



木林森MLS | Stock code : 002745

Pragmatic

Responsible

Innovative



木林森MLS | Stock code : **002745**

<http://www.led-mls.com>

The Global Leader in LED Field  
The whole industrial chain of LED products is integrated

Shenzhen Mulinsen Technology Co., Ltd.

Web <http://www.led-mls.com>

Office Address: 337 Changfeng Road, Guangming District, Shenzhen

Production Address: Ji'an Jinggangshan Economic Development Zone East Chuangye Dadao Mulinsen Industrial Park





## ABOUT US

### Mulinsen Group

**Mulinsen was founded in 1997,  
and successfully listed on the Shenzhen Stock Exchange in 2015.**

We are the global leader in LED packaging;  
China's largest LED enterprise;  
With efficient and accurate production, research and testing equipment;  
Strong global distribution network, Long-term stable customer relationship;  
Meet all customers' individual needs;  
Provide more healthy and high-quality light to hundreds of millions of users around the world!

In 2022, the operating revenue reached **18.615 billion** RMB

It has about **20000** employees worldwide

Its business covers **140** countries and regions worldwide

China's LED packaging revenue and display market share ranked **No.1**

# DEVELOPMENT PATH

Since its establishment in 1997, Mulinsen has achieved strong growth over the past 26 years to establish a leading position in the LED industry



**1997**  
Revenue: 709,000 RMB

- The company was founded.



**2008**  
Revenue: 385 million RMB

- Production of lighting products, LED stents components.

**2005**  
Revenue: 99 million RMB

- Launched the world's first generation of LED chip type T8 tube.

**2010**  
Revenue: 815 million RMB

- Built the largest LED packaging base in Asia



**2014**  
Revenue: 4.01 billion RMB

- Annual production exceeds 4 billion.
- Mullinsen device packaging ranks 7th in the global lighting market share.

**2015**  
Revenue: 3.88 billion RMB

- Packaged components ranked fifth in the global lighting market.
- It is rated as the 9th largest LED enterprise in the world.



**2016**  
Revenue: 5.52 billion RMB

- With IDG to buy LEDVANCE.

More than 50 billion moon lamp beads were produced.

**2017**  
Revenue: 8.17 billion RMB

- Participated in the acquisition of LEDVANCE and completed the equity closing.
- The 18th largest industrial semiconductor manufacturer in the world.
- Ranked second in LED packaging revenue in China market.



**2018**  
Revenue: 17.95 billion RMB

- China's first LED enterprise exceeding 10 billion revenue.
- Ranked first in China's LED packaging market.
- The 13th largest industrial semiconductor manufacturer in the world.

**2019**  
Revenue: 17.95 billion RMB

- Ranked 5th in global LED lamp beads revenue.
- China's top 500 private enterprises in manufacturing.



**2020**  
Revenue: 17.38 billion RMB

- The first place in China LED lighting industry.
- China's LED display products market share ranked first.

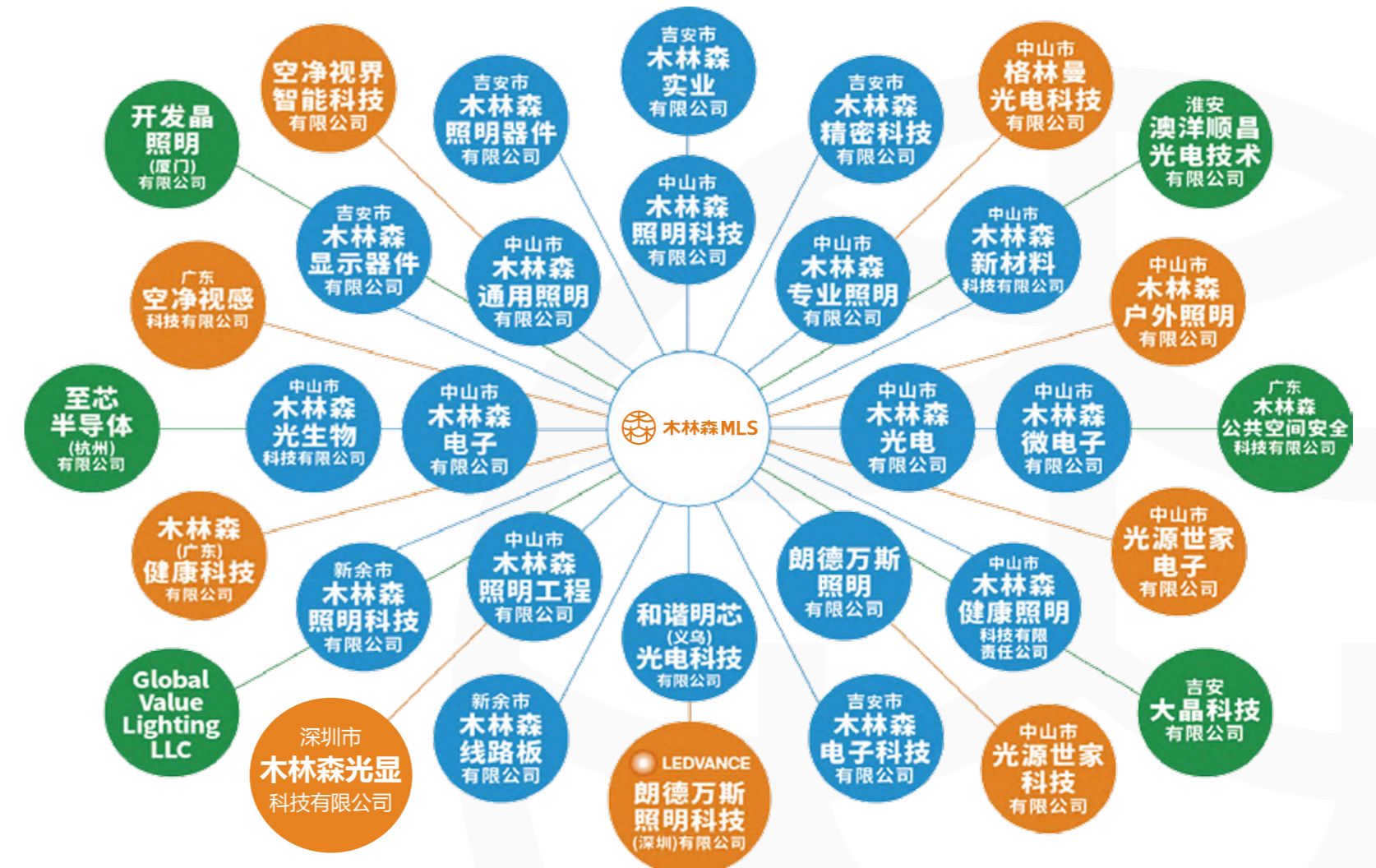
# ENTERPRISE STRENGTH

» Complete product range and brand «



» Large family «

Mulinsen Group has more than 100 subsidiaries, involving the upper, middle and lower reaches of the LED industry, running through the whole industrial chain, and gradually realizing the integration of component production, finished product production and sales.



- Major wholly owned companies
- Major holding companies
- Major joint ventures

# HONORARY QUALIFICATION

## » Honor and qualification «



[National enterprise Technology Center],  
[National intellectual property advantage  
Enterprise], [Famous trademark  
of Guangdong Province] and so on



[Top 500 private enterprises in China],  
[Top 10 international competitiveness of  
Chinese LED enterprises],  
[LED lamp bead packaging single product  
champion] and so on



[The most growing listed company in  
high-end manufacturing industry], [2021  
ESG most investment value enterprise]  
and so on

## » Patents and inventions «



Worldwide licensed  
patents **2600+**



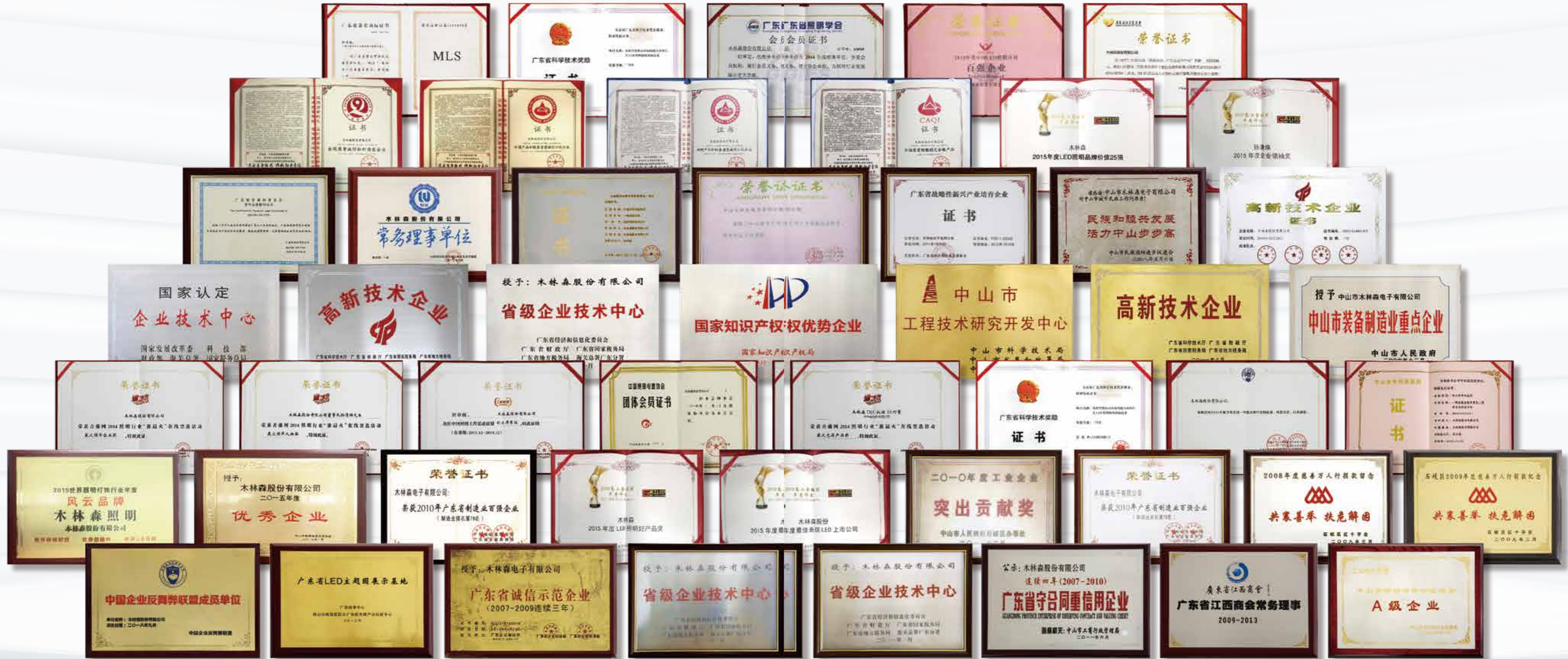
**1100+** invention  
patents



The proportion of authorized inventions  
ranks among the top of the industry









## COMPANY PROFILE

When the LED industry is accelerating in an all-round way, as the "chain owner" of the science and technology manufacturing industry, Mulinsen will focus on the layout of LED technology and industrial chain, rapidly expand business channels and increase the R&D of high-end LED products, continue to empower the LED industry through technological innovation, and do a good job as the "leader" of the LED industrial chain.

With LED technology and resource advantages, Mulinsen has formed its own technical solutions such as materials, processes, equipment and production lines, realizing the manufacturing capacity of chip, packaging, PCB, IC and display panel application in the whole industry chain, and achieving the world's leading large-scale production of LED display.

Combined with the practice and thinking of sticking to the industry for more than 26 years, Mulinsen always adheres to the core cultural concept of "pragmatism, responsibility and innovation", and drives the coordinated development of the LED industry chain and the new leap in the value of the LED industry chain with the technology of continuous selection of generations, the strong industrial chain layout and the strong cooperation of quality barrier channels.

Shenzhen Mulin Forest Light Technology Co., Ltd. as one of the important shares of Mulinsen, undertake to provide customers with intelligent display solutions. Relying on the comprehensive advantages of the industrial chain of Mulinsen Group, based on the leading display technology, integrating industry resources, deep research in digital exhibition hall display, digital commercial display, digital information display and other fields, to provide enterprises, governments and industries with intelligent display scene solutions.

### » Strong manufacturing capability«

In the world there are four production bases, 12 factories investment :20 billion yuan +, production base area: 2.71 million m<sup>2</sup>+



Covers an area of 243.25 mu, specializing in the production of a full range of LED light source devices and power supplies.



Covering an area of 935.27 mu, it specializes in the production of all LED optical components and semiconductor materials.



Covering an area of 434.70 mu, it mainly produces PCB, FPC and MCPCB, and is becoming the largest manufacturing base in China.



Covering an area of 935.27 mu, it specializes in the production of full LED light source devices and semiconductor materials.

### » R&D and innovation capability«

Six nationally recognized CNAS laboratories have been established



Zhongshan Central Laboratory

Xinyu Research and Development Laboratory

Mulinsen Lighting Laboratory

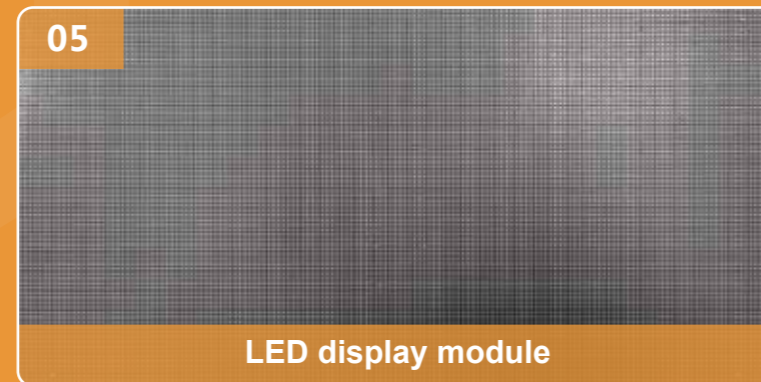
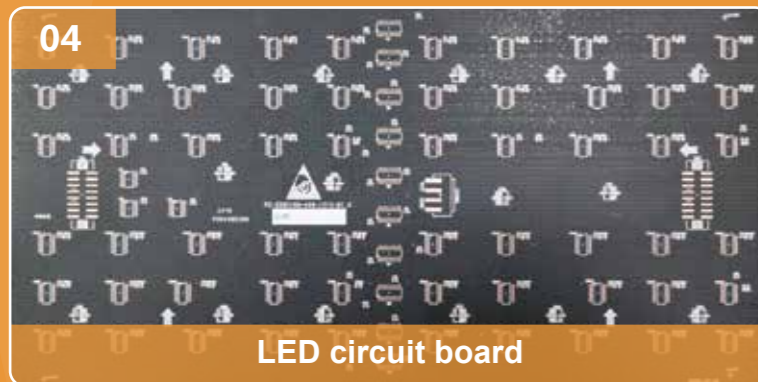
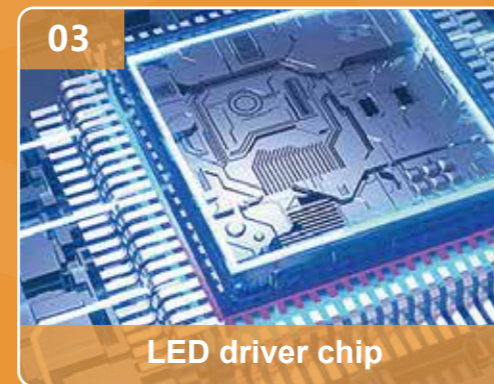
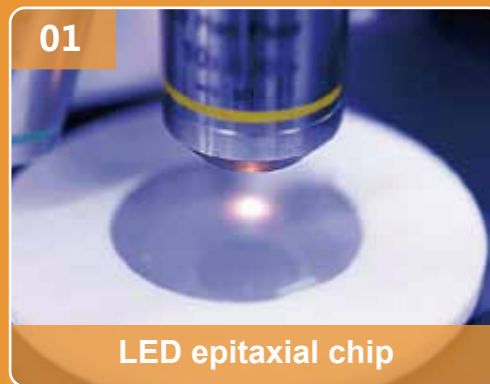
Ji'an Central Laboratory

Ledvance Testing Laboratory

Xinyu Testing Laboratory



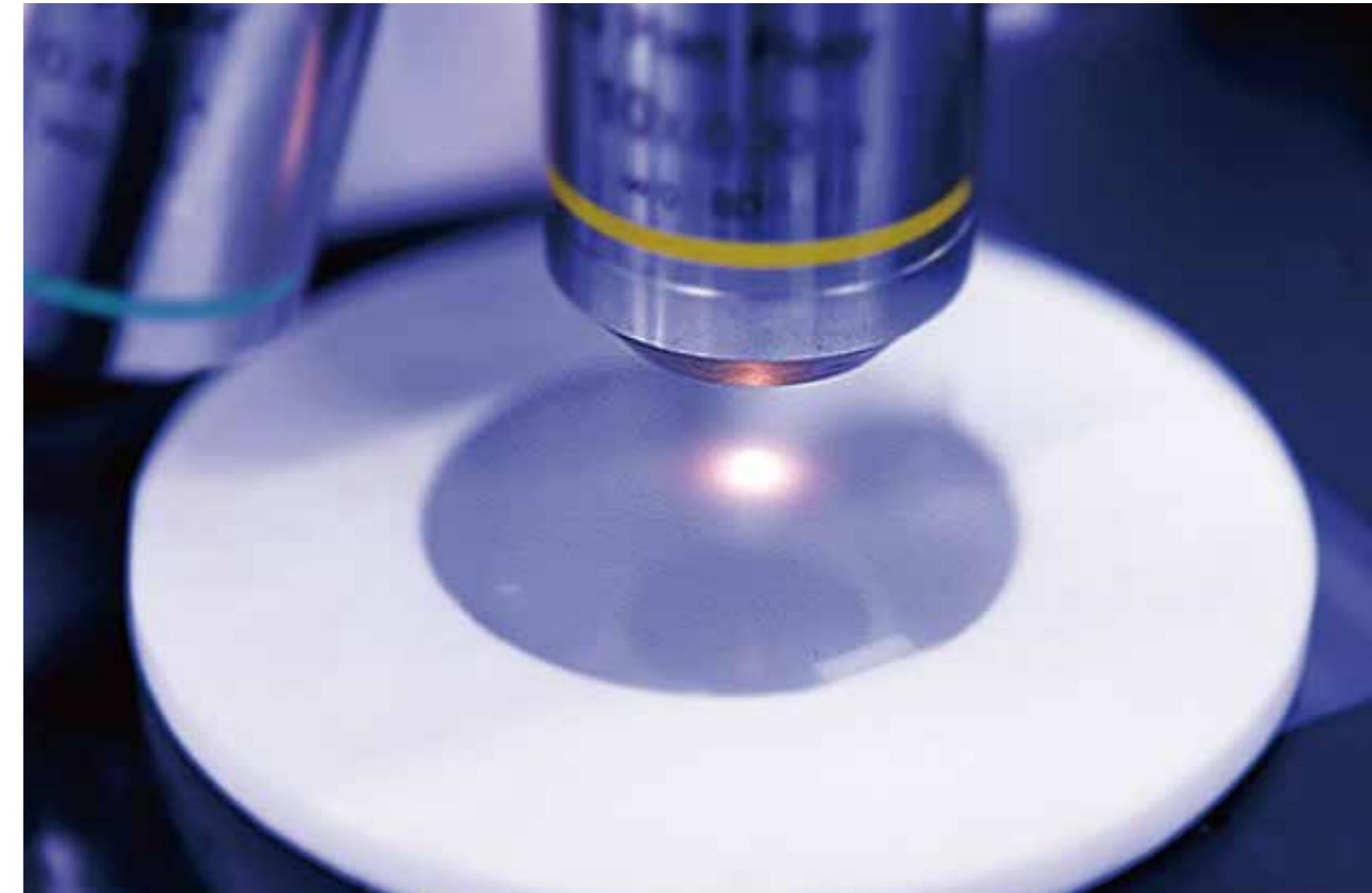
# MULINSEN MANUFACTURES THE FOLLOWING PRODUCTS IN THE FIELD OF LED DISPLAY SCREENS



## LED EPITAXIAL CHIP

Mulinsen joined hands with CEC and EPISTAR to form KAISTAR, which is committed to research and development and production of gallium nitride based LED chip which can be used for lighting, display and backlight, also known as LED light-emitting chip, which is the core component of LED devices. Its main function is to convert electrical energy into light energy.

The luminous principle of LED chip is: PN junction is used. Driven by external electric field, the electron in N-type semiconductor and the empty six in P-type semiconductor compound into photon ( $e-h+=hv$ ) at the junction interface, realizing the conversion of electric energy to light energy.

