



Light Shaping Diffuser®

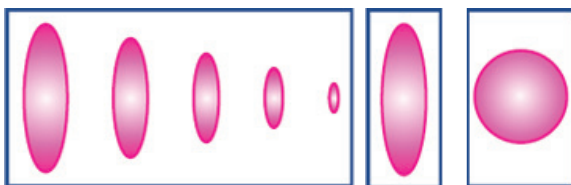
Spatially Variable Micro-Optics

Unique Designs, Precise Beam Control

Luminit can create a single component with multiple diffusion angles and orientations seamlessly integrated across its surface, enabling designs where a single LED array can be diffused at varied angles over a single component. By combining this with our prismatic films, we provide unmatched customization for precise beam shaping, enabling designers and engineers to achieve tailored light distributions and effects in a single, unified solution.



Figure 1:
Combining varied shape, orientation, or diffusion angles on different areas of a single diffuser produces distinct patterns even when lit with one LED array.



Integrated Manufacturing: From Design to Fabrication

Our in-house mastering, greyscale photolithography, and advanced microscopy tools allow pixel-by-pixel custom design and write capabilities for a full-range of micro-optics solutions at high volume production levels, replicated on a variety of AMECA-approved plastic and glass substrates depending on thickness, temperature, and volume requirements.

Luminit's custom double-sided spatially variable micro-optics offer customized beam shaping for any automotive display or lighting design. Whether it's exterior lighting or advanced displays, automotive applications require fine control for the way light is shaped.

Our custom micro-optics can combine our prismatic films (Direction Turning Film or Display Brightness Film) and a low angle or high angle Light Shaping Diffuser®. The image to the right presents one of many possible configurations.

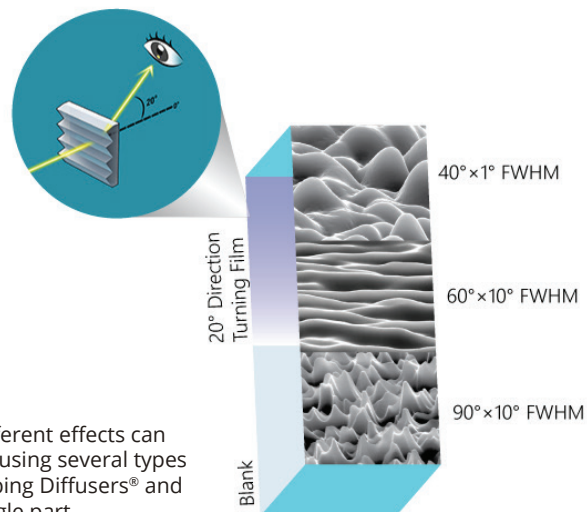


Figure 2: Different effects can be achieved using several types of Light Shaping Diffusers® and film on a single part.



Luminit Articulate Recording System (LARS)

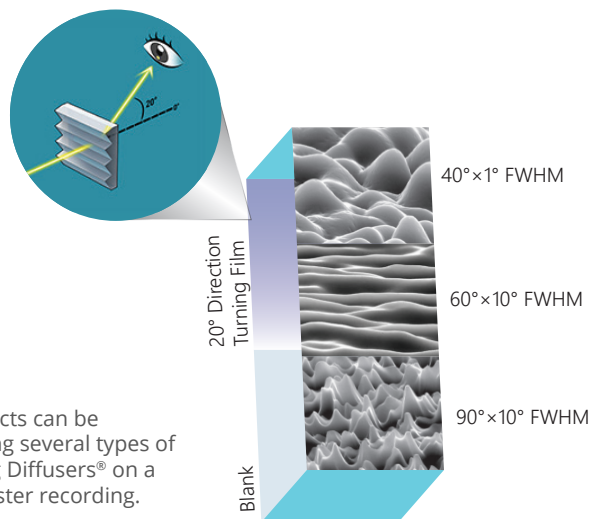
Recent upgrades to Luminit's manufacturing facilities have significantly expanded its capabilities with on-site 2.5D and 3D Master recording and large-format 3D lens fabrication. Its cutting-edge, injection-molded micro-optic solutions enable custom light shaping, by integrating diffusers with varying angles and orientations into a single part.

LARS is a breakthrough high precision 5-axis robotic exposure system which masters 3D mold inserts, where the multi-axis capability yields today, components and modules that integrate ever-complex optical functionality. Recording precision microstructures into optical components leads to modules that contain "Optical Origami" resulting in optical parts with increased efficiency, lower weight, higher reliability and lower cost – all in high demand by OEM's for transformative performance in displays and lighting applications.

With a significant cleanroom expansion and the addition of multiple in-house injection molding machines ranging 50-270 ton, the facility offers wide-ranging production capacity, enabling both efficiency and scalability with several products now in serial production. Auto-certified IAF16949, industry compliant RCL and DRL designs are available, making Luminit a one-stop-shop, design-to-fabrication light guide module service.



Spatially Variable Microoptics - 3D Recording



Different effects can be achieved using several types of Light Shaping Diffusers® on a single 3D master recording.



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