

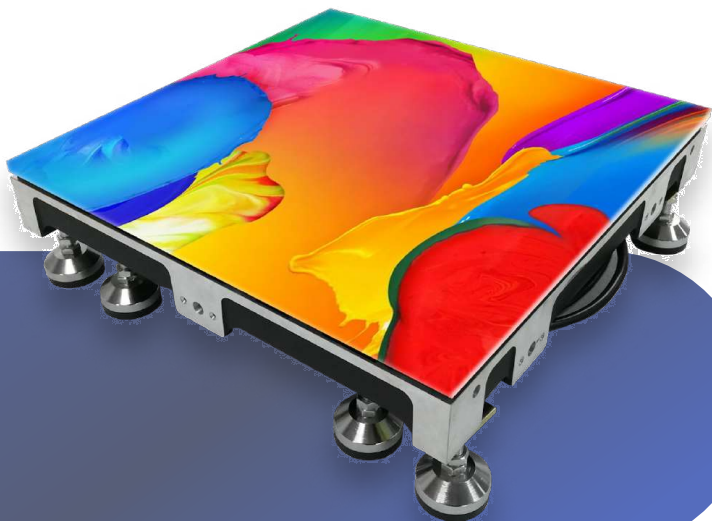
## CALKiN Stage Series

- Indoor Floor LED screen
- Outdoor Floor LED screen
- LED intelligent interactive Floor LED screen

## Stage Series Floor LED Screen

With the continuous development and innovation of LED display technology, as a display device, the technology of LED screens is relatively mature and stable. Regardless of the performance, service life, control technology, application fields. The CALKiN intelligent interactive floor LED screen uses human-computer interaction technology, so that the audience can participate in the display scene, so as to achieve an immersive effect.

Interactive technology combined with high-end interactive materials, the experimenter can feel more interesting, enhance the sense of vision and experience, and make the virtual scene more realistic and vivid. Through the integration of linkage interaction technology and linkage software, the LED intelligent interactive floor screen is no longer just a display device, but a hardware control device, enhancing the functions and application fields of the LED floor screen and linkage equipment. Strengthen the value of the product itself and bring higher commercial value to customers.



## Intelligent Interactive Floor LED Screen

CALKiN intelligent interactive floor LED screen is a digital display device customized for indoor and outdoor exhibition halls and special background environments. It uses the most advanced optical sensing technology to sense human movements and accurately capture the changes of moving objects on the LED screen. The stage renderings are based on the Puller effect, using the most advanced planar antenna technology on the market, making it also equipped with radar sensing technology, allowing users to have an immersive experience.



## Waterproof and moisture-proof

The bottom shell, housing, power cord and signal line of calkin intelligent interactive floor and module are all specially designed and equipped with waterproof and moisture-proof materials. The raw materials are made of materials with low moisture absorption coefficients and have been sealed many times. It has a good waterproof and moisture-proof function, and the front and back of the cabinet can reach the IP65 waterproof level.

## Super load bearing

CALKiN intelligent interactive floor screen is designed according to different mechanics, and the ultimate load-bearing capacity per square meter can be as high as 3000 KGS.

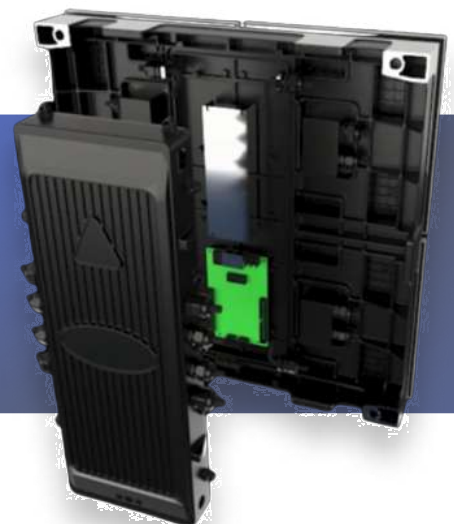


## Wear-resistant and flame-retardant

CALKiN intelligent interactive floor screen housing is made of imported PC material, which has high wear resistance and flexibility, and good high and low temperature resistance. In order to enhance the applicability and safety of adapting to the harsh outdoor environment, CALKiN has enhanced UV resistance, low temperature resistance and higher flame retardant properties.

## Silent heat dissipation

CALKiN intelligent interactive floor screen box power box adopts die-cast aluminum with better heat dissipation and special heat dissipation device design, which has a better silent heat dissipation function.





## Product Features

- 1 Fast interactive response: response time of 20 microseconds.
- 2 Unlimited interactive points, both point-to-point and multi-point interaction
- 3 High polymer PC material housing: low moisture absorption coefficient, anti-skid and anti-glare design.
- 4 Built-in optical sensor chip, not interfered by external light or electric waves.
- 5 High-strength anti-corrosion materials structure, single-point height adjustable, non-slip and shock-absorbing design.
- 6 Multiple interactive production and playback in TUOI, Flash, and UDP point-to-point formats support. The software supports the function of sensing objects with intelligent shielding.

