PL3.9 Pro V3 User Manual

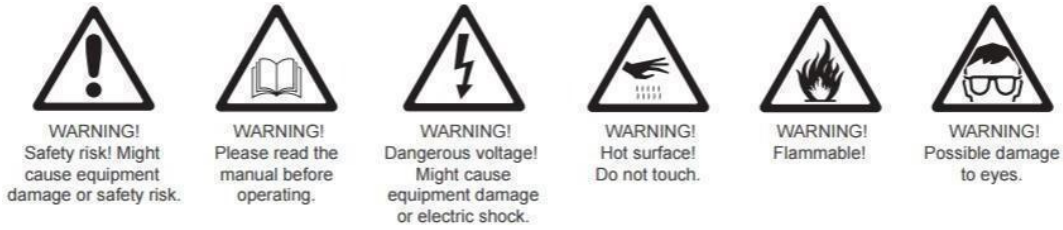
A durable platform with clear image

Shenzhen Absen Optoelectronic Co.,Ltd.

Catalogue

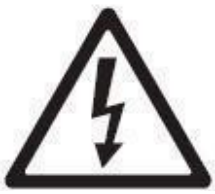
Safety Information

The following marks on the product and in this manual indicate important safety measures.



WARNING: Be sure to understand and follow all safety guidelines, safety instructions, warnings and precautions listed in this manual.
This product is for professional use only!
This product may result in serious injury or death due to fire hazard, electric shock, and crushing hazard.

Please read this manual carefully before installing, powering up, operating and maintenance of this product.
Follow safety instructions in this manual and on the product. If you have any questions, please seek help from Absen.



Beware of Electric Shock!

• To prevent electric shock the device must be properly grounded during installation, Do not ignore using the grounding plug, or else there is a risk of electric shock.
• During a lightning storm, please disconnect the device's power supply, or provide other suitable lightning protection. If the equipment is not in use for a long time, please unplug the power cord.
• When performing any installation or maintenance work (e.g. removing the fuses, etc.,) make sure to turn off the master switch.
• Disconnect AC power when the product is not in use, or before disassembling, or installing the product.
• The AC power used in this product must comply with local building and electric codes, and should be equipped with overload and ground fault protection.
• The main power switch should be installed at a location near the product and should be

clearly visible and easily reached. This way in case of any failure the power can be promptly disconnected.

• Before using this product check all electrical distribution equipment, cables and all connected devices, and make sure all meet current requirements.

• Use appropriate power cords. Please select the appropriate power cord according to the required power and current capacity, and ensure the power cord is not damaged, aged or wet. If any overheating occurs, replace power cord immediately.

• For any other questions, please consult a professional.

Beware of Fire!

• Use a circuit breaker or fuse protection to avoid fire caused by power supply cables overloading.

• Maintain good ventilation around the display screen, controller, power supply and other devices, and keep a minimum 0.1 meter gap with other objects.

• Do not stick or hang anything on the screen.

• Do not modify the product, do not add or remove parts.

• Do not use the product in case ambient temperature is over 55 ℃.

Beware of Injury!

• Warning: Wear a helmet to avoid injury.

• Ensure any structures used to support, fix and connect the equipment can withstand at least 10 times the weight of all the equipment.

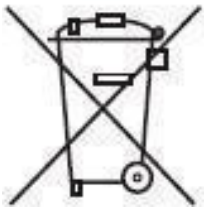
• When stacking products, please hold products firmly to prevent tipping or falling.

• Ensure all components and steel frames are securely installed.

• When installing, repairing, or moving the product, ensure the working area is free of obstacles, and ensure the working platform is securely and stably fixed.

• In the absence of proper eye protection, please do not look directly at the lit screen from within a 1 meter distance.

• Do not use any optical devices that have converging functions to look at the screen to avoid burning the eyes.



Product Disposal

• Any component that has a recycling bin label can be recycled.

• For more information on collecting, reusing and recycling, please contact the local or regional waste management unit.

• Please contact us directly for detailed environmental performance information.

WARNING: Beware of suspended loads.

LED lamps used in the module are sensitive and can be damaged by ESD (electrostatic discharge). To prevent damage to LED lamps, do not touch when the device is running or switched off.

WARNING: The manufacturer shall not bear any responsibility for any incorrect, inappropriate, irresponsible or unsafe system installation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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.

1. Product Introduction

PL3.9 Pro V3 is designed for both outdoor and indoor application, it mainly focused on corporate event and festival events, such as large concerts, sports events, auto shows, business activities, etc., meanwhile it takes into account some touring applications.The pixel pitch of PL3.9 Pro V3 is PP3.9mm, cabinet dimensions including 1000(w)x500mm(h) and 500x500mm.

The cabinet frame uses composite structure design with higher level strength, which caters 20m Maximum Hanging Height under the Beaufort Wind Force Scale Level 8 environment.(PL V3 500x1000mm Panels + Integrated Wind-Bracing Systems + Triangle Hanging Bars)

PL3.9 Pro V3: 1000(w)x500(h)mm/500(w)x500(h)mm;

1000(w)x500(h)x88(d)mm panel: Die casting magnesium , 11.8kg/panel

500(w)x500(h)x88(d)mm panel: Die casting magnesium, 7kg/panel

1.1 Product Main Features

• The core value of PL3.9 Pro V3 is durable and offers clear image in outdoor & indoor environment. Cabinet frame is composite structure design, offers black led with 5000nit brightness and high contrast ratio, 7680Hz refresh rate and 16Bit gray scale. Moreover, 0.1-5000nit ultra high dynamic brightness range makes display image more clear, the deviation of color temperature is less than 500K from 0-255 gray level, which display the excellent color accuracy at only brightness application.

• PL3.9 Pro V3 uses composite structure design, die casting magnesium frame makes cabinet durable and still light weight. 500x1000mm cabinet only 11.8kg/panel, 500x500mm cabinet only 7kg/panel.

