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# The Best Display

LCD vs OLED. Which one would you choose?



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Nowadays, there are only two types of phone screen displayed used: LCD and OLED. What do they mean? What is the difference? But most importantly, which one is a better option?

A liquid-crystal display (LCD), is the most common option used for display screens. LEDs are placed at the top or bottom of the LCD display, with the assistance of a diffuser to distribute the light evenly across the display. This shapes the images and makes them visible. As a result, LCD screens have a good pay off when it comes to colour accuracy. However, they do have limited contrast in colour. But unlike Oled display screens, LCD screens are also a lot cheaper and easier to produce and don't suffer from burn-ins. But they do have a "back-light leakage" which is a glow that can be seen at the edge of the screen.

On the other hand, OLED stands for an organic light-emitting diode. It is when a single red, blue and green pixel emits its

own light which is made from an organic compound, hence its name: OLED. Compared to LCD, OLED displays have more vibrant colours it contains deeper blacks, brighter whites and a better contrast ratio. OLED is much more flexible compared to LCD, because of their power efficiency and thinness. As a result, this is a more luxurious and expensive option for phone display screen. Even so, the major drawback of using OLED for phone display is burn-in. Burn-in is caused by the uneven wearing of pixels which will cause the pixels to dim over time. This problem can be worsened by the overuse of bright and static images. As a result, it will shorten the life-span of the phone. However, phone companies have implemented various strategies to minimise the effect of burn-in.

So what will this mean to iPhone users?

Apple has been manufacturing their iPhones with only LCD display screens. Up until recently, Apple decided to make the switch



to OLED to enable a “more flexible handset design”. With the switch to OLED, the flexible screen display will give Apple more space to add a bigger battery or a thinner iPhone design. This is possible with the removal of the backlight. But this switch will be costly for consumers and consequently will increase the cost of iPhones.

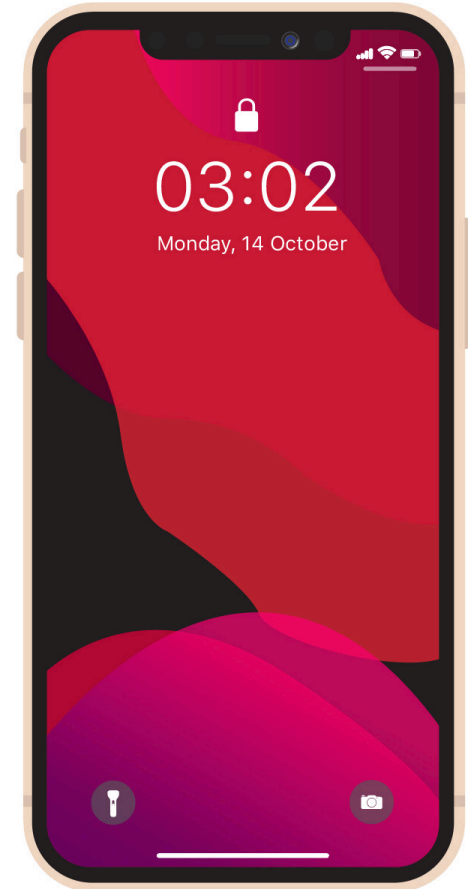
However, it took Apple a long time to make this switch as they had to ensure that they had a reliable stream of OLED for iPhones. Because of their high standards and consumer expectations, Apple has engineered the Super Retina (iPhone X, iPhone XS, iPhone XS Max) and Super Retina XDR (iPhone 11 Pro, iPhone 11 Pro Max) which offers the best colour accuracy.

Apple believes that “these are the best OLED displays that have ever shipped in a smartphone”. The Super Retina and Super Retina XDR promise to provide incredible contrast, high brightness, and a cinema standard wide colour gamut. This paired with

the best colour system, colour management and colours are precisely engineered to deliver an optimal viewing experience for their consumers.

Apple has also featured High Dynamic Range (HDR) when they design and developed the Super Retina and Super Retina XDR. HDR supports a range of dark and light areas in photos and videos taken and displayed on iPhones. This will allow consumers to see deep true blacks to purest bright white. As a result, photos and videos look more vivid.

Thus, both have their advantages and drawbacks, so it ultimately is a question of personal preference on which screen display that the user prefers when using the iPhone. As a result, the major factors to consider will be the OLED’s skills to handle the darkest shades contrasted with its precision in the lighter tones and LCD’s ability to maintain colours at a bright and higher level in iPhones.



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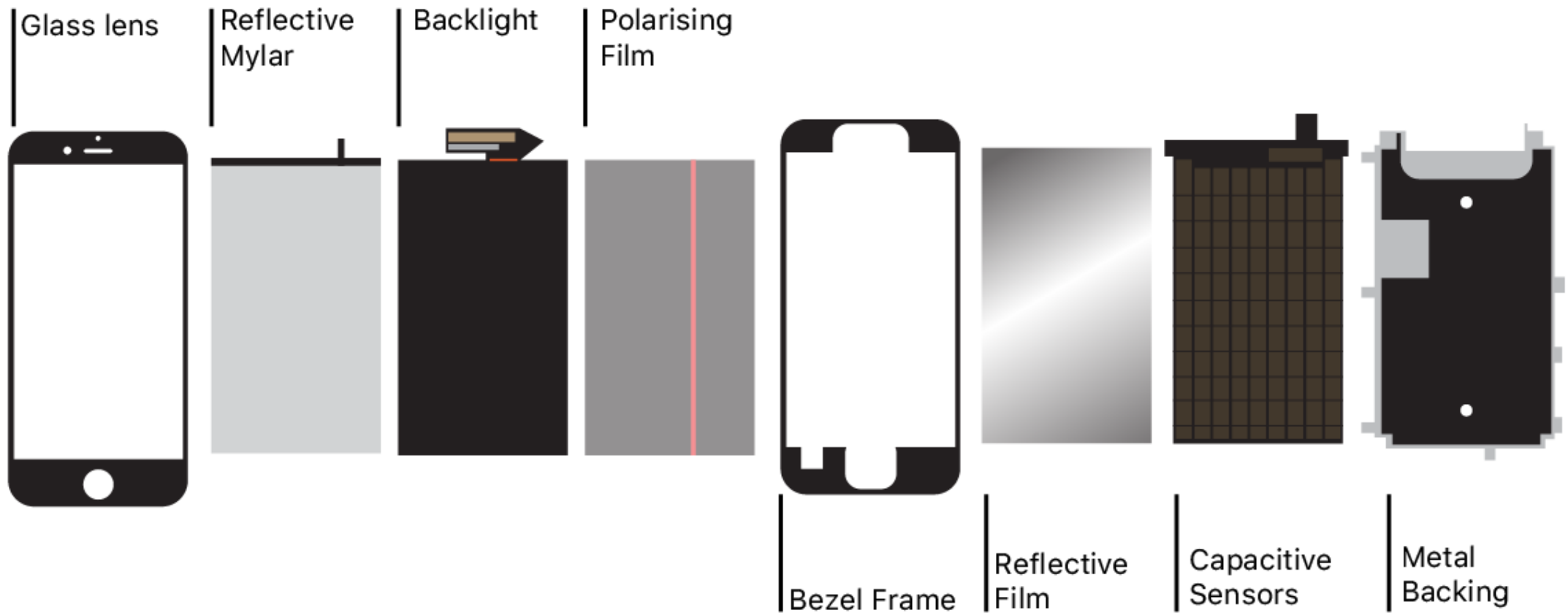
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# iPhone 6S Screen Display Breakdown (LCD Display)



# iPhone X Screen Display Breakdown (OLED Display)

