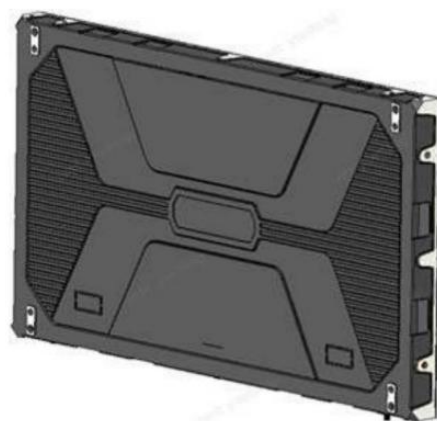
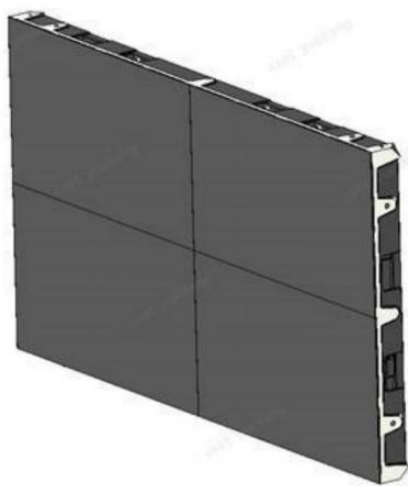
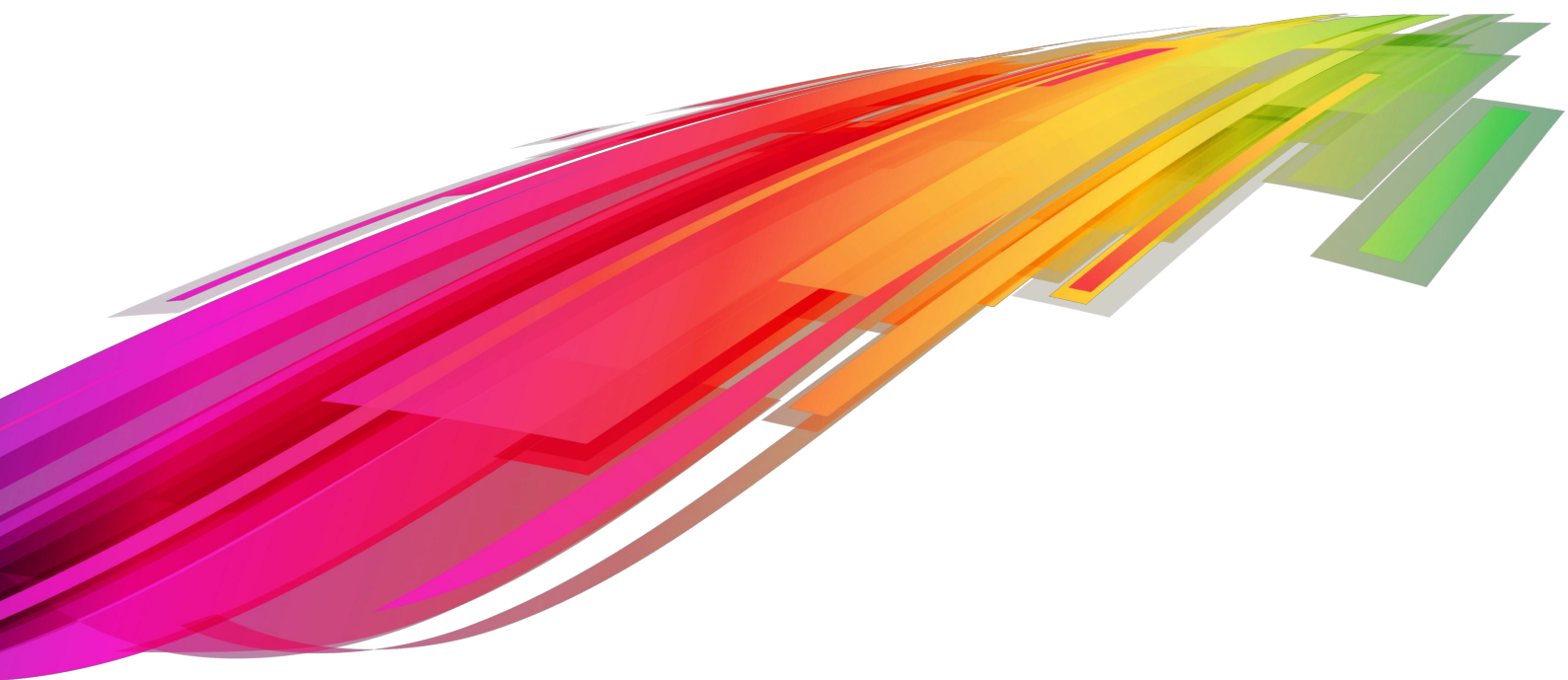




