LED lamps offer light transmission of 89 percent

Replacing a long-time fixture isn't easy. But PolyBrite's Borealis LED (light-emitting diode) lamps featuring Bayer MaterialScience LLC's Makrolon polycarbonate plastic make it a snap to switch from an energy-sapping incandescent light bulb to energy-efficient, eye-pleasing and impact-resistant LED technology.

Bayer MaterialScience's Makrolon FR7067 polycarbonate plastic plays a key role in enabling Borealis A19, B10, R20, PAR30 and PAR38 LED lamps to achieve maximum brightness and improved energy efficiency – up to 90 percent less energy consumption – than traditional lighting with no radiant heat or ultraviolet (UV) rays.

The flame retardant plastic material exhibits outstanding optical properties and meets the Underwriters Laboratory UL-94 V0 flame rating at 1.5 mm while also offering light transmission of about 89 percent. By comparison, most traditional flame retardant polycarbonates meet this key flammability rating at a thicker 3.0 mm. Using Makrolon FR7067 will also help manufacturers meet the new UL-8750 Standard for Safety for non-class 2 and direct-connected LED lighting, as the new standard requires a V1 rating for lenses and optics, which V0 rated materials also meet.

The Makrolon grade was developed for manufacturing injection-molded covers of LED lamps. The covers serve as both an UL-approved circuit enclosure, and as a lens – modifying the light path by either focusing or scattering the light depending on the application, and by not blocking as much light as other materials. The higher light transmittance also allows the PolyBrite technology to use fewer LEDs, according to PolyBrite.

"I have always had success with Makrolon polycarbonate resin and I knew that we could count on the material to consistently meet our needs," said Carl Scianna, president of PolyBrite International and inventor of PolyBrite™ technology. "Makrolon polycarbonate plastic is a superior choice because of its high impact strength and glass-like transparency, among the many other benefits it offers.

"Experts from Bayer MaterialScience have been and continue to be a great asset, providing support to our company as we rapidly move forward developing our innovative LED solutions," Scianna said.

Borealis lamps are used in a variety of general lighting applications including residential, commercial and retail areas. Each lamp offers an eco-friendly, energy-saving alternative to incandescent or compact fluorescent light (CFL) bulbs. The Borealis A19, B10, R20, PAR30 and PAR38 LED lamps that feature Makrolon polycarbonate plastic provide brightness comparable to incandescent lamps, but with reduced glare and improved shock and vibration resistance. The color and the quality of light can be tuned for specific applications, according to PolyBrite.

Scianna explained that by using Bayer MaterialScience's plastic, Borealis lamps are impact resistant and virtually unbreakable, resulting in significant reduction in maintenance costs, without burdening the environment and future with hazardous materials and unnecessary gas emissions associated with CFL and fluorescent lighting. Additionally, they are the only warranted lamps for an industry high 50,000 hours of operation as compared with the life span of a CFL with 6,000 hours or 1.5 years, or an incandescent lamp that lasts 1,000 hours or 3 months, he added.

The Borealis line is designed with dimming capabilities and fits into standard fixtures. The LED lamps and lighting systems provide superior performance and efficiency through advanced technologies, proprietary design, and thermal management, ensuring reliability and longevity of the Borealis line of products.

1-800-320-3801 or visit www.polybrite.com [1] or www.borealislighting.com [2]

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