

# Frequently Asked Questions (FAQ)



## OLED/PLED

Q) What is OLED Technology?

A) OLED (Organic Light Emitting Diode) technology was initially discovered in the 1980's as a means to produce light using carbon-based materials. The patented technology will lend itself to many innovations through the use of area illumination that has never before been possible.

Q) What is an OLED display?

A) OLED displays are comprised of layers of carbon-based materials deposited in a matrix or columns (segments) and rows (commons). Each intersection in this matrix represents a dot (pixel) in the display. Each pixel is self-emissive as a point source of light, and can be activated as needed to produce an image on the display. Pixel arrangements can vary by design for all sorts of graphical, alphanumeric, and even icon based displays.

Q) What is the OLED vs. PLED?

A) In organic display technology, there are two general manufacturing approaches. One is the use of small molecule organic materials, and the other is large molecule organic materials. The major difference is in manufacturing process and the materials used. The respective names come from the molecular weight of the organic material. PLED, or poly-OLED, is the large molecule technology. PLED is sometimes called light emitting polymer (LEP) in some applications. The small-molecule OLED (SMOLED) is typically referred to as just OLED in most common usages. Each approach is patented by different people and organizations.

Q) Can there be differences in monochrome displays?

A) Monochrome organic displays actually emit light in the color that is desired. It is also possible for monochrome displays to emit a white spectrum and use existing color filter technology to reach a specific color of interest. There are benefits to using a color filter in some designs including UV protection for the organic materials. Also, it provides the ability to generate a unique color display that may not have a very good reliability if emitted directly. The technology used will depend on the design.

Q) What is area color?

A) Area color is the ability to have a monochrome display in which areas of the display can emit a pre-defined color spectrum. For example, the top of the display may be able to emit orange graphics only, and the bottom part of the display may only be able to emit blue graphics. The colors are adjustable by the color filter design which is a permanent hardware feature. Adjusting color filters requires changes to the panel's construction.