



## Increase Productivity with Océ Radiant Fusing Technology

### Océ Large Format Printing Systems

Océ Radiant Fusing technology is a patented, energy saving fusing method providing printing availability without lengthy warm-up times. The technology consumes less energy and emits less noise and ozone when compared to other fusing methods common to large format printing equipment. In addition to the environmental benefits, its design also provides high quality output, with consistent results over time.

Océ Radiant Fusing technology is ideal for decentralized, on-demand, workgroup environments where users require reliability, energy efficiency, low heat and noise, and instant-on capabilities, along with high image quality.





## Key customer benefits of Océ Radiant Fusing technology

### VIRTUALLY NO WARM UP TIME

Enables quick machine availability even from sleep mode

### SHARPER OUTPUT

Prevents resolution loss, dot size degradation and line fuzziness since the toner melts exactly where it is placed on the media

### LOW POWER CONSUMPTION

Reduces energy usage with ENERGY STAR® designation. The array used in fusing is heated instantly limiting the amount of power required in stand-by/ready and sleep modes.

### LESS NOISE AND LESS HEAT

Minimizes distractions. With no pressure rollers, a lower temperature is maintained. Since the system heats and cools instantly, there is no need for noisy fans, and the system is silent in stand-by/ready and sleep modes.

### GREATER LONG-TERM RELIABILITY

Generates less internal heat and uses fewer consumable parts (no fuser rollers or fuser oil). The lower total heat helps enable all parts of the machine to last longer.

## Why a patented technology?

Traditional LED printing technology requires high fusing temperatures and creates an inefficient workflow for low and mid-volume use typified by walk-up users with on-demand needs. Therefore, Océ developed a fusing method specifically targeted at the workflow requirements of these customers.

In low and mid-volume large format printing environments, systems can remain idle for a large part of the day. At common print speeds, most jobs can be performed in less than 10% of a full 8 hour working day. For traditional users in this environment, the speed at which they can expect to receive their set of drawings is more critical than the reported speed of the print engine. In order for traditional LED technology-based engines to provide the first print quickly, it is necessary to keep the fusing unit temperature at a high enough level to avoid lengthy warm up time (ready mode).

This generates unnecessary heat, energy usage and noise even when the equipment is not in use. Océ Radiant Fusing technology was developed to feature instant printing anytime of the day without wasting energy.

## What is the electrophotographic process?

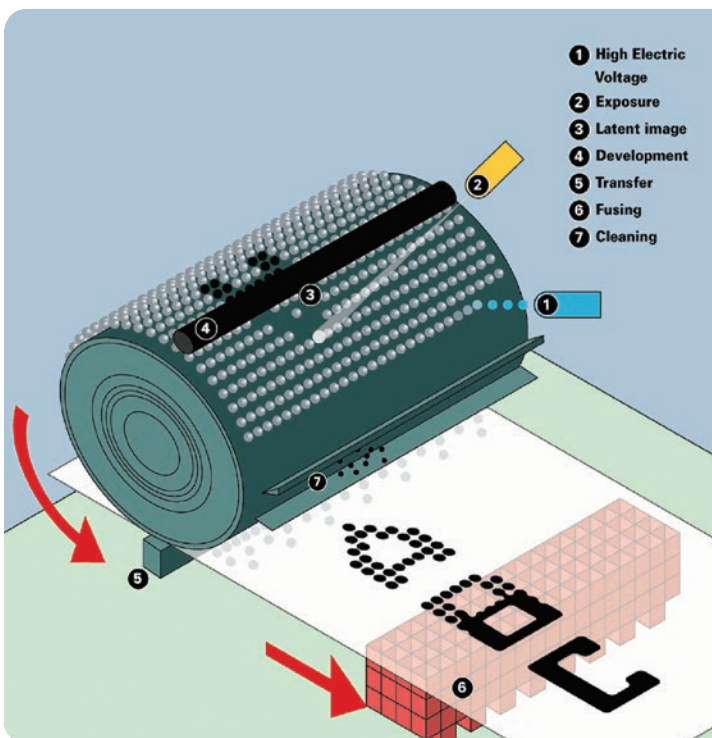
The term electrophotography means “to write with light using electricity.” During the electrophotographic process, light is converted from a binary (on/off) light source into black dots (or absence of black dots) on a piece of paper. The process takes place on a photoconductor — usually called the drum — that rotates and creates the image.

Conventional technologies use heated fuser rollers that require extensive warm-up time or high levels of energy consumption to keep them hot while waiting for prints in ready mode (standby). Additionally, these systems usually include a cooling fan, which can be quite noisy even while the machine is idle.

## What makes Océ Radiant Fusing technology different?

During the Océ Radiant Fusing process, toner is fused to the media by heat rising through the media from an array of heating elements. The array used in the Océ Radiant Fusing method heats and cools quickly in a manner similar to the heating elements found in a toaster. The toner melts and is fused to the media without distorting the image. Most large format printers use hot pressure rollers to fuse the image to the media.

These rollers require high levels of energy to maintain a heat level needed for fusing in order to circumvent lengthy warm-up times. The rollers smash the toner into the media, creating potential for blurred images. Additionally, these systems require a lubricant on the fuser rollers to prevent the print from sticking to the roller. This lubricant is usually referred to as silicone oil, but may also be called silicone grease, fuser grease, or fuser oil. As a result, systems that use a roller technology may leave a silicone residue on the print, which can increase the likelihood of unwanted toner transfer if prints are stacked or folded.



## How does Océ Radiant Fusing technology work?

### STEP 1: HIGH ELECTRIC VOLTAGE

The light-sensitive drum gets a negative electric charge.

### STEP 2: EXPOSURE

The drum is then exposed to light from the LED (light emitting diode) array.

### STEP 3: LATENT IMAGE

Where light from the image hits the surface of the drum, the negative charge disappears leaving a latent image.

### STEP 4: DEVELOPMENT

The drum comes in contact with the toner. The negatively charged toner is attracted to the area of the drum where the points of light have caused the original negative charge to disappear. The image on the drum becomes visible as a layer of toner covers the discharged parts.

### STEP 5: TRANSFER

A positive charge is applied through the media as it moves past the drum. The positive charge attracts the toner and causes it to move from the drum to the media.

### STEP 6: FUSING

The toner is heated and fixed permanently (fused) onto the media. In Océ equipment containing Océ Radiant Fusing technology, this is done via an array of heated lamellae, or plates. The heat rises up through the media, allowing the toner to literally melt down into the media. This minimizes any distortion of the image, which may be created by systems using heated pressure fuser rollers.

### STEP 7: CLEANING

Toner particles left on the drum are removed and the drum is cleaned prior to printing the next image.



## What does this mean to a user?

Unlike other reprographic processes, the media travelling through the fuser never makes contact with pressure rollers. Pressure rollers smash the toner into the media, which can blur the printed image. Océ Radiant Fusing technology prevents resolution loss, dot size degradation and line fuzziness as the toner is melted exactly as it is placed on the media.

### OCÉ RADIANT FUSING PRODUCTS OPERATE AT A LOWER TEMPERATURE

Because there are no pressure rollers to heat, printers containing Océ Radiant Fusing technology maintain a lower temperature. During the printing process, the array is heated to fuse the toner to the media. The fusing section heats quickly to fuse the toner and cools quickly when the task is completed.

Once printing is completed, the printer reverts to a standby mode drawing a minimum of power — as low as 39 watts. Roller-based large format products frequently can be found having a standby mode that draws 1000 watts, as the pressure rollers must stay heated in preparation for the next print.

Today's Océ printers that use Océ Radiant Fusing technology have received the ENERGY STAR designation from the U.S. Environmental Protection Agency. This designation recognizes printers that are energy efficient products.

## THIS MEANS

**Less energy use**, which can lead to significant cost savings — When comparing printers containing Océ Radiant Fusing technology to systems that use pressure rollers, users can realize significant electricity cost savings

**Perfect for workgroup environments** — Printers containing Océ Radiant Fusing technology generate less heat and noise so they fit easily into a workgroup environment. And because the instant-on capability means no waiting for the machine to warm up before getting prints, it is ideal for decentralized, walk-up environments when users need their prints on demand.

**Greater long-term reliability** — Products containing Océ Radiant Fusing technology generate less internal heat and contain fewer consumable parts (no fusers or fuser oil). The lower total heat helps printer parts last longer, and fewer consumable parts mean fewer service calls to replace parts.

## Océ products increase productivity

The low operating temperature needed to fuse the toner to the media means printers containing Océ Radiant Fusing technology are instant on. The printer warms up as prints are processed and cools down immediately afterwards. Products containing pressure rollers need to stay in a more costly, heat-producing standby mode in order to remain this productive. If they cool down, they then require several minutes warm up time, which adds to a users printing time. With Océ Radiant Fusing technology, one does not need to make a trade-off between productivity, reliability, and energy savings.

**Canon**

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