

Individual design using light

## **Light guides made from PLEXIGLAS® lend a high-quality appearance to the new premium ATMs from Diebold Nixdorf**

- **Individually customizable illumination on the new premium ATMs from Diebold Nixdorf**
- **The new premium series of ATMs will enable banks to adapt the illumination to their company colors**
- **Light guides made from PLEXIGLAS® molding compounds create a homogeneous and high-quality appearance**

Whether in a pedestrian zone or in a shopping mall, advertisement boards are lit up everywhere and compete for the attention of passers-by. Many companies therefore place value on being recognized by their brand colors and, ideally, standing out from the crowd. The same goes for banks. However, while facades and the buildings themselves are generally found in the company colors, most ATMs still look very similar. The next generation of ATMs from Diebold Nixdorf – the DN Series™ – will now change this.

### *Illuminated accents*

Up to now, the ATM screen was the primary location for placing individual advertisements. There are, however, many more options for color accents and branding. As such, the premium variant of the new DN Series of ATMs comes with customizable color lighting options around the cash dispenser, on the card reader and on the side view protectors. “For this model, we are focusing on high-quality lighting,” says Peter Golüke, Lead Engineer for Light Solutions at Diebold Nixdorf Systems GmbH. The lighting elements are not just a design feature, but also increase security: “The changing colors guide the user throughout the entire transaction,” Golüke explains. At the end, for example, the cash dispenser is illuminated so that the user does not forget their money.

The development of the ATM series, which is both quicker and more compact than its predecessor, took almost two years. “One of the biggest challenges was to develop even and high-quality lighting,” reports Golüke. For the experienced lighting specialist, only one product came into question: the brand polymethyl methacrylate (PMMA) from Röhm. “We have been working with PLEXIGLAS® for a long time and it was clear to us from the very start that we would only be able to achieve the desired high-quality effect with this material. No other manufacturer of PMMA can even come close to producing this quality,” Golüke emphasizes.

Despite this, it took the development team a while to be satisfied with the result. Different material variants were tested, the tools were modified and different processors commissioned. “There were issues with light distortion, undesired 3D effects and varying brightness levels,” reports Golüke. “It was a real learning process before we found the right combination of material, fabrication process and position of the light guides and LEDs in the device.”

### *Special material for edge lighting*

PLEXIGLAS® LED for edge lighting provided the breakthrough for Diebold Nixdorf. This variant of PLEXIGLAS® is a molding compound specifically developed for this purpose. Special diffuser particles embedded in the material ensure that light that enters via the edge is outcoupled evenly across the entire surface of the component. “The material is clear when unlit, while it shines in the color of the LEDs when illuminated,” describes René Kogler, Head of Product Management for Lighting, Extrusion, Optics at Röhm. “Because PLEXIGLAS® itself is completely colorless, it displays the colors very precisely.”

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These are properties which impressed the lighting experts at Diebold Nixdorf: “In our view, this is a fantastic material,” says Golüke. “The light distribution is so uniform that the light guide which surrounds the cash dispenser in a U-form is illuminated absolutely homogeneously.”

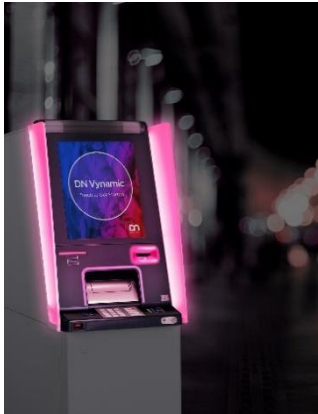
The DN Series uses two different versions of the special molding compound: PLEXIGLAS® LED LD12 for the light guide surrounding the card reader and PLEXIGLAS® LED LD48 for the lighting element around the cash dispenser. “The two types have a different content of diffuser particles,” Kogler explains. After all, the distance the light has to cover also plays a role in achieving homogeneous edge illumination. PLEXIGLAS® LED for edge lighting is therefore available in four different variants, enabling even light extraction from components up to 96 centimeters in length.

*Illuminated view protection*

While PLEXIGLAS® LED uses diffuser particles to extract light in a homogeneous way, the standard versions of the brand PMMA from Röhm also possess excellent light guiding properties – a factor which can be seen in the side view protectors installed on the ATM. “We use PLEXIGLAS® GS sheets here, which are printed with an almost invisible structure,” Golüke explains. The view protector can be set up so that it is only illuminated when the ATM is in use.

The diverse and high-quality overall impression of the illuminating elements remains intact over many years in PLEXIGLAS® products, as all material versions display the highest surface hardness of all thermoplastics, thus providing good functional properties. A durable premium look for a premium product.

Images



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The premium variant of the new DN Series of ATMs comes with customizable color lighting options around the cash dispenser and card reader and on the side view protectors. PLEXIGLAS® ensures even light distribution.



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