SHENZHEN KMTEKLED PHOTOELECTRICITY CO. , LTD

Product Specification



KMT QL-COB SERIES

Table of Contents

1. Product Description 3

2. Product features 3

3. Technical Parameters 4

4. Display Size Diagram 7

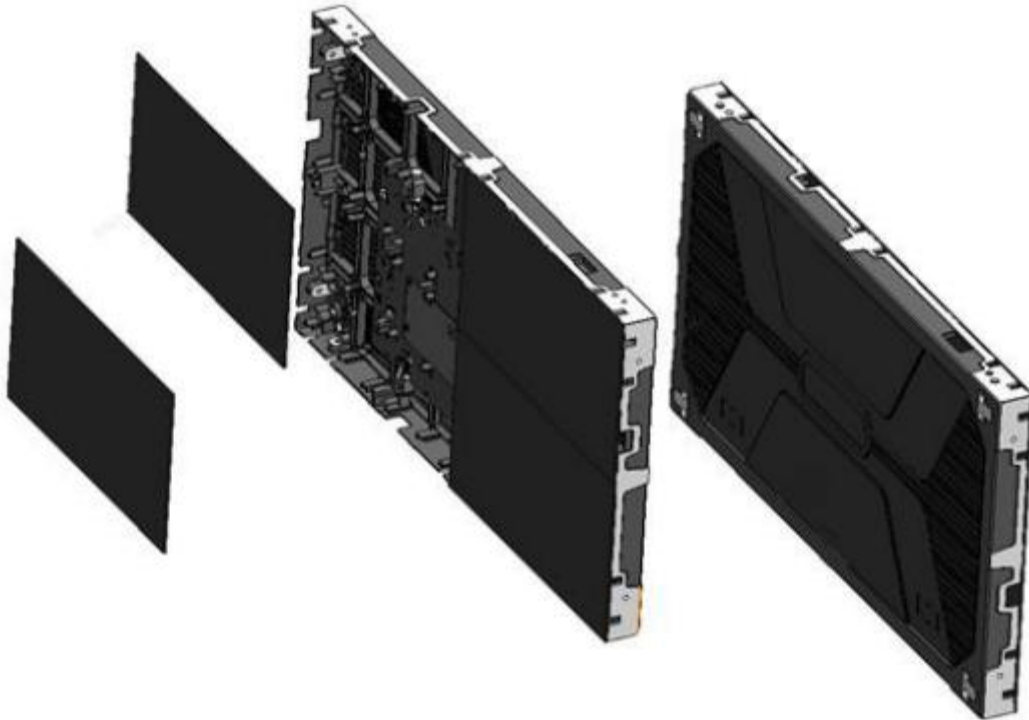
5. Precautions for the Product Use8

6. Product Usage Instructions 9

7. Product Packaging Instructions 10

8. Product Installation Instructions 12

1. Product Description



1.1 Each pixel on the front face of the LED display is comprised of an integrated package of 1R, 1G and 1B flip-chip bonded chips, with each chip individually mounted onto the circuit board.

1.2 The rear side of the LED display module houses driver ICs, resistors, capacitors, and other components, which can be linked to the display control system to present videos, images, text and other information.

1.3 The LED display module adopts a front-maintenance design, necessitating the use of specialized suction cup tools for installation and commissioning.