• PL3.9 Pro V3 features 7680Hz refresh rate and 16bit gray scale, the ultra-high refresh rate and 1/8 low scanning ratio makes video playing smoother, and is more friendly to real- time camera shooting as the low scanning ratio allows for quick capture of great moments.

• PL3.9 Pro V3 can be transported by 14-in-1 dolly system, it caters huge screen fast installation and touring application. Besides, the durable wind-bracing system and triangle hanging beams connection design support hanging 20m height under the Beaufort Wind Force Scale Level 8 environment.

• PL3.9 Pro V3 support -7.5° ~ +10° curve screen set up, what's more, 500x1000mm and 500x500mm cabinet support vertical and horizontal connection, it makes more creative stage shape.

• PL3.9 Pro V3 uses integrated power supply box and modules, no need any tool do maintain, making it easy to swap modules and power box between on sites.

• PL3.9 Pro V3 is equipped with a full-automatic corner protection system to avoid crashes and lower maintenance costs.

• Every module was powered reinforced corner shield system at four edges, which could protect leds and module house well, decrease the failure rate and maintenance rate.

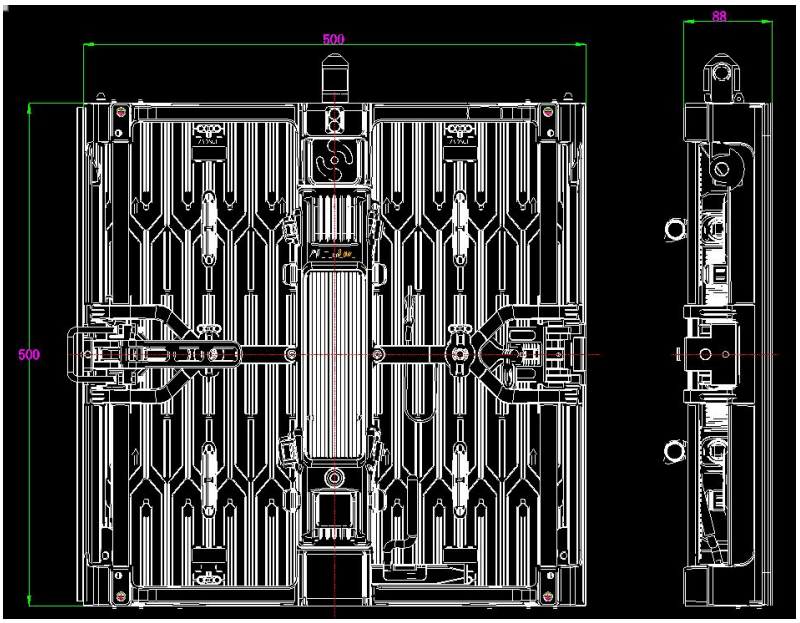
1.2 Product Specifications

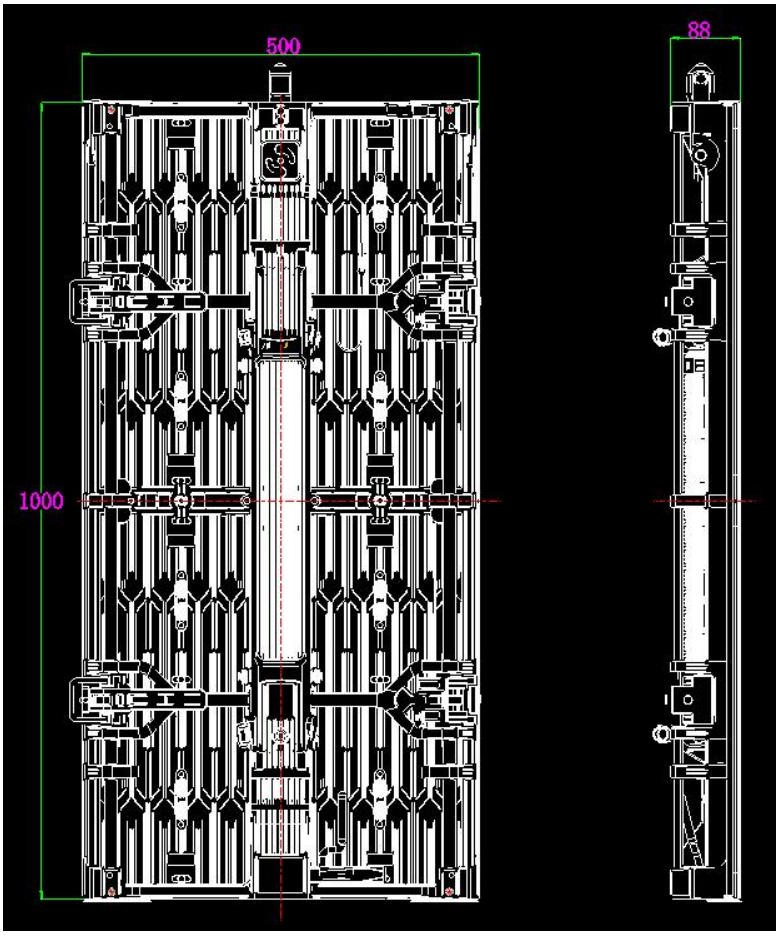
SA products:

Parameters		PL3.9 Pro V3			
Physical Parameters	LED Type	Black SMD 1921			
	Pixel Pitch (mm)	3.9			
	Cabinet Pixels	128X128		128X256	
	Pixel Density (Pixels / m2)	256x256		256x256	
	Module size (W × L)/(mm)	250x500			
	Panel size (W×L×D)/(mm)	500x500x88		500x1000x88	
	Cabinet Material	Die casting magnesium			
	Cabinet Weight (kg/Cabinet)	7		11.8	
	Grayscale	16		16	
	Refresh Rate (Hz)	7680			
	Drive Mode	1/8		1/8	
Optical Parameters	Brightness (nit)	5000		5000	
	Viewing Angle (H/V)(°)	160/160		160/160	
Electrical Parameters	AC Input Voltage (V)	100~240			
	Power Consumption (Max/Avg.)(W/m2)	720/240		720/240	
Environmental Parameters	Storage Temperature (°C)	-40~+60			
	Working Temperature (°C)	-20~+50			
	Storage Temperature (RH)	10%~90%			
	Working Humidity (RH)	10%~90%			
	Ingress Protection	IP65/IP65			
Leasing Product Installation	Panel Installation Method	Rigging/Stacking			
	Maximum number of hoisted cabinets	20	20	20	20
Control system	Brompton & Novastar				

