

# Optimising digital ink processes: CUGHER infrared dryer technology

*As digital glass printing evolves, CUGHER leverages its expertise to deliver infrared drying systems designed for precision, stability and reliability. Combining advanced airflow management with controlled thermal processes, these solutions ensure consistent results - supporting industrial manufacturers in meeting increasingly complex production demands.*

The rapid expansion of digital printing on glass is reshaping expectations for industrial drying systems. As production environments demand greater consistency and quality, factors such as thermal precision, airflow stability and operational reliability have become central to process performance. Within this evolving landscape, Cugher has extended its established expertise in screen printing into the digital domain. Drawing on years of application experience, the company has developed infrared drying solutions specifically engineered to address the complexities of digital inks, en-



surely controlled processes and consistent outcomes even under demanding production conditions.

## DRYING CONTROL FOR DIGITAL INKS

Digital printing introduces a level of sensitivity absent in traditional screen processes, particularly during the initial drying phase. At this stage, inks remain unstable and highly vulnerable to disturbances caused by airflow or temperature fluctuations, which can compromise image definition. To mitigate these risks, Cugher has implemented a 'soft' air diffusion ventilation system designed to deliver uniform, non-invasive airflow. Characterised by large-diameter openings, this approach prevents ink displacement prior to stabilisation, maintains consistent thermal conditions across the glass surface and preserves the integrity of even complex graphics. The drying process is further refined through the integration of infrared radiation with hot air recirculation. This combination ensures efficient and controlled energy transfer while enabling the processing of substantial digital ink layers -up to 100 microns- without sacrificing stability or final adhesion.

## TECHNICAL FEATURES AND DESIGN

Cugher's dryers for digital applications incorporate a range of engineering solu-



tions focused on process stability, continuous operation and durability. Operating temperatures can reach up to 250°C, supported by a forced fume extraction system equipped with dedicated fans for each module. The modular architecture, based on two-metre sections for both heating and cooling zones, allows flexible configuration while maintaining efficiency. Ventilation systems have been specifically optimised for the sensitivity of digital inks, and the overall design supports seamless in-line integration for uninterrupted production flows. Enhancements derived from traditional IR dryer evolution include stainless steel hot module heads, which offer increased resistance to heat and solvents, alongside a polygonal structural design that improves efficiency and simplifies maintenance. Together, these elements

contribute to a stable process environment, reduced maintenance demands and extended equipment lifespan.

## IR-J RANGE: TAILORED SOLUTIONS FOR DIGITAL GLASS PRINTING

In response to the diversification of digital printing applications, Cugher has expanded its offering with the IR-J series, a comprehensive range of dryers designed to accommodate varying production requirements. The portfolio includes both belt-driven systems and roller conveyor configurations, providing flexibility across different operational setups. Models within the range -IR-J-100, IR-J-130, IR-J-160, IR-J-200, IR-J-230 and IR-J-250- enable coverage of a broad spectrum of

industrial applications while maintaining consistent performance standards.

## RELIABILITY AND CONTROL

As digital glass printing continues to advance, the demand for precise and reliable drying systems is intensifying. In this context, Cugher's infrared dryers represent a mature and dependable solution, combining technical innovation with proven application knowledge. Accurate control of process parameters, supported by design features tailored to the behaviour of digital inks, ensures high levels of quality, stability and repeatability. These capabilities position the technology as a key enabler for manufacturers addressing increasingly sophisticated production challenges.



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