

Press release

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Combining infrared radiation and air management to fasten print drying

Infradry systems from Heraeus Noblelight make printing and coating applications significantly more efficient, as infrared emitters work in conjunction with a specially developed air management system to reduce drying time.

Drying printing inks and lacquers is an energy-intensive process, which is reason enough to put conventional dryers to the test. Infradry modules combine intensive IR radiation with a controlled supply of hot air and exhaust system to ensure effective drying.

This was accomplished with the help of computational fluid dynamics (CFD) to coordinate radiation and air extraction via computer simulation before the system was built. Tests with customer materials confirmed the simulation. The drying speed was up to 30 percent faster than with conventional dryers.

Highly efficient drying

The air management system has been designed to absorb and then remove the moisture that is driven out of the coating by the IR emitters. This accelerates drying by preventing the atmosphere inside the process area from becoming oversaturated.

With a power density that is customized to the application and highly polished reflectors that concentrate the infrared radiation on the substrate surface, the new Infradry systems provide very efficient drying. Their modular construction makes them easily scalable for any working width, and they can be configured with a variety of interfaces. Sensors ensure exact control of drying.

Powerful twin-tube infrared emitters

There are currently two types of Infradry systems: The Infradry Compact has a very small footprint and is easy to retrofit. The Infradry Combi is suitable for larger web widths and is the first drying system in the world to extract the air within the infrared emitter field. Unlike conventional dryers, the moisture is extracted directly from the process area, making infrared drying more thorough, as a result.

High-performance twin-tube IR emitters provide the infrared radiation for drying inks. Depending on the application, shortwave NIR or mediumwave CIR emitters can be selected. Shortwave emitters produce very high temperatures very quickly, while mediumwave emitters are considered the most efficient method to dry inks and lacquers gently to protect the paper.

Heraeus Noblelight offers the whole range of infrared radiation—from near infrared (NIR) to mediumwave carbon infrared (CIR), conducts trials with the materials, and provides guidance in selecting the optimal emitter for every process.

A globally leading technology group, Heraeus is headquartered in Hanau, Germany. Founded in 1851, it is a family-owned portfolio company which traces its roots back to a pharmacy opened by the family in 1660. Today, Heraeus combines businesses in the environmental, energy, electronics, health, mobility and industrial applications sectors.

In the 2018 financial year, Heraeus generated revenues of €20.3 billion. With approximately 15.000 employees (including staff leasing) in 40 countries, the FORTUNE Global 500-listed company holds a leading position in its global markets. Heraeus is one of the top 10 family-owned companies in Germany.

With technical expertise, a commitment to excellence, a focus on innovation and entrepreneurial leadership, we are constantly striving to improve our performance. We create high-quality solutions for our clients and strengthen their long-term competitiveness by combining unique material expertise with leadership in technology.

Heraeus Noblelight GmbH with its headquarters in Hanau and with subsidiaries in the USA, Great Britain, France and China is one of the technology- and market-leaders in the production of specialty light sources and systems. The organization develops, manufactures and markets infrared and ultraviolet emitters, systems and solutions for applications in industrial manufacture, environmental protection, medicine and cosmetics, research, development and analytical measurement techniques.

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Infradry systems make printing and coating applications significantly more efficient.

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