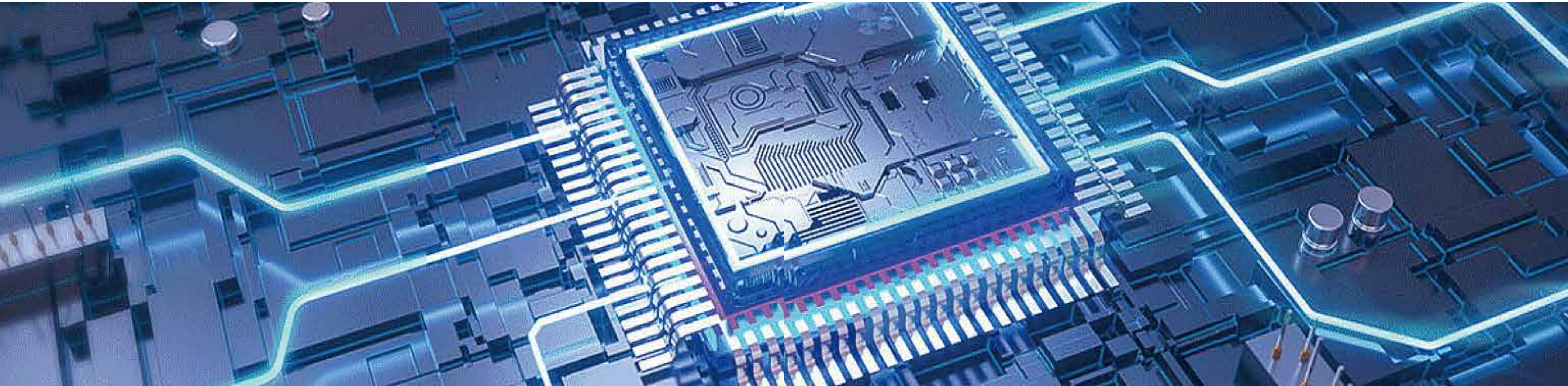




## LED LAMP BEAD

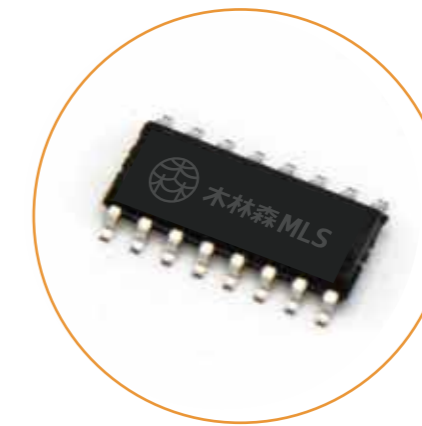
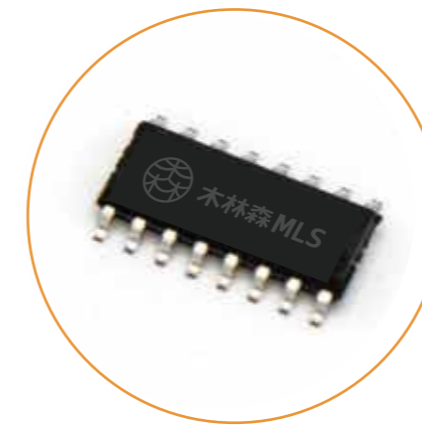
Ji 'an Mulinsen Display Device Co., Ltd. is a wholly-owned subsidiary of MULINSEN, committed to research, development and production of LED display lamp bead devices, equipped with the world's largest and advanced fully automated production equipment, the world's leading quality testing laboratory and reliability verification equipment, is the world's largest LED packaging lamp bead enterprise sales share.





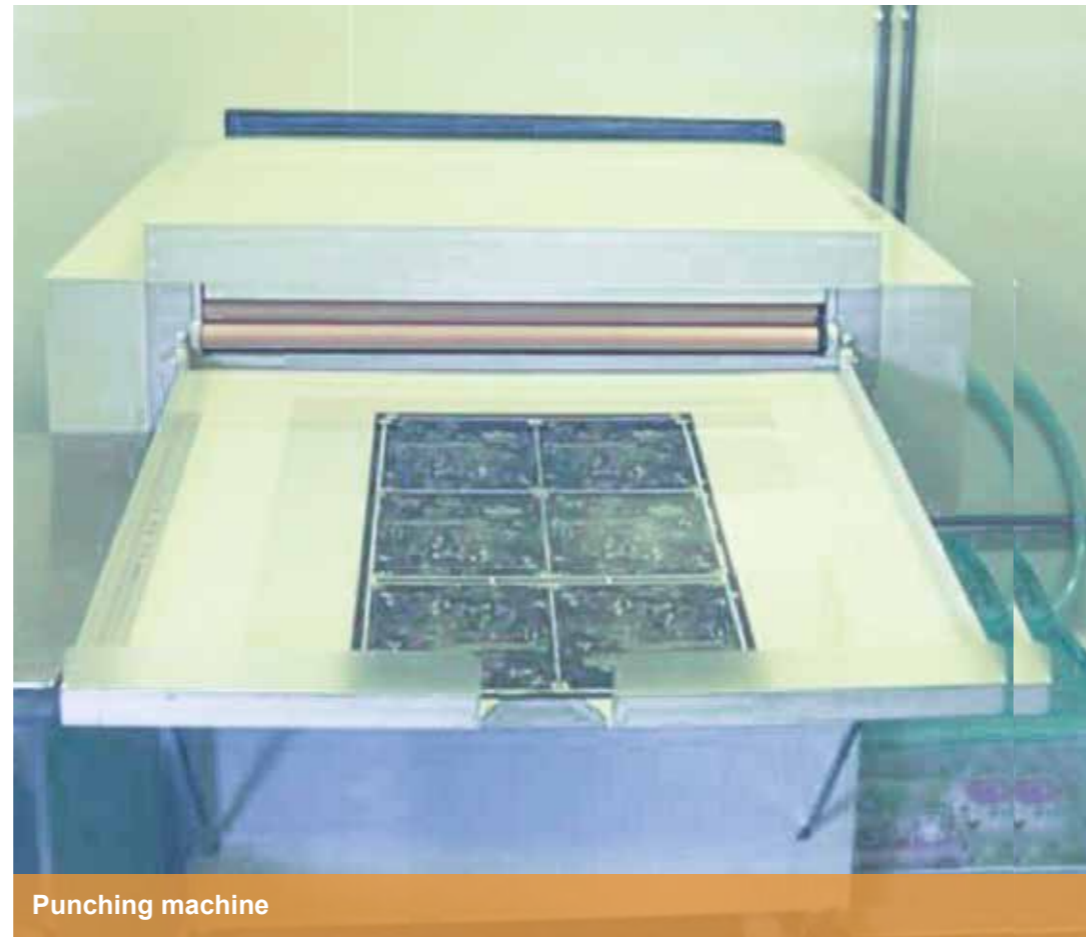
## LED DRIVER CHIP

Zhong Shan MuLinsen Microelectronics is a wholly-owned subsidiary of MULINSEN, is an integrated circuit chip solution provider. We provide constant current drive, row drive, logic control and other LED display solutions. The products have the characteristics of stable and reliable performance, high current accuracy, low power consumption, and can achieve high-quality display effect.





Film testing machine



Punching machine



Film laminator



Quadratic film measuring instrument



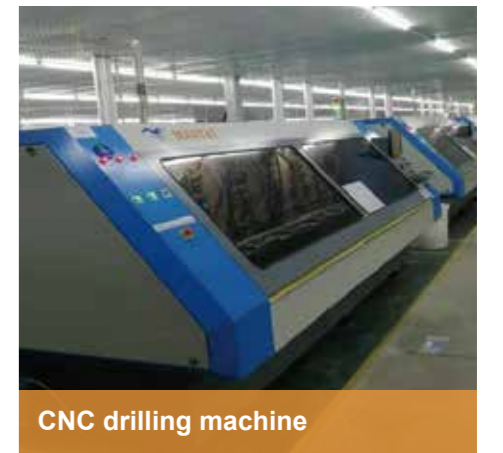
Round knife die cutting machine



LDI net drying machine



Optical drawing machine



CNC drilling machine

# LED CIRCUIT BOARD

Xinyu Linsen Circuit Board Co., Ltd. is a wholly-owned subsidiary of Mullinsen, with registered capital of 1.3 billion yuan. It is a core PCB supplier integrating research and development, production, sales and service. The company covers a total area of 290,000 square meters, plant construction area of 141,500 square meters. At present, the monthly comprehensive production capacity of PCB, FPC and MPCB has reached 1.5 million square meters, and it has grown into one of the influential comprehensive professional circuit board manufacturing bases in mainland China.



◀ Our products are mainly for the LED indoor and outdoor display industry. Our company has the advantages of the largest production capacity and the lowest production cost in the industry. At present, this type of product can meet the market demand of 200,000 square meters per month.



Flexible module graphene equipment



Plate electric production line



Development etching line



Quick press machine



Text screen printing machine



Electric measuring machine

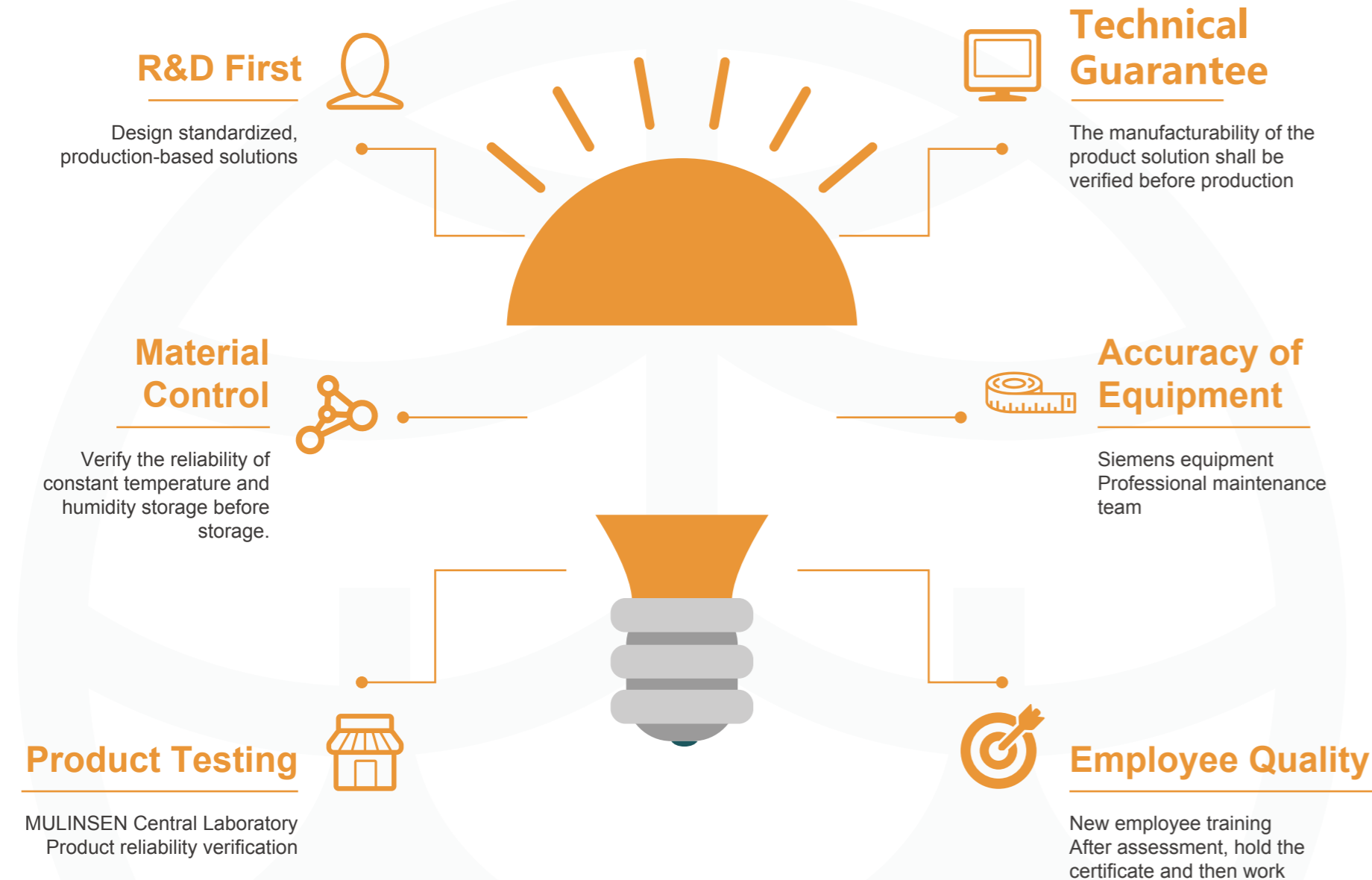


## LED DISPLAY PANEL

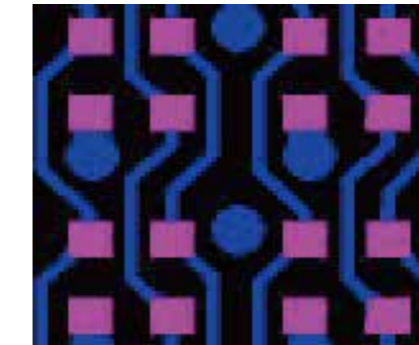
With a registered capital of 300 million RMB and a factory area of 100,000 SQM, Mulinsen Display is a subsidiary company of Mulinsen. It has 200 sets of advanced large-scale automated SMT line bodies from Germany Siemens and a monthly production capacity of 1 million LED display panels. Currently, it mainly adopts the OEM/ODM mode of the industry's leading brands, giving full play to the advantages of intelligent manufacturing.



# QUALITY ASSURANCE

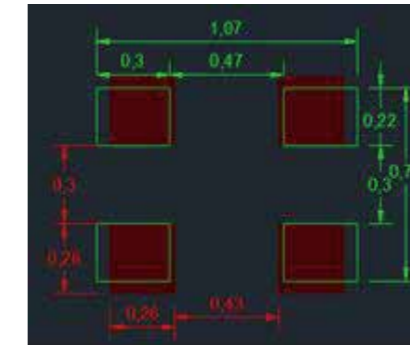


# R&D FIRST



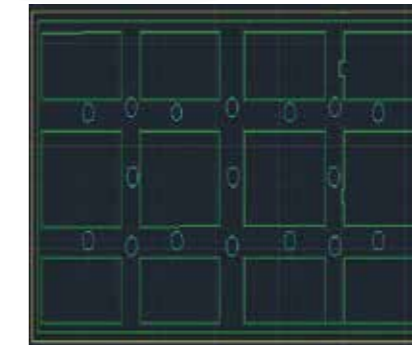
**PCB—Line Width and Line Distance**

1. P1.2 minimum line width :0.088mm
2. P1.2 Minimum line distance :0.099mm
3. IC is 1.8mm away from PCB side
4. PCB drilling control



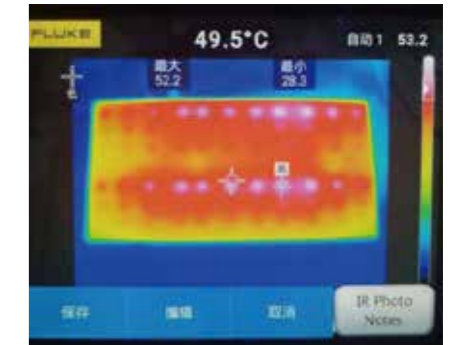
**Pad matching**

1. Before design, the lamp PAD needs to be compared with the standard gallery
2. Different lamp beads are designed differently to avoid the dark side



**Bottom Shell Matches PCB**

1. the front electrolysis, avoid socket interference, 24mm safe distance
2. the bottom shell appearance design is novel



**Surface Temperature**

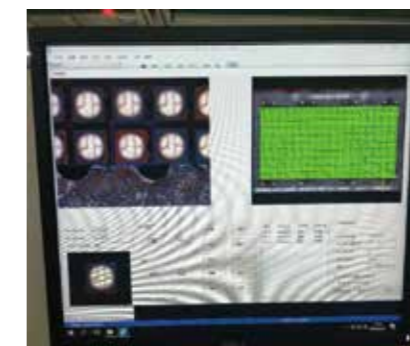
- 1.LED driver IC layout optimization law -> discrete arrangement
2. Avoid area color differences

# PRODUCT VERIFICATION



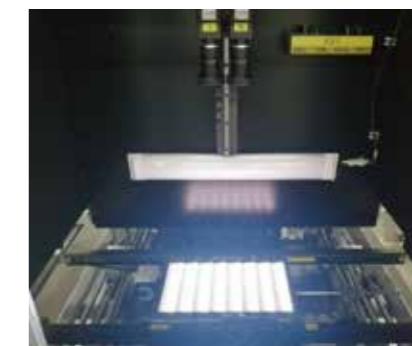
**SPI Check**

1. Equipment resolution, 15um
2. Check standard: CPK≥2
- 3.IPQC spot check once in 4H



**AOI Check**

1. Equipment resolution, 15um
2. Check standard: CPK≥23.IPQC spot check once in 4H



**Automatic lighting**

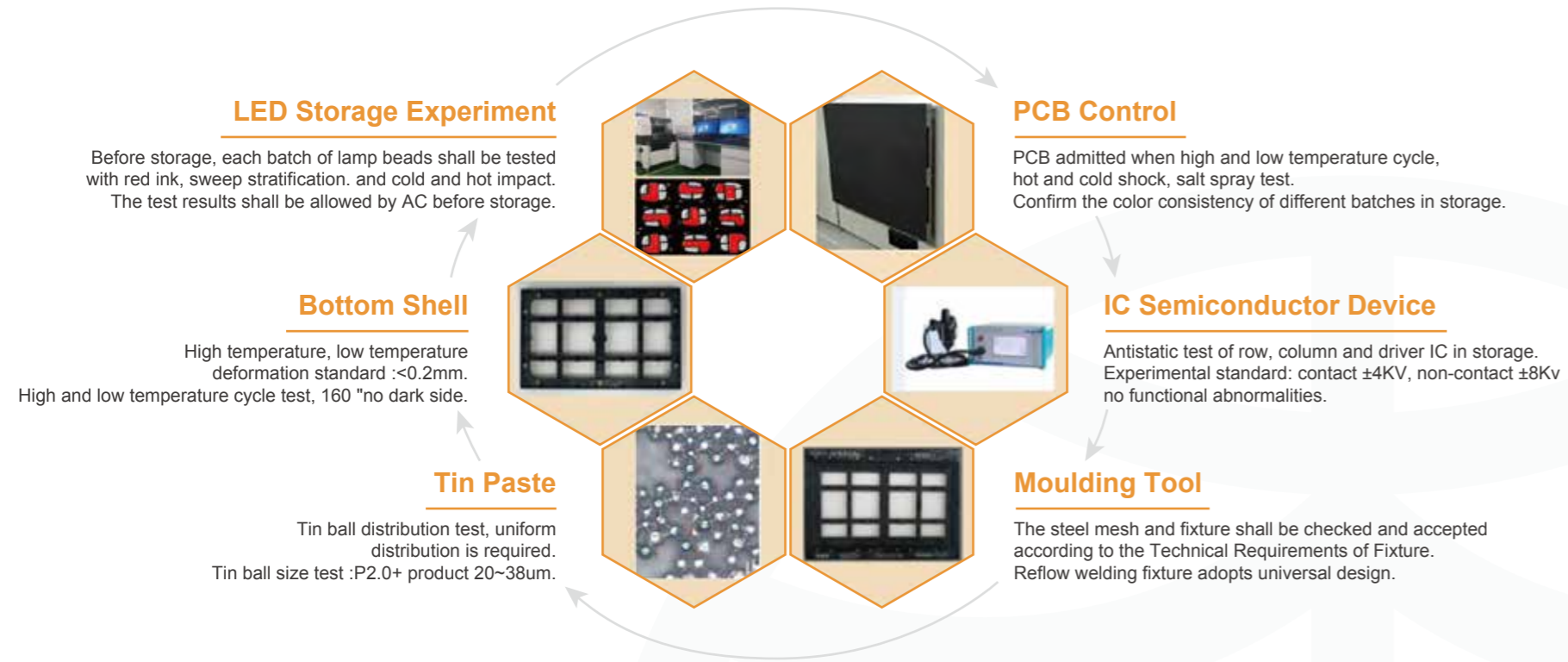
1. Fully automatic light visual judgment
2. Test screen W/R/G/B, oblique sweep, gray level, dead light, dark light



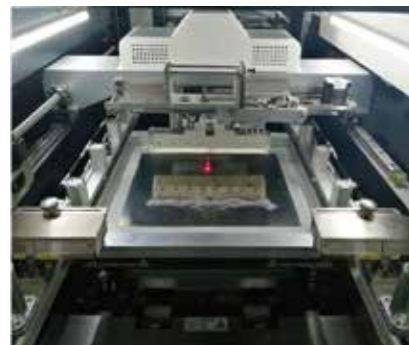
**Module aging**

1. The entire screen of the dedicated area is aging
2. Aging time: 12 hours +
3. White and black aging alternately, confirmed by specially-assigned person

# MATERIAL CONTROL



# ACCURACY OF EQUIPMENT



**Paste Printing Machine**

1. Equipment precision control :18um1.
2. Printing speed :50mm/s
3. Scraper pressure :4~9Kg



**Patch Machine**

1. Control accuracy of the placement machine +25um
2. PCB deformation mounting pressure automatic correction function



**Reflow Welding**

1. ERAS10 Thermal zone in Germany
2. Temperature control accuracy :+1°C
3. Daily temperature curve test



**Automatic Assembly**

1. Automatic bottom shell, PCB assembly
2. Automatic locking screw, torque 0.6kg
3. Reverse alarm of visual identification missing lock

# PRODUCT TESTING



**Cold and Heat Shock**

Conditions : -40 to 125°C, 30 minutes /C100C No dead indicator is abnormal. Testing in the research and development stage, sampling monitoring during normal mass production.



