Step-by-Step LCD Manufacturing Process

Samsung Public Information Display (PID) is the global market leader in panel solution technology. Samsung PID is recognized for its exceptional product performance and reliability, shipping nearly 8 million PID panels since 2009. If you were to line up all these LCD screens, the height would amount to 1,000 times that of the world’s highest mountain – Mount Everest! We have achieved market recognition due to our advanced research and development, state-of-the-art manufacturing processes, and unmatched quality assurance procedures.

Designed to tolerate long hours of continuous operation, Samsung Display’s panels perform through high temperatures, ambient light, dust, and heavy-duty usage. Our panels use proprietary Thin Film Transistors (TFTs) employ VA technology where liquid crystals are vertically aligned, to create the highest quality PID displays available on the market. For a refresher on LCD components and structure, see this article.

Such rigorous qualifications begin on Samsung Display’s manufacturing floor where our unique construction process and eco-friendly materials ensure compliance with ROHS and deliver unparalleled benefits such as:

- Outstanding brightness and color uniformity
- 24/7 operation – 2 years and more
- Low power consumption
- High contrast ratio
- Resistance to extreme weather conditions

See how the LCD manufacturing process works in detail with this step-by-step infographic.
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Thick Film Transistor Application

- Select appropriate metal for the application
- Select appropriate glass substrate

- Display circuitry is etched into the glass
- Metal and dielectric layers are applied
- Glass is baked and cooled

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Printing, Liquid Crystal Injection, and Glass Assembly

- Print circuit design onto the glass
- Liquid crystal is injected into the glass
- Glass is baked and cooled

Critical Last Components to Packaging and Shipment

- Package the final display
- Test the display
- Inspect the display
- Package the final display
- Test the display

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