



Light Shaping Diffusers[®]

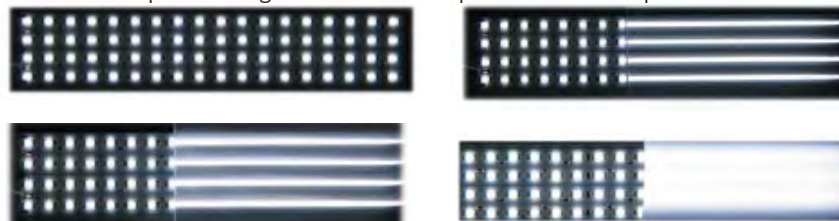
LED Lighting Applications

Many LED Lighting applications require diffusers capable of improving the uniformity and controlling the beam angle of the fixture without sacrificing light output. In some applications, the diffuser is required to mix the color emissions of multiple sources or to illuminate a larger symmetrical or asymmetrical area. Hotspots and uneven light distribution are common problems with LED sources. Luminit offers Light Shaping Diffusers[®] that homogenize and shape the light with high transmission efficiency – 85% to 92%. Light Shaping Diffusers[®] are available in a variety of circular and elliptical angles on thin film or rigid substrates and can be used to eliminate or minimize hotspots while maintaining high transmission efficiency. Elliptical Light Shaping Diffusers[®] shape the light in separate horizontal and vertical angles. Following is an example of a 60°×1° elliptical diffuser utilizing a strip LED light source with incorporated primary optics. The light is shaped by spreading it 60° in the horizontal direction, but only 1° in the vertical direction, eliminating hotspots. Zero order or a specular component will be less than 1% for visible wavelengths, but may be higher if our standard product is used with wavelengths >700nm. Luminit is able to design custom diffuser for wavelengths in the infra-red region. Please contact sales@luminitco.com for further details.

LED Lightline with 60°×1° Diffuser



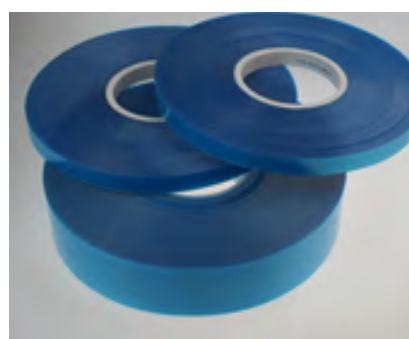
Examples utilizing a board with multiple LEDs without optics





Light Shaping Diffuser® Availability

- Light Shaping Diffusers® are available in circular and elliptical angles from 1° to 100°.
- Thin film Light Shaping Diffusers® are available in rolls, sheets or parts cut to your specifications.
- Standard rolls are 24" wide and 50' long.
- Strip rolls are also available in your specified width.
- Rigid polycarbonate sheets are available in sheets or cut to your specifications.
- Low-cost injection molded Light Shaping Diffusers® can be custom made for high volume OEM LED applications



Specifications

LSD® Angle Range (FWHM)	Circular: 1° to 100° Elliptical: minor: 1° to 60° major: 10° to 80°		
Transmission Efficiency	Circular: 0.2° to 20° ≥ 90%, 20° to 80° ≥ 85% Elliptical: ≥ 85%		
Angle Tolerance (10"×10" area)	≤ 1° ± 0.5°, (>1° < 10°) ±1°, >10° ± 10%		
Transmission Spectral Range	400nm to 700nm		
Temperature Range	-30°C to 80°C @ 240 hours		
Humidity	>95% ± 5% RH @ 24 hrs.		
Refractive Index	PC=1.586; PET=1.60, PMMA =1.494 (dependent on wavelength and composition)		
Pencil Hardness	>2H		
UV Resistance UVA/UVB (900 Kjm ²)	PET	PC (0.010"/0.25mm)	PC (0.030"/0.75mm)
	Δa= -2.3	Δa=-2.98	Δa=1.90
	Δb=-4.42	Δb=10.27	Δb= 3.98

Download our other product datasheets, at

<https://luminitco.com/downloads/data-sheets>