2. Product features

2.1 Adopts a large lamp board module, featuring minimal seams and high assembly efficiency;

2.2 High-reliability fully flip-chip integrated packaging;

2.3 The LED chip is driven by a constant current approach, offering uniform light emission and low power consumption;

2.4 Simultaneously achieves high brightness, high contrast, high refresh rate, wide color gamut and deep ink color;

2.5 Lightweight and easy to install and disassemble;

2.6 Excellent hardware protection (resistant to collision, waterproof, anti-static, and washable);

2.7 Complies with RoHS 2.0 and EMC Class A standards;

2.8 Features a removable bottom shell and supports customization.

3.1 Technical Parameters

Specification		Parameter	
pixel pitch (mm)		P0.9375	
Module	Dimension (mm)	150*168.75	
	Pixel Per Module	160*180	
	Surface Finish	Matte finish	
Cabinet	Module Arrangement	4*2	
	Pixel Per Cabinet	640*360	
	Dimension (mm)	600*337.5*38.1	
	Maintenance Mode	Front maintenance	
	Panel Material	Die-cast aluminum	
	Weight（kg）	4.4KG	
	Pixel Density (points /m²)	1137777	
Optical parameters	White Balance Brightness (nit)	600 / 800 (standard)	
	Brightness Uniformity	≥97%	
	Viewing Angle (°)	≥160 (Horizontal/vertical)	
	Color Temperature (K)	3000-10000 (adjustable) 9300K (standard)	
	Contrast Ratio (Environment illumination 10 Lux)	≥ 5000: 1	
	Color Gamut	NTSC ratio ≥ 105%	DCI-P3 coverage ≥ 90%
Electrical parameters	Max Power Consumption (W/m²)	≤240@600nit	≤290@800nit
	Average Power Consumption (W/m²)	≤80 @600nit	≤97@800nit
	AC Operating Voltage of Cabinet	AC 100~240V 50/60Hz	
	DC Operating Voltage of Module	DC 3.8V / 2.8V	
Processing characteristics	Refresh Rate (Hz)	≥3840	
	Driving Type	54s	
	Grayscale	≥13bit	
	Module Flash Management	Support	
	Frame Rate	60Hz	
	Driving Mode	Common cathode	
Application Parameter	Operating Temperature and Humidity	-10℃-+40℃/10%RH-90%RH	
	Storage Temperature and Humidity	-40℃-+60℃/10%RH-90%RH	
	IP Rating	IP65 (Per module surface)	
Certifications	CCC, CQC		
Caution	The power consumption of the product may fluctuate by 5-10% depending on the batch of LED chips, subject to the actual product.		

