

New Product Information

HeatWave Sublimation System

SP-300 Inkjet Printer / Cutter

Overview

Roland HeatWave is the world's first complete factory inkjet solution for printing sublimation graphics. HeatWave includes the VersaCAMM 30-inch printer/cutter, sublimation ink, sublimation transfer paper and Roland COLORIP™ software. Thanks to Roland's vast expertise with inkjet technology and high-quality color output, all four elements perform in concert to produce reliable transfers with brilliant color.

Simply put, Roland has taken the mystery out of sublimation printing. We partnered with Sawgrass Technologies to offer a custom-formulated, clog-free sublimation ink with an expanded color gamut. These advanced inks allow users to create bold, crisp sublimation graphics ideal for tile murals, textiles, promotional items, photo gifts, awards, signage and jerseys.



Sublimation Workflow

The following describes a Heat transfer with the HeatWave sublimation solution:

1. Print a digital image using a VersaCAMM printer with HeatWave sublimation ink, HeatWave sublimation transfer paper and Roland COLORIP™ profiles.
2. Put the freshly printed image on top of the sublimation-ready surface and place them together in a heat press.
3. Press the image and the substrate according to the recommended time and temperature settings (generally 400 degrees, 20-60 seconds) and remove it for a bright and durable finished product.

How to Convert the SP-300 to a Sublimation Printer

In order to use the HeatWave sublimation inks, new firmware 2.2 or higher is required. Once the firmware is confirmed or updated, sublimation ink needs to be selected on the control panel and the machine will display **SP-300S** as the model name.

IMPORTANT: Please make sure you have a new unit that was never loaded with Eco-SOL Inks since the sublimation inks have a similar composition to pigment inks and will cause problems when mixed.

Additionally, once you have chosen the sublimation mode, you cannot go back to Eco-SOL mode.

RIP Software

Roland COLORIP™ RIP software for the HeatWave systems includes universal sublimation profiles for several types of materials, making it easier to generate consistent transfers and control color. It also offers simultaneous RIP & Print capability, enhanced color management and contour cutting. In addition to Postscript jobs, Roland COLORIP™ lets users print directly from TIFF, JPEG, EPS, PS, PDF 1.4 and DCS 2.0 files.

Sublimatable Substrates & Profiles

Materials with polyester or acrylic surfaces – i.e., “sublimatable” materials -- need to be used for successful transfers. There is a wide range of these materials available from various manufacturers, including UNISUB, Fisher Textiles and Hanes (for specialty t-shirts). Substrates generally fall into one of three categories: plastics, fabrics, and tile (ceramics) although coated glass and metals can also be used.

We have found that that the composition of the various UNISUB products (metal, plastic and hardboard materials) are essentially identical. The fabric materials also tend to offer the same results. Therefore, we are offering three profiles: High Speed (360x720) which is recommended for textiles, Standard (720x720) which is recommended for plastics, and High Quality (720x1440) which is recommended for metals.

Material qualities will vary, so we strongly suggest testing the application before producing a run of product. In some cases, customers may have unique materials that require custom profiling, but that is the exception to the rule and the standard profiles should cover most applications.

Frequently Asked Questions

What are sublimation transfer inks?

Sublimation describes the process of a solid substance changing directly into a gas or vapor without first passing through the intermediary liquid state, then changing back to a solid state. Sublimation inks allow for digital printing followed by transferring to a substrate through the use of heat to activate this process. These inks have the ability to create a permanent bond with polyester or acrylic surfaces.

How does sublimation work?

Sublimation uses a patented heat transfer process that employs special heat sensitive inks to permanently dye polymer-coated surfaces. Simply print your clip art, scanned images, or computer created artwork on a VersaCAMM SP300S inkjet printer/cutter using HeatWave sublimation transfer paper and sublimation inks. Then the paper is placed on a

sublimatable item and both are placed into a heat press for a certain amount of time (in seconds) at a certain temperature (in degrees) that varies with type of item used for the process.

How are sublimation transfers different from other transfer materials?