**On-off Cycle**

Conditions: Double 85 on 1H-> off 2H->-40C Light 1H7 days without dead lamp anomaly Research and development stage, normal mass production monitoring



**Drop Vibration**

Research and development stage, normal mass production monitoring. Judging criteria :LED module is not damaged, bottom shell is not falling off.



**High Temperature and Humidity**

Condition: Double 85 condition, 255 all white spot bright 72H without death, electrical poor Research and development stage, normal mass production monitoring



**Back Pressure Test**

R&d & normal mass production of each batch shall be carried out according to White Balance Debugging Report. Test standard :VR<1.8V, VGB<1.5V.



**LED Thrust**

R & D & mass production each batch according to the "Thrust Test Table" Thrust standard :1515>0.9kg, professional IMC analysis

# SERVICE SYSTEM

# COOPERATIVE PARTNER

## » Why Choose Us? «

<h3>Effective Cost</h3> <ul style="list-style-type: none"> <li>• Source manufacturers supply finished products, material cost saving 8%-15%.</li> </ul>	
<h3>Multiple Choices</h3> <ul style="list-style-type: none"> <li>• Product types, specifications, sizes and models are diverse.</li> </ul>	<h3>Famous Brand</h3> <ul style="list-style-type: none"> <li>• Listed company, industry famous brand, a large number of honors and qualifications, worthy of your trust.</li> </ul>
<h3>High Quality</h3> <ul style="list-style-type: none"> <li>• Standardized production, mature technology, professional testing, manufacturing quality products.</li> </ul>	<h3>Good Service</h3> <ul style="list-style-type: none"> <li>• Professional sales services, design services and installation guidance services.</li> </ul>




# PRODUCT CATALOG



STANDARD EDITION - (INDOOR)

01



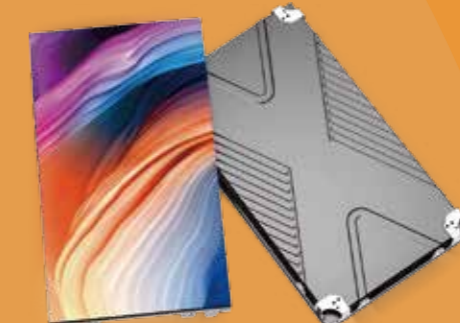
STANDARD EDITION - (OUTDOOR)

02



COB SERIES

03



16:9 INDOOR

04



FLEXIBLE SERIES

05

11



CUSTOMIZED

10



RENTAL SCREEN

09



PHOTOELECTRIC GLASS

08



FLOOR TILE SCREEN

07



LED FILM SCREEN

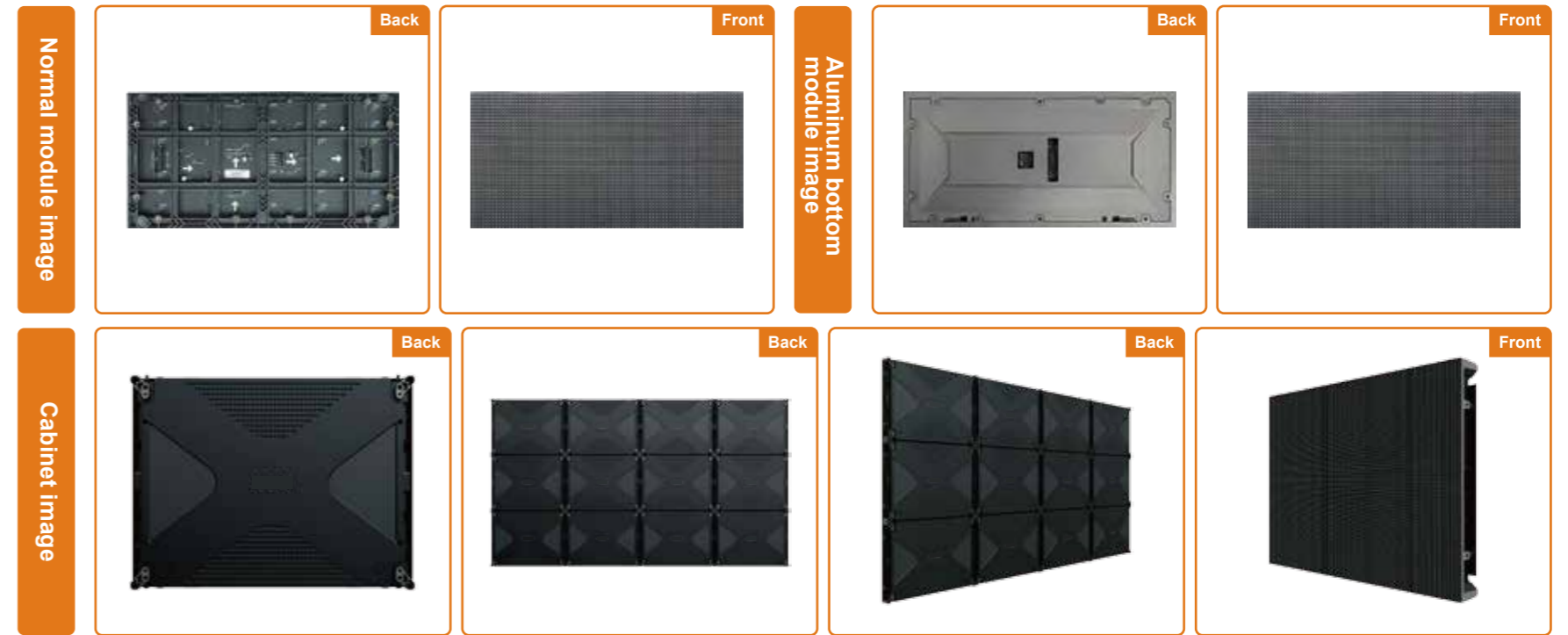
06



TRANSPARENT SCREEN

# STANDARD EDITION - (INDOOR)

Mainly used in meeting rooms, command or control rooms, studios, stores and so on



## Characteristic



RGB deep gray processing, with high contrast and gray level, high-definition and delicate picture, rich color, clear and natural picture;



According to the requirements of pixel spacing customized integrated molding box, light weight, tensile resistance, shock-proof, strong heat dissipation, long service life;



Seamless stitching, high flatness, better picture quality;



Support hoisting, fixed installation, landing installation and other installation methods;



A variety of splicing methods, plane, Angle, radian, etc.;



Support point by point correction function to ensure the consistency of color and brightness;



It covers all pixel spacing to meet the requirements of meeting rooms, studios and naked eye 3D display scenes;

## Superposition to super clear resolution

- A single LED module has a maximum resolution of 256×128
- Through modular splicing, the entire screen can be more than 4K or any resolution



## Low light and high gray details are clearer

- The brightness can be adjusted according to the environment: 0-1000nits
- Reduce the brightness without loss of picture quality



## 160° Super Wide Angle of View

- 160° super wide angle of view, visual distance of 2-30 meters
- Both sides and back of the audience's viewing needs to create a comfortable viewing experience



## Ensure product quality through rigorous testing

Strictly monitor each process, do a good job of quality control



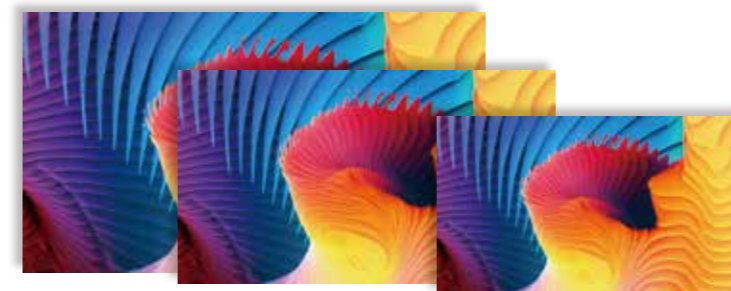
## A wider gamut makes the picture more realistic

- Compared with projection and LCD products, LED displays more accurate and stable colors



## A variety of models and sizes

- Pixel pitch: 0.9/1.2/1.5/1.6/1.8/2/2.5/3/4
- Module size: 320\*160/192\*192/256\*256/320\*180/150\*168.75



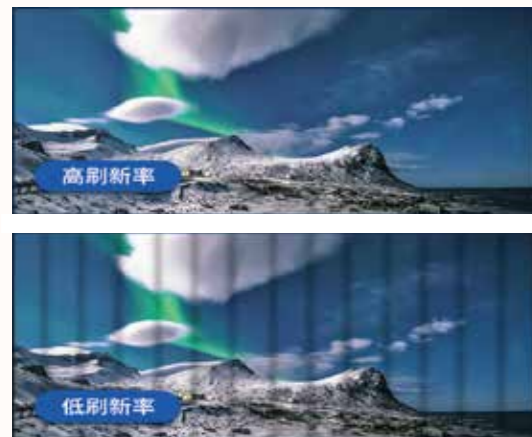
## Seamless splicing

- High precision unit module structure design, ensure the screen bead spacing height is consistent
- The picture is seamless, and the viewing effect is more shocking



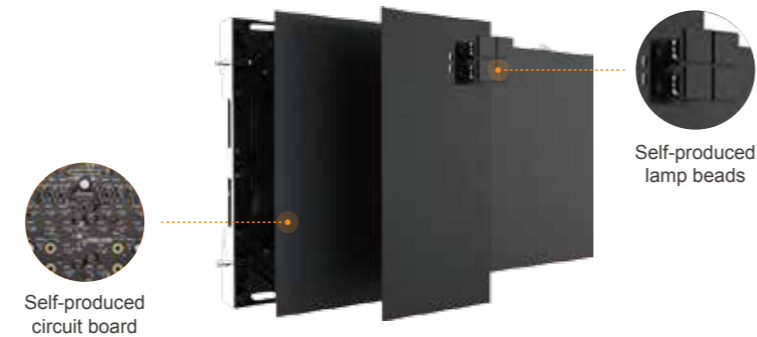
## Super high refresh rate

- The refresh rate is as high as 3840-7680Hz, much higher than the ordinary display
- The picture plays clearer and smoother



## Reliable performance

- Health and environmental protection, use peace of mind
- Focus on research, the process is mature



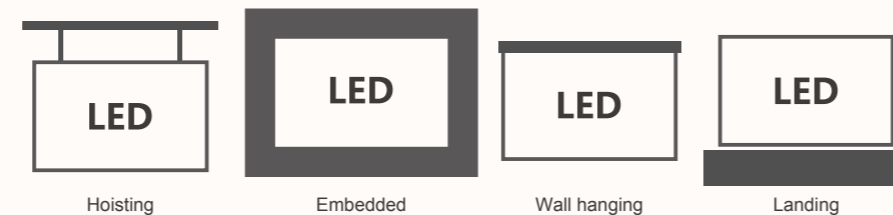
## Quick installation and maintenance

- Fast installation, 2 people 2 hours fast installation
- Fast maintenance, only 2 seconds to remove the module

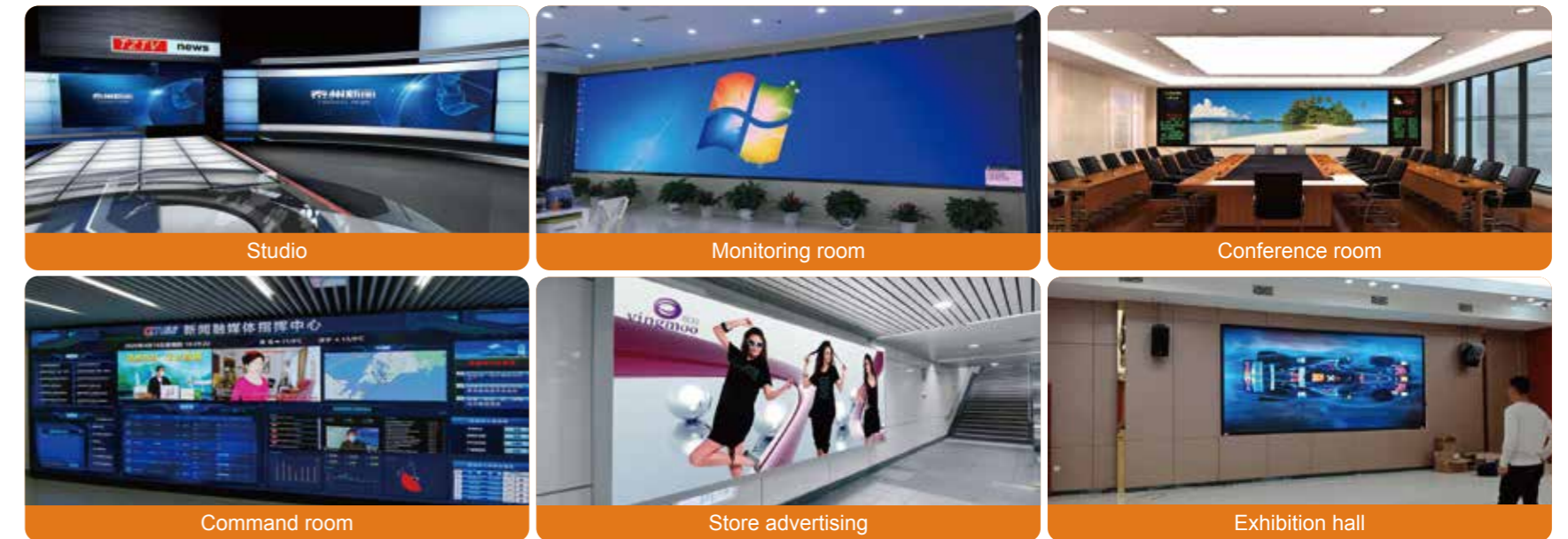


## Installation mode

- Magnetic suction installation, simple and fast
- Supports multiple installation methods



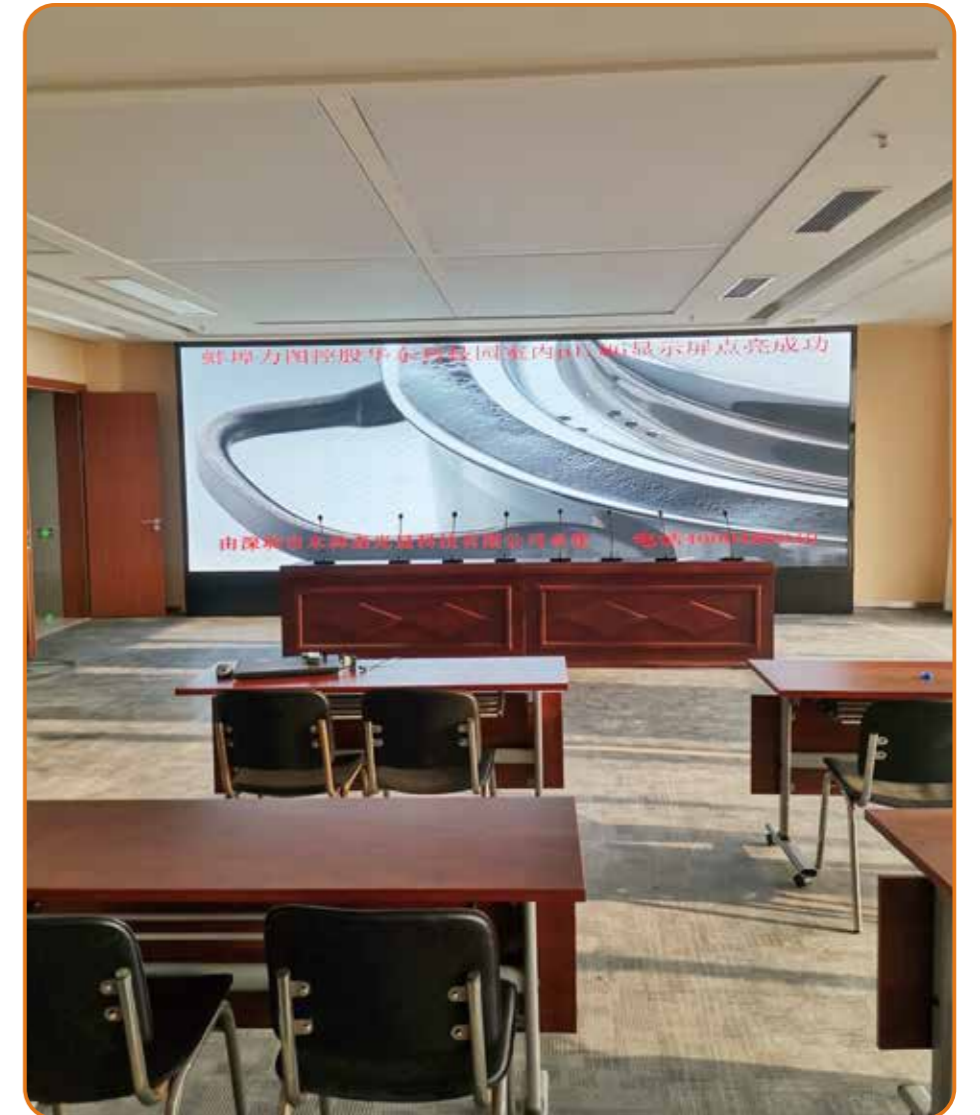
## Application



## Specification--Indoor

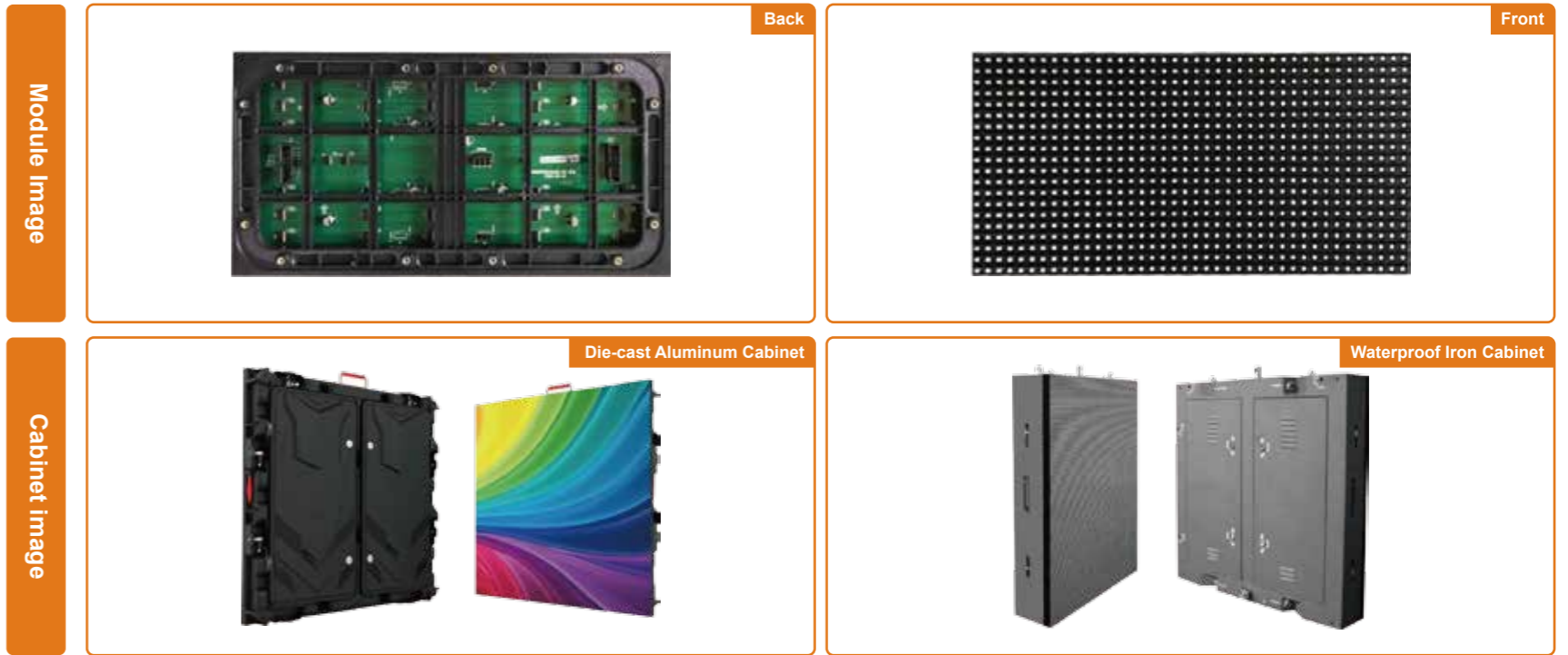
	Model	P1.2	P1.3	P1.5	P1.6	P1.8	P2	P2.5
Module specification	Pixel pitch(mm)	1.25	1.37	1.53	1.66	1.86	2	2.5
	Size(mm)	320×160	320×160	320×160	320×160	320×160	320×160	320×160
	Resolution(Pixel)	256×128	232×116	208×104	192×96	172×86	160×80	128×64
	Pixel Density ( dots/m <sup>2</sup> )	640000	525625	422500	360000	288900	250000	160000
	Lamp Type(SMD)	1010	1010	1212	1212	1515	1515	2121
	Weight ( Kg/Piece )	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Cabinet specification	Size(W*H)	640×480	640×480	640×480	640×480	640×480	640×480	640×480
	Resolution(Pixel)	512×376	464×348	416×312	384×288	344×258	320×240	256×192
	Weight ( Kg/m <sup>2</sup> )	7.5						
	Maintenance	Supports front and rear maintenance						
Photo-electric parameter	Waterproofing Class	IP50						
	Brightness(cd/m <sup>2</sup> )	0-800 Adjustable						
	Horizontal view Angle(°)	≥160						
	Vertical view Angle(°)	≥140						
	Color Temperature(K)	11000-14000						
Other parameters	Visible distance(m)	≥1.5	≥2.1	≥2.3	≥2.5	≥2.8	≥3	≥3.8
	Refresh Rate(Hz)	1920/3840/7680						
	Gray level(Bit)	12~14						
	Max Power(W/m <sup>2</sup> )	≤800	≤800	≤800	≤800	≤800	≤800	≤800
	Average Power(W/m <sup>2</sup> )	≤220	≤220	≤220	≤220	≤220	≤220	≤220
	Humidity	10~90%RH						
	Temperature	-20°C~+50°C						
	Life Span	100000h						





