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

1980’s
Physical Optics Corp. Founded

1990’s
Invented LSD
Partnership with Japanese firm

2000
Partnership with Japanese Chemical Firm

2003
Spun out as Luminit

2006
Developed Injection Molded LSD
Installed World Class R2R Web

2009
2.5D Injection Molded Diffuser

2012
3D Injection Molded Diffuser

2015
Partnership with Japanese Chemical Firm

2018
Introduced Prismatic Films

2020
JV in Taiwan with Rite Display

AMETEK
Locations

- Global Distributors
- 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

Holographic Optical Elements
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?

Driver Monitoring/Gesture Recognition Modules

Imaging in Heads Up Displays
How can they be implemented?

**AVAILABLE FORMATS**

- Injection Molded: 2D, 2.5D and 3D shapes
- AMECA approved thin film (0.010” to 0.030” thick)
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