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FLEXIBLE ACRYLIC POLYMER LIGHTS THE WAY

It provides new vehicle lighting options

Normally automotive exterior lighting performs one of two functions: project light for the driver to see ahead or behind the vehicle, or provide front or rear side markers so the vehicle can be seen. The front and rear side markers are typically reflectors of light from other vehicles.

The combination of light emitting diodes (LEDs) and acrylic polymers provides new vehicle lighting options. Tyco engineers used **CYRO Industries'** ACRYLITE H12 acrylic polymer to design AMP Light Guides. The ACRYLITE H12 polymer provides consistent processing parameters, and the transparency, weathering stability, and light transmission characteristics that vehicle applications require. The linear light distribution system focuses the light to illuminate specific surfaces.

Using the acrylic's flexibility and ability to conduct light and LEDs as the light source, unique geometries are possible. Each polymer pipe provides 94 percent light transmission for the output of the LED. Light traveling through the pipe can be curved without affecting

light transmission or illumination. The LEDs dissipate minimal heat and the conducted light gives off no heat so the entire system is safe to the touch. This allows lighting to be used almost anywhere inside the vehicle. The polymer material is weather-resistant, so exterior applications are suitable for the light guides as well.

A reflective strip integrated onto the acrylic pipe maximizes light output and directs the LED light in the desired direction. The reflective strip design maximizes illumination for the light guides. The light guides can use red, green, and other LED colors.

Among the initial vehicle applications is the illumination of vehicle running boards. The linear lighting illuminates running board steps on the Nissan Quest minivan for passengers entering or exiting the vehicle.

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Directed Lighting

Flexible acrylic polymers route LED lighting and withstand the rigors of the outdoors. Since the light pipes are cool to the touch, they have potential applications inside the vehicle.

