Luminit®
LIGHT SHAPING SOLUTIONS

Advanced Micro-optics for Automotive Applications

Outline

- Luminit Background and History
- What are Micro-Optics?
- Where are they used?
- How can they be implemented?
- Emerging applications and differentiation opportunities

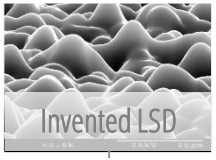
Luminit's Background

Founded in 2006, Luminit LLC manufactures and markets highly efficient optical diffusers and custom designed optics to manufacturers, integrators and developers in the OEM marketplace worldwide. Our Light Shaping Diffusers® precisely homogenize, shape and direct light to suit a particular purpose, and Luminit Transparent Holographic Components direct light beams without the need for conventional optics. Luminit provides customized and mass produced solutions for use in lighting, displays, automotive and high-tech applications.

- Privately held, profitable small business with over $118M in sales since 2006
- 103 employees, US and Taiwanese manufacturing facilities
- Diversity in both customers and market segments
- Differentiated high performance product

Luminit's History

Installed World Class R2R Web



Developed Injection Molded LSD

AMECA

3D Injection Molded Diffuser

2.5D Injection Molded Diffuser

Introduced Prismatic Films

Partnership with Asian Firm

JV in Taiwan with Rite Display

1980's

1990's

2000

2003

2006

2009

2012

2015

2018

2020

Physical Optics Corp. Founded

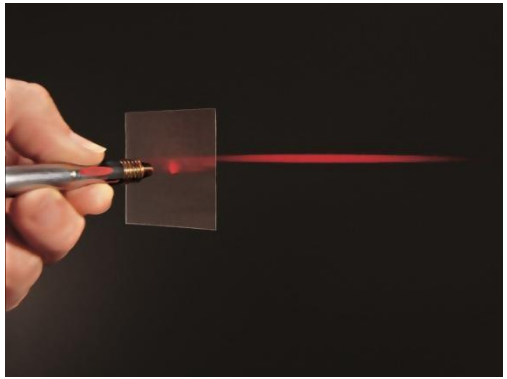
Partnership with Japanese firm

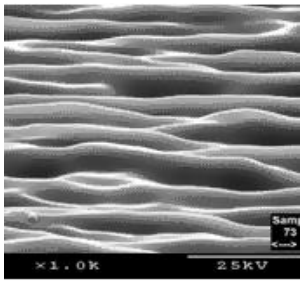
Spun out as Luminit

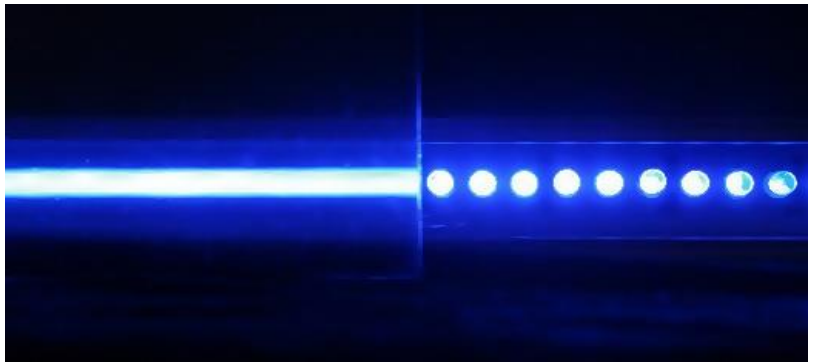
Partnership with Japanese Chemical Firm

Locations


Global Distributers
Manufacturing Facilities (U.S., China, and Taiwan)







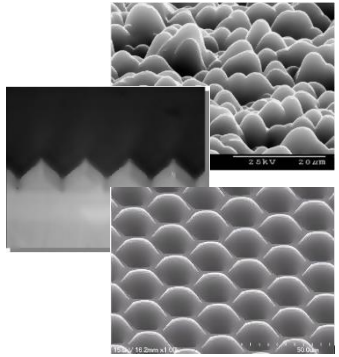
What are Micro-Optics?

Micro-Optics are diffractive or refractive structures that shape the output of a light source or enable a more homogenous appearance.

Luminit's Technology Platforms

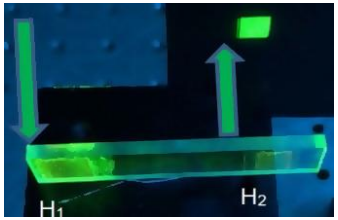
Light Shaping Diffusers

Light Shaping Micro-Optics



VIEW VIDEO

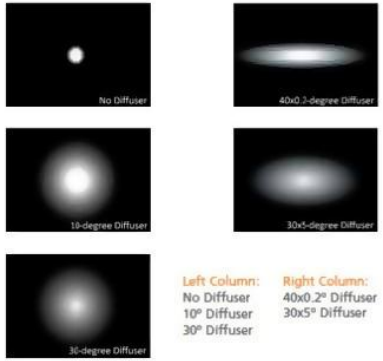
Holographic Optical Elements



VIEW VIDEO

When and where are they used?

Emergency Vehicle Light Bars: **Shaping the projected pattern of light**



Tail Function of RCLs: **Homogenization to provide better aesthetics without sacrificing efficiency**

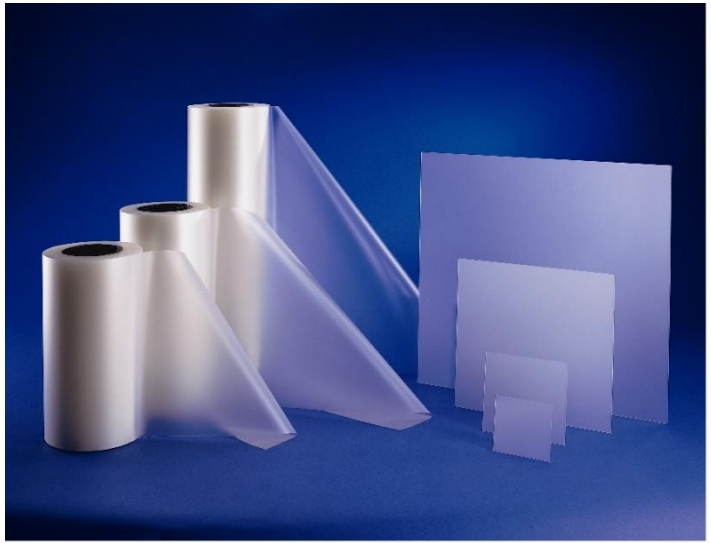
When and where are they used?

Imaging in Heads Up Displays

Driver Monitoring/Gesture Recognition Modules

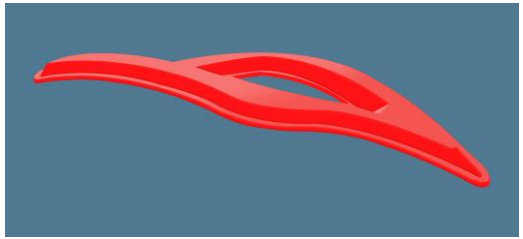
How can they be implemented?

AVAILABLE FORMATS



AMECA approved thin film (0.010” to 0.030” thick)

Injection Molded: 2D, 2.5D and 3D shapes



Emerging Applications

ADVANCED FORWARD AND REAR EXTERIOR LIGHTING WITH UNIFORM BRAKE AND DIRECTIONAL INDICATOR FUNCTIONS USING LIGHT PIPE/BLADE ARCHITECTURES

Emerging Applications

LIDAR FOR AUTONOMOUS VEHICLES