# STANDARD EDITION - (OUTDOOR)

Outdoor LED display is mainly used in commercial advertising, such as stores, station platforms, street lights, sports fields and so on



## Characteristic



High brightness, clear and stable display under bright light;



RGB deep gray processing, with high contrast and gray level, high-definition and delicate picture, rich color, clear and natural picture;



Full-size customized cabinet, internal fixed reinforcement plate, tensile shock resistance, strong heat dissipation, long service life;



Protection level IP65, not afraid of any bad weather;



Seamless stitching, high flatness, better picture quality;



Precise, fast, flexible positioning Cabinet installation, easy installation, scene is not limited;



Support point by point correction function to ensure the consistency of color and brightness;



It covers all pixel spacing to meet the requirements of ordinary advertising display, naked eye 3D, motion sensing interaction;

## Overwrites all display scenarios

- store
- Naked eye 3D
- stadium
- traffic
- park
- And so on



## Security guarantees remove worries

- The raw materials of well-known brands
- Standardized production process
- Quality control throughout the process
- Multiple authentication



## Outdoor screen features

- **Seamless splicing**  
Can adapt to building wall shape and size
- **High IP level**  
High protection level, can deal with all kinds of weather
- **Automatic regulation**  
The brightness can be adjusted automatically following the ambient light intensity
- **High brightness**  
You can see it in the sunlight
- **Environmental protection and energy saving**  
Environmental protection and energy saving, adapt to all-weather work
- **Broad perspective**  
Wide viewing Angle, wide color gamut, gorgeous colors

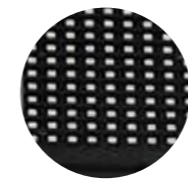
## Super waterproof and resistant to extreme weather

- anti-typhoon
- Storm resistance
- Low temperature resistance
- Low humidity resistance
- High temperature resistance
- Salt spray protection



## Professional manufacturing

Strict raw material inspection, standardized manufacturing process



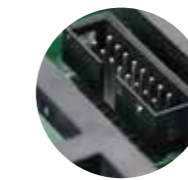
### Lamp bead

SMD 3-in-1 patch technology, using high quality raw materials processing.



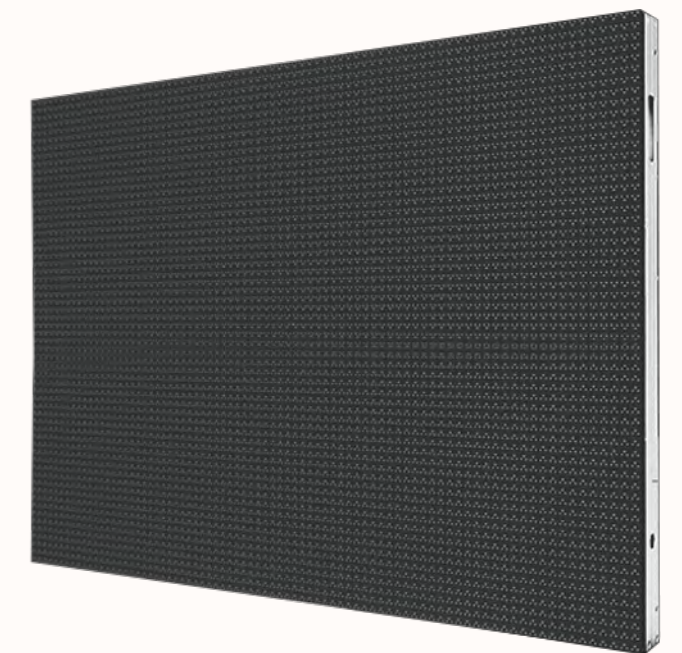
### Terminal post

Quick and reasonable design makes maintenance more convenient.



### Guard rail

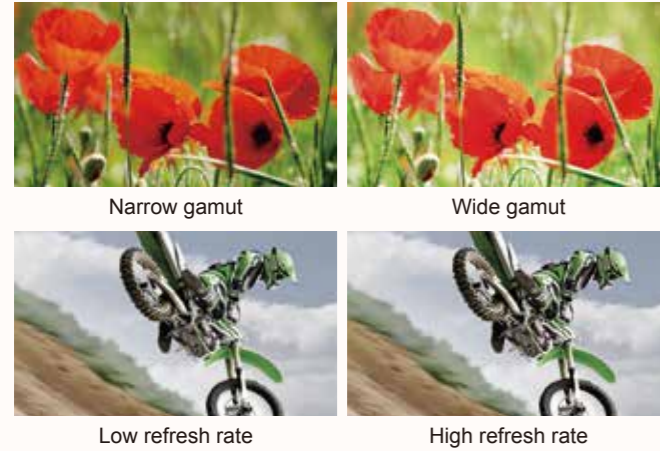
Easy to install, prevent in the process of transportation to the needle caused damage.



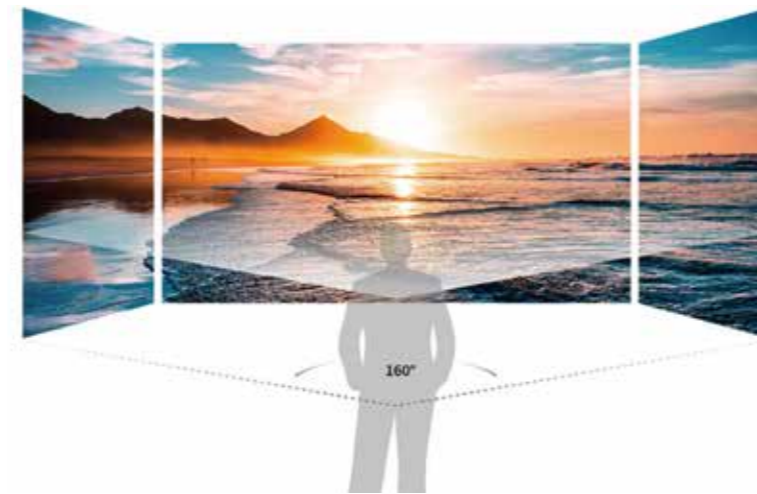


## Extreme display, restore the real world

- 3840Hz high refresh rate, fast response dynamic picture
- 14bit high grayscale, smoother color transition
- 110% wide color gamut, to truly show every color

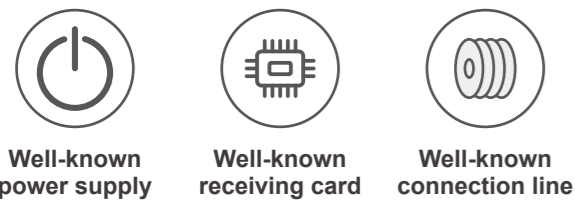


## Super wide viewing Angle to capture more line of sight



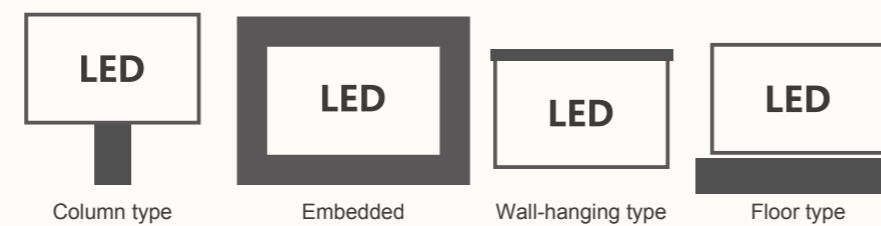
## Complete machine

Cabinet equipped with famous brand power supply, receiving card and other accessories, quality is guaranteed



## Installation mode

- Simple design, more convenient maintenance
- All-round waterproofing

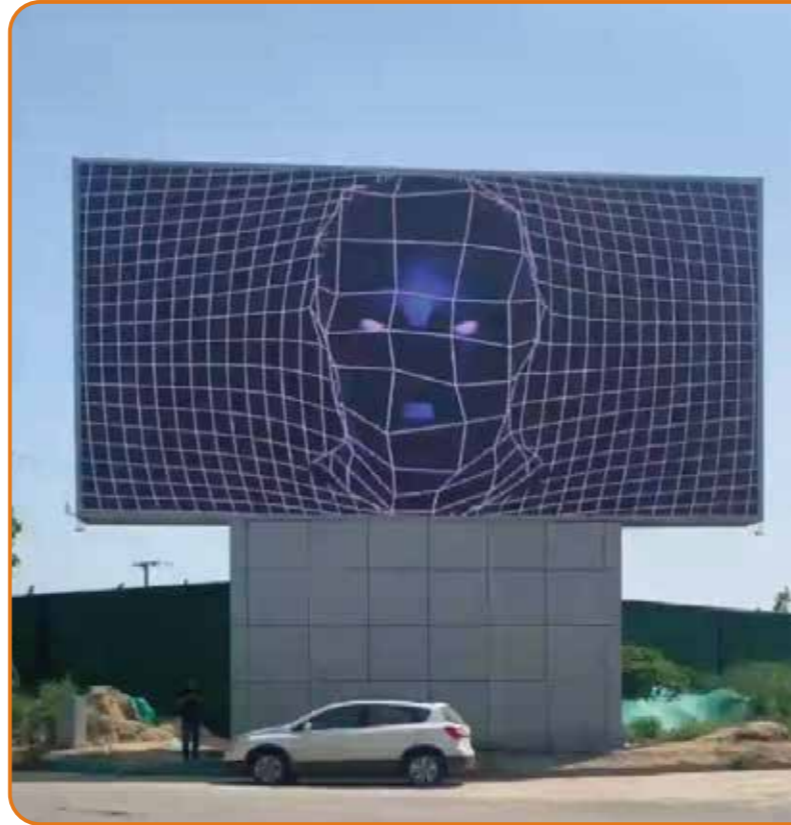


## Detail Image



## Specification--Outdoor

	Model	P2.5	P3.0	P4	P5	P6	P8	P10
Module specification	Pixel pitch(mm)	2.5	3.07	4	5	6.6	8	10
	Resolution(Pixel)	128×64	104×52	80×40	64×32	48×24	40×20	32×16
	Size(mm)	320*160						
	Lamp Type(SMD)	1515	1515	1921	1921	3535	3535	3535
	Weight ( Kg/Piece )	0.5	0.41	0.5	0.48	0.48	0.48	0.48
Cabinet specification	Size(L*W*H)	960*960*90mm						
	Resolution(Pixel)	384×384	312×312	240×240	192×192	144×144	120×120	96×96
	Weight ( Kg/Piece )	25						
	Maintenance	Rear maintenance						
Photo-electric parameter	Waterproofing Class	IP65						
	Brightness(cd/m <sup>2</sup> )	≥4000	≥4500	≥4500	≥5000	≥5000	≥5000	≥5000
	Horizontal view Angle(°)	≥140						
	Vertical view Angle(°)	≥100						
	Color Temperature(K)	11000-14000						
	Visible distance(m)	3.8	4.5	6	7.5	8.5	10	12
	Operating voltage	4.5V						
Other parameters	Interface	HUB75						
	Refresh Rate(Hz)	1920/3840/7680						
	Gray level(Bit)	12~14						
	Max Power(W/m <sup>2</sup> )	≤1000	≤1000	≤1000	≤1000	≤1000	≤1000	≤1000
	Average Power(W/m <sup>2</sup> )	≤300	≤300	≤300	≤300	≤300	≤300	≤300
	Humidity	10~90%RH						
	Temperature	-20°C~+50°C						
Life Span	100000h							





# COB SERIES

Mainly used in meeting room, monitoring room, command room, studio, exhibition hall, etc



Detail Image

## Characteristic



16:9 golden ratio, point-to-point display, perfect response to display needs;



High gray scale, high brush refresh rate, high contrast, high resolution, wide gamut;

**DIY**

Cabinet compatible with hard and soft connection, support DIY splicing, adjustable flatness, easy installation;



Intelligent module, with correction factor storage, support power signal dual backup;



The cabinet is jointed seamlessly, and the flatness is higher;



Support front and rear maintenance, modular design, fast and convenient maintenance, support for hot swap;

## Long depth of field

The use of unique pixel arrangement, so that the image display more three-dimensional sense, picture depth of field longer.



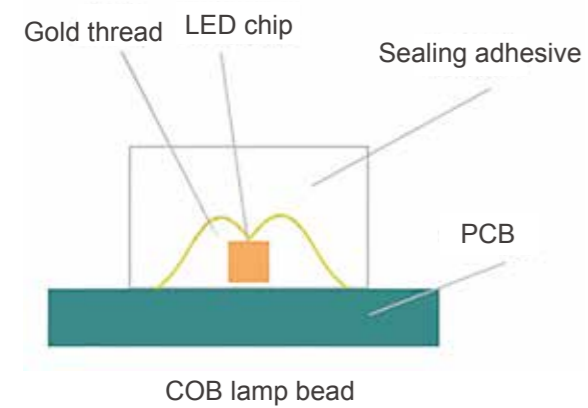
## High contrast

The ultra-high contrast ratio of the screen is 10,000:1, which can improve the perceptual resolution and further maintain the original effect of the image.



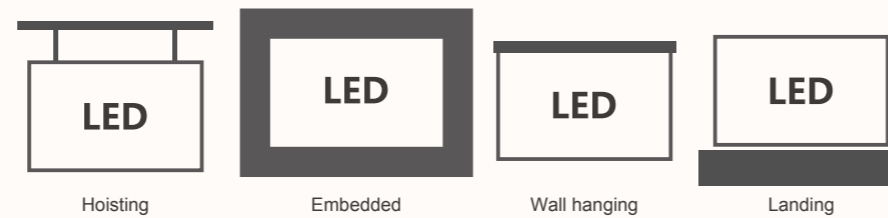
## Flip process

Compared with formal COB package, flip COB structure is simpler, LED heat dissipation is better, high stability.

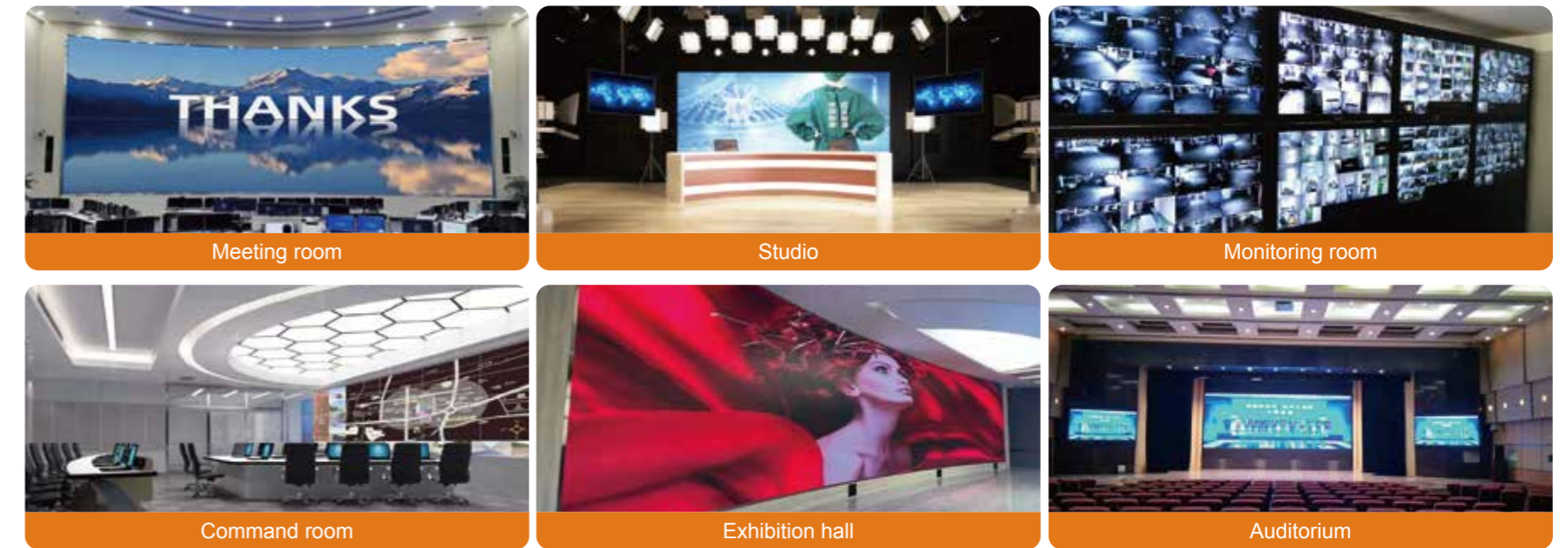


## Installation mode

- Direct magnetic suction, quick installation
- Pre-maintenance design, easier maintenance
- Prefabricated structure, more environmentally friendly