**Aluminum cabinet**



**Die-cast aluminum cabinet**



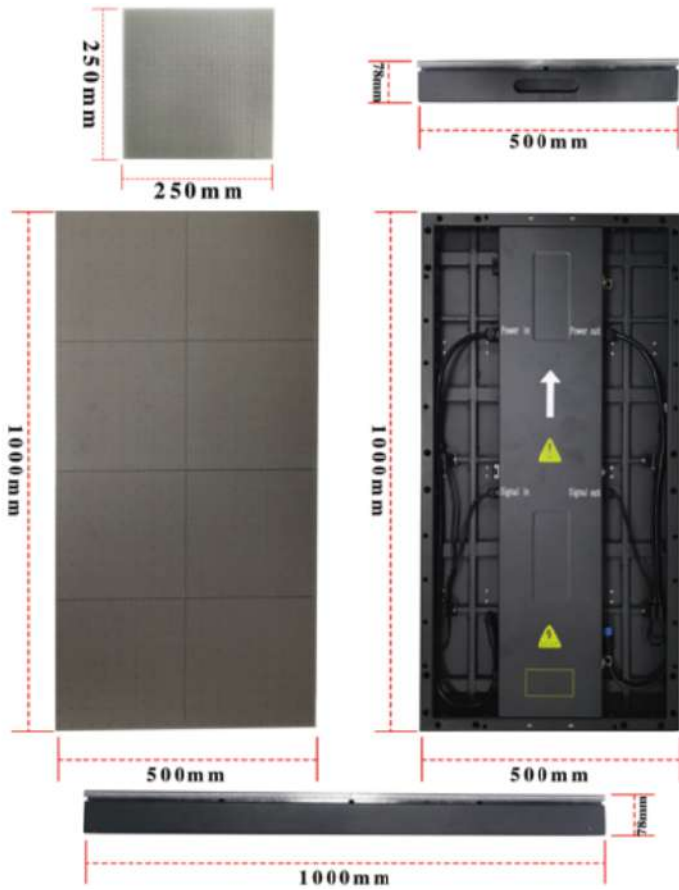
**Aluminum cabinet**



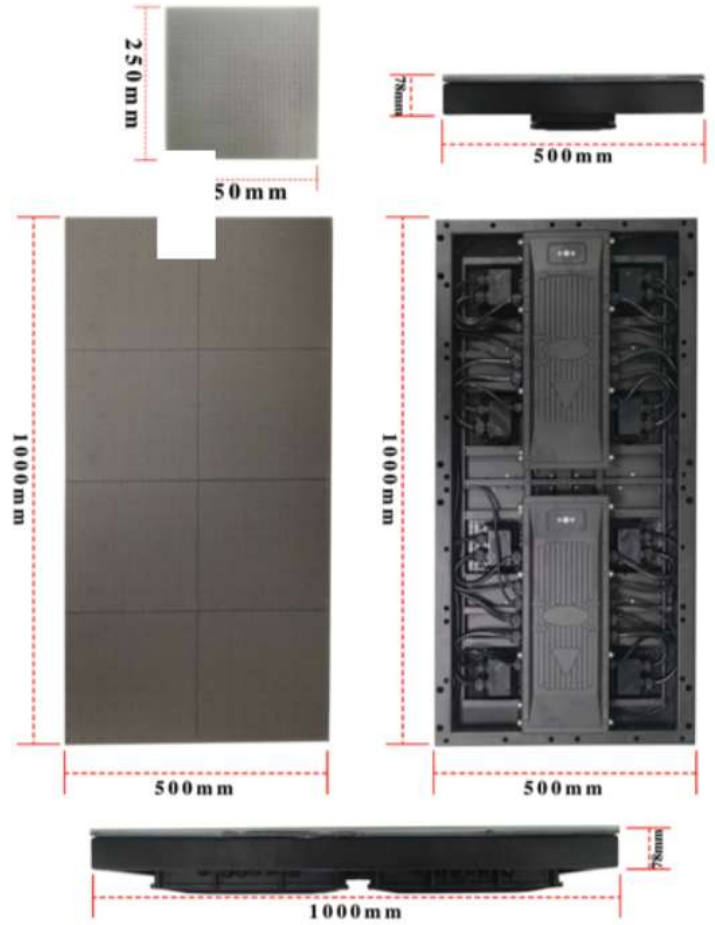
**Iron cabinet**



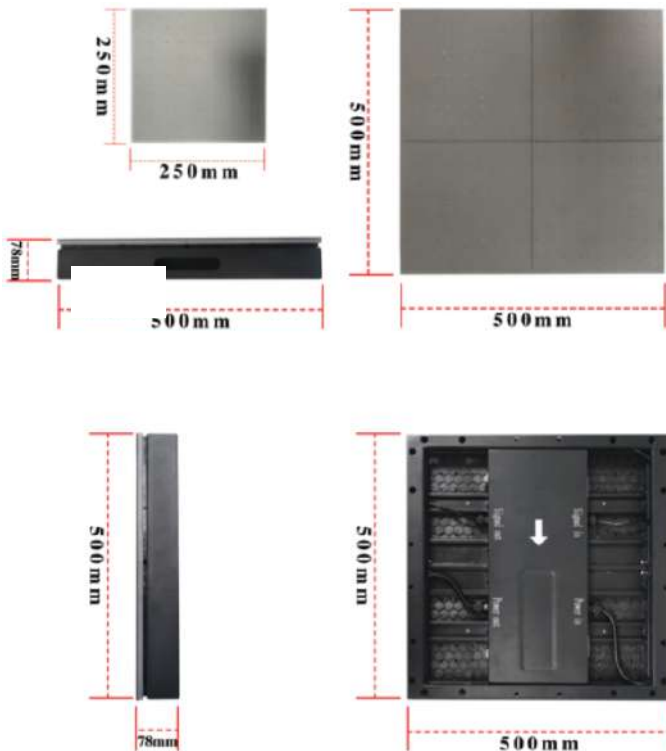
### Iron cabinet Indoor 500\*1000mm



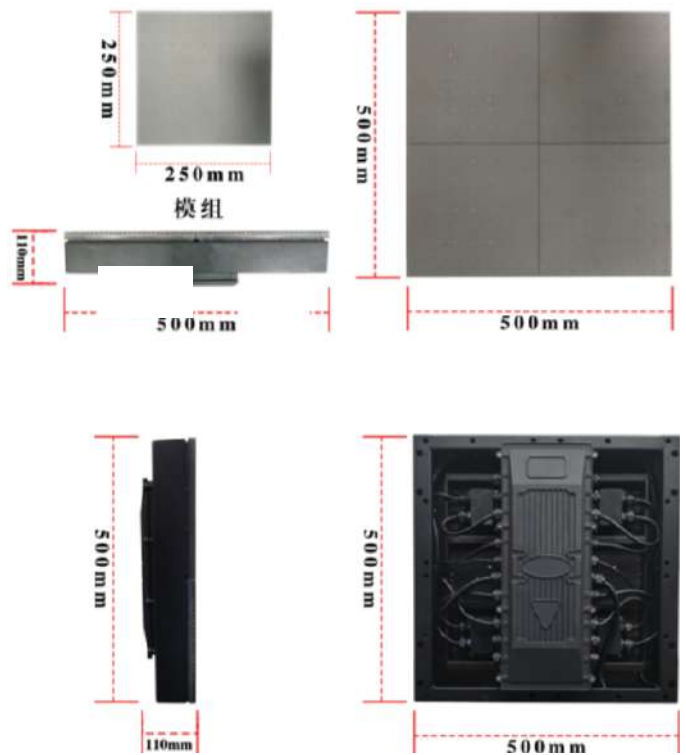
### Iron cabinet Outdoor 500\*1000mm



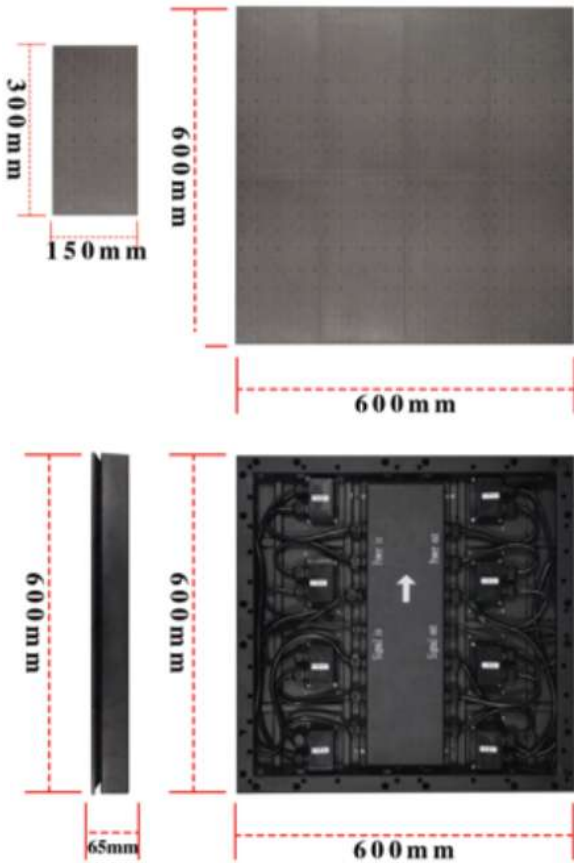
### Indoor 500\*500mm Iron cabinet



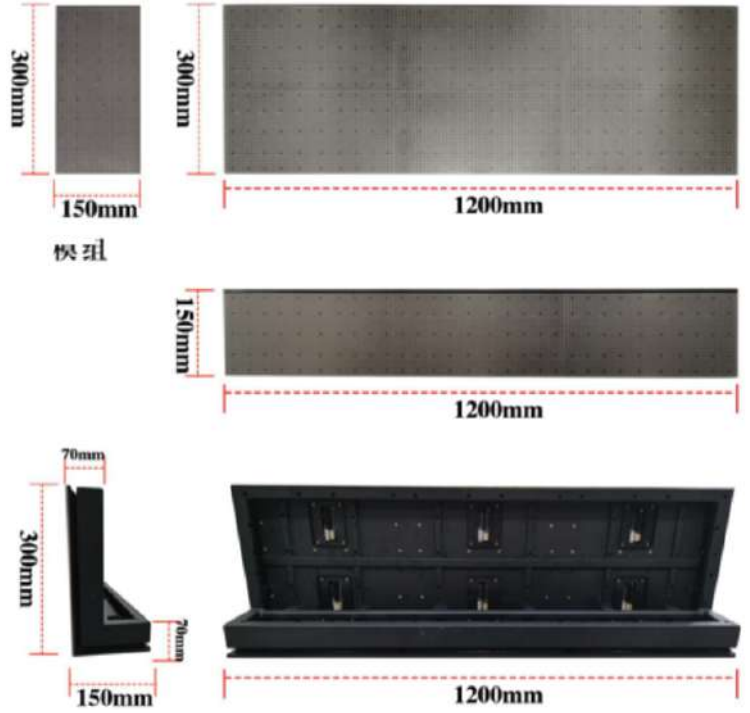
### Outdoor 500\*500mm Iron cabinet



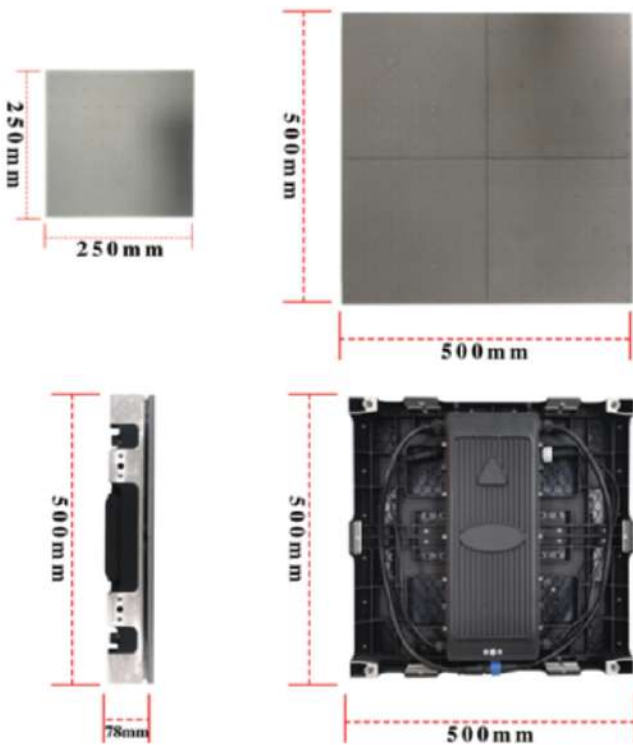
### Iron cabinet



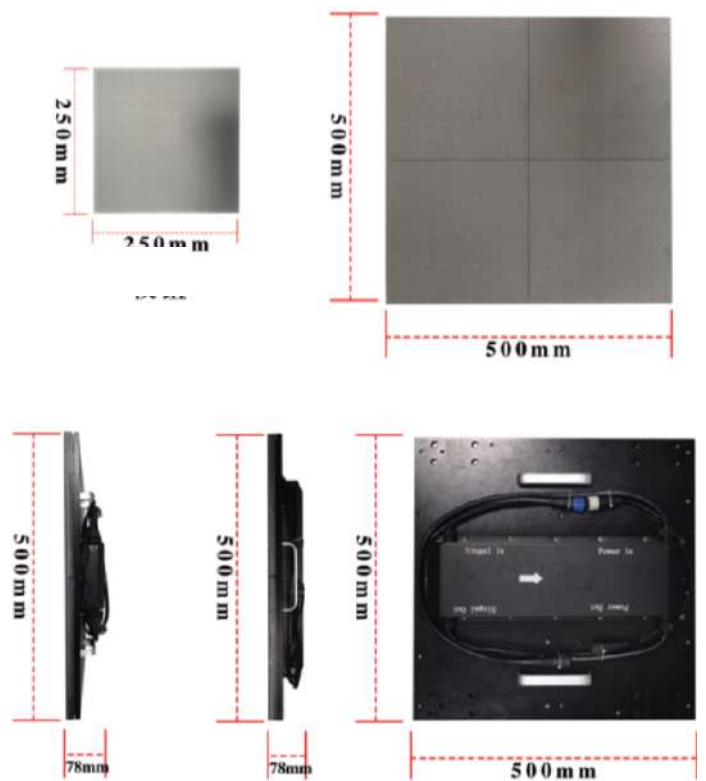
### Stair screen Iron cabinet



### Die-cast Aluminum cabinet



### Aluminum cabinet

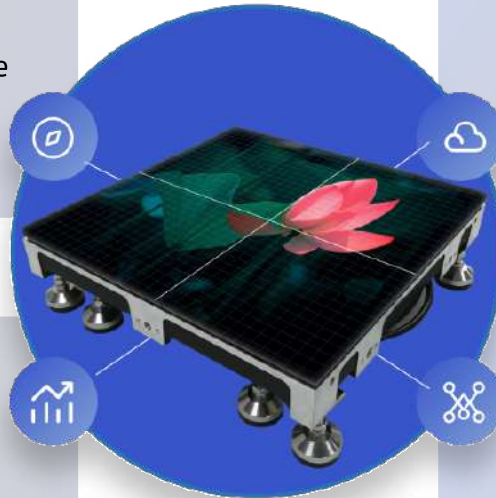




## Module

The data of each unit is transmitted separately, and the occlusion of each signal source will not affect the display of the next area.

Each module area is separate data transmission. One is covered and the others will be used for data transmission to achieve interaction.



Each module integrates a relative number of sensing points. When one sensing point fails, the remaining sensing points will continue to work.