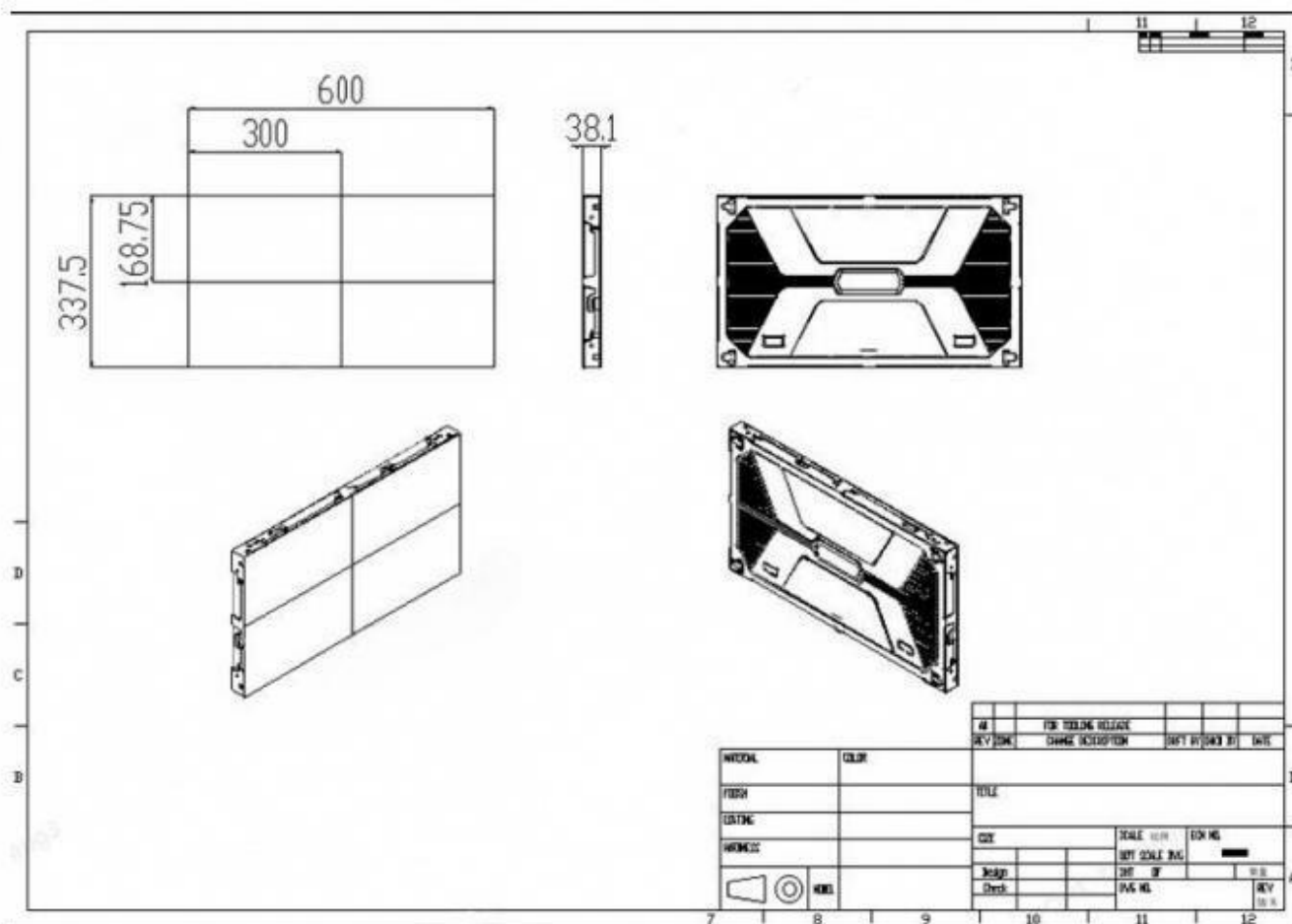
3.2 Technical Parameters

Specification		Parameter	
pixel pitch (mm)		P1.25	
Module	Dimension (mm)	300*168.75	
	Pixel Per Module	240*135	
	Surface Finish	Matte finish	
Cabinet	Module Arrangement	2*2	
	Pixel Per Cabinet	480*270	
	Dimension (mm)	600*337.5*38.1	
	Maintenance Mode	Front maintenance	
	Panel Material	Die-cast aluminum	
	Weight（kg）	3.6	
	Pixel Density (points /m²)	640000	
Optical parameters	White Balance Brightness (nit)	600 (standard)/800 (optional)	
	Brightness Uniformity	≥97%	
	Viewing Angle (°)	≥160 (Horizontal/vertical)	
	Color Temperature (K)	3000-10000 (adjustable) 9300K (standard)	
	Contrast Ratio (Environment illumination 10 Lux)	≥ 5000: 1	
	Color Gamut	NTSC ratio ≥ 105%	DCI-P3 coverage ≥ 90%
Electrical parameters	Max Power Consumption (W/m²)	≤280@800nit	225@600nit
	Average Power Consumption (W/m²)	≤95 @800nit	76@600nit
	AC Operating Voltage of Cabinet	AC 100~240V 50/60Hz	
	DC Operating Voltage of Module	DC 4.0V	
Processing characteristics	Refresh Rate (Hz)	≥3840	
	Driving Type	60s	
	Grayscale	≥13bit	
	Module Flash Management	Support	
	Frame Rate	60Hz	
	Driving Mode	Common anode	
Application Parameter	Operating Temperature and Humidity	-10°C-+40°C/10%RH-90%RH	
	Storage Temperature and Humidity	-40°C-+60°C/10%RH-90%RH	
	IP Rating	IP65 (Per module surface)	
Certifications	CCC, CQC		
Caution	The power consumption of the product may fluctuate by 5-10% depending on the batch of LED chips, subject to the actual product.		