## Application



## Specification--Indoor COB

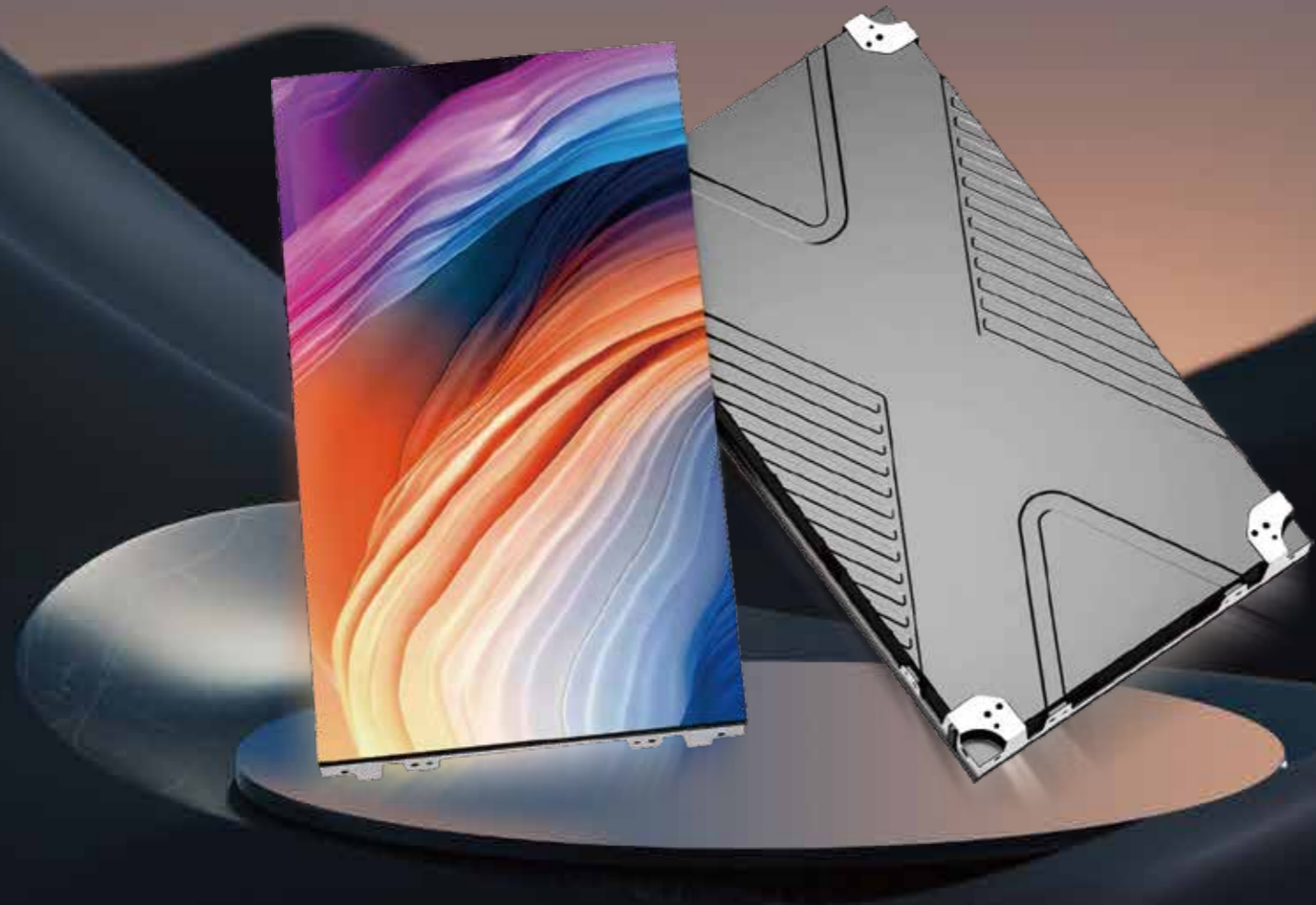
Model		COB-P0.7		COB-P0.9		COB-P1.2		COB-P1.5	
Product specification	Pixel pitch(mm)	0.78		0.93		1.25		1.56	
	Technology	RGB Flip Chip		RGB Flip Chip		RGB Flip Chip		RGB Flip Chip	
	Module size(mm)	150×112.5	150×168.75	150×112.5	150×168.75	150×112.5	150×168.75	150×112.5	150×168.75
	Module resolution(Pixel)	192×144	192×216	160×120	160×180	120×90	120×135	96×72	96×108
	Pixel Density ( dots/m <sup>2</sup> )	1643524		1151000		640000		422500	
	Cabinet Size(L*W*H)	600*337.5		600*337.5		600*337.5		600*337.5	
	Cabinet Resolution(Pixel)	768×432		640×360		480×270		384×216	
	Cabinet Weight(Kg/Piece)	6.4		6.5		6.5		6.5	
Photo-electric parameter	Maintenance	Front maintenance		Front maintenance		Front maintenance		Front maintenance	
	Brightness(cd/m <sup>2</sup> )	0-800 Adjustable							
	Horizontal view Angle(°)	≥160							
	Vertical view Angle(°)	≥140							
	Color Temperature(K)	11000-14000							
Other parameters	Visible distance(m)	≥1M	≥1M	≥1.5M	≥1.5M	≥2M	≥2M	≥2M	≥2M
	Operating voltage	AC100/240 50/60HZ							
Other parameters	Refresh Rate(Hz)	≥3840							
	Gray level(Bit)	12~14							
	Max Power(W/m <sup>2</sup> )	≤530	≤530	≤530	≤530	≤530	≤530	≤530	≤530
	Average Power(W/m <sup>2</sup> )	≤150	≤150	≤150	≤150	≤150	≤150	≤150	≤150
	Humidity	10~90%RH							
	Temperature	-20°C~+50°C							
Life Span	100000h								





# 16:9 INDOOR

Mainly used in meeting room, monitoring room, command room, studio, exhibition hall, etc.



## Characteristic



16:9 golden ratio, point-to-point display, perfect response to display needs.



High gray scale, high brush refresh rate, high contrast, high resolution, wide gamut.

DIY

Cabinet compatible with hard and soft connection, support DIY splicing, adjustable flatness, easy installation



Intelligent module, with correction factor storage, support power signal dual backup.



The cabinet is jointed seamlessly, and the flatness is higher.



Support front and rear maintenance, modular design, fast and convenient maintenance, support for hot swap.



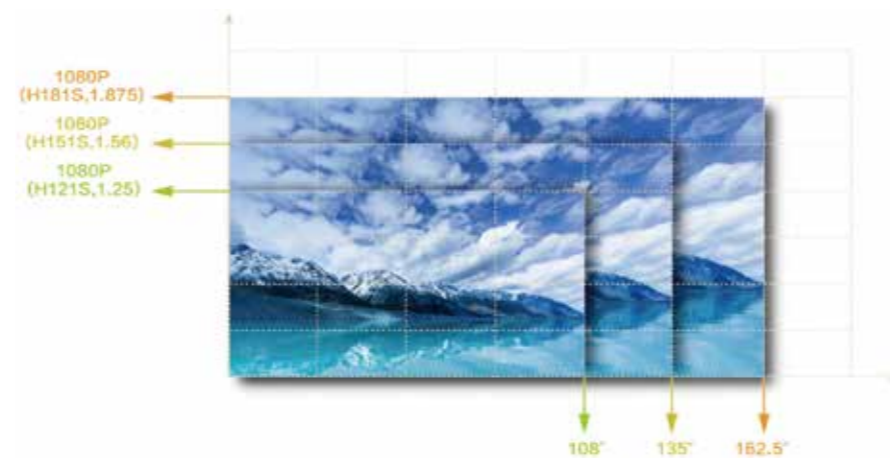
## High Refresh Rate

The highest refresh rate can reach 7680Hz, as shown in the picture on the right, the display effect is better.



## Splicing Without Deformation

Because the box is 16:9 ratio, so as long as the stitching of equal proportion of the number of stitching, the whole LED display will not be deformed, so as to ensure the perfect display effect.



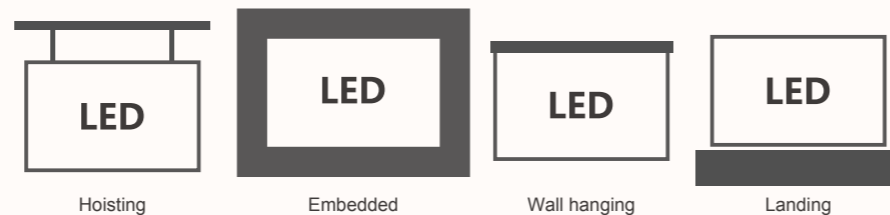
## Clear and delicate visual effects

LED HDR presents realistic images using optimization technology. Dynamic peaking and reverse tone mapping increase content display to peak brightness by improving contrast and reducing glare, while deep color mapping ensures full color expression.

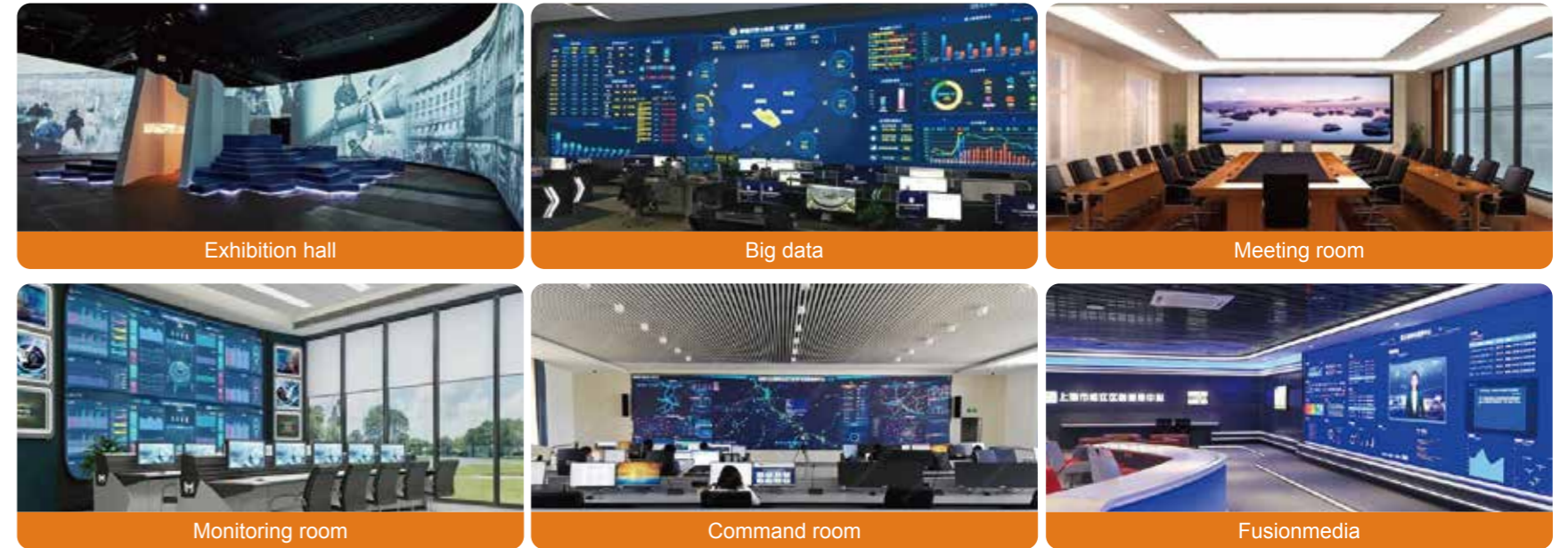


## Installation mode

- Direct magnetic suction, quick installation
- Pre-maintenance design, easier maintenance
- Prefabricated structure, more environmentally friendly



## Application



## Specification--Indoor 16:9

Model		P0.9	P1.2		P1.5		P1.8		P2	
Product specification	Pixel pitch(mm)	0.93	1.25	1.25	1.55	1.56	1.875	1.88	2	
	Size(mm)	300×168.75	320×180	300×168.75	320×180	300×168.75	300×168.75	320×180	320×180	
	Resolution(Pixel)	320×180	256×144	240×135	206×116	192×108	160×90	170×96	160×90	
	Pixel Density ( dots/m <sup>2</sup> )	1137777	640000	640000	416025	409600	284444	283024	250000	
	Lamp Type(SMD)	0808	1010	1010	1212	1212	1515	1515	1515	
	Cabinet Size(L*W*H)	600×337.5	640×360	600×337.5	640×360	600×337.5	600×337.5	640×360	640×360	
	Cabinet Resolution(Pixel)	640×360	512×288	480×270	412×232	384×216	320×180	340×192	320×180	
	Cabinet Weight(Kg/Piece)	6.5	6	6.5	6	6.5	6.5	6	6	
	Maintenance	Front maintenance								
	Brightness(cd/m <sup>2</sup> )	0-800 Adjustable								
Photo-electric parameter	Horizontal view Angle(°)	≥160								
	Vertical view Angle(°)	≥140								
	Color Temperature(K)	11000-14000								
	Visible distance(m)	≥1	≥15	≥15	≥2	≥2	≥2.5	≥2.5	≥3	
	Operating voltage	AC100/240 50/60HZ								
Other parameters	Refresh Rate(Hz)	≥3840								
	Gray level(Bit)	12~14								
	Max Power(W/m <sup>2</sup> )	≤530	≤600	≤600	≤600	≤600	≤600	≤600	≤600	
	Average Power(W/m <sup>2</sup> )	≤150	≤200	≤200	≤200	≤200	≤200	≤200	≤200	
	Humidity	10~90%RH								
	Temperature	-20°C~+50°C								
	Life Span	100000h								



# FLEXIBLE SERIES

Mainly used in exhibition halls, shopping malls, stores, stations, hotels, airports and so on



## Characteristic



The PCB uses a silicone base and mask to achieve radian distortion.



It is flexible, lightweight and easy to install, and supports pre/post maintenance.



It can be bent, wound, combined and spliced with artistic shape.



Soft, thin and light, applicable to various scenarios.



Diversified product specifications to meet the needs of different size area.



Support point by point correction function, ensure color and brightness consistency.



360° viewing Angle, all-round display.



With high contrast and gray level, high-definition and delicate picture, rich color, clear and natural picture.

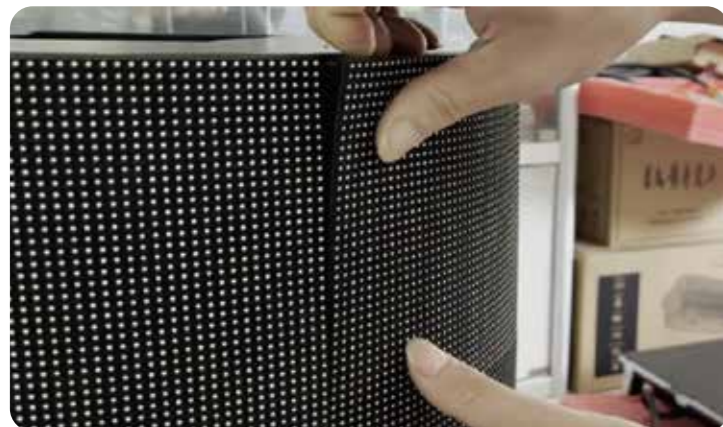
## Silicone bottom shell

- Splicing different shapes, such as indoor columns, rings



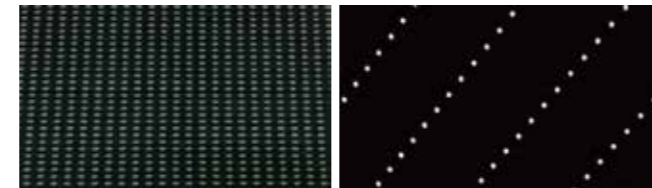
## Front maintenance simple design

The module adopts the pre-magnetic maintenance design. Can be combined with special pre maintenance tool easy maintenance.

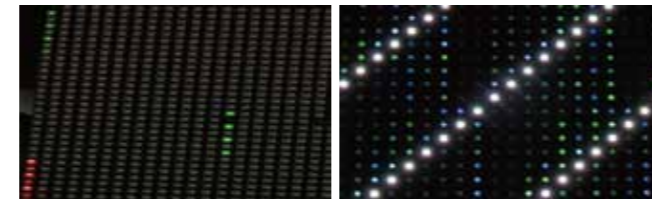


## Clean image, no trailing

Shadow elimination design: the corresponding blanking circuit is added (to eliminate the phenomenon of hidden and bright), and the picture is clear when playing the video, without trailing.



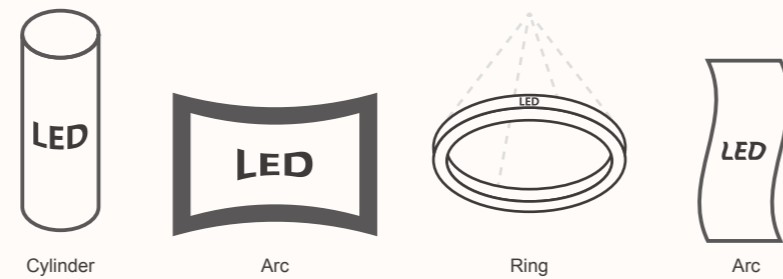
Mulinsen Display: Clean and clear, no trailing



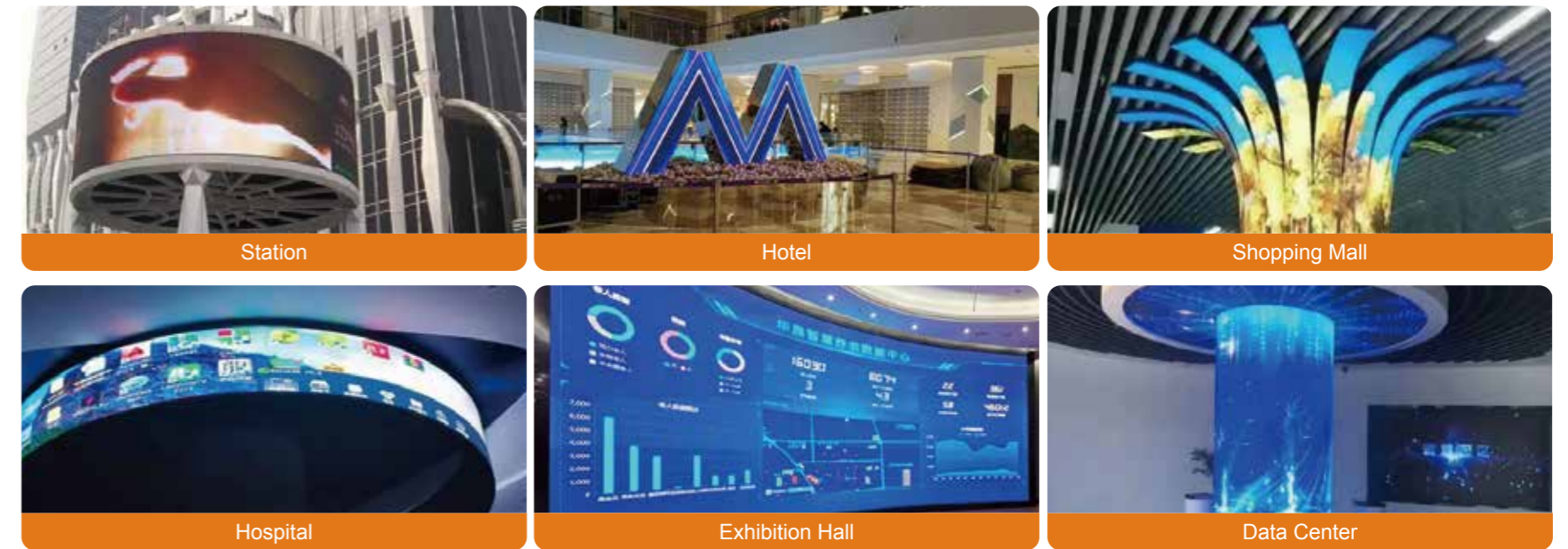
Some display :LED lamp bead leakage, dead lamp

## Installation mode

- Modular mounting, quick installation.
- Pre maintenance design, more convenient after sale. Combined with the curved cabinet, improve the flatness.



## Application



## Specification--Flexible module

	Model	P1.2	P1.5	P1.8	P2	P2.5	P3
Module specification	Pixel pitch(mm)	1.2	1.5	1.8	2	2.5	3.07
	Size(mm)	320x160					
	Resolution(Pixel)	256x128	208x104	172x86	160x80	128x64	104x52
	Size(mm)	240x120					
	Resolution(Pixel)	192x96	152x76	128x64	120x60	96x48	80x40
	Lamp Type	SMD1010	SMD1212	SMD1515	SMD1515	SMD1515/SMD2121	SMD2121
	Bottom shell material	Silica Gel					
Photo-electric parameter	Maximum bending radians	150°~180°					
	Brightness(cd/m <sup>2</sup> )	0-800 Adjustable					
	Horizontal view Angle(°)	≥160					
	Vertical view Angle(°)	≥140					
	Color Temperature(K)	11000-15000					
	Visible distance(m)	≥1.9	≥2.3	≥2.8	≥3	≥3.8	≥4.5
	Operating voltage	AC100/240 50/60HZ					
Other parameters	Refresh Rate(Hz)	1920/3840/7680					
	Gray level(Bit)	12~14					
	Max Power(W/m <sup>2</sup> )	≤800	≤800	≤800	≤800	≤800	≤800
	Average Power(W/m <sup>2</sup> )	≤220	≤220	≤220	≤220	≤220	≤220
	Humidity	10~90%RH					
	Temperature	-20°C~+50°C					
	Life Span	100000h					

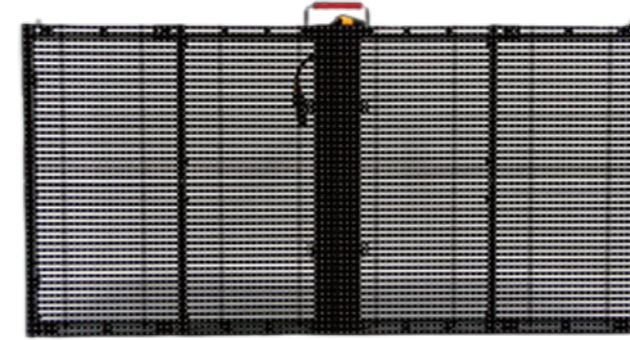


# TRANSPARENT SCREEN

Mainly used in glass curtain wall, building top, sightseeing elevator, street view advertising, sports venues, bars and so on



Product Image



## Characteristic



Ultra-light ultra-thin, optional frame design, 90% ultra-high permeability.



Modular design for easy assembly and maintenance.



New circuit design, natural heat dissipation, effectively avoid overheating.



Modular design for easy assembly and maintenance.



It can be selected by asynchronous control and cluster control.



It can be customized according to the usage scenario and size, and supports plane and arc customization.

## High permeability

Hollow out light strip structure design, reduce the parts to block the line of sight. When the picture is played, the stereo sense and visual depth are strong.



## Aluminum profile structure

Aluminum profile structure is durable, firm and light, fast heat dissipation



## Easy to install and maintain

The whole screen loading and unloading by quick bolt fixed connection, can be installed quickly, maintenance is more convenient.