Module integrated sensing area

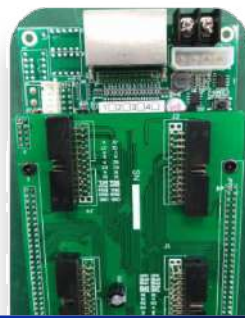
## Cabinet Components



Module



Cabinet



Receiving card



Power

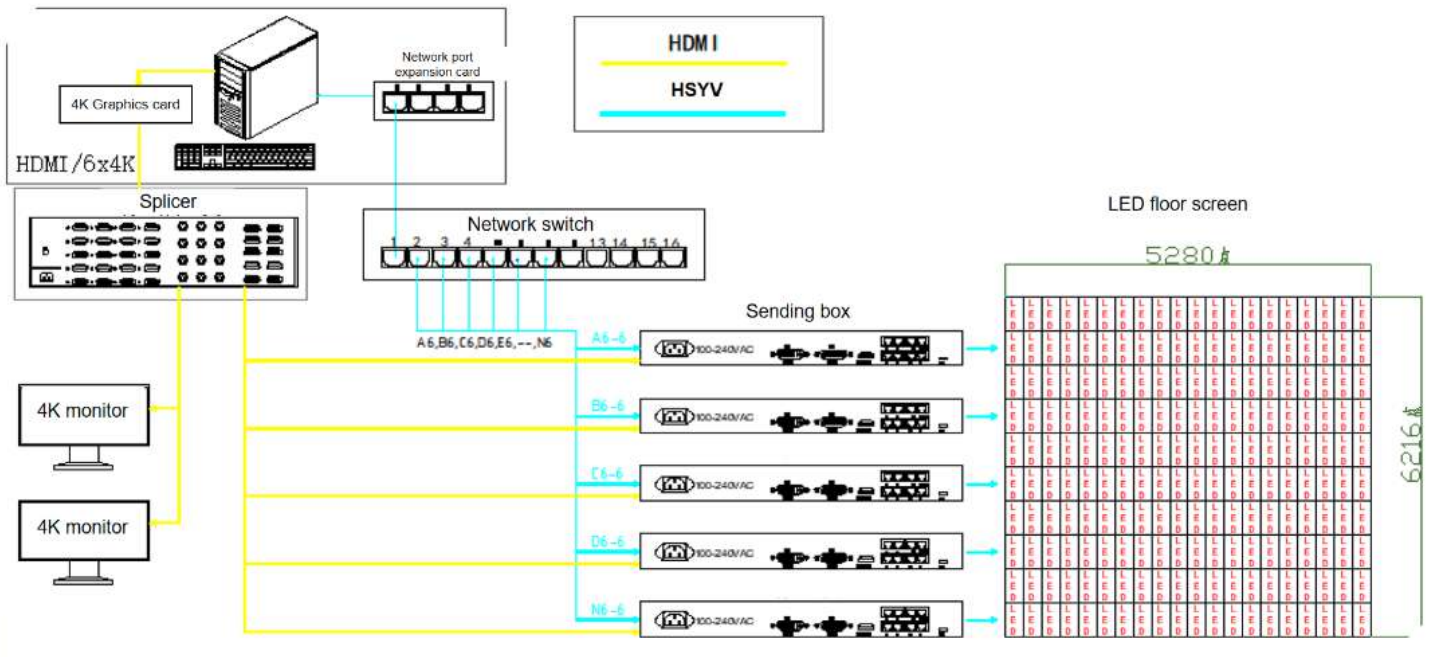


220V Power line

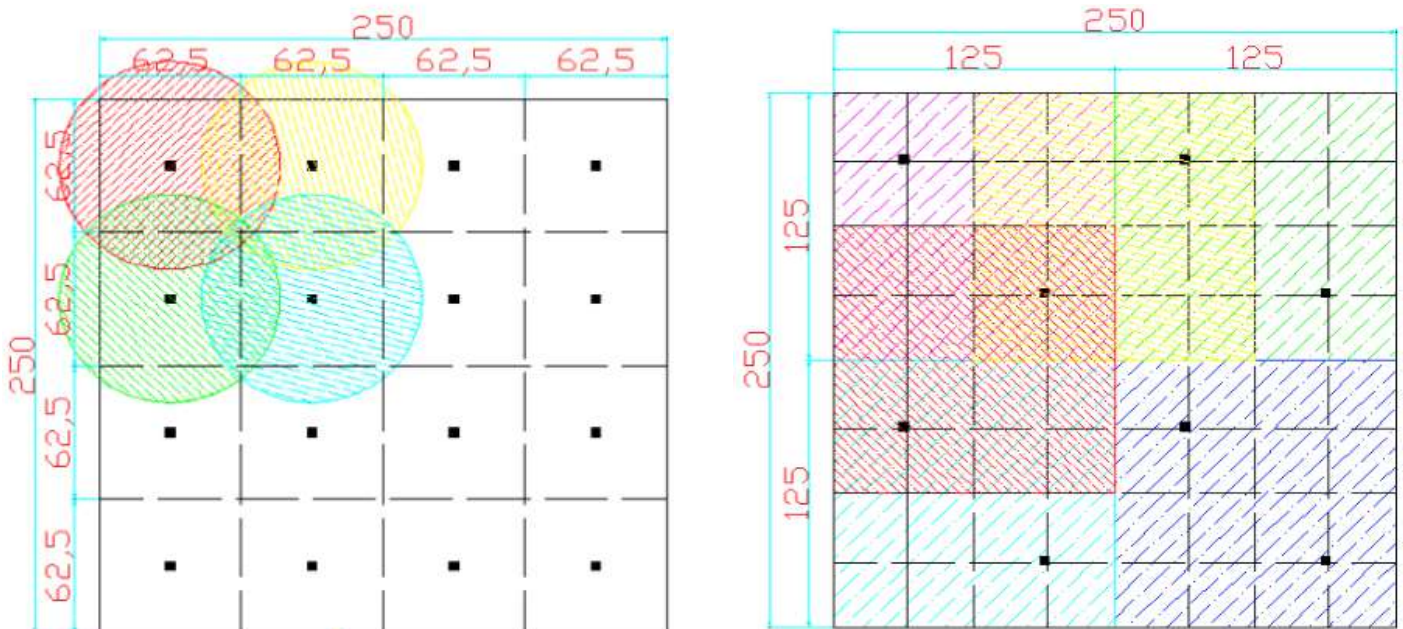


Network Cable

# Control Diagram



## Sensor distribution simulation diagram of unit module

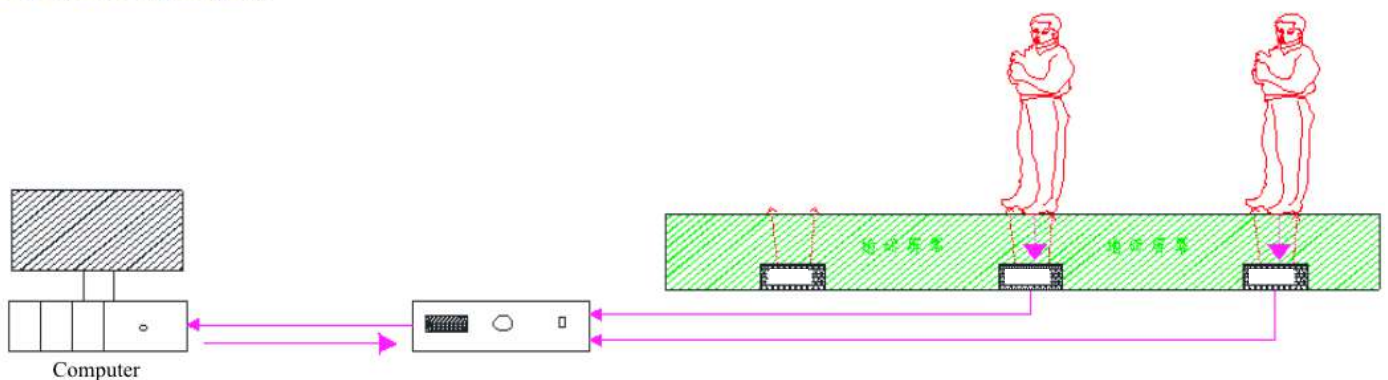




# Human-Computer Interaction

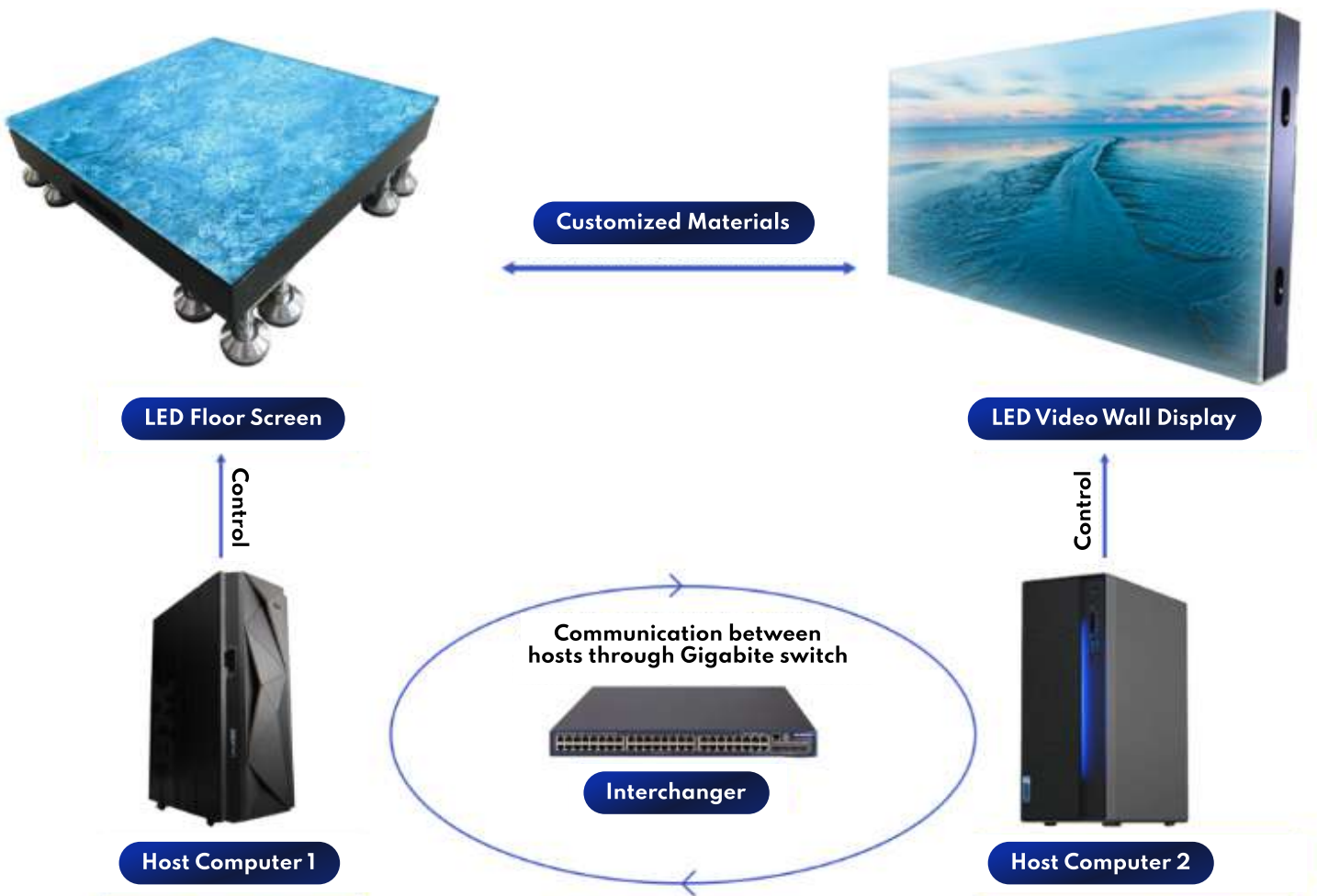
The LED floor screen senses the objects on the surface of the screen through a micro-optical sensor device at close range, and transmits the information of the sensor device to the interactive main control computer. The interactive host calculates the positioning coordinates of the sensor device through calculation and processing. Send instruction information to the main control PC, and the main control PC will call the corresponding interactive material or interactive file according to the interactive main control's instruction, and display the corresponding scene material. From control to installation, it is more convenient and fast, with fast response speed, high accuracy of sensor display, multi-scene application and multi-device linkage, so it is called LED intelligent interactive floor screen. And the LED intelligent interactive floor screen allows the audience to participate in the displayed virtual scene. When the human body or object touches the surface of the LED floor screen, the LED floor screen will change the display content accordingly. The LED floor screen combines the intelligent interactive system and interactive materials to present the real scene in a virtual way, so as to achieve the effect of human-computer interaction.