3.3 Technical Parameters

Specification		Parameter
pixel pitch (mm)		P1.56
Module	Dimension (mm)	300*168.75
	Pixel Per Module	192*108
	Surface Finish	Matte finish
Cabinet	Module Arrangement	2*2
	Pixel Per Cabinet	384*216
	Dimension (mm)	600*337.5*38.1
	Maintenance Mode	Front maintenance
	Panel Material	Die-cast aluminum
	Weight (kg)	3.6
	Pixel Density (points /m ²)	409600
Optical parameters	White Balance Brightness (nit)	600 (standard)
	Brightness Uniformity	≥97%
	Viewing Angle (°)	≥160 (Horizontal/vertical)
	Color Temperature (K)	3000-10000 (adjustable) 9300K (standard)
	Contrast Ratio (Environment illumination 10 Lux)	≥ 5000: 1
	Color Gamut	NTSC ratio ≥ 105% DCI-P3 coverage ≥ 90%
Electrical parameters	Max Power Consumption (W/m ²)	≤275
	Average Power Consumption (W/m ²)	≤91
	AC Operating Voltage of Cabinet	AC 100~240V 50/60Hz
	DC Operating Voltage of Module	DC 4.0V
Processing characteristics	Refresh Rate (Hz)	≥3840
	Driving Type	54s
	Grayscale	≥13bit
	Module Flash Management	Support
	Frame Rate	60Hz
	Driving Mode	Common anode
Application Parameter	Operating Temperature and Humidity	-10°C-+40°C/10%RH-90%RH
	Storage Temperature and Humidity	-40°C-+60°C/10%RH-90%RH
	IP Rating	IP65 (Per module surface)
Certifications	CCC, CQC	
Caution	The power consumption of the product may fluctuate by 5-10% depending on the batch of LED chips, subject to the actual product.	

4. Display Size Diagram



5. Precautions for the Product Use

Item	Description
Temperature requirements	Storage temperature range: $-40^{\circ}\text{C}\sim+60^{\circ}\text{C}$; When the temperature exceeds 60 degrees, cooling treatment is required; Operating temperature range: $-10^{\circ}\text{C}\sim+40^{\circ}\text{C}$; For other temperature ranges, temperature control device needs to be installed; When the temperature of the display's lamp surface is $60\geq 60^{\circ}\text{C}$, a temperature control device needs to be installed.
Humidity requirements	Storage humidity range: 10%RH ~ 90%RH; Dehumidification treatment is required when the humidity exceeds 90%RH; Operating humidity range: 10%RH ~ 90%RH; If the humidity exceeds the standard, the usage environment must be dehumidified before it can be used normally.
Handling of overdue storage	If the product has been stored for more than one month, it must undergo a 6-hour aging process before normal use. The aging method is as follows: operate at full brightness with a gradual increase in brightness settings: 10% for 1 hour, 30% for 1 hour, 60% for 2 hours, 80% for 1 hour, and finally 100% for 1 hour.
Dust prevention requirements	Indoor products have a low protection level and should not be exposed to environments with excessive dust, such as during studio decoration or renovation. Special protection measures must be taken for the display.
Corrosion-resistant gas	Corrosive gases in environments containing salt or acid in the air can cause corrosion, crystal leakage, and other damage to electronic components.
Anti-electromagnetic radiation	The display should not be placed in an environment where electromagnetic or radio frequency radiation exceeds an interference source with an electric field strength of 5V/m.
Shock resistance	The display should be installed on a sturdy and reliable structure that is free from strong vibrations.
Keep away from water sources	Indoor products have a low protection level, and water conductivity can cause circuit shortages, leading to damage to circuit components. Therefore, it is essential to keep them away from water sources.
Electrostatic protection	Do not touch the product with bare hands to prevent static electricity from damaging the internal components. Wear rubber gloves when handling the product.
Lightning protection	Effective protective measures should be implemented for the display during thunderstorms.
Personal injury prevention	The angle and height of the display installation should be appropriate, and sharp edges should be covered to prevent injuries caused by the hard shell.
Safety requirements	The stability of the power supply system must be ensured, with normal levels of frequency, voltage, and current harmonics maintained. During the installation of the display, the metal casing should be grounded along with the metal frame of the LED display. The overall grounding resistance of the display system should not exceed $1\ \Omega$, and the ground leakage current should not exceed 5% of the input current. The electrical strength should comply with the stipulations in Section 5.7.5 of SJ/T 11141-2017 General Specification for Light Emitting Diode (LED) displays.
Others	The surface of the display should not be cleaned with alcohol or other organic solvents; only pure water and a fine, dust-free cloth may be used for cleaning. The surface of the display should not be touched directly by hand, and rubber gloves must be worn during disassembly and assembly.

