

MicroLEDs

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In news— Apple's shift to microLED display technology is reportedly under process.

What is microLED display?

- **MicroLEDs are self-illuminating diodes that have brighter and better colour** reproduction than Organic Light Emitting Diode (OLED) display technology.
- The **basis of microLED technology are sapphires**. A **sapphire can shine on its own forever**.
- A **microLED screen is filled with such small but strong light**. The picture in a microLED screen is generated by several individual light-emitting diodes.
- **Samsung, the pioneer in microLED technology** explained that a **microLED is as small as cutting a centimetre of hair into 200 smaller pieces**.
- Each of these microLEDs are semiconductors that receive electric signals. Once these microLEDs are gathered, they form a module. Several modules are then combined to form screens.
- **MicroLED displays are brighter, have better colour reproduction and provide better viewing angles**.
- **They make images appear as if they painted on top of the device's glass** and are quite the technological feat, according to a report by Bloomberg.
- MicroLEDs have limitless scalability, as **they are resolution-free, bezel-free, ratio-free, and even size-free**.
- **The screen can be freely resized in any form for practical usage**. In addition to being self-emissive, MicroLEDs **also individually produce red, green, and blue colours without needing the same backlighting or colour filters** as conventional displays, according to Samsung.
- The electronics company is currently the world's most advanced manufacturer of displays, and has been

producing its own version of microLED for TVs.

- Samsung and LG Displays have evolved with brighter OLED panels over the last couple of years but microLED promises even greater luminance without panel degradation issues.
- Samsung has come up with MicroLED displays with up to 4,000 nits of peak brightness, roughly double of what the best OLED and LCD TVs are capable of right now.

Technology	TFT LCD	OLED	Micro LED
Light Source	LCD backlight	Self emit	Self emit
Cost	Low	Medium	High
Power Consumption	High	60%–80% of LCD	30%-40% of LCD
Brightness	Low	High	High
Efficiency	Low	Medium	High
Lifespan	Long	Medium	Long
Contrast	Low	High	High
Response Time	ms	μs	ns