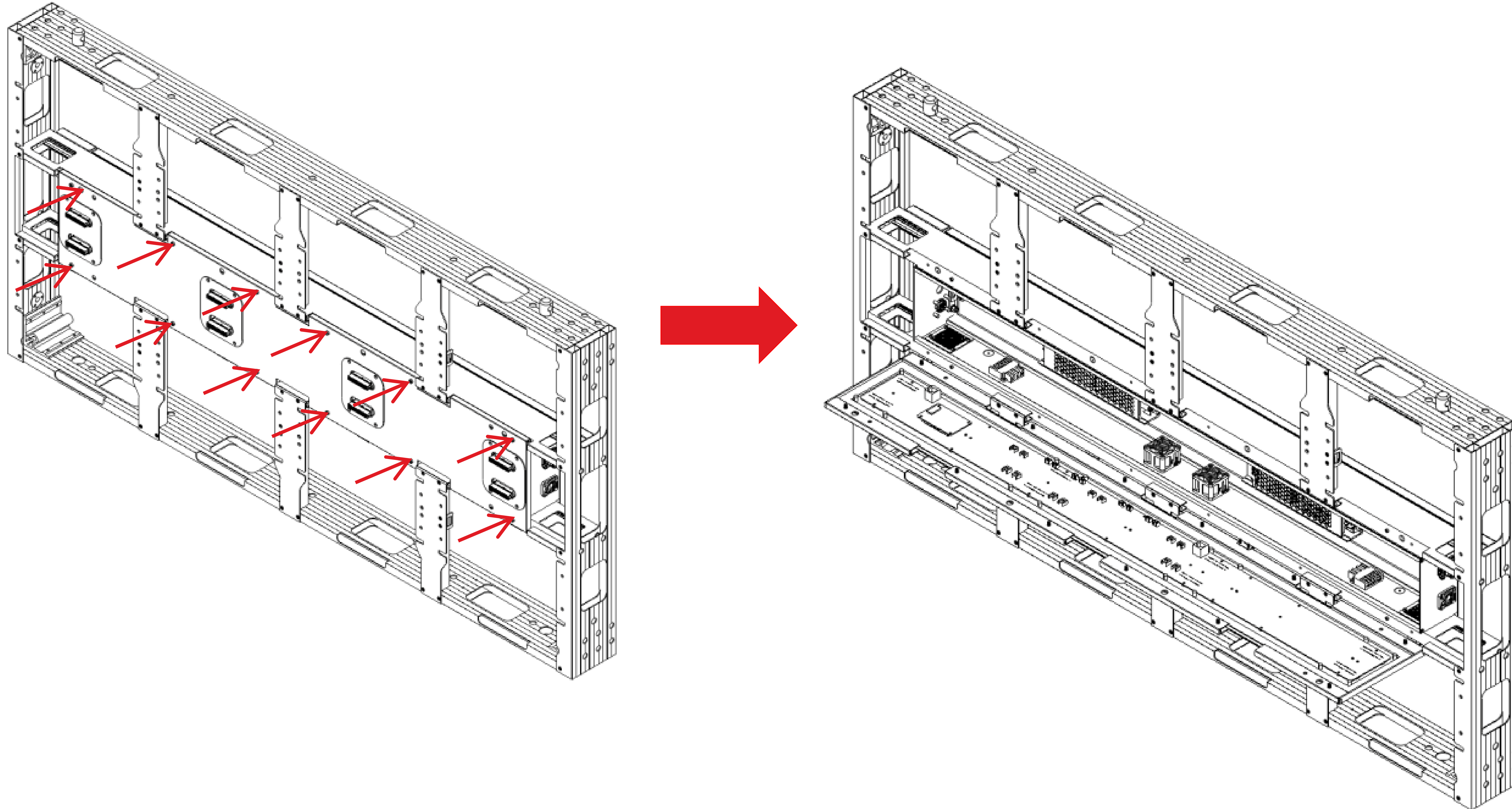




Power Box Front Maintenance:

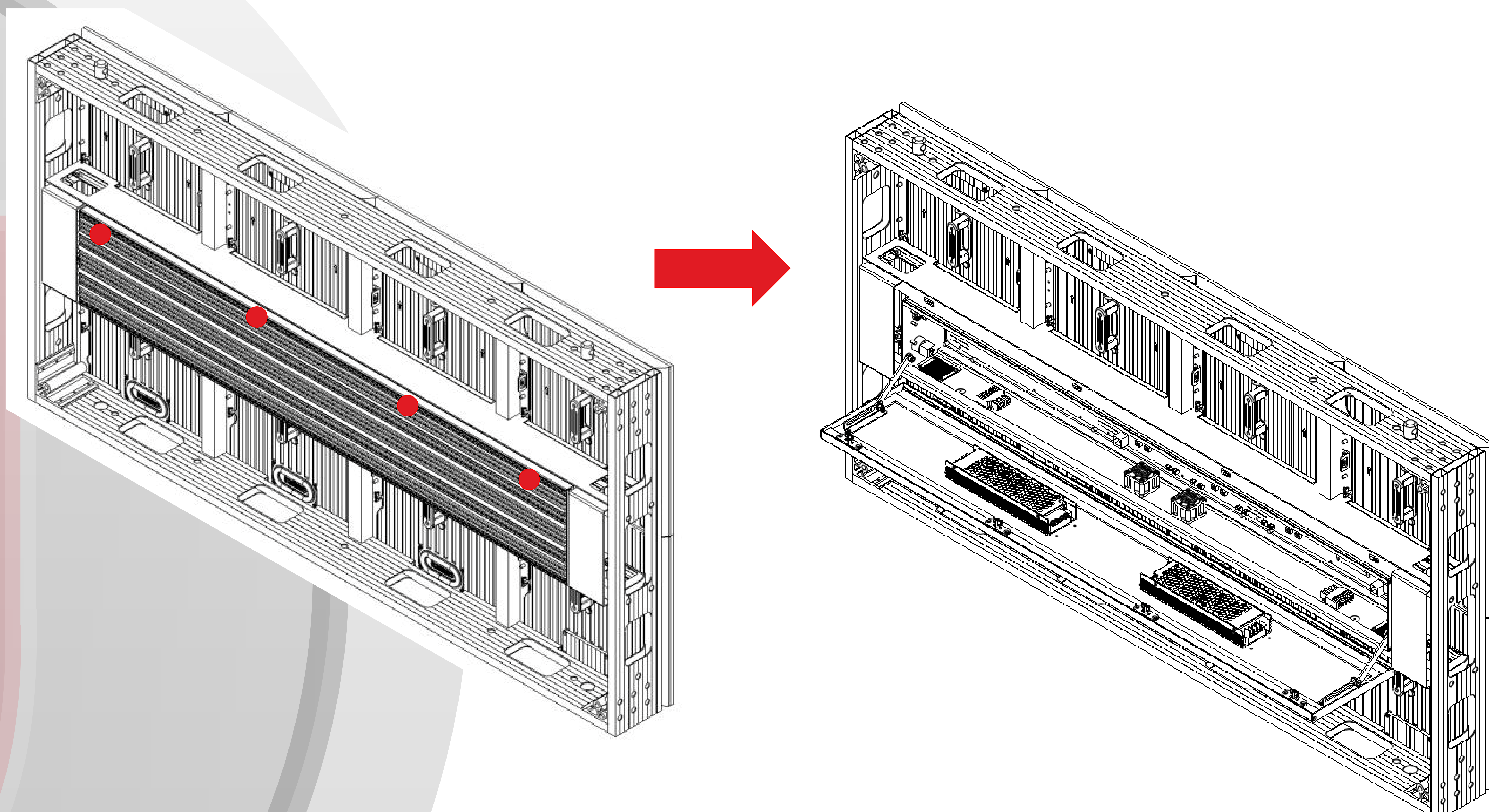
* Ensure power is disconnected before servicing to avoid electric shock.

Insert the M3 hex wrench into the front cover holes and rotate counterclockwise 45° to open the cover.



Power Box Rear Maintenance:

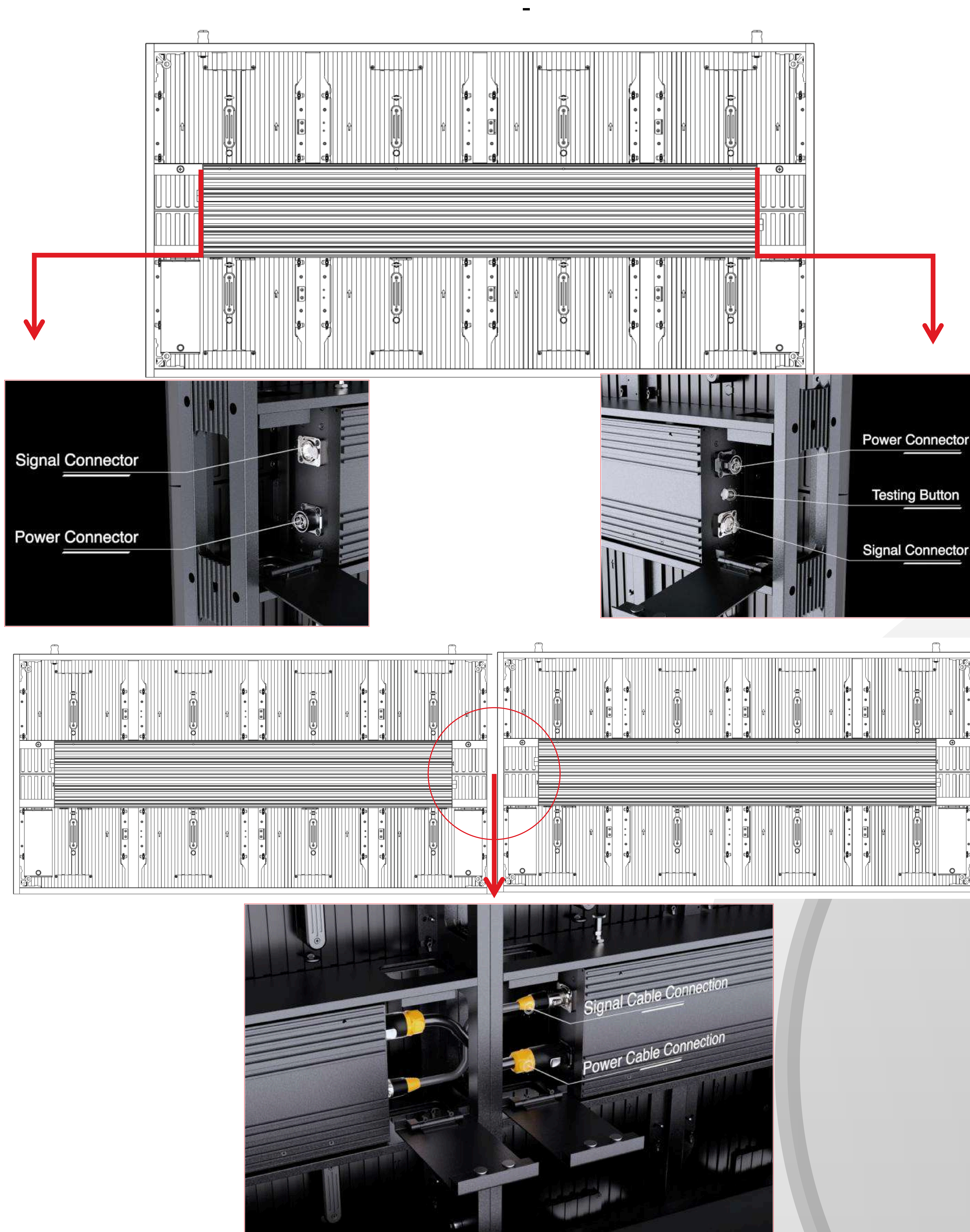
Insert the M3 hex wrench into the rear cover holes and rotate counterclockwise 45° to open.