## Easy and quick installation

Full environment application scenario, do not worry about installation problems



## Application



Shop window



Curtain wall



Glass door



Curtain wall



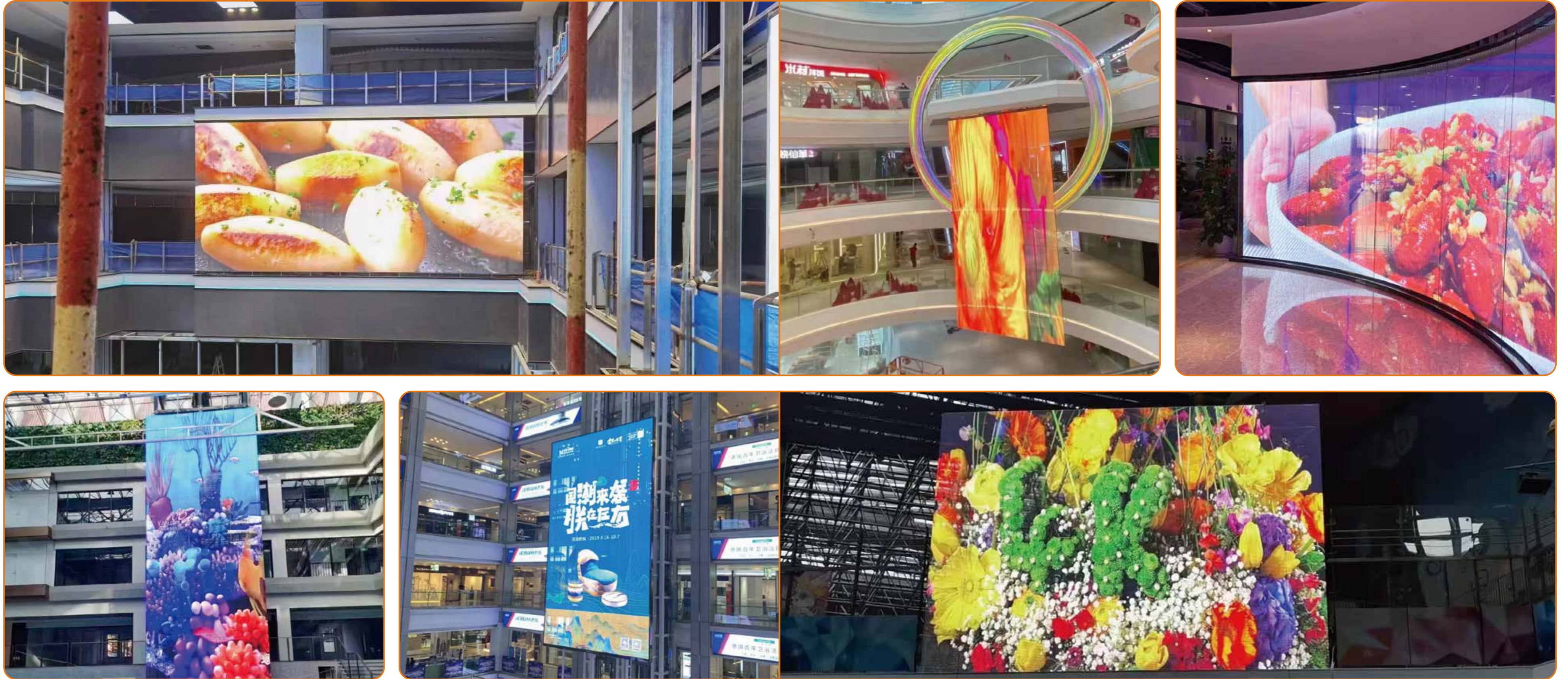
Sightseeing elevator



Hall

## Specification--Transparent screen

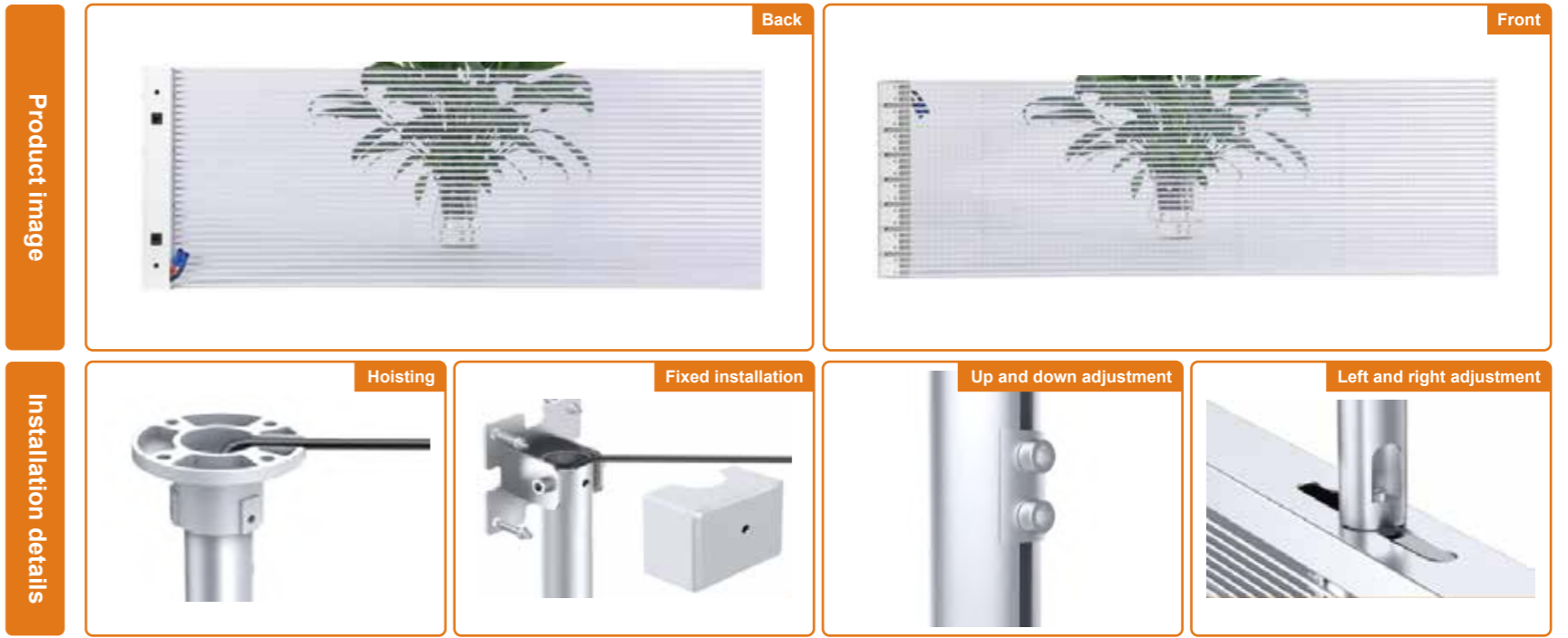
	Model	P2.6	P2.97	P3.91			P7.81	P10.42		
Product specification	Pixel pitch(mm)	2.6-5.2	2.97-6.25	3.91-7.82			7.81-7.81	10.42-10.42		
	Resolution(Pixel)	73728	53760	32768			16384	9216		
	Module size ( mm)	500*125mm	500*125mm	500*125mm			500*125mm	500*125mm		
	Lamp Type	SMD1515	SMD2020	SMD1921	SMD1921	SMD1921	SMD1921	SMD2727	SDM3535	
	Cabinet Size(L*W*H)	500*500mm/1000*500mm/1000*1000mm								
	Cabinet Weight	≤8kg/m <sup>2</sup>	≤8kg/m <sup>2</sup>	≤8kg/m <sup>2</sup>	≤8kg/m <sup>2</sup>	≤6kg/m <sup>2</sup>	≤7kg/m <sup>2</sup>	≤6kg/m <sup>2</sup>	≤6kg/m <sup>2</sup>	
Photo-electric parameter	Transparency	55%		65%	68%	68%	70%	87%		
	Waterproofing Class	IP22		IP45	IP45	IP22	IP42	IP42		
	Brightness(cd/m <sup>2</sup> )	1000	1000	3000	5000	2500	1000	5000	2000	5000
	Horizontal view Angle(°)	≥160		≥140			≥120		≥160	
	Vertical view Angle(°)	≥140								
	Color Temperature(K)	5500-9300								
Other parameters	Visible distance(m)	≥4								
	Operating voltage	4.5V								
	Refresh Rate(Hz)	1920/3840								
	Gray level(Bit)	12~14								
	Max Power(W/m <sup>2</sup> )	≤800	≤800	≤800	≤800	≤800	≤800	≤800	≤800	≤800
	Average Power(W/m <sup>2</sup> )	≤220	≤220	≤220	≤220	≤220	≤220	≤220	≤220	≤220
Humidity	10~90%RH									
Temperature	-20°C~+50°C									
Life Span	100000h									





# LED FILM SCREEN

Mainly used in glass curtain wall, sightseeing elevator, shopping mall guardrail, retail window, etc



## Characteristic



Lightweight design, thickness within 3mm, square weight 6KG/square.



PET film high permeability, does not affect the lighting and viewing effect, permeability of more than 85%.



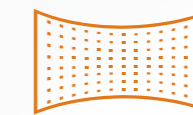
Flexible and arbitrary cutting is not subject to site installation size restrictions, flexible customization requirements.



Close to the glass installation, no need to change the building structure, also can be fixed, easy to install.



No fan, air conditioning auxiliary heat dissipation, low temperature, energy saving and environmental protection.



Strong weather resistance, not easy to deformation, stable and durable, lamp life more than 100,000 hours.



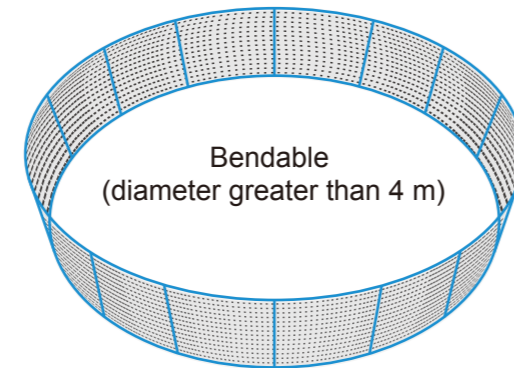
Anti-fall and anti-collision, each square can withstand external impact pressure 2KG.

## Drive-IN LED bead technology

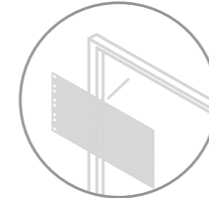
- The lamp bead and the drive are integrated into one
- Fine structure
- True 16Bit gray scale
- More precise control
- The display effect is more stable
- The color is delicate and realistic



## Paste installation, Anomalous shape



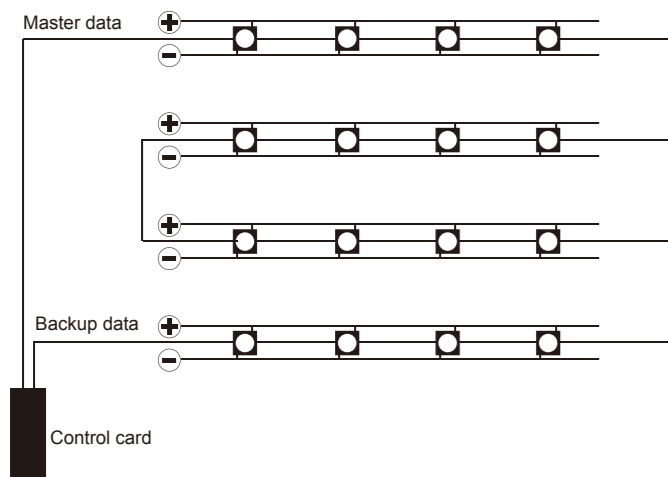
Can be cut to any shape



Install against glass

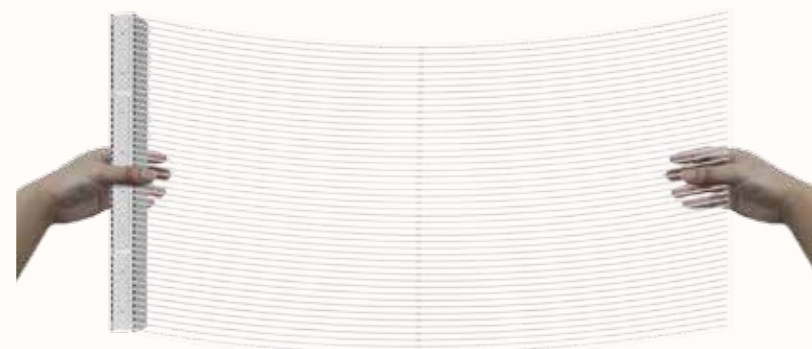
## Bidirectional drive with multiple guarantees

Support two-way Drive LED, single point failure backup data signal automatically start, seamless switching, does not affect the display effect.



## Clear, thin and transparent

<b>6</b> KG/m <sup>2</sup>	<b>3</b> mm	<b>85%</b>	<b>5000</b> nits
Weight	Thickness	Transparency	Brightness



## | Application



Curtain wall



Sightseeing elevator



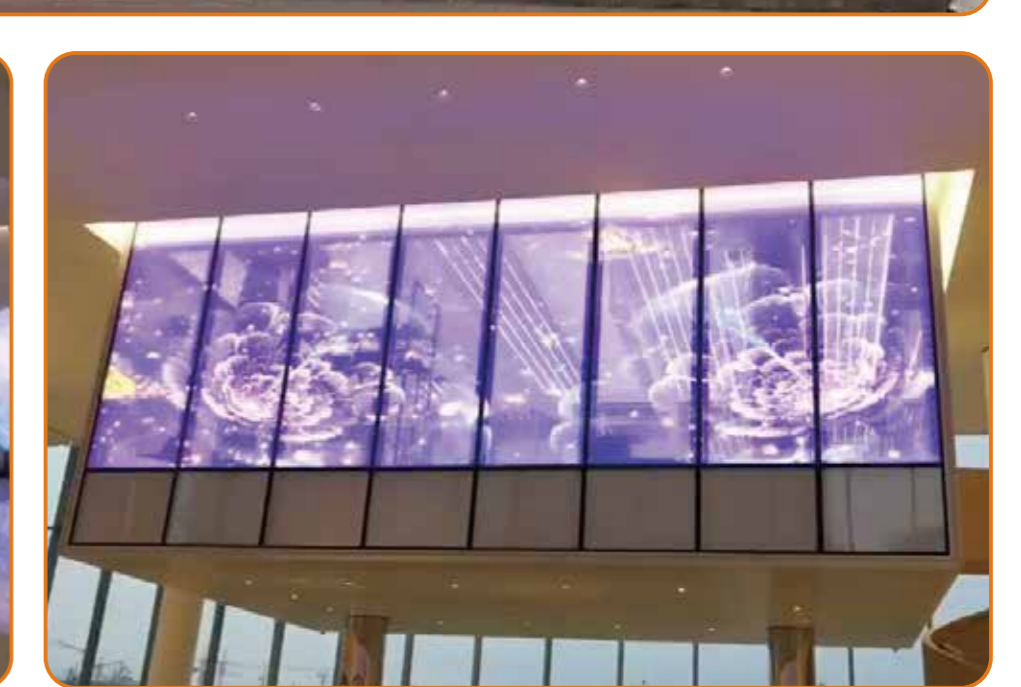
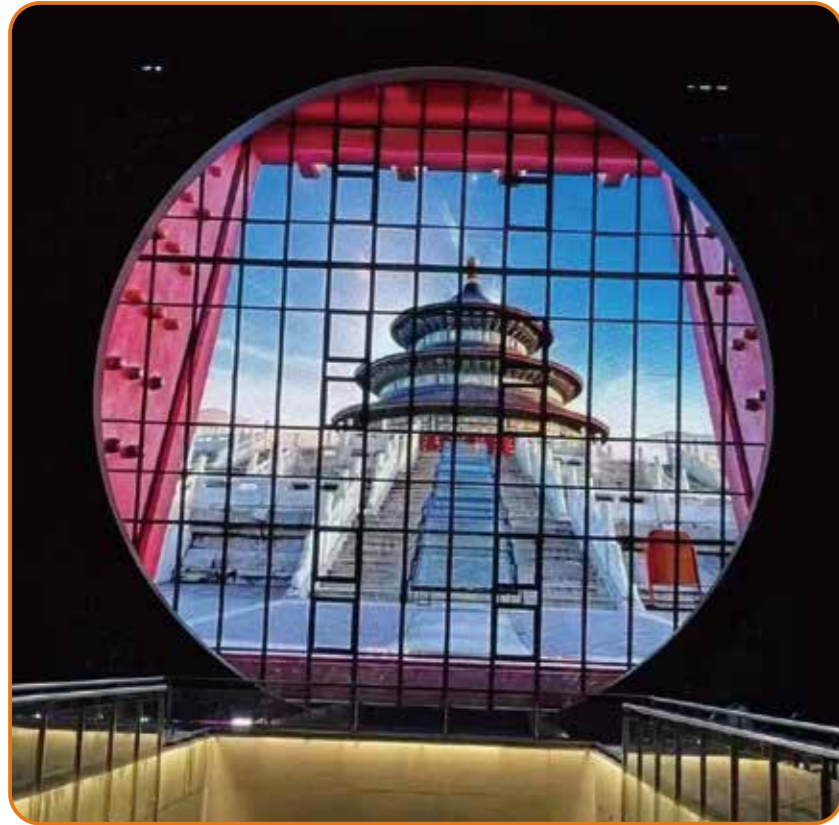
Mall fence



Retail window

## | Specification--Film screen

Model	P2.5	P4-8	P5-10	P6	P10	P12	P16	P20
Pixel pitch(mm)	2.5-5	4-8	5-10	6.5	10	12	16	20
Transparency	≥55%	≥55%	≥68%	≥60%	≥85%	≥85%	≥85%	≥90%
Pixel Density ( dots/m <sup>2</sup> )	80000	31250	20000	23716	10000	6944	3906	2500
Lamp Type	SMD2020							
Technology	The bead and the chip are combined into one							
Cabinet Size(L*W*H)	960*256	960*256	960*320	960*208	960*320	960*320	960*256	960*320
Screen Thickness ( mm )	≤3							
Weight ( Kg/m <sup>2</sup> )	1~3							
Brightness(cd/m <sup>2</sup> )	5000cd/m <sup>2</sup>	5000cd/m <sup>2</sup>	5000cd/m <sup>2</sup>	5000cd/m <sup>2</sup>	5000cd/m <sup>2</sup>	4500cd/m <sup>2</sup>	3000cd/m <sup>2</sup>	2300cd/m <sup>2</sup>
Horizontal view Angle(°)	120°							
Vertical view Angle(°)	120°							
Temperature	-20°C-61°C							
Visible distance(m)	≥4m	≥5m	≥5m	≥6m	≥8m	≥14m	≥18m	≥20m
Refresh Rate(Hz)	3840							
Gray level(Bit)	12~14							
Max Power(W/m <sup>2</sup> )	≤800	≤800	≤800	≤800	≤800	≤800	≤800	≤800
Average Power(W/m <sup>2</sup> )	≤220	≤220	≤220	≤220	≤220	≤220	≤220	≤220
Humidity	10~90%RH							
Life Span	100000h							



# PHOTOELECTRIC GLASS

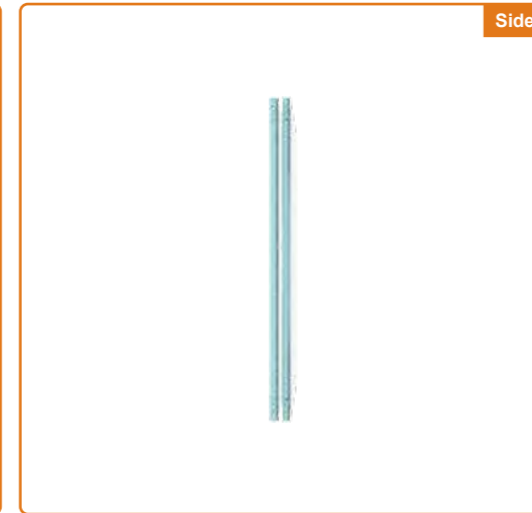
Mainly used in indoor and outdoor decoration, home design, lighting, outdoor media and so on



Product Image



Front



Side



Back

## Characteristic



Perfect combination with architecture, decoration and other facilities, can directly replace the original glass, making the building more artistic.



Ultra-high permeability, does not affect the lighting and viewing effect, permeability of more than 90%.



No fan, air conditioning auxiliary heat dissipation, low temperature, energy saving and environmental protection.



Strong weather resistance, stable and durable more than 100,000 hours.



Front and back waterproof IP65 level, not afraid of weather changes, safe and stable.



Horizontal and vertical visual Angle 150°, now see no dead Angle, no color bias.



Display three-dimensional effect, rich color, effectively improve the popularity and flow.