1.3 Cabinet dimension figure

Unit: mm

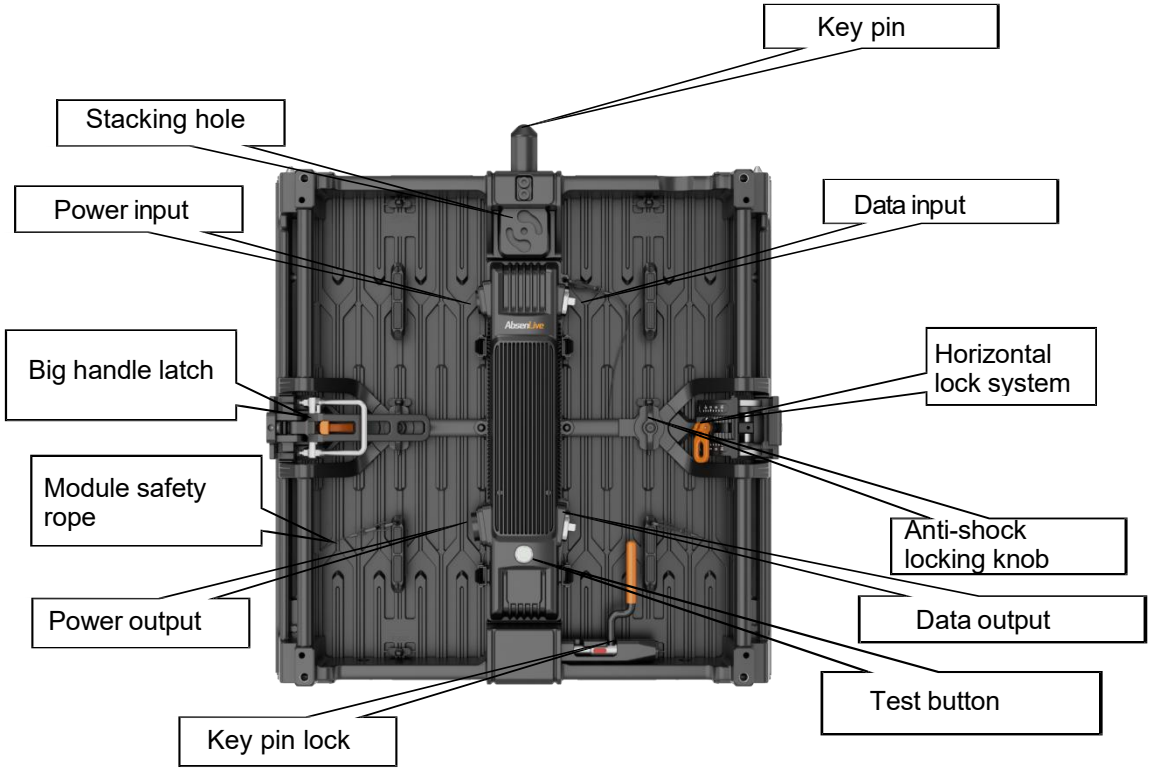




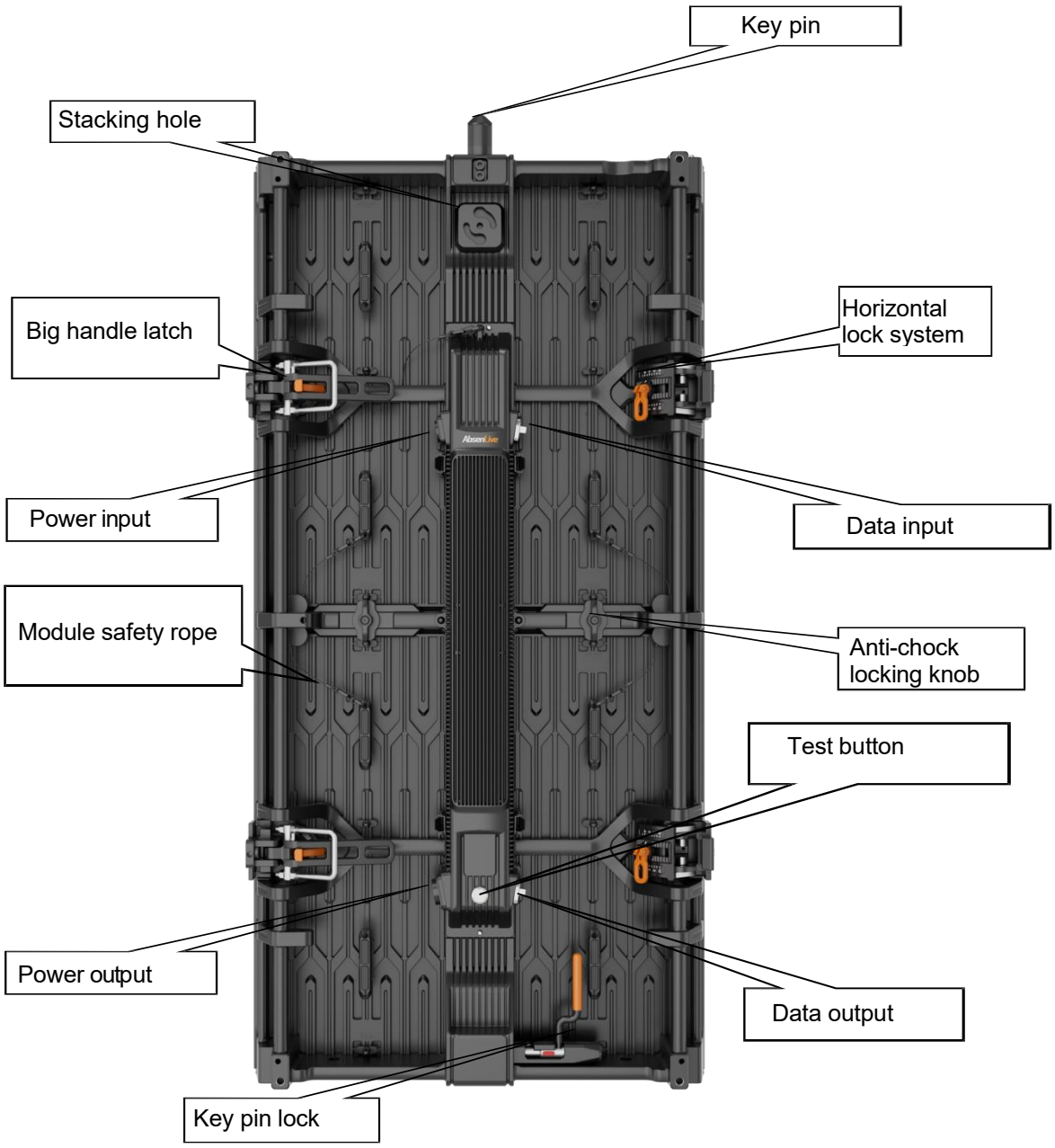
2. Product Components

2.1 Cabinet Introduction

500x500mm panel



500x500mm panel

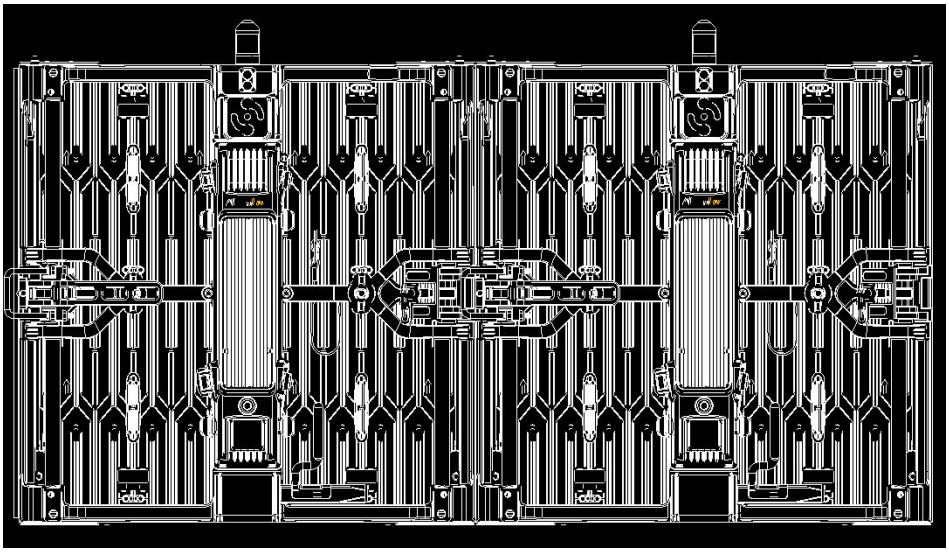


3. Product Installation

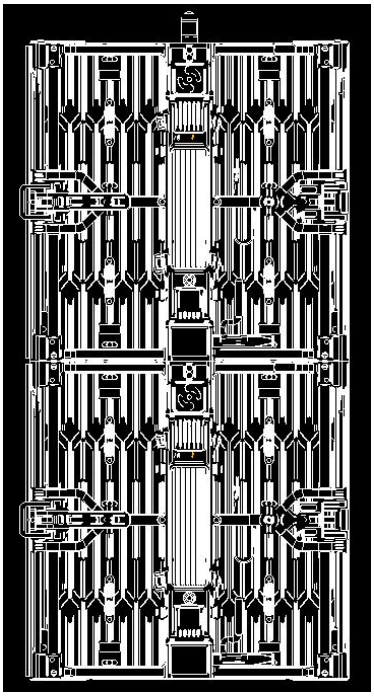
The product is suitable for various forms of installation, including rigging and stacking installation. Use the locking system to lock the cabinets during installation. The curved lock can support radian connection from -7.5 ° to +10°.

Standard locking:

500x500mm cabinets

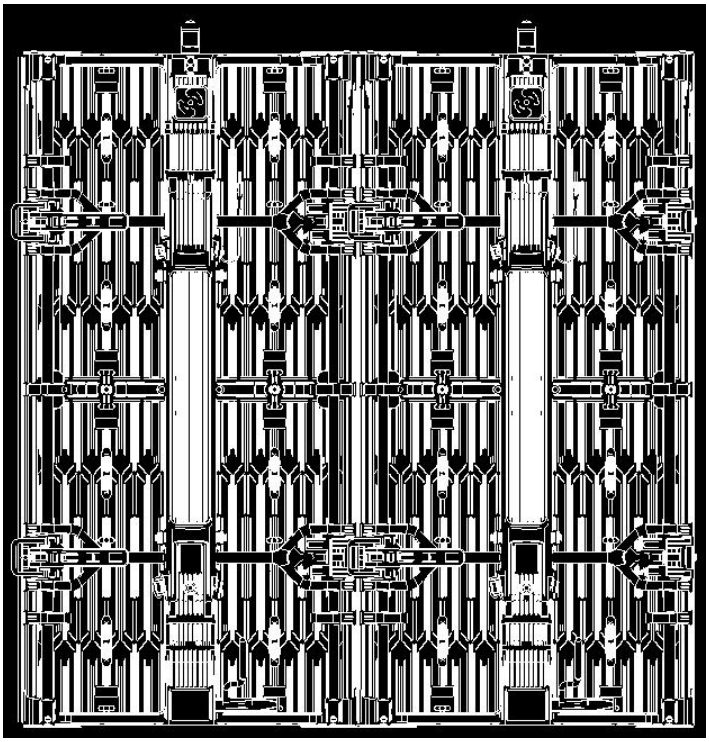


Horizontal connection

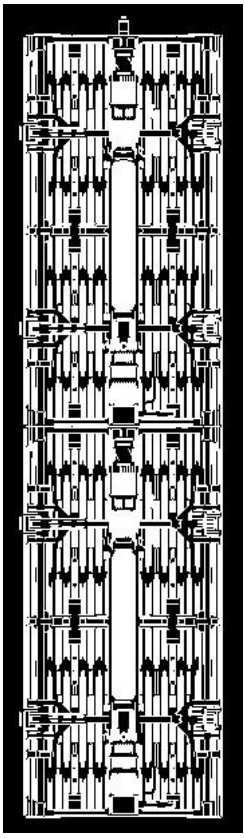


Vertical connection

500x1000mm cabinets

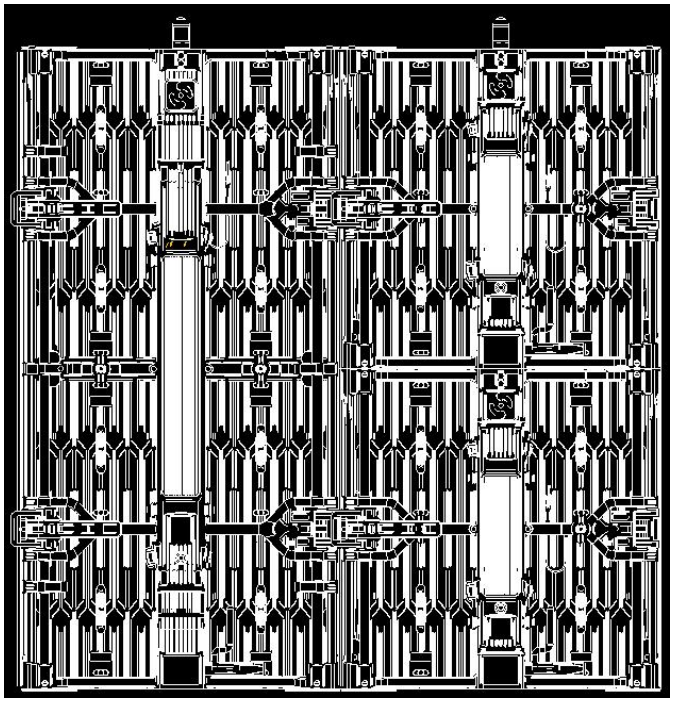


Horizontal connection

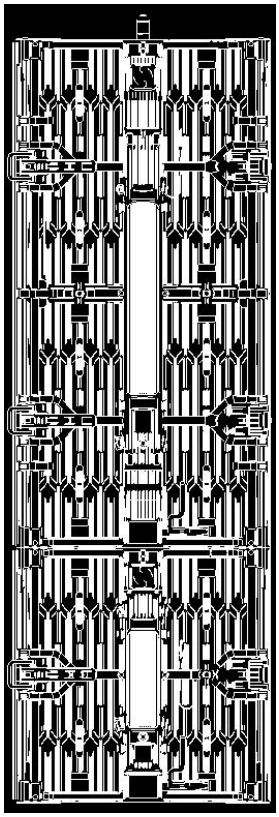


Vertical connection

500x500mm and 500x500mm cabinets connection in horizontal direction



500x500mm and 500x1000mm cabinets connection in vertical direction



3.1 Hanging Installation

3.1.1 Hanging bar Illustration

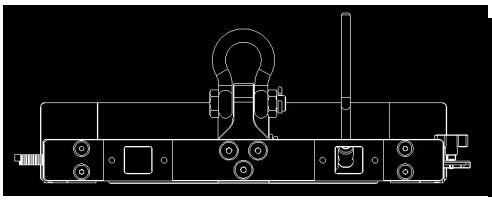
Used for rigging installation, including single, double hanging bar

Hanging bar with triangle fits(can connect with wind-bracing system, support hanging cabinets over 10m height, maximum support hanging 20m)

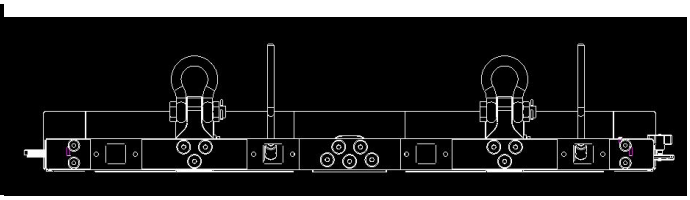
0.5 meter long

1.0 meter long

Standard hanging bar, without triangle fits(maximum support hanging cabinets no more than 10m height)



0.5 meter long



1.0 meter long

3.1.2 Hanging bar installation

Connect cabinets with key pin lock system in vertical direction, and connect cabinets with big handle latch in horizontal direction.

Installation steps:

1. Fix the Hanging Bar on the Truss
2. Align the key pin t with the mounting hole on the hanging beam
3. Lock the key pin lock on the hanging bar for 1st row cabinets connection
4. Insert the key pin into the upper cabinet
5. Tighten the key pin lock on the cabinet for 2nd row cabinets
6. Tighten the 3rd row cabinets as described above

Note: For detailed installation steps, see the product installation video

STEP	Graphic
1, Connect the hanging bars and fix them on the Truss	
2, Align the hoisting dowel on the cabinet with the mounting hole on the hanging beam, then fasten the lock on the hanging beam.	
3, Fasten the 1st line panels by connecting the side locks between cabinets	
4, Hanging the 2nd line panels by repeating the step 2 and step 3, then connecting power cables and data cables between panels	

5, Repeat step 4 till full screen finished set up	

3.2 Stacking Installation

Standard stacking system with PL Series

stacking installation

1. The cabinet is equipped with a curved lock which support radian connection from -7.5 ° to +10°.
2. For the installation method of the cabinet, please refer to the installation above.

