

EASTMAN

Eastman **SPECTAR™ STRATUS**
copolyester

Brilliant by design

LED light-diffusing technology



Excellent diffusion and light transmission. Improved processability.

Offering brilliant long-lasting performance, LED lights are fast becoming the sustainable choice for architectural, residential, industrial, and retail lighting. Not since the invention of the light bulb has the industry seen so much change and innovation. But the intensity of an LED can be unappealing to the eye and create "hot spots" when diffused through conventional plastics or glass.

Now there's a new way to create a soft even glow without decreasing light output: Eastman Spectar™ Stratus copolyester.

Made with a proprietary technology, Spectar Stratus can be extruded or injection molded and the results can be spectacular.



Illuminating differences.

Brands and lighting designers are finding that conventional plastic or glass fixtures are often not the best choice for applications that use LED lights. Eastman Spectar™ Stratus copolyester offers light-diffusing technology for extruded and injection molded parts that can handle the intensity LEDs bring to the industry. Best of all, our options still allow optimum light transmission while “hiding” the light source.

Spectar Stratus advantages include:

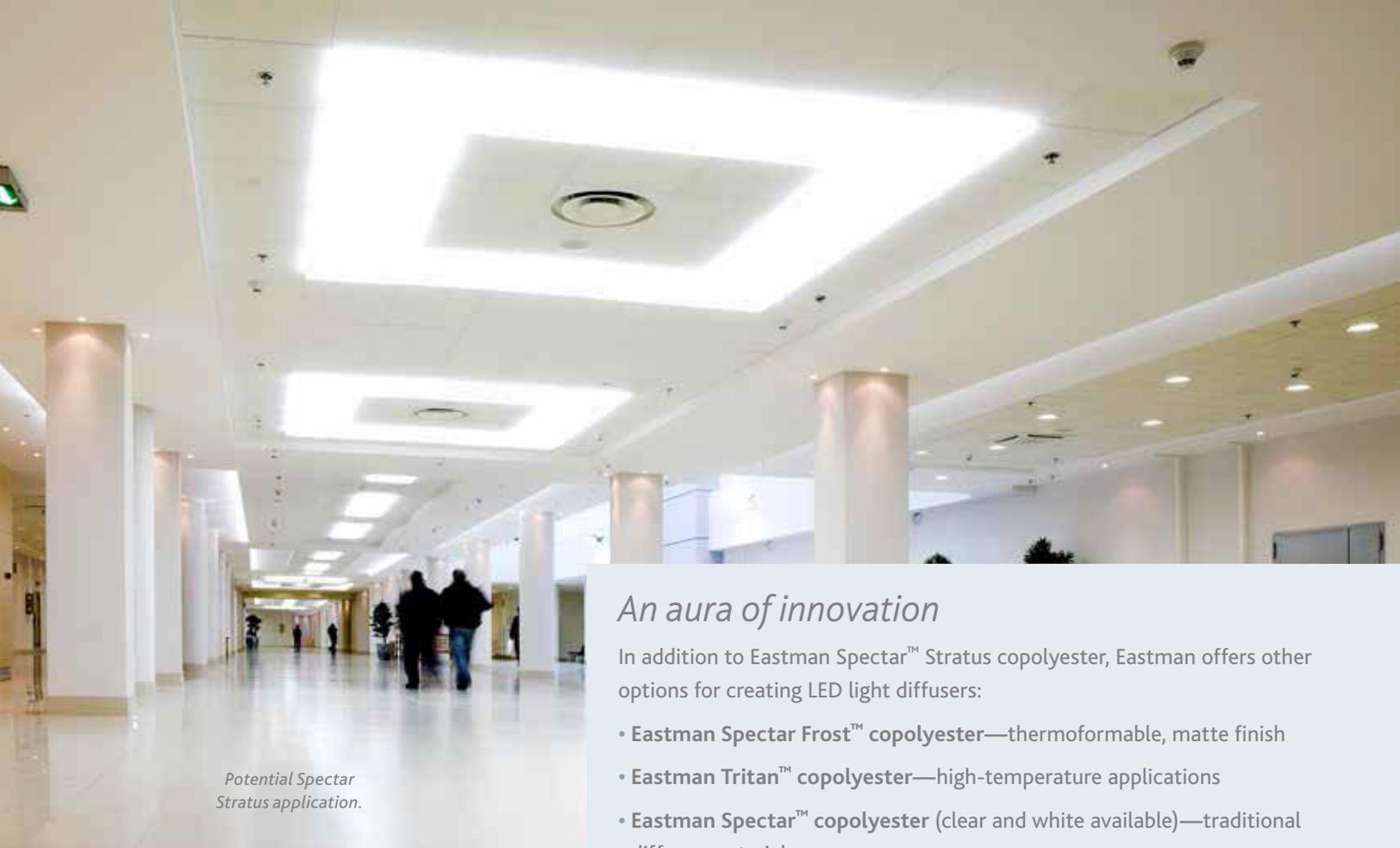
- **High light transmission**—Depending on gauge, Spectar Stratus light transmission can be adjusted between 80% and 90%. Minimal loss of light output allows maximum lumens per watt for the fixture.
- **Outstanding hiding power**—LED points of light are diffused across the diffuser lens, creating a desirable appearance.
- **Durability**—Unlike many other diffusers that crack in shipping or in use, Spectar Stratus is tough, capable of withstanding direct impact without breaking.
- **Design flexibility**—With its deep draw capabilities, Spectar Stratus allows endless design options.
- **Simple processing**—Spectar copolyesters truly make production fast and simple with a low thermoforming temperature, no need to predry before thermoforming, ease of cutting, and cold-bending capability.