## High penetration highlighting

More than 92% permeability, 3 meters away can hardly see the screen, brightness up to 5000nits, meet the brightness requirements under the condition of direct sunlight



## Borderless design

No frame keel frame design, simple and beautiful, truly achieve a large area without a frame. Glass splicing imaging, power and control system fully hidden, visual more light and flexible



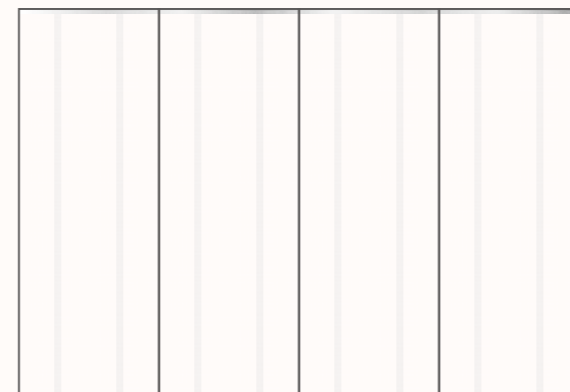
## Ultra-high strength

Impact strength is 5~10 times of ordinary glass, broken will not fall



## Convenient installation saves worry and effort

Support solid installation/hoisting, easy and stable operation, left and right splicing and widening as needed



## Application



The glass window



Public guidelines



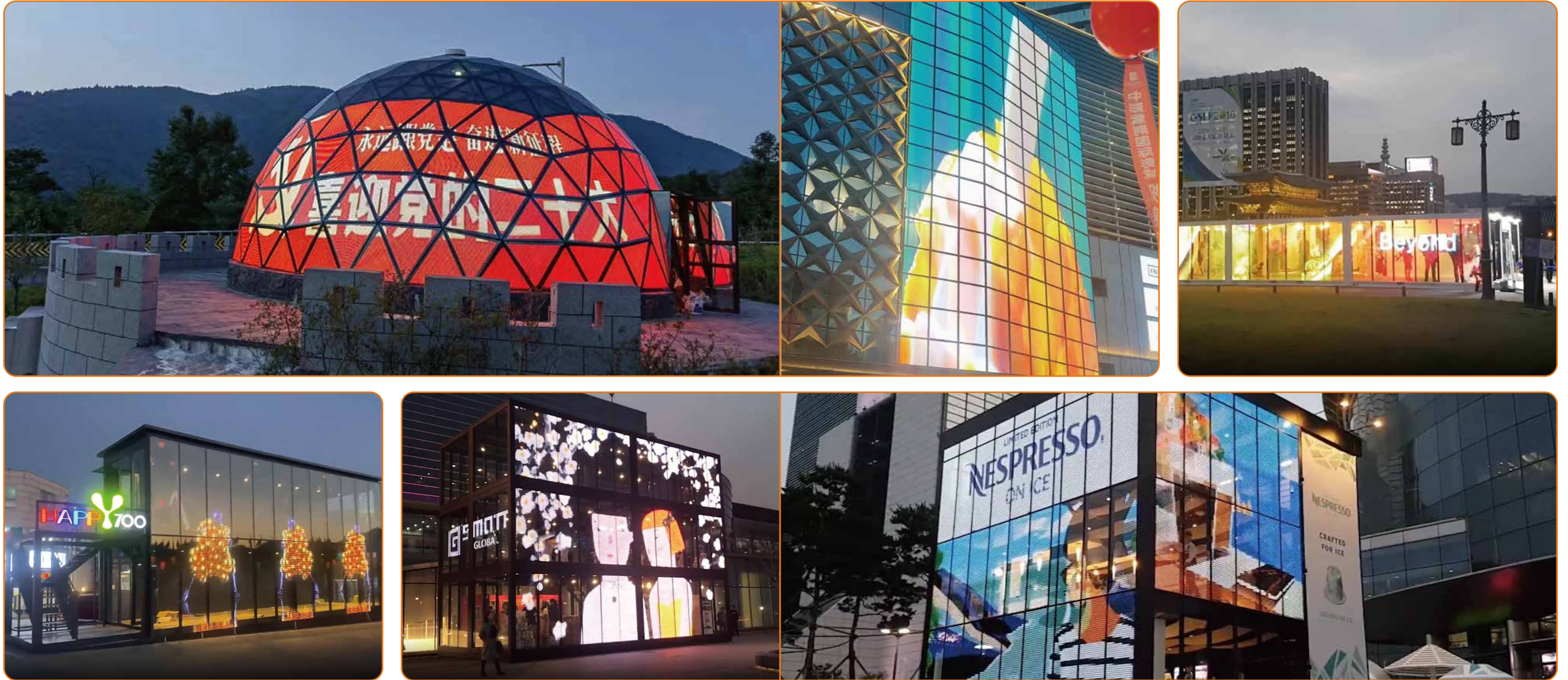
Curtain wall



Commercial advertisement

## Specification--Photoelectric glass

	Model	P8	P10	P16	P20	P30
Product specification	Pixel pitch(mm)	8	10	16	20	31.25
	Transparency	≥65%	≥80%	≥80%	≥85%	≥90%
	Lamp Type	SMD2121				
	Technology	The bead and the chip are combined into one				
	Pixel Density ( dots/m <sup>2</sup> )	15625	10000	3906	2500	1024
	Screen material	Toughened glass				
	Screen Thickness ( mm )	5+2+5/6+2+6				
Photoelectric parameter	Brightness(cd/m <sup>2</sup> )	≥4000cd/m <sup>2</sup>	≥4000cd/m <sup>2</sup>	≥3000cd/m <sup>2</sup>	≥2300cd/m <sup>2</sup>	≥1000cd/m <sup>2</sup>
	Horizontal view Angle(°)	140°				
	Vertical view Angle(°)	140°				
	Temperature	-10°C-65°C				
	Visible distance(m)	≥10m	≥15m	≥20m	≥30m	≥40m
	Operating voltage	220V±10% ; AC50HZ				
	Refresh Rate(Hz)	3840				
	Gray level(Bit)	65536				
	Max Power(W/m <sup>2</sup> )	≤700	≤600	≤300	≤280	≤150
	Average Power(W/m <sup>2</sup> )	≤300	≤280	≤150	≤120	≤90
Other parameters	Humidity	10~90%RH				
	Life Span	100000h				



# FLOOR TILE SCREEN

Mainly used in commercial real estate, tourist attractions, hotels, restaurants, shopping malls, theme parks and so on



Module Image



Back



Front

Installation Image



## Characteristic



RGB deep gray processing, with high contrast and gray level, high-definition and delicate picture, rich color, clear and natural picture.



Seamless splicing, cabinet random combination, the picture is flat and high, better picture quality.



It can realize the interaction of human body in the virtual scene, and the fun of interaction is infinite.



High contrast, high refresh, so that the screen in the display of patterns without any lag phenomenon.



With high strength wear-resistant anti-slip mask, can be trampled directly, 500KG high bearing capacity, IP65 high waterproof grade.



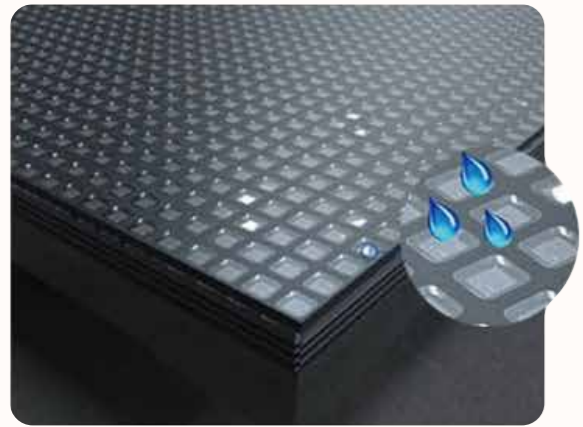
Professional cooling channel design, support before maintenance cabinet disassembly, easy and fast maintenance.



Professional customized connector, quality safety is guaranteed, beautiful, convenient and easy to disassemble and assemble.

## The bottom shell combines perfectly with the soft mask

Non-slip, anti-glare, uniform light, good waterproof performance, outdoor can be directly washed with water, indoor can be directly scrub with wet towel, protection level can reach IP65.



## Stainless steel case

A single stress point bearing about 2 tons, indoor is made of sheet metal, outdoor is stainless steel material.

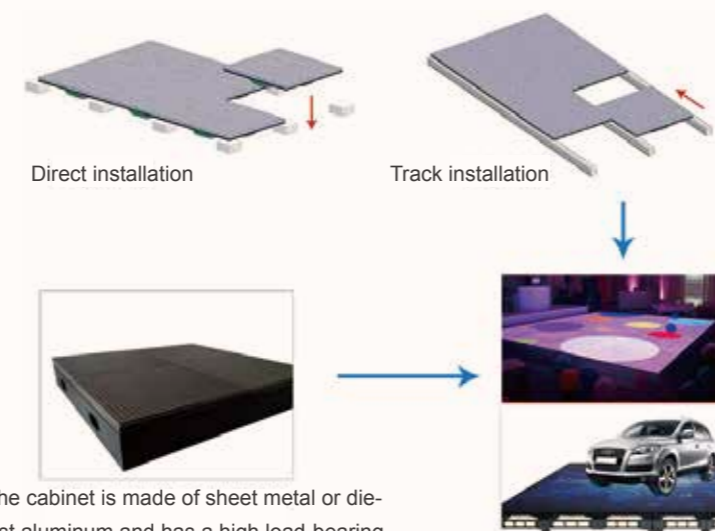


## Shock-proof plastic

Face mask is shock-proof plastic, wear-resistant, screen is not easy to scratch, easy to clean



## Installation mode



The cabinet is made of sheet metal or die-cast aluminum and has a high load-bearing capacity.

## Application



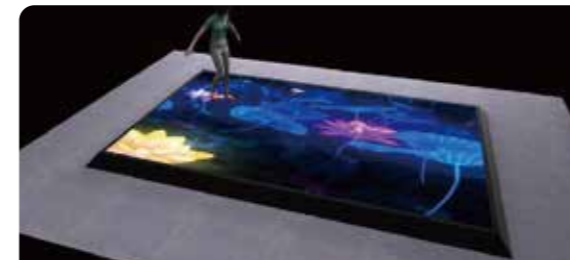
Teaching place



Hotel



Shopping mall



Scenic spot



Restaurant

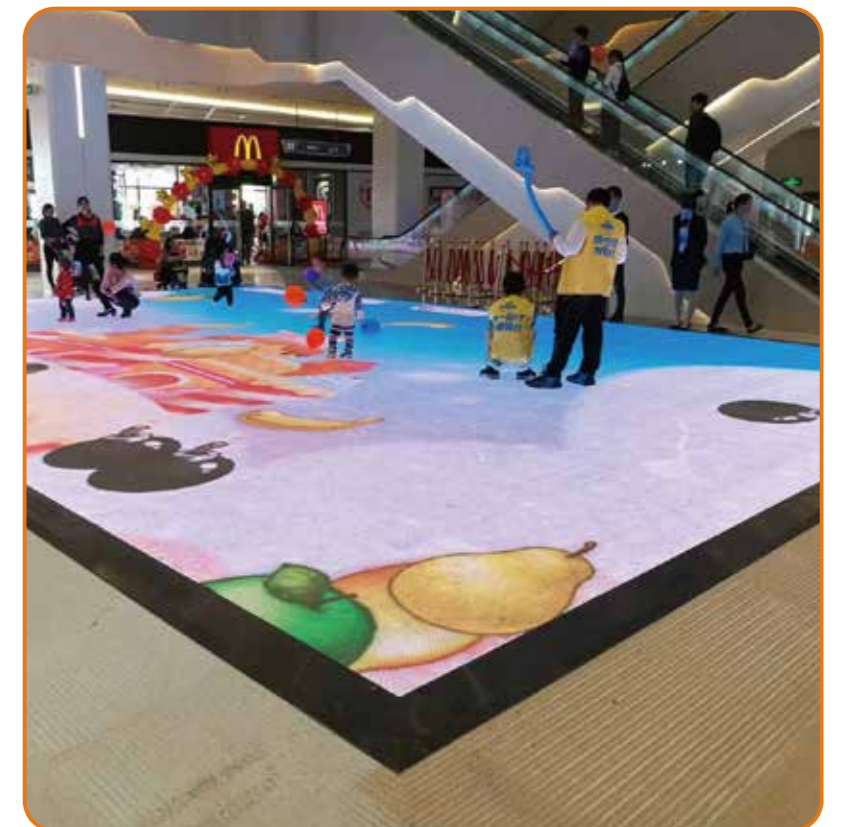
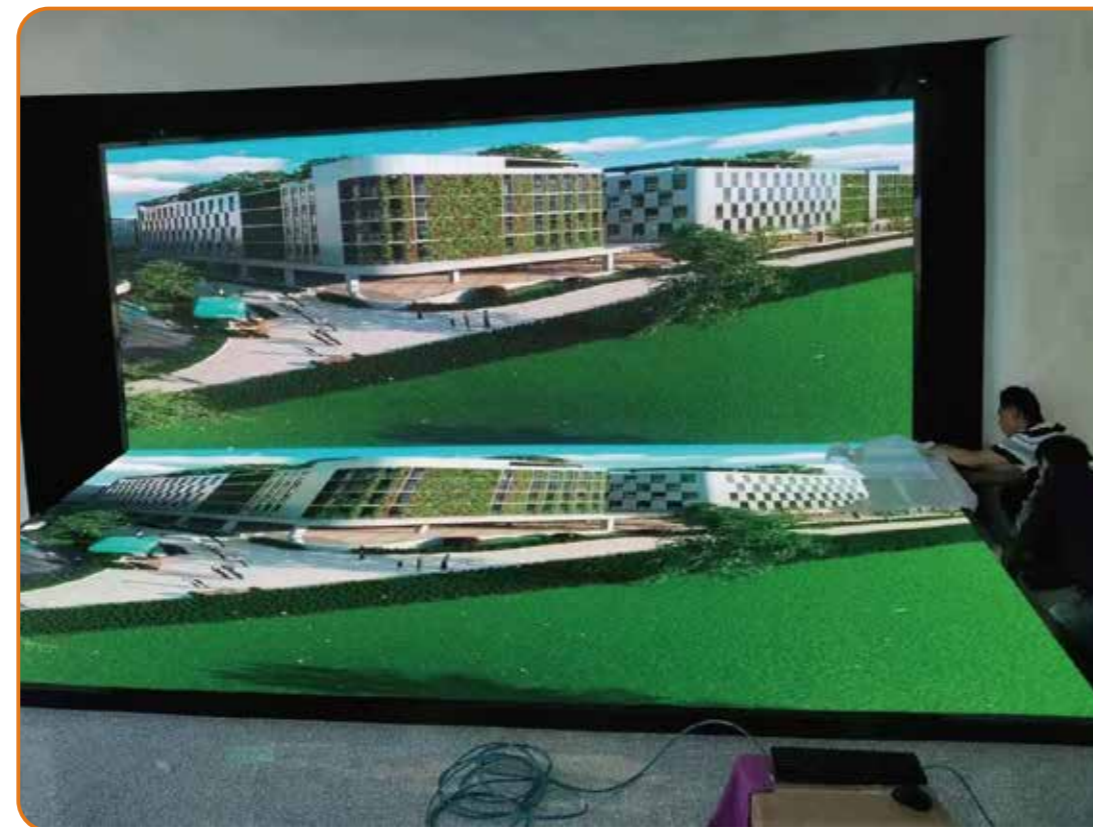
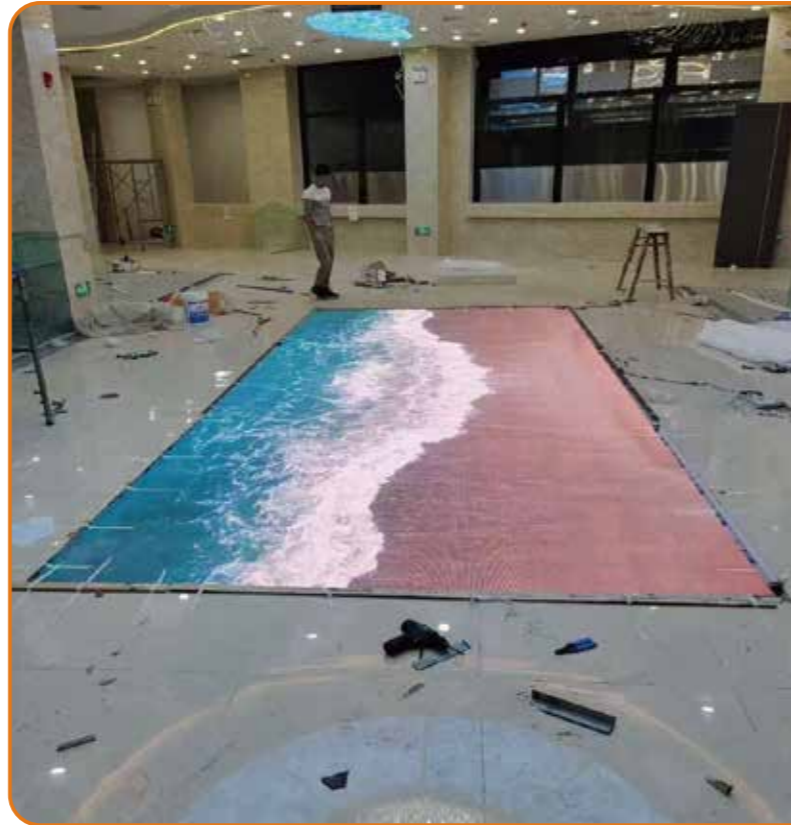


Exhibition hall

## Specification--Floor Tile Screen

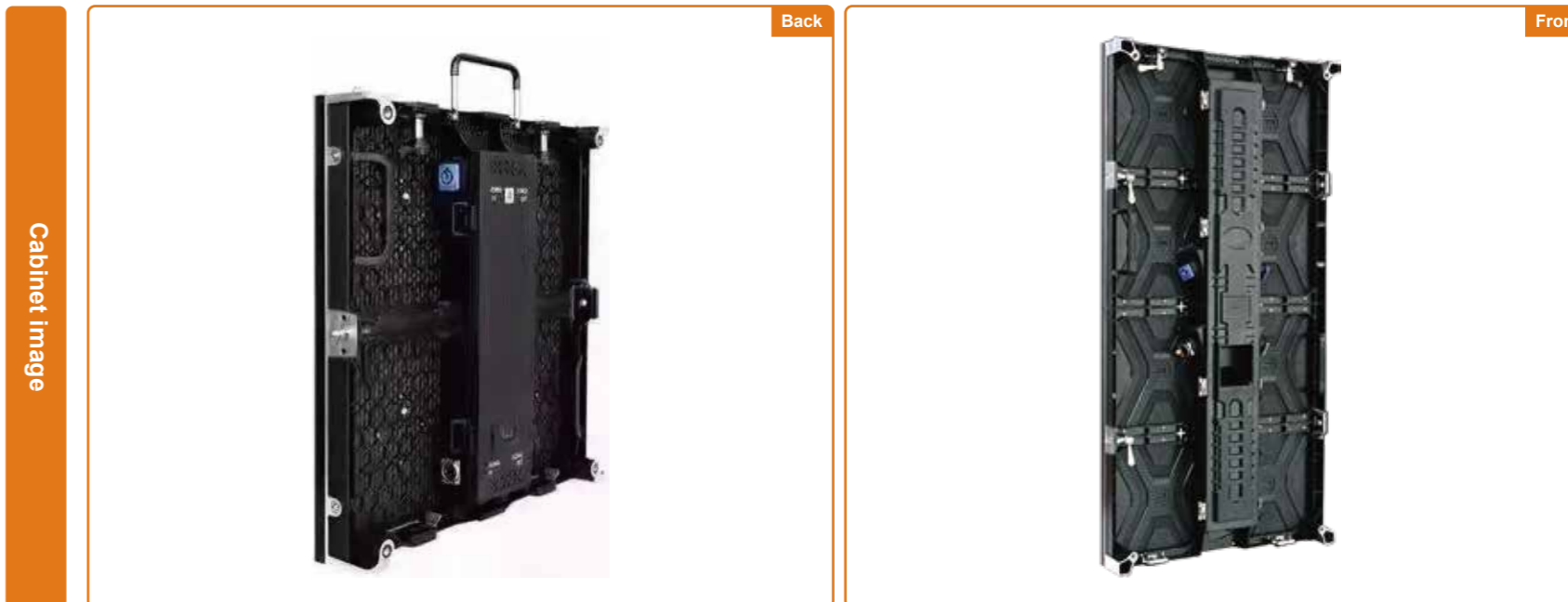
	Model	P2.6	P2.9	P3.9	P4.8	P6.2
Product specification	Pixel pitch(mm)	2.6	2.9	3.9	4.8	6.2
	Module resolution(Pixel)	96*96	84*84	64*64	52*52	40*40
	Module size ( mm)	250*250				
	Lamp Type	SMD1415	SMD1415	SMD1415	SDM1921	SDM1921
	Cabinet Size(L*W*H)	500*500	1000*500	1000*500	1000*500	1000*500
	Cabinet Weight ( Kg )	10kg	22kg	22kg	22kg	22kg
Photo-electric parameter	Bearing pressure(KN/m²)	≥7.5	≥7.5	≥7.5	≥7.5	≥7.5
	Brightness(cd/m²)	0-5000 Adjustable				
	Horizontal view Angle(°)	140°				
	Vertical view Angle(°)	140°				
	Temperature	-20°C-65°C				
	Visible distance(m)	3.9m	4.5m	5.9m	7.2m	9.5m
	Max Power(W/m²)	480	480	480	400	350
	Refresh Rate(Hz)	≥3840				
	Gray level(Bit)	14				
	Humidity	10~90%RH				
Life Span	100000h					





# RENTAL SCREEN

Mainly used in enterprises, hotels, exhibitions, concerts, speeches and so on



Cabinet image

## Characteristic



With high contrast and gray level, high-definition and delicate picture, rich color, clear and natural picture.