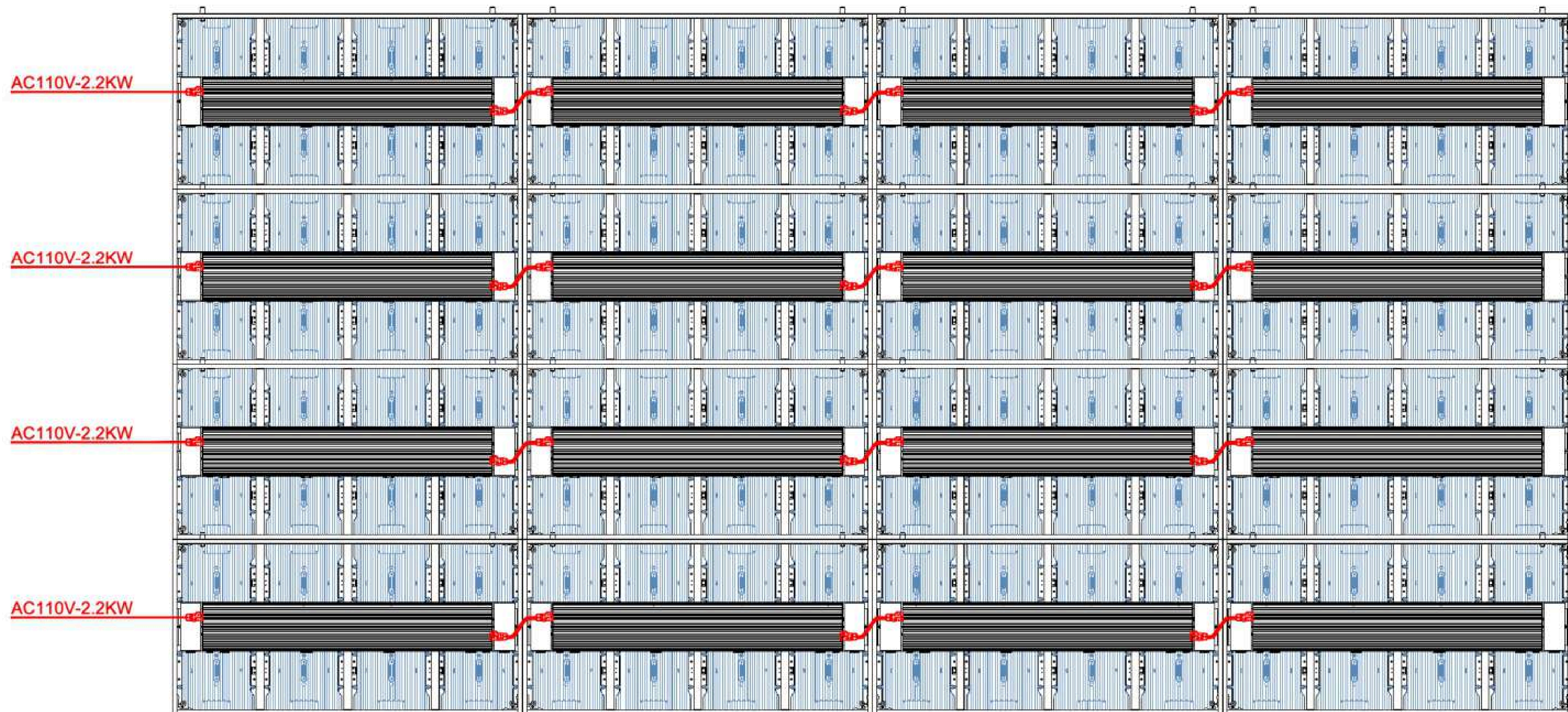
2. Cabinet Wiring

2.1 Cabinet-to-Cabinet Wiring

Power and data transmission between cabinets use aviation connectors for quick connection. Open the magnetic cable cover plate, and connect the power and data aviation plugs between adjacent cabinets to complete the inter-cabinet wiring.

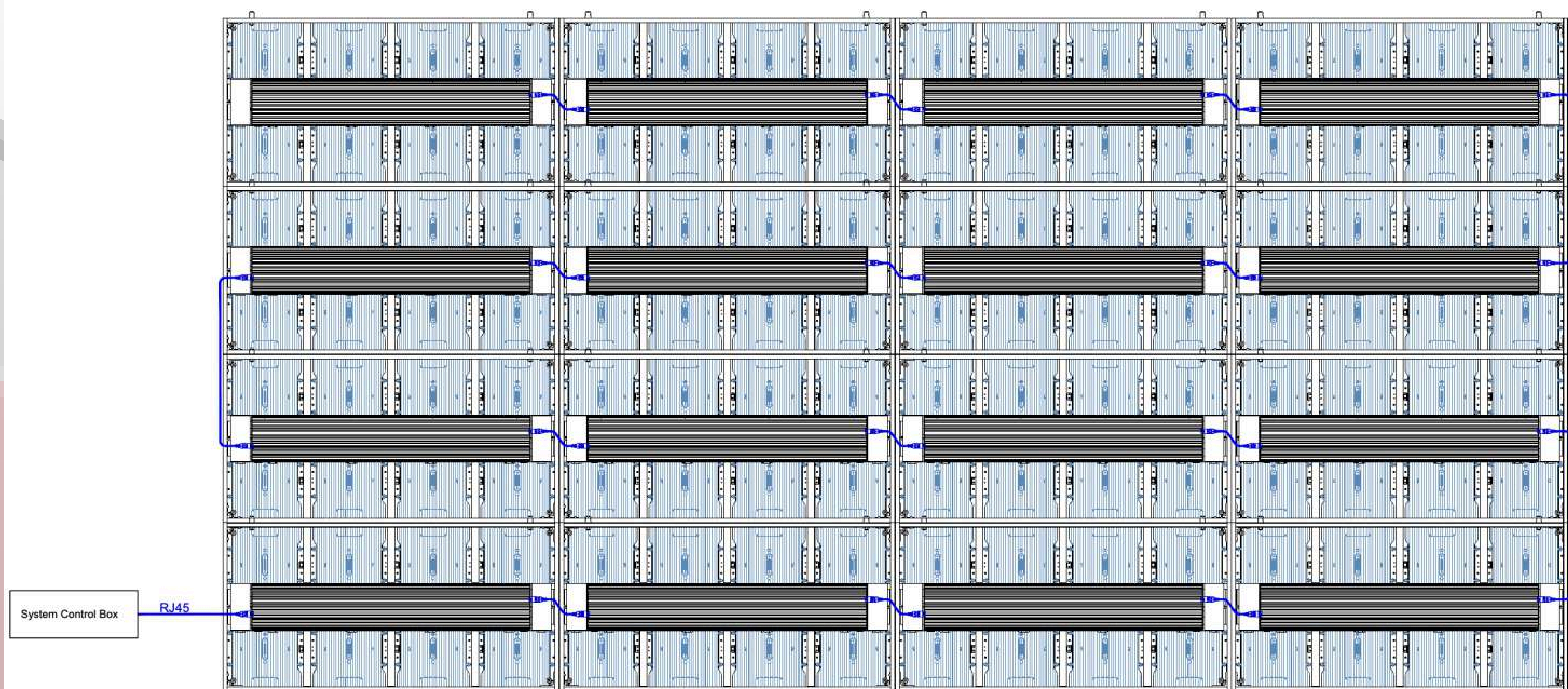


2.2 Power Cable Routing Diagram



The above diagram is for reference only. Please follow the specific power wiring schematic provided with your order for actual wiring. The standard main power cable specification is **3 × 12 AWG**.

2.3 Data Cable Routing Diagram



The above diagram is for reference only. Please follow the specific data wiring schematic provided with your order for actual wiring.



3. Installation

3.1 Installation Methods

The product supports two installation methods:
Rear installation
Front installation

3.2 Preparations Before Installation

Required Tools:

Rubber mallet	Level gauge	Adjustable wrench
		

Required Safety Equipment:

Protective apron	Safety helmet	Safety rope/harness
		

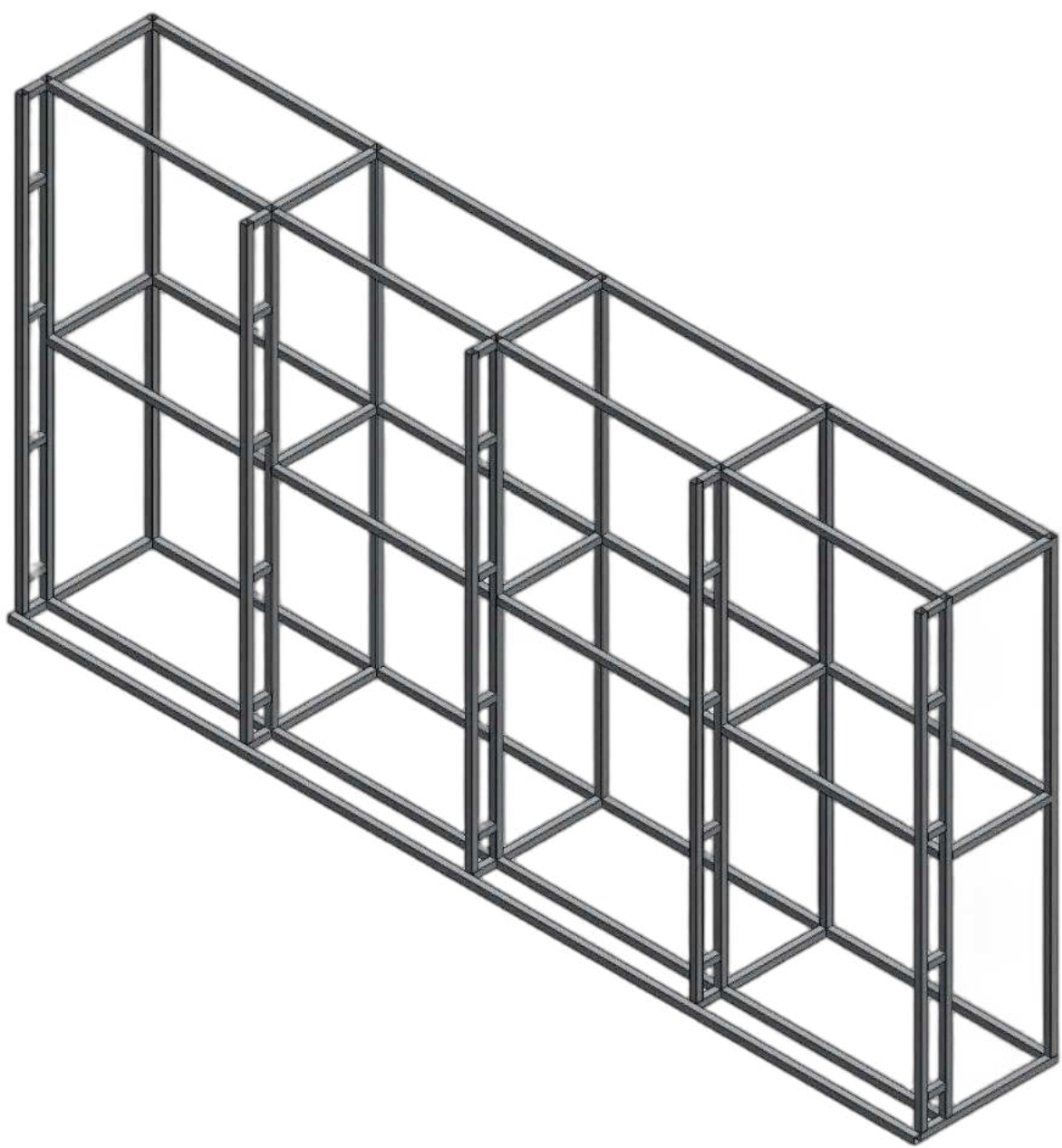
Important Notes:

- 1. Installation must comply with local safety regulations.
- 2. Construction workers must wear safety helmets, and those working at heights must use safety harnesses.
- 3. The installation order for the cabinets should proceed from **bottom to top**, and from **center to both sides**. The alignment of the bottom row of cabinets is crucial — its accuracy largely determines the overall flatness and uniformity of the entire display.

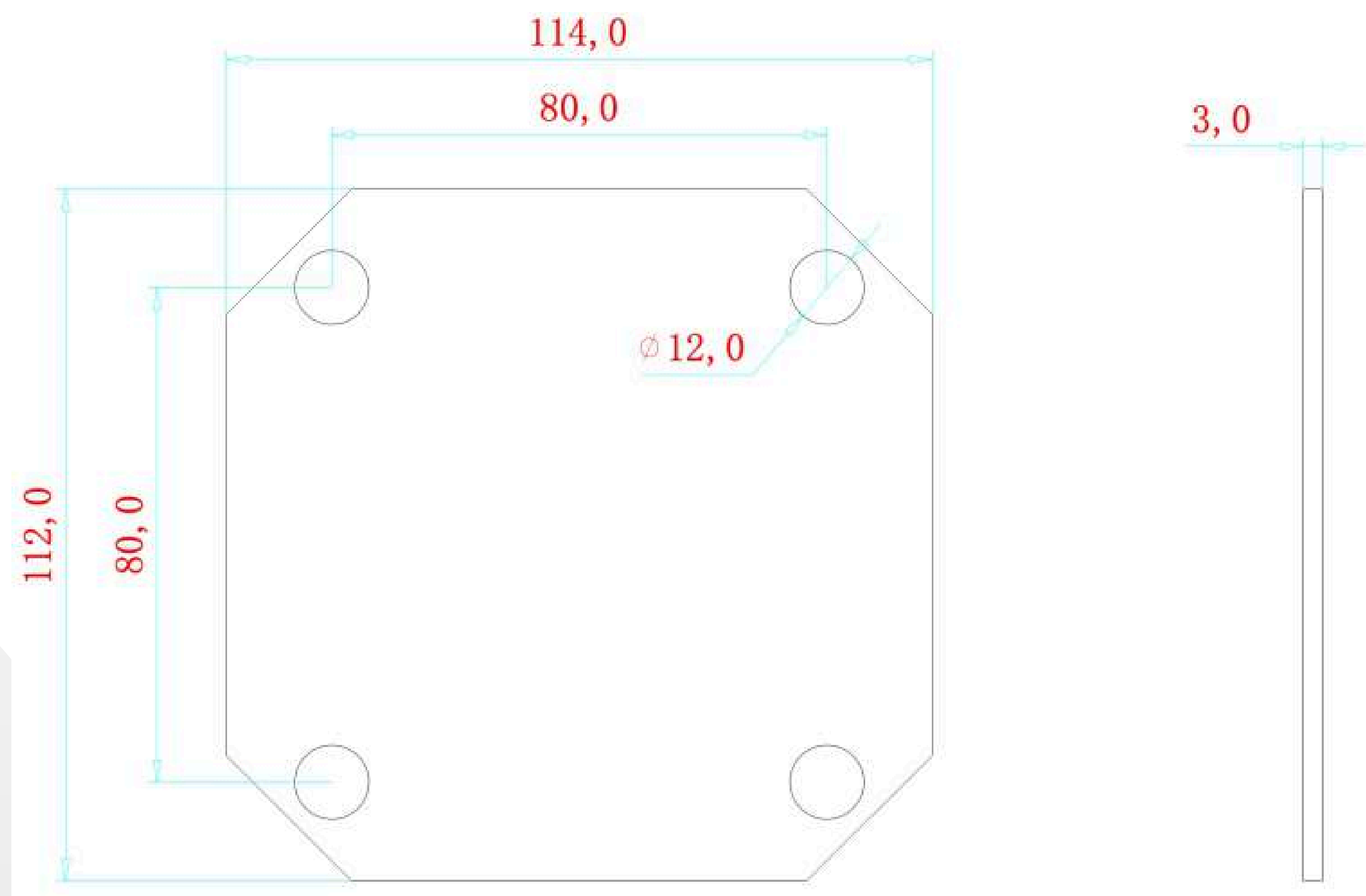


3.3 Rear Installation

Rear installation is the most common method for outdoor LED displays. The specific installation structure depends on screen size, environment, and maintenance requirements. The following example shows a representative rear-installation, rear-maintenance structure for reference.