The impact resistance, toughness, and durability of Spectar Stratus enhance the design freedom of your applications.

- **Chemical resistance**—Spectar Stratus is resistant to a variety of chemicals and cleaners, allowing for broader application and cleaning methods.
- **Process sustainability**—Trim scrap from extrusion or forming can be easily incorporated at high levels.
- **GREENGUARD Indoor Air Quality Certified®**—Sustainable attributes of GREENGUARD certified Spectar copolyester resins support the sustainability of luminaires made with Spectar Stratus technology. Spectar Stratus is also not manufactured with bisphenol-A, halogens, or phthalates.



Potential Spectar Stratus application.



Potential Spectar Stratus application.

An aura of innovation

In addition to Eastman Spectar™ Stratus copolyester, Eastman offers other options for creating LED light diffusers:

- Eastman Spectar Frost™ copolyester—thermoformable, matte finish
- Eastman Tritan™ copolyester—high-temperature applications
- Eastman Spectar™ copolyester (clear and white available)—traditional diffuser material
- Eastman Provista™ copolymer—for profiles
- Eastman Spectar UV™ copolyester—ultraviolet protection

Lighting a level above.

Achieving optimum light transmission while distributing light evenly across the diffuser sheet will depend on several factors, such as the distance the diffuser lens is from your LEDs, the gauge of your sheet, the finish applied to the lens, and the distance between LEDs.

Spectar Stratus can be used to tailor the material's optical properties to meet the performance of materials already in the market.

Optical properties

Product	Transmission (%)	Hiding power
Spectar Stratus high LT	88	Good
Spectar Stratus high diffusion	70	Very good
Polycarbonate high LT	86	Good
Polycarbonate high diffusion	64	Very good
Acrylic high LT	87	Good

LT refers to light transmission.

Specifications for Spectar sheet made with Stratus technology

Property	Test method	Spectar Stratus
Physical		
Specific gravity	ASTM D 792	1.27
Water absorption, 24 hours	ASTM D 570	0.15%
Mechanical		
Tensile strength, ultimate	ASTM D 638	3742 psi
Tensile strength, yield	ASTM D 638	7513 psi
Tensile modulus	ASTM D 638	281 Kpsi
Elongation @ break	ASTM D 638	59%
Flexural strength	ASTM D 790	11 Kpsi
Flexural modulus	ASTM D 790	316 Kpsi
Instrumental impact @ 0.118"	ASTM D 3763	23 ft-lb
Thermal		
Heat deflection temperature @264 psi	ASTM D 648	150 °F
Heat deflection temperature @66 psi	ASTM D 648	160 °F
Flammability		
Flame class @ 0.118", horizontal burn	UL 94	Pass*
Flame class @ 0.118", vertical burn	UL 94	V2*

*Flammability measured on general Eastman Spectar™ copolyester

Spectar Stratus processing advantages include:

- Improved thermoforming cycle
- Wider thermoforming temperature window
- Deeper draws
- Easy finishing
- Excellent printability

Production is fast and simple with Eastman Spectar™ Stratus copolyester.



Put your project in a good light.

What if you could focus on implementation rather than limitations?

Creative lighting is a crucial part of any brand experience in retail or work environments. And Eastman Spectar™ Stratus copolyester is the innovative solution for creating durable, sustainable, and inspirational installations.

Stunning in both clear and translucent applications, Spectar Stratus is a premier product that brings brilliant ideas to light by enabling effortless fabrication and inspired design. Its flexibility allows designers to create unique shapes that are not possible with glass or other plastic materials.

Light diffuser sheets made with Spectar Stratus can be bent hot or cold and polished with commercial edge-finishing equipment, sanding, solvents, flames, or buffing to produce finished edges—and brilliant designs. It can be laser cut, routed, welded, drilled, die-punched, or joined by screws, rivets, or bolts. It can also be cut on conventional table, band, or radial-arm saws with blades commonly used for plastic.

Spectar Stratus can be vacuum-formed at lower temperatures than other plastics without predrying the sheet. It forms clear, strong bonds with commercially available cements and solvents. It accepts screen printing, painting, laser marking, and hot stamping easily. Surface scratches or scuff marks can be removed using a common heat gun.

Best of all, lighting applications made with Spectar Stratus are made tough—durable enough to survive heavy use and harsh environments—and is resistant to a variety of chemicals and cleaners. Because of this outstanding toughness, designers can insist on thinner designs without compromising performance.

With Eastman Spectar™ Stratus copolyester, versatile, easy-to-process lighting creations are endless.



Potential Spectar Stratus application.



*Potential Spectar
Stratus application.*

Make the switch.

Eastman is a global specialty chemical company that produces a broad range of advanced materials, additives and functional products, specialty chemicals, and fibers that are found in products people use every day. As a world leader in the diverse markets we serve, we are focused on delivering innovative and technology-based solutions while maintaining our commitment to safety and sustainability.

To help you succeed, we can assist you in identifying options that allow you to bring new products to market. Let us help you tailor an LED-diffusing solution that meets your preference as well as your needs.

See why Spectar Stratus is the brilliant choice for creating durable, sustainable, and inspirational installations. To learn more, contact your Eastman representative or visit Eastman.com/Spectar.



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