6. Product Usage Instructions

6.1 Guiding principles

- 1) Ensure installation of the display is carried out after reading and comprehending the user manual;
- 2) Under no circumstances should our company's products be disassembled or repaired by personnel not authorized by the factory;
- 3) The foundation at the installation site must be solid, free from issues such as sinking, tilting, or collapse;
- 4) The installation environment should not exhibit conditions such as excessive weight, pollution, radioactivity, corrosiveness, or toxic gases;
- 5) All components must be sourced exclusively from the original manufacturer or suppliers certified by the original manufacturer;
- 6) Without the consent of the original manufacturer, components must not be repaired or replaced arbitrarily;
- 7) Please operate in accordance with the product manual. If you have any questions, please contact the manufacturer.

6.2 Safety instructions

6.2.1 Personnel

- 1) During high-altitude work, operators must take proper protective measures and wear necessary safety gear, such as qualified helmets and safety belts;
- 2) Each LED display box weighs 4KG, and operators must exercise extreme caution to ensure personal safety during handling;
- 3) During work operations, throwing tools and materials is strictly prohibited;
- 4) When conducting simultaneous operations on upper and lower sections, isolation facilities must be installed in between.

6.2.2 Products

- 1) During storage and transportation, strict protective measures must be implemented for the product to ensure secure packaging and prevent the application of external pressure beyond specified limits;
- 2) When moving or handling products, please adhere strictly to the instructions in the product manual. Do not trample, strike, or drop the products or their components;
- 3) The product must be operated in a dry and clean environment to prevent electric shock accidents;
- 4) Rainproof measures must be instituted to protect products from rain exposure or immersion, thereby preventing circuit and equipment damage caused by short circuits;
- 5) Adequate ventilation and heat dissipation must be ensured to maintain air circulation during equipment operation, preventing heat buildup and potential safety hazards. If necessary, air conditioning cooling should be installed at the rear of the equipment;
- 6) Keep the product away from flammable materials.

6.2.3 Installation

- 1) When installing or disassembling the display module, use suction cup tools to handle it at a right angle to the screen body. Ensure that the edges of the module do not collide with those of other modules;
- 2) Wear rubber gloves when installing or disassembling the display module;
- 3) After installation, wipe the screen surface with a dust-free cloth dampened with clean water. Do not use any other solvents for cleaning.

6.2.4 Power supply

- 1) Select appropriate power supplies and distribution cabinets based on power consumption. All distribution systems must be enclosed for protection and comply with local electrical safety standards.
- 2) The power distribution system should be installed close to the display, ensuring that power and data cables are free from tension or damage.
- 3) Before connecting the power cord, verify that the local input voltage matches the screen's power supply requirements to ensure proper configuration.
- 4) Do not use damaged wires for installation; replace them with new ones.

5) The display experiences a relatively high inrush current when powered on, so an appropriate circuit breaker, such as a D-type, should be selected.

6.2.5 Grounding

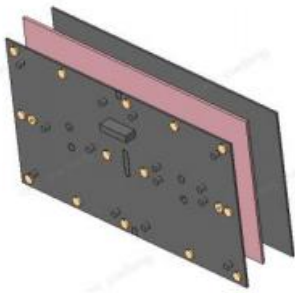
1) The display must be grounded using a dedicated grounding wire.

6.2.6 Precautions during use

- 1) Protect the display from excessive pressure or impact to avoid damaging the screen or its components.
- 2) When cleaning the display surface, adhere strictly to the guidelines and use only soft, lint-free cloths.
- 3) Power must be disconnected before disassembling the display.
- 4) All installation accessories are designed exclusively for the installation and connection of this specific LED display.
- 5) This display utilizes special materials and manufacturing processes to ensure component durability. Modifying or duplicating any components is strictly prohibited, as it may result in permanent damage.
- 6) Strictly adhere to the installation instructions. If you have any questions regarding safe usage, consult the manufacturer.
- 7) The manufacturer assumes no legal liability for any consequences arising from incorrect, unsafe use, or installation of the system.

7. Product Packaging Instructions

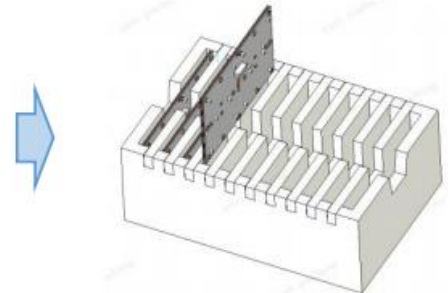
7.1 Module packaging



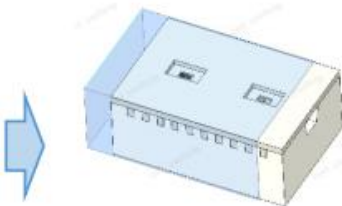
Place 2 modules face-to-face,
Insert 1 EPE Spacer between the two
modules.



