

Case Study

High-speed, high quality textile screen printing enabled by precise temperature control

Company

MHM

Industry

Textile screen printing

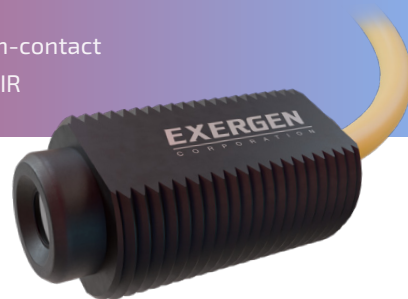
Products

Exergen IRT/c.03 non-contact sensors from CleverIR

For more than 40 years, Austria's MHM has pioneered textile screen printing innovation. The company's flash cure units set industry standards for drying screen-printed fabrics at high speed. But maintaining quality while maximizing efficiency demands extreme precision. With radiant lamps reaching temperatures up to 1600°C, even slight miscalculations can damage delicate textiles and costly branded garments. MHM needed accurate real-time temperature monitoring to prevent ink overheating while optimizing throughput.

Challenges

MHM's flash cure units use MW lamps (reaching 1200°C) or HTL lamps (reaching 1600°C) for rapid textile drying. Three critical thermal challenges arise. Intense lamp heat conducted to sensor areas risked exceeding the 100°C body temperature limit. Residual heat after shutdown could overheat sensors when cooling fans stopped. Densely packed lamps restricted sensor field of view while radiating heat that distorted readings. Overheating creates waste and brand risk for MHM's global brand clients.



Solutions

Working closely with CleverIR engineers, MHM selected Exergen IRT/c.03 sensors with a 3:1 field of view. Sensors mount between and behind IR lamps, protecting them from direct heat while maintaining clear sightlines to printed fabrics. Continuous airflow from cooling fans keeps sensor bodies at safe temperatures and absorbs residual heat after shutdown. The unpowered sensors measure dryout points with 0.0001°C resolution and 0.01°C repeatability, enabling optimized drying speed without compromising quality.

Benefits

Exceptional temperature accuracy prevents under-drying and overheating across varying textile types, colors and ink formulations. Unpowered sensors require no field calibration and withstand demanding production environments without drift. Strategic positioning solves field-of-view challenges while integrated airflow management addresses operational and shutdown heat concerns. Operators confidently increase lamp intensity to boost efficiency, knowing precise measurements will prevent damage. Maintenance-free design reduces costs while ensuring consistent performance for demanding brand partners.



Precise temperature control unlocks higher throughput without sacrificing quality.

Results

MHM now operates flash cure units at higher lamp intensities while maintaining complete thermal control. The system delivers approximately 2 seconds faster print times per garment – a significant competitive advantage in high-volume production. Print quality remains consistent with aggressive curing parameters. Waste from overheated garments has been eliminated, protecting brand relationships and reducing costs. The solution's reliability has strengthened MHM's reputation as a recognized leader in textile screen printing equipment.

Conclusion

This collaboration demonstrates how precisely engineered sensor solutions enable breakthrough performance in thermally demanding applications. Exergen IRT/c.03 sensors from CleverIR solved multiple technical challenges through thoughtful positioning, integrated cooling and exceptional measurement accuracy. MHM's ability to safely increase lamp intensity while maintaining quality proves that proper thermal management drives competitive advantage. The unpowered, maintenance-free design delivers sustained performance in extreme conditions, making these sensors ideal for industrial processes where speed, quality and reliability cannot be compromised.