Intelligent sensing diagram



# Wall and floor screen joint interaction

The floor screen can not only realize the human-computer interaction on the ground but also realize the interactive interaction between the floor and the wall. Linkage is a combination of intelligent interactive LED floor screen and interactive LED video wall. Its effect display and special effect display have reached the high-tech level in many fields. In particular, the wall and floor linkage display not only tests the splicing effect of the wall screen and floor screen but also tests the splicing technology of video images. The picture can be more immersive when the two are combined. The LED intelligent interactive floor screen and LED video wall of CALKiN to adopt advanced induction interaction technology. The video wall and floor screen are connected through our linkage software, and the video wall and floor screen can interact and control in real-time. The perspective effect is more vivid and the application field is wider. The function of the wall and floor screen is greatly improved. More commercial value has been realized.



# Interactive Technology

Interactive floor LED screen achieves the interaction between people and screen by sensing capture technology to achieve interactive function. Common LED interactive technology are body feeling interaction, radar interaction, infrared frame interaction and intelligent interaction.

## Body feeling interaction

It is to place a set of devices that can sense the human body at a certain distance from the experiencer. When the experiencer leans into the sensing range of the device, the sensing device will start the sensing function for interaction.

The working principle is that the sensing device takes pictures by an infrared camera, calculates and locates the captured image to locate the coordinates of the experiencer, and then starts the corresponding interactive scene material to achieve human-computer interaction.

**DISADVANTAGE :** It is only applicable to the screen far away from the wall or the human body, and it is not waterproof and not suitable for outdoor use. Suitable for small area screen.



## Radar interaction

Large and small area of LED screen can be used, mainly for the same surface induction LED screen. The radar sensing device is installed on the edge of LED screen. When an object touches the LED screen surface, the radar sensing device will start the interactive function.

The working principle is to transmit radar wave. The radar wave forms a semicircle shape, adheres to the surface of LED screen and shoots to the other side of LED. The induction area is the semicircle area of radius according to the transmitting distance of radar wave. When the radar wave is blocked by an object, the radar device starts the interactive device. After positioning the coordinates of the object through the coordinates of the radio wave, the corresponding interactive scene material is activated to achieve human-computer interaction.

**DISADVANTAGE :** it can only sense the first layer of objects. When there are multiple layers of objects, the objects behind can not be sensed. The positioning area is large and inaccurate. The requirements of installation site are high, many sites can not be applied. Moreover, it is difficult to splice radar in large area display, there are many external lines, and the power supply of external power supply is prone to failure.





## Infrared frame interaction

Mainly for small area led or LCD screen. The infrared frame device is installed on the edge of LED screen. When an object touches the surface of LED screen, the infrared frame works to start the interactive function.

The working principle is that infrared light is transmitted by infrared light, and the infrared device at the transmitting end pastes the infrared light on the surface of LED screen to the infrared receiving end of the opposite side, and sets a group of infrared devices according to a certain distance. When an object blocks the infrared light, the infrared device starts the interactive device to locate the coordinates of the object by blocking the infrared light.

**DISADVANTAGE :** Only suitable for indoor small area screen, not for large area screen. It is not waterproof and moisture-proof and easy to be damaged.

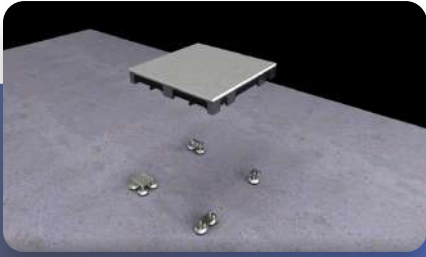
## Radar interaction

Our intelligent interaction adopts the most advanced micro sensing technology (optical sensing) in the world. The micro sensing device is placed on the module light board of LED floor screen, and the interactive function is activated when an object contacts the surface of the LED floor screen.

The working principle is that the sensing device emits special light waves from the inner lamp board of the LED floor tile panel module to the screen surface. When an object contacts the surface of the screen and blocks the light wave emitted by the sensing device, the interactive software locates the object coordinates through the coordinates of the sensing device.

**ADVANTAGE :** Our intelligent sensing, also known as optical sensing, uses special optical principles to sense and locate objects without the influence of light. Using the world's most advanced micro sensor and SMT technology, combined with our innovative circuit design, the sensor is built into the module. It has better moisture resistance, better stability and easy protection. Our module adopts special protection processing, internal control signal wiring, video signal and sensing control signal goes through the same control line, without multiple groups of wiring, no external power supply. So it can be used indoors and outdoors. The sensing method is from bottom to top, evenly and reasonably distributed sensing, with high sensing accuracy and fast response speed. In video signal control and fusion, multi-element infinite splicing can be realized, and multi-point simultaneous interaction can be realized without the restriction of interaction points. Without external sensor equipment and external control signal circuit, the appearance is neat and beautiful. It can be applied to all kinds of special sites which are not on the same sensing surface or are covered by objects or have no sensing equipment installed.