Customized integrated molding box process, light weight, tensile shock proof, strong heat dissipation, long service life.



Seamless stitching, smooth picture, better picture quality.



Latch fixed, balanced force, perfect for quick installation and disassembly.



Plane splicing and arc splicing, modular modeling, whatever you want.



Support point by point correction function to ensure consistency of color and brightness during use.



Can be a box multi-purpose, product upgrading only need to replace modules, low upgrade cost.



Humanized power supply and signal indicator light, easy to identify working and fault state.



Professional standard connectors, quality assurance, beautiful and convenient, easy to disassemble and assemble.

## Lightweight device - thin structure

The cabinet is light and easy to assemble and disassemble and transport. Cabinet made of die-cast aluminum, high strength, toughness, high precision, not easy to deformation, for transport labor saving.



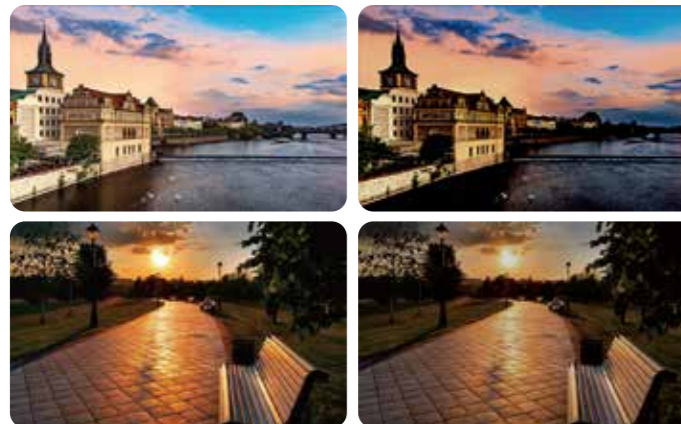
## Excellent workmanship - Seamless stitching

The cabinet is connected with a fast locking structure, 10 seconds to complete the installation of a cabinet, seamless stitching, smooth playback picture.



## Image processing is delicate - low light high gray

Using high-quality black LED lights, with black face, higher contrast, make the image more clear and vivid



Our

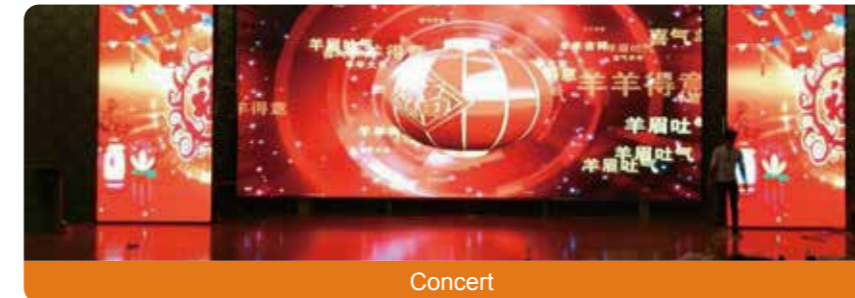
Other

## Time-saving and labor-saving installation is convenient

Meet the requirements of hoisting and installing, indoor and outdoor requirements; PCB adopts high-strength anti-collision pad design, which can withstand 8kg impact force without fear of dead lights falling off; Precise, fast, flexible positioning installation, can effectively respond to different application fields.



## Application



Concert



Hotel



Speech



Activity

## Specification--Rental screen

Model	Indoor				Outdoor			
	P2.6	P2.9	P3.9	P4.8	P2.9	P3.9	P4.8	
Module specification	Pixel pitch(mm)	2.604	2.976	3.91	4.81	2.976	3.91	4.86
	Size(mm)	250×250	250×250	250×250	250×250	250×250	250×250	250×250
	Resolution(Pixel)	96×96	84×84	64×64	52×52	84×84	64×64	52×52
	Lamp Type(SMD)	1515	2020	2020	2020	1921	1921	1921
Pixel Density ( dots/m <sup>2</sup> )	147456	112896	65536	43264	112896	65536	43264	
Cabinet specification	Size(W*H)	500×500/500×1000						
	Resolution(Pixel)	192×192	168×168	128×128	104×104	168×168	128×128	104×104
	Weight ( Kg/m <sup>2</sup> )	7/12.25						
	Maintenance	Supports front and rear maintenance						
Photo-electric parameter	Maintenance	IP50	IP50	IP50	IP50	IP65	IP65	IP65
	Brightness(cd/m <sup>2</sup> )	0-800 Adjustable				0-5000 Adjustable		
	Horizontal view Angle(°)	120						
	Vertical view Angle(°)	120						
Other parameters	Visible distance(m)	≥2.5	≥3.5	≥4.5	≥6	≥3.5	≥4.5	≥6
	Refresh Rate(Hz)	1920/3840/7680						
	Gray level(Bit)	12~14						
	Max Power(W/m <sup>2</sup> )	≤800	≤800	≤800	≤800	≤800	≤800	≤800
Other parameters	Average Power(W/m <sup>2</sup> )	≤220	≤220	≤220	≤220	≤220	≤220	≤220
	Humidity	10~90%RH						
	Temperature	-20°C~+50°C						
	Life Span	100000h						



# CUSTOMIZED

The main application scenarios are tourist attractions, real estate, cultural and entertainment, feature pavilions, car displays, etc



## The difference between traditional and custom screens



Conventional projection, the reflection is obvious, the effect is dim



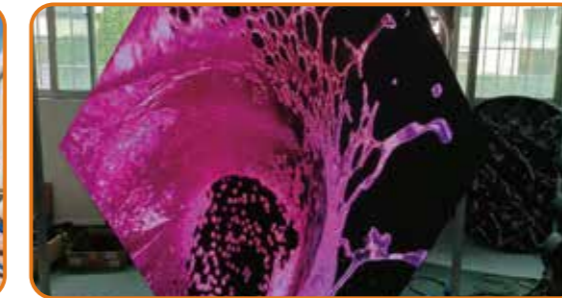
Conventional modeling stitching bag edge is large, display incomplete



Conventional stitching, ordinary shape



LED display, bright colors, immersive



Custom modeling, full size display



Customized integration, display more natural

## Characteristic



Perfect matching design shape and size, can be perfectly integrated with the surrounding environment



Digital creative display, support DIY splicing, high flatness, convenient installation.



A full range of indoor and outdoor models of customized services to meet different display needs.



RGB deep gray processing, with high contrast and gray level, the picture HD color is rich, the picture gradually natural.



Support point by point correction function to ensure consistency of color and brightness during use.



Strong anti-interference ability, high signal stability, to meet the requirements of different environments.

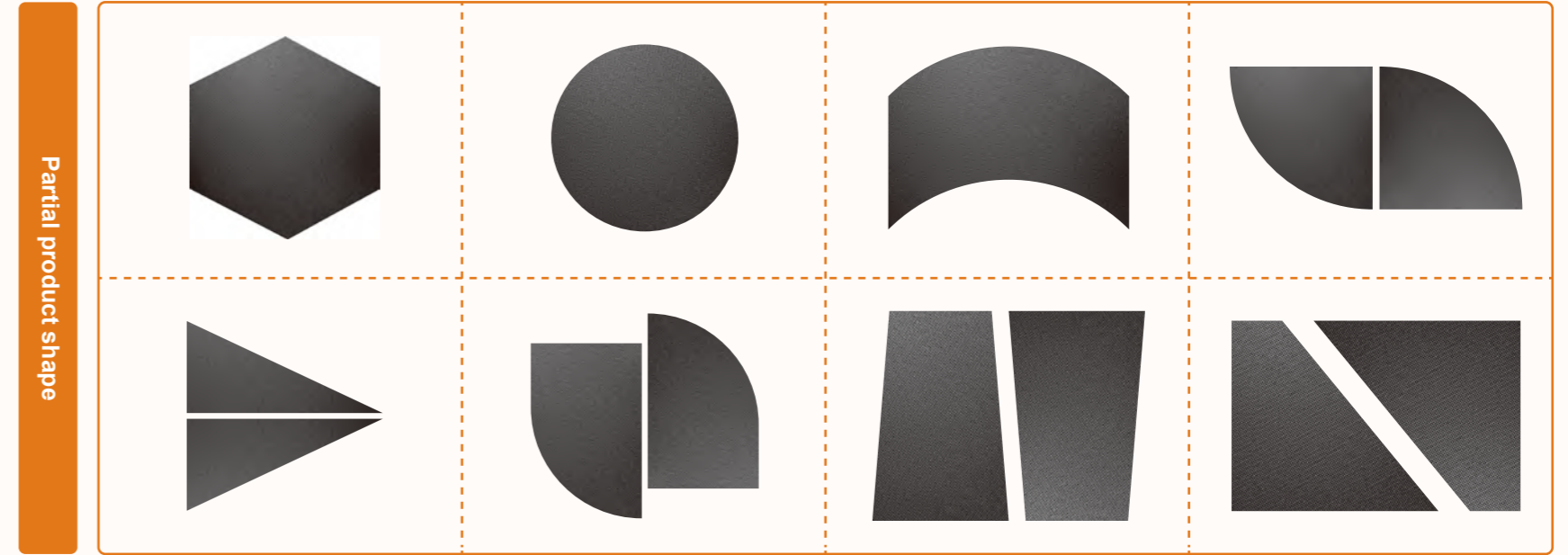


Unique shape, strong appreciation, scene display novel.

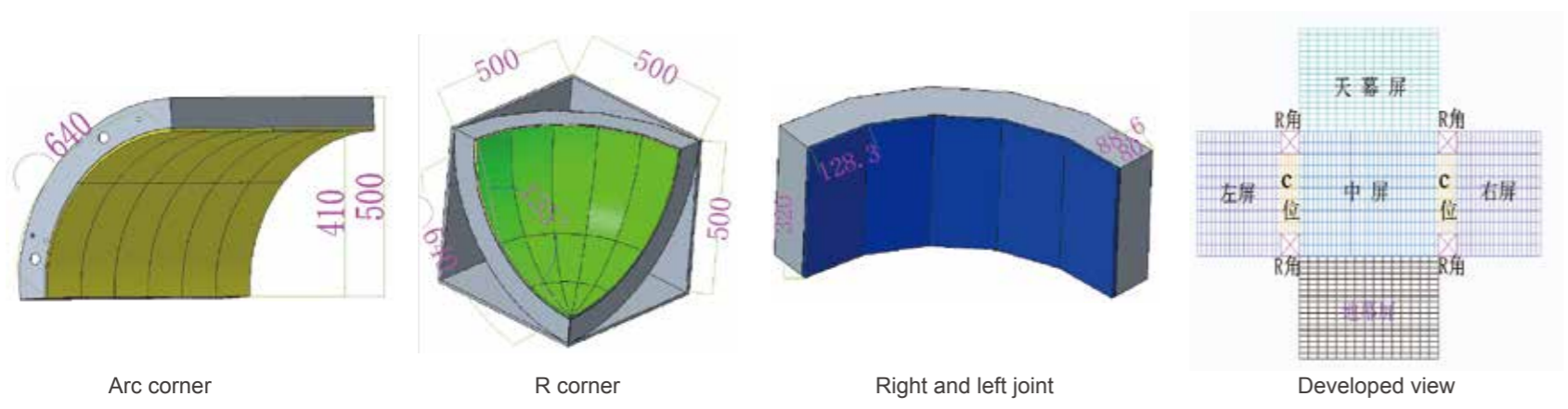
### MULINSEN's immersive screen



### Special-shaped screen



### The cabinet expansion of MULINSEN's immersive screen

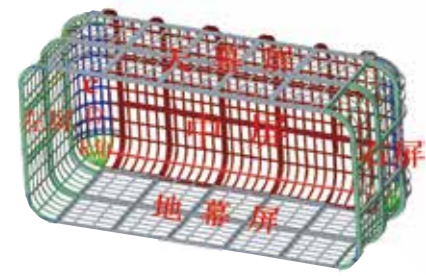


Arc corner

R corner

Right and left joint

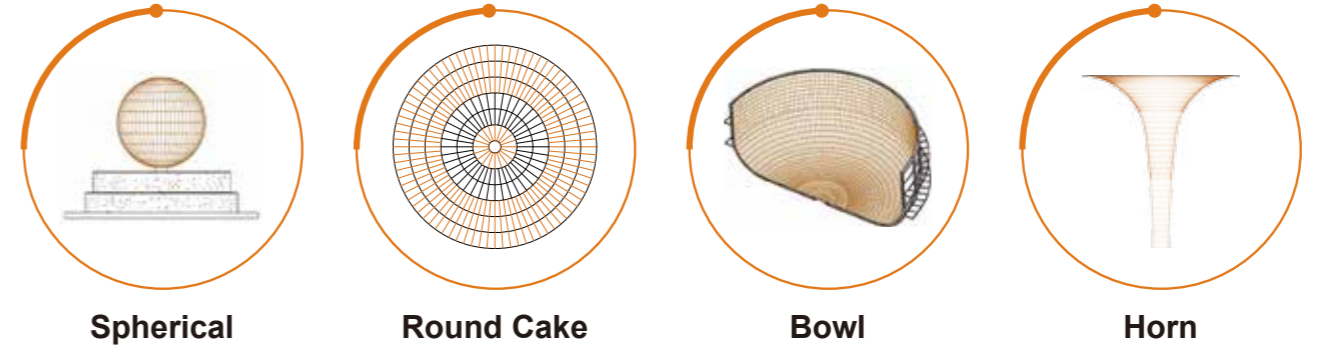
Developed view



Left and right size:  
Depth: 320mm\*N+410mm  
Height: 320mm\*N+820mm

Bottom and top size:  
Length: 320mm\*N  
Depth: 320mm\*N

Center size  
Length: Same as the top  
Height: Same as left



Spherical

Round Cake

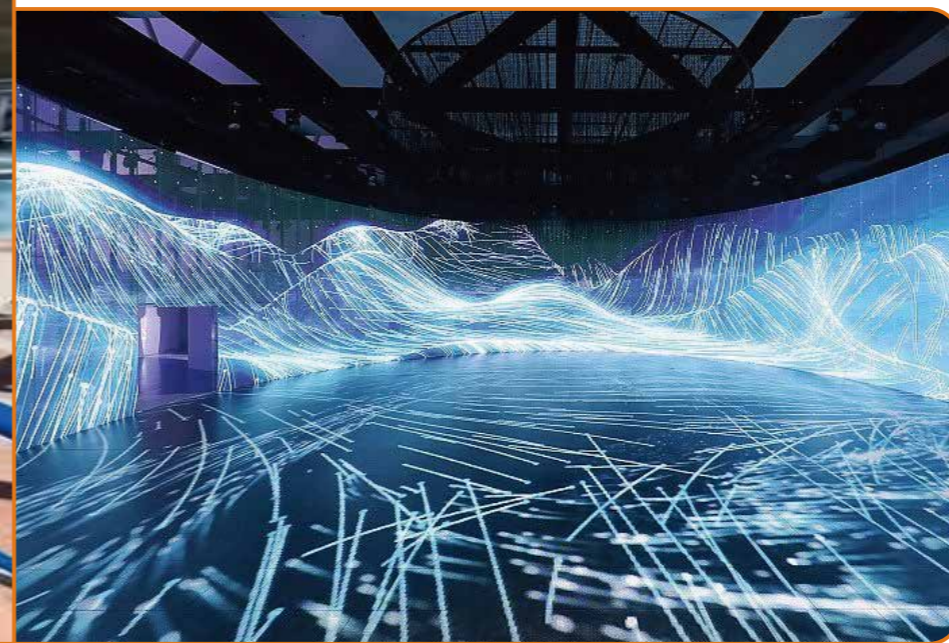
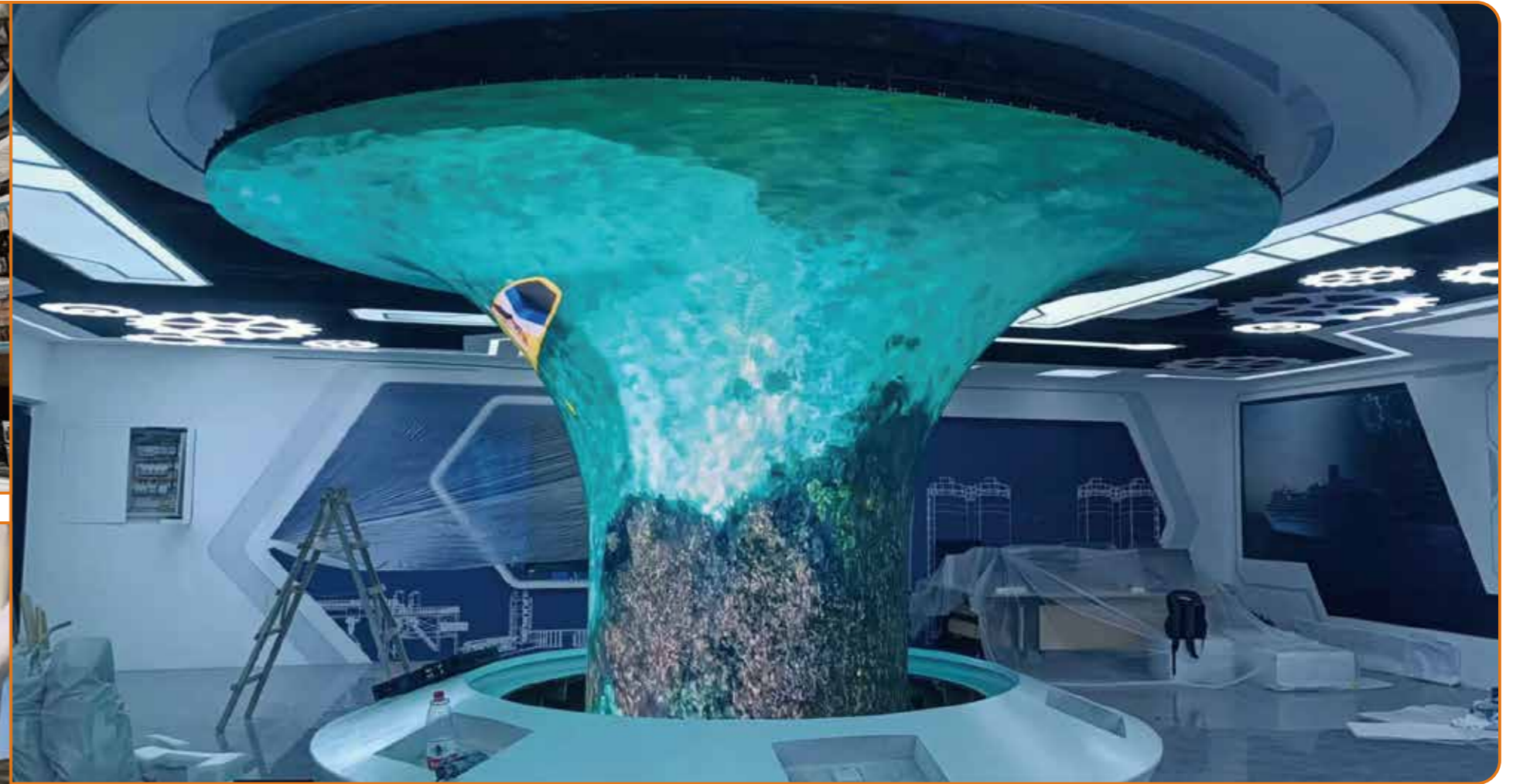
Bowl

Horn

### Multiple splicing styles

Free combination to create a different presentation scene, size and shape performance more flexible.







## GENERAL MANAGER'S MESSAGE

A new page in the Chinese display market is constantly being written. After years of experience accumulation and technological innovation, chinese display market has reached the moment of sparking fire.

It is a great honor for MuLinSen to enter this page at the right time after all the hard work and innovation. We sincerely hope that a very great company can be born in this industry, which can provide a place for us in China and on the world stage. And also hope that MuLinSen can become one of such companies.

Looking back on the past, we sincerely thank the friends, colleagues and customers who have cared, helped and supported us. Looking forward to the future, we hope to receive your continued encouragement and care.

Everything in the past is the preface. MuLinSen has always insisted on being a believer in technology. Based in China, looking at the world, and committed to becoming the world's first-class and respected smart display manufacturer.

李文信