4. Product Cabling

4.1 Preparation Before Cabling

Please check carefully if the connection of power and signal circuit is correct before supplying power and signal to the screen. Please make sure that there is no short circuit between the L line, N line and PE line of each cabinet's AC power input by using multimeter.

Power connection instructions: Please calculate and select the appropriate model of distribution box or socket according to the maximum power consumption. Please consult your electrician or distribution cabinet manufacturer for specific selection method. The input voltage of cabinet is 100-240V/AC and 3X2.5mm/sqm power cable is used between distribution box and the cabinet. Please confirm the input voltage, the number of cabinets loaded on each power cable will be different upon different voltages and product models. (Please feel free to contact our after-sales service department if you are not sure).

4.2 Power Supply and Signal Cable Wiring

Cable connection

			
Name: power cable Dimension: 1.8m Max current: 16A	Name: long power cable Dimension: 10m Max current: 16A	Name:long data cable Dimension: 10m	Name: data cable Dimension: 1.8m

Data cables and power cables of all series are connected by aviation connector, as showed the pictures above:

Note: The connecting cables between the cabinets should pass through the cabinets as much as possible. If the connection method changed, please set the same connection method in the software settings. Please refer to the software for more details.

Operation steps:

1) Load capacity of main power cable and main network cable
2) Checking

After the cabinet wiring is completed, use a multimeter to measure whether there is a short circuit between the AC input (L / N / PE) and DC output (VCC / GND) of the power supply. If so, please check the circuit carefully. Please make sure the circuit is normal

before starting up. To avoid the entire screen being burned due to the wrong working voltage, please pay attention to the working voltage range of the cabinet during use.

3) Turn on screen and check the effect

Play high-definition content after starting up, such as video, text, images, etc. It is suggested to make sure the resolution of the content is in consistent with that of the screen, otherwise the content will be compressed, thus affecting the overall performance.

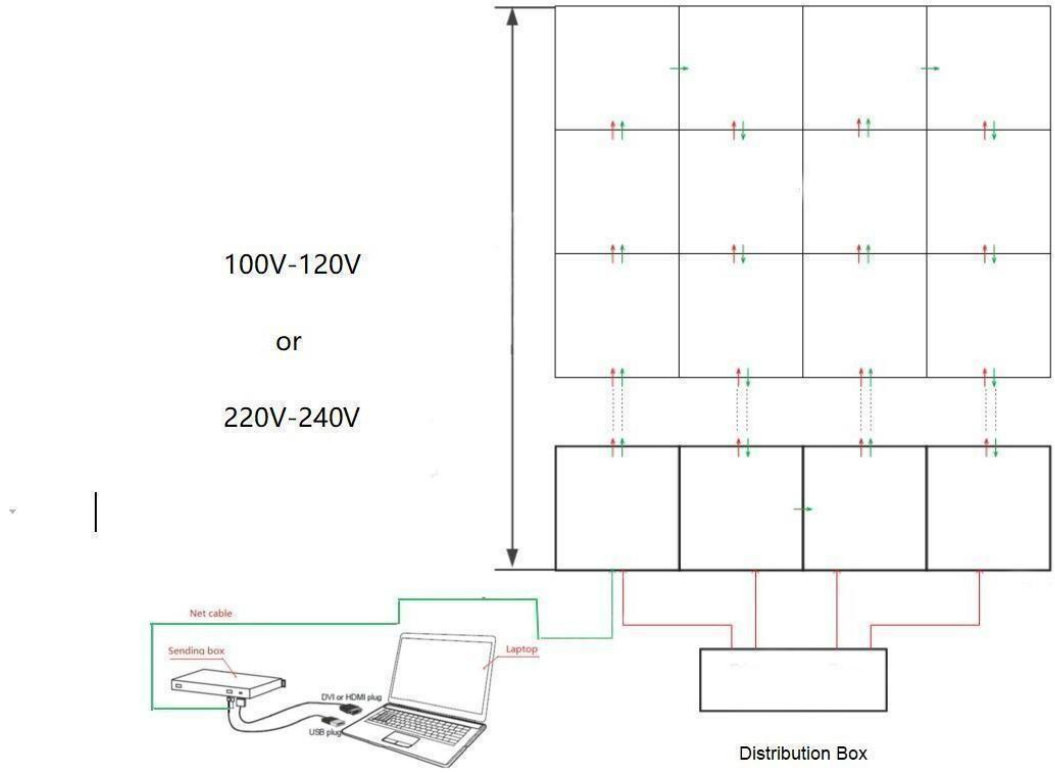
4) For software operation, please refer to the software instruction manual.

Under different cabinet sizes and different input voltages, there are differences in the number of cabinets that wires are able to carry. See the following table for details:

Product	Cabinet dimension	Qty of cabinets (AC220V,3x2.5mm2)	Qty of cabinets (AC110V,3x2.5mm2)
PL3.9 Pro V3	500x500	16	8
	500x1000	8	4

Please calculate the resolution according to each box pixel and connect the signal line according to the load range of the sending card. No more than 655360 pixels can be loaded on each network port.

4.2.1 Standard Cable Wiring



This product cannot store or display video content solely on itself. To perform normal work , the screen requires video source from the output device such as PC, laptop, medi a payer, etc. and one or more sending box to receive and feed the source to it.

5. Maintenance

5.1 Tools for Maintenance

Preparation of maintenance tools:

List	Type	Function	Picture
	Front maintenance tool	Installing and fixing module	
	Phillips screwdriver	Installing and disassembling module & power supply & screw on receiving card	
	multimeter	Measuring power lines and distribution boxes	
	Small Phillips screwdriver	Installing and removing mask	
	Spirit level	Measuring structure	
	laser spirit level	Measuring installation position	
	band tape	Measuring distance of installation hole	

5.2 Maintenance Instructions

The module and power box of PL V3 series support front & rear maintenance.

5.2.1 Front Maintenance

Module front maintenance

(the anti-shock locking knob should be unlock station, 1st press the anti-shock locking system, then rotate counterclockwise by 90 degrees)

Step1: Align the maintenance tool to the module front maintenance hole, then spin the whorl till tightly connect with module, then pull the module off the panel.