## Flat installation

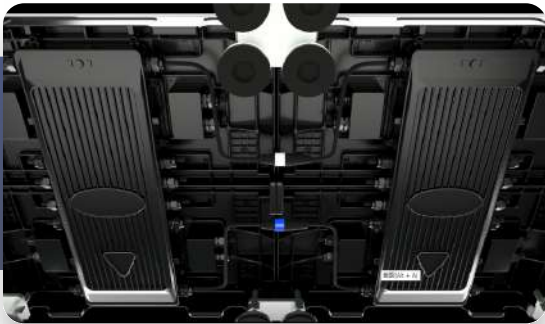


- 1 On a relatively flat ground, place the floor support at the position as shown in the figure (the distance between adjacent floor supports is 500mm\*1000mm).

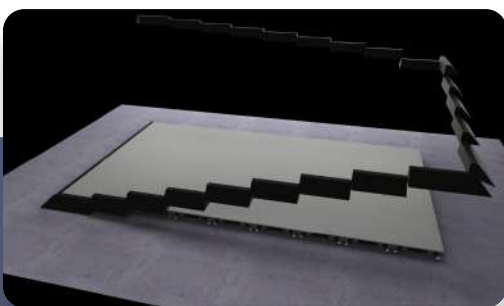
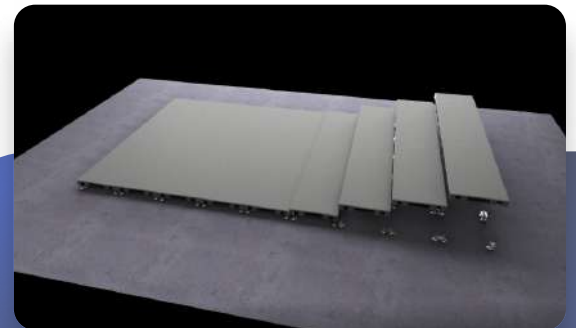
- 2 Connect the positioning holes at the bottom of the cabinet with the positioning posts on the surface of the floor support; connect the positioning holes of the cabinet with the four floor supports in turn (the arrow on the back of the cabinet must be in the same direction).



- 3 Connect the power cable and signal cable on the back of the cabinet to another cabinet in turn (Note: the cabinet faces the same).

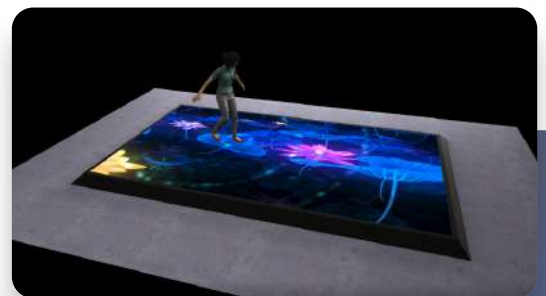


- 4 The cabinets are connected in turn according to the above content, as shown in the figure.

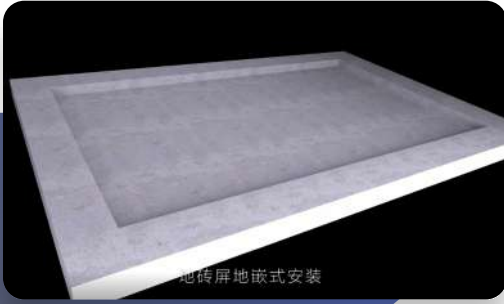


- 5 After the installation is finished, you can decide whether to install the edging to enhance the aesthetics according to actual needs.

- 6 Regular maintenance is required during the use of the screen to ensure the use time of the screen.

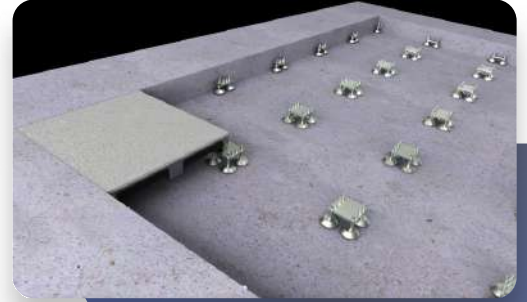


## Indoor embedded installation



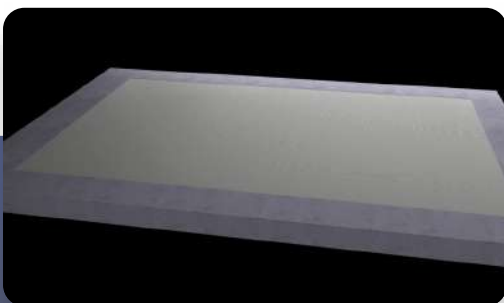
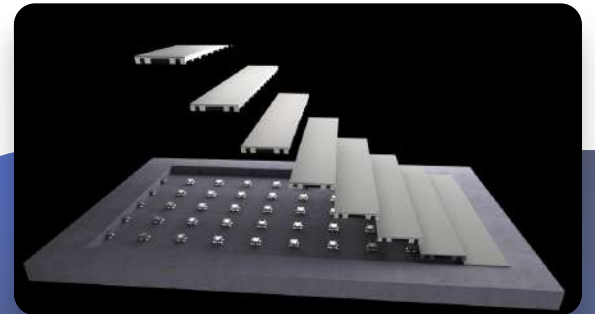
- 1 Place the floor supports in a relatively flat scene with the depth of the foundation pit between 130mm-170mm. The placement position is as shown in the figure (the distance between adjacent floor supports is 500mm\*1000mm).

- 2 The positioning hole at the bottom of the cabinet is connected with the positioning column on the floor support; the positioning holes of the cabinet are connected to the four floor supports in turn, and the height of the floor support is adjusted to make the surface of the screen and the ground level, as shown in the figure.



- 3 Connect the power cable and signal cable on the back of the cabinet to another cabinet in turn. (Note: the cabinet faces the same)

- 4 The cabinets are connected in turn according to the above content, as shown in the figure.



- 5 After the installation is finished, you can decide whether to install the edging to enhance the aesthetics according to actual needs.

- 6 Regular maintenance is required during the use of the screen to ensure the use time of the screen.



