

## 1. About LED display

According to environment, LED display can be divided into different types:

Type	Application
Advertising LED display	Shop window, shopping mall inside, building exterior, street furniture, bus shelter, LED billboard, media facade
Rental LED display	Live show, exhibition, concert, high-end meeting, other events
Sports LED display	Stadium LED perimeter, indoor central hanged LED cube, audience seat LED ribbon, building wall big advertising LED display
Fine pitch LED display	TV studio, government control center, airport, cinema, meeting room
Creative LED display	LED letters, LED tree, LED ring, LED column, curved LED display, etc

## 2. Definitions

**A. Resolution.** Every video source has a defined resolution such as 640x360, 852x480, 1024x576, 1920x1080(HD), 2560x1440(2K), 3840x2160(4K). LED display plays the video source dot by dot.

When planning a LED display, we always follow 16:9 or 4:3, or between width/height ratio.

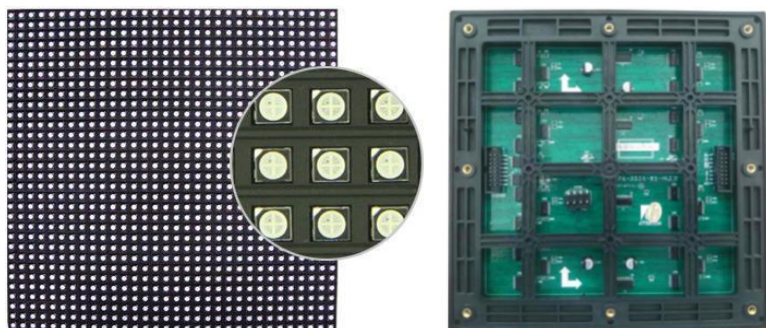
**B. Pixel Pitch.** It is the gap between 2 LED diodes. At a given LED display size, smaller pixel pitch means higher definition also higher price.

LedUnion Full Line Pixel Pitch Table (mm)

1.2	1.5	1.6	1.8	1.9	2.0	2.5	2.6	2.9	3.0	3.1	3.3	3.8	3.9
4.0	4.8	5.0	6.0	6.6	7.8	8.0	10	12	16	20	25	50	80

\*Professional expression is P1.2, P3.9, P10, etc

**C. LED Module.** LED module is made up of LED diodes, PCB, Driver IC, capacitors, resistors, connectors, front mask, back frame. It is the basic unit of LED display.



**D. LED Cabinet.** Like Lego, a LED display is spliced by small units - LED cabinet. A LED cabinet is made up of LED modules, metal frame, power supply, receiving card, cables, other fixing parts. When selecting, we can calculate LED cabinet quantity according to LED display size.



**E. Viewing Distance.** People can watch LED display fully and clearly. The distance between is Viewing Distance (VD). Referred to table on the left, Best VD = pixel pitch x3 (in meter) Smallest VD = pixel pitch (in meter), Biggest VD = pixel pitch x10 (in meter)

**F. IP rate.** For indoor use, every product can satisfy. For outdoor use, the LED display should be IP65 or higher, means fully dust-proof, water-proof.

**G. Brightness.** For indoor use, the brightness required is 500-1500nit. For outdoor use, required is 3500-8000nit. When the installation faces to the Sun, the brightness required is >5000nit.

**H. Control Mode.**

Synchronous control - PC connect to LED display and play real-time content from PC/External devices  
Asynchronous control - Preset and upload videos to LED display via smart phone/PC, then LED display auto loop playback

**I. Service Mode**

Front service - When LED display is directly fixed onto the wall, or there is no >90cm channel behind the LED display, we choose front service

Rear service - When there is >90cm channel behind the LED display, or to avoid any disturbance during installation or maintenance, we choose rear service.

**J. Installation and structure**

Pls refer to "How to install" on homepage. For structure preparation please contact our online account manager for a professional solution.

Below is a case example to help selection:

### 3. Example

You are a shop owner and plan a new LED display behind the shop window to attract people from day to night.

The front window size is 5x3m (wide x height). You plan to play 720P (1280x720) video on it.

Your shop is on downtown commercial street. The walkway is 4m wide from the shop.

Selection:

1. The smallest viewing distance is 4m from the shop. We choose outdoor P3~P4 products. Average human height is 1.7m. The window height is 3m. Standing at 4m away can watch the full LED display.
2. The environment is indoor, so IP rate is not a question. The LED display will play to outdoor, so brightness should be over 3500nits, we choose outdoor type.
3. Control mode we choose asynchronous control, to have the LED display auto loop playback.
4. Service mode depends on your installing position, normally it is rear service by opening back door to do maintenance.
5. The LED display is put on a stand structure for easy watch, which takes about 0.5m space vertically. Following 16:9 ratio rule, the planned LED display size 4.4x2.5m.

$$\text{Pixel pitch (mm)} = \text{Planned display size (mm)} \div \text{Video Resolution}$$

So, Width=4400/1280=3.44, Height=2500/720=3.47

Refer to pixel pitch table above, we choose nearest **P3.3**.

Please download “Outdoor LED Display Size Selection” file and read, we confirm the LED display size **4160x2400mm**.

**Shopping Steps:** Find UniDisplay P3.3 Outdoor on website → Select optional configurations → Input quantity → Add to cart → View your cart on the page top right → Everything ready click “Generate Order”