Insert into a static bag,



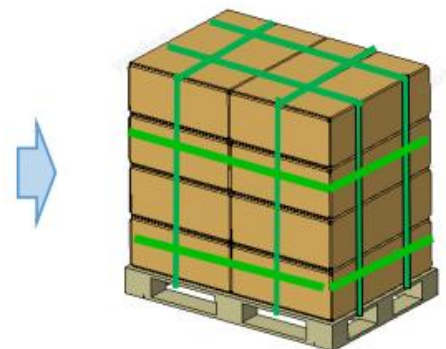
Place one bag per EPE slot, totaling 11
bags for 22 modules.



Bag the modules and vacuum-seal
them.



Pack the modules in a cotton (608 *
443 * 261mm) 22PCS per cotton.



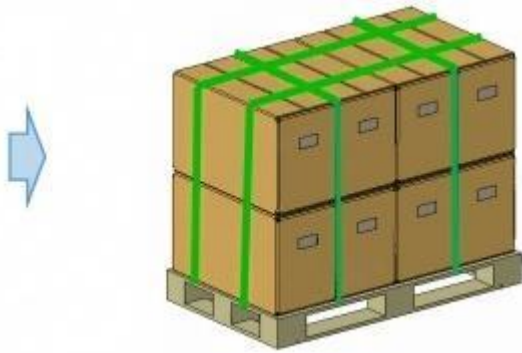
Stack the module cottons onto a pallet
(1235 * 928 * 1164mm) 16 cottons per
pallet, accommodating 352 modules in
total