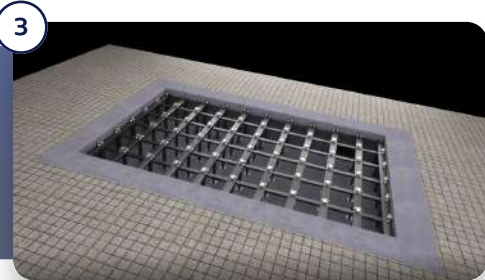


## Outdoor embedded installation



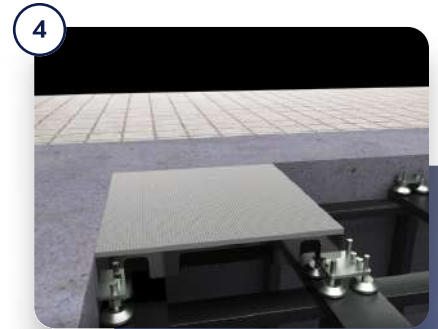
- 1** The depth of the outdoor foundation pit needs to be between 500-800mm, and reserved drainage outlets, exhaust outlets, network cable pipes and power cable pipes, and route the wires into the foundation pit in advance. The distance from the control room to the screen should not exceed 80m; as shown in the figure.

- 2** Build a 300mm-650mm steel structure in the foundation pit (Note: 130mm-170mm height should be reserved between the surface of the steel structure and the ground; the distance between adjacent steel structures is 500mm\*1000mm)

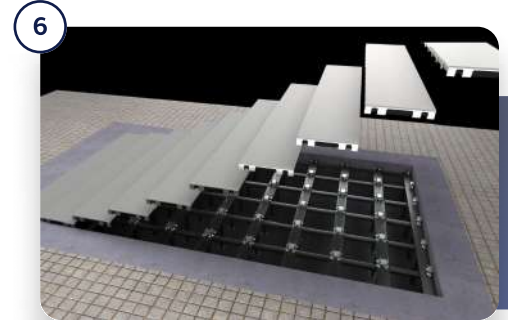


- 3** Place the floor support on the surface of the steel structure, as shown in the figure (the distance between adjacent ground supports is 500mm\*1000mm)

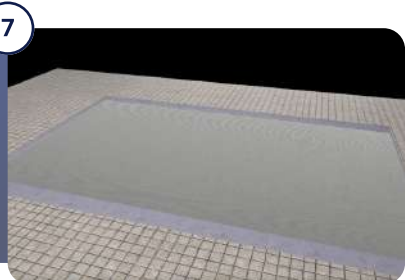
- 4** The positioning hole at the bottom of the cabinet is connected with the positioning column on the floor support; the positioning holes of the cabinet are connected to the four floor supports in turn, and the height of the floor support is adjusted to make the surface of the screen and the ground level, as shown in the figure.



- 5** Connect the power cable and signal cable on the back of the cabinet to another cabinet in turn.(Note: the cabinet faces the same)



- 6** The cabinets are connected in turn according to the above content, as shown in the figure.



- 7** After the installation is finished, you can decide whether to install the edging to enhance the aesthetics according to actual needs.



- 8** Regular maintenance is required during the use of the screen to ensure the use time of the screen.



# Application



# CALKiN Stage Series

Type	P2.5	P2.976	P3.91	P4.68	P4.68 Stairs
Module resolution	100*100	84*84	64*64	64*32	64*32
Module size (mm)	250*250	250*250	250*250	300*150	300*150
Resolution (dots/m <sup>2</sup> )	160000	112896	65025	51200	45796
Scan	1/25	1/14	1/16	1/8	1/8
Brightness (cd/m <sup>2</sup> )	Indoor:1500	Indoor:1500	Indoor:1500 Outdoor:4500	Indoor:1500 Outdoor:4500	Indoor:1500 Outdoor:4500
Cabinet Size (mm)	500*500 500*1000	500*500 500*1000	500*500 500*1000	600*600	1200* (300+150)
Weight/Cabinet (kg)	25	25	25	25	55
Refresh (Hz)	1920/3840	1920/3840	1920/3840	1920/3840	1920/3840
Working temperature (°C)	-20 ~ 65	-20 ~ 65	-20 ~ 65	-20 ~ 65	-20 ~ 65
Protection level	IndoorIP54, OutdoorIP65	IndoorIP54, OutdoorIP65	IndoorIP54, OutdoorIP65	IndoorIP54, OutdoorIP65	IndoorIP54, OutdoorIP65
Defective ratio	4≤100000	4≤100000	4≤100000	4≤100000	4≤100000
Protection technology	Anti-slip, moisture-proof, dust-proof, anti-corrosion, anti-static, anti-lightning, and has the functions of over-current, short-circuit, over-voltage, and under-voltage protection				
Cabinet material	Iron cabinet, Aluminum cabinet, Die-cast Aluminum cabinet				

Type	P4.81	P5.2	P6.25	P7.8125	P7.8125
Module resolution	52*52	48*48	40*40	32*32	28*28
Module size (mm)	250*250	250*250	250*250	250*250	250*250
Resolution (dots/m <sup>2</sup> )	43264	36864	25600	16384	12544
Scan	1/13	1/6	1/10	1/4	1/4
Brightness (cd/m <sup>2</sup> )	Indoor:1500 Outdoor:4500	Indoor:1500 Outdoor:4500	Indoor:1500 Outdoor:5000	Indoor:1500 Outdoor:5000	Indoor:1500 Outdoor:5000
Cabinet Size (mm)	500*500 500*1000	500*500 500*1000	500*500 500*1000	500*500 500*1000	500*500 500*1000
Weight/Cabinet (kg)	25	25	25	25	55
Refresh (Hz)	1920/3840	1920/3840	1920/3840	1920/3840	1920/3840
Working temperature (°C)	-20 ~ 65	-20 ~ 65	-20 ~ 65	-20 ~ 65	-20 ~ 65
Protection level	IndoorIP54, OutdoorIP65	IndoorIP54, OutdoorIP65	IndoorIP54, OutdoorIP65	IndoorIP54, OutdoorIP65	IndoorIP54, OutdoorIP65
Defective ratio	4≤100000	4≤100000	4≤100000	4≤100000	4≤100000
Protection technology	Anti-slip, moisture-proof, dust-proof, anti-corrosion, anti-static, anti-lightning, and has the functions of over-current, short-circuit, over-voltage, and under-voltage protection				
Cabinet material	Iron cabinet, Aluminum cabinet, Die-cast Aluminum cabinet				



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