Step2: Unload the module safety rope and remove the failure module,.

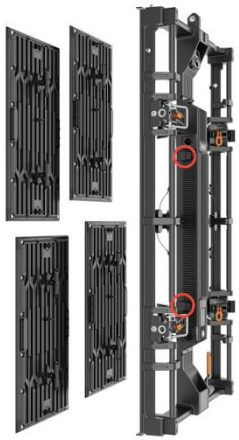
Step3: Replace with a good module.

Power box front maintenance

Step1:Take out modules from front side.

Step2: Unlock the 4pcs buckles on the power box.

Step3: Take out the power box and replace with



5.2.2 Rear maintenance：

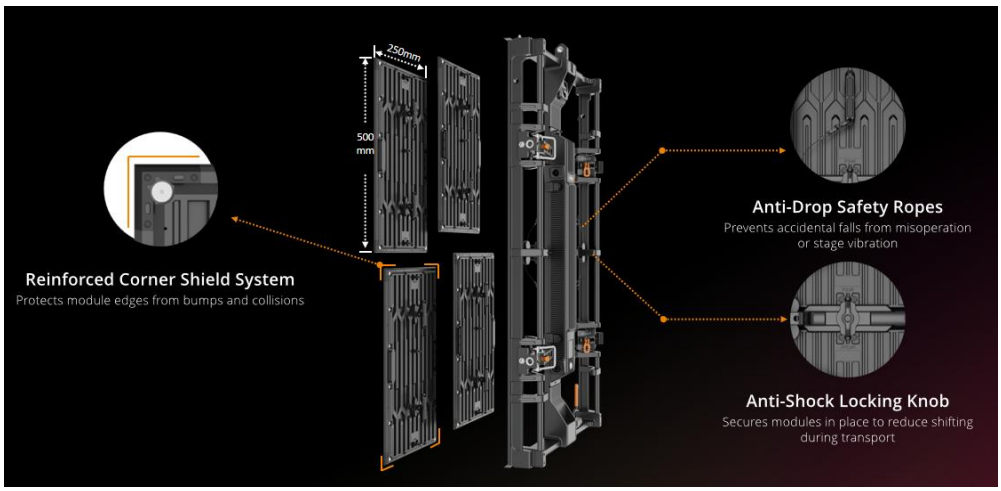
Modules rear maintenance

Step1: Unlock the anti-shock knob system by pressing it, then rotating counterclockwise by 90 degrees.

Step2: Hold the module handle and push it forward.

Step3:Unload the module safety rope.

Step4: Replace with new module.

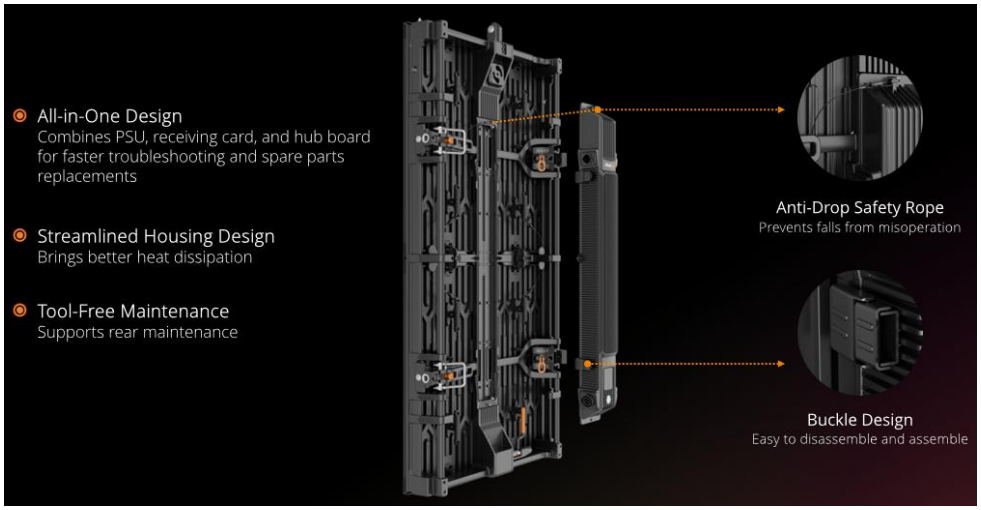


Power box rear maintenance

Step1: Unlock the 4pcs buckles on the power box.

Step2: Unload the power box safety rope.

Step3: Remove the failure power box and replace a new one.

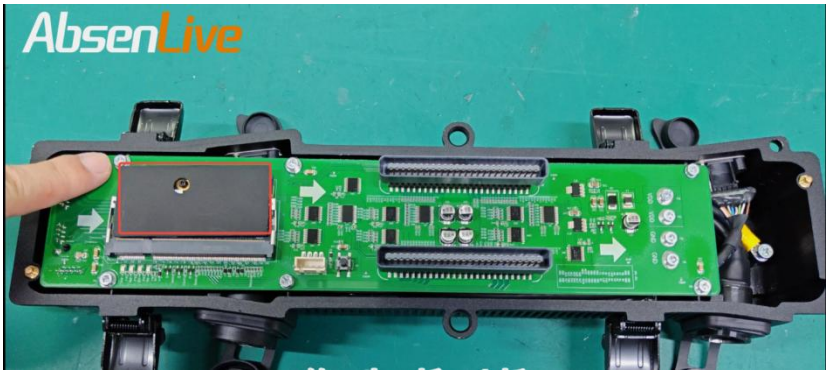


Attention: It is necessary to cut off power supply of cabinets during the maintenance of the power box to avoid electric shock.

