Infrared Allows More Cost-Efficient Print Drying

A carbon infrared (CIR) drying system from Heraeus Noblelight is being used with a high speed print unit to achieve more cost-effective drying of a range of high quality tickets at the Hull factory of Bemrose Booth.
Bemrose Booth was founded in 1826 as a manufacturer of railway timetables and is today still heavily involved in the railway sector, printing railway tickets but now offers a wide portfolio of products, from gift cards and vouchers to calendars, diaries and lottery tickets.
An important design feature of car parking tickets is the use of blocks of black ink to flag points in the final ticket rolls to alert users that rolls are in need of imminent replacement. Naturally, these “alert blocks” require the laying down of large amounts of ink. Previously, a toner printing system was used and there was no need for drying. Unfortunately, the system was extremely expensive to run and the company decided to convert to a technology, where print heads can deliver up to 204.8 million droplets per second of water-based ink. However, in order to realize the considerable economic benefits offered by the high performance printing system, it was necessary that especially the ink blocks were dried at speeds to match the printing speeds.
Following trials, a purpose-designed drying system was built and installed. This consists of a carbon medium wave, infrared system providing highly efficient drying, as water absorbs infrared most strongly in the medium wave section of the spectrum. The system is automatically controlled according to the temperature of the web after it leaves the heating/drying module. As the line speed increases or slows down, or if ambient conditions change, the system’s infrared emitters are infinitely regulated to maintain a pre-set temperature. On stoppage of the machine, the emitters turn off virtually instantaneously and a fan switches on to ensure that there is no damage to the thermally sensitive paper.
As Graham Winship, Operations Manager at Bemrose Booth, explains, “It was important that the ink was dried effectively and efficiently without detriment to the sensitive paper at line speeds up to 60 m/min. The Heraeus system does exactly what it says on the box.”

Features

- printing of alert blocks on parking tickets
- drying of water-based inks
- high speed print drying

Technical Data

- carbon infrared emitters with fast response times
- 12.9kW
- cooling fan
- line speeds of up to 60 m/min
- controls by optical pyrometer

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