

FLUX - SMART DRYERS

Solutions for Inkjet Printing

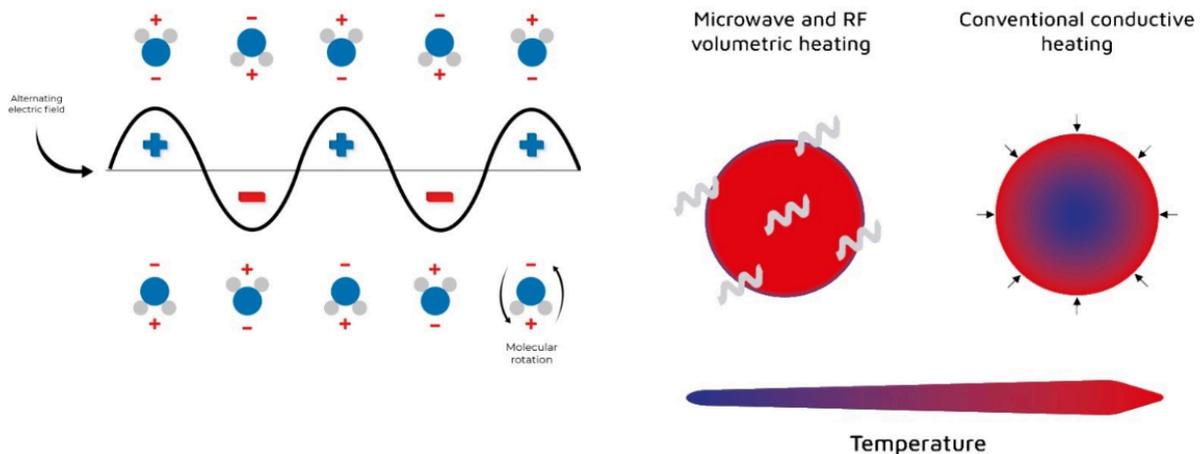
WHY USE RF for the drying of ink?

Currently, at the state-of-art of digital printers, the printing equipment are designed for high-speed printing capacity where the potential directly bonded and limited only by the efficiency of the dryers. The result is an inefficient pair that match an high-end technological and expensive printing machine with an un-efficient, slow and obsolete dryer.

HOW THE TECHNOLOGY WORKS?

RADIO FREQUENCY technology is based on high frequency electromagnetic fields, to heat the water within the ink. When exposed to high frequency waves, water molecules undergo vibration and rotation at a rate of million times per second, generating heat from the core and raising the water temperature to the point of evaporation.

The heat transfer process is intrinsic and immediate throughout the entire product mass, making the entire drying process intimate and significantly faster than conventional methods.



ADVANTAGES:

- **Low consumption and 100% Fully electric technology:** The overall efficiency of the process is 2 to 3 times higher than conventional Infrared/Hot air/Gas technology. With an evaporation rate of 1,5Lt/hour of water for every Kw of RF power FLUX technology is the most efficient and money-saving method for the drying of ink.
- **No changes in colors and low thermal stress:** The water extraction process involves a very mild and insignificant thermal transfer to the product and external environment, the transfer of the energy is provided with surgical precision to the water molecules only.
- **No emissions or polluting products:** The technology is 100% electric and Carbon Free, does not require any filtering systems, environmental control nor use of disposable sources of power
- **High thermal efficiency, low environmental heating and elimination of preparation time:** The drying of water based ink is processed instantly with RF, with negligible thermal losses and without any preparation or pre-heating time.

WHY THE CONVENTIONAL METHODS ARE NOT EFFICIENT AS RF?

Currently different technologies are used for the drying of Ink but all of them even if applied efficiently have to face different handicaps:

- *Forced HOT AIR dryers: they are the most common equipment used for the drying of ink on digital printing applications. The heating involve the use of high rate of electric energy for the generation of power through electric resistors or use of gas burners. Environmental impact is the highest with thermal dispersion, slow and uneven drying that make the equipment bulky and expensive to run.*
- *INFRARED RAYS and ULTRAVIOLET RAYS dryers: IR and UV waves are not able to drying efficiently through the whole mass of the ink, the drying is only processed efficiently on surface of the product. It involve an higher thermal dispersion through the environment and thermal stress to the ink, the drying is non even since the absorption of the radiation is affected by the colors of the ink in the visible spectrum*

Case Study about energetic consumption

Below we report some data for comparing the consumption on a operative production line with a 72-head printer, which includes a traditional dual-module hybrid gas/electric dryer from a common brand, whose declared consumption we compare to our equivalent in capacity: TIFFANY 20

Case study for South European market	DUAL MODULE DRYER HYBRID GAS/ELECTRIC	FLUX TIFFANI 20
Gas Consumption (H)	12 mc (126 Kwh)	0
Electric Consumption (H)	46 Kwh	40 Kwh
Daily electric cost 24H (200 Eur/MWh)	221 Eur/24H	192 Eur/24H
Gas cost (30 Eur/MWh)	91 Eur/24H	0
Operating cost (24h x 250 days)	77,950 EUR	48,000 EUR

The savings thus amount to over 30,000 Euros/year in the South European market, which is one of the most economical in the European zone. Additionally, there is a saving in terms of environmental climate control as the high-frequency wave process has virtually no thermal dispersion into the environment.

The same comparison was made in Italy, where the consumption of two operating plants with 16-head printers of equivalent capacity was analyzed, comparing conventional hot air dryer with a single electric module to our equivalent TIFFANY 10 currently in use.

Data for ITALY	SINGLE MODULE HOT AIR DRYER	FLUX TIFFANY 10
Gas Consumption (H)	0	0
Electric Consumption (H)	16.12 Kwh	6.31 Kwh
Daily electric cost 24H (240 Eur/MWh)	93 Eur/24H	37 Eur/24H
Operating cost (24h x 250 days)	23,250 EUR	9,250 EUR

In this study, we have confirmed a saving of 14,000 Euros/year per unit, which is a cost reduction of about 60% on the electric bill compared to the traditional technology currently in use.

TECHNICAL DATASHEET

Model - Tiffany 5

DIMENSION: 1800x2200x(H)2650mm

WEIGHT: 1000 kg

RF POWER: 5 kW

INSTALLED POWER: 6 kW / 3p~400Vac / 9A

MAX DRYING CAPACITY: 7.5 LT/HOUR

PRODUCTION SPEED: 375MQ/HOUR or 200MT/HOUR

MAX. FORMAT DIMENSION: up to 1800mm of height

COMPATIBILITY: PRINTER 8 HEADS

Model - Tiffany 10

DIMENSIONS: 3220x2200x(H)2650mm

WEIGHT: 1200 kg

RF POWER: 10 kW

INSTALLED POWER: 11 kW / 3p~400Vac / 16A

DRYING CAPACITY: 15 LT/HOUR

PRODUCTION SPEED: 750MQ/HOUR or 400MT/HOUR

MAX. FORMAT DIMENSION: up to 1800mm of height

COMPATIBILITY: PRINTER 16-32 HEADS

Model - Tiffany 20

DIMENSIONS: 4220x2200x(H)2650

WEIGHT: 1700 kg

RF POWER: 20 kW

INSTALLED POWER: 22 kW / 3p~400Vac / 36A

DRYING CAPACITY: 30 LT/HOUR

PRODUCTION SPEED: 1500MQ/HOUR or 800MT/HOUR

MAX. FORMAT DIMENSION: up to 1800mm of height

COMPATIBILITY: PRINTER 64-72 HEADS