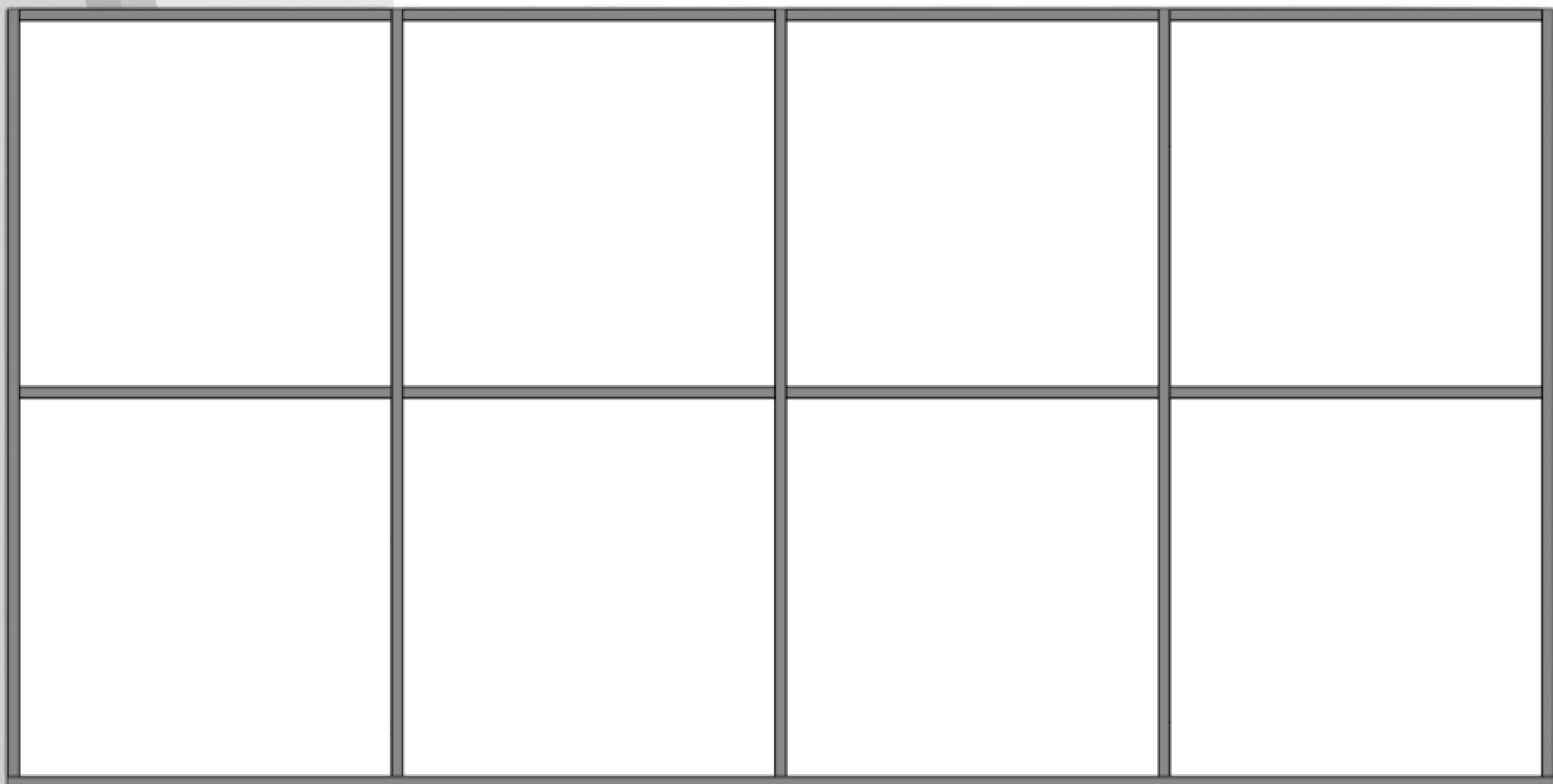
Mounting Structure (The vertical support tubes for the display are 40×40 mm)	Cabinet connection bolts: M10×40	Rear installation connection plate	Rear installation connection plate bolts: M10×60
			

Rear Installation Connection Plate Dimensions (mm):



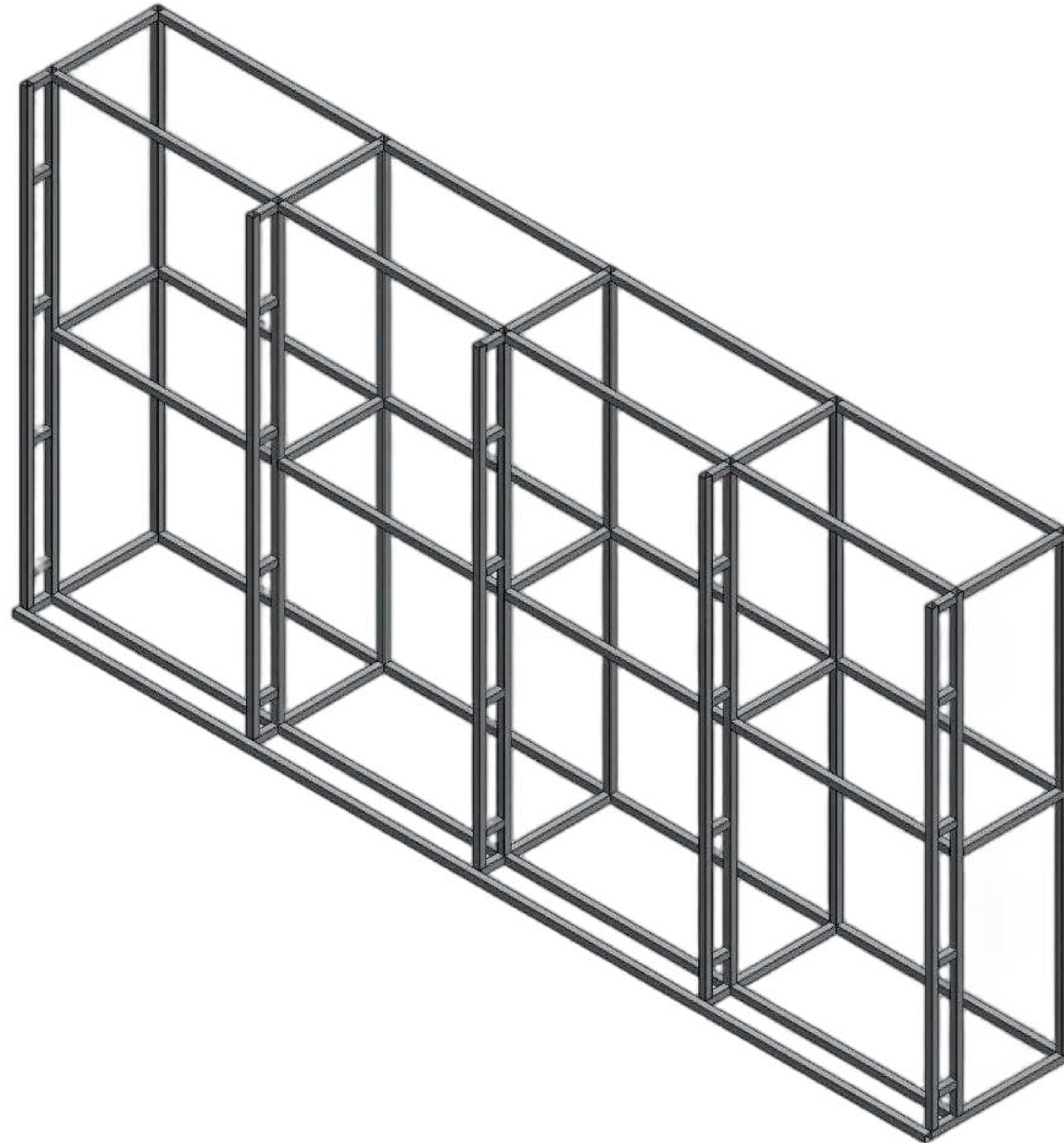
Installation Steps:

1. Verify the structure and drawings — Confirm the structure matches the design drawings. Use a plumb bob to ensure each vertical tube is perpendicular and all vertical tubes are on the same plane.