5.2.3 Receiving card, HUB card and Power maintenance

Receiving card maintenance:

Step 1: Remove the heat dissipation silicone from the receiving card top;

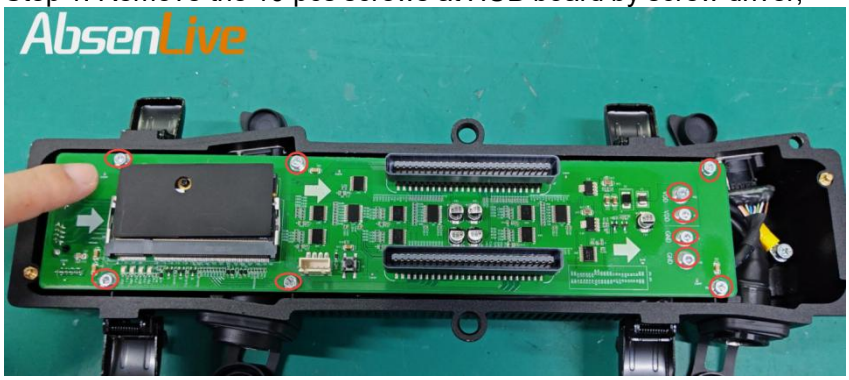


Step 2: Take off the screw from the receiving card;

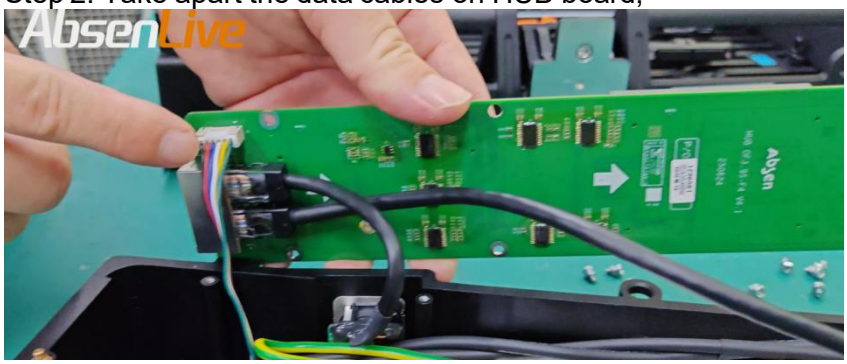
Step 3: Remove the receiving card and replace a new one;

HUB Board Maintenance:

Step 1: Remove the 10 pcs screws at HUB board by screw driver;



Step 2: Take apart the data cables on HUB board;



Step 3: Take out the HUB board to maintenance or replace a new one.

Power Supply maintenance:

Step 1: Remove the HUB board as the guide above;

Step 2: Remove the screws which connected power supply(totally 7 pcs screws);

*Please check the product maintenance video for all details.

5.2.4 Flight Case and Dolly

Flight Case

Place the LED panels horizontally to prevent SMD damage.

PL3.9 Pro V3 flight case has 10-in-1, and 5-in-1.

10-in-1 for 500x500mm cabinet package
5-in-1 for 500x1000mm cabinet package

10-in-1 flight case 1192mm(L) x 596mm(W) x 780mm(H)

5-in-1 flight case 1192mm(L) x 596mm(W) x 780mm(H)

Dolly

PL3.9 Pro V3 has dolly package solution, it can transport with wind bracing system, which support efficient electric hoist hanging for huge stage set up, such as concert, festival events and touring application.

14-in-1 dolly 1110mm(L) × 1210mm(W) × 1339mm(H)

Max hanging height: 20m(triangle hanging bar+wind-bracing system connection)

6. Common faults and troubleshooting

No.	Common faults	Solution
1	Some modules are black	1. Check whether the power plug of the corresponding module is tightly inserted;
		2. Check whether the power cable of the corresponding module is burnt out;
		3. Check whether the switch power supply of the corresponding module has no output;
		4. Check whether the flat cable of the corresponding module is malfunctioning;
		5. Replace the flat cable of the corresponding module;
		6. Replace the module;

		7. Replace the receiving card;
		8. Send rcfg file;
2	The whole screen is black	1. Check whether the screen power is on;
		2. Check whether the DVI cable or HDMI cable is loose;
		3. Check whether the main data cable is well inserted;
		4. Check whether the sending card is powered on and whether the running indicator is flashing;
		5. Replace the sending card;
		6, Connecting the computer to an LCD display, check whether there is output on video card;
		7. Update the video card driver;
		8. Replace the computer;
3	Screen show scr ambled image	1. Check whether the power plug of the receiving card is well inserted;
		2. Check whether the power cable of the receiving card is burnt out;
		3. Check whether the power supply has no output;
		4. Check the data cable of the receiving card;
		5. Replace the data cable;
		6. Send the rcfg file;
		7. Upgrade the firmware version of the receiving card;
		8. Replace the receiving card;
4	Chromatic aberration between modules	1. Check whether the module power plug is well plugged;
		3. Check whether the main data cable is well inserted;
		4. Check whether the sending card is powered on and whether the running indicator is flashing;
		4. Replace the module;
		5. Replace the receiving card;
5	All panels display the same content	1. Set the screen connection on software;
		2. Check whether the data port is wrong.
6	No control system detected	1. Check the USB cable;
		2. Check whether the computer USB port is malfunctioning;
		3. Update the USB driver;
		4. Replace the USB cable;
		5. Replace the sending card;
7	No multi-function card detected	1. Check whether the distribution box is in the automatic state;
		2. Check whether the multi-function card is powered;
		3. Replace the power supply of the multi-function card;
		4. Check whether the main data cable is inserted into the wrong data port;
		5. Check whether the sending card data port is

		malfunctioning;
		6. Re-add the multi-function card;
		7. Replace the multi-function card;
		8. Replace the sending card;
8	No full screen display	1. Check whether the setting of the playback window is normal;
		2. Check the output resolution of the video processor;
		3. Check the output window of the video processor;

Check for Power Supply Short Circuit 

After completing the cabinet wiring, please use a multimeter to check if there is any short circuit at the AC input power supply (L / N / PE) and DC output terminal (VCC / GND). If there is a short circuit, please carefully investigate the wirings. Make sure all wirings are normal, and only then connect power to operate the unit.

Absen

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