

RENOLIT relies on JUST Normlicht's LED-based technology for color proofing

Secure Communication via color

The RENOLIT Group is one of the world's leading manufacturers of high-quality polymer solutions. On modern calender and extrusion lines, the company produces high-quality plastic films and related products from various polymers. Depending on the application, these are further processed on printing presses, embossing calender, varnishing and cutting systems. For objective and standard-compliant assessments of product color, quality and appearance, RENOLIT SE recently invested in Digital Light Systems solutions from JUST Normlicht at its headquarter in Worms, Germany.

The RENOLIT Group is known for partnership-based service, an international orientation, and innovative, high-quality, reliable products. What began in 1946 with seven employees in Worms has grown into a global company with around 5,000 employees worldwide. Today, with 18 production sites and 14 distribution units in over 20 countries, the RENOLIT Group is one of the world's leading plastics processors. The know-how and commitment of its employees make the independent family-owned company a sought-after specialist for high-quality films, sheets and other products made of polymers. The top quality of its products supports this success.

To ensure that these high standards are also met in terms of color appearance, RENOLIT SE recently invested in fifteen Digital Light Systems (DLS) from JUST Normlicht at its headquarters in Worms.



From left: Alexander Doppler, Production Manager at RENOLIT SE Worms, and Abdel H. Naji, Sales and Marketing Manager at JUST Normlicht, in front of one of the fifteen sampling booths at the Worms production site with the new JUST DLS luminaires.

CHANGEOVER TO LEDs

„For color matching and quality inspection of our films and polymers, high-quality standard light illumination is indispensable. Here at our headquarters in Worms, we have fifteen different stations on which we proof and assess color and overall appearance of our films. Previously, we had already installed JUST moduLight 6500 luminaires based on JUST proindustry 6500 fluorescent tubes, but they are now getting old. With the coming ban of fluorescent tubes by the EU and the innovative further development of LED technology, we decided last year to make the switch to LEDs,“ explains Alexander Doppler, Production Manager at RENOLIT in Worms.

The company, divided into 13 different business units, today focuses primarily on technical films. In Worms are manufactured products and solutions for the four business units: Exterior Solutions, Interior Surfaces, Visual Communication and Facade business units. The Exterior Solutions division is the main business in Worms

and includes decorative high-performance films for exterior applications, which are used to protect against weathering and for surface design of window profiles, door panels, garage doors and other construction elements.

Interior Surfaces offers one-, two- and three-dimensional processable thermolaminates for the decorative design of a wide variety of surfaces that can be used in kitchens, furniture, stores, walls and ceilings, healthcare, offices, hospitality, and consumer electronics. Interior surfaces are also a partner of the caravan, door and flooring industries.

The Visual Communication business unit offers a wide range of calender flexible PVC films and foils for a wide variety of applications, from graphic films and advertising prints to protective and illuminated films or adhesive tapes and labels. Other products with permanent surface protection have been designed for poster and digital printing or vehicle advertising.

The Facade segment offers solutions for new construction and renovation. Self-adhesive films are used to freshen up building envelopes or form jointless pier and corner cladding, reveal and lintel cladding, and many other solutions. The company does not outsource any part of the production process, but keeps the entire value chain in-house, not only producing the films and polymer products, but also printing in its own print shop and embossing and cutting in the finishing department.

„After the film has been calendared once and rolled out into a continuous film sheet until it is about as thin as a human hair (0.1 mm), it is transferred to our print shop. There we realize wood decor reproductions using the gravure printing process, then in the next process step an additional finishing with a transparent protective layer that ensures the necessary UV stability. The film is laminated and then embossed - thus the desired structure,“ says Alexander Doppler, describing the complex process that gives the films their filigree and very realistic appearance.

CREATE IDENTICAL CONDITIONS FOR PROOFING

„Quality is a very important criteria for us, so in 24/7 production it is also highly important that the assessment of the films and polymers takes place under identical conditions - regardless of whether it is carried out during the day or night shift. For this reason, we have consistently created the same conditions at those stations where assessment is important: Assessment is performed on identical tables in neutral Munsell N7 matte gray with identical inclination, identical spacing and of course, identical illuminants. With the LED-based color proofing luminaires DLS module series from JUST Normlicht, we have consistently ensured identical and verifiable viewing conditions,“ emphasizes Alexander Doppler. „Deviating and fluctuating color temperatures, which can cause distorted viewing results, are a thing of the past with our LED technology. The Digital Light systems has a consistently high quality of light. The technology combines the high illuminance

of the diodes with special Fresnel lenses, which ensures optimum homogeneity in the illumination,“ explains Abdel H. Naji, sales and marketing manager at JUST Normlicht. „The mix of multiple-colored LEDs creates a more homogenous and complete light spectrum than conventional fluorescent lamps. The result is a natural and reproducible color matching with standardized illuminants D50 and D65, far away from environmentally harmful mercury, restrictive warm-up phases, changes in light color temperature or quality variations in tube batches.“

INDUSTRIAL PRODUCTION WITH SPECIAL CRITERIA

A special challenge at RENOLIT SE was the uniform illumination across the entire width of the table because the company produces in special formats that are significantly larger than the standard and classic formats used in the graphic arts industry. „For our production, we need to evaluate the result on a maximum printing width of 2.2 meters. That’s why we could not use the available viewing cabins, at the time when we started matching under standardized light. For this reason, we optimized them ourselves for our dimensions and designed them uniformly and in accordance with standards, painted them with neutral, matte gray Munsell N7, and thus created standardized conditions,“ reports Alexander Doppler. „Another significant difference compared to the graphic arts industry is that we don’t print with the classic process colors but have many spot colors in use - especially in the decorative area. With

a pure film, the result can be measured without any problems, but this is not possible with a decor. The essential criteria here is the impression and the optical comparison. Of course, the register marks can be checked, but what is decisive here is the overall image on the entire print area.“

When assessing the entire width of the table, it could also happen with the classic fluorescent tubes that they had a reddish color cast at one end and a greenish color cast at the other end, Alexander Doppler said. This was also one of the reasons that led the RENOLIT team to use the JUST DLS solution - it enables them to make critical color assessments over a wide area. Since the LED illumination is also stable immediately after switching on, the JUST DLS system can be turned-on only when needed. Fluorescent lamps must first stabilize after switching on before color proofing is possible.

„Four DLS modules now replace ten previous tube modules in the rack because the light is more intense with LEDs,“ said Abdel H. Naji. „Today’s LED technology is significantly more economical compared to the previous fluorescent lamp! Via the immense savings due to the elimination of warm-up phases and regular tube changes, RENOLIT will recover the entire acquisition costs for the JUST DLS system in four to five years, at the latest. For RENOLIT, this is an argument in favor of the new technology, which should not only be innovative and ensure quality, but must also have an attractive return-on-investment,“ Abdel H. Naji concludes by summarizing the advantages of JUST LED technology.

The use of JUST DLS standard luminaires ensures consistently high lighting quality and homogeneity of illumination with low reflection behavior. Alexander Doppler (front) and Abdel H. Naji sampling the foils.

