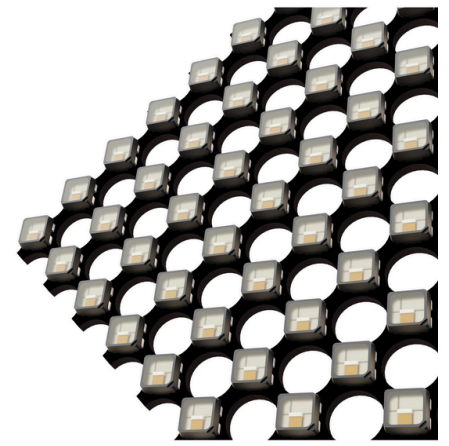


Understanding Transparent Micro-Mesh LED



A closer look at the technology reshaping the role of glass in digital display.

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Glass has always played a dual role in architecture: it divides space while preserving light and visibility. Historically, this made it a poor host for digital media. Traditional screens, whether LED, LCD, or projection-based, tend to obstruct, darken, or dominate the surfaces they occupy. Transparent micro-mesh LED introduces a new relationship between light and structure. Built on a lattice design, this technology arranges LED nodes across an *ultra-thin, open weave grid* that adheres to or is suspended just in front of a glass surface. The effect is *minimal and elegant*: from most angles, the structure is barely visible; when activated, it becomes a dynamic display surface.

The Light Emitting Diode & Lattice Module PCB

Each diode in this unique lattice design, lights independently, using static-driven IC's (a 1/1 scanning method) powering each LED individually and continuously, resulting in superior brightness, refresh rate, and visual stability. This setup not only delivers top-tier performance but also reduces the risk of multi-lamp failure, making it ideal for high-end, precision LED applications. allowing video, motion graphics, and messaging to appear across the transparent mesh. When inactive, the display remains largely unseen, allowing full transparency of the underlying glass. It is this duality, both present and invisible, that defines the appeal of micro-mesh LED in contemporary visual applications. When we look at pixel pitch (PP), this is the distance between each individual LED. Selecting the appropriate module type, based on viewing distance and application needs, is a key consideration. It governs both the resolution of the content and the overall transparency of the system. Finer pitch yields higher image fidelity but slightly less see-through clarity; wider pitch maintains greater transparency and is often ideal for larger-scale content or simple graphic treatments from further distance. Power usage remains low compared to traditional signage, in part because the diodes cover only a fraction of the total surface area. The lattice structure itself introduces minimal weight and requires no backlighting, X-Y axis (gridlines), visible power-supply-units (PSU), processors or cabling.

While initial applications have particularly been driven by **retail storefronts, flagship locations, and automotive showrooms**, the technology is finding traction across **hospitality, exhibition, transport hubs and cultural venues**. What unites these environments is the desire to introduce digital content without sacrificing

spatial openness. As display systems continue to evolve, transparent micro-mesh LED presents an approach where light, glass, and message co-exist. It doesn't seek to replace architectural materials but to activate them—quietly, precisely, and on demand.

How it works

Using cutting-edge micro-spaced LED pixel arrays suspended on an ultra-thin mesh grid, the system delivers motion, imagery, and messaging without the weight, bulk, heat, or opacity of traditional LED walls. The result: minimal structural impact, fast deployment, and maximum visual punch.

- **Transparent & Lightweight:** Over 90% see-through, perfect for retail windows and atriums.
- **Energy Efficient:** Lower power consumption than conventional LED displays.
- **Modular & Scalable:** Customize size, shape, flex, and pixel pitch to suit any architectural or brand need.
- **Holographic, Future-Ready Design:** Compatible with synchronized & asynchronous content, dynamic lighting, and holographic visual storytelling.
- **Integrated Tinting Effect:** Acts as a light diffuser, offering mild tinting properties that reduce glare and sunlight without additional films or treatments.

How it's different

Traditional digital signage often blocks visibility and dominates a space. Del Arte's transparent micro-mesh LED invites it to evolve. Instead of covering the environment, it integrates seamlessly, blending design and content in one elevated expression. Where standard screens demand attention, micro-mesh LED earns it subtly, innovatively, and elegantly.

Why Del Arte Media

We don't just sell screens, we create experiences. From ideation to execution, support and maintenance, Del Arte and its partners will work with you to design and deliver site-specific, brand-aligned, immersive environments using the most innovative LED technologies available worldwide.

- ◆ Book a live demo
- ◆ Explore custom design options
- ◆ Discover how to transform your next project with invisible tech that leaves a lasting impact.



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