7.2 Cabinet packaging



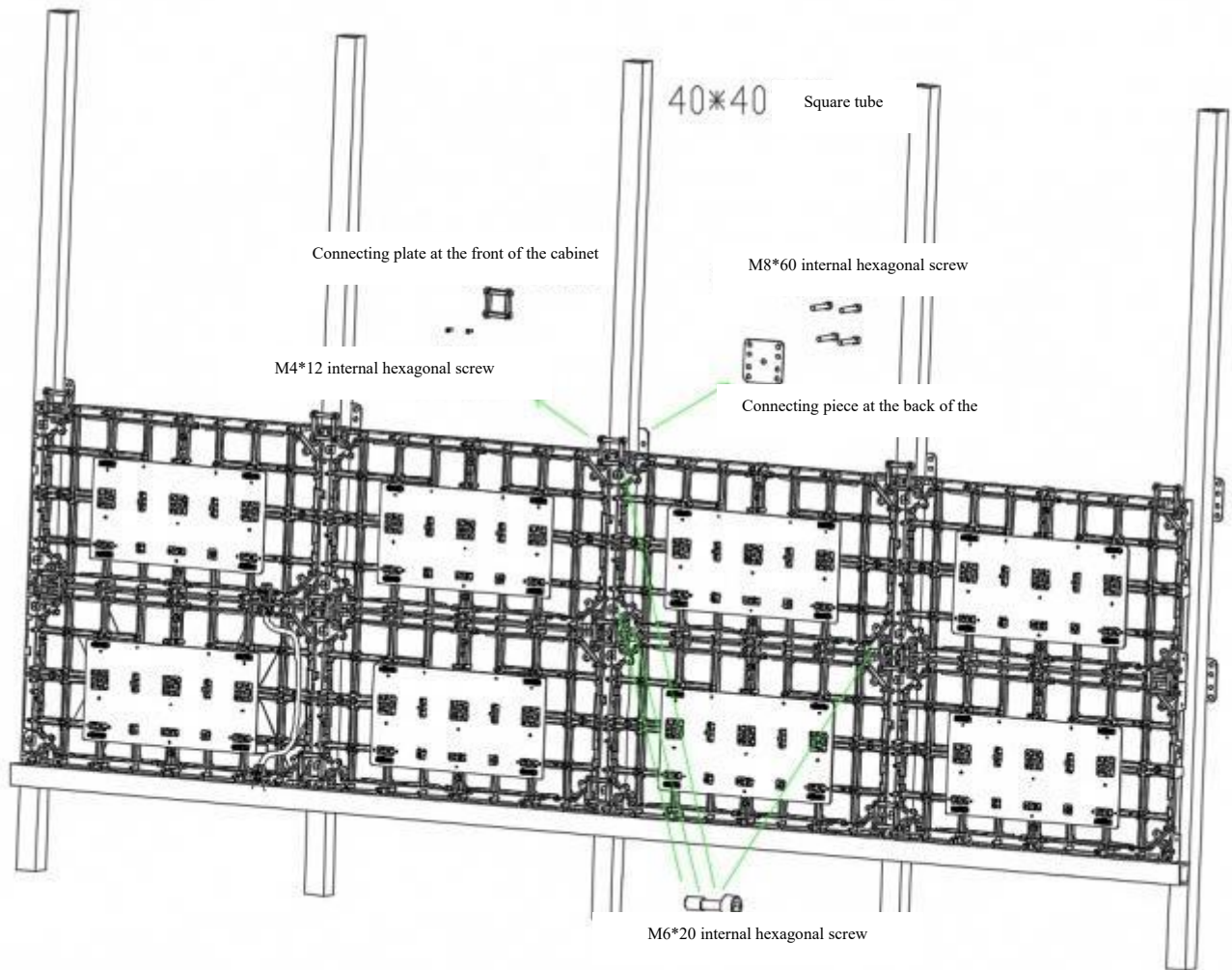
1 cabinet

5 cabinets correspond to 4 PCS of 1 cotton (656 * 291 * 405 mm)
buffer materials contains 5 cabinets



Place cotton on a pallet (1190 * 690 * 930 mm)
16 cottons per pallet; first wrap with 5 layers of
stretch film, then secure with "cross" shaped
strapping; 40 cabinets per pallet

8. Product Installation Instructions



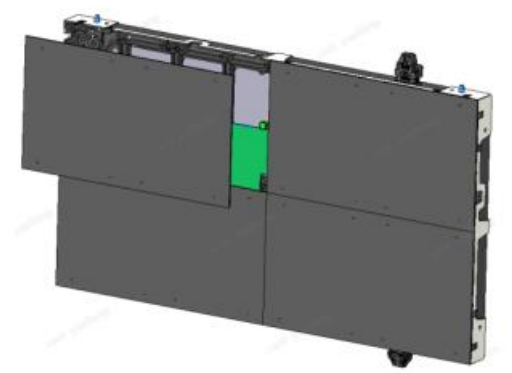
The cabinet is fixed with non loosening screws on the top, bottom, left and right sides.

Note: Don't tighten the screws for now

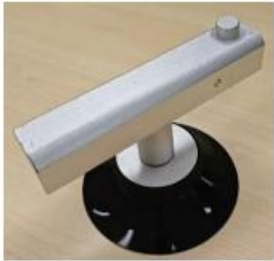
8.1 Installation steps:

1. Cabinet Fixation: Secure the cabinet onto the bracket from the rear side of the screen using rear connecting pieces. Each rear connecting piece should be fastened with four M8 * 60 bolts.
2. Cabinet Assembly: Begin by installing the M6 * 20 screws that connect the left and right, as well as the upper and lower cabinets. (Do not overtighten the screws at this stage.)
3. Attach the front connecting pieces, securing each one with four M4 * 12mm internal hexagonal screws. Utilize these front connecting pieces to level any height discrepancies between the cabinets.
4. Tighten the M6 * 12 captive screws between the left and right, as well as the upper and lower cabinets. Adjust the gaps between the cabinets by appropriately tightening or loosening these screws based on the size of the joints.
5. Connect the cascaded power cords and network cables between the cabinets.
6. Remove the module (wearing gloves to prevent fingerprints), and use a vacuum suction cup maintenance tool to mount the panel onto the Cabinet.

8.2 Module maintenance tools:



Module maintenance



Vacuum sucker

8.3 Power line load description



Main power cable



Power cord (external cable)

Description of the maximum number of load-bearing units on a single power supply main line (2.5mm ² national standard wire)		
Pitch		P0.93 P1.25 P1.56
600*337.5 Cabinet	Operating voltage AC 110V	23
	Operating voltage AC 220V	46

Description of the maximum number of loaded units on a single column of power supply line (1.5mm ² national standard wire)		
Pitch		P0.93 P1.25 P1.56
600*337.5 Cabinet	Operating voltage AC 110V	14
	Operating voltage AC 220V	28