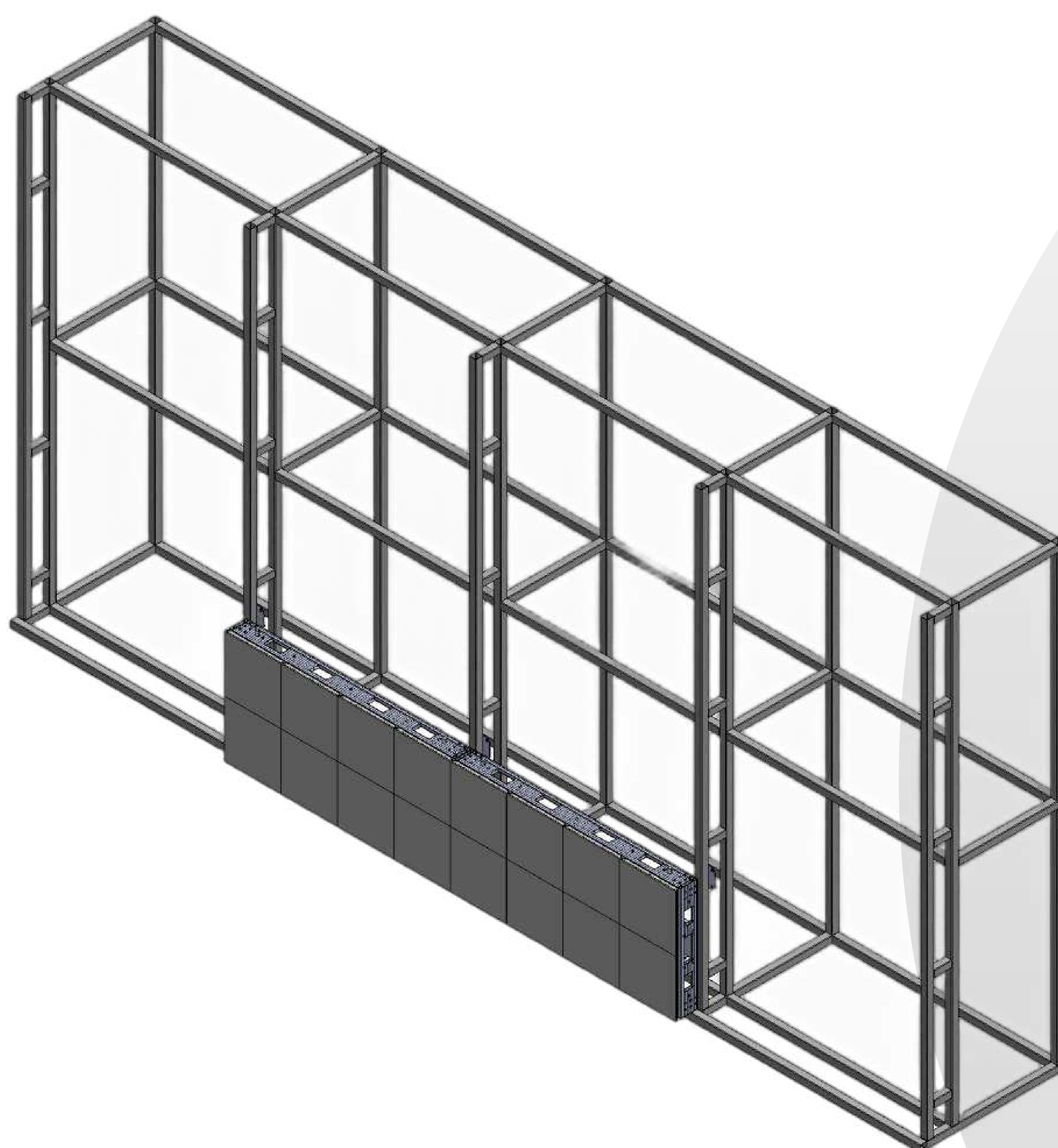




2. Level the base — Use a level to ensure the base is horizontal and forms a 90° angle with the vertical tubes.

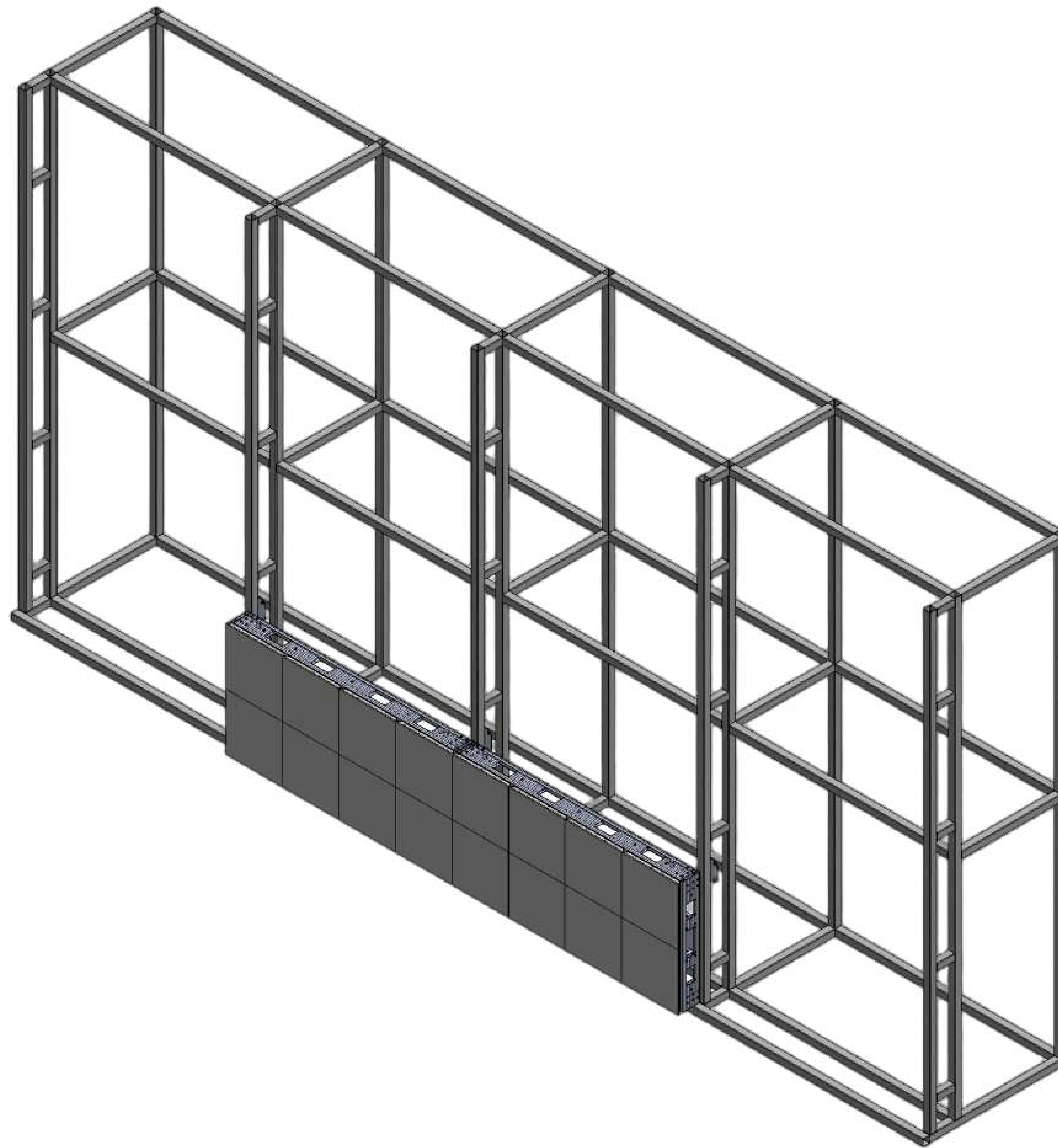


3. Place the first two cabinets — Position them in the middle section of the structure on the vertical tubes.

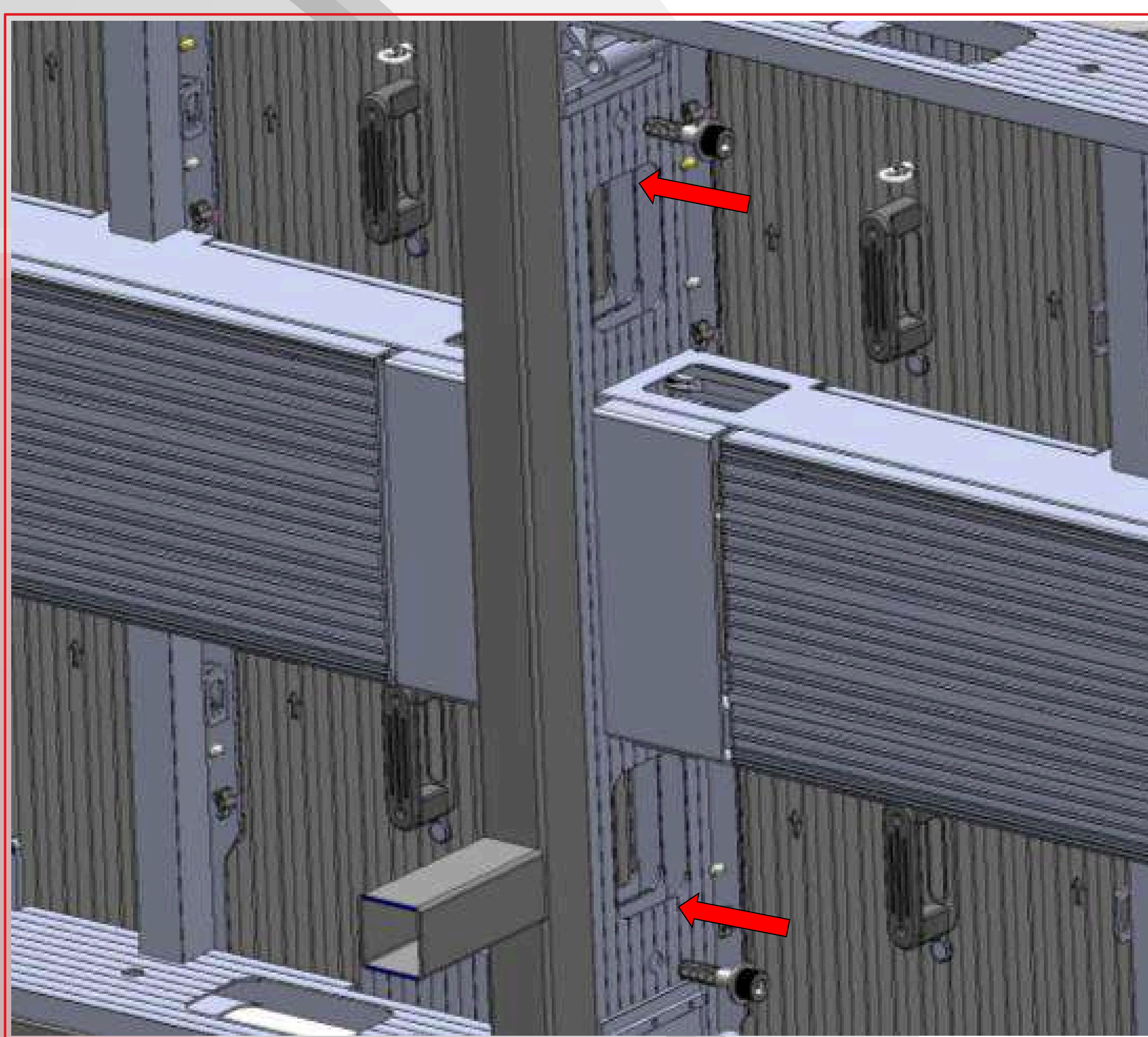




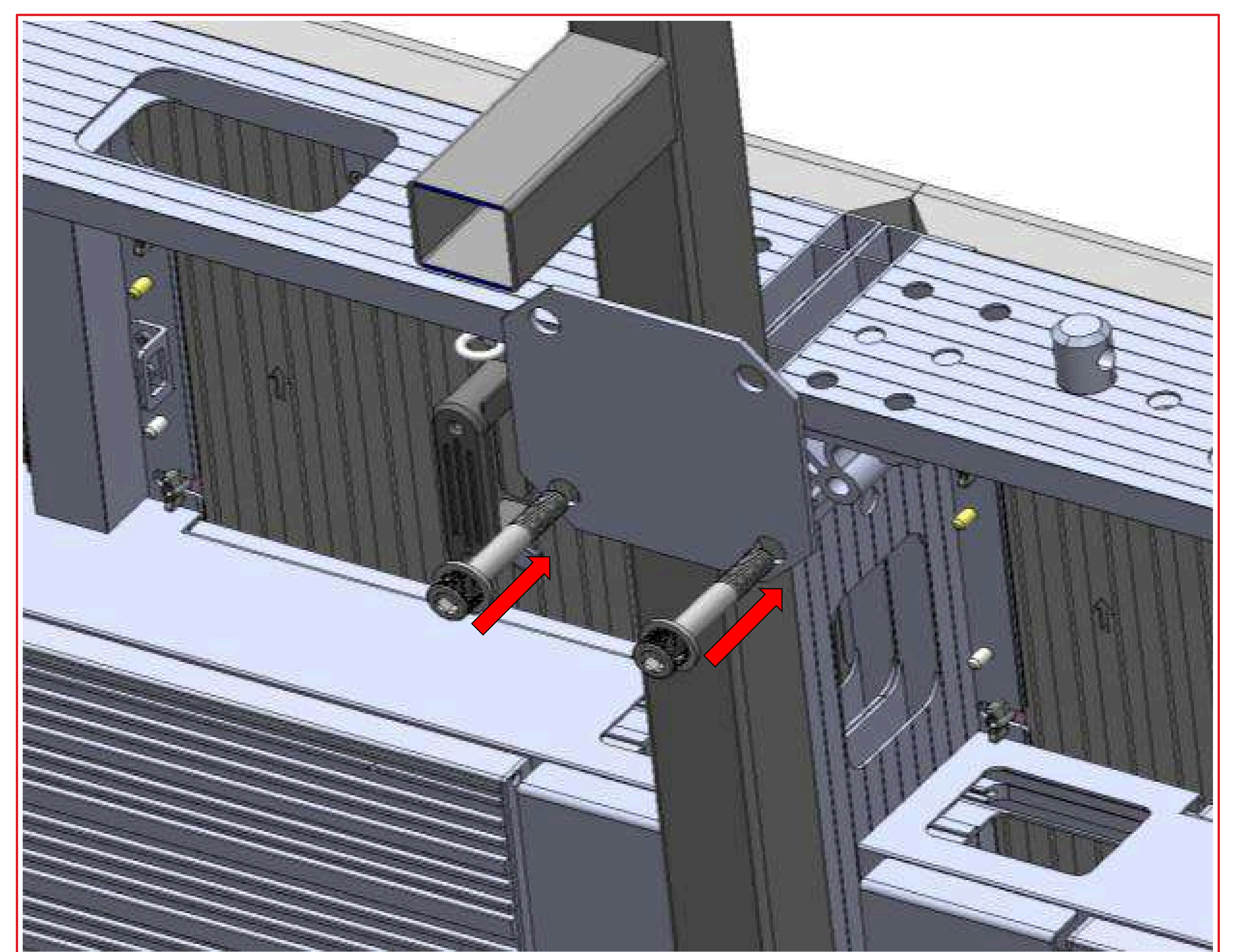
4. Align and fasten horizontally — Make sure the tops and front surfaces of the cabinets are level. Insert the connection plate behind the vertical tube, then use M10 bolts to fasten the cabinets (do not fully tighten yet; fully tighten after the entire connection section is installed).



Fasten Left & Right Cabinets:

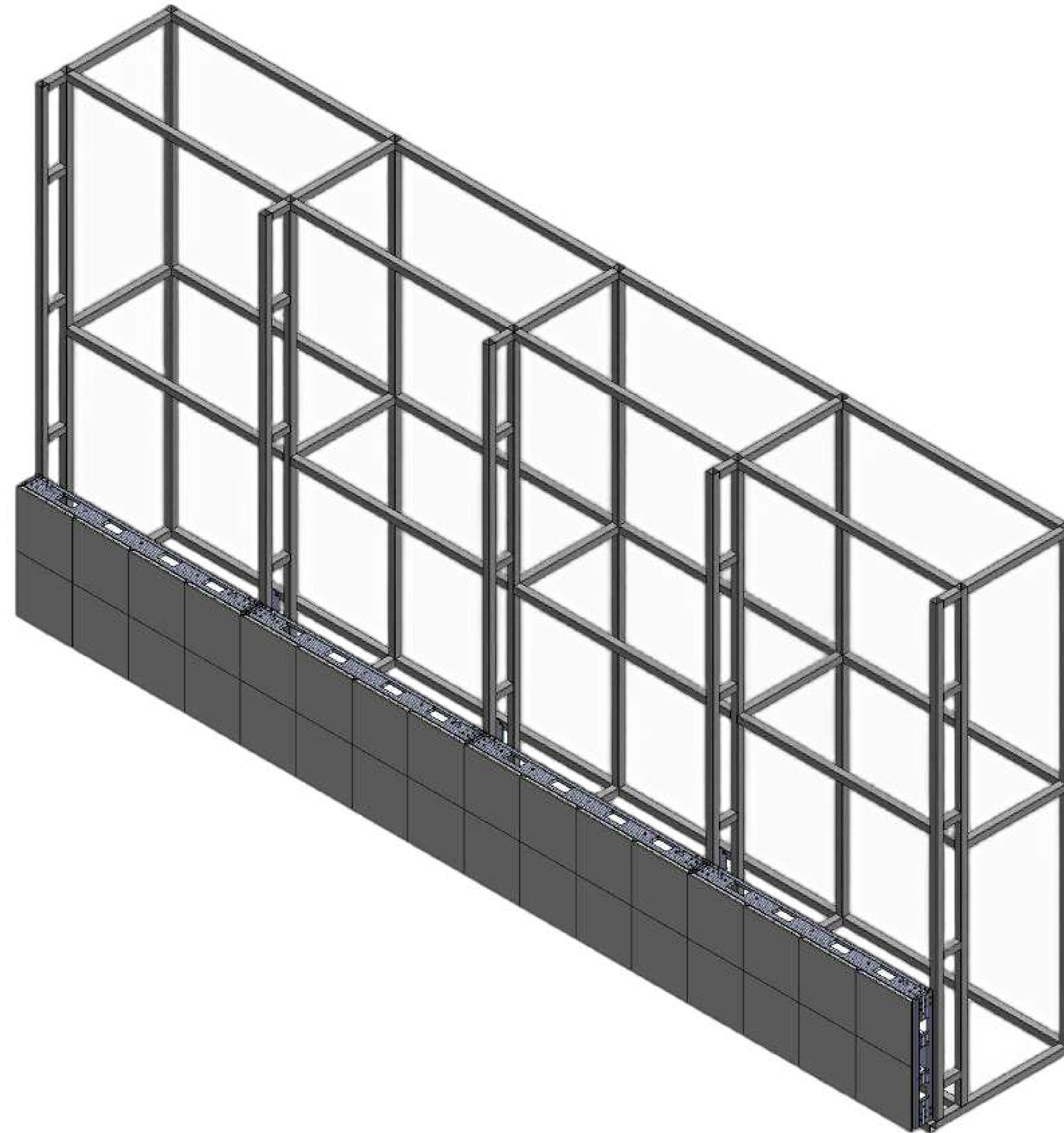


Fasten Cabinets to Frame:

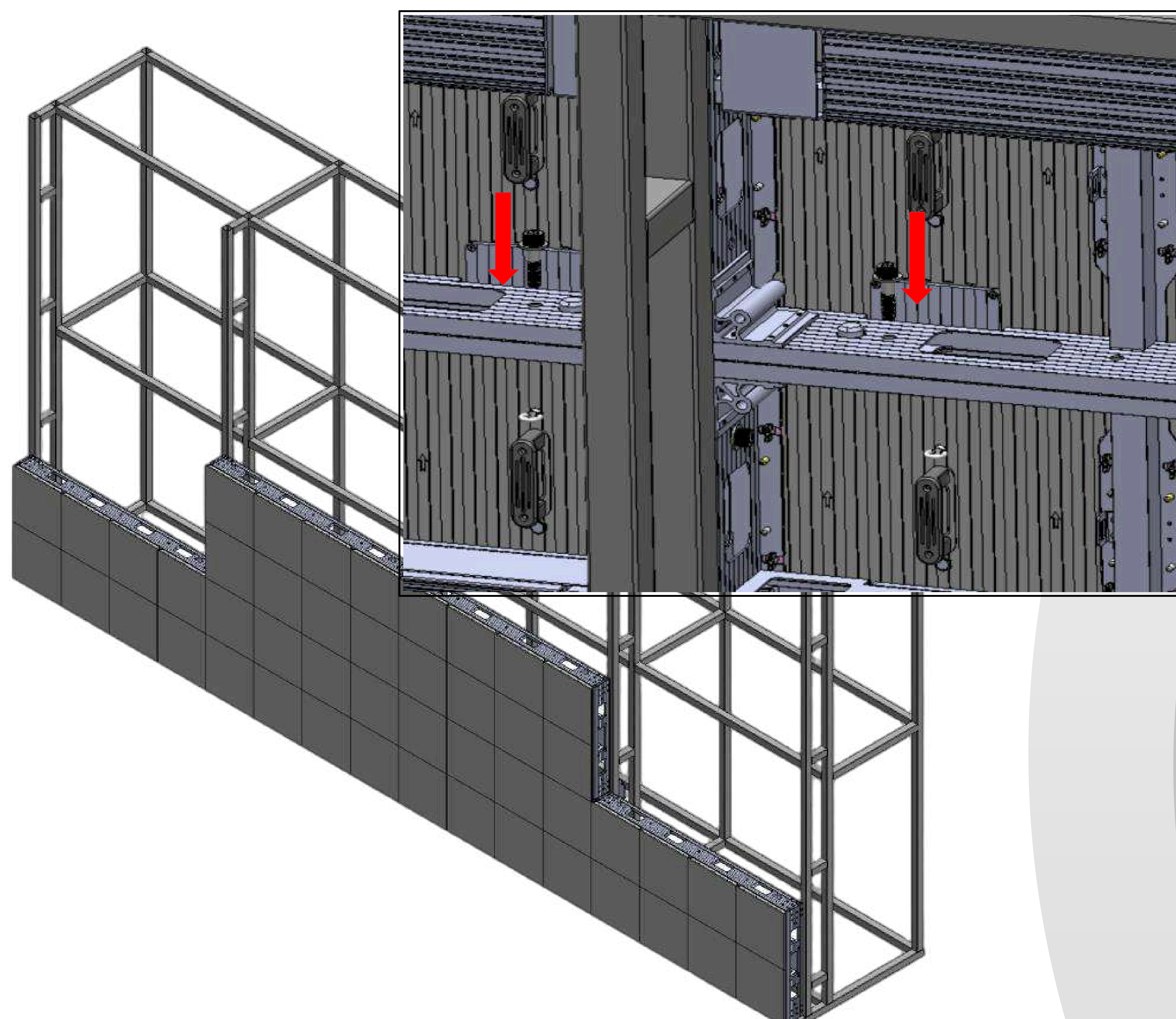




5. Complete the bottom row — Use a level and rubber mallet to ensure the top edges and front surfaces of all bottom-row cabinets are flush. If alignment cannot be achieved, do not hit the cabinets hard — use thin metal shims under the base if needed. The first row is critical: any misalignment will cause accumulated errors in subsequent rows, leading to visible seams or unevenness.

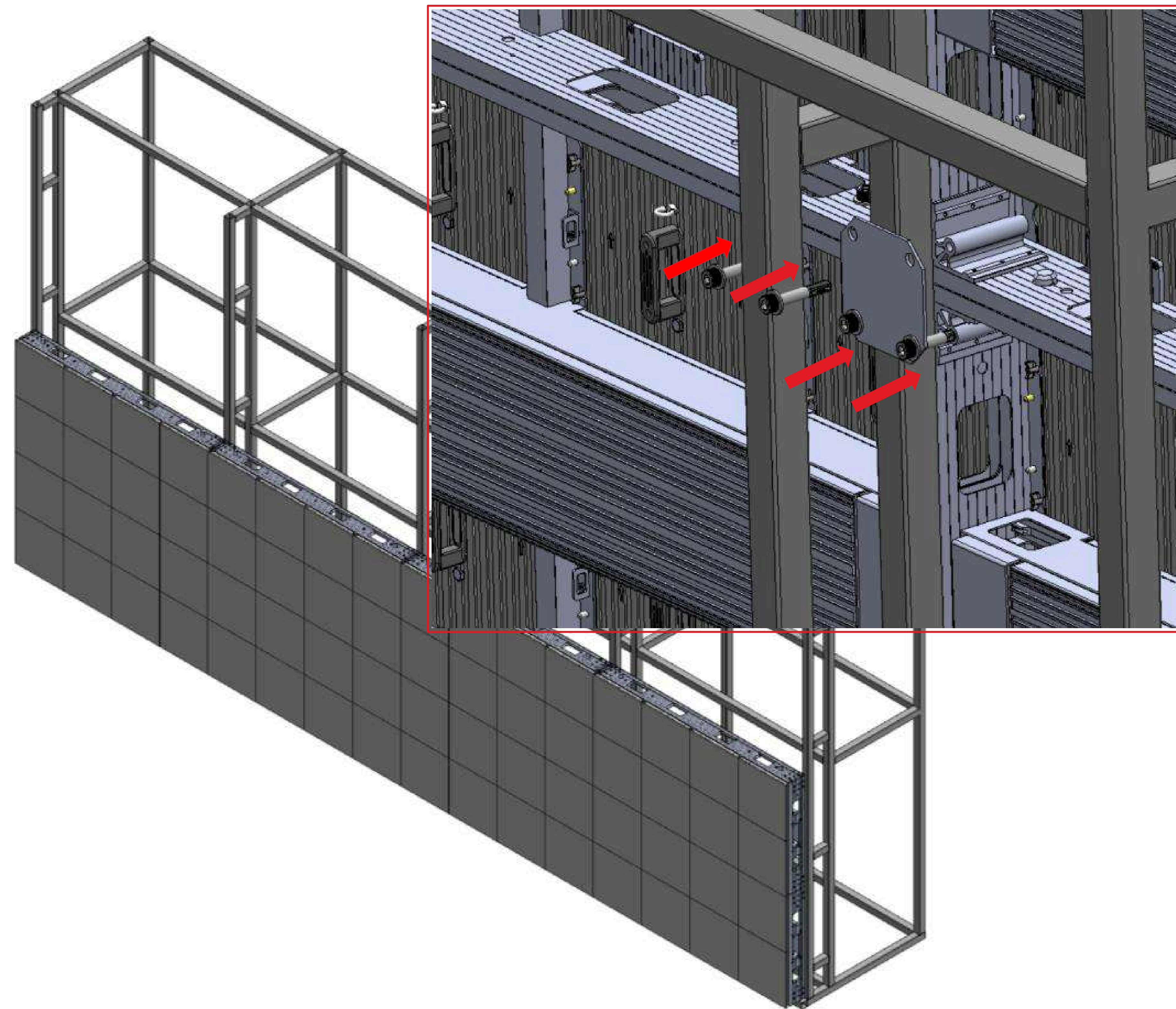


6. Install the second row — Start from the middle two cabinets again. After fastening the left-right bolts, adjust and fasten the upper-lower connecting bolts between cabinets.

