

LED Signs: 101



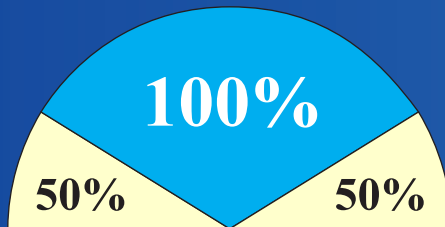
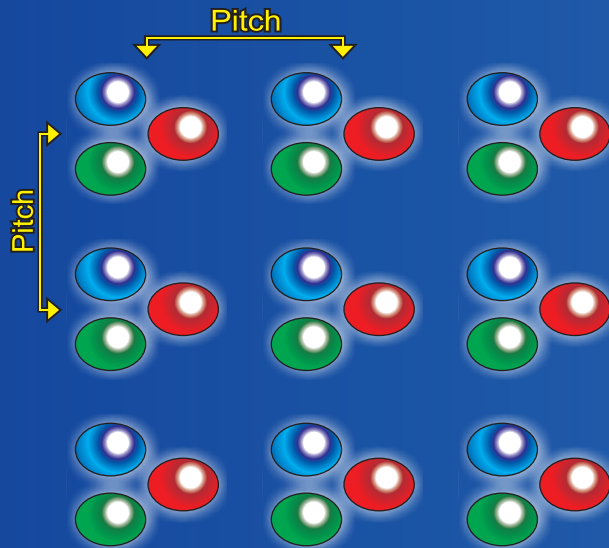
FREEDOMLED

What is an LED?



Light emitting diodes (LED) are special diodes that emit light when illuminated by the movement of electrons in the semi-conductor chips. Thousands of these LED's are placed together on a sign, creating the clear images and pictures that you see.

PRODUCT TERMINOLOGY



PIXEL

Pixel

The smallest discrete component of an image or picture.

Pitch

The distance in millimeters on center between pixels. One of the determining factors in character size and display size.

Viewing Angle

The angle within which the light output of an LED is perceived at 100% brightness, outside of this angle the brightness is reduced by half.

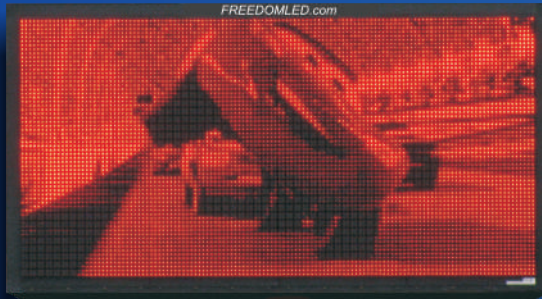
Freedom LED Signs have a horizontal viewing angle of 140 degrees and a vertical viewing angle of 70 degrees.

Brightness (NITS)

The light output per square meter.



PRODUCT TERMINOLOGY



Greyscale Monochrome

Any display utilizing a single color LED that is capable of controlling individual pixel intensity.



RGB / Full Color

Any display utilizing Red, Green and Blue LEDs and is capable of controlling each individual color's intensity within the individual pixel.

ADVANTAGES OF LED'S

LED technology is quickly becoming tomorrow's primary light source and has several advantages over conventional light sources:



LED's for sign illumination are rated for continual use for up to **100,000 hours**.



LED's radiate a "cold light", meaning they generate very little heat compared with other lighting technologies. This also means less wasted energy.



LED's are energy efficient meaning they consume less energy to produce brighter illuminated displays that creates much greater readability and flexibility of use than traditional signs and billboards.



LED's are manufactured in a full range of colors and with appropriate mixing schemes can generate trillions of colors.



LED's are continually decreasing in price, making LED displays extremely affordable.

