The Future of Light Is Digital and Ultra-Lightweight

LightnTec produces dynamic LED films for covering ceilings, walls and floors

Easily displaying video animations and creating lighting effects in any shape using lightweight materials may sound like a futuristic notion yet. The Karlsruhe-based start-up LightnTec has already developed an innovative technology allowing it do precisely that. The ultra-lightweight LED-Wallpaper films used to digitize light on ceilings, walls and floors are suitable for practically any application imaginable. Images are controlled using DVI video signals simply via a USB stick, Wi-Fi or the Internet.

Karlsruhe, March 17, 2018. The company's two execs Florian Kall and Lutz Nehrhoff von Holderberg have extensive experience in the fields of functional layers, films, lighting, information technology and AV/video control. In their words, LightnTec provides niche products that sit somewhere between dynamic lighting and 16:9 screens. "Our products are a hybrid of analog lighting and TVs. What we provide is dynamic lighting in the form of an LED Wallpaper. We can't really think of any potential applications where our patented lighting device, consisting of dynamic lighting on an ultra-thin plastic foil, wouldn't be suitable", says LightnTec CEO Florian Kall with confidence. Individually controllable light spots on an ultra-thin film (made from a thermoplastic polymer) provide a fully malleable lighting surface suitable for all manner of applications. "Any shape is achievable, no matter whether the lighting installation needs to be in the form of a wave, a circle, a triangle or even a fish. We are ready to customize individual layouts to meet customers' specific requirements, and the full end-to-end development and production of the lighting device, i.e. the lighting and the mechanism for controlling it on the film, is carried out in Karlsruhe", Kall continues. The high-tech material is translucent, light, rollable and water-resistant as well as ultra-thin and ultra-lightweight.

How does film-based digital signage work?

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LightnTec's technology is based on a matrix of conducting paths integrated into a thin and flexible plastic film. The light spots are placed along these paths currently at intervals of 50 mm, however the pitch can be adjusted. The LED film is produced off the roll in tracks with a width of 600 mm and is available in black, white, translucent or with customized printing. The individual sheets can then be easily combined to form one single overall surface for covering any space, such as ceilings, walls, floors and façades, even up to the size of a tennis court. An optional diffuser can also be used to achieve a uniformly lit surface from a short distance.

The LED film weighs just 250 grams per square meter, which is nothing when you consider that a corresponding LED display would weight several kilograms! LightnTec's films therefore reduces the weight in a factor of 100, which in turn removes the need for expensive and time-consuming sub-constructions as the LED film can, be even glued to almost any subsurface. The company plans to unveil an outdoor film with a luminous intensity of 5,000 candela per square meter in the third quarter. This will mean that LightnTec films can be used both indoors and outdoors, even in daylight.

LightnTec displays are already being used:

LightnTec's "media screen matrix" isn't a futuristic notion or a bold vision as the company's LED-Wallpaper are already being successfully put to use in various locations and are now being showcased to a wide audience at Light+Building in Frankfurt. One such example was an installation measuring in excess of 30 m² at the CODE-n-festival in Karlsruhe (https://youtu.be/r7w99ZzYccA).

However, the technology isn't only suitable for digital advertising displays. The most recent uses have included a futuristic wall design and dynamic lights in a Berlin seminar center and the Lighting Technology Institute in Copenhagen. Other installations are being planned in London, Vienna, Frankfurt, Düsseldorf and Paris as well as Karlsruhe and surrounding areas. Prototypes are in the pipeline for human-centric lighting (HCL)

![LightnTec logo]

applications in order to create the right lighting mood, "gesture or sensor-controlled IoT lighting" or so-called "light showers" (also planned in "dual white" or RGBW) for homes, offices, hospitals, buses, trucks, trains and caravans.

"Incoming orders are encouraging as word has spread about the flexibility that our technology offers", explains Lutz Nehrhoff von Holderberg, LightnTec CSO: "We digitize surfaces, nobody has ever digitized before!: Any Size. Any Place. Any Shape".

The company plans to obtain the CE certification for an outdoor version in the second quarter 2018. The LED films are optimized for temperatures between -20°C and 70°C, and displays can also be equipped with IP65 protection layer against dust, UV, and water.

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About LightnTec

LightnTec is the leading innovator for light and its control on ultra-thin films. LightnTec's digital illuminating surfaces are ultra thin, malleable, flat, large in scale, applicable both indoors and outdoors, and digital – any size, any shape, any place, ultra thin, ultra lightweight.

The light and display screen film can achieve luminance values of up to 5,000 candela per square metre. Its very low fire load also means it offers advantages in terms of fire protection. The technology also offers wide-ranging application potential in the fields of audio/video, digitally controllable and illuminating surfaces on ceilings, walls, roof linings, cladding and façades. LightnTec was founded in Karlsruhe in February 2016 to develop LED wallpapers.