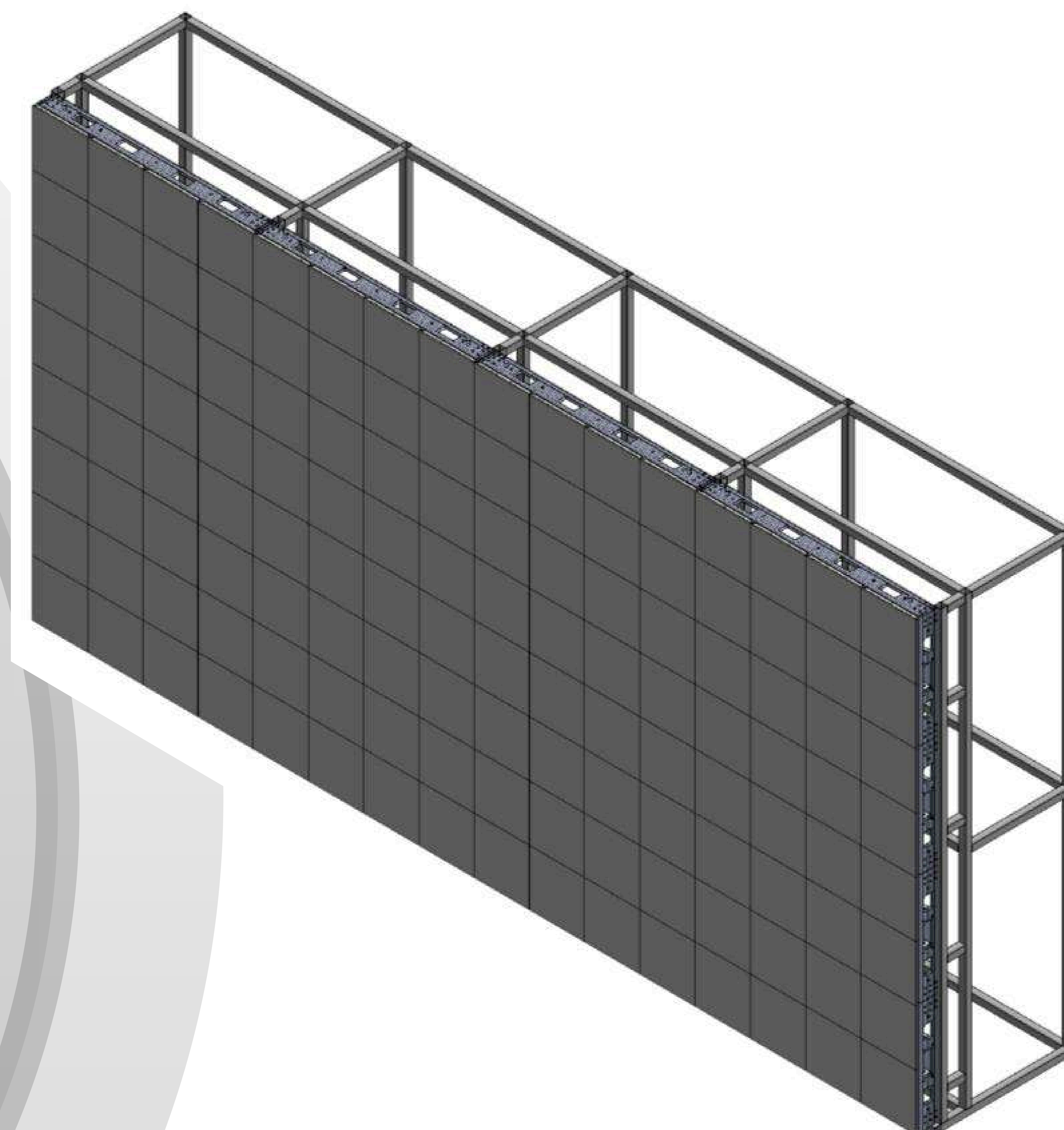




7. Tighten connecting plates — After leveling, tighten the connecting plates bolts between the upper and lower rows.



8. Install remaining cabinets — Repeat the same process for all remaining rows until the entire screen is assembled.



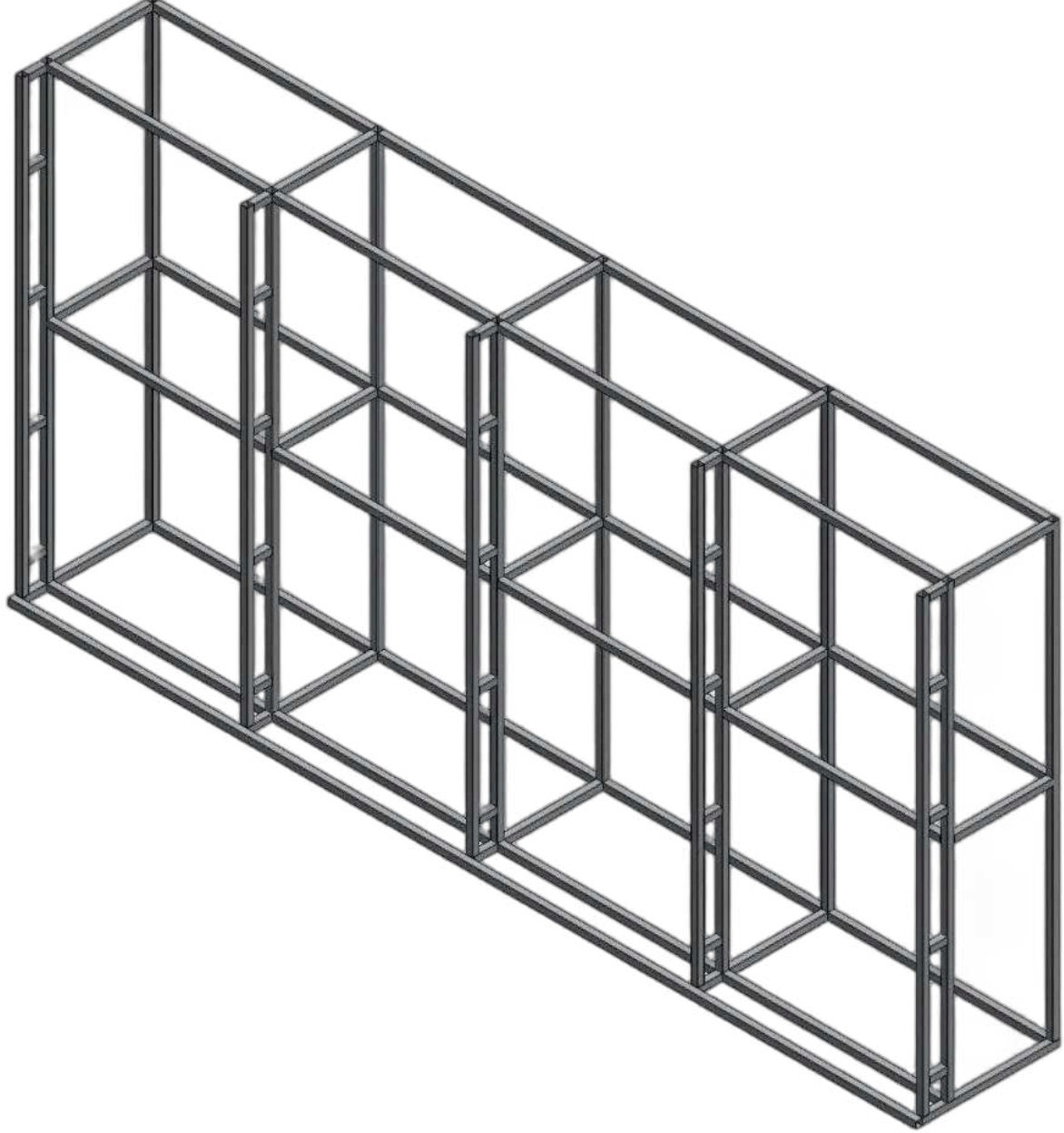
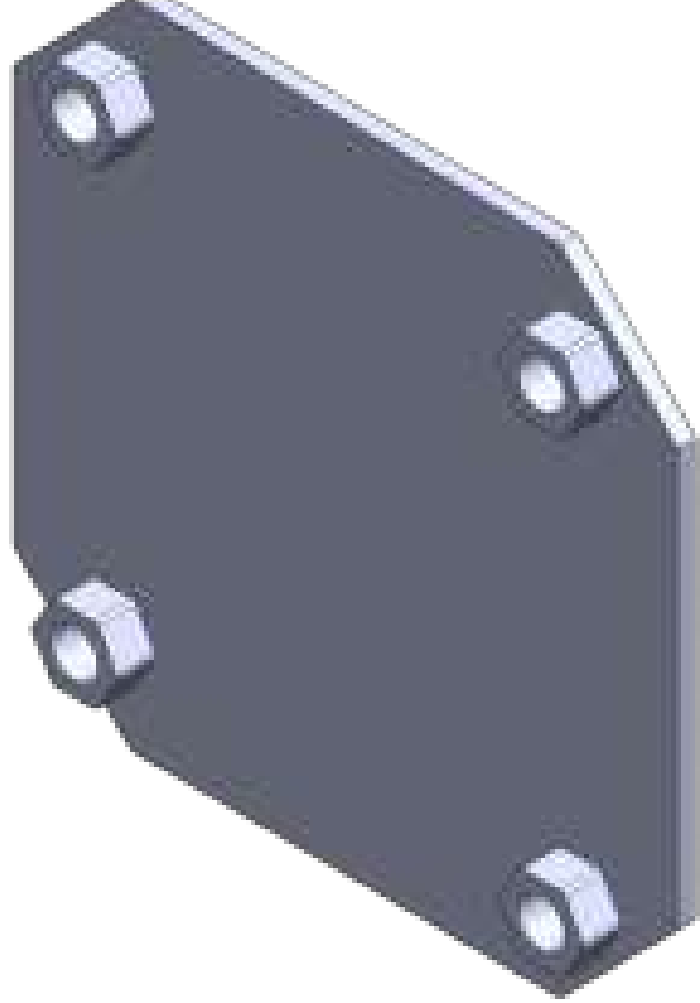


3.4 Front Installation

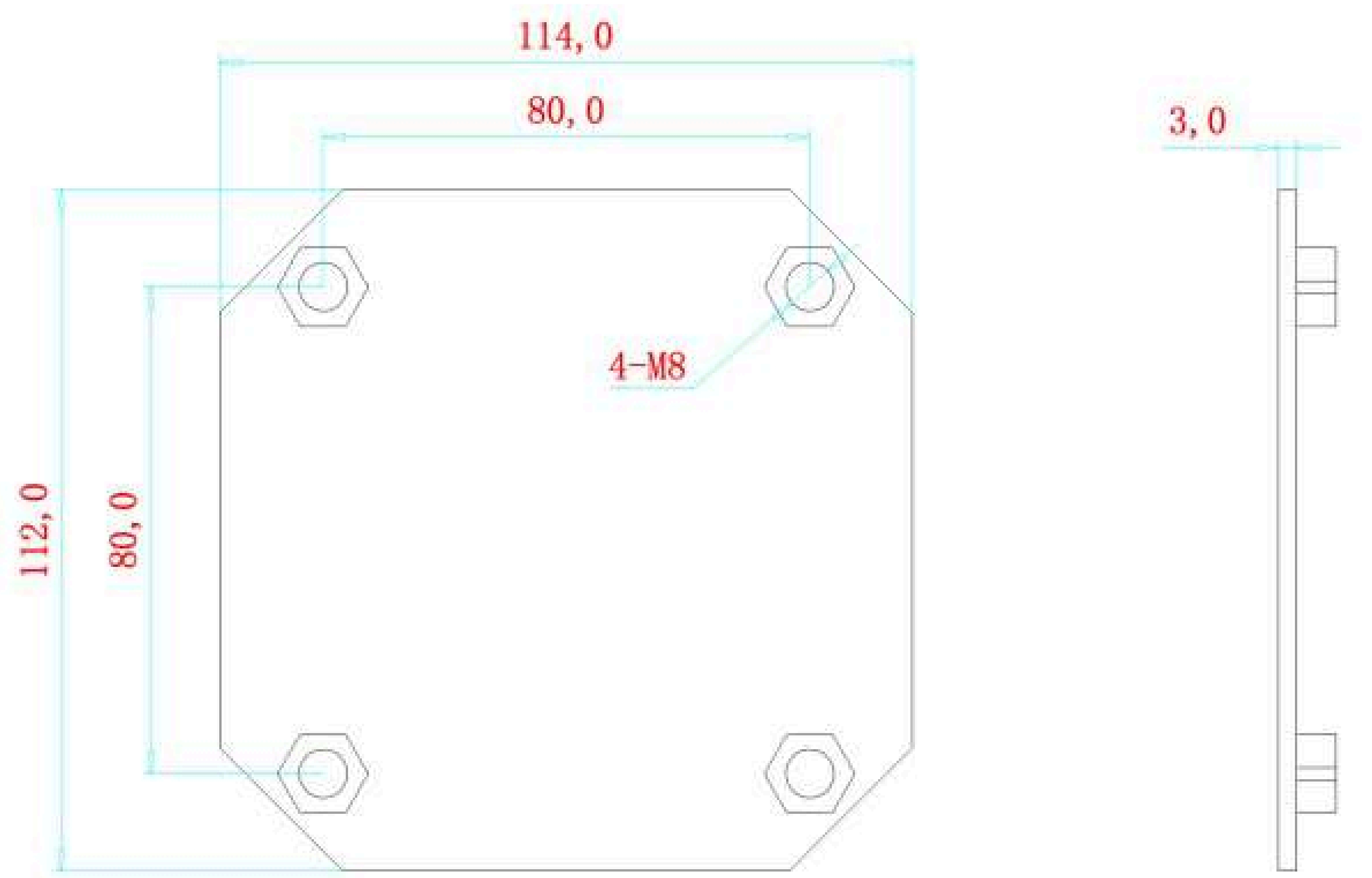
When the space behind the screen is limited (such as wall-mounted installations), front installation can be used. (However, note that rear installation is still preferred when space and conditions allow. A recommended alternative is to pre-assemble the cabinets to structure using rear installation method and then lift it as a whole onto the wall or support frame.)

Ventilation Note:

If there is **no air-conditioning or fan system**, at least 20 cm of space should be reserved behind the display for air circulation. Open space or ventilation openings at the top and bottom are required to maintain airflow and extend product lifespan.

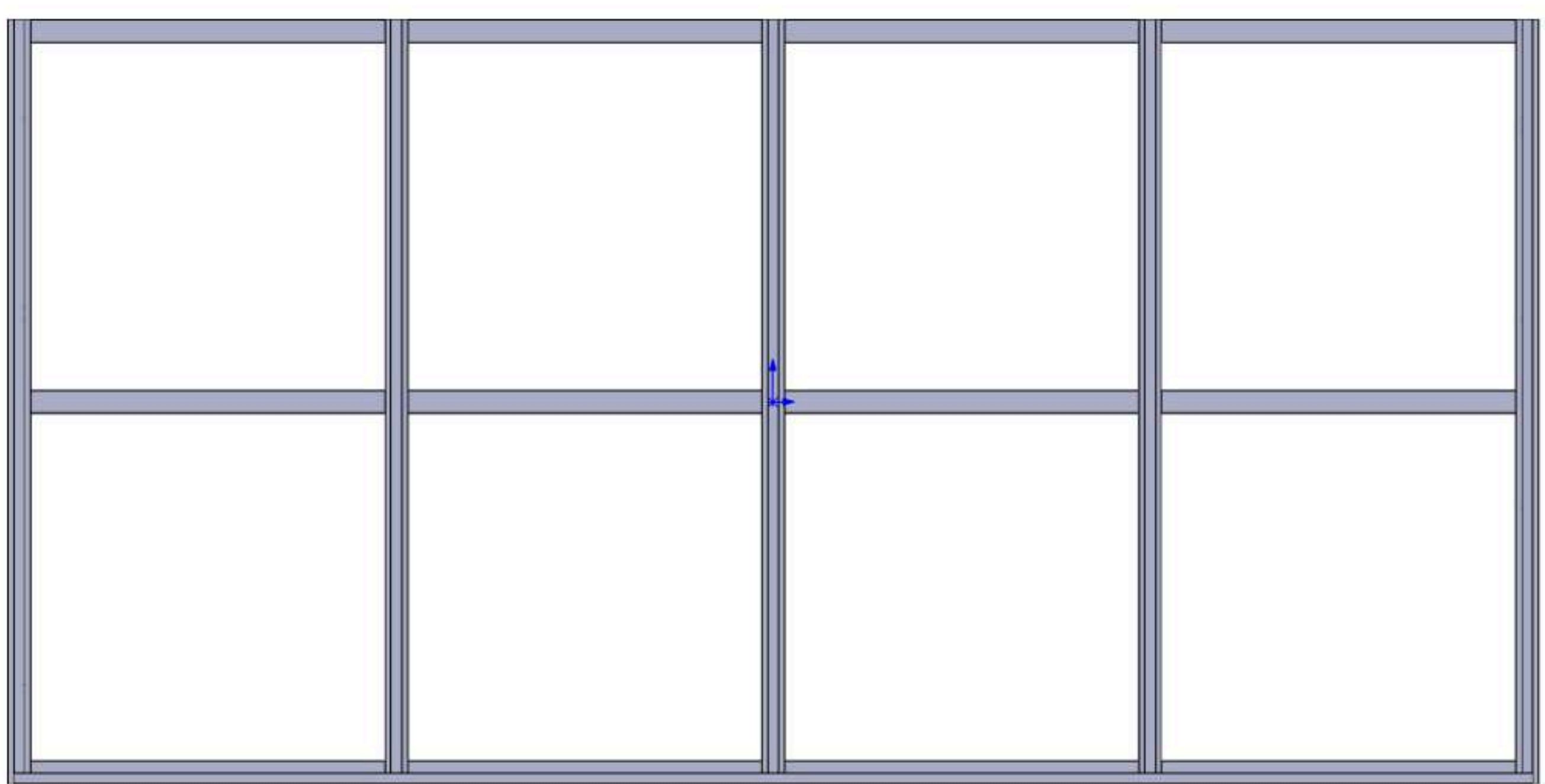
Mounting Structure (The vertical support tubes for the display are 40×40 mm)	Cabinet connection bolts: M10×40	Front installation connection plate	Front installation connection plate bolts: M8×4
			

