

Providing flexible solutions for the  
**LED LIGHTING INDUSTRY**

Marian supplies die-cut and converted flexible parts for the LED Lighting Market. Marian is an ISO 9001:2015 certified company with locations worldwide. The many benefits of LED lights are increasingly understood and the reason for steady growth in the market. Light designers are challenged to develop lights that are more efficient, more cost effective and superior to their competition. Let the experts at Marian provide innovative solutions and cost saving suggestions for your next LED design project. Contact Marian for a material sample, quote or a fast prototype.

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## Die-cut Solutions for LED Light Enclosures

### Thermal Management

Proper thermal management is critical to the longevity of LED light enclosures. Die-cut thermal interface materials offer consistent thickness and shape. They are quick and easy to install as opposed to messy thermal grease. Marian offers silicone and non-silicone thermal components.

### Environmental Sealing

Outdoor LED light enclosures are required to seal out water, wind and dust. They must withstand a wide range of temperatures as well as UV exposure. Die-cut gaskets from Marian are made from the highest quality materials and cut to highly specific dimensions.

### Light Diffusion

Light diffusing films can help light designers disperse or shape a light beam for a particular purpose. Die-cut light diffusing lenses will fit directly into the LED light enclosure, diffusing hot spots and evening out light distribution. Marian can also screen print beam angles and installation instructions onto the films.

### Enclosure Ratings

LED light enclosures are often compliant with stringent UL, NEMA and IPX ratings that require components and materials capable of passing the required standards. Marian engineers are experts in sourcing and selecting materials that meet specifications for enclosure ratings.

### Venting

Hydrophobic microporous vents are a cost-effective way to protect your LED product by keeping dust and moisture out of the enclosure while relieving positive pressure or negative pressure in the enclosure. Vents are IP-Rated, up to IP-68. Marian offers die-cut discs with zoned adhesive lamination.

### Bonding & Joining

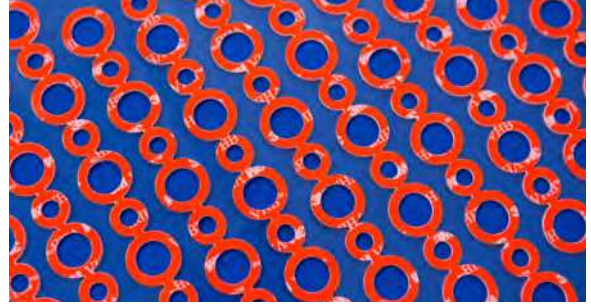
Double coated tapes are a lightweight, thin, and clean option for bonding and sealing components within the LED light enclosure. Materials often meet important UL specifications while offering a durable and robust bonding performance needed for the long life of LED enclosures.



## Materials

Marian sales engineers are experts in recommending the appropriate materials for LED applications. LED lighting products are required to meet a number of specifications. Proper material selection can ensure that the products meet or exceed requirements such as UL certifications, IP ratings, and long-term warranties. Marian maintains strong relationships with premier material manufacturers such as 3M, Rogers, Porex, Polymer Science, Luminit, Tesa and Nitto.

- Foams for Gaskets and Seals
- 3M™ VHB™
- 3M™ Flame Barrier Material
- Light Diffusing Films
- PTFE Venting Materials
- Light Reflecting Films
- Double and Single Coated Tapes



## Capabilities

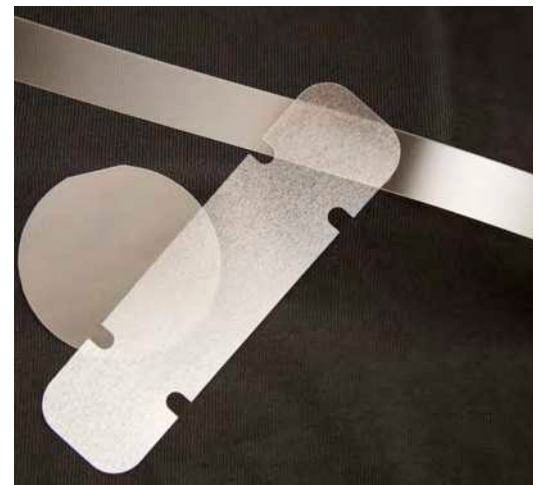
Marian continuously invests in and creates innovative manufacturing technologies to produce component parts. Marian aims to improve assembly processes and reduce costs. Whether a part requires tight tolerances, lamination of multiple materials, zone coating, or manufacturing for precision “pick-and-place” equipment, Marian will work to provide a flexible solution.

- Rapid Prototyping
- Rotary Die cutting
- Slitting
- Flat Bed Die cutting
- Spooling
- Laser Cutting
- Plotter Cutting
- Laminating
- Assembly
- Machine Automation
- Graphic Overlays

## Applications

Marian’s diverse set of manufacturing capabilities and long list of material offerings give them the ability to manufacture custom components for almost any application. Marian excels at manufacturing intricate and challenging parts at high volumes. Marian’s experienced teams are ready to support LED product life-cycles from prototypes to development builds to full production. Common LED Lighting applications are listed below.

- Thermal Management
- Adhesion / Structural Attachment and Bonding
- Venting
- Light Reflection
- Light Diffusion
- Vibration Management
- Environmental Sealing
- Heat and Flame Barrier
- Electrical Insulation







Marian is a global leader in providing precision die-cut component parts for customers in the consumer electronics, automotive, LED lighting, and medical industries. With over 1,000,000 square feet of production space worldwide and state-of-the-art manufacturing technologies, Marian engineers work closely with customers to solve complex manufacturing and assembly problems. Marian’s responsive approach, in-depth material knowledge, innovative manufacturing capabilities, and high standards for quality all add up to provide you with the best component solutions in the industry.



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