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White Paper

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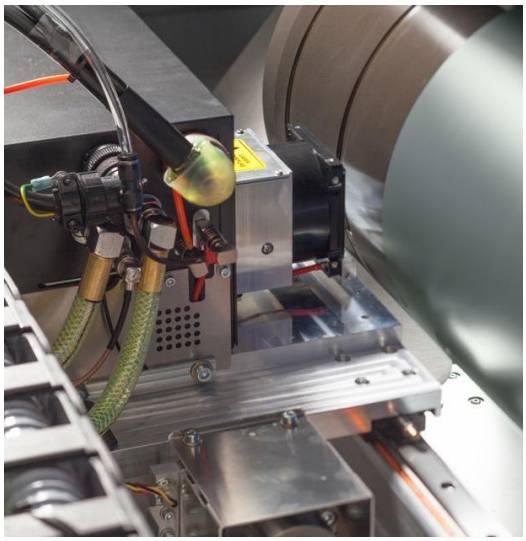
Why Kodak CTP is best for process free plates

Back at Drupa 1995—while most prepress suppliers were focusing on visible light imaging technologies—Kodak and Creo announced a new thermal technology for imaging printing plates. Today, 80% of installed CTP devices use thermal imaging technology, proving that this innovation was the right choice for the future.



Since 1995, Kodak has stayed on the leading edge of thermal imaging technology for CTP and plates and now provides the most sustainable and stable plate making process available on the market. Kodak's CTP devices deliver:

- Product design and performance that is optimized for sustainability and current and future technology, including process free plates.
- Optimized technology, including significantly reduced power consumption, no ablation while imaging, and CTP automation with appropriate plate and paper handling.
- Unique SQUAREspot Imaging Technology, which continues to show differentiated benefits for applications where imaging spot size and shape matter.

Before getting into more details about these technical features, it is important to keep in mind what an offset printer expects from an optimal prepress setup:

- Lowest cost of operation all the way to the press
- Highest uptime with minimal operator involvement
- Minimization of the environmental burden on the world around us.

We believe we can do all of this with key technologies invented and owned by Kodak.

CTP devices designed for today's requirements – optimization and redesign

CTP compatibility with process free plate technology is essential in order to realize the full potential offered by this new type of plate. All Kodak's CTP devices – ACHIEVE, TRENDSETTER, GENERATION NEWS and MAGNUS Platesetters – are 100% compatible with KODAK SONORA Process Free Plates, enabling the complete elimination of plate processing equipment and chemistry, as well as the associated operational variables and costs.

Here are some key technology features that have been designed with the requirements of process free plates in mind:

- **Optimized laser power:** in general, process free plates require more laser power. SQUAREspot Thermal Heads have a very efficient optical system from laser to plate, which results in faster plate throughput and less wasted energy.
    - The laser we use is a 50-watt laser that, with about 50% efficiency, gives us about 25 watts on plate. Other systems are less efficient and, as a result, 'waste' more energy, which typically then gets turned into heat. This heat then requires cooling/chilling, which requires power. Think about your old 60-watt light bulb versus LED at 9 watts, which wastes less energy.
    - The sizes and shape of the dot using SQUAREspot Technology allows for a more efficient exposure – we image SONORA Plates at 150 mJ/cm^2 with SQUAREspot Technology– with the ACHIEVE Imaging Technology (TH5) it is about 170 mJ/cm^2 – and with other competitive systems we need to "over expose" further to 180 mJ/cm^2.
- **The latest plate and paper handling technology for CTP automation:** process free plates, including some other newer plate technologies, can be more scratch sensitive and/or light sensitive. New SCU and MCU automation options for ACHIEVE and TRENDSETTER Platesetters employ technologies that have been specifically designed to take these requirements into account. Examples include:
    - Removing paper reliably, with no movement between paper and emulsion on plate;
    - Light tightness of the CTP panels, ensuring no special prepress rooms are required while storing plates inside the platesetter cassettes for longer durations;
    - Scratch-free picking, transporting and imaging of plates, regardless of plate technology.

