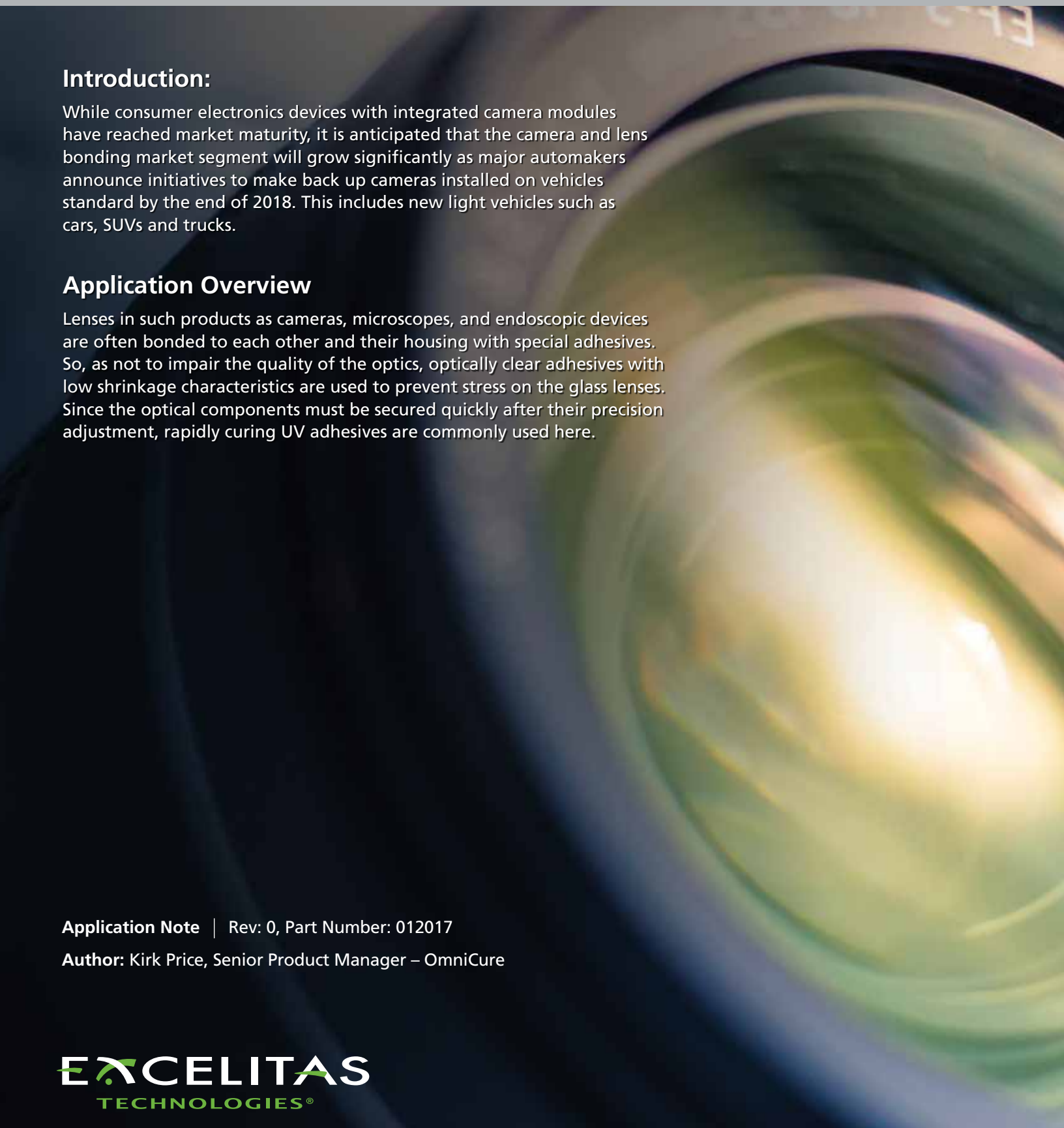
OmniCure®
UV Curing • In Control

Precision UV Curing for Lens Bonding Applications



Introduction:

While consumer electronics devices with integrated camera modules have reached market maturity, it is anticipated that the camera and lens bonding market segment will grow significantly as major automakers announce initiatives to make back up cameras installed on vehicles standard by the end of 2018. This includes new light vehicles such as cars, SUVs and trucks.

Application Overview

Lenses in such products as cameras, microscopes, and endoscopic devices are often bonded to each other and their housing with special adhesives. So, as not to impair the quality of the optics, optically clear adhesives with low shrinkage characteristics are used to prevent stress on the glass lenses. Since the optical components must be secured quickly after their precision adjustment, rapidly curing UV adhesives are commonly used here.

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The Challenge

Lens bonding applications require a precise irradiance level in order to cure the parts as quickly as possible without overheating. This application benefits from a UV curing system with precise UV intensity control and specialized optics to focus the light in order to avoid lens damage while efficiently delivering optimal UV light energy essential for bonding photosensitive materials.

The Solution

The OmniCure® LX500 spot curing system with such advanced UV LED technology as the proprietary Intelli-Lamp® LED will ensure that each lens receives a constant and repeatable amount of optical energy. Often in lens bonding applications, the process requires a two stage curing. First, a primary cure to quickly apply a low dose of energy is required to set the part into place and minimize shrinkage of the adhesive. A second dose of energy is then applied over a longer period to provide the final cure of adhesive to the substrate. In rapid production environments, using StepCure 2.0 programming is an ideal solution to accommodate multi-step curing to avoid unwanted damage to the lens.

The Benefit

The specific spectrum of UV output with specialized focusing lenses provides a uniform high-dose UV curing at low temperatures. Interchangeable LED focusing lenses allow control over UV spot size and irradiance level to meet the needs of your specific application. The OmniCure LX500 will offer a dramatic increase in production yields, reduced scrap and lower costs. The optimized and efficient thermal design coupled with over 20,000 hours typical LED lifetime has a lower cost of ownership when compared to existing UV systems. The enhanced power efficiency of UV LED systems improve operating costs due to superior reliability and has a positive impact on the environment.

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