Heat transfers created with color laser, ink jet, or wax thermal printers use a polymer coated transfer paper to fuse ordinary toner or ink particles onto the surface of a substrate. The result is a "decal-like" transfer that can peel, crack, fade, and discolor over time. Sublimation transfers instead rely on special inks to transfer below the surface of a substrate. The result is an embedded image that will not peel, crack, or fade and lasts for many years. Sublimated images are extremely washable, scratch-resistant and dishwasher safe because the image is protected within the surface.

How is a sublimation transfer different from direct printing onto fabric?

“Direct printing” is an alternative category that includes printing directly onto coated and paperbacked fabric with an inkjet printer. Standard inkjet inks can be used but vary greatly in quality and durability. Coated or paper-backed fabrics for direct printing are generally more expensive and easily wasted. Moreover, sublimation transfers offer a level of color vibrancy and permanency that direct printing cannot rival.

What are the limitations of sublimation?

Sublimation inks transfer well to light colored, synthetic surfaces such as polyester and acrylic. They do not transfer to natural fabrics such as cotton, or dark-colored surfaces. Also, depending on exposure, sublimation inks may have less color-fastness when exposed to direct sunlight.

Do I need a special transfer paper?

Specialized papers designed to take advantage of the characteristics of sublimation ink deliver more accurate and consistent results. HeatWave transfer paper is designed to produce the best prints for high-quality transfers to a wide variety of substrates.

What do I need to know about color management software?

Every ink used in the printing industry requires color management to produce good clarity and consistent results. Color management software is an invaluable tool when printing with sublimation. Color management software gives sublimation printers the tools to produce brilliant spot color fills and transfers with true photo quality. So even when the image looks “dull” when printed, color management software allows the color to really pop when heat transferred.

What should I know about UV stability when using sublimation inks?

Over long periods of time, sublimation inks have limited color-fastness when exposed to direct sunlight. However, there are many factors that can affect the lifetime of your sublimated product, including climate, transfer time, temperature and pressure, the substrate and image density. HeatWave Inks are designed to maximize both indoor and

outdoor durability. If you are planning an application that will be exposed to direct sunlight for the product lifetime, it is best to test the actual application.

Does sublimation work on 100% cotton T-shirts in addition to polyester T-shirts?

Sublimation uses dyes requiring t-shirts to have a synthetic printing surface. Hanes Printable offers a range of apparel called Soft L'ink™ that combines 100% cotton fabric with a micro-polyester outer weave for a product line that allows printers to digitally create full-color, photo-quality graphics on a cotton-based garment.

HeatWave Ink Cost

List price of HeatWave ink is \$149.95 per cartridge and the matrix below includes test results from the VersaCAMM SP-300S printer/cutter. This cost-per-square-foot information was calculated using the bicycle image below with Roland HeatWave sublimation paper.

Print Mode	Print Speed	Price Per Square Foot	
High Speed	63 sq ft/hr	\$0.20/sq ft	
Standard	32 sq ft/hr	\$0.27/sq ft	
High Quality	16 sq ft/hr	\$0.33/sq ft	

HeatWave Key Features

- VersaCAMM SP-300S 30-inch printer/cutter
- HeatWave sublimation ink in 220 ml CMYK cartridges
- Consistent, clog-free printing with advance formula ink
- Brilliant colors with expanded color gamut
- HeatWave 120-gram sublimation transfer paper in 30” wide rolls
- Bundled Roland COLORIP™ software including sublimation profiles
- Stand alone vinyl cutter capabilities

Summary

The VersaCAMM HeatWave Sublimation System marks the first time anyone has packaged a “turn key” inkjet sublimation system. To take the guess work out of trying to piece different manufacturers’ products together, we are offering a complete solution. One of the key elements to the success of this new HeatWave solution will be exploiting the printing and cutting capabilities of the VersaCAMM. Currently, sublimation shops are not specifically looking for cutting capabilities. However there are an endless number of cuttable materials pertinent to their business, including a cuttable transfer material for sublimation. This capability together with the sublimation system solution will make this an extremely useful product for the sublimation customer.