Front Installation Connection Plate Dimensions (mm):



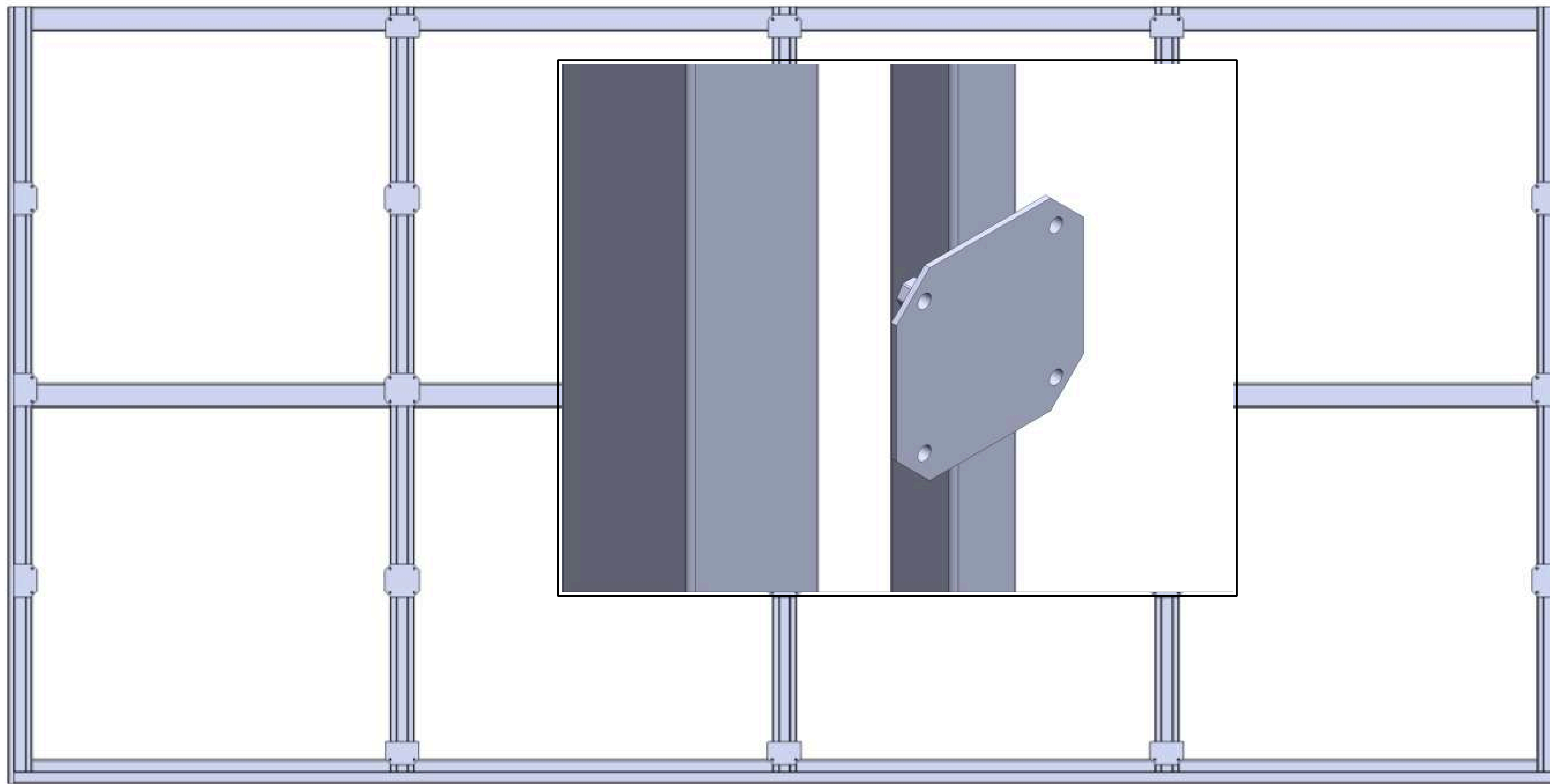
Installation Steps:

1. Verify structure — Confirm the structure matches design drawings. Use a plumb bob to ensure all vertical tubes are perpendicular and on the same plane.



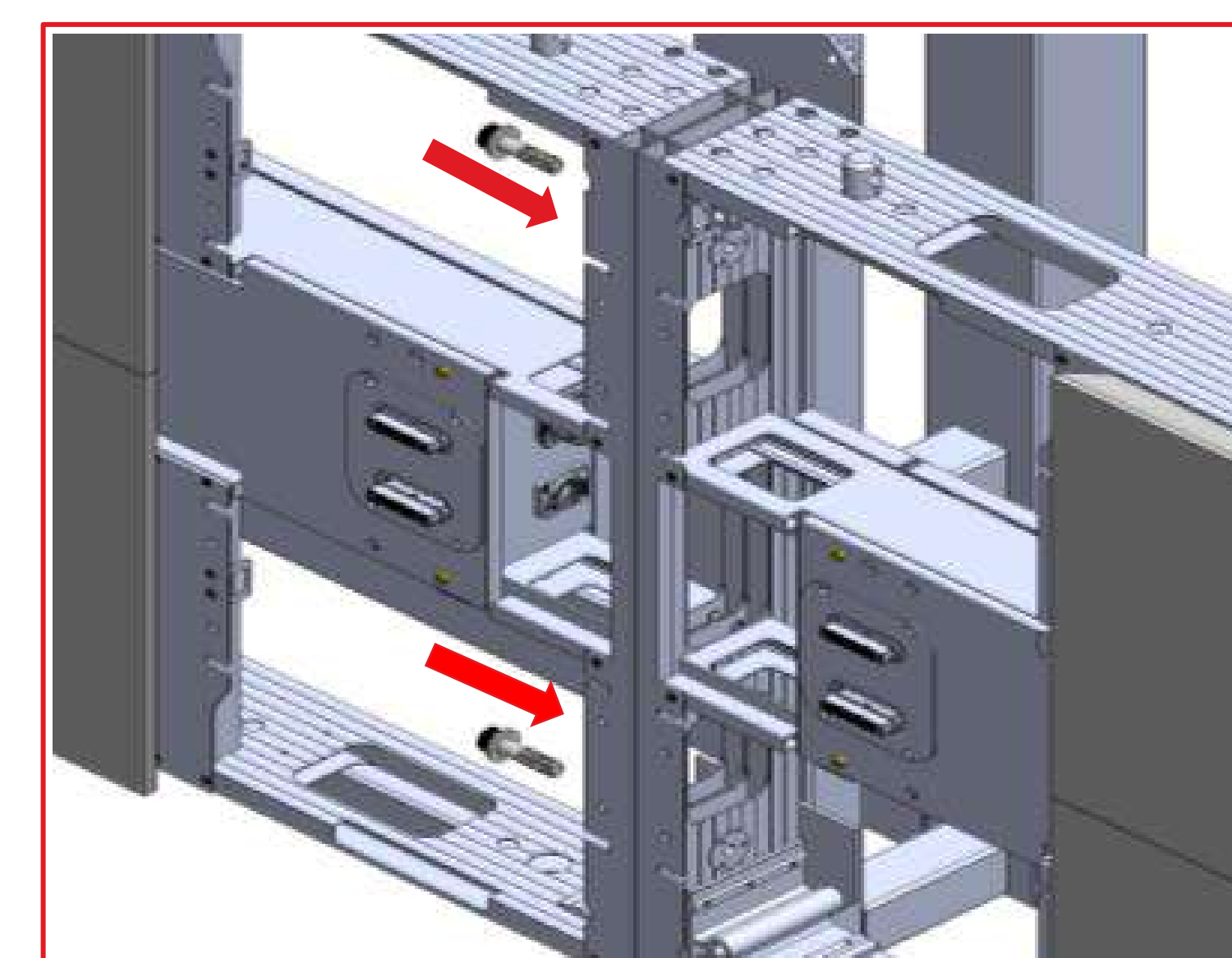


2. Pre-weld front connection plates — According to the design drawings, pre-weld front connection plates to the vertical tubes. (Note: the nuts of the connection plates must face backward.)

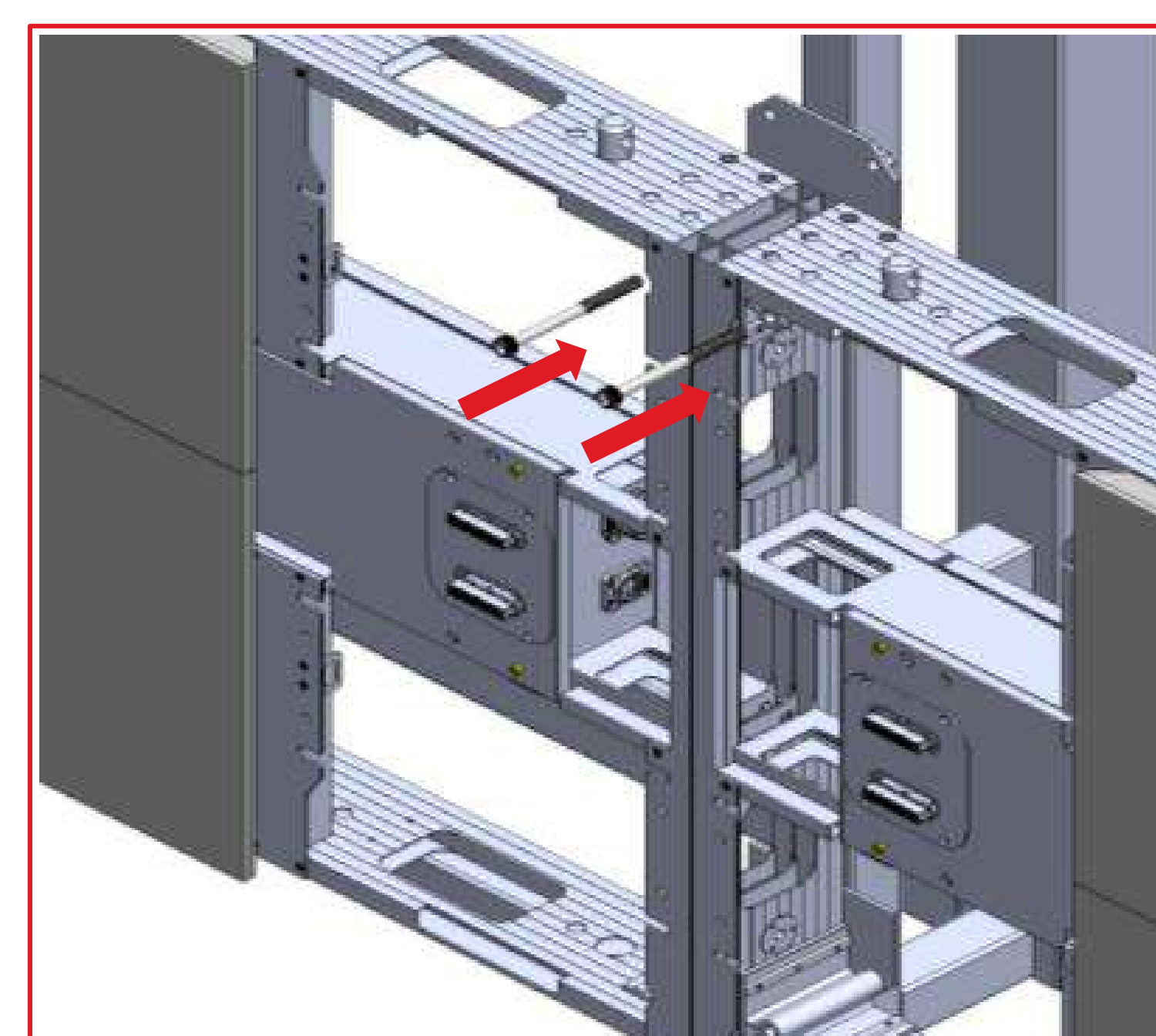


3. Remove corner modules — Remove the corner modules of the cabinet before installation. Starting from the bottom, place two cabinets in the middle of the vertical tubes. Align and ensure the top and front surfaces are level, then fasten the left-right connecting bolts. Use M10 bolts to lock the cabinet to the connection plate from the front side (do not fully tighten yet).

Fasten Left & Right Cabinets:

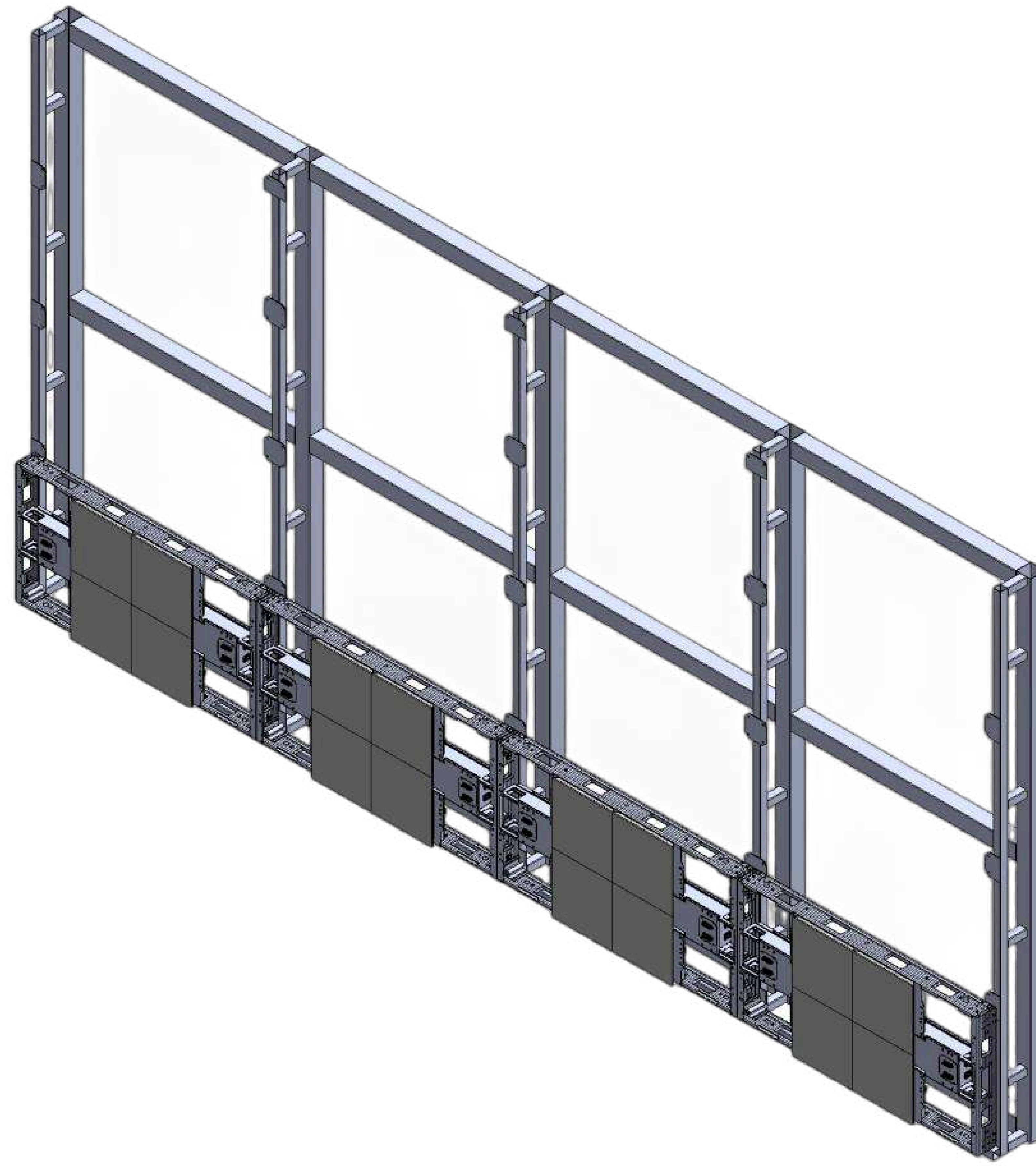


Fasten Cabinets to Frame:



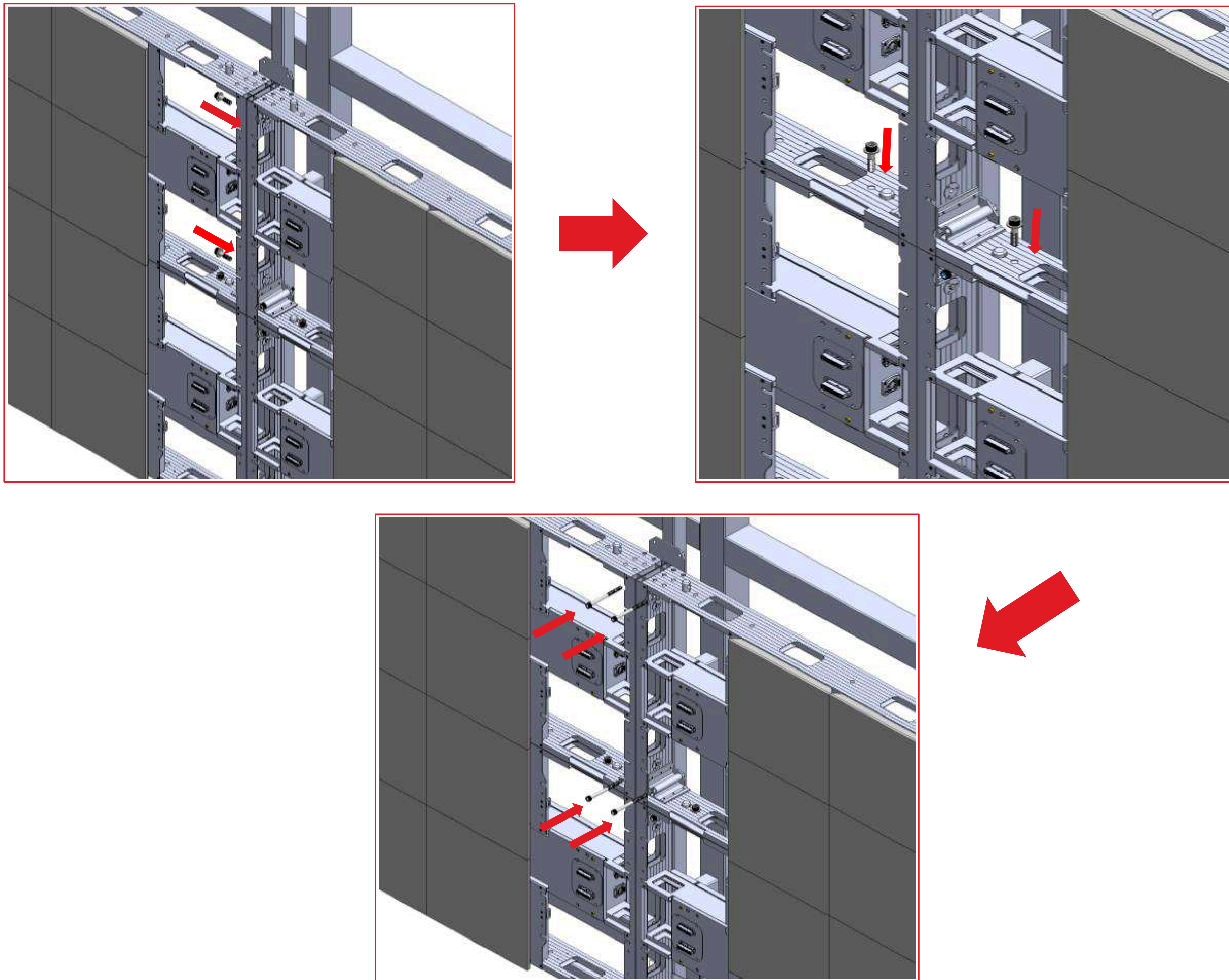


4. Finish the bottom row — Use a level and rubber mallet for fine adjustment. Adjust cabinet alignment using connection bolts and connection plate positions. The first row is crucial: misalignment will lead to cumulative errors in subsequent rows.

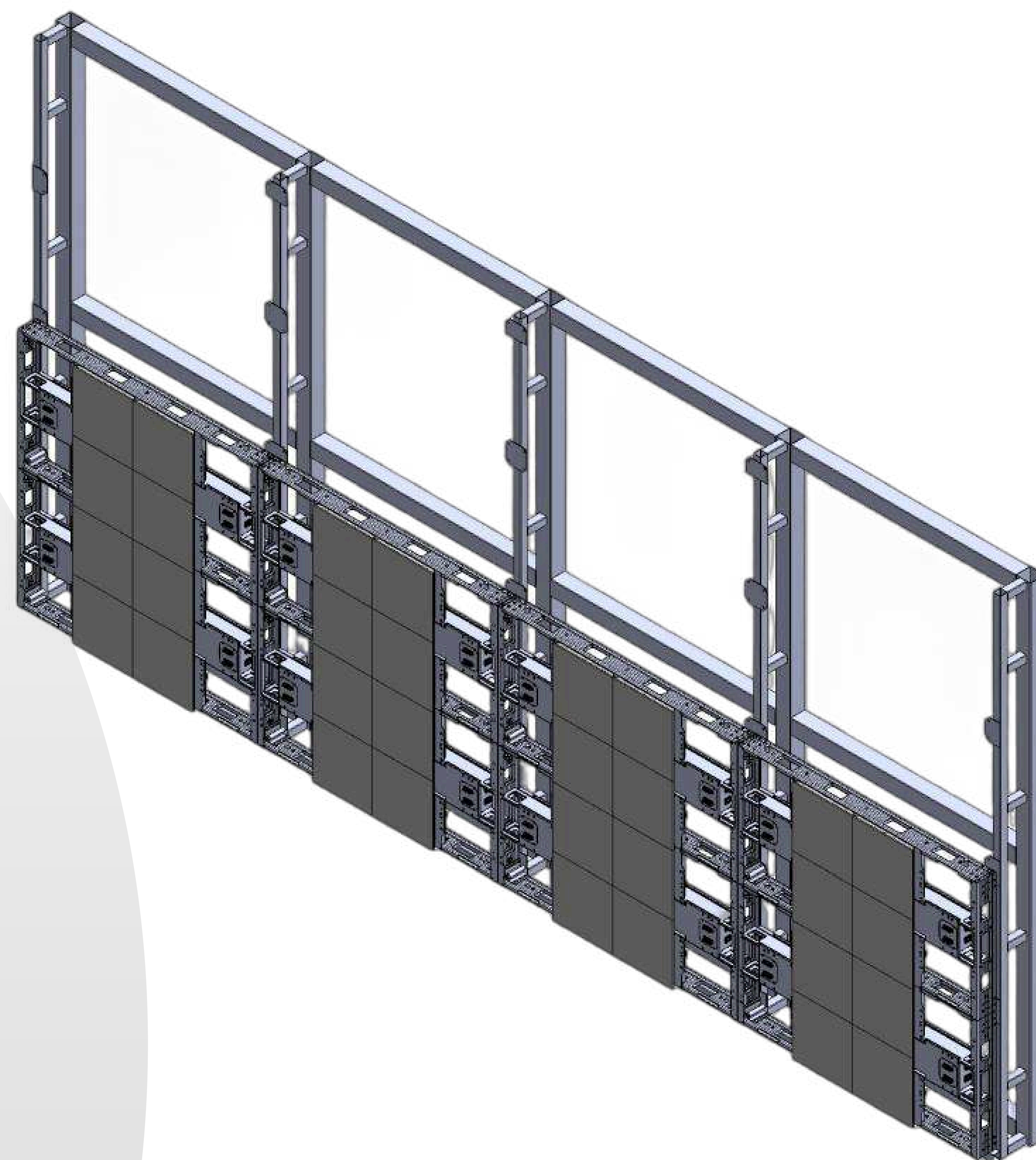


5. Install the second row — Start again from the middle two cabinets. After locking the left-right bolts, level the cabinets and fasten the top-bottom connection bolts.





6. Tighten connecting plates — After leveling, tighten the connecting plates bolts between the upper and lower rows.



7. Complete installation — Repeat the same procedure for all remaining cabinets until installation is complete.

4. Common Faults and Solutions

Faults	Possible Causes and Solutions
1: The entire LED screen displays no image	1. Check whether the power to the display is turned on.
	2. Verify if the display receives a valid input signal.
	3. Ensure the brightness settings in the control software are configured correctly.
2: Some sections of the LED display show no image	1. Check whether the power supply of the affected section is functioning properly, including both input and output power.
	2. If no abnormalities are found, restart the power for the affected area. Wait at least one minute before re-powering. A proper reinitialization may resolve the issue.
	3. Inspect signal transmission between display units; a faulty cascade cable may cause data interruption.
3: Image flickering in some parts of the display	1. Inspect the cascade signal cables between display units. Try replacing the cables or the receiving card & hub card if needed.
	2. Check the input signal for interference or instability.
	3. Verify software configuration settings.
	4. Check the screen's power supply system for voltage fluctuation or insufficient power.
4: Abnormal display on LED modules (missing colors, constant lighting, uncontrolled or semi-controlled state)	1. The display unit may not have initialized correctly. Restart the power for that section, waiting at least one minute before turning it back on. In some cases, 2–3 restarts may be necessary.
	2. If the issue persists, check for poor contact between the LED module and the receiving card & hub card. Reseating the connectors may resolve the problem.
	3. If the above steps fail, the issue may lie within the LED module or receiving card & hub card circuitry. Replace the defective module or receiving card & hub card.
	4. Check software settings to ensure correct configuration parameters.
5: Video image window incomplete or cropped	1. Check whether the controller's input or output signals are normal.
	2. Verify that the input resolution matches the saved configuration resolution.
	3. Check the controller's display setup parameters for correctness.

When any abnormal condition occurs on the LED display, analyze the problem comprehensively based on experience and specific symptoms to determine which part of the display system is at fault. If the issue cannot be resolved, promptly contact your customer representative for technical support.