Today's CTP devices also need to be optimized to perform well when imaging process free plates; what was acceptable only a few years ago may no longer be acceptable with today's plates. Kodak CTP devices have continued to evolve in ways that best integrate newer, more eco-friendly

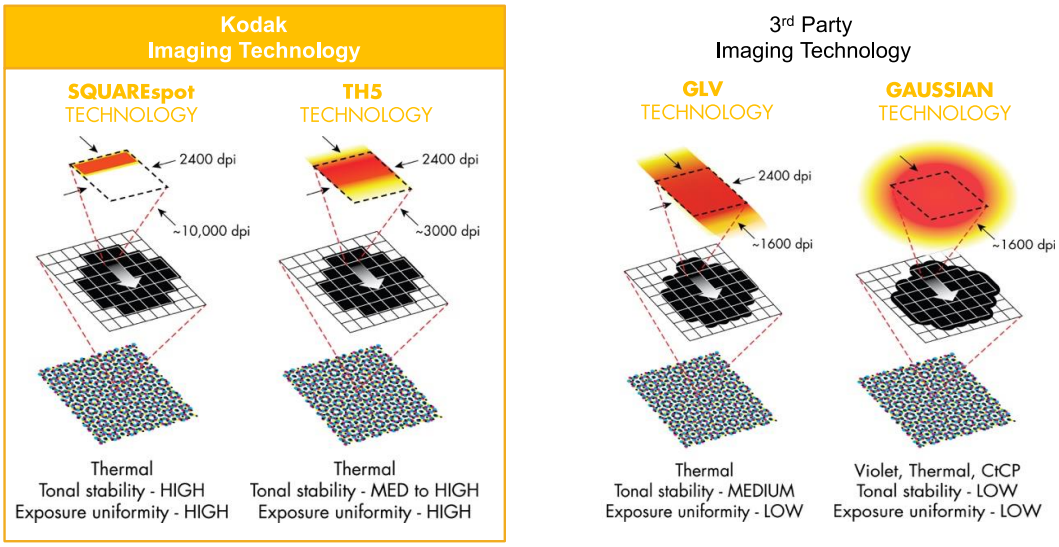
solutions, and they really reach their full sustainability potential when combined with SONORA Process Free Plates. Examples include:

- **Elimination of debris removal requirement**: Unlike some simple-process plates and other process free plates, SONORA Plates do not produce debris while imaging, so there is no need for a debris removal mechanism, and printers enjoy savings in power consumption (1.5 kW), space and especially noise in the prepress room.
- **Significant power savings**: By optimizing laser cooling systems, automation and CTP engine technology, power consumption is reduced by up to 43% compared to previous-generation platesetters and up to 95% compared to competitive devices. For example, TRENDSETTER Platesetters do not require a vacuum system to hold the plate on the drum due to the low drum speed enabled by the wider imaging swath of the SQUAREspot Thermal Head. The table below illustrates Kodak's ongoing commitment to minimizing the energy consumption of its CTP devices.

	Power consumption while imaging (watts)		
	2015 Model	**Current Model**	**Power savings**
ACHIEVE T400/T800 Platesetter	700	400	43%
TRENDSETTER Q400/Q800 Platesetter (F/X-speed)	1,100	770	30%
TRENDSETTER Q1600 Platesetter	1,400	1,100	21%
TRENDSETTER Q2400/Q3600 Platesetter	5,100	3,700	27%

Size (and shape) matter - SQUAREspot Imaging Technology today…

Many have tried unsuccessfully to match what SQUAREspot Imaging Technology has done for over 20 years. As plates move to process-free technology, the unique benefits of SQUAREspot Technology become even more important. The small size of a single pixel and the evenness of the energy level across the imaged pixel delivered by SQUAREspot Imaging Technology are key to unlocking the full potential of process free plates.



Extensive testing and years of customer experience have clarified some of the key benefits:

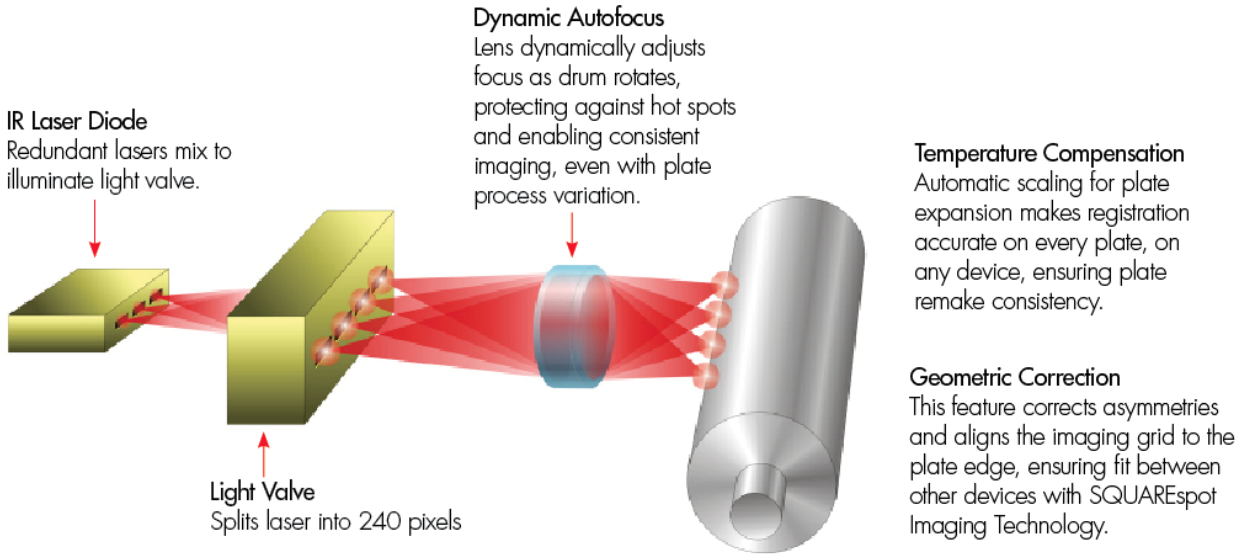
- Increased laser efficiency: results in higher plate throughput, and up to 27% less energy is consumed relative to competing systems
- Plug-and-play color reproduction: in most cases, no dot gain calibration required when switching from processed plates
- Superior tonal stability: achieve highest screening qualification with the same process free plate
- Stronger imaging contrast compared to other imaging technologies when exposed to the same exposure energy level, due to the high and even power density of the SQUAREspot imaging head.

SQUAREspot Technology and SONORA Process Free Plates: the perfect combination

Of course, the key benefits that set SQUAREspot Technology apart still apply:

- Maximum uptime with Geometric Correction, enabling plate remakes on any other CTP device with SQUAREspot Technology; perfect dot-to-dot registration between CTP devices, enabling maximum operational flexibility
- Peace of mind with the widest available operational temperature range in the industry – from 18-30 degrees C (64-86 degrees F), enabling stable, reliable performance
- Maximum quality and robustness with Dynamic Autofocus, creating market-leading specifications with Staccato 10 FM and 450 lpi AM screening

Kodak's award-winning, superior imaging technology provides accurate, stable and reliable dots with wide latitude under varying conditions.



Commitment to sustainability

Sustainability has always been—and continues to be— fundamental to Kodak's product development efforts, and we continue to invest in minimizing the environmental footprint of our CTP technology, including:

- Power savings with a new cooling system
- Reduced heat output of the CTP device, reducing the prepress environment conditioning.
- Recycling strategy for used and aging CTP devices with a responsible recycling program for obsolete platesetters, or Kodak's Certified Pre-Owned CTP Device program, which extends the life of the device.

- Reduced packaging waste with bulk packaging of plates, including Automatic Pallet Load automation options for MAGNUS Q800 and MAGNUS VLF Platesetters, which further reduce packaging and operational requirements.

The environmental and performance attributes of Kodak's CTP devices perfectly complement the sustainability advantages available with SONORA Plates, which eliminate plate making steps, as well as processing equipment, chemistry, power, space and variability in the plate making process … with no compromise to on-press performance.

About Kodak

Eastman Kodak Company is driving innovation and change for customers in commercial, packaging and functional printing, and enterprise services markets with one of the broadest portfolios of technologies, products, and services in the graphic communications and commercial printing markets. Solutions from Kodak offer exceptional quality, streamlined production, and scalability to grow with our customers' businesses, and only Kodak provides digital and conventional solutions within a unified workflow. We are a worldwide team that performs with excellence, works with customers to help them succeed, and brings innovative solutions to market. For more